

# Annual Energy Review 2006

[www.eia.doe.gov](http://www.eia.doe.gov)  
**EIA** Energy Information Administration

## Annual Energy Review 2006

The *Annual Energy Review* (*AER*) is the Energy Information Administration's (EIA) primary report of annual historical energy statistics. For many series, data begin with the year 1949. Included are data on total energy production, consumption, and trade; overviews of petroleum, natural gas, coal, electricity, nuclear energy, renewable energy, international energy, as well as financial and environment indicators; and data unit conversion tables.

Publication of this report is required under Public Law 95-91 (Department of Energy Organization Act), Section 205(c), and is in keeping with responsibilities given to the EIA under Section 205(a)(2), which states:

*"The Administrator shall be responsible for carrying out a central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze, and disseminate data and information...."*

The *AER* is intended for use by Members of Congress, Federal and State agencies, energy analysts, and the general public. EIA welcomes suggestions from readers regarding data series in the *AER* and in other EIA publications.

**More Current Data and Forecasts:** For many of the series shown in the *AER*, readers can find more current data in EIA's *Monthly Energy Review* and forecast data in EIA's *Short-Term Energy Outlook*, *Annual Energy Outlook*, and *International Energy Outlook*. All are available on the Web at <http://www.eia.doe.gov>.

### Cover Photographs

1	4	9	1. Acadia National Park 2. Redwood National Park 3. Cape Hatteras National Seashore 4. Golden Gate National Recreation Area 5. Mount Rushmore National Memorial 6. Grand Canyon National Park 7. Hawai'i Volcanoes National Park 8. Everglades National Park 9. Statue of Liberty National Monument 10. Lincoln Memorial 11. Mount Rainer National Park
	5		
2	6	10	
3	7	11	
	8		

## Ordering Information

Complimentary copies are available to certain groups, such as public and academic libraries; Federal, State, local, and foreign governments; EIA survey respondents; and the media. For further information and answers to questions on energy statistics, contact:

National Energy Information Center, EI-30  
Energy Information Administration  
Forrestal Building, Room 1E-210  
1000 Independence Avenue, S.W.  
Washington, DC 20585  
202-586-8800  
9:00 a.m.-5:00 p.m., Eastern time, M-F  
Fax: 202-586-0114  
Email: [infoctr@eia.doe.gov](mailto:infoctr@eia.doe.gov)

This and other EIA publications may be purchased from the U.S. Government Printing Office:

- **Internet** U.S. Government Online Bookstore
- **Phone** DC Metro Area: 202-512-1800  
Toll-Free: 866-512-1800  
7:00 a.m.-8:00 p.m., Eastern time, M-F
- **Fax** 202-512-2104
- **Mail** Superintendent of Documents  
P.O. Box 371954  
Pittsburgh, PA 15250-7954

For additional information see, <http://bookstore.gpo.gov/index.jsp>.

## Electronic Access

The *AER* is available on EIA's Web site in a variety of formats at:  
<http://www.eia.doe.gov/aer>.

- Full Report and Sections: Portable Document Formats (PDF).
- Report Tables: HTML files and PDF.
- Table Data (unrounded): Excel (XLS) files.
- Graphs: PDF.



Printed with soy ink on recycled paper.

# Annual Energy Review 2006

June 2007

**Energy Information Administration**  
Office of Energy Markets and End Use  
U.S. Department of Energy  
Washington, DC 20585

This report was prepared by the Energy Information Administration, the independent statistical and analytical agency within the U.S. Department of Energy. The information contained herein should be attributed to the Energy Information Administration and should not be construed as advocating or reflecting any policy of the Department of Energy or any other organization.



# Contacts

The *Annual Energy Review (AER)* is prepared by the Energy Information Administration, Office of Energy Markets and End Use, Integrated Energy Statistics Division, Domestic Energy Statistics Team, under the direction of Katherine E. Seiferlein, 202-586-5695 ([kitty.seiferlein@eia.doe.gov](mailto:kitty.seiferlein@eia.doe.gov)). Questions and comments about the *AER* may be referred to Ray Boyer, 202-586-1680 ([ray.boyer@eia.doe.gov](mailto:ray.boyer@eia.doe.gov)), the National Energy Information Center, 202-586-8800 ([infoctr@eia.doe.gov](mailto:infoctr@eia.doe.gov)), or to the following subject specialists:

<b>1. Energy Overview</b> .....	Ray Boyer	<a href="mailto:ray.boyer@eia.doe.gov">ray.boyer@eia.doe.gov</a>	202-586-1680
<b>2. Energy Consumption by Sector</b>			
Manufacturing Energy Consumption Survey.....	Robert Adler	<a href="mailto:robert.adler@eia.doe.gov">robert.adler@eia.doe.gov</a>	202-586-1134
Residential Energy Consumption Survey.....	Eileen O'Brien	<a href="mailto:eileen.obrien@eia.doe.gov">eileen.obrien@eia.doe.gov</a>	202-586-1122
Commercial Buildings Energy Consumption Survey.....	Joelle Michaels	<a href="mailto:joelle.michaels@eia.doe.gov">joelle.michaels@eia.doe.gov</a>	202-586-8952
<b>3. Financial Indicators</b>			
Financial Reporting System.....	Greg Filas	<a href="mailto:greg.filas@eia.doe.gov">greg.filas@eia.doe.gov</a>	202-586-1347
<b>4. Energy Resources</b>			
Petroleum and Natural Gas.....	Robert F. King	<a href="mailto:robert.king@eia.doe.gov">robert.king@eia.doe.gov</a>	202-586-4787
Coal.....	George Warholic	<a href="mailto:george.warholic@eia.doe.gov">george.warholic@eia.doe.gov</a>	202-586-2307
Uranium.....	Douglas C. Bonnar	<a href="mailto:douglas.bonnar@eia.doe.gov">douglas.bonnar@eia.doe.gov</a>	202-586-1085
<b>5. Petroleum</b> .....	Michael Conner	<a href="mailto:michael.conner@eia.doe.gov">michael.conner@eia.doe.gov</a>	202-586-1795
Prices.....	Elizabeth K. Scott	<a href="mailto:elizabeth.scott@eia.doe.gov">elizabeth.scott@eia.doe.gov</a>	202-586-1258
<b>6. Natural Gas</b> .....	Joseph Conklin	<a href="mailto:joseph.conklin@eia.doe.gov">joseph.conklin@eia.doe.gov</a>	202-586-6664
<b>7. Coal</b> .....	Paulette Young	<a href="mailto:paulette.young@eia.doe.gov">paulette.young@eia.doe.gov</a>	202-586-1719
<b>8. Electricity</b> .....	James R. Diefenderfer	<a href="mailto:jim.diefenderfer@eia.doe.gov">jim.diefenderfer@eia.doe.gov</a>	202-586-2432
<b>9. Nuclear Energy</b> .....	John R. Moens	<a href="mailto:john.moens@eia.doe.gov">john.moens@eia.doe.gov</a>	202-586-1509
<b>10. Renewable Energy</b> .....	Louise Guey-Lee	<a href="mailto:louise.guey-lee@eia.doe.gov">louise.guey-lee@eia.doe.gov</a>	202-586-1293
<b>11. International Energy</b> .....	Michael J. Grillot	<a href="mailto:michael.grillot@eia.doe.gov">michael.grillot@eia.doe.gov</a>	202-586-6577
<b>12. Environmental Indicators</b>			
Greenhouse Gases.....	Stephen E. Calopedis	<a href="mailto:stephen.calopedis@eia.doe.gov">stephen.calopedis@eia.doe.gov</a>	202-586-1156
Environmental Equipment.....	Natalie Ko	<a href="mailto:natalie.ko@eia.doe.gov">natalie.ko@eia.doe.gov</a>	202-586-3139



## Preface

The *Annual Energy Review 2006 (AER)* is produced by the Energy Information Administration (EIA) to provide analysts with long-term annual historical time series to aid in identifying and understanding energy data trends, milestones, and relationships.

Each year, the *AER* includes a new year of data (in this case, usually 2006), which are generally preliminary and likely to change in subsequent releases, and revisions to previous years' data as better information becomes available. This year's report also includes new material designed to meet energy analysts' changing requirements. For example, for the first time, the *AER* includes Table 10.3, "Ethanol and Biofuels Overview," which summarizes in one place the best data that EIA can assemble at this time on a subject of rapidly growing interest. Other changes in this year's report are noted in "What's New in the *AER 2006*" at <http://www.eia.doe.gov/emeu/aer/whatsnew.html>.

The integrated tables and figures for production, consumption, and imports in this report do not include uranium as a primary energy source. For both production and consumption, nuclear-generated electricity is included based on its fossil fuel equivalent energy content.

While the primary purpose of this report is to document the Nation's energy history and offer perspectives on issues related to past energy supply and demand, the data

also serve as the foundation for building scenarios for possible future paths for the Nation's energy picture. EIA's long-term forecast is released as the *Annual Energy Outlook (AEO)*. The *AEO 2007*, released in February 2007, includes 33 individual cases that cover a range of assumptions and projections through 2030.

Pairing *AER* and *AEO* information, analysts looking for the "big picture" see U.S. total energy consumption levels recorded at 32 quadrillion British thermal units (Btu) in 1949, 76 quadrillion Btu in 1973, and 100 quadrillion Btu in 2006, and projections in the *AEO* reference case of 118 quadrillion Btu in 2020 and 131 quadrillion Btu in 2030. Similarly, one can see U.S. total energy production levels of 32 quadrillion Btu in 1949, 64 quadrillion Btu in 1973, and 71 quadrillion Btu in 2006, and projections in the *AEO* reference case of 82 quadrillion Btu in 2020 and 89 quadrillion Btu in 2030. Over the same period, the Nation's reliance on trade to meet its energy needs changes from a slight export advantage (0.01 quadrillion Btu) in 1949 to net import levels of 13 quadrillion Btu in 1973 and 30 quadrillion Btu in 2006, and projections in the *AEO* reference case of 35 quadrillion Btu in 2020 and 42 quadrillion Btu in 2030.

The *AER*, and complete time series supporting the tables and graphs, is available on EIA's website at: <http://www.eia.doe.gov/aer>. EIA continually updates the time series; more recent data for many of the *AER* series can be found in the *Monthly Energy Review* at <http://www.eia.doe/mer>.



# Contents

	Page
Energy Perspectives.....	xix
Sections	
1. Energy Overview.....	1
2. Energy Consumption by Sector.....	35
3. Financial Indicators.....	63
4. Energy Resources.....	93
5. Petroleum.....	121
6. Natural Gas.....	179
7. Coal.....	199
8. Electricity.....	219
9. Nuclear Energy.....	269
10. Renewable Energy.....	277
11. International Energy.....	299
12. Environmental Indicators.....	339
Appendices	
A. Thermal Conversion Factors.....	359
B. Metric and Other Physical Conversion Factors.....	371
C. U.S. Census Regions and Divisions.....	375
D. Population, U.S. Gross Domestic Product, and Implicit Price Deflator.....	377
E. Estimated Energy Consumption in the United States, 1635-1945.....	379
Glossary.....	381
Diagrams	
1. Energy Flow, 2006.....	3
2. Petroleum Flow, 2006.....	123
3. Natural Gas Flow, 2006.....	181
4. Coal Flow, 2006.....	201
5. Electricity Flow, 2006.....	221

## Tables

	Page
<b>1. Energy Overview</b>	
1.1 Energy Overview, Selected Years, 1949-2006 . . . . .	5
1.2 Energy Production by Primary Energy Source, Selected Years, 1949-2006 . . . . .	7
1.3 Energy Consumption by Primary Energy Source, Selected Years, 1949-2006 . . . . .	9
1.4 Energy Trade by Source, Selected Years, 1949-2006 . . . . .	11
1.5 Energy Consumption, Expenditures, and Emissions Indicators, Selected Years, 1949-2006 . . . . .	13
1.6 State-Level Energy Consumption, Expenditures, and Prices, 2004 . . . . .	15
1.7 Heating Degree-Days by Month, Selected Years, 1949-2006 . . . . .	17
1.8 Cooling Degree-Days by Month, Selected Years, 1949-2006 . . . . .	19
1.9 Heating Degree-Days by Census Division, Selected Years, 1949-2006 . . . . .	21
1.10 Cooling Degree-Days by Census Division, Selected Years, 1949-2006 . . . . .	23
1.11 U.S. Government Energy Consumption by Agency, Fiscal Years 1975-2006 . . . . .	25
1.12 U.S. Government Energy Consumption by Source, Fiscal Years 1975-2006 . . . . .	27
1.13 U.S. Government Energy Consumption by Agency and Source, Fiscal Years 1996 and 2006 . . . . .	29
1.14 Fossil Fuel Production on Federally Administered Lands, Selected Years, 1949-2006 . . . . .	31
1.15 Fossil Fuel Consumption for Nonfuel Use, 1980-2006 . . . . .	33
<b>2. Energy Consumption by Sector</b>	
2.1a Energy Consumption by Sector, Selected Years, 1949-2006 . . . . .	38
2.1b Residential Sector Energy Consumption, Selected Years, 1949-2006 . . . . .	39
2.1c Commercial Sector Energy Consumption, Selected Years, 1949-2006 . . . . .	40
2.1d Industrial Sector Energy Consumption, Selected Years, 1949-2006 . . . . .	41
2.1e Transportation Sector Energy Consumption, Selected Years, 1949-2006 . . . . .	42
2.1f Electric Power Sector Energy Consumption, Selected Years, 1949-2006 . . . . .	43
2.2 Manufacturing Consumption of Energy for All Purposes, 2002 . . . . .	45
2.3 Manufacturing Inputs for Heat, Power, and Electricity Generation by End Use, 2002 . . . . .	47
2.4 Household Energy Consumption by Census Region, Selected Years, 1978-2001 . . . . .	49
2.5 Household Energy Consumption and Expenditures by End Use and Energy Source, Selected Years, 1978-2001 . . . . .	51
2.6 Households With Selected Appliances and Types of Main Heating Fuel, Selected Years, 1978-2001 . . . . .	53
2.7 Type of Heating in Occupied Housing Units, Selected Years, 1950-2005 . . . . .	55
2.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates, Selected Years, 1949-2005 . . . . .	57
2.9 Commercial Buildings Consumption by Energy Source, Selected Years, 1979-2003 . . . . .	59
2.10 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-2003 . . . . .	61
<b>3. Financial Indicators</b>	
3.1 Fossil Fuel Production Prices, Selected Years, 1949-2006 . . . . .	65
3.2 Value of Fossil Fuel Production, Selected Years, 1949-2006 . . . . .	67
3.3 Consumer Price Estimates for Energy by Source, 1970-2004 . . . . .	69
3.4 Consumer Price Estimates for Energy by End-Use Sector, 1970-2004 . . . . .	71
3.5 Consumer Expenditure Estimates for Energy by Source, 1970-2004 . . . . .	73
3.6 Consumer Expenditure Estimates for Energy by End-Use Sector, 1970-2004 . . . . .	75
3.7 Value of Fossil Fuel Imports, Selected Years, 1949-2006 . . . . .	77

## Tables

	Page
<b>3. Financial Indicators—Continued</b>	
3.8    Value of Fossil Fuel Exports, Selected Years, 1949-2006. . . . .	79
3.9    Value of Fossil Fuel Net Imports, Selected Years, 1949-2006. . . . .	81
3.10   Major U.S. Energy Companies' Domestic Production and Refining, 1974-2005. . . . .	83
3.11   Major U.S. Energy Companies' Net Income, 1974-2005. . . . .	85
3.12   Major U.S. Energy Companies' Profitability, 1974-2005. . . . .	87
3.13   U.S. Energy Activities by Foreign-Affiliated Companies, 1978-2004. . . . .	89
3.14   Companies Reporting to the Financial Reporting System, 1974-2005. . . . .	90
<b>4. Energy Resources</b>	
4.1    Technically Recoverable Crude Oil, Natural Gas, and Natural Gas Liquids Resource Estimates, 2005. . . . .	95
4.2    Crude Oil and Natural Gas Cumulative Production, Proved Reserves, and Proved Ultimate Recovery, 1977-2005. . . . .	97
4.3    Crude Oil, Natural Gas, and Natural Gas Liquids Proved Reserves, Selected Years, 1949-2005. . . . .	99
4.4    Crude Oil and Natural Gas Rotary Rigs in Operation, Selected Years, 1949-2006. . . . .	101
4.5    Crude Oil and Natural Gas Exploratory and Development Wells, Selected Years, 1949-2005. . . . .	103
4.6    Crude Oil and Natural Gas Exploratory Wells, Selected Years, 1949-2005. . . . .	105
4.7    Crude Oil and Natural Gas Development Wells, Selected Years, 1949-2005. . . . .	107
4.8    Costs of Crude Oil and Natural Gas Wells Drilled, 1960-2005. . . . .	109
4.9    Crude Oil, Natural Gas, and Natural Gas Liquids Gross Additions to Proved Reserves, and Exploration and Development Expenditures, 1974-2005. . . . .	111
4.10   Major U.S. Energy Companies' Expenditures for Crude Oil and Natural Gas Exploration and Development by Region, 1974-2005. . . . .	113
4.11   Coal Demonstrated Reserve Base, January 1, 2006. . . . .	115
4.12   Uranium Exploration and Development Drilling, Selected Years, 1949-2006. . . . .	117
4.13   Uranium Reserves and Resources, 2003. . . . .	119
<b>5. Petroleum</b>	
5.1    Petroleum Overview, Selected Years, 1949-2006. . . . .	125
5.2    Crude Oil Production and Crude Oil Well Productivity, 1954-2006. . . . .	127
5.3    Petroleum Imports by Type, Selected Years, 1949-2006. . . . .	129
5.4    Petroleum Imports by Country of Origin, 1960-2006. . . . .	131
5.5    Petroleum Exports by Type, Selected Years, 1949-2006. . . . .	133
5.6    Petroleum Exports by Country of Destination, 1960-2006. . . . .	135
5.7    Petroleum Net Imports by Country of Origin, 1960-2006. . . . .	137
5.8    Refinery and Blender Net Inputs and Net Production, Selected Years, 1949-2006. . . . .	139
5.9    Refinery Capacity and Utilization, Selected Years, 1949-2006. . . . .	141
5.10   Natural Gas Plant Liquids Production, Selected Years, 1949-2006. . . . .	143
5.11   Petroleum Products Supplied by Type, Selected Years, 1949-2006. . . . .	145
5.12   Heat Content of Petroleum Products Supplied, Selected Years, 1949-2006. . . . .	147
5.13a  Estimated Petroleum Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006. . . . .	150
5.13b  Estimated Petroleum Consumption: Industrial Sector, Selected Years, 1949-2006. . . . .	151
5.13c  Estimated Petroleum Consumption: Transportation Sector, Selected Years, 1949-2006. . . . .	152
5.13d  Petroleum Consumption: Electric Power Sector, Selected Years, 1949-2006. . . . .	153

## Tables

	Page
<b>5. Petroleum—Continued</b>	
5.14a Heat Content of Petroleum Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006.	155
5.14b Heat Content of Petroleum Consumption: Industrial Sector, Selected Years, 1949-2006.	156
5.14c Heat Content of Petroleum Consumption: Transportation and Electric Power Sectors, Selected Years, 1949-2006.	157
5.15 Fuel Oil and Kerosene Sales, 1984-2005	159
5.16 Petroleum Primary Stocks by Type, Selected Years, 1949-2006.	161
5.17 Strategic Petroleum Reserve, 1977-2006.	163
5.18 Crude Oil Domestic First Purchase Prices, Selected Years, 1949-2006.	165
5.19 Landed Costs of Crude Oil Imports From Selected Countries, 1973-2006.	167
5.20 Value of Crude Oil Imports From Selected Countries, 1973-2006.	169
5.21 Crude Oil Refiner Acquisition Costs, 1968-2006.	171
5.22 Refiner Sales Prices and Refiner Margins for Selected Petroleum Products, 1989-2006.	173
5.23 All Sellers Sales Prices for Selected Petroleum Products, 1989-2006.	175
5.24 Retail Motor Gasoline and On-Highway Diesel Fuel Prices, Selected Years, 1949-2006.	177
<b>6. Natural Gas</b>	
6.1 Natural Gas Overview, Selected Years, 1949-2006.	183
6.2 Natural Gas Production, Selected Years, 1949-2006.	185
6.3 Natural Gas Imports, Exports, and Net Imports, Selected Years, 1949-2006.	187
6.4 Natural Gas Gross Withdrawals and Natural Gas Well Productivity, 1960-2006.	189
6.5 Natural Gas Consumption by Sector, Selected Years, 1949-2006.	191
6.6 Natural Gas Underground Storage, 1954-2006.	193
6.7 Natural Gas Wellhead, City Gate, and Imports Prices, Selected Years, 1949-2006.	195
6.8 Natural Gas Prices by Sector, 1967-2006.	197
<b>7. Coal</b>	
7.1 Coal Overview, Selected Years, 1949-2006.	203
7.2 Coal Production, Selected Years, 1949-2006.	205
7.3 Coal Consumption by Sector, Selected Years, 1949-2006.	207
7.4 Coal Exports by Country of Destination, 1960-2006.	209
7.5 Coal Stocks by Sector, Selected Years, 1949-2006.	211
7.6 Coal Mining Productivity, Selected Years, 1949-2006.	213
7.7 Coke Overview, Selected Years, 1949-2006.	215
7.8 Coal Prices, Selected Years, 1949-2006.	217
<b>8. Electricity</b>	
8.1 Electricity Overview, Selected Years, 1949-2006.	223
8.2a Electricity Net Generation: Total (All Sectors), Selected Years, 1949-2006.	226
8.2b Electricity Net Generation: Electric Power Sector, Selected Years, 1949-2006.	227
8.2c Electricity Net Generation: Electric Power Sector by Plant Type, 1989-2006.	228
8.2d Electricity Net Generation: Commercial and Industrial Sectors, 1989-2006.	229
8.3a Useful Thermal Output at Combined-Heat-and-Power Plants: Total (All Sectors), 1989-2006.	231
8.3b Useful Thermal Output at Combined-Heat-and-Power Plants: Electric Power Sector, 1989-2006.	232
8.3c Useful Thermal Output at Combined-Heat-and-Power Plants: Commercial and Industrial Sectors, 1989-2006.	233

## Tables

	Page
<b>8. Electricity—Continued</b>	
8.4a Consumption for Electricity Generation by Energy Source: Total (All Sectors), Selected Years, 1949-2006.....	235
8.4b Consumption for Electricity Generation by Energy Source: Electric Power Sector, Selected Years, 1949-2006.....	236
8.4c Consumption for Electricity Generation by Energy Source: Commercial and Industrial Sectors, 1989-2006.....	237
8.5a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors), Selected Years, 1949-2006.....	240
8.5b Consumption of Combustible Fuels for Electricity Generation: Electric Power Sector, Selected Years, 1949-2006.....	241
8.5c Consumption of Combustible Fuels for Electricity Generation: Electric Power Sector by Plant Type, 1989-2006.....	242
8.5d Consumption of Combustible Fuels for Electricity Generation: Commercial and Industrial Sectors, 1989-2006.....	243
8.6a Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Total (All Sectors), 1989-2006.....	245
8.6b Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Electric Power Sector, 1989-2006.....	246
8.6c Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Commercial and Industrial Sectors, 1989-2006.....	247
8.7a Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Total (All Sectors), 1989-2006.....	249
8.7b Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Electric Power Sector, 1989-2006.....	250
8.7c Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors, 1989-2006.....	251
8.8 Stocks of Coal and Petroleum: Electric Power Sector, Selected Years, 1949-2006.....	253
8.9 Electricity End Use, Selected Years, 1949-2006.....	255
8.10 Average Retail Prices of Electricity, 1960-2006.....	257
8.11a Electric Net Summer Capacity: Total (All Sectors), Selected Years, 1949-2006.....	260
8.11b Electric Net Summer Capacity: Electric Power Sector, Selected Years, 1949-2006.....	261
8.11c Electric Net Summer Capacity: Electric Power Sector by Plant Type, 1989-2006.....	262
8.11d Electric Net Summer Capacity: Commercial and Industrial Sectors, 1989-2006.....	263
8.12 Electric Noncoincident Peak Load and Capacity Margin, 1986-2006.....	265
8.13 Electric Utility Demand-Side Management Programs, 1989-2005.....	267
<b>9. Nuclear Energy</b>	
9.1 Nuclear Generating Units, 1953-2006.....	271
9.2 Nuclear Power Plant Operations, 1957-2006.....	273
9.3 Uranium Overview, Selected Years, 1949-2006.....	275
<b>10. Renewable Energy</b>	
10.1 Renewable Energy Production and Consumption by Primary Energy Source, Selected Years, 1949-2006.....	279
10.2a Renewable Energy Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006.....	282
10.2b Renewable Energy Consumption: Industrial and Transportation Sectors, Selected Years, 1949-2006.....	283
10.2c Renewable Energy Consumption: Electric Power Sector, Selected Years, 1949-2006.....	285
10.3 Ethanol and Biodiesel Overview, 1981-2006.....	287
10.4 Estimated Number of Alternative-Fueled Vehicles in Use and Replacement Fuel Consumption, 1992-2005.....	289
10.5 Solar Thermal Collector Shipments by Type, Price, and Trade, 1974-2005.....	291
10.6 Solar Thermal Collector Shipments by End Use, Market Sector, and Type, 2005.....	293
10.7 Photovoltaic Cell and Module Shipments by Type, Trade, and Prices, 1982-2005.....	295

## Tables

	Page
<b>10. Renewable Energy—Continued</b>	
10.8    Photovoltaic Cell and Module Shipments by End Use and Market Sector, 1989-2005.....	297
<b>11. International Energy</b>	
11.1    World Primary Energy Production by Source, 1970-2004.....	301
11.2    World Primary Energy Production by Region, 1995-2004.....	303
11.3    World Primary Energy Consumption by Region, 1995-2004.....	305
11.4    World Crude Oil and Natural Gas Reserves, January 1, 2006.....	307
11.5    World Crude Oil Production, 1960-2006.....	309
11.6    World Natural Gas Plant Liquids Production, 1973-2004.....	311
11.7    Crude Oil Prices by Selected Type, 1970-2007.....	313
11.8    Retail Motor Gasoline Prices in Selected Countries, 1990-2006.....	315
11.9    World Crude Oil Refining Capacity, 1970-2006.....	317
11.10    World Petroleum Consumption, 1960-2005.....	319
11.11    World Dry Natural Gas Production, 1995-2004.....	321
11.12    World Dry Natural Gas Consumption, 1980-2004.....	323
11.13    World Recoverable Reserves of Coal, 2002.....	325
11.14    World Coal Production, 1995-2004.....	327
11.15    World Coal Consumption, 1980-2004.....	329
11.16    World Net Generation of Electricity by Type, 1980, 1990, and 2004.....	331
11.17    World Electrical Installed Capacity by Type, 1980, 1990, and 2004.....	333
11.18    World Nuclear Electricity Net Generation, 1996-2005.....	335
11.19    World Carbon Dioxide Emissions From Energy Consumption, 1995-2004.....	337
<b>12. Environmental Indicators</b>	
12.1    Emissions of Greenhouse Gases, 1980-2005.....	341
12.2    Carbon Dioxide Emissions From Energy Consumption by Sector, 1980-2005.....	343
12.3    Carbon Dioxide Emissions From Energy Consumption by Sector by Energy Source, 2005.....	345
12.4    Carbon Dioxide Emissions From Consumption of Energy for All Purposes in the Manufacturing Sector, 2002.....	347
12.5    Methane Emissions, 1980-2005.....	349
12.6    Nitrous Oxide Emissions, 1980-2005.....	351
12.7a    Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output: Total (All Sectors), 1989-2005.....	353
12.7b    Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output: Electric Power Sector, 1989-2005.....	354
12.7c    Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors, 1989-2005.....	355
12.8    Installed Nameplate Capacity of Steam-Electric Generators With Environmental Equipment, 1985-2005.....	357
<b>Appendix A. Thermal Conversion Factors</b>	
A1.    Approximate Heat Content of Petroleum Products.....	359
A2.    Approximate Heat Content of Petroleum Production, Imports, and Exports Selected Years, 1949-2006.....	360
A3.    Approximate Heat Content of Petroleum Consumption and Biofuels Production, Selected Years, 1949-2006.....	361
A4.    Approximate Heat Content of Natural Gas, Selected Years, 1949-2006.....	362
A5.    Approximate Heat Content of Coal and Coal Coke, Selected Years, 1949-2006.....	363

## Tables

Page

### Appendix A. Thermal Conversion Factors—*Continued*

A6. Approximate Heat Rates for Electricity, and Heat Content of Electricity, Selected Years, 1949-2006. . . . .	364
---	-----

### Appendix B. Metric and Other Physical Conversion Factors

B1. Metric Conversion Factors. . . . .	372
B2. Metric Prefixes. . . . .	373
B3. Other Physical Conversion Factors. . . . .	373

### Appendix D. Population, U.S. Gross Domestic Product, and Implicit Price Deflator

D1. Population, U.S. Gross Domestic Product, and Implicit Price Deflator, Selected Years, 1949-2006. . . . .	377
--	-----

### Appendix E. Estimated Energy Consumption in the United States, 1635-1945

E1. Estimated Energy Consumption in the United States, Selected Years, 1635-1945. . . . .	379
---	-----

## Figures

	Page
<b>1. Energy Overview</b>	
1.1 Energy Overview.....	4
1.2 Energy Production by Primary Energy Source.....	6
1.3 Energy Consumption by Primary Energy Source.....	8
1.4 Energy Trade by Source, 1949-2006.....	10
1.5 Energy Consumption and Expenditures Indicators.....	12
1.6 State-Level Energy Consumption and Consumption per Person, 2004.....	14
1.7 Heating Degree-Days by Month, 1949-2006.....	16
1.8 Cooling Degree-Days by Month, 1949-2006.....	18
1.9 Heating Degree-Days by Census Division.....	20
1.10 Cooling Degree-Days by Census Division.....	22
1.11 U.S. Government Energy Consumption by Agency.....	24
1.12 U.S. Government Energy Consumption by Source, Fiscal Years 1975-2006.....	26
1.13 U.S. Government Energy Consumption by Agency and Source, Fiscal Years 1996 and 2006.....	28
1.14 Fossil Fuel Production on Federally Administered Lands.....	30
1.15 Fossil Fuel Consumption for Nonfuel Use.....	32
<b>2. Energy Consumption by Sector</b>	
2.1a Energy Consumption by Sector Overview.....	36
2.1b Energy Consumption by End-Use Sector, 1949-2006.....	37
2.2 Manufacturing Consumption of Energy for All Purposes, 2002.....	44
2.3 Manufacturing Inputs for Heat, Power, and Electricity Generation, 2002.....	46
2.4 Household Energy Consumption .....	48
2.5 Household Energy Consumption and Expenditures .....	50
2.6 Households With Selected Appliances and Types of Main Heating Fuel.....	52
2.7 Type of Heating in Occupied Housing Units, 1950 and 2005.....	54
2.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates.....	56
2.9 Commercial Buildings Consumption by Energy Source.....	58
2.10 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-2003.....	60
<b>3. Financial Indicators</b>	
3.1 Fossil Fuel Production Prices.....	64
3.2 Value of Fossil Fuel Production.....	66
3.3 Consumer Price Estimates for Energy by Source.....	68
3.4 Consumer Price Estimates for Energy by End-Use Sector, 2004.....	70
3.5 Consumer Expenditure Estimates for Energy by Source.....	72
3.6 Consumer Expenditure Estimates for Energy by End-Use Sector, 2004.....	74
3.7 Value of Fossil Fuel Imports.....	76
3.8 Value of Fossil Fuel Exports.....	78
3.9 Value of Fossil Fuel Net Imports, 1949-2006.....	80
3.10 Major U.S. Energy Companies' Domestic Production and Refining, 1974-2005.....	82
3.11 Major U.S. Energy Companies' Net Income.....	84

## Figures

	Page
<b>3. Financial Indicators—Continued</b>	
3.12 Major U.S. Energy Companies' Profitability.....	86
3.13 U.S. Energy Activities by Foreign-Affiliated Companies, 1978-2004.....	88
<b>4. Energy Resources</b>	
4.1 Technically Recoverable Crude Oil, Natural Gas, and Natural Gas Liquids Resource Estimates, 2005.....	94
4.2 Crude Oil and Natural Gas Cumulative Production, Proved Reserves, and Proved Ultimate Recovery, 1977-2005.....	96
4.3 Crude Oil, Natural Gas, and Natural Gas Liquids Proved Reserves.....	98
4.4 Crude Oil and Natural Gas Rotary Rigs in Operation.....	100
4.5 Crude Oil and Natural Gas Exploratory and Development Wells.....	102
4.6 Crude Oil and Natural Gas Exploratory Wells, 1949-2005.....	104
4.7 Crude Oil and Natural Gas Development Wells, 1949-2005.....	106
4.8 Costs of Crude Oil and Natural Gas Wells Drilled.....	108
4.9 Crude Oil, Natural Gas, and Natural Gas Liquids Gross Additions to Proved Reserves, and Exploration and Development Expenditures.....	110
4.10 Major U.S. Energy Companies' Expenditures for Crude Oil and Natural Gas Exploration and Development by Region.....	112
4.11 Coal Demonstrated Reserve Base, January 1, 2006.....	114
4.12 Uranium Exploration and Development Drilling.....	116
4.13 Uranium Reserves and Resources, 2003.....	118
<b>5. Petroleum</b>	
5.1 Petroleum Overview.....	124
5.2 Crude Oil Production and Crude Oil Well Productivity, 1954-2006.....	126
5.3 Petroleum Imports by Type.....	128
5.4 Petroleum Imports by Country of Origin.....	130
5.5 Petroleum Exports by Type.....	132
5.6 Petroleum Exports by Country of Destination.....	134
5.7 Petroleum Net Imports by Country of Origin, 1960-2006.....	136
5.8 Refinery and Blender Net Inputs and Net Production, 1949-2006.....	138
5.9 Refinery Capacity and Utilization, 1949-2006.....	140
5.10 Natural Gas Plant Liquids Production.....	142
5.11 Petroleum Products Supplied by Type.....	144
5.12 Heat Content of Petroleum Products Supplied.....	146
5.13a Estimated Petroleum Consumption by Sector.....	148
5.13b Estimated Petroleum Consumption by Product by Sector, 1949-2006.....	149
5.14 Heat Content of Petroleum Consumption by Product by Sector, 1949-2006.....	154
5.15 Fuel Oil and Kerosene Sales, 1984-2005.....	158
5.16 Petroleum Primary Stocks by Type.....	160
5.17 Strategic Petroleum Reserve, 1977-2006.....	162
5.18 Crude Oil Domestic First Purchase Prices.....	164
5.19 Landed Costs of Crude Oil Imports From Selected Countries.....	166
5.20 Value of Crude Oil Imports.....	168
5.21 Crude Oil Refiner Acquisition Costs, 1968-2006.....	170

## Figures

	Page
<b>5. Petroleum —Continued</b>	
5.22 Refiner Sales Prices for Selected Petroleum Products, 1990-2006.....	172
5.23 All Sellers Sales Prices for Selected Petroleum Products, 2006.....	174
5.24 Retail Motor Gasoline and On-Highway Diesel Fuel Prices.....	176
<b>6. Natural Gas</b>	
6.1 Natural Gas Overview.....	182
6.2 Natural Gas Production.....	184
6.3 Natural Gas Imports, Exports, and Net Imports.....	186
6.4 Natural Gas Gross Withdrawals and Natural Gas Well Productivity, 1960-2006.....	188
6.5 Natural Gas Consumption by Sector.....	190
6.6 Natural Gas Underground Storage.....	192
6.7 Natural Gas Wellhead, City Gate, and Imports Prices.....	194
6.8 Natural Gas Prices by Sector.....	196
<b>7. Coal</b>	
7.1 Coal Overview.....	202
7.2 Coal Production, 1949-2006.....	204
7.3 Coal Consumption by Sector.....	206
7.4 Coal Exports by Country of Destination.....	208
7.5 Coal Stocks.....	210
7.6 Coal Mining Productivity.....	212
7.7 Coke Overview.....	214
7.8 Coal Prices.....	216
<b>8. Electricity</b>	
8.1 Electricity Overview.....	222
8.2a Electricity Net Generation, Total (All Sectors).....	224
8.2b Electricity Net Generation by Sector.....	225
8.3 Useful Thermal Output at Combined-Heat-and-Power Plants.....	230
8.4 Consumption for Electricity Generation.....	234
8.5a Consumption of Combustible Fuels for Electricity Generation, 1989-2006.....	238
8.5b Consumption of Combustible Fuels for Electricity Generation by Sector, 2006.....	239
8.6 Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants by Sector, 1989-2006.....	244
8.7 Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output, 1989-2006.....	248
8.8 Stocks of Coal and Petroleum: Electric Power Sector.....	252
8.9 Electricity End Use.....	254
8.10 Average Retail Prices of Electricity.....	256
8.11a Electric Net Summer Capacity, Total (All Sectors).....	258
8.11b Electric Net Summer Capacity by Sector.....	259
8.12 Electric Noncoincident Peak Load and Capacity Margin.....	264
8.13 Electric Utility Demand-Side Management Programs.....	266

## Figures

Page

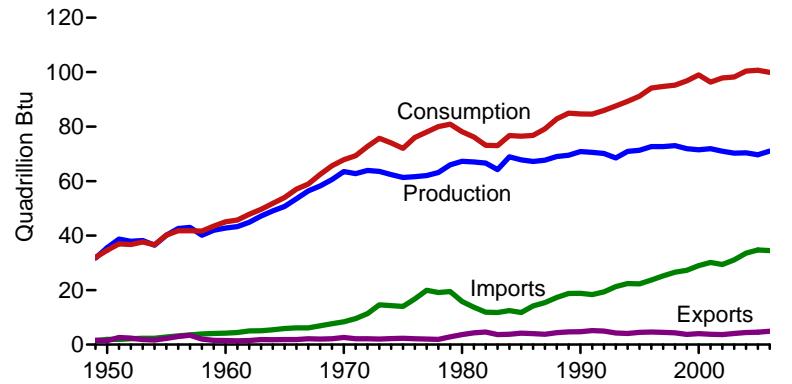
<b>9. Nuclear Energy</b>	
9.1    Nuclear Generating Units.....	270
9.2    Nuclear Power Plant Operations.....	272
9.3    Uranium Overview.....	274
<b>10. Renewable Energy</b>	
10.1   Renewable Energy Consumption by Major Sources.....	278
10.2a  Renewable Energy Consumption: End-Use Sectors, 1989-2006.....	280
10.2b  Renewable Energy Consumption: End-Use Sectors and Electric Power Sector.....	281
10.2c  Renewable Energy Consumption: Electric Power Sector.....	284
10.3   Ethanol and Biodiesel Overview.....	286
10.4   Estimated Number of Alternative-Fueled Vehicles in Use and Alternative Fuel Consumption.....	288
10.5   Solar Thermal Collector Shipments by Type, Price, and Trade.....	290
10.6   Solar Thermal Collector Shipments by End Use, Market Sector, and Type, 2005.....	292
10.7   Photovoltaic Cell and Module Shipments, Trade, and Prices.....	294
10.8   Photovoltaic Cell and Module Shipments by End Use and Market Sector, 2005.....	296
<b>11. International Energy</b>	
11.1   World Primary Energy Production by Source.....	300
11.2   World Primary Energy Production by Region and Country.....	302
11.3   World Primary Energy Consumption.....	304
11.4   World Crude Oil and Natural Gas Reserves, January 1, 2006.....	306
11.5   World Crude Oil Production.....	308
11.6   World Natural Gas Plant Liquids Production.....	310
11.7   Crude Oil Prices by Selected Type.....	312
11.8   Retail Motor Gasoline Prices in Selected Countries, 2006.....	314
11.9   World Crude Oil Refining Capacity.....	316
11.10  World Petroleum Consumption.....	318
11.11  World Dry Natural Gas Production.....	320
11.12  World Dry Natural Gas Consumption.....	322
11.13  World Recoverable Reserves of Coal, 2002.....	324
11.14  World Coal Production.....	326
11.15  World Coal Consumption.....	328
11.16  World Net Generation of Electricity.....	330
11.17  World Electrical Installed Capacity by Type.....	332
11.18  World Nuclear Electricity Net Generation.....	334
11.19  World Carbon Dioxide Emissions From Energy Consumption.....	336
<b>12. Environmental Indicators</b>	
12.1   Emissions of Greenhouse Gases.....	340
12.2   Carbon Dioxide Emissions From Energy Consumption by Sector.....	342
12.3   Carbon Dioxide Emissions From Energy Consumption by Sector by Energy Source, 2005.....	344
12.4   Carbon Dioxide Emissions From Consumption of Energy for All Purposes in the Manufacturing Sector, 2002.....	346
12.5   Methane Emissions.....	348

## Figures

	Page
<b>12. Environmental Indicators—<i>Continued</i></b>	
12.6    Nitrous Oxide Emissions.....	350
12.7    Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output.....	352
12.8    Installed Nameplate Capacity of Steam-Electric Generators With Environmental Equipment.....	356
<b>Appendix C. U.S. Census Regions and Divisions</b>	
C1.      U.S. Census Regions and Divisions .....	375

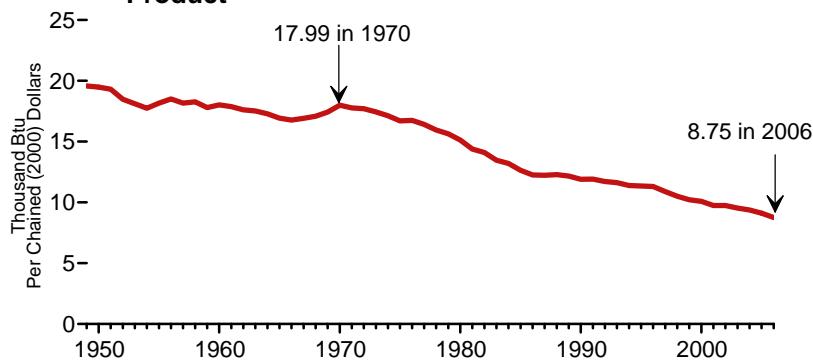
## Overview

**Figure 1. Energy Overview**



The United States was self-sufficient in energy until the late 1950s when energy consumption began to outpace domestic production. At that point, the Nation began to import more energy to fill the gap. In 2006, net imported energy accounted for 30 percent of all energy consumed.

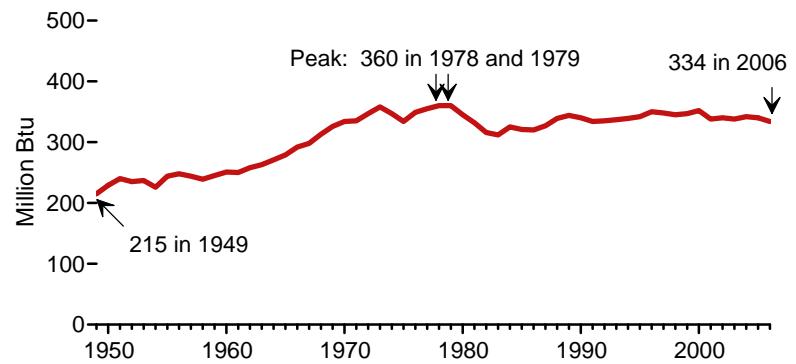
**Figure 3. Energy Use per Real Dollar of Gross Domestic Product**



See "Chained Dollars" in Glossary.

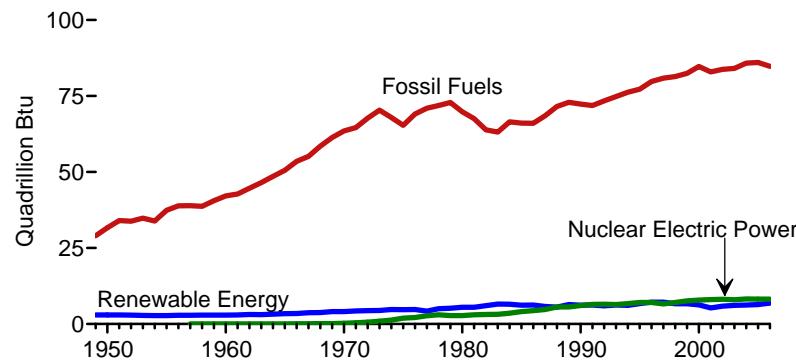
After 1970, the amount of energy consumed to produce a dollar's worth of the Nation's output of goods and services trended down. The decline resulted from efficiency improvements and structural changes in the economy. The level in 2006 was 51 percent below that of 1970.

**Figure 2. Energy Consumption per Person**



Energy use per person stood at 215 million British thermal units (Btu) in 1949. The rate generally increased until the oil price shocks of the mid-1970s and early 1980s when the trend reversed for a few years. From 1988 on, the rate held fairly steady. In 2006, 334 million Btu of energy were consumed per person, 55 percent above the 1949 rate.

**Figure 4. Energy Consumption by Primary Energy Source**



Most energy consumed in the United States came from fossil fuels. Renewable energy resources supplied a relatively small but steady portion. In the late 1950s, nuclear fuel began to be used to generate electricity, and in most years since 1988, nuclear electric power surpassed renewable energy.

## Consumption by Source

Figure 5. Energy Consumption by Source, 1635-2006

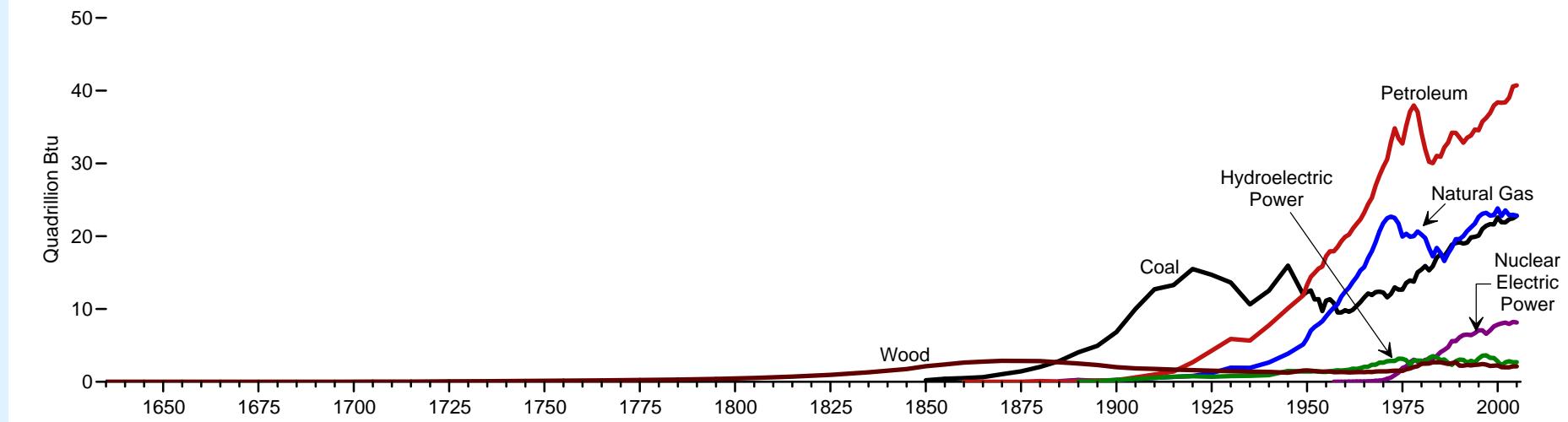
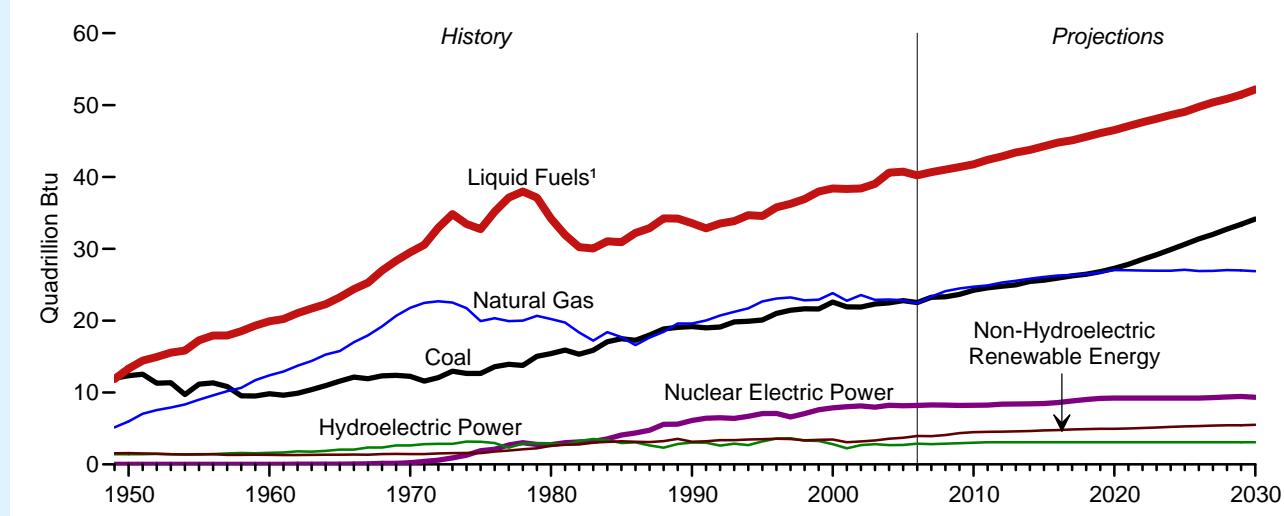


Figure 6. Energy Consumption History and Outlook, 1949-2030



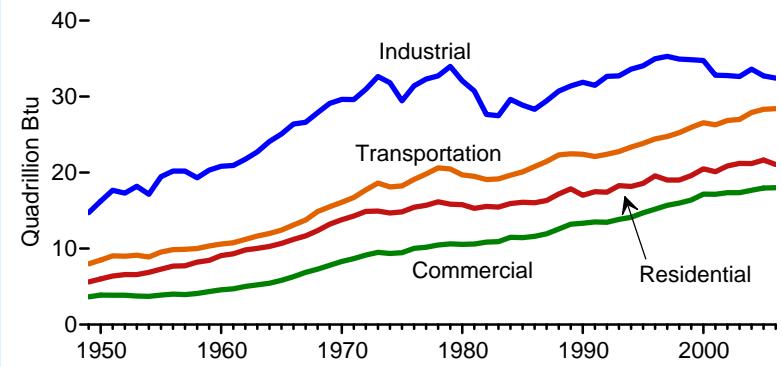
<sup>1</sup> Includes petroleum-derived fuels and non-petroleum-derived fuels, such as ethanol and biodiesel.

In the long view of American history, wood served as the preeminent form of energy for about half of the Nation's history. Around 1885, coal surpassed wood's usage. Despite its tremendous and rapid expansion, coal was, in turn, overtaken by petroleum in the middle of the 20th century. Natural gas, too, experienced rapid development into the second half of the 20th century, and coal began to expand again. Late in the 20th century still another form of energy, nuclear electric power, was developed and made significant contributions.

While the Nation's energy history is one of large-scale change as new forms of energy were developed, the outlook for the next couple of decades (assuming current laws, regulations, and policies) is for continued growth and reliance on the three major fossil fuels—petroleum, natural gas, and coal—modest expansion in renewable resources, and relatively flat generation from nuclear electric power.

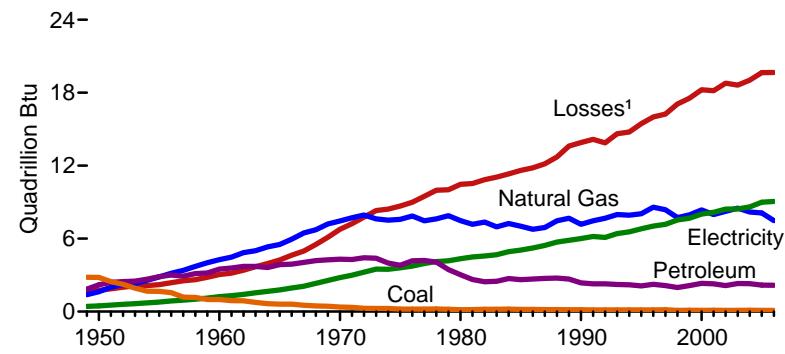
# Consumption by Sector

**Figure 7. Energy Consumption by End-Use Sector**



All four major economic sectors of the economy recorded tremendous growth in their use of energy. The industrial sector used the biggest share of total energy and showed the greatest volatility; in particular, steep drops occurred in the sector in 1975 and 1980-1983 largely in response to high oil prices and economic slowdown.

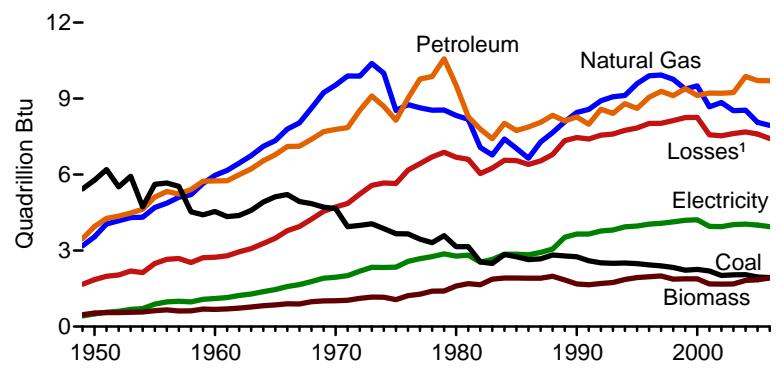
**Figure 8. Residential and Commercial Energy Consumption, Major Sources**



<sup>1</sup> Energy lost during generation, transmission, and distribution of electricity.

In the 1950s and 1960s, coal, which had been important to residential and commercial consumers, was gradually replaced by other forms of energy. Petroleum consumption peaked in the early 1970s. Natural gas consumption grew fast until the early 1970s and then, with mild fluctuations, held fairly steady in the following years. Meanwhile, electricity use (and related losses) expanded dramatically.

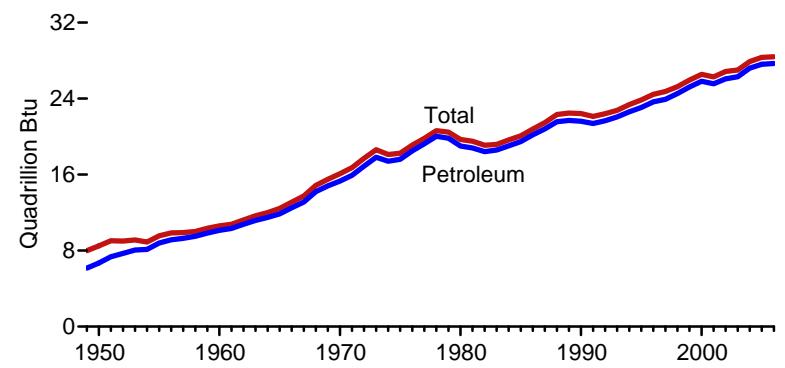
**Figure 9. Industrial Energy Consumption, Major Sources**



<sup>1</sup> Energy lost during generation, transmission, and distribution of electricity.

Coal, once the predominant form of energy in the industrial sector, gave way to natural gas and petroleum in the late 1950s. Both natural gas and petroleum use expanded rapidly until the early 1970s and then fluctuated widely over the following decades. Use of electricity and biomass trended upward, but use of electricity grew at a faster rate than biomass.

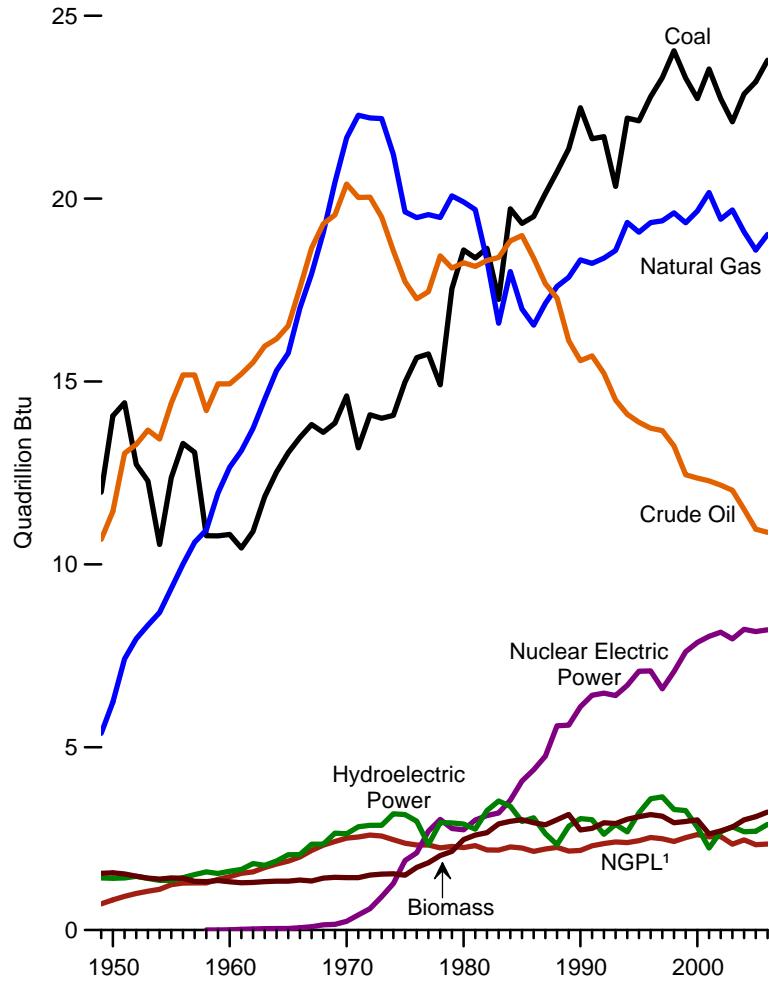
**Figure 10. Transportation Energy Consumption**



Transportation sector use of energy experienced tremendous growth overall but registered noticeable pauses in 1974, 1979-1982, 1990 and 1991, and 2001. In 2006, petroleum accounted for 96 percent of the sector's energy. In Btu, motor gasoline accounted for 62 percent of all petroleum used in the sector; in barrels, motor gasoline accounted for 64 percent.

# Production and Trade

**Figure 11. Energy Production by Major Source**



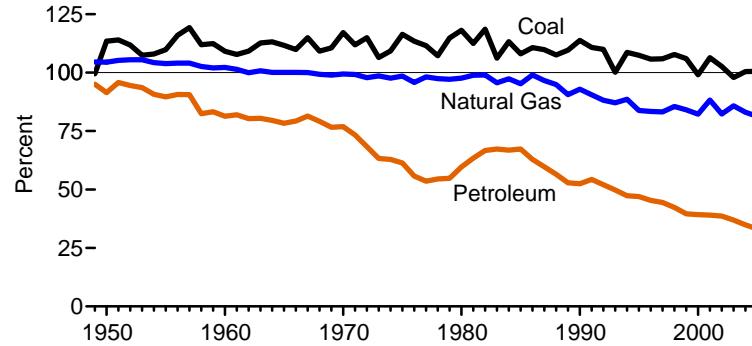
<sup>1</sup> Natural gas plant liquids.

Most energy produced in the United States came from fossil fuels—coal, natural gas, and crude oil. Coal, the leading source at the middle of the 20th century, was surpassed by crude oil and then by natural gas. By the mid-1980s, coal again became the leading energy source produced in the United States, and crude oil declined sharply. In the 1970s, electricity produced from nuclear fuel began to make a significant contribution and expanded rapidly in the following decades.

xxii

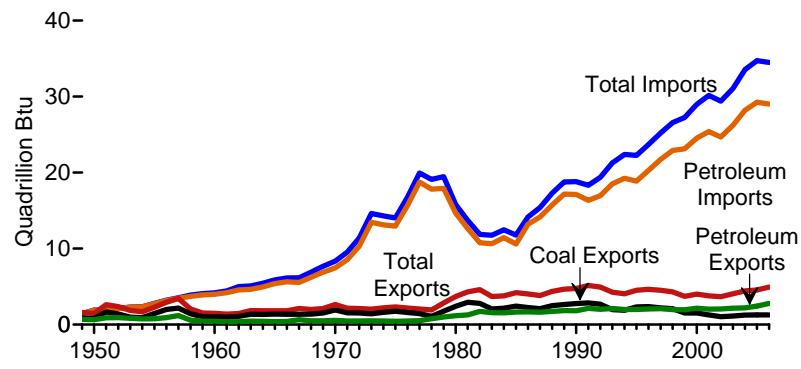
Energy Information Administration / Annual Energy Review 2006

**Figure 12. Production as Share of Consumption for Coal, Natural Gas, and Petroleum**



The United States almost always produced more than enough coal for its own requirements. For many years, the United States was also self-sufficient in natural gas, but after 1967, it produced less than it consumed each year. Petroleum production fell far short of domestic demands, requiring the Nation to rely on imported supplies.

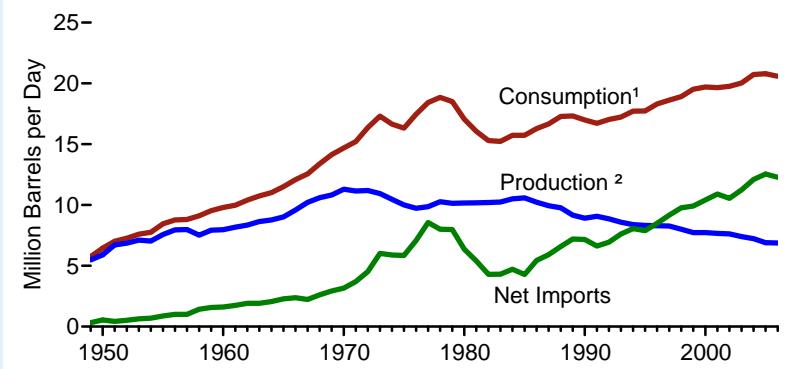
**Figure 13. Energy Imports and Exports**



Since the mid-1950s, the Nation imported more energy than it exported. In 2006, the United States imported 34 quadrillion Btu of energy and exported 5 quadrillion Btu. Most imported energy was in the form of petroleum; since 1986, natural gas imports expanded rapidly as well. Through 1992, most exported energy was in the form of coal; after that, petroleum exports often exceeded coal exports.

# Petroleum Overview and Crude Oil Production

**Figure 14. Petroleum Overview**

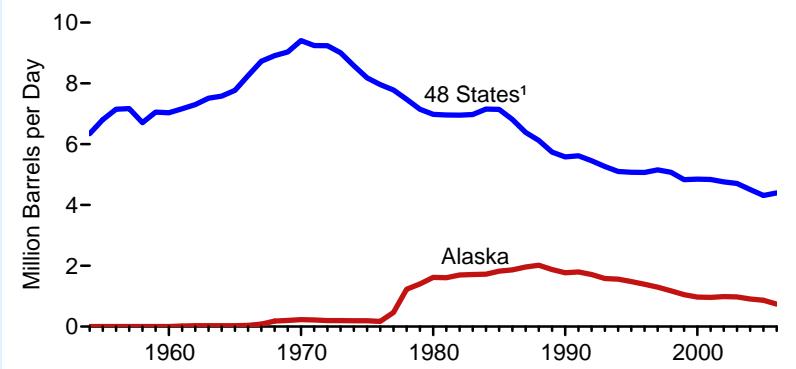


<sup>1</sup> Petroleum products supplied is used as an approximation for consumption.

<sup>2</sup> Crude oil and natural gas plant liquids production.

When U.S. petroleum production peaked at 11.3 million barrels per day in 1970, net imports stood at 3.2 million barrels per day. By 1996, net imports exceeded production. In 2006, production was 6.9 million barrels per day, and net imports were 12.3 million barrels per day.

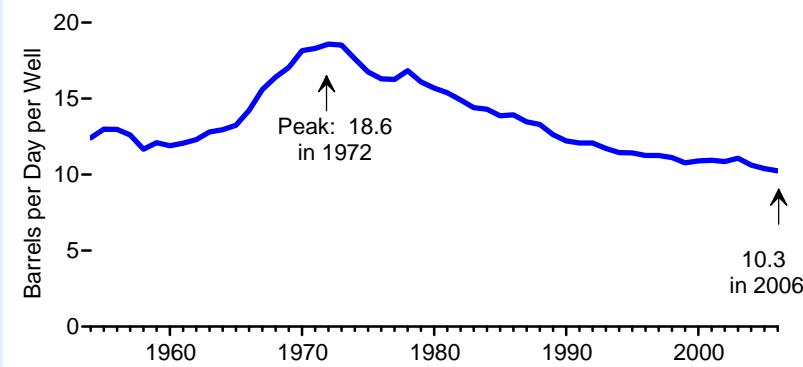
**Figure 15. 48 States and Alaskan Crude Oil Production**



<sup>1</sup> United States excluding Alaska and Hawaii.

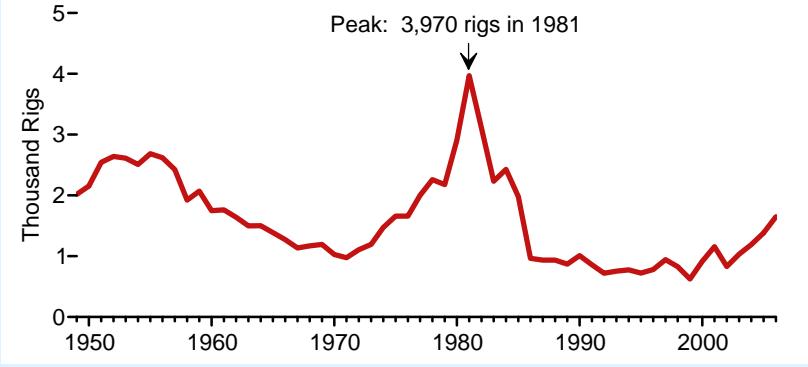
Crude oil production peaked in the 48 States at 9.4 million barrels per day in 1970. As production fell in the 48 States, Alaska's production came on line and helped supply U.S. needs. Alaskan production peaked at 2.0 million barrels per day in 1988; in 2006, Alaska's production stood at 37 percent of its peak level.

**Figure 16. Crude Oil Well Productivity**



The amount of crude oil produced per day per well rose sharply in the 1960s and reached a peak of 18.6 barrels per day per well in 1972. After 1972, productivity generally declined. The 2006 rate of 10.3 barrels per day per well was 45 percent below the peak and the lowest level since the Energy Information Administration began reporting oil well productivity.

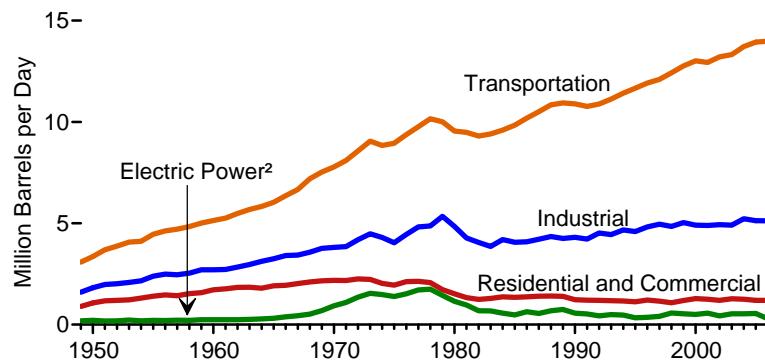
**Figure 17. Crude Oil and Natural Gas Rotary Rigs in Operation**



Rotary rig activity declined sharply from 1955 to 1971. After 1971, the number of rigs in operation began to climb again, and a peak of nearly 4 thousand rigs in operation was registered in 1981. In 2006, 1,649 rigs were in operation, nearly double the level in 2002, but only 42 percent of the peak level in 1981.

# Petroleum Consumption and Prices

**Figure 18. Petroleum Consumption<sup>1</sup> by Sector**

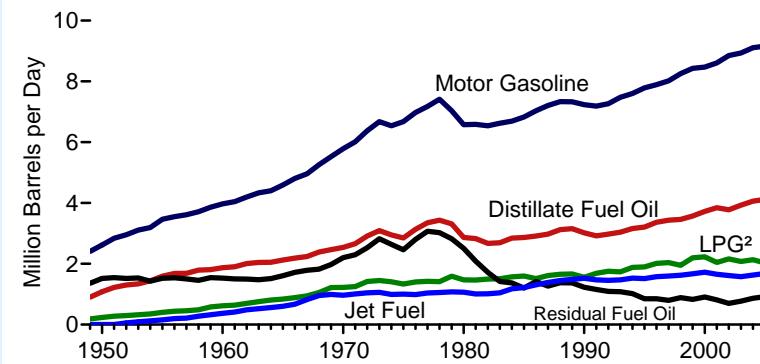


<sup>1</sup> Petroleum products supplied is used as an approximation for consumption.

<sup>2</sup> Through 1988, electric utilities only; after 1988, includes independent power producers.

Transportation was the largest consuming sector of petroleum and the one showing the greatest expansion over the second half of the 20th century. In 2006, 14 million barrels per day of petroleum products were consumed for transportation purposes, accounting for 68 percent of all petroleum used.

**Figure 19. Petroleum Consumption<sup>1</sup> by Selected Product**

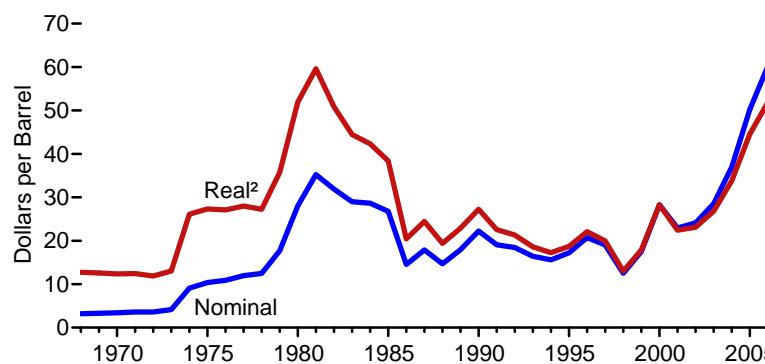


<sup>1</sup> Petroleum products supplied is used as an approximation for consumption.

<sup>2</sup> Liquefied petroleum gases.

Motor gasoline was the single largest petroleum product consumed in the United States. Its consumption stood at 9.2 million barrels per day in 2006, 45 percent of all petroleum consumption. Distillate fuel oil, liquefied petroleum gases (LPG), and jet fuel were other important products. The use of residual fuel oil fell off sharply after 1977.

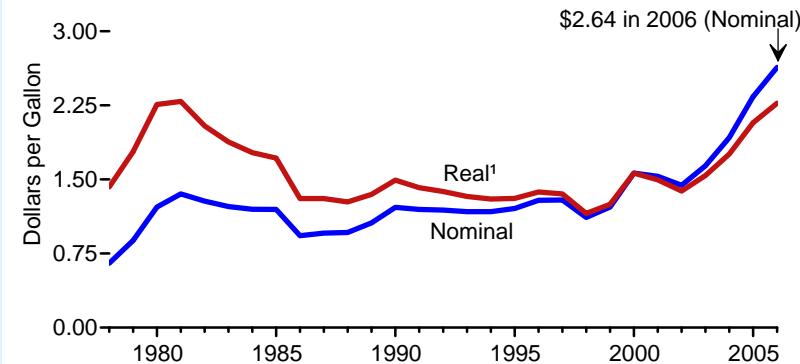
**Figure 20. Crude Oil Refiner Acquisition Cost<sup>1</sup>**



<sup>1</sup> Composite of domestic and imported crude oil. <sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflator. See "Chained Dollars" in Glossary.

Unadjusted for inflation (nominal dollars), the refiner acquisition composite (domestic and foreign) cost of crude oil reached \$35.24 per barrel in 1981. Over the years that followed, the price fell dramatically to a low of \$12.52 per barrel in 1998 before rising again. The preliminary nominal price reported for 2006 was \$60.23 per barrel, a new peak level and up 20 percent over the 2005 price.

**Figure 21. Retail Price of Motor Gasoline, All Grades**

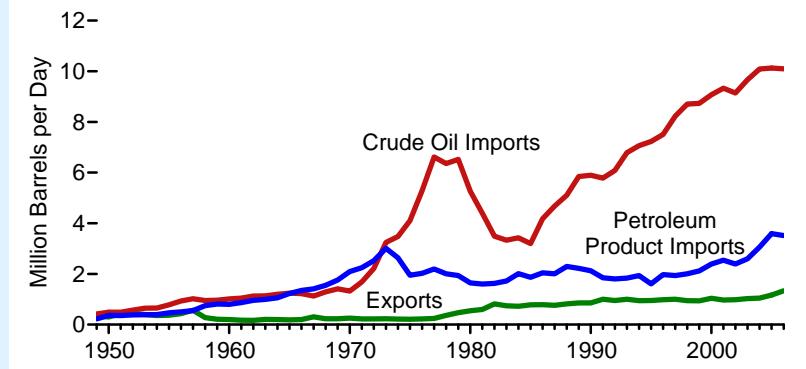


<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflator. See "Chained Dollars" in Glossary.

In nominal (unadjusted for inflation) dollars, Americans paid an average of 65¢ per gallon for motor gasoline in 1978. The 2006 average price of \$2.64 was four times the 1978 rate; adjusted for inflation, it was 59 percent higher.

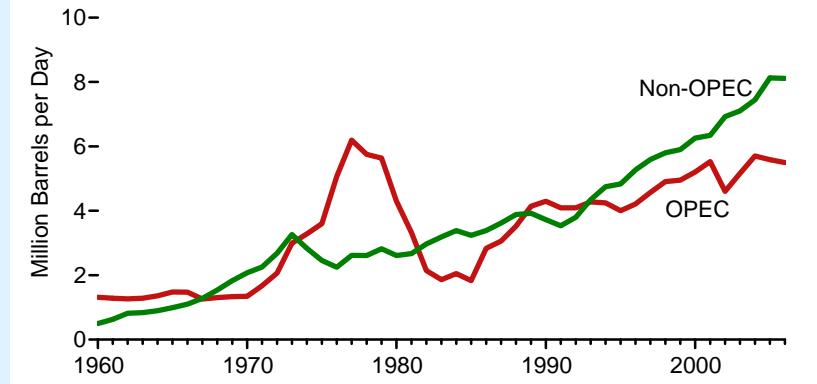
# Petroleum Trade

**Figure 22. Petroleum Trade**



U.S. crude oil imports grew rapidly from mid-century until the late 1970s but fell sharply from 1979 to 1985 due to conservation efforts and improved efficiency. After 1985, the upward trend resumed and stood at 10.1 million barrels per day in 2006. Petroleum product imports were 3.5 million barrels per day in 2006. Exports totaled 1.3 million barrels per day in 2006, mainly in the form of petroleum coke and residual fuel oil.

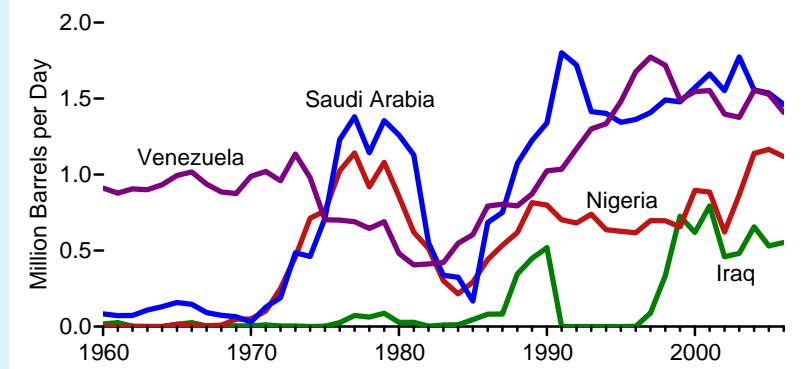
**Figure 23. Imports From OPEC and Non-OPEC Countries**



OPEC = Organization of the Petroleum Exporting Countries.

U.S. petroleum imports rose sharply in the 1970s, and reliance on petroleum from the Organization of the Petroleum Exporting Countries (OPEC) grew. In 2006, 40 percent of U.S. petroleum imports came from OPEC countries, down from 70 percent in 1977. After 1992, more petroleum came into the United States from non-OPEC countries than from OPEC countries.

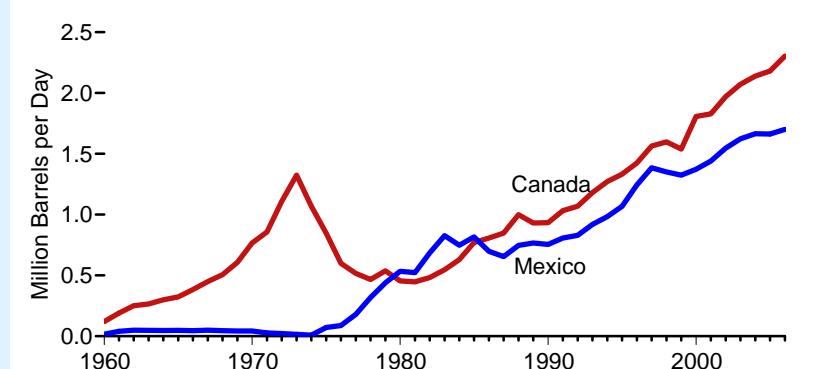
**Figure 24. Imports From Selected OPEC Countries**



OPEC = Organization of the Petroleum Exporting Countries.

Among OPEC countries, Saudi Arabia, Venezuela, and Nigeria—nations from three different continents—were key suppliers of petroleum to the American market. Each experienced wide fluctuation in the amount of petroleum it sold to the United States over the decades. In 2006, 0.6 million barrels per day of petroleum came into the United States from Iraq.

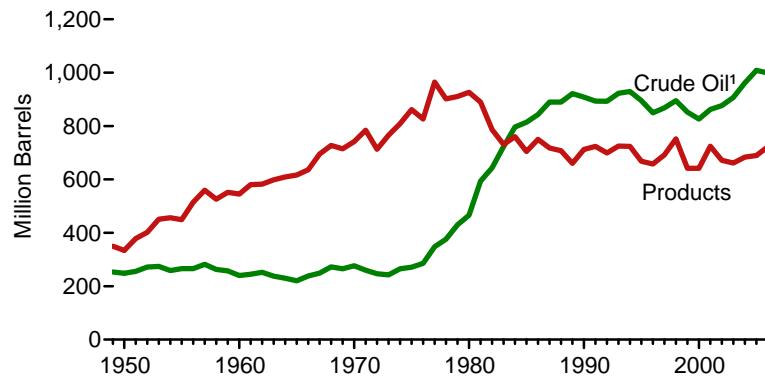
**Figure 25. Imports From Canada and Mexico**



Canada and Mexico were the largest non-OPEC suppliers of petroleum to the United States. In 2006, imports from Canada reached a new high of 2.3 million barrels per day. Imports from Mexico were insignificant until the mid-1970s when they began to play a key role in U.S. supplies. Canadian and Mexican petroleum together accounted for 29 percent of all U.S. imports in 2006.

## Petroleum Stocks

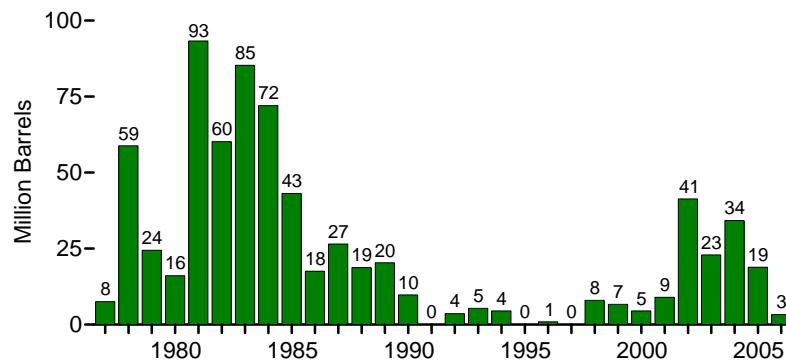
**Figure 26. Stocks of Crude Oil and Products**



<sup>1</sup> Includes crude oil stored in the Strategic Petroleum Reserve.

Through 1983, the Nation held most of its petroleum storage in the form of products, which were ready for the market. After 1983, most petroleum in storage was in the form of crude oil (including that held by the government in the Strategic Petroleum Reserve) that still needed to be refined into usable end products. At the end of 2006, petroleum stocks totaled 1.7 billion barrels, 58 percent crude oil and 42 percent products.

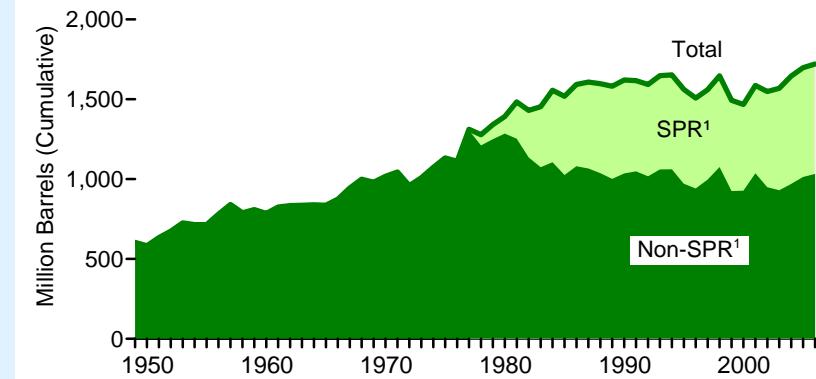
**Figure 28. Crude Oil Imports for the SPR<sup>1</sup>**



<sup>1</sup> Imported by the SPR and imported by others for the SPR.

Most crude oil in the SPR was imported and came in during the early 1980s. In fact, from 1991 through 1997, only 14 million barrels were imported for the reserve, and in 3 of those years, no oil at all was imported for the reserve. SPR imports picked up again after 1997 and stored another 149 million barrels from 1998 through 2006.

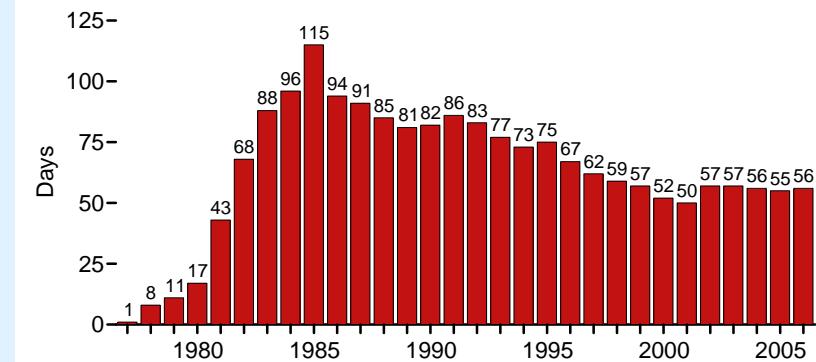
**Figure 27. Total Stocks and the Strategic Petroleum Reserve**



<sup>1</sup> Strategic Petroleum Reserve.

In 1977, the United States began filling the Strategic Petroleum Reserve (SPR), a national reserve of petroleum stocks in case of emergency. At the end of 2006, the SPR held 689 million barrels of crude oil, 40 percent of all U.S. petroleum stocks.

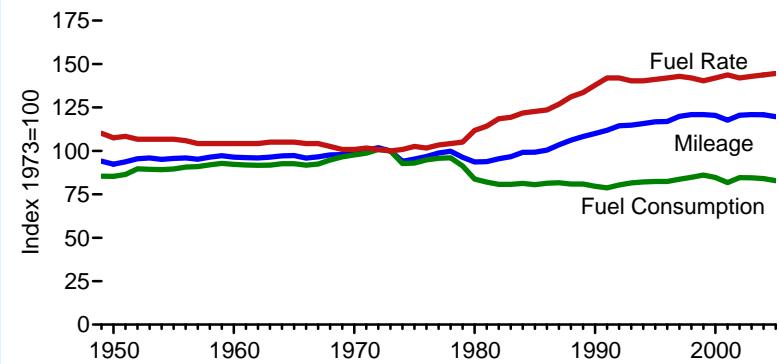
**Figure 29. SPR Stocks as Days of Petroleum Net Imports**



Stocks are often measured by the number of days of total net imports of petroleum that could be met by the reserve in an emergency. The peak level occurred in 1985 when the reserve could have supplied 115 days of petroleum net imports, at the 1985 level. The rate trended down for many years, falling to 50 days in 2001. In 2006, SPR held 56 days of net imports.

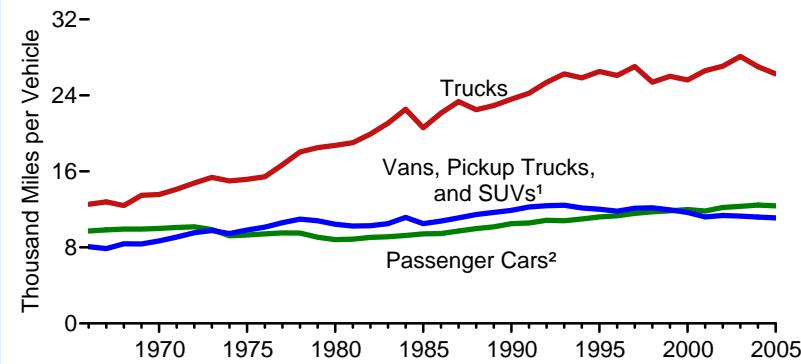
# Motor Vehicles

**Figure 30. Motor Vehicle Indicators**



The composite motor vehicle fuel rate (miles per gallon) rose 42 percent from 1973 to 1991 and then varied little over the next 14 years. Mileage (miles per vehicle) grew steadily from 1980 to 1998 and then hovered around 12 thousand miles per vehicle per year through 2005. Fuel consumption (gallons per vehicle) fell 21 percent from 1973 to 1991, regained 9 percent from 1991 to 1999, and then trended down through 2005.

**Figure 32. Motor Vehicle Mileage**

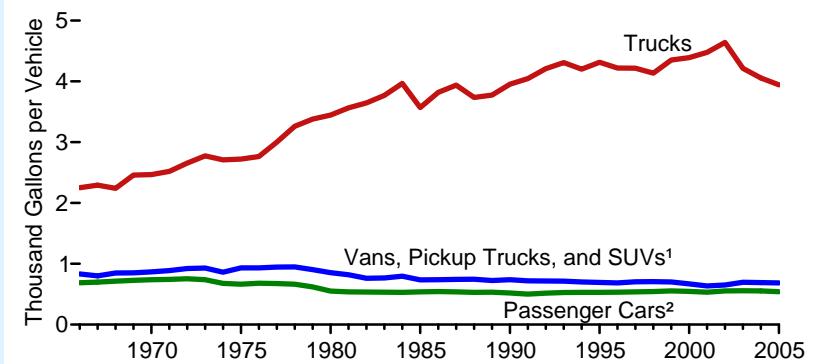


<sup>1</sup> Sport utility vehicle. <sup>2</sup> Motorcycles are included through 1989.

Truck miles traveled per year greatly exceeded the other vehicle categories and grew by 124 percent from 1966 to 2003 but decreased 6 percent from 2003 to 2005. Passenger cars averaged 12 thousand miles per vehicle per year from 1997 to 2005, and vans, pickup trucks, and sport utility vehicles averaged 11 thousand miles per vehicle from 2001 to 2005.

Note: Motor vehicles include passenger cars, motorcycles, vans, pickup trucks, sport utility vehicles, trucks, and buses.

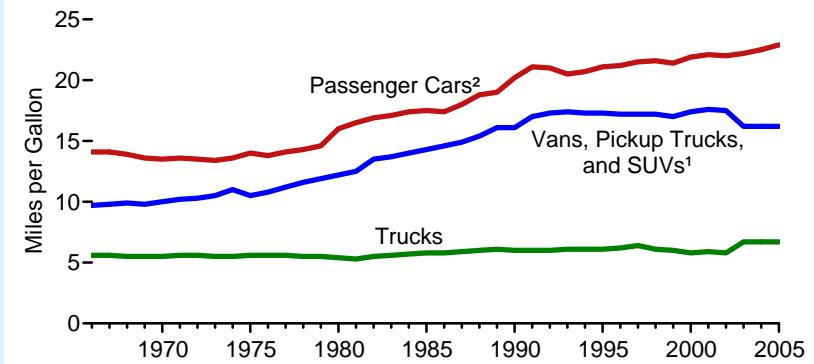
**Figure 31. Motor Vehicle Fuel Consumption**



<sup>1</sup> Sport utility vehicle. <sup>2</sup> Motorcycles are included through 1989.

From 1966 to 2002, annual fuel consumed per truck doubled, growing from 2.3 thousand gallons to 4.6 thousand gallons, and then fell in 2003 through 2005. Meanwhile, annual fuel consumed per passenger car and per van, pickup truck, and sport utility vehicle fell by 22 percent and 24 percent, respectively, from 1966 to 2001, rose in 2002 and 2003, and then fell in 2004 and 2005.

**Figure 33. Motor Vehicle Fuel Rates**

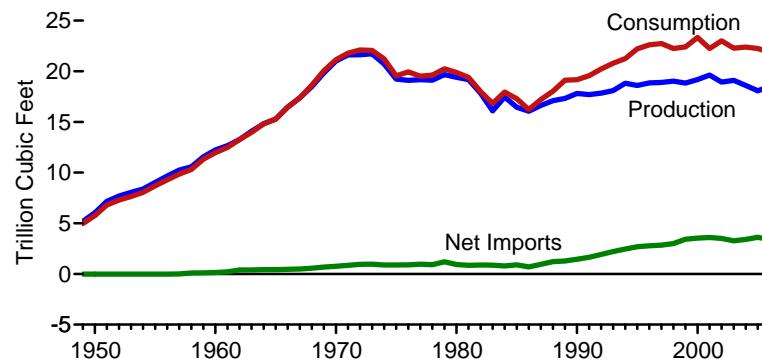


<sup>1</sup> Sport utility vehicle. <sup>2</sup> Motorcycles are included through 1989.

Fuel rates (miles per gallon) for both passenger cars and vans, pickup trucks, and SUVs improved noticeably from the late 1970s through the early 1990s. Passenger cars improved further in subsequent years, but rates for vans, pickup trucks, and SUVs deteriorated. Truck rates, which were much lower than rates for other vehicle categories and recorded much less year-to-year change, experienced a 16-percent increase from 2002 to 2003.

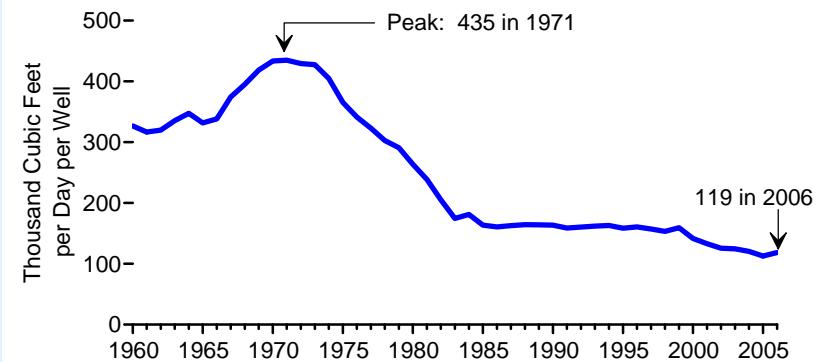
# Natural Gas

**Figure 34. Natural Gas Overview**



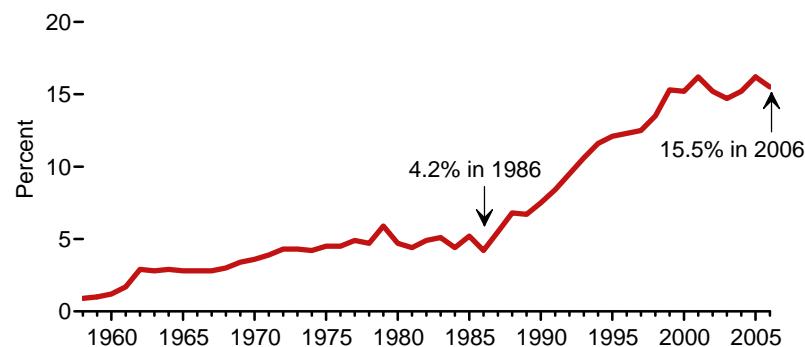
U.S. natural gas production and consumption were nearly in balance through 1986. After that, consumption began to outpace production, and imports of natural gas rose to meet U.S. requirements for the fuel. In 2006, production stood at 18.5 trillion cubic feet (Tcf), net imports at 3.4 Tcf, and consumption at 21.9 Tcf.

**Figure 35. Natural Gas Well Average Productivity**



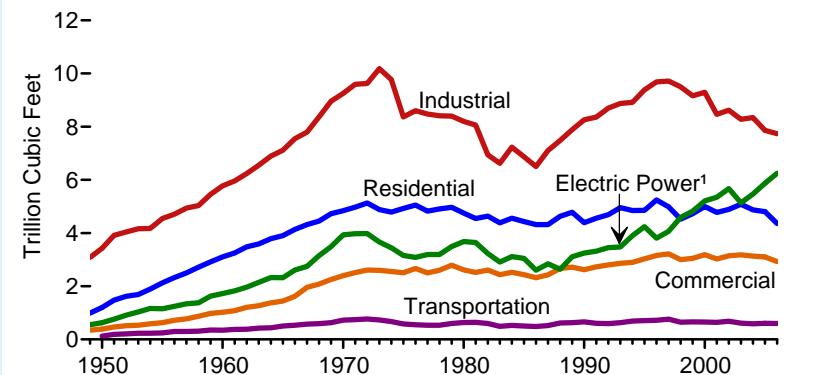
Natural gas well productivity, measured as gross withdrawals per day per well, grew rapidly in the late 1960s, peaked in 1971, and then fell sharply until the mid-1980s. Productivity remained fairly steady from 1985 through 1999, fell annually through 2005, and turned up slightly in 2006.

**Figure 36. Net Imports as Share of Consumption**



Net imports of natural gas as a share of consumption was in the 4-to-6 percent range from 1970 through 1987. Then, during a period when consumption outpaced production, the share rose from 4.2 percent in 1986 to 16.2 percent in 2001. In 2006, the share was 15.5 percent.

**Figure 37. Natural Gas Consumption by Sector**

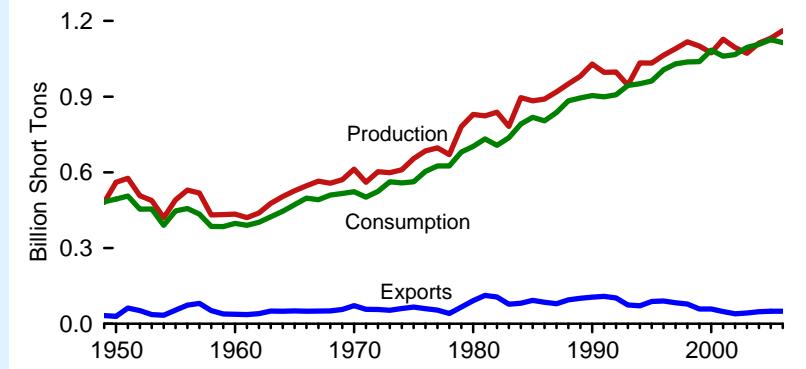


<sup>1</sup> Through 1988, electric utilities only; after 1988, includes independent power producers.

The industrial sector was both the largest consuming sector of natural gas and the sector with the greatest volatility due to variability in industrial output. In 2006, the industrial sector accounted for 35 percent of all natural gas consumption, and the electric power sector accounted for 29 percent.

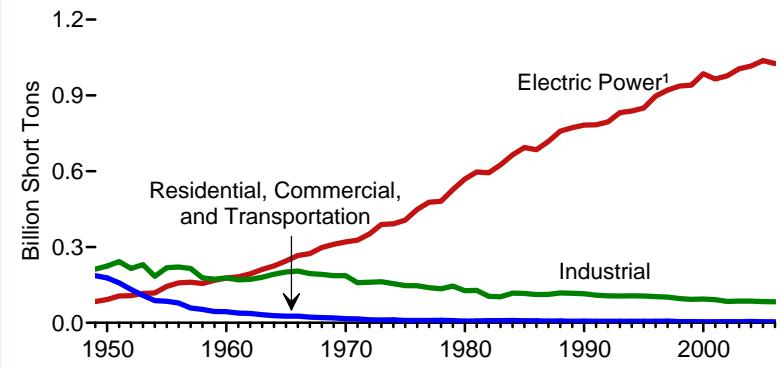
# Coal

**Figure 38. Coal Overview**



Historically, U.S. coal production usually surpassed U.S. coal consumption. In 2004 and 2005, however, production and consumption were in balance at 1.11 billion short tons in 2004 and 1.13 billion short tons in 2005. In 2006, production again slightly exceeded consumption. Exports, which peaked at 113 million short tons in 1981, stood at 50 million short tons in 2006.

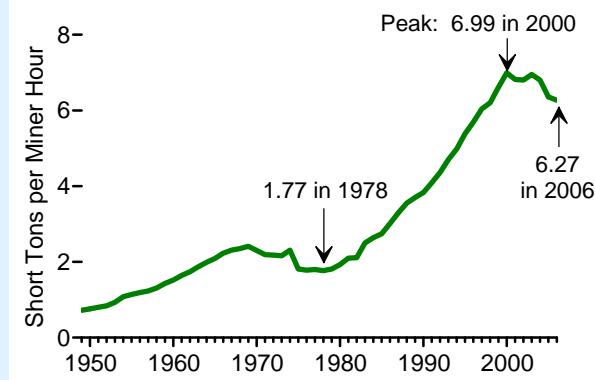
**Figure 39. Coal Consumption by Sector**



<sup>1</sup> Through 1988, electric utilities only; after 1988, includes independent power producers.

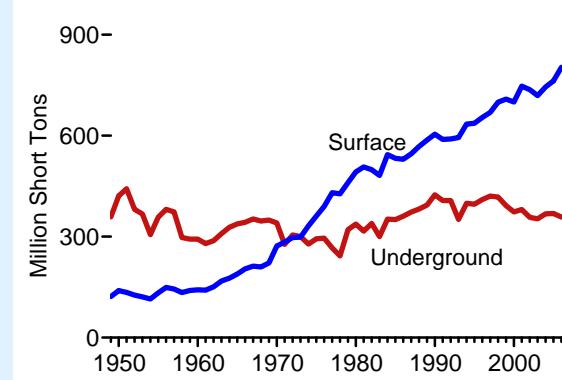
In the 1950s, most coal was consumed in the industrial sector, many homes were still heated by coal, and the transportation sector consumed coal in steam-driven trains and ships. By the 1960s, most coal was used for generating electricity. In 2006, the electric power sector accounted for 92 percent of all coal consumption.

**Figure 40. Coal Mining Productivity**



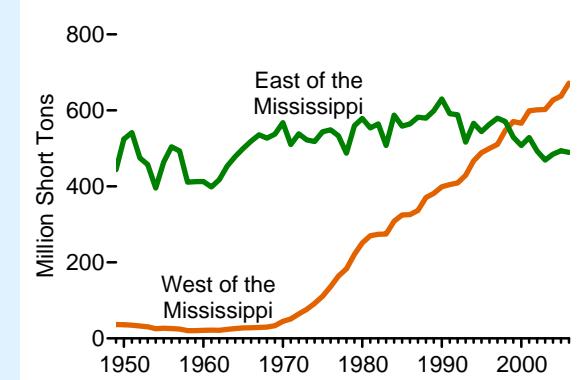
Improved mining technology and the shift toward more surface-mined coal promoted dramatic improvement in productivity from the Nation's mines from 1978 through 2000, but productivity declined in each of the last 3 years.

**Figure 41. Production by Mining Method**



In 1949, one-fourth of U.S. coal came from surface mines; by 1971, more than one-half was surface-mined; and in 2006, 69 percent came from above-ground mines.

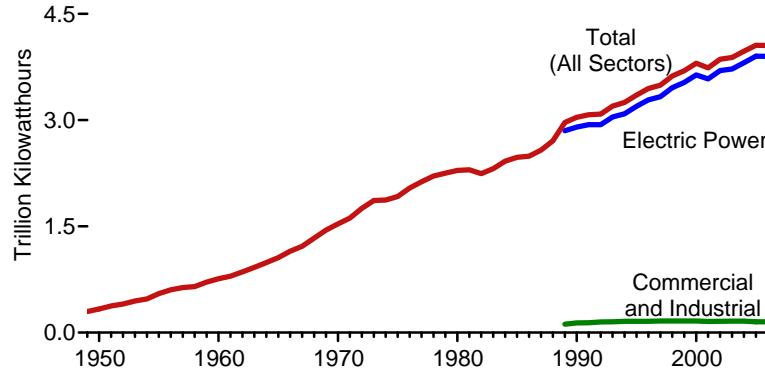
**Figure 42. Production by Location**



Western coal production expanded tremendously after 1969 and surpassed Eastern production beginning in 1999. In 2006, an estimated 58 percent of U.S. coal came from West of the Mississippi.

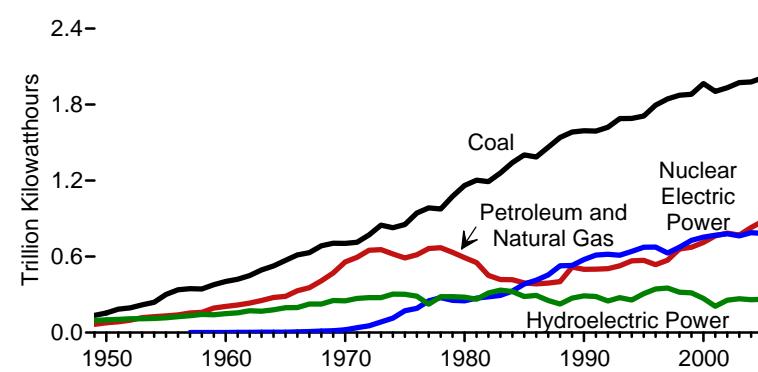
# Electricity Net Generation and Useful Thermal Output

**Figure 43. Electricity Net Generation by Sector**



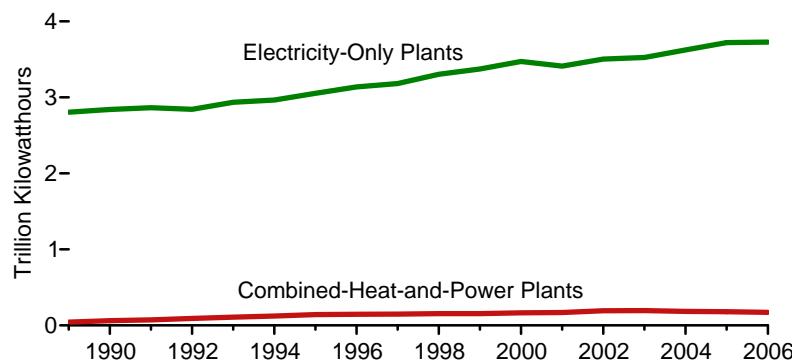
Total electricity net generation in all sectors grew from 0.3 trillion kilowatt-hours in 1949 to 4.1 trillion kilowatthours in 2006, failing to increase in only 3 years (1982, 2001, and 2006) over the entire span. Most generation was in the electric power sector, but some occurred directly in the commercial and industrial sectors.

**Figure 44. Major Sources of Total Electricity Net Generation**



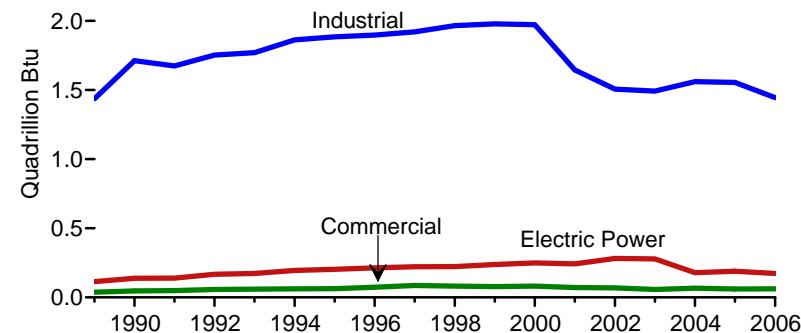
Most electricity net generation came from coal. In 2006, fossil fuels (coal, petroleum, and natural gas) accounted for 71 percent of all net generation, while nuclear electric power contributed 19 percent, and renewable energy resources 9 percent. Three-fourths of the net generation from renewable energy resources was derived from conventional hydroelectric power.

**Figure 45. Electric Power Sector by Plant Type**



Most generating facilities exist to produce only electricity, but some function as combined-heat-and-power (CHP) plants that produce both electricity and heat from a single heat source. Rather than being wasted, the heat from a CHP plant is used for processes and applications in addition to electricity generation.

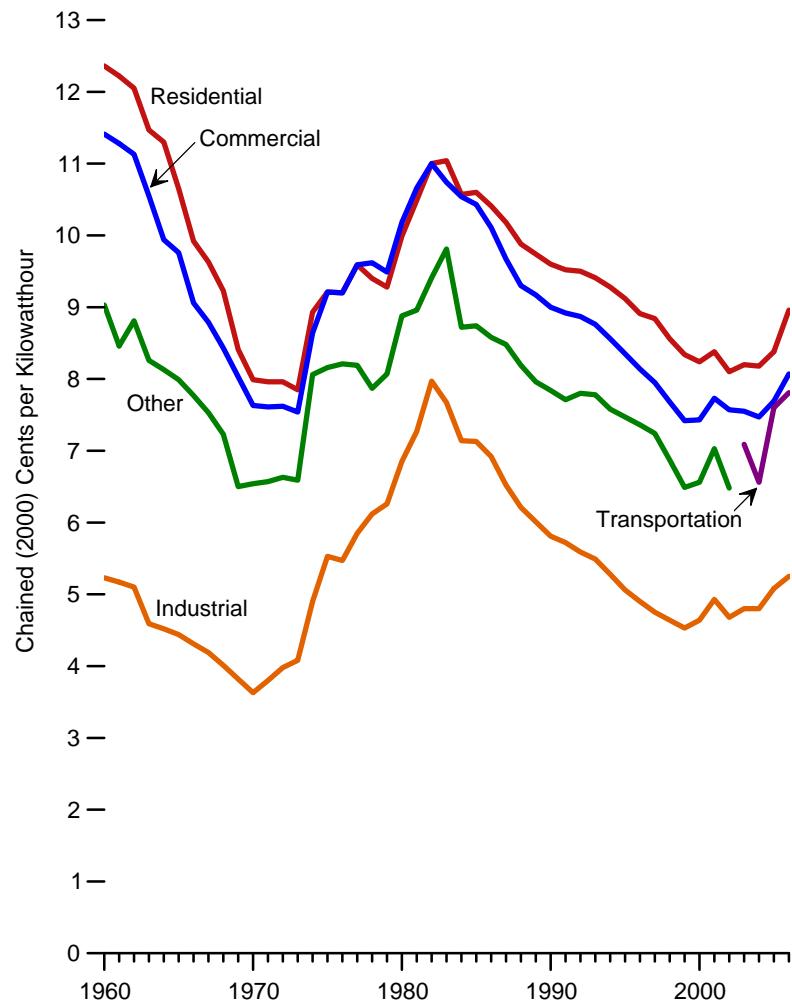
**Figure 46. Useful Thermal Output at Combined-Heat-and-Power Plants by Sector**



The non-electrical output at a CHP plant is called useful thermal output. Useful thermal output is thermal energy that is available from the plant for use in industrial or commercial processes or heating or cooling applications. In 2006, the industrial sector generated 1.4 quadrillion Btu of useful thermal output; the electric power and commercial sectors generated much smaller quantities.

# Electricity Prices, Sales, and Trade

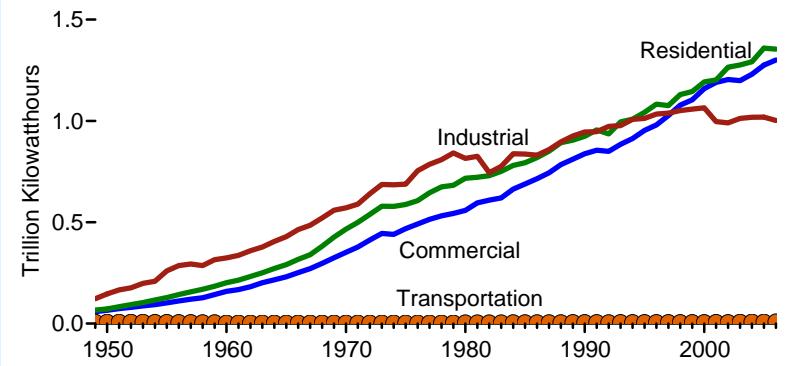
**Figure 47. Average Real<sup>1</sup> Retail Prices of Electricity by Sector**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See "Chained Dollars" in Glossary.

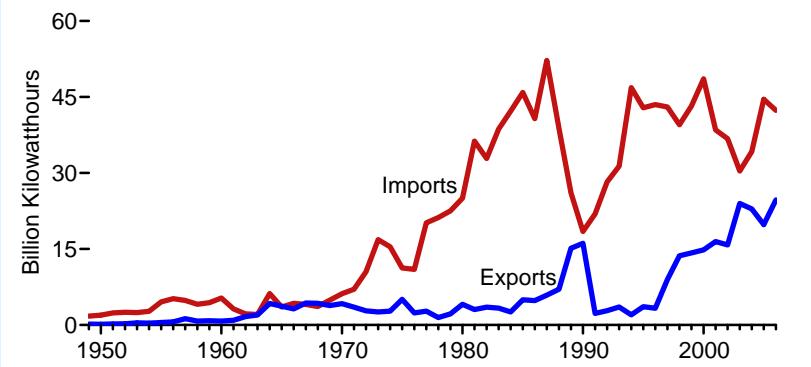
Over the decades, industrial consumers paid the lowest rates for electricity; residential customers usually paid the highest prices. Inflation-adjusted prices rose in both 2005 and 2006 but remained well below the peak price levels of the mid-1980s.

**Figure 48. Retail Sales by Sector**



Enormous growth occurred in the amount of electricity sold to the three major sectors—residential, commercial, and industrial. Industrial sector sales showed the greatest volatility. Sales to residences exceeded sales to industrial sites beginning in the early 1990s, and sales to commercial sites surpassed industrial sales beginning in the late 1990s.

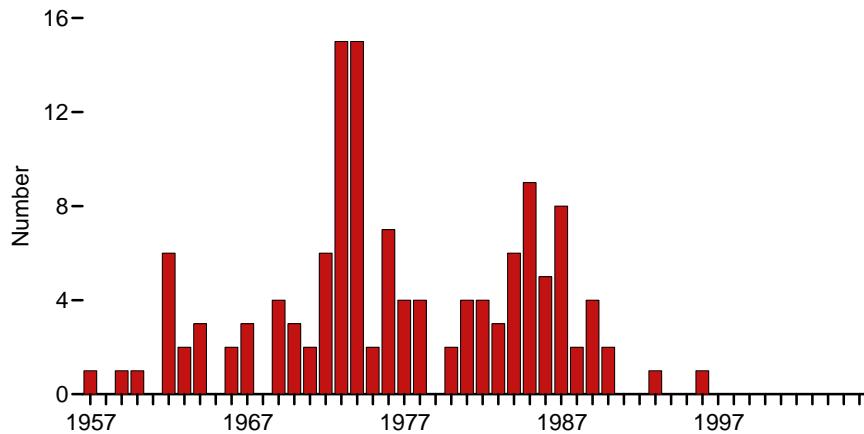
**Figure 49. Electricity Trade**



Except for a few years in the 1960s when imported and exported electricity were nearly equal, the United States imported more electricity than it exported. Most electricity trade occurred with Canada; very small exchanges occurred between the United States and Mexico. In 2006, net imported electricity was less than 0.5 percent of all electricity used in the United States.

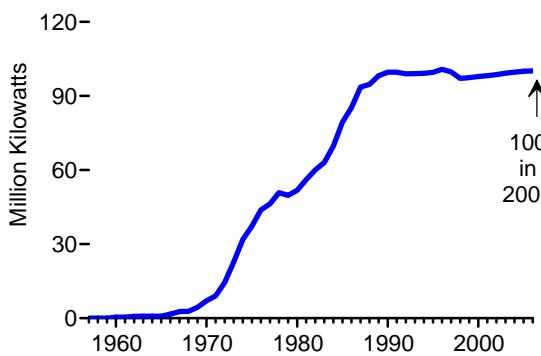
# Nuclear Electric Power

**Figure 50. Full-Power Operating Licenses Issued**



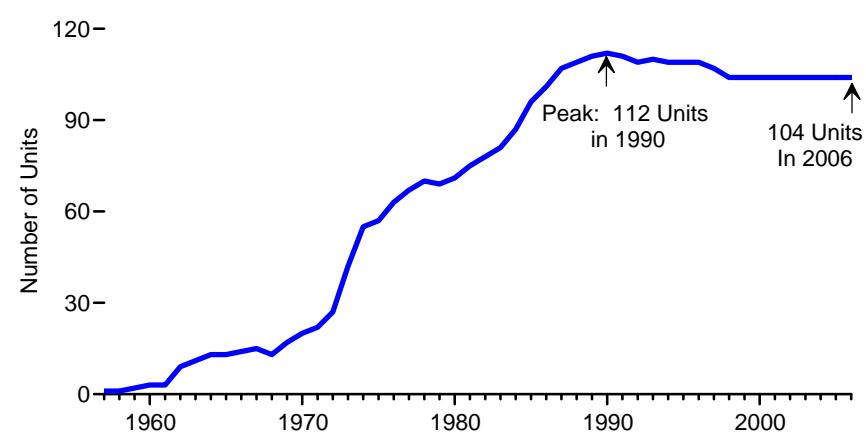
A total of 132 full-power operating licenses, or equivalent permission, were issued in the United States since the industry got its start in the 1950s. Most of the licenses were granted between 1962 and 1990. After 1990, one license was issued in 1993 and one in 1996.

**Figure 52. Nuclear Net Summer Capacity**



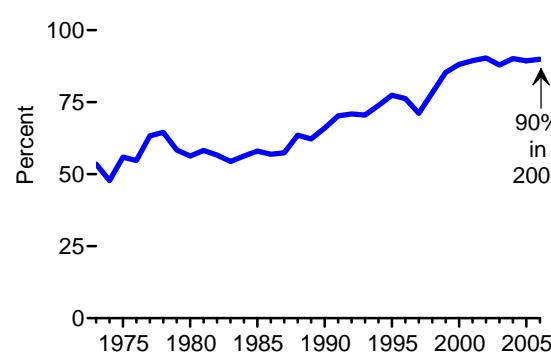
The U.S. nuclear industry's first commercial plant opened in Shippingport, Pennsylvania, in 1957. Nuclear capacity expanded sharply in the 1970s and 1980s. Total net capacity stood at 100 million kilowatts in 2006.

**Figure 51. Operable Units**



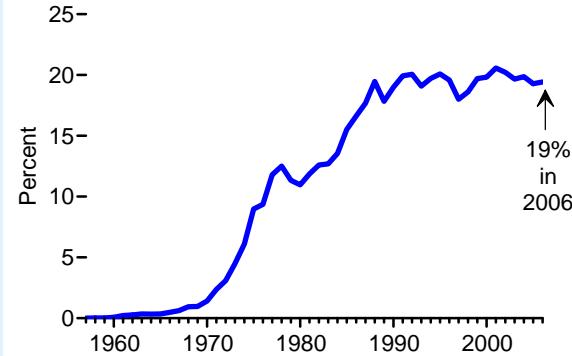
Out of the 132 units that were granted full-power operating licenses, or equivalent permission, over time, 28 were permanently shut down. The largest number of units ever operable in the United States was 112 in 1990. From 1998 through 2006, 104 units were operable.

**Figure 53. Capacity Factor**



Capacity factors measure actual power generation as a share of maximum possible output. Factors for the industry, which were in the 50-to-60 percent range through the 1980s, generally improved in later years and stood at 90 percent in 2006.

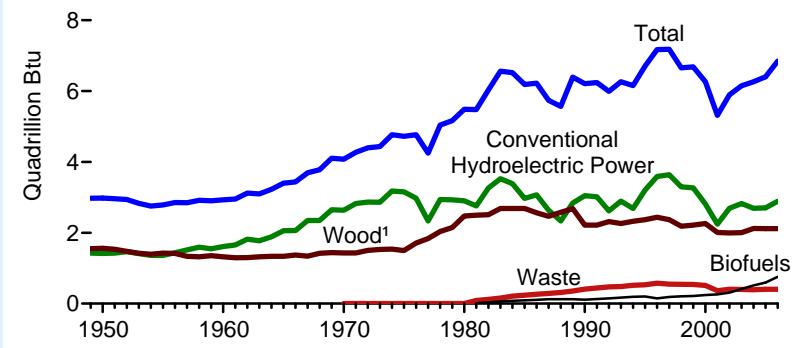
**Figure 54. Nuclear Share of Electricity**



Over the latter part of the last century, nuclear electric power began to play a key role in meeting the Nation's rapidly growing electricity requirements. In 2006, 19 percent of U.S. total electricity net generation came from nuclear electric power.

# Renewable Energy

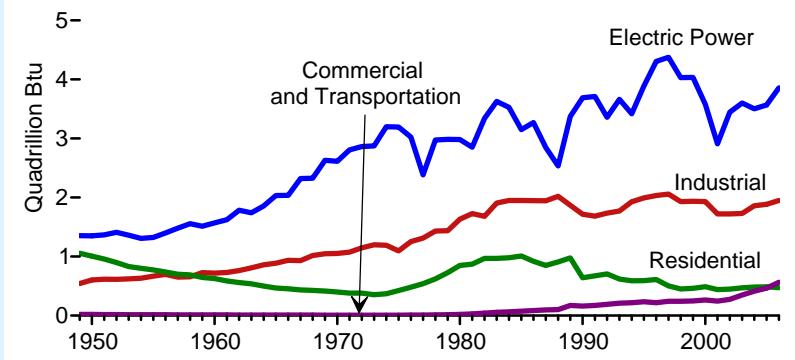
**Figure 55. Renewable Energy Total Consumption and Major Sources**



<sup>1</sup> Wood and wood-derived fuels.

Total renewable energy consumption generally followed the pattern of hydroelectric power output, which was the largest component of the total for most of the years shown. In 2006, hydroelectric power accounted for 42 percent of the total. Wood was the next largest source of renewable energy, followed by biofuels, waste, geothermal, wind, and solar/photovoltaic.

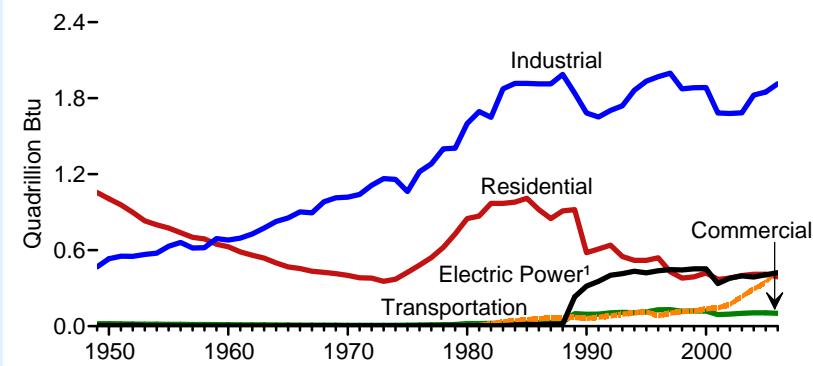
**Figure 56. Renewable Energy Consumption by Sector**



<sup>1</sup> Through 1988, electric utilities only; after 1988, includes independent power producers.

Most renewable energy was consumed by the electric power sector to generate electricity. After 1958, the industrial sector was the second largest consuming sector of renewable energy; residential sector usage of renewable energy was the third largest consuming sector.

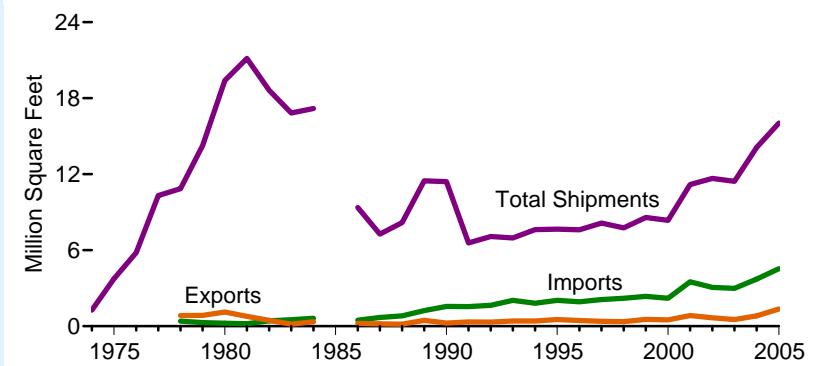
**Figure 57. Biomass Consumption by Sector**



<sup>1</sup> Through 1988, electric utilities only; after 1988, includes independent power producers.

After 1959, the industrial sector consumed the most biomass (wood, waste, ethanol and biodiesel). Residential use of biomass (wood) fell through 1973, expanded from 1974 through 1985, and then trended downward through 2006. Transportation consumption of biomass (ethanol and biodiesel) expanded after 1996 and, by 2006, exceeded the electric power sector's consumption of biomass (wood and waste).

**Figure 58. Solar Collector Shipments and Trade**

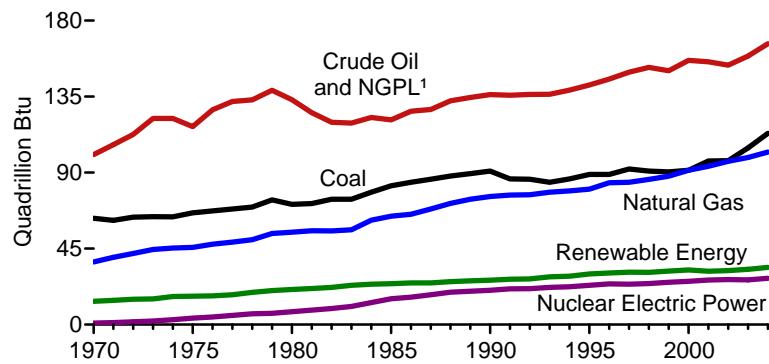


Notes: • Data were not collected for 1985. • Shipments include all domestically manufactured collectors plus imports.

Shipments of solar collectors grew strongly in the 1970s and reached a peak of 21 million square feet in 1981. Uneven performance was recorded over the next decade, followed by a mild upward trend during the 1990s and a bump up in 2001 and again in 2004 and 2005. Imports reached a record level of 4.5 million square feet in 2005.

# International Energy

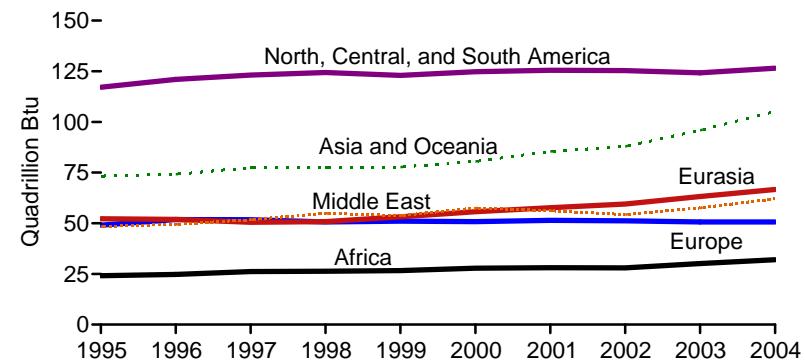
**Figure 59. World Primary Energy Production By Source**



<sup>1</sup> Natural gas plant liquids.

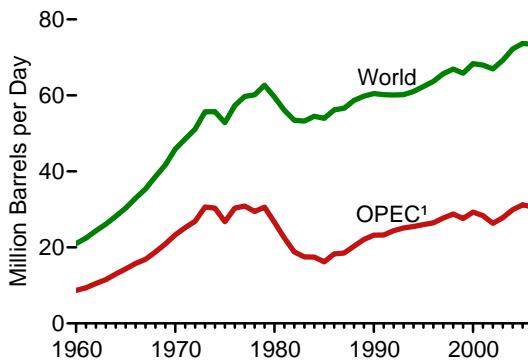
From 1970 to 2004, world primary energy production grew by 106 percent, reaching 443 quadrillion Btu in 2004. Growth occurred in all types of energy. In 2004, fossil fuels accounted for 86 percent of all energy produced worldwide, renewable energy 8 percent, and nuclear electric power 6 percent.

**Figure 60. World Primary Energy Production by Region**



Twenty-nine percent of the 443 quadrillion Btu of energy produced worldwide in 2004 came from North, Central, and South America. The second largest regional energy producer was Asia and Oceania with 24 percent of the world total in 2004.

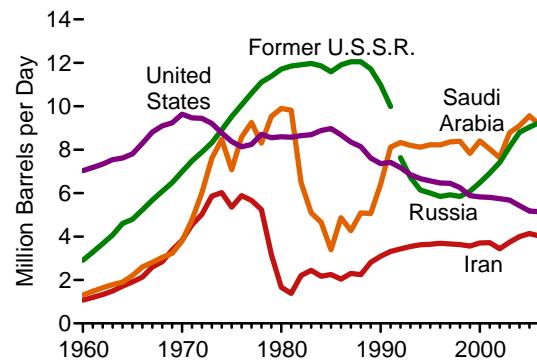
**Figure 61. World Crude Oil Production**



<sup>1</sup> Organization of the Petroleum Exporting Countries.

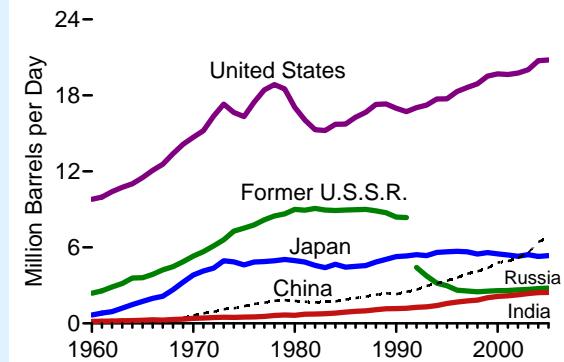
World crude oil production totaled 73 million barrels per day in 2006, down slightly from the level in 2005. OPEC's share of the world total in 2006 was 42 percent, compared to the peak level of 55 percent in 1973.

**Figure 62. Leading Crude Oil Producers**



From 1974 through 1991, the former U.S.S.R. was the world's leading crude oil producer. After 1991, Saudi Arabia was the top producer until 2006 when Russia's production exceeded Saudi Arabia's for the first time. U.S. production peaked in 1970 but still ranked third in 2006.

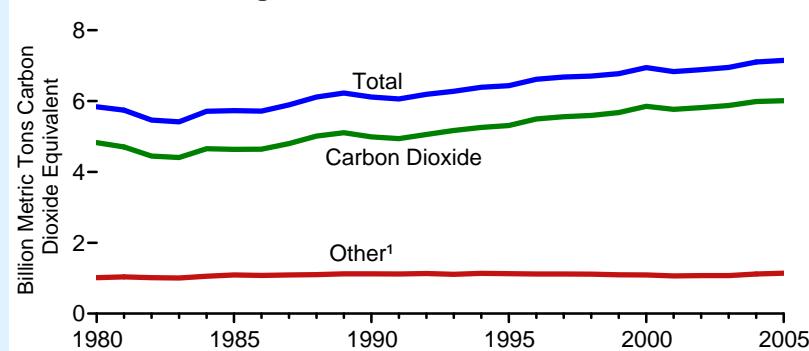
**Figure 63. Leading Petroleum Consumers**



The United States accounted for 25 percent of world petroleum consumption in 2005. China and Japan, the next two leading consumers, together accounted for 15 percent. In 2005, India consumed nearly as much petroleum as Russia.

## Emissions

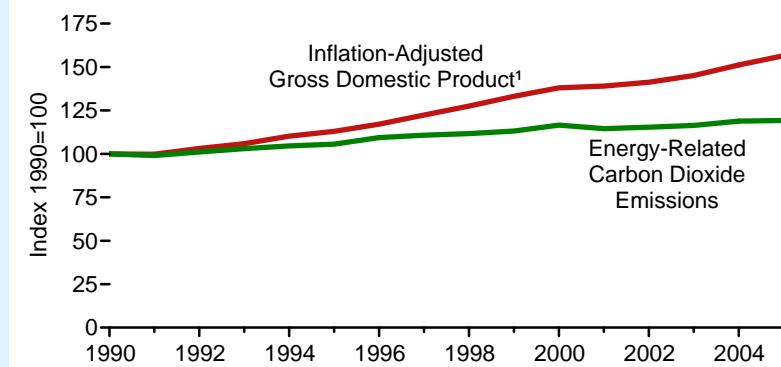
**Figure 64. Greenhouse Gas Emissions, Based on Global Warming Potential**



<sup>1</sup> Methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ( $SF_6$ ).

The combustion of fossil fuels—coal, petroleum, and natural gas—to release their energy creates carbon dioxide emissions, the most significant greenhouse gas. Total carbon dioxide emissions reached 6 billion metric tons of gas in 2005, 20 percent higher than the 1990 level.

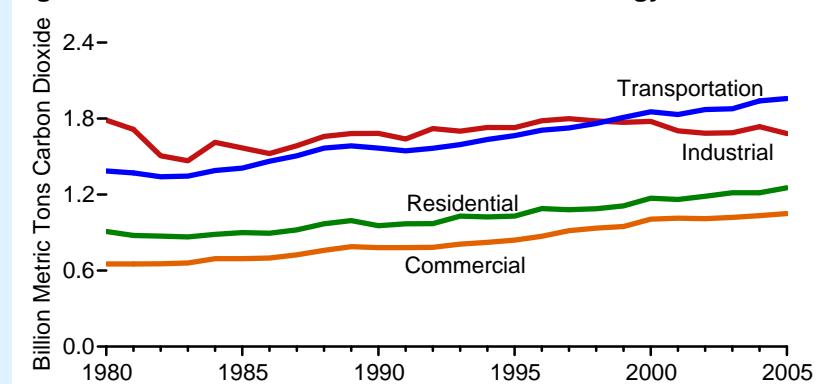
**Figure 66. GDP Growth and Carbon Dioxide Emissions**



<sup>1</sup> Based on chained (2000) dollars. See "Chained Dollars" in Glossary.

While real gross domestic product (GDP) grew by 55 percent from 1990 to 2005, energy-related carbon dioxide emissions grew by 19 percent. From 2000 to 2005, GDP rose 13 percent, and energy-related carbon dioxide emissions rose 2 percent.

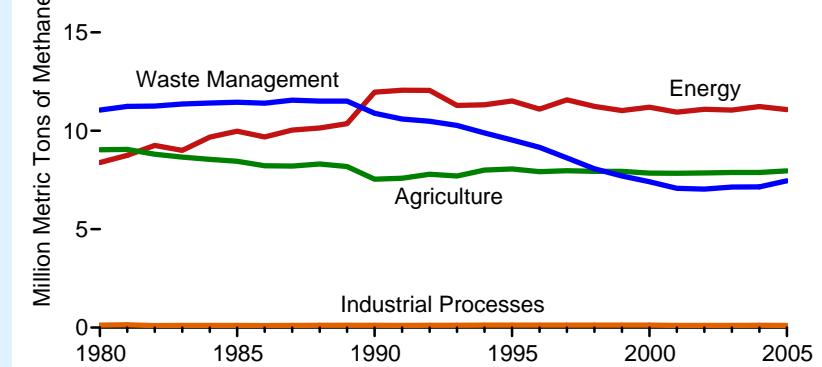
**Figure 65. Carbon Dioxide Emissions From Energy Use**



Note: Electric power sector emissions are distributed to the end-use sectors.

Carbon dioxide emitted by the industrial sector fell by 6 percent from 1980 to 2005. By 1999, transportation sector carbon dioxide emissions exceeded industrial sector emissions. Of the major sectors, the commercial sector generated the least carbon dioxide but recorded the largest growth (61 percent) since 1980.

**Figure 67. Methane Emissions by Source**



In 2005, methane emissions accounted for 9 percent of total U.S. greenhouse gas emissions, weighted by global warming potential. Most methane emissions came from energy, waste management, and agricultural sources. The production, processing, and distribution of natural gas accounted for 60 percent of all energy-related methane emissions in 2005.

## Figure Sources

Data for "Energy Perspectives" figures and text are derived from the following *Annual Energy Review 2006* tables and additional sources:

1. Table 1.1.
2. Table 1.5.
3. Table 1.5.
4. Table 1.3.
5. Tables 1.3, 10.1, and E1.
6. Historical data: Table 1.3. Projections: Energy Information Administration, *Annual Energy Outlook 2007* (February 2007), Reference Case Tables, Table 1, "Total Energy Supply and Disposition Summary."
7. Table 2.1a.
8. Tables 2.1b and 2.1c.
9. Table 2.1d.
10. Tables 2.1e, 5.13c, and 5.14c.
11. Table 1.2.
12. Tables 5.1, 6.1, and 7.1.
13. Table 1.4.
14. Table 5.1.
15. Table 5.2.
16. Table 5.2.
17. Table 4.4.
18. Tables 5.13a, 5.13b, 5.13c, and 5.13d.
19. Table 5.11.
20. Table 5.21.
21. Table 5.24.
22. Tables 5.3 and 5.5.
23. Table 5.4.
24. Table 5.4.
25. Table 5.4.
26. Table 5.16.
27. Table 5.16.
28. Table 5.17.
29. Table 5.17.
30. Table 2.8.
31. Table 2.8.
32. Table 2.8.
33. Table 2.8.
34. Table 6.1.
35. Table 6.4.
36. Table 6.3.
37. Table 6.5.
38. Table 7.1.
39. Table 7.3.
40. Table 7.6.
41. Table 7.2.
42. Table 7.2.
43. Tables 8.2a, 8.2b, and 8.2d.
44. Table 8.2a.
45. Table 8.2c.
46. Tables 8.3b and 8.3c.
47. Table 8.10.
48. Table 8.9.
49. Table 8.1.
50. Table 9.1.
51. Table 9.1.
52. Table 9.2.
53. Table 9.2.
54. Table 9.2.
55. Table 10.1.
56. Tables 10.2a–10.2c.
57. Tables 10.2a–10.2c.
58. Table 10.5.
59. Table 11.1.
60. Table 11.2.
61. Table 11.5.
62. Table 11.5.
63. Table 11.10.
64. Table 12.1.
65. Table 12.2.
66. Tables 1.5 and 12.2.
67. Tables 12.1 and 12.5.

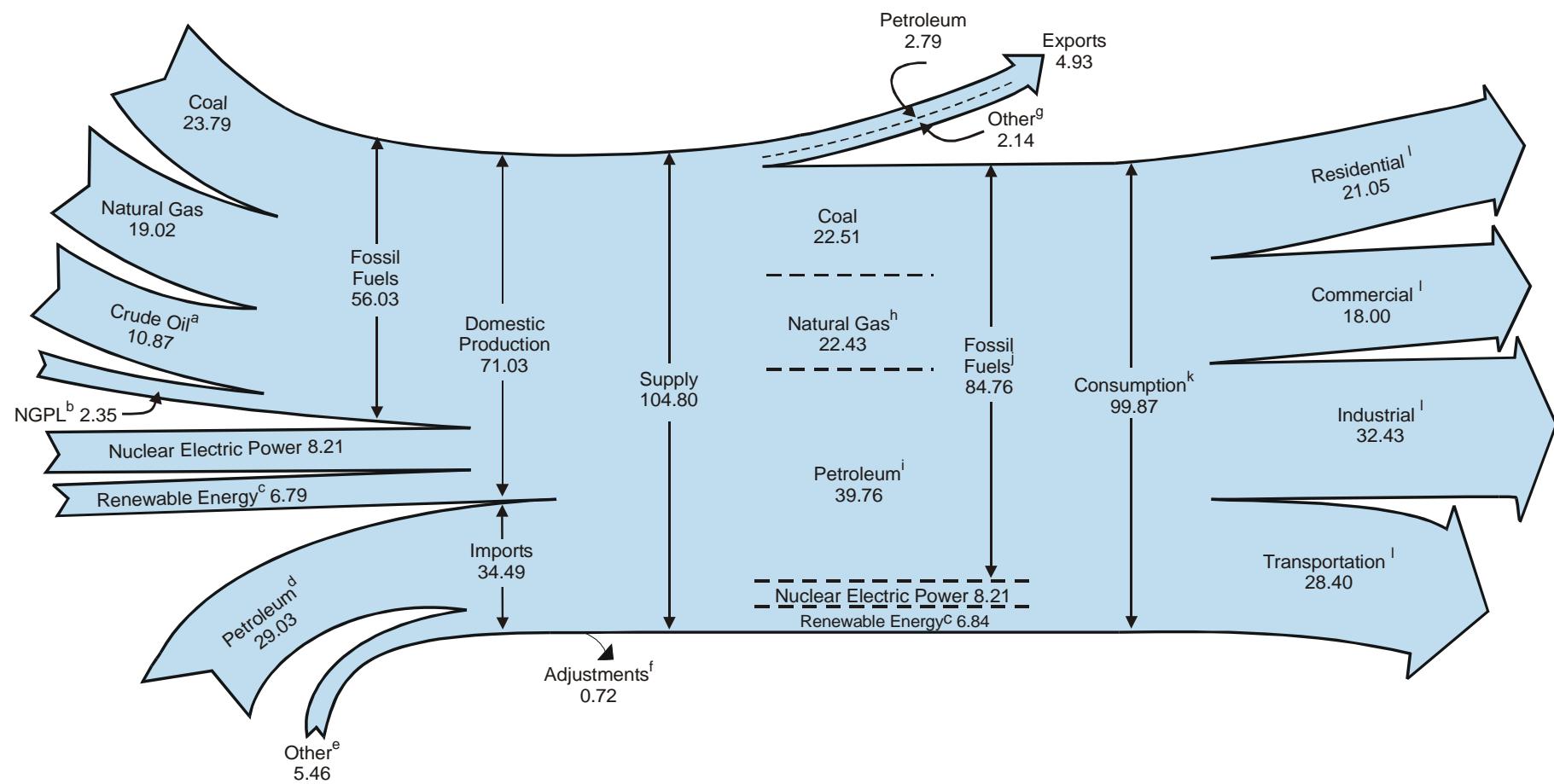
# Energy Overview



The continental United States at night from orbit. Source: National Oceanic and Atmospheric Administration satellite imagery; mosaic provided by U.S. Geological Survey.



**Diagram 1. Energy Flow, 2006**  
 (Quadrillion Btu)



<sup>a</sup> Includes lease condensate.

<sup>b</sup> Natural gas plant liquids.

<sup>c</sup> Conventional hydroelectric power, biomass, geothermal, solar/PV, and wind.

<sup>d</sup> Crude oil and petroleum products. Includes imports into the Strategic Petroleum Reserve.

<sup>e</sup> Natural gas, coal, coal coke, fuel ethanol, and electricity.

<sup>f</sup> Stock changes, losses, gains, miscellaneous blending components, and unaccounted-for supply.

<sup>g</sup> Coal, natural gas, coal coke, and electricity.

<sup>h</sup> Natural gas only; excludes supplemental gaseous fuels.

<sup>i</sup> Petroleum products, including natural gas plant liquids, and crude oil burned as fuel.

<sup>j</sup> Includes 0.06 quadrillion Btu of coal coke net imports.

<sup>k</sup> Includes 0.06 quadrillion Btu of electricity net imports.

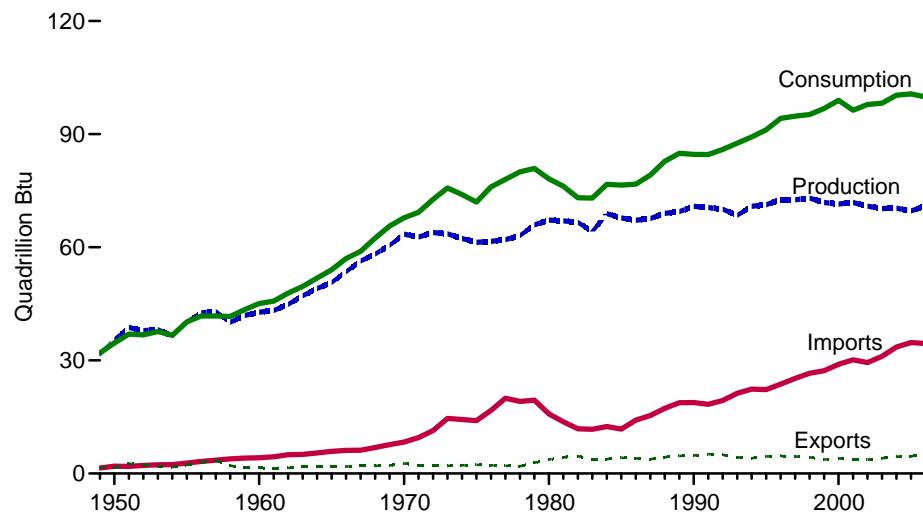
<sup>l</sup> Primary consumption, electricity retail sales, and electrical system energy losses, which are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note, "Electrical Systems Energy Losses," at end of Section 2.

Notes: • Data are preliminary. • Values are derived from source data prior to rounding for publication. • Totals may not equal sum of components due to independent rounding.

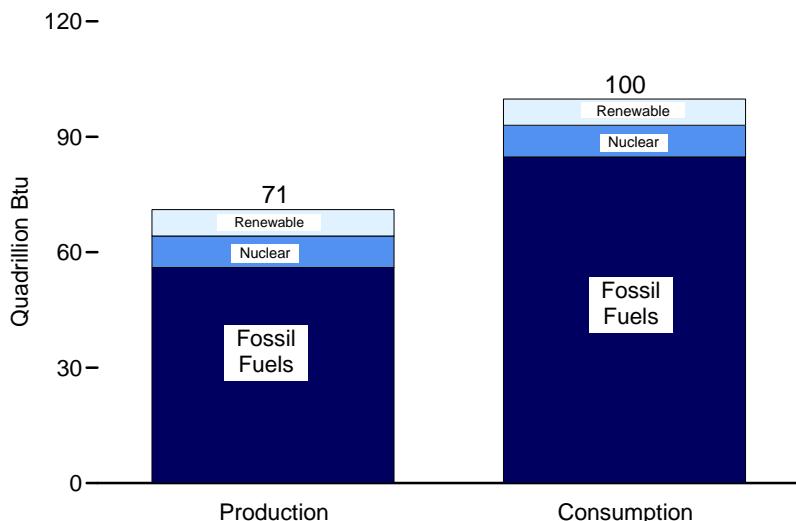
Sources: Tables 1.1, 1.2, 1.3, 1.4, and 2.1a.

**Figure 1.1 Energy Overview**

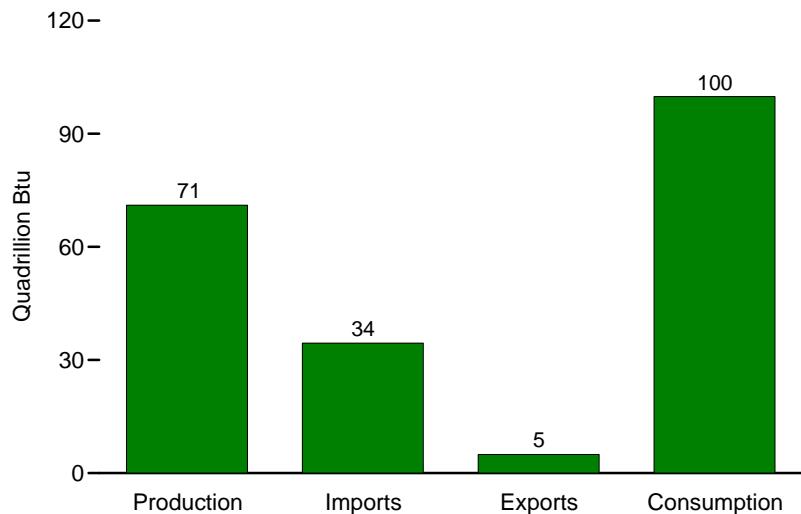
**Overview, 1949-2006**



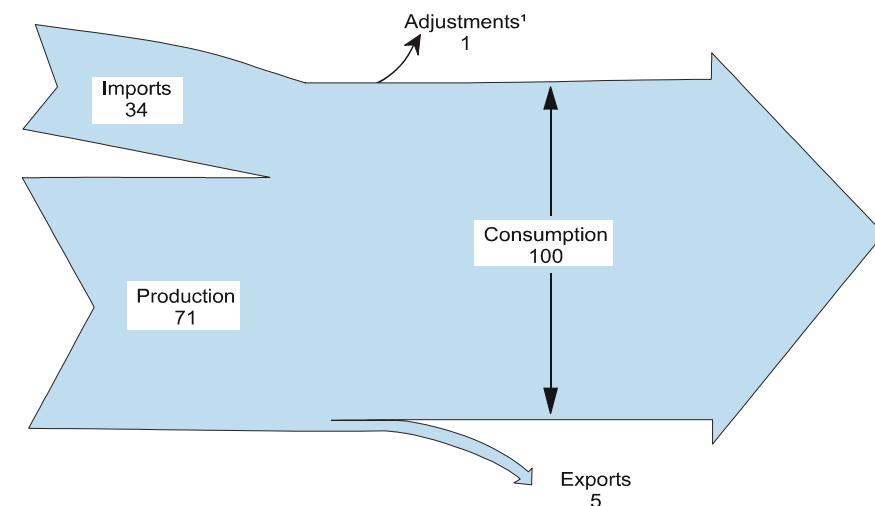
**Production and Consumption, 2006**



**Overview, 2006**



**Energy Flow, 2006  
(Quadrillion Btu)**



<sup>1</sup> Stock changes, losses, gains, miscellaneous blending components, and unaccounted-for supply.

Source: Table 1.1.

**Table 1.1 Energy Overview, Selected Years, 1949-2006**  
 (Quadrillion Btu)

Year	Production <sup>1</sup>				Trade					Stock Change and Other <sup>9</sup>	Consumption <sup>2</sup>				
	Fossil Fuels <sup>4</sup>	Nuclear Electric Power	Renewable Energy <sup>5</sup>	Total	Imports		Exports		Net Imports <sup>3</sup>		Fossil Fuels <sup>10</sup>	Nuclear Electric Power	Renewable Energy <sup>5</sup>	Total <sup>11</sup>	
					Petroleum <sup>6</sup>	Total <sup>7</sup>	Coal	Total <sup>8</sup>							
1949	28.748	0.000	2.974	31.722	1.427	1.448	0.877	1.592	-0.144	0.403	29.002	0.000	2.974	31.982	
1950	32.563	.000	2.978	35.540	1.886	1.913	.786	1.465	.448	-1.372	31.632	.000	2.978	34.616	
1955	37.364	.000	2.784	40.148	2.752	2.790	1.465	2.286	.504	-.444	37.410	.000	2.784	40.208	
1960	39.869	.006	2.929	42.804	3.999	4.188	1.023	1.477	2.710	-.427	42.137	.006	2.929	45.087	
1965	47.235	.043	3.398	50.676	5.402	5.892	1.376	1.829	4.063	-.722	50.577	.043	3.398	54.017	
1970	59.186	.239	4.076	63.501	7.470	8.342	1.936	2.632	5.709	-1.367	63.522	.239	4.076	67.844	
1971	58.042	.413	4.268	62.723	8.540	9.535	1.546	2.151	7.384	-.818	64.596	.413	4.268	69.289	
1972	58.938	.584	4.398	63.920	10.299	11.387	1.531	2.118	9.269	-.485	67.696	.584	4.398	72.704	
1973	58.241	.910	4.433	63.585	13.466	14.613	1.425	2.033	12.580	-.456	70.316	.910	4.433	75.708	
1974	56.331	1.272	4.769	62.372	13.127	14.304	1.620	2.203	12.101	-.482	67.906	1.272	4.769	73.991	
1975	54.733	1.900	4.723	61.357	12.948	14.032	1.761	2.323	11.709	-1.067	65.355	1.900	4.723	71.999	
1976	54.723	2.111	4.768	61.602	15.672	16.760	1.597	2.172	14.588	-.178	69.104	2.111	4.768	76.012	
1977	55.101	2.702	4.249	62.052	18.756	19.948	1.442	2.052	17.896	-1.948	70.989	2.702	4.249	78.000	
1978	55.074	3.024	5.039	63.137	17.824	19.106	1.078	1.920	17.186	-.337	71.856	3.024	5.039	79.986	
1979	58.006	2.776	5.166	65.948	17.933	19.460	1.753	2.855	16.605	-1.649	72.892	2.776	5.166	80.903	
1980	59.008	2.739	5.485	67.232	14.658	15.796	2.421	3.695	12.101	R-1.212	R69.826	2.739	5.485	R78.122	
1981	58.529	3.008	R5.477	R67.014	12.639	13.719	2.944	4.307	9.412	R-.258	R67.570	3.008	R5.477	R76.168	
1982	57.458	3.131	R6.034	R66.623	10.777	11.861	2.787	4.608	7.253	R-.724	R63.888	3.131	R6.034	R73.153	
1983	54.416	3.203	R6.561	R64.180	10.647	11.752	2.045	3.693	8.059	R-.799	R63.154	3.203	R6.561	R73.038	
1984	58.849	3.553	R6.522	R68.924	11.433	12.471	2.151	3.786	8.685	R-.894	R66.504	3.553	R6.522	R76.714	
1985	57.539	4.076	R6.185	R67.799	10.609	11.781	2.438	4.196	7.584	R1.107	R66.091	4.076	R6.185	R76.491	
1986	56.575	4.380	R6.223	R67.178	13.201	14.151	2.248	4.021	10.130	R-.552	R66.031	4.380	R6.223	R76.756	
1987	57.167	4.754	R5.739	R67.659	14.162	15.398	2.093	3.812	11.586	R-.073	R68.522	4.754	R5.739	R79.173	
1988	57.875	5.587	R5.568	R69.030	15.747	17.296	2.499	4.366	12.929	R-.860	R71.556	5.587	R5.568	R82.819	
1989	R57.483	5.602	R6.391	R69.476	17.162	18.766	2.637	4.661	14.105	R1.362	R72.913	5.602	R6.391	R84.944	
1990	R58.560	6.104	R6.206	R70.870	17.117	18.817	2.772	4.752	14.065	R-.283	R72.333	6.104	R6.206	R84.652	
1991	R57.872	6.422	R6.238	R70.532	16.348	18.335	2.854	5.141	13.194	R-.881	R71.880	6.422	R6.238	R84.607	
1992	R57.655	6.479	R5.993	R70.127	16.968	19.372	2.682	4.937	14.435	R1.394	R73.397	6.479	R5.993	R85.956	
1993	R55.822	6.410	R6.263	R68.495	18.510	21.273	1.962	4.258	R17.015	R2.093	R74.836	6.410	R6.262	R87.603	
1994	R58.044	6.694	R6.155	R70.893	19.244	22.391	1.879	4.061	18.330	R.037	R76.258	6.694	R6.155	R89.260	
1995	R57.540	7.075	R6.703	R71.319	18.882	22.262	2.318	4.511	17.751	R2.103	R77.258	7.075	R6.705	R91.173	
1996	R58.387	7.087	R7.167	R72.641	20.285	23.703	2.368	4.633	19.070	R2.464	R79.783	7.087	R7.168	R94.175	
1997	R58.857	6.597	R7.180	R72.634	21.740	25.216	2.193	4.514	20.702	R1.430	R80.874	6.597	R7.178	R94.765	
1998	R59.314	7.068	R6.659	R73.041	22.908	26.581	2.092	4.299	22.282	R-.139	R81.370	7.068	R6.657	R95.183	
1999	R57.614	7.610	R6.683	R71.907	23.133	27.253	1.525	3.715	23.538	R1.373	R82.428	7.610	R6.681	R96.817	
2000	R57.366	7.862	R6.262	R71.490	24.532	28.973	1.528	4.006	24.967	R2.518	R84.733	7.862	R6.264	R98.975	
2001	R58.541	8.033	R5.318	R71.892	25.400	30.158	1.265	3.770	26.387	R-1.953	R82.903	8.033	R5.315	R96.326	
2002	R56.894	8.143	R5.899	R70.935	24.676	29.408	1.032	3.668	25.740	R1.182	R83.750	8.143	R5.893	R97.858	
2003	R56.162	7.959	R6.149	R70.270	26.220	31.062	1.117	4.054	27.008	R.931	R84.078	7.959	R6.151	R98.209	
2004	R55.924	8.222	R6.248	R70.394	28.209	R33.556	1.253	4.433	R29.122	R.835	R85.830	8.222	R6.261	R100.351	
2005	R55.090	R8.160	R6.391	R69.640	R29.259	R34.721	1.273	R4.561	R30.160	R.891	R86.043	R8.160	R6.404	R100.691	
2006 <sup>p</sup>	56.032	8.208	6.794	71.034	29.030	34.491	1.264	4.931	29.560	-.721	84.760	8.208	6.844	99.873	

<sup>1</sup> See "Primary Energy Production" in Glossary.

<sup>2</sup> See "Primary Energy Consumption" in Glossary.

<sup>3</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>4</sup> Coal, natural gas (dry), crude oil, and natural gas plant liquids.

<sup>5</sup> See Tables 10.1-10.2c for notes on series components and estimation.

<sup>6</sup> Crude oil and petroleum products. Includes imports into the Strategic Petroleum Reserve.

<sup>7</sup> Also includes natural gas, coal, coal coke, fuel ethanol, and electricity.

<sup>8</sup> Also includes natural gas, petroleum, coal coke, and electricity.

<sup>9</sup> Calculated as consumption and exports minus production and imports. Includes petroleum stock

change and adjustments; natural gas net storage withdrawals and balancing item; coal stock change, losses, and unaccounted for; and fuel ethanol stock change.

<sup>10</sup> Coal, coal coke net imports, natural gas, and petroleum.

<sup>11</sup> Also includes electricity net imports.

R=Revised. P=Preliminary.

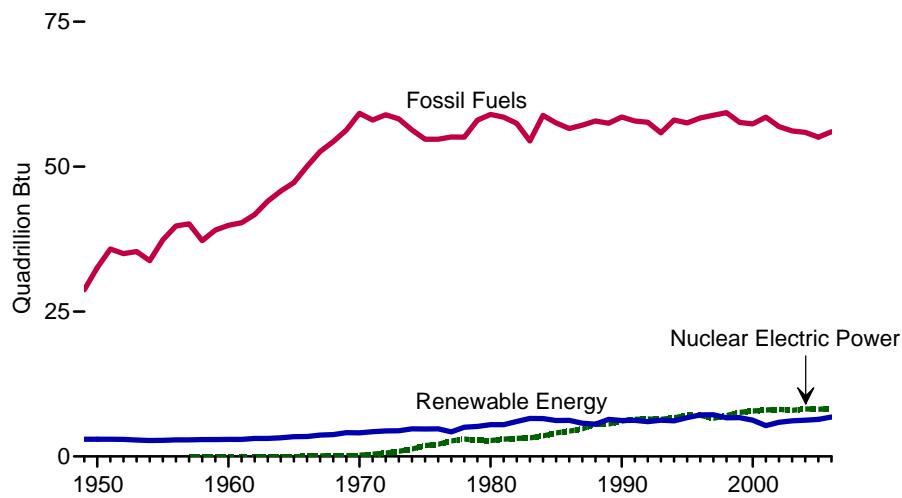
Note: Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

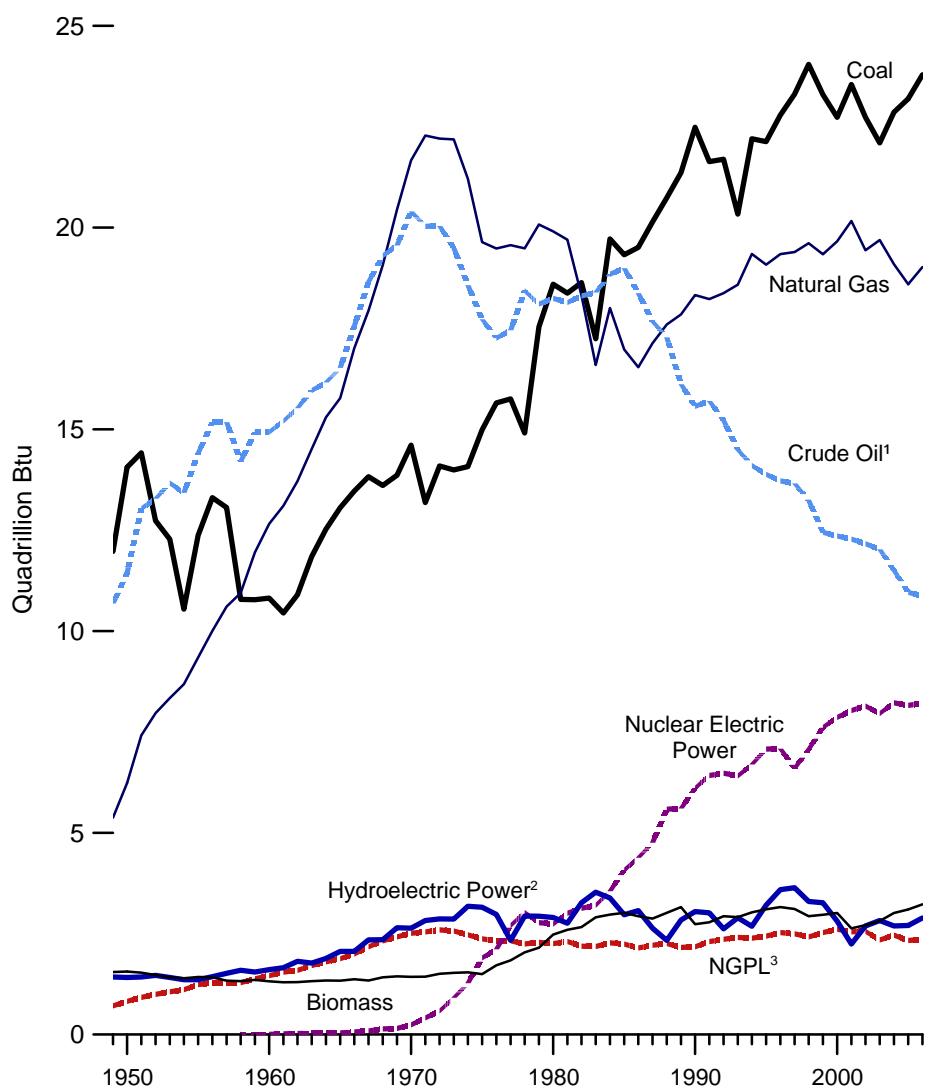
Sources: Tables 1.2, 1.3, and 1.4.

**Figure 1.2 Energy Production by Primary Energy Source**

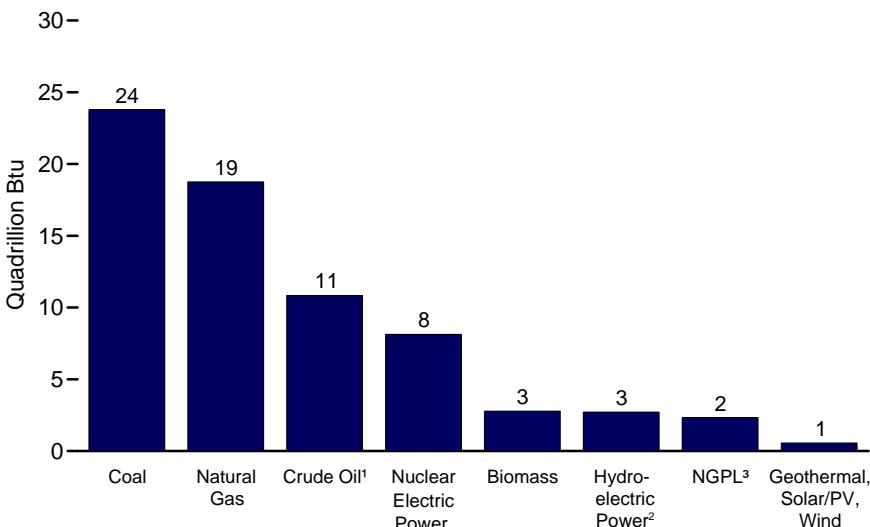
**By Source Category, 1949-2006**



**By Major Source, 1949-2006**



**By Source, 2006**



<sup>1</sup> Includes lease condensate.

<sup>2</sup> Conventional hydroelectric power.

<sup>3</sup> Natural gas plant liquids.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 1.2.

**Table 1.2 Energy Production by Primary Energy Source, Selected Years, 1949-2006**  
 (Quadrillion Btu)

Year	Fossil Fuels					Nuclear Electric Power	Renewable Energy <sup>1</sup>						Total
	Coal <sup>2</sup>	Natural Gas (Dry)	Crude Oil <sup>3</sup>	NGPL <sup>4</sup>	Total		Hydro-electric Power <sup>5</sup>	Geothermal	Solar/PV	Wind	Biomass	Total	
1949	11.974	5.377	10.683	0.714	28.748	0.000	1.425	NA	NA	NA	1.549	2.974	31.722
1950	14.060	6.233	11.447	.823	32.563	.000	1.415	NA	NA	NA	1.562	2.978	35.540
1955	12.370	9.345	14.410	1.240	37.364	.000	1.360	NA	NA	NA	1.424	2.784	40.148
1960	10.817	12.656	14.935	1.461	39.869	.006	1.608	.001	NA	NA	1.320	2.929	42.804
1965	13.055	15.775	16.521	1.883	47.235	.043	2.059	.004	NA	NA	1.335	3.398	50.676
1970	14.607	21.666	20.401	2.512	59.186	.239	2.634	.011	NA	NA	1.431	4.076	63.501
1971	13.186	22.280	20.033	2.544	58.042	.413	2.824	.012	NA	NA	1.432	4.268	62.723
1972	14.092	22.208	20.041	2.598	58.938	.584	2.864	.031	NA	NA	1.503	4.398	63.920
1973	13.992	22.187	19.493	2.569	58.241	.910	2.861	.043	NA	NA	1.529	4.433	63.585
1974	14.074	21.210	18.575	2.471	56.331	1.272	3.177	.053	NA	NA	1.540	4.769	62.372
1975	14.989	19.640	17.729	2.374	54.733	1.900	3.155	.070	NA	NA	1.499	4.723	61.357
1976	15.654	19.480	17.262	2.327	54.723	2.111	2.976	.078	NA	NA	1.713	4.768	61.602
1977	15.755	19.565	17.454	2.327	55.101	2.702	2.333	.077	NA	NA	1.838	4.249	62.052
1978	14.910	19.485	18.434	2.245	55.074	3.024	2.937	.064	NA	NA	2.038	5.039	63.137
1979	17.540	20.076	18.104	2.286	58.006	2.776	2.931	.084	NA	NA	2.152	5.166	65.948
1980	18.598	19.908	18.249	2.254	59.008	2.739	2.900	.110	NA	NA	2.476	5.485	67.232
1981	18.377	19.699	18.146	2.307	58.529	3.008	2.758	.123	NA	NA	R <sup>2</sup> .596	R <sup>5</sup> .477	R <sup>67</sup> .014
1982	18.639	18.319	18.309	2.191	57.458	3.131	3.266	.105	NA	NA	R <sup>2</sup> .664	R <sup>6</sup> .034	R <sup>66</sup> .623
1983	17.247	16.593	18.392	2.184	54.416	3.203	3.527	.129	NA	(s)	R <sup>2</sup> .904	R <sup>6</sup> .561	R <sup>64</sup> .180
1984	19.719	18.008	18.848	2.274	58.849	3.553	3.386	.165	(s)	(s)	R <sup>2</sup> .971	R <sup>6</sup> .522	R <sup>68</sup> .924
1985	19.325	16.980	18.992	2.241	57.539	4.076	2.970	.198	(s)	(s)	R <sup>3</sup> .016	R <sup>6</sup> .185	R <sup>67</sup> .799
1986	19.509	16.541	18.376	2.149	56.575	4.380	3.071	.219	(s)	(s)	R <sup>2</sup> .932	R <sup>6</sup> .223	R <sup>67</sup> .178
1987	20.141	17.136	17.675	2.215	57.167	4.754	2.635	.229	(s)	(s)	R <sup>2</sup> .875	R <sup>5</sup> .739	R <sup>67</sup> .659
1988	20.738	17.599	17.279	2.260	57.875	5.587	2.334	.217	(s)	(s)	R <sup>3</sup> .016	R <sup>5</sup> .568	R <sup>69</sup> .030
1989	2 <sup>2</sup> 21.360	17.847	16.117	2.158	R <sup>57</sup> .483	5.602	2.837	.317	.055	.022	R <sup>3</sup> .160	R <sup>6</sup> .391	R <sup>69</sup> .476
1990	R <sup>22</sup> .488	18.326	15.571	2.175	R <sup>58</sup> .560	6.104	3.046	.336	.060	.029	R <sup>2</sup> .735	R <sup>6</sup> .206	R <sup>70</sup> .870
1991	R <sup>21</sup> .636	18.229	15.701	2.306	R <sup>57</sup> .872	6.422	3.016	.346	.063	.031	R <sup>2</sup> .782	R <sup>6</sup> .238	R <sup>70</sup> .532
1992	R <sup>21</sup> .694	18.375	15.223	2.363	R <sup>57</sup> .655	6.479	2.617	.349	.064	.030	R <sup>2</sup> .933	R <sup>5</sup> .993	R <sup>70</sup> .127
1993	R <sup>20</sup> .336	18.584	14.494	2.408	R <sup>55</sup> .822	6.410	2.892	.364	.066	.031	R <sup>2</sup> .910	R <sup>6</sup> .263	R <sup>68</sup> .495
1994	R <sup>22</sup> .202	19.348	14.103	2.391	R <sup>58</sup> .044	6.694	2.683	.338	.069	.036	R <sup>3</sup> .030	R <sup>6</sup> .155	R <sup>70</sup> .893
1995	R <sup>22</sup> .130	19.082	13.887	2.442	R <sup>57</sup> .540	7.075	3.205	.294	.070	.033	R <sup>3</sup> .102	R <sup>6</sup> .703	R <sup>71</sup> .319
1996	R <sup>22</sup> .790	19.344	13.723	2.530	R <sup>58</sup> .387	7.087	3.590	.316	.071	.033	R <sup>3</sup> .157	R <sup>7</sup> .167	R <sup>72</sup> .641
1997	R <sup>23</sup> .310	19.394	13.658	2.495	R <sup>58</sup> .857	6.597	3.640	.325	.070	.034	R <sup>3</sup> .111	R <sup>7</sup> .180	R <sup>72</sup> .634
1998	R <sup>24</sup> .045	19.613	13.235	2.420	R <sup>59</sup> .314	7.068	3.297	.328	.070	.031	R <sup>2</sup> .933	R <sup>6</sup> .659	R <sup>73</sup> .041
1999	R <sup>23</sup> .295	19.341	12.451	2.528	R <sup>57</sup> .614	7.610	3.268	.331	.069	.046	R <sup>2</sup> .969	R <sup>6</sup> .683	R <sup>71</sup> .907
2000	R <sup>22</sup> .735	19.662	12.358	2.611	R <sup>57</sup> .366	7.862	2.811	.317	.066	.057	R <sup>3</sup> .010	R <sup>6</sup> .262	R <sup>71</sup> .490
2001	2 <sup>2</sup> 23.547	R <sup>20</sup> .166	12.282	2.547	R <sup>58</sup> .541	8.033	2.242	.311	.065	.070	R <sup>2</sup> .629	R <sup>5</sup> .318	R <sup>71</sup> .892
2002	R <sup>22</sup> .732	19.439	12.163	2.559	R <sup>56</sup> .894	8.143	2.689	.328	.064	.105	R <sup>2</sup> .712	R <sup>5</sup> .899	R <sup>70</sup> .935
2003	R <sup>22</sup> .099	19.691	12.026	2.346	R <sup>56</sup> .162	7.959	2.825	.331	.064	.115	R <sup>2</sup> .816	R <sup>6</sup> .149	R <sup>70</sup> .270
2004	R <sup>22</sup> .862	R <sup>19</sup> .093	11.503	2.466	R <sup>55</sup> .924	8.222	2.690	.341	.065	.142	R <sup>3</sup> .011	R <sup>6</sup> .248	R <sup>70</sup> .394
2005	R <sup>23</sup> .195	R <sup>18</sup> .598	R <sup>10</sup> .963	R <sup>2</sup> .334	R <sup>55</sup> .090	R <sup>8</sup> .160	R <sup>2</sup> .703	R <sup>3</sup> .433	R <sup>0</sup> .666	R <sup>1</sup> .78	R <sup>3</sup> .101	R <sup>6</sup> .391	R <sup>69</sup> .640
2006 <sup>P</sup>	23.788	19.020	10.874	2.351	56.032	8.208	2.889	.349	.070	.258	3.227	6.794	71.034

<sup>1</sup> Most values are estimated. See Tables 10.1-10.2c for notes on series components and estimation.

<sup>2</sup> Beginning in 1989, includes waste coal supplied. Beginning in 2001, also includes a small amount of refuse recovery. See Table 7.1.

<sup>3</sup> Includes lease condensate.

<sup>4</sup> Natural gas plant liquids.

<sup>5</sup> Conventional hydroelectric power.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.0005 quadrillion Btu.

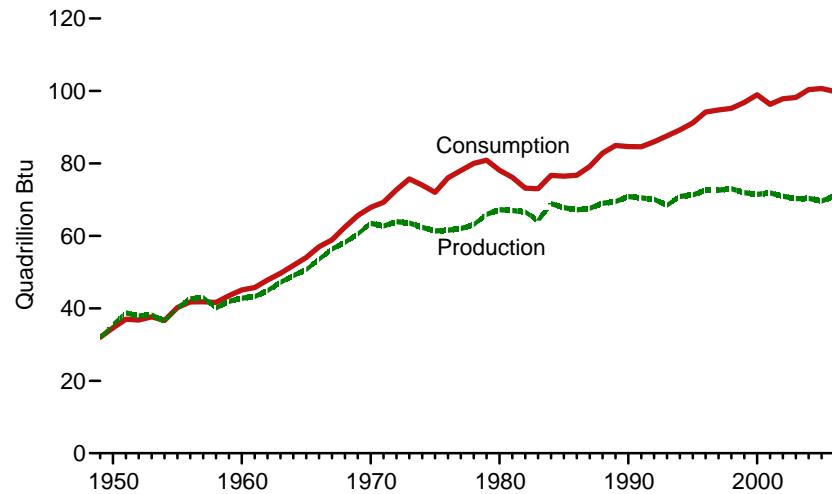
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

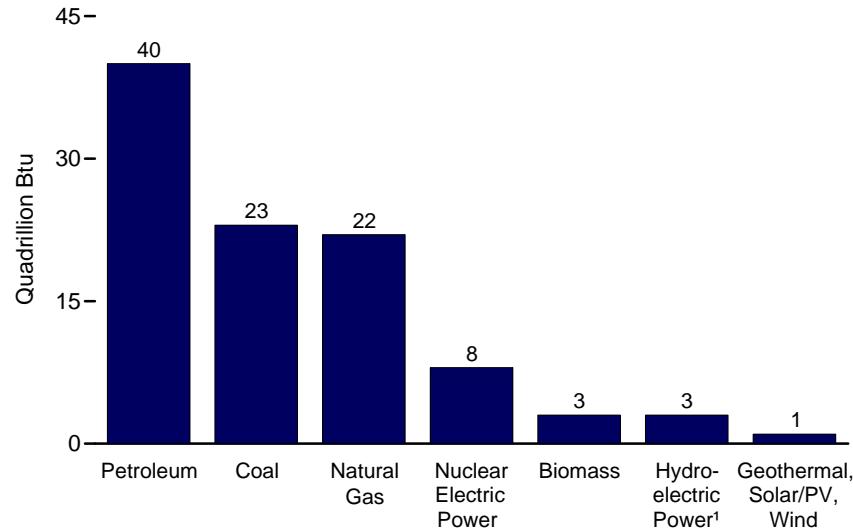
Sources: Tables 5.1, 6.1, 7.1, 8.2a, 10.1, A2, A4, A5, and A6.

**Figure 1.3 Energy Consumption by Primary Energy Source**

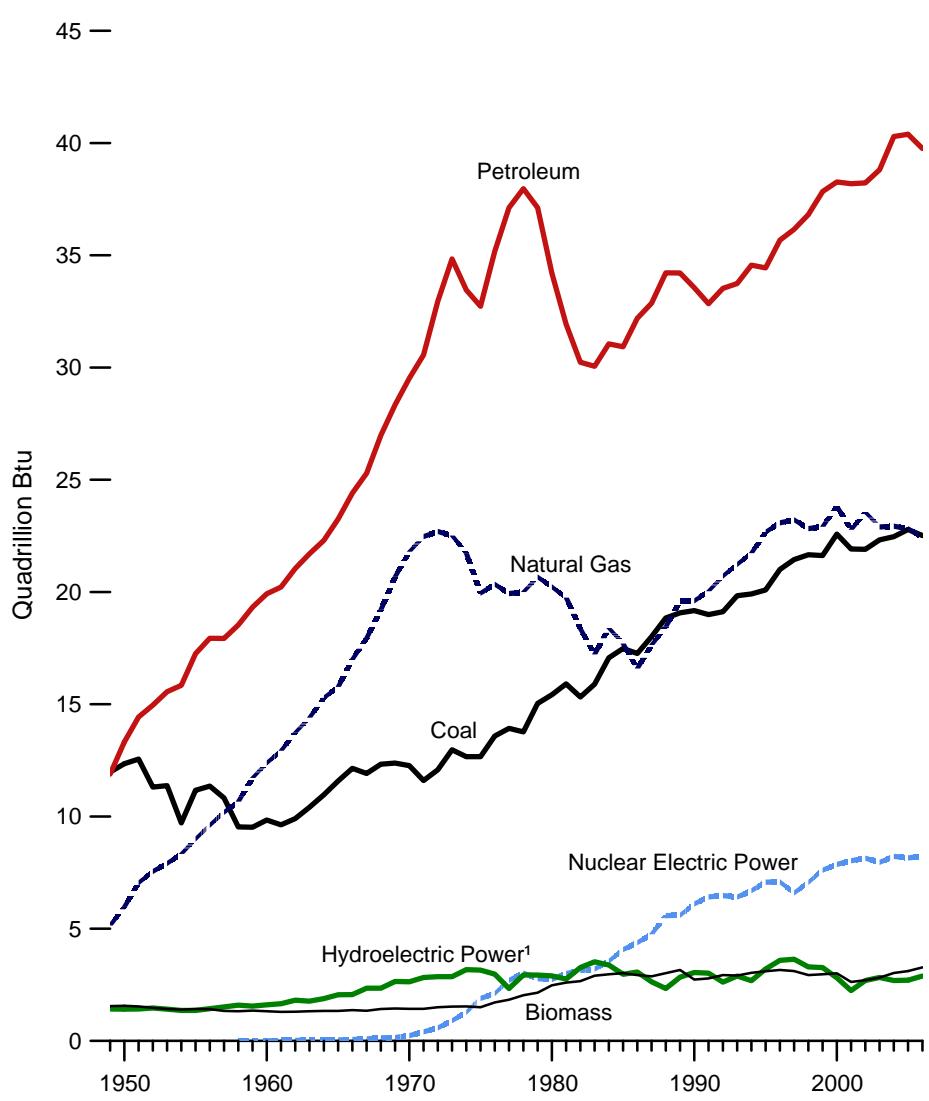
**Production and Consumption, 1949-2006**



**By Source, 2006**



**By Major Source, 1949-2006**



<sup>1</sup> Conventional hydroelectric power.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 1.2 and 1.3.

**Table 1.3 Energy Consumption by Primary Energy Source, Selected Years, 1949-2006**  
 (Quadrillion Btu)

Year	Fossil Fuels					Nuclear Electric Power	Renewable Energy <sup>1</sup>						Electricity Net Imports <sup>2</sup>	Total
	Coal	Coal Coke Net Imports <sup>2</sup>	Natural Gas <sup>3</sup>	Petroleum <sup>4</sup>	Total		Hydro- electric Power <sup>5</sup>	Geothermal	Solar/PV	Wind	Biomass	Total		
1949	11.981	-0.007	5.145	11.883	29.002	0.000	1.425	NA	NA	NA	1.549	2.974	0.005	31.982
1950	12.347	.001	5.968	13.315	31.632	.000	1.415	NA	NA	NA	1.562	2.978	.006	34.616
1955	11.167	-.010	8.998	17.255	37.410	.000	1.360	NA	NA	NA	1.424	2.784	.014	40.208
1960	9.838	-.006	12.385	19.919	42.137	.006	1.608	.001	NA	NA	1.320	2.929	.015	45.087
1965	11.581	-.018	15.769	23.246	50.577	.043	2.059	.004	NA	NA	1.335	3.398	(s)	54.017
1970	12.265	-.058	21.795	29.521	63.522	.239	2.634	.011	NA	NA	1.431	4.076	.007	67.844
1971	11.598	-.033	22.469	30.561	64.596	.413	2.824	.012	NA	NA	1.432	4.268	.012	69.289
1972	12.077	-.026	22.698	32.947	67.696	.584	2.864	.031	NA	NA	1.503	4.398	.026	72.704
1973	12.971	-.007	22.512	34.840	70.316	.910	2.861	.043	NA	NA	1.529	4.433	.049	75.708
1974	12.663	.056	21.732	33.455	67.906	1.272	3.177	.053	NA	NA	1.540	4.769	.043	73.991
1975	12.663	.014	19.948	32.731	65.355	1.900	3.155	.070	NA	NA	1.499	4.723	.021	71.999
1976	13.584	(s)	20.345	35.175	69.104	2.111	2.976	.078	NA	NA	1.713	4.768	.029	76.012
1977	13.922	.015	19.931	37.122	70.989	2.702	2.333	.077	NA	NA	1.838	4.249	.059	78.000
1978	13.766	.125	20.000	37.965	71.856	3.024	2.937	.064	NA	NA	2.038	5.039	.067	79.986
1979	15.040	.063	20.666	37.123	72.892	2.776	2.931	.084	NA	NA	2.152	5.166	.069	80.903
1980	15.423	-.035	R20.235	34.202	R69.826	2.739	2.900	.110	NA	NA	2.476	5.485	.071	R78.122
1981	15.908	-.016	R19.747	31.931	R67.570	3.008	2.758	.123	NA	NA	R2.596	R5.477	.113	R76.168
1982	15.322	-.022	R18.356	30.232	R63.888	3.131	3.266	.105	NA	NA	R2.664	R6.034	.100	R73.153
1983	15.894	-.016	R17.221	30.054	R63.154	3.203	3.527	.129	NA	(s)	R2.904	R6.561	.121	R73.038
1984	17.071	-.011	R18.394	31.051	R66.504	3.553	3.386	.165	(s)	(s)	R2.971	R6.522	.135	R76.714
1985	17.478	-.013	R17.703	30.922	R66.091	4.076	2.970	.198	(s)	(s)	R3.016	R6.185	.140	R76.491
1986	17.260	-.017	R16.591	32.196	R66.031	4.380	3.071	.219	(s)	(s)	R2.932	R6.223	.122	R76.756
1987	18.008	.009	R17.640	32.865	R68.522	4.754	2.635	.229	(s)	(s)	R2.875	R5.739	.158	R79.173
1988	18.846	.040	R18.448	34.222	R71.556	5.587	2.334	.217	(s)	(s)	R3.016	R5.568	.108	R82.819
1989	19.070	.030	R19.602	34.211	R72.913	5.602	2.837	.317	.055	.022	R3.160	R6.391	.037	R84.944
1990	19.173	.005	R19.603	33.553	R72.333	6.104	3.046	.336	.060	.029	R2.735	R6.206	.008	R84.652
1991	18.992	.010	R20.033	32.845	R71.880	6.422	3.016	.346	.063	.031	R2.782	R6.238	.067	R84.607
1992	19.122	.035	R20.714	33.527	R73.397	6.479	2.617	.349	.064	.030	R2.933	R5.993	.087	R85.956
1993	19.835	.027	R21.229	R33.744	R74.836	6.410	2.892	.364	.066	.031	R2.910	R6.262	.095	R87.603
1994	19.909	.058	R21.728	R34.562	R76.258	6.694	2.683	.338	.069	.036	R3.030	R6.155	.153	R89.260
1995	20.089	.061	R22.671	R34.437	R77.258	7.075	3.205	.294	.070	.033	R3.104	R6.705	.134	R91.173
1996	21.002	.023	R23.085	R35.673	R79.783	7.087	3.590	.316	.071	.033	R3.159	R7.168	.137	R94.175
1997	21.445	.046	R23.223	R36.160	R80.874	6.597	3.640	.325	.070	.034	R3.108	R7.178	.116	R94.765
1998	21.656	.067	R22.830	R36.817	R81.370	7.068	3.297	.328	.070	.031	R2.931	R6.657	.088	R95.183
1999	21.623	.058	R22.909	R37.838	R82.428	7.610	3.268	.331	.069	.046	R2.967	R6.681	.099	R96.817
2000	22.580	.065	R23.824	R38.264	R84.733	7.862	2.811	.317	.066	.057	R3.013	R6.264	.115	R98.975
2001	21.914	.029	R22.773	R38.186	R82.903	8.033	2.242	.311	.065	.070	R2.627	R5.315	.075	R96.326
2002	21.904	.061	R23.558	R38.227	R83.750	8.143	2.689	.328	.064	.105	R2.706	R5.893	.072	R97.858
2003	22.321	.051	R22.897	R38.809	R84.078	7.959	2.825	.331	.064	.115	R2.817	R6.151	.022	R98.209
2004	22.466	.138	R22.931	R40.294	R85.830	8.222	2.690	.341	.065	.142	R3.023	R6.261	.039	R100.351
2005	R22.785	.044	R22.821	R40.393	R86.043	R8.160	R2.703	R.343	R.066	R.178	R3.114	R6.404	.084	R100.691
2006 <sup>P</sup>	22.511	.061	22.431	39.758	84.760	8.208	2.889	.349	.070	.258	3.277	6.844	.060	99.873

<sup>1</sup> Most values are estimated. See Tables 10.1-10.2c for notes on series components and estimation.

<sup>2</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>3</sup> Natural gas only; excludes supplemental gaseous fuels.

<sup>4</sup> Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel. Does not include the ethanol portion of motor gasoline—ethanol is included in "Biomass."

<sup>5</sup> Conventional hydroelectric power.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.0005 and greater than -0.0005

quadrillion Btu.

Notes: • See "Primary Energy Consumption" in Glossary. • See Table E1 for estimated energy consumption for 1635-1945. • See Note 3, "Electricity Imports and Exports," at end of Section 8.

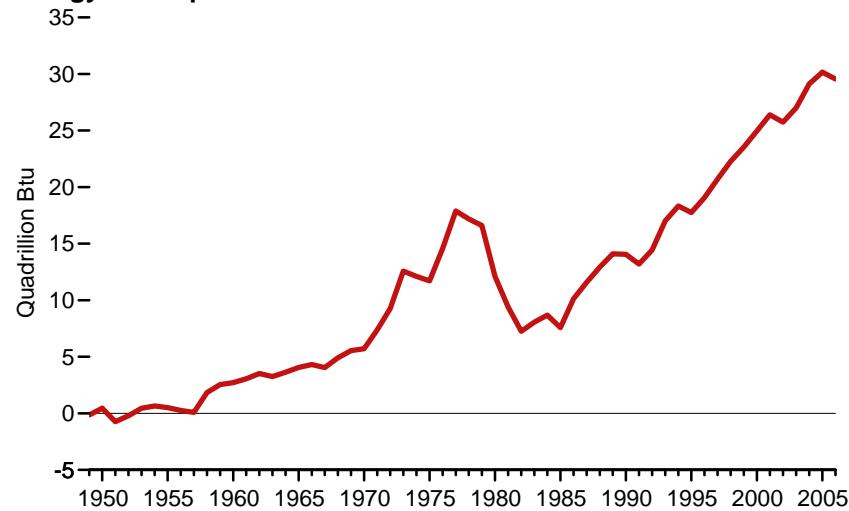
• Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

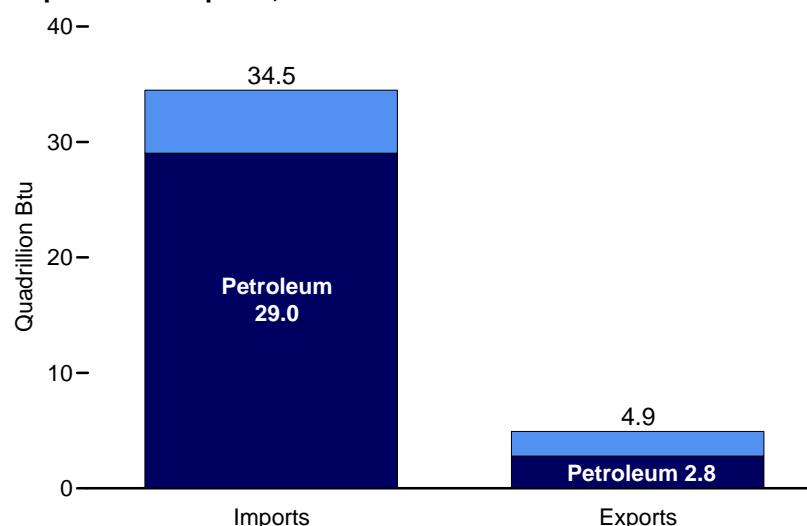
Sources: Tables 5.12, 6.1, 7.1, 7.7, 8.1, 8.2a, 10.1, 10.3, A4, A5, and A6.

**Figure 1.4 Energy Trade by Source, 1949-2006**

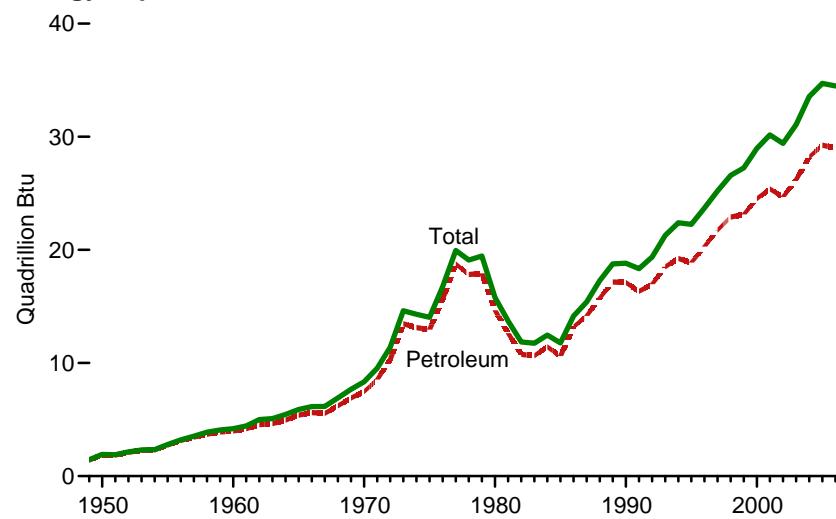
**Energy Net Imports**



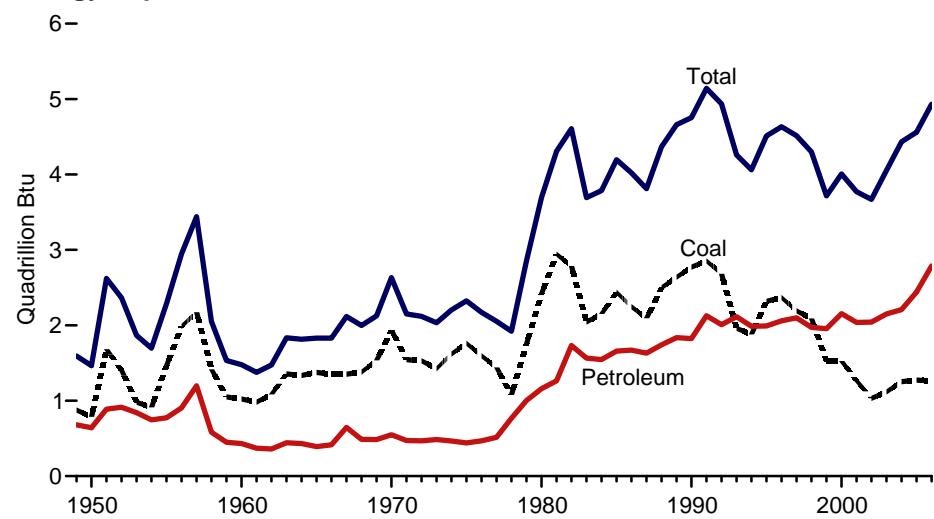
**Imports and Exports, 2006**



**Energy Imports**



**Energy Exports**



Notes: • Negative net imports are net exports. • Because vertical scales differ, graphs should not be compared.

Source: Table 1.4.

**Table 1.4 Energy Trade by Source, Selected Years, 1949-2006**  
 (Quadrillion Btu)

Year	Imports										Exports								Net Imports <sup>1</sup>
	Coal	Coal Coke	Natural Gas	Petroleum			Fuel Ethanol	Electricity	Total	Coal	Coal Coke	Natural Gas	Petroleum			Electricity	Total	Total	
				Crude Oil <sup>2</sup>	Petroleum Products	Total							Crude Oil	Petroleum Products	Total				
1949	0.008	0.007	0.000	0.915	0.513	1.427	NA	0.006	1.448	0.877	0.014	0.021	0.192	0.488	0.680	0.001	1.592	-0.144	
1950	.009	.011	.000	1.056	.830	1.886	NA	.007	1.913	.786	.010	.027	.202	.440	.642	.001	1.465	.448	
1955	.008	.003	.011	1.691	1.061	2.752	NA	.016	2.790	1.465	.013	.032	.067	.707	.774	.002	2.286	.504	
1960	.007	.003	.161	2.196	1.802	3.999	NA	.018	4.188	1.023	.009	.012	.018	.413	.431	.003	1.477	2.710	
1965	.005	.002	.471	2.654	2.748	5.402	NA	.012	5.892	1.376	.021	.027	.006	.386	.392	.013	1.829	4.063	
1970	.001	.004	.846	2.814	4.656	7.470	NA	.021	8.342	1.936	.061	.072	.029	.520	.549	.014	2.632	5.709	
1971	.003	.004	.964	3.573	4.968	8.540	NA	.024	9.535	1.546	.037	.083	.003	.470	.473	.012	2.151	7.384	
1972	.001	.005	1.047	4.712	5.587	10.299	NA	.036	11.387	1.531	.031	.080	.001	.466	.467	.010	2.118	9.269	
1973	.003	.027	1.060	6.887	6.578	13.466	NA	.057	14.613	1.425	.035	.079	.004	.482	.486	.009	2.033	12.580	
1974	.052	.088	.985	7.395	5.731	13.127	NA	.053	14.304	1.620	.032	.078	.006	.458	.465	.009	2.203	12.101	
1975	.024	.045	.978	8.721	4.227	12.948	NA	.038	14.032	1.761	.032	.074	.012	.427	.439	.017	2.323	11.709	
1976	.030	.033	.988	11.239	4.434	15.672	NA	.037	16.760	1.597	.033	.066	.017	.452	.469	.008	2.172	14.588	
1977	.041	.045	1.037	14.027	4.728	18.756	NA	.069	19.948	1.442	.031	.056	.106	.408	.514	.009	2.052	17.896	
1978	.074	.142	.995	13.460	4.364	17.824	NA	.072	19.106	1.078	.017	.053	.335	.432	.767	.005	1.920	17.186	
1979	.051	.099	1.300	13.825	4.108	17.933	NA	.077	19.460	1.753	.036	.056	.497	.505	1.002	.007	2.855	16.605	
1980	.030	.016	1.006	11.195	3.463	14.658	NA	.085	15.796	2.421	.051	.049	.609	.551	1.160	.014	3.695	12.101	
1981	.026	.013	.917	9.336	3.303	12.639	NA	.124	13.719	2.944	.029	.060	.482	.781	1.264	.010	4.307	9.412	
1982	.019	.003	.950	7.418	3.360	10.777	NA	.112	11.861	2.787	.025	.052	.500	1.231	1.732	.012	4.608	7.253	
1983	.032	.001	.940	7.079	3.568	10.647	NA	.132	11.752	2.045	.016	.055	.348	1.217	1.565	.011	3.693	8.059	
1984	.032	.014	.847	7.302	4.131	11.433	NA	.144	12.471	2.151	.026	.055	.384	1.161	1.545	.009	3.786	8.685	
1985	.049	.014	.952	6.814	3.796	10.609	NA	.157	11.781	2.438	.028	.056	.432	1.225	1.657	.017	4.196	7.584	
1986	.055	.008	.748	9.002	4.199	13.201	NA	.139	14.151	2.248	.025	.062	.326	1.344	1.670	.016	4.021	10.130	
1987	.044	.023	.992	10.067	4.095	14.162	NA	.178	15.398	2.093	.014	.055	.319	1.311	1.630	.020	3.812	11.586	
1988	.053	.067	1.296	11.027	4.720	15.747	NA	.133	17.296	2.499	.027	.075	.329	1.412	1.741	.024	4.366	12.929	
1989	.071	.057	1.387	12.596	4.565	17.162	NA	.089	18.766	2.637	.027	.109	.300	1.536	1.836	.052	4.661	14.105	
1990	.067	.019	1.551	12.766	4.351	17.117	NA	.063	18.817	2.772	.014	.087	.230	1.594	1.824	.055	4.752	14.065	
1991	.085	.029	1.798	12.553	3.794	16.348	NA	.075	18.335	2.854	.020	.132	.246	1.882	2.128	.008	5.141	13.194	
1992	.095	.052	2.161	13.253	3.714	16.968	NA	.096	19.372	2.682	.017	.220	.188	1.819	2.008	.010	4.937	14.435	
1993	.205	.053	2.397	14.749	3.761	18.510	.001	.107	21.273	1.962	.026	.142	.208	1.907	2.115	.012	4.258	R17.015	
1994	.222	.083	2.682	15.340	3.905	19.244	.001	.160	22.391	1.879	.024	.164	.209	1.779	1.988	.007	4.061	18.330	
1995	.237	.095	2.901	15.669	3.213	18.882	.001	.146	22.262	2.318	.034	.156	.200	1.791	1.991	.012	4.511	17.751	
1996	.203	.063	3.002	16.341	3.944	20.285	.001	.148	23.703	2.368	.040	.155	.233	1.825	2.059	.011	4.633	19.070	
1997	.187	.078	3.063	17.876	3.865	21.740	(s)	.147	25.216	2.193	.031	.159	.228	1.872	2.100	.031	4.514	20.702	
1998	.218	.095	3.225	18.916	3.992	22.908	(s)	.135	26.581	2.092	.028	.161	.233	1.740	1.972	.047	4.299	22.282	
1999	.227	.080	3.664	18.935	4.198	23.133	(s)	.147	27.253	1.525	.022	.164	.250	1.705	1.955	.049	3.715	23.538	
2000	.313	.094	3.869	19.783	4.749	24.532	(s)	.166	28.973	1.528	.028	.245	.106	2.048	2.154	.051	4.006	24.967	
2001	.495	.063	4.068	20.348	5.052	25.400	.001	.131	30.158	1.265	.033	.377	.043	1.996	2.039	.056	3.770	26.387	
2002	.422	.080	4.104	19.920	4.755	24.676	.001	.125	29.408	1.032	.020	.520	.019	2.023	2.042	.054	3.668	25.740	
2003	.626	.068	4.042	21.060	5.160	26.220	.001	.104	31.062	1.117	.018	.686	.026	2.124	2.151	.082	4.054	27.008	
2004	.682	.170	4.365	22.082	6.127	28.209	.013	.117	R33.556	1.253	.033	.862	.057	2.151	2.208	.078	4.433	R29.122	
2005	.762	.088	R4.450	R22.091	R7.169	R29.259	.011	.152	R34.721	1.273	.043	R.735	R.067	2.374	R2.442	.068	R4.561	R30.160	
2006 <sup>P</sup>	.906	.101	4.248	22.035	6.995	29.030	.061	.145	34.491	1.264	.040	.756	.052	2.736	2.788	.084	4.931	29.560	

<sup>1</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>2</sup> Includes imports into the Strategic Petroleum Reserve, which began in 1977.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.0005 quadrillion Btu.

Notes: • Includes trade between the United States (50 States and the District of Columbia) and its

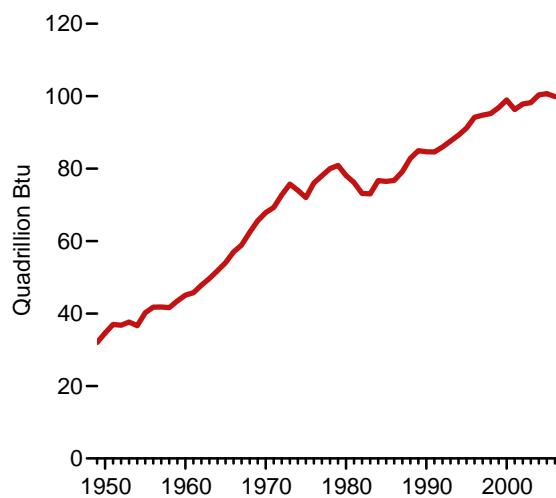
territories and possessions. • See Note 3, "Electricity Imports and Exports," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

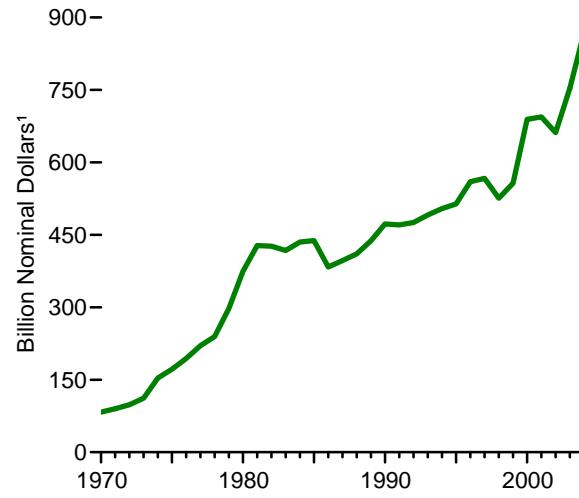
Sources: Tables 5.1, 5.3, 5.5, 6.1, 7.1, 7.7, 8.1, 10.3, A2, A4, A5, and A6.

**Figure 1.5 Energy Consumption and Expenditures Indicators**

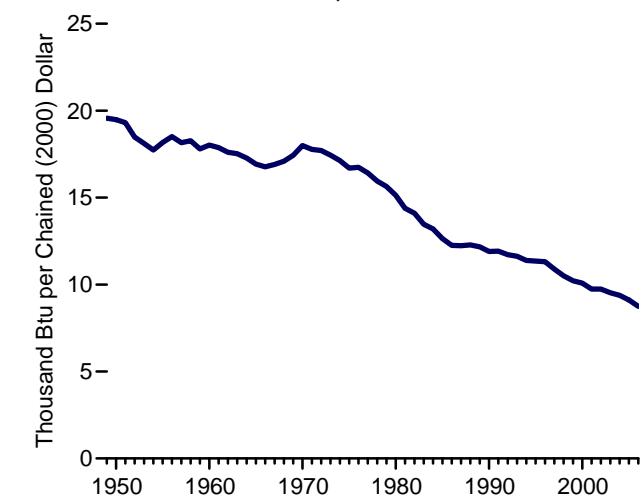
**Energy Consumption, 1949-2006**



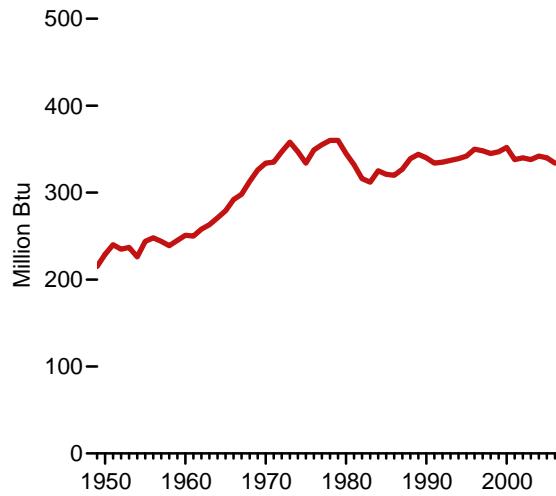
**Energy Expenditures, 1970-2004**



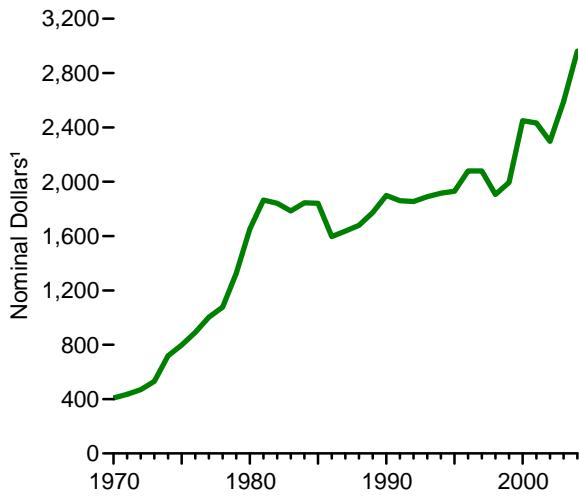
**Energy Consumption per Real Dollar<sup>2</sup> of Gross Domestic Product, 1949-2006**



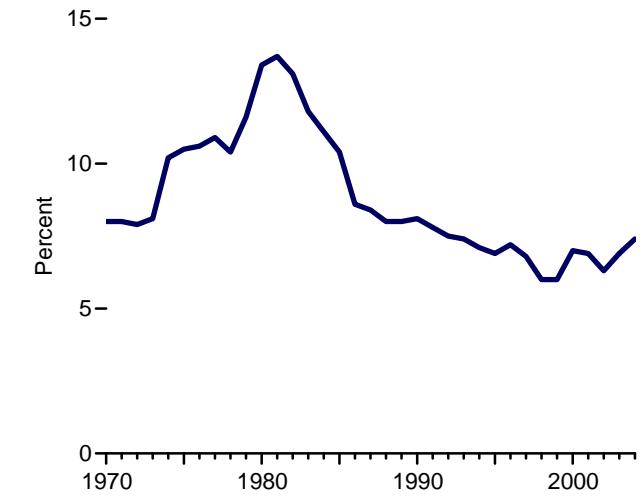
**Energy Consumption per Person, 1949-2006**



**Energy Expenditures per Person, 1970-2004**



**Energy Expenditures as Share of Gross Domestic Product, 1970-2004**



<sup>1</sup> See "Nominal Dollars" in Glossary

<sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators, See Appendix D1.

Source: Table 1.5.

**Table 1.5 Energy Consumption, Expenditures, and Emissions Indicators, Selected Years, 1949-2006**

Year	Energy Consumption	Energy Consumption per Person	Energy Expenditures <sup>1</sup>	Energy Expenditures <sup>1</sup> per Person	Gross Domestic Product (GDP)	Energy Expenditures <sup>1</sup> as Share of GDP	Gross Domestic Product (GDP)	Energy Consumption per Dollar of GDP	Greenhouse Gas Emissions <sup>2</sup> per Dollar of GDP	Carbon Dioxide Emissions <sup>3</sup> per Dollar of GDP
	Quadrillion Btu	Million Btu	Million Nominal Dollars <sup>4</sup>	Nominal Dollars <sup>4</sup>	Billion Nominal Dollars <sup>4</sup>	Percent	Billion Chained (2000) Dollars <sup>5</sup>	Thousand Btu per Chained (2000) Dollar <sup>5</sup>	Metric Tons Carbon Dioxide Equivalent per Million Chained (2000) Dollars <sup>5</sup>	Metric Tons Carbon Dioxide per Million Chained (2000) Dollars <sup>5</sup>
1949	31.98	215	NA	NA	267.3	NA	1,634.6	19.57	NA	NA
1950	34.62	229	NA	NA	293.8	NA	1,777.3	19.48	NA	NA
1955	40.21	244	NA	NA	414.8	NA	2,212.8	18.17	NA	NA
1960	45.09	251	NA	NA	526.4	NA	2,501.8	18.02	NA	NA
1965	54.02	279	NA	NA	719.1	NA	3,191.1	16.93	NA	NA
1970	67.84	334	82,911	408	1,038.5	8.0	3,771.9	17.99	NA	NA
1971	69.29	335	90,071	435	1,127.1	8.0	3,898.6	17.77	NA	NA
1972	72.70	347	98,108	469	1,238.3	7.9	4,105.0	17.71	NA	NA
1973	75.71	358	111,928	530	1,382.7	8.1	4,341.5	17.44	NA	NA
1974	73.99	347	153,370	719	1,500.0	10.2	4,319.6	17.13	NA	NA
1975	72.00	334	171,846	798	1,638.3	10.5	4,311.2	16.70	NA	NA
1976	76.01	349	193,897	891	1,825.3	10.6	4,540.9	16.74	NA	NA
1977	78.00	355	220,461	1,003	2,030.9	10.9	4,750.5	16.42	NA	NA
1978	79.99	360	239,230	1,077	2,294.7	10.4	5,015.0	15.95	NA	NA
1979	80.90	360	297,543	1,325	2,563.3	11.6	5,173.4	15.64	NA	NA
1980	R78.12	R345	374,346	1,652	2,789.5	13.4	5,161.7	R15.13	1,131	917
1981	R76.17	R332	427,877	1,865	3,128.4	13.7	5,291.7	R14.39	1,085	872
1982	R73.15	316	426,437	1,841	3,255.0	13.1	5,189.3	R14.10	1,053	843
1983	R73.04	R312	417,419	1,785	3,536.7	11.8	5,423.8	R13.47	998	800
1984	R76.71	R325	434,982	1,845	3,933.2	11.1	5,813.6	R13.20	982	788
1985	R76.49	R321	438,184	1,842	4,220.3	10.4	6,053.7	R12.64	946	755
1986	R76.76	320	383,409	1,597	4,462.8	8.6	6,263.6	R12.25	913	731
1987	R79.17	327	396,515	1,637	4,739.5	8.4	6,475.1	R12.23	910	732
1988	R82.82	339	410,426	1,679	5,103.8	8.0	6,742.7	R12.28	907	735
1989	R84.94	344	437,611	1,773	5,484.4	8.0	6,981.4	R12.17	892	723
1990	R84.65	R340	472,539	1,899	5,803.1	8.1	7,112.5	R11.90	R859	R701
1991	R84.61	R334	470,559	1,860	5,995.9	7.8	7,100.5	11.92	R854	R695
1992	R85.96	335	475,587	1,854	6,337.7	7.5	7,336.6	11.72	R844	R687
1993	R87.60	337	491,168	1,890	6,657.4	7.4	7,532.7	R11.63	R833	R682
1994	R89.26	339	504,204	1,916	7,072.2	7.1	7,835.5	R11.39	R815	R665
1995	R91.17	342	514,049	1,930	7,397.7	6.9	8,031.7	11.35	R801	656
1996	R94.17	350	559,954	2,079	7,816.9	7.2	8,328.9	11.31	R794	655
1997	R94.77	348	566,770	2,079	8,304.3	6.8	8,703.5	10.89	R767	R634
1998	R95.18	345	525,737	1,906	8,747.0	6.0	9,066.9	10.50	R740	614
1999	R96.82	347	556,538	1,994	9,268.4	6.0	9,470.3	R10.22	R715	R595
2000	98.98	352	689,199	2,449	9,817.0	7.0	9,817.0	10.08	R707	R592
2001	R96.33	338	R694,066	R2,433	10,128.0	6.9	9,890.7	R9.74	R691	R577
2002	R97.86	340	R661,772	R2,297	10,469.6	6.3	10,048.8	R9.74	R685	572
2003	R98.21	338	R753,397	R2,591	R10,960.8	R6.9	R10,301.0	R9.53	R674	R563
2004	R100.35	342	R869,319	R2,961	R11,712.5	R7.4	R10,703.5	R9.38	R664	R553
2005	R100.69	R340	NA	NA	R12,455.8	NA	R11,048.6	R9.11	R647	R538
2006 <sup>P</sup>	99.87	334	NA	NA	13,244.6	NA	11,413.6	8.75	NA	NA

<sup>1</sup> Expenditures include taxes where data are available.

<sup>2</sup> Greenhouse gas emissions from anthropogenic sources. See Table 12.1.

<sup>3</sup> Carbon dioxide emissions from energy consumption. See Table 12.2.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> See "Chained Dollars" in Glossary.

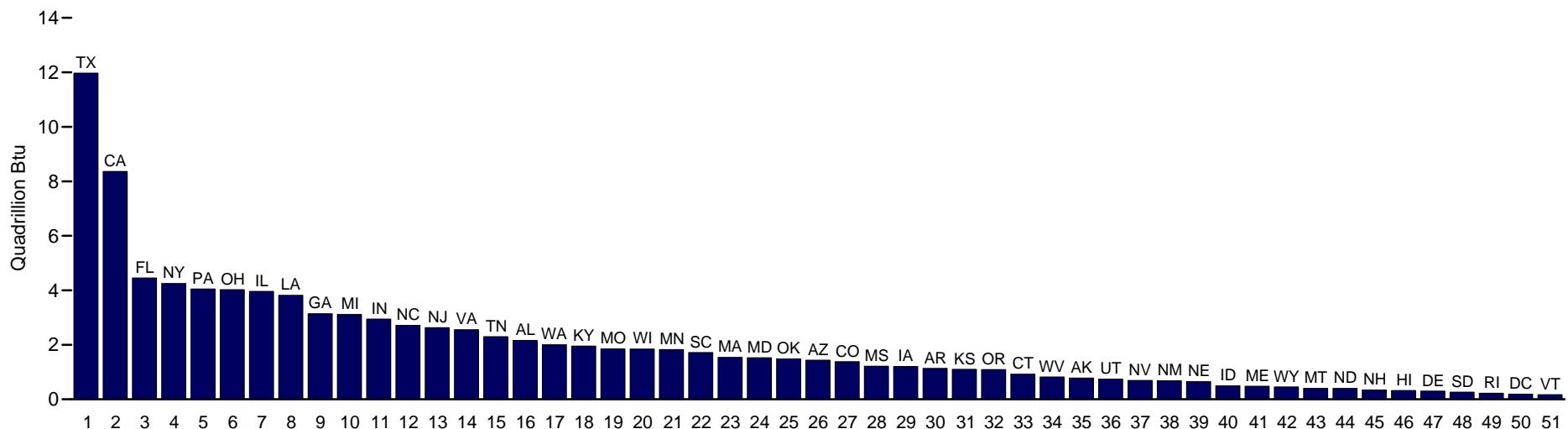
R=Revised. P=Preliminary. NA=Not available.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

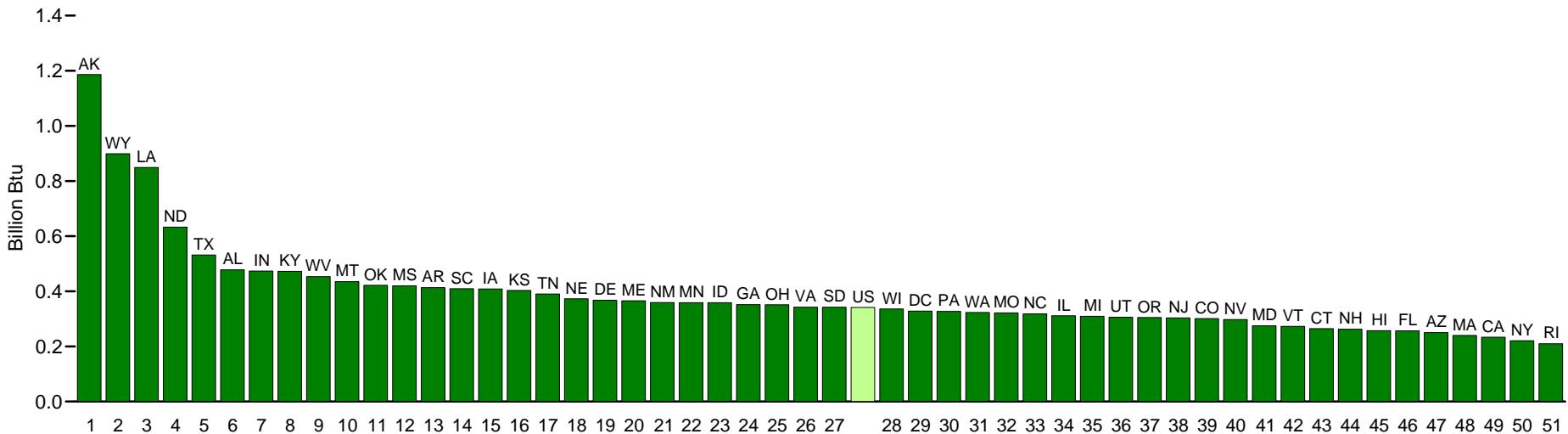
Sources: **Energy Consumption:** Table 1.3. **Energy Expenditures:** Table 3.5. **Gross Domestic Product:** Table D1. **Population Data:** Table D1. **Greenhouse Gas Emissions:** Table 12.1. **Carbon Dioxide Emissions:** Table 12.2. **Other Columns:** Calculated by EIA.

**Figure 1.6 State-Level Energy Consumption and Consumption per Person, 2004**

## Consumption



## Consumption per Person



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 1.6.

**Table 1.6 State-Level Energy Consumption, Expenditures, and Prices, 2004**

Rank	Consumption		Consumption per Person		Expenditures <sup>1</sup>		Expenditures <sup>1</sup> per Person		Prices <sup>1</sup>	
		Trillion Btu		Million Btu		Million Nominal Dollars <sup>2</sup>		Nominal Dollars <sup>2</sup>		Nominal Dollars <sup>2</sup> per Million Btu
1	Texas	11,971.4	Alaska	1,186.2	Texas	95,122	Alaska	6,339	Hawaii	18.05
2	California	8,364.6	Wyoming	898.8	California	90,260	Wyoming	5,749	District of Columbia	16.87
3	Florida	4,452.5	Louisiana	848.9	New York	48,504	Louisiana	5,428	Massachusetts	16.18
4	New York	4,254.0	North Dakota	632.7	Florida	41,112	Texas	4,224	Rhode Island	15.95
5	Pennsylvania	4,049.4	Texas	531.6	Pennsylvania	36,069	North Dakota	4,167	Connecticut	15.86
6	Ohio	4,022.8	Alabama	478.1	Ohio	34,944	Montana	3,435	Vermont	15.83
7	Illinois	3,960.5	Indiana	473.3	Illinois	34,067	Iowa	3,423	New York	15.65
8	Louisiana	3,816.3	Kentucky	472.5	Michigan	27,063	Maine	3,403	New Hampshire	15.52
9	Georgia	3,141.1	West Virginia	453.5	New Jersey	27,060	Indiana	3,364	Nevada	15.43
10	Michigan	3,119.4	Montana	435.0	Georgia	25,659	Alabama	3,360	Arizona	15.24
11	Indiana	2,945.7	Oklahoma	421.8	Louisiana	24,402	Kentucky	3,353	Florida	15.21
12	North Carolina	2,715.6	Mississippi	419.8	North Carolina	23,225	Kansas	3,270	California	15.12
13	New Jersey	2,630.2	Arkansas	413.5	Virginia	21,298	Mississippi	3,268	Maryland	14.11
14	Virginia	2,558.2	South Carolina	409.4	Indiana	20,932	West Virginia	3,228	New Jersey	14.07
15	Tennessee	2,297.7	Iowa	408.2	Massachusetts	17,855	Hawaii	3,207	Delaware	13.64
16	Alabama	2,159.7	Kansas	403.0	Tennessee	17,666	Oklahoma	3,200	North Carolina	13.60
17	Washington	2,004.8	Tennessee	390.4	Missouri	16,370	South Carolina	3,194	New Mexico	13.48
18	Kentucky	1,956.4	Nebraska	373.1	Wisconsin	16,069	Arkansas	3,174	Pennsylvania	13.05
19	Missouri	1,849.3	Delaware	367.7	Washington	15,561	Vermont	3,170	Missouri	12.89
20	Wisconsin	1,847.7	Maine	365.6	Minnesota	15,229	New Jersey	3,119	Ohio	12.85
21	Minnesota	1,826.3	New Mexico	359.0	Alabama	15,180	Nebraska	3,093	Oregon	12.85
22	South Carolina	1,717.5	Minnesota	358.5	Maryland	14,167	Delaware	3,066	Maine	12.80
23	Massachusetts	1,542.9	Idaho	358.4	Kentucky	13,882	Ohio	3,049	Wisconsin	12.69
24	Maryland	1,526.6	Georgia	351.5	Arizona	13,779	Connecticut	3,032	Virginia	12.64
25	Oklahoma	1,485.9	Ohio	351.0	South Carolina	13,397	New Hampshire	3,026	Colorado	12.54
26	Arizona	1,436.6	Virginia	342.4	Colorado	11,805	South Dakota	3,008	South Dakota	12.54
27	Colorado	1,383.9	South Dakota	342.2	Oklahoma	11,274	Tennessee	3,001	South Carolina	12.53
28	Mississippi	1,214.3	Wisconsin	336.0	Connecticut	10,595	Minnesota	2,989	Mississippi	12.51
29	Iowa	1,205.8	District of Columbia	328.2	Iowa	10,111	District of Columbia	2,983	Illinois	12.46
30	Arkansas	1,135.9	Pennsylvania	327.2	Mississippi	9,453	Nevada	2,949	Kansas	12.44
31	Kansas	1,103.5	Washington	323.1	Oregon	9,129	Wisconsin	2,922	Georgia	12.42
32	Oregon	1,093.6	Missouri	321.5	Kansas	8,954	Pennsylvania	2,914	Washington	12.32
33	Connecticut	923.8	North Carolina	318.3	Arkansas	8,718	Georgia	2,872	Oklahoma	12.24
34	West Virginia	821.3	Illinois	311.5	Nevada	6,878	Virginia	2,850	Michigan	12.24
35	Alaska	779.1	Michigan	309.1	West Virginia	5,845	Missouri	2,846	Nebraska	12.18
36	Utah	740.2	Utah	305.7	Utah	5,673	Massachusetts	2,774	Minnesota	12.17
37	Nevada	693.7	Oregon	304.7	Nebraska	5,404	New Mexico	2,745	Tennessee	12.16
38	New Mexico	682.3	New Jersey	303.2	New Mexico	5,217	North Carolina	2,722	Montana	12.12
39	Nebraska	651.9	Colorado	301.0	Maine	4,471	Michigan	2,681	Arkansas	11.89
40	Idaho	499.8	Nevada	297.4	Alaska	4,164	Illinois	2,680	Idaho	11.82
41	Maine	480.3	Maryland	274.9	Hawaii	4,038	Idaho	2,679	Iowa	11.80
42	Wyoming	454.4	Vermont	272.8	New Hampshire	3,928	Colorado	2,567	Texas	11.50
43	Montana	402.9	Connecticut	264.4	Idaho	3,736	Maryland	2,551	Utah	11.39
44	North Dakota	402.3	New Hampshire	262.5	Montana	3,182	Oregon	2,544	Kentucky	11.30
45	New Hampshire	340.7	Hawaii	256.9	Wyoming	2,906	California	2,518	Alabama	11.29
46	Hawaii	323.5	Florida	256.4	North Dakota	2,650	New York	2,514	Alaska	11.09
47	Delaware	304.8	Arizona	250.0	Rhode Island	2,634	Washington	2,508	West Virginia	10.66
48	South Dakota	263.6	Massachusetts	239.7	Delaware	2,541	Rhode Island	2,442	Wyoming	10.29
49	Rhode Island	226.4	California	233.4	South Dakota	2,317	Arizona	2,398	Indiana	10.19
50	District of Columbia	190.3	New York	220.5	Vermont	1,968	Florida	2,367	Louisiana	10.09
51	Vermont	169.3	Rhode Island	209.9	District of Columbia	1,729	Utah	2,343	North Dakota	9.18
	<b>United States</b>	<b><sup>3</sup>100,278.6</b>	<b>United States</b>	<b>341.5</b>	<b>United States</b>	<b><sup>4</sup>869,319</b>	<b>United States</b>	<b>2,961</b>	<b>United States</b>	<b>12.91</b>

<sup>1</sup> Prices and expenditures include taxes where data are available.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Includes 137.8 trillion Btu of coal coke net imports, which are not allocated to the States.

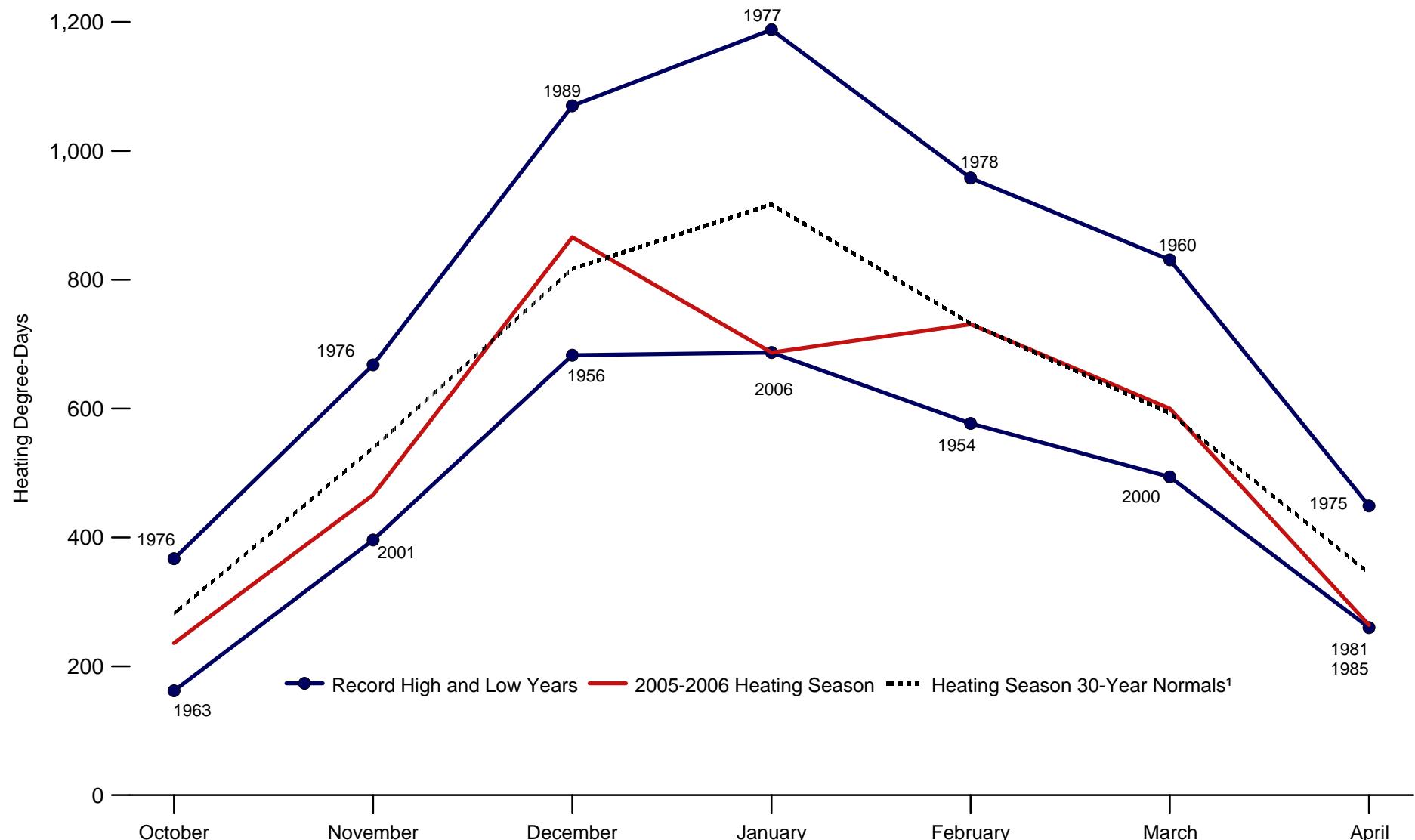
<sup>4</sup> Includes \$1,125 million for coal coke net imports, which are not allocated to the States.

Note: Rankings based on unrounded data.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/states/\\_seds.html](http://www.eia.doe.gov/emeu/states/_seds.html).

Sources: • **Consumption:** Energy Information Administration (EIA), "State Energy Data 2004: Consumption" (June 2007), Tables R1 and R2. • **Expenditures and Prices:** EIA, "State Energy Data 2004: Prices and Expenditures" (June 2007), Table R1. • "State Energy Data 2004" includes State-level data by end-use sector and type of energy. Consumption estimates are annual 1960 through 2004, and price and expenditure estimates are annual 1970 through 2004.

**Figure 1.7 Heating Degree-Days by Month, 1949-2006**



<sup>1</sup> Based on calculations of data from 1971 through 2000.

Source: Table 1.7.

**Table 1.7 Heating Degree-Days by Month, Selected Years, 1949-2006**

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
1949	858	701	611	330	128	21	7	9	94	209	503	763	4,234
1950	761	721	693	412	162	40	11	18	85	196	565	872	4,536
1955	927	759	600	272	121	48	9	6	56	237	600	886	4,521
1960	884	780	831	278	160	33	7	11	48	254	502	936	4,724
1965	907	780	738	355	114	48	11	14	78	271	494	739	4,549
1970	1,063	758	685	344	120	31	4	9	55	253	541	801	4,664
1971	976	760	681	375	194	29	10	12	47	187	553	723	4,547
1972	890	785	608	377	137	49	7	12	65	330	613	832	4,705
1973	893	772	504	356	182	22	6	9	61	212	497	799	4,313
1974	838	754	556	310	171	42	6	13	94	303	524	795	4,406
1975	821	742	686	449	117	37	5	13	100	235	462	805	4,472
1976	974	609	544	309	178	28	8	19	81	367	668	941	4,726
1977	1,188	751	529	270	119	38	6	13	59	295	493	844	4,605
1978	1,061	958	677	350	157	31	7	11	59	283	517	847	4,958
1979	1,079	950	575	364	148	37	6	15	58	271	528	750	4,781
1980	887	831	680	338	142	49	5	10	54	316	564	831	4,707
1981	984	689	620	260	165	25	6	11	76	327	504	845	4,512
1982	1,067	776	620	408	114	62	7	19	75	264	515	692	4,619
1983	874	706	588	421	189	35	6	5	53	251	509	990	4,627
1984	1,000	645	704	371	172	28	7	7	88	223	565	704	4,514
1985	1,057	807	557	260	123	47	5	17	69	243	506	951	4,642
1986	859	734	542	295	123	30	9	18	76	258	558	793	4,295
1987	920	714	573	309	107	20	8	13	61	345	491	773	4,334
1988	1,004	778	594	344	134	30	3	5	72	352	506	831	4,653
1989	789	832	603	344	163	32	5	14	73	259	542	1,070	4,726
1990	728	655	535	321	184	29	6	10	56	246	457	789	4,016
1991	921	639	564	287	98	30	6	7	69	242	586	751	4,200
1992	852	644	603	345	152	46	14	24	74	301	564	822	4,441
1993	860	827	664	368	128	38	11	9	89	302	580	824	4,700
1994	1,031	813	594	293	174	21	6	16	65	268	479	723	4,483
1995	847	750	556	375	174	31	4	7	77	233	605	872	4,531
1996	945	748	713	360	165	27	8	9	72	276	630	760	4,713
1997	932	672	552	406	198	31	7	16	63	273	592	800	4,542
1998	765	623	596	331	109	41	4	5	33	245	482	717	3,951
1999	861	647	645	319	139	31	5	12	62	275	413	760	4,169
2000	886	643	494	341	115	29	12	12	69	244	610	1,005	4,460
2001	935	725	669	302	115	29	8	6	R69	R260	R396	R689	R4,203
2002	R776	R669	R622	R281	R184	23	3	8	R37	R298	R560	R812	R4,273
2003	944	801	572	344	165	41	4	5	62	R260	477	784	R4,459
2004	968	766	495	303	107	37	7	20	47	251	487	802	4,290
2005	R859	R676	R648	R305	R186	R25	3	R6	R39	R236	466	R866	R4,315
2006 <sup>P</sup>	687	731	600	264	137	23	2	9	82	304	467	690	3,996
Normals <sup>1</sup>	917	732	593	345	159	39	9	15	77	282	539	817	4,524

<sup>1</sup> Based on calculations of data from 1971 through 2000.

R=Revised. P=Preliminary.

Notes: • This table excludes Alaska and Hawaii. • Degree-days are relative measurements of outdoor air temperature. Heating degree-days are deviations below the mean daily temperature of 65° F. For example, a weather station recording a mean daily temperature of 40° F would report 25 heating degree-days. • Temperature information recorded by weather stations is used to calculate State-wide degree-day averages based on resident State population. Beginning in July 2001, data are weighted by the

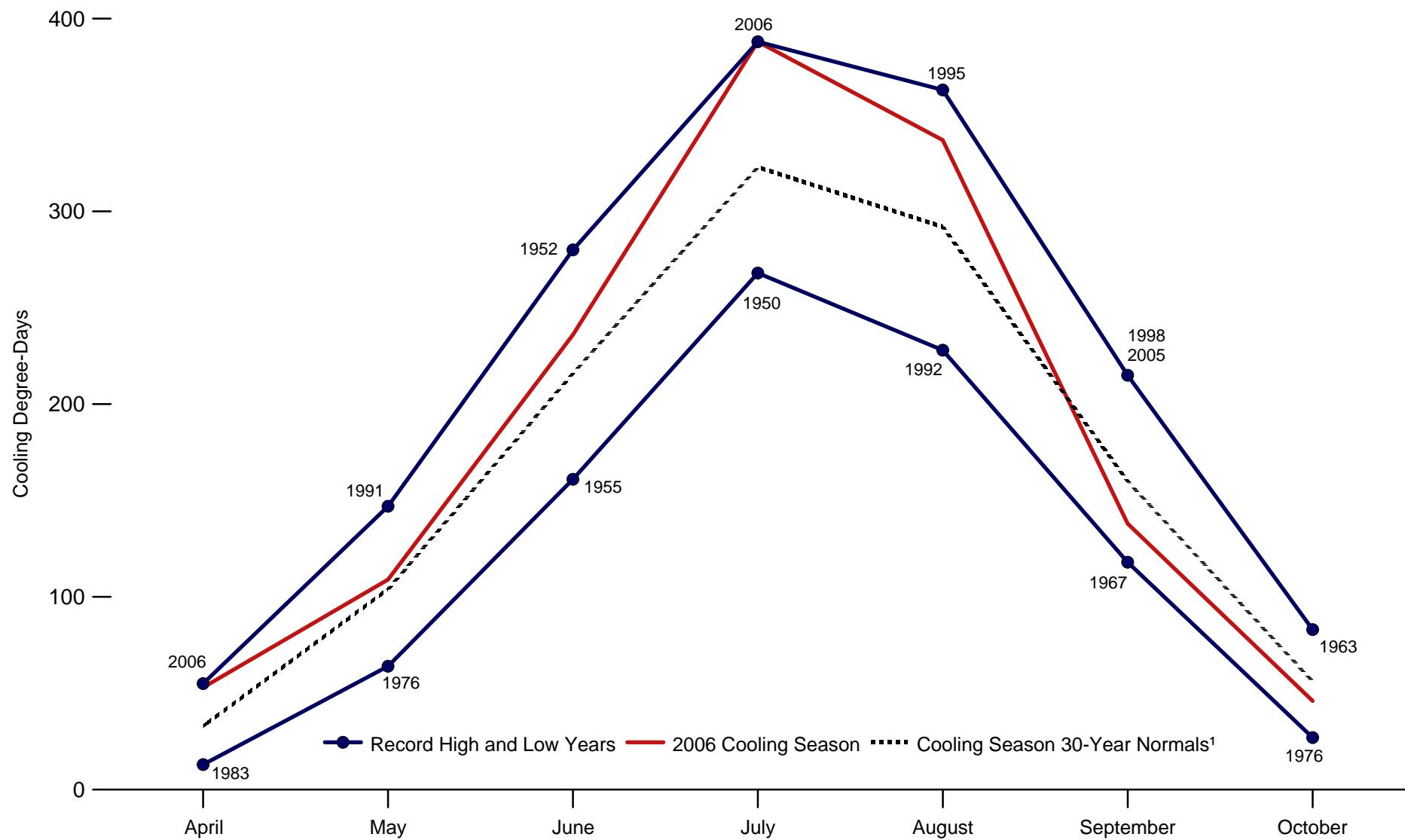
2000 population. The population-weighted State figures are aggregated into Census divisions and the national average.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>. • For current data, see <http://www.eia.doe.gov/emeu/mer/overview.html>.

Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center, Asheville, North Carolina, Historical Climatology Series 5-1.

**Figure 1.8 Cooling Degree-Days by Month, 1949-2006**

---



<sup>1</sup> Based on calculations of data from 1971 through 2000.

Source: Table 1.8.

**Table 1.8 Cooling Degree-Days by Month, Selected Years, 1949-2006**

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
1949	16	14	14	27	110	253	367	294	131	70	12	10	1,318
1950	27	12	13	21	105	201	268	244	128	78	9	4	1,110
1955	6	7	20	45	121	161	381	355	182	50	10	6	1,344
1960	7	4	6	37	76	215	301	302	181	59	15	3	1,206
1965	9	7	10	42	125	179	280	273	155	48	19	6	1,153
1970	3	4	10	36	104	201	323	313	185	48	6	9	1,242
1971	8	7	10	22	68	244	288	269	182	77	12	17	1,204
1972	15	6	22	36	88	174	299	276	169	44	9	8	1,146
1973	7	3	24	18	75	236	318	303	166	66	21	4	1,241
1974	21	6	28	29	101	173	317	267	120	40	10	5	1,117
1975	14	11	14	24	117	203	301	296	120	55	12	5	1,172
1976	5	11	23	27	64	208	282	243	127	27	8	4	1,029
1977	2	5	21	35	121	212	351	293	180	44	15	6	1,285
1978	3	1	10	31	93	218	310	300	180	52	19	9	1,226
1979	4	4	13	32	82	187	295	266	160	53	11	6	1,113
1980	9	4	13	23	95	199	374	347	192	42	10	5	1,313
1981	3	6	10	52	75	257	333	275	138	43	12	5	1,209
1982	6	10	21	26	115	165	318	262	140	47	15	11	1,136
1983	6	5	9	13	72	193	353	362	172	58	12	5	1,260
1984	5	6	14	24	92	233	291	312	143	70	9	15	1,214
1985	3	5	22	39	108	193	313	269	145	68	25	4	1,194
1986	8	10	17	33	106	231	340	259	161	52	23	9	1,249
1987	5	7	13	23	127	244	334	298	156	40	14	8	1,269
1988	5	5	13	28	89	218	359	348	149	45	18	6	1,283
1989	15	7	19	36	88	208	312	266	138	49	16	2	1,156
1990	15	14	21	29	86	234	316	291	172	57	16	9	1,260
1991	10	9	19	42	147	235	336	305	149	62	8	9	1,331
1992	6	10	15	29	77	170	286	228	150	49	13	7	1,040
1993	13	5	11	19	91	207	347	317	146	47	11	4	1,218
1994	7	9	18	37	76	262	328	263	141	50	20	9	1,220
1995	7	7	18	29	91	202	348	363	150	61	12	5	1,293
1996	7	6	8	26	116	226	299	287	139	45	14	7	1,180
1997	8	11	31	19	81	189	315	268	171	48	10	5	1,156
1998	12	7	10	23	135	228	350	337	215	62	20	11	1,410
1999	12	11	12	40	94	219	374	305	152	55	17	6	1,297
2000	10	10	25	28	131	221	284	302	156	50	8	4	1,229
2001	3	12	11	37	114	220	302	333	138	46	18	11	1,245
2002	8	6	17	53	92	R <sup>243</sup>	R <sup>370</sup>	R <sup>332</sup>	202	57	11	5	R <sup>1,396</sup>
2003	5	7	24	30	110	187	336	345	156	65	21	4	1,290
2004	6	6	28	29	138	208	299	252	177	67	17	5	1,232
2005	R <sup>10</sup>	7	R <sup>12</sup>	R <sup>24</sup>	R <sup>82</sup>	R <sup>250</sup>	367	R <sup>351</sup>	R <sup>215</sup>	R <sup>55</sup>	R <sup>20</sup>	4	R <sup>1,397</sup>
2006 <sup>P</sup>	13	5	18	53	109	236	388	337	138	46	14	11	1,368
Normals <sup>1</sup>	R 8	8	18	R 33	R 104	R 216	R 323	R 292	R 160	R 56	R 16	8	R 1,242

<sup>1</sup> Based on calculations of data from 1971 through 2000.

R=Revised. P=Preliminary.

Notes: • This table excludes Alaska and Hawaii. • Degree-days are relative measurements of outdoor air temperature. Cooling degree-days are deviations above the mean daily temperature of 65° F. For example, a weather station recording a mean daily temperature of 78° F would report 13 cooling degree-days. • Temperature information recorded by weather stations is used to calculate State-wide degree-day averages based on resident State population. Beginning in 2002, data are weighted by the

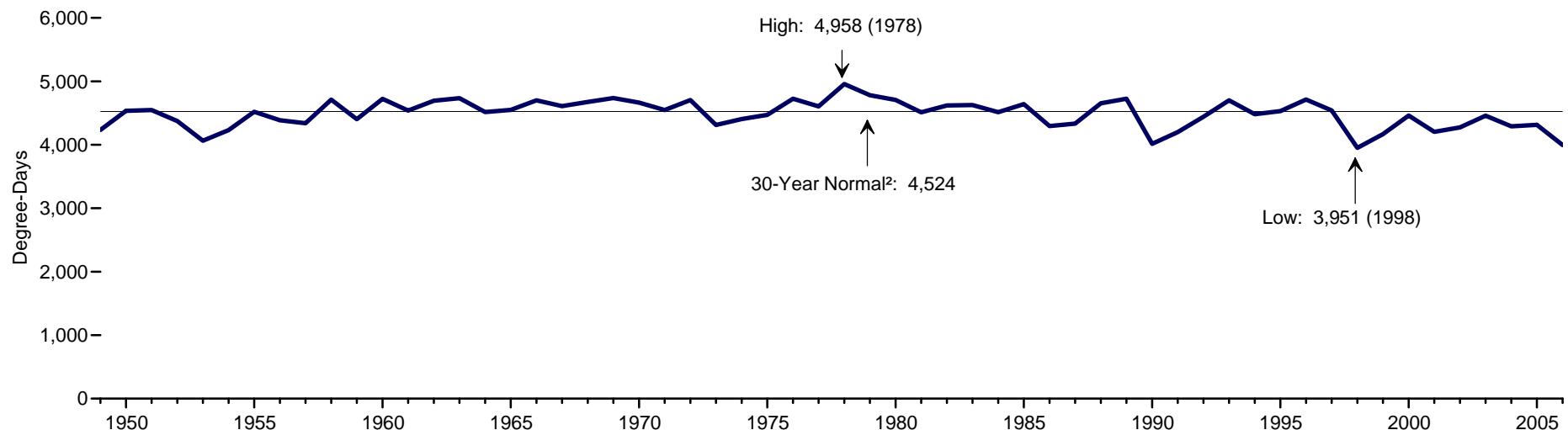
2000 population. The population-weighted State figures are aggregated into Census divisions and the national average.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>. • For current data, see <http://www.eia.doe.gov/emeu/mer/overview.html>.

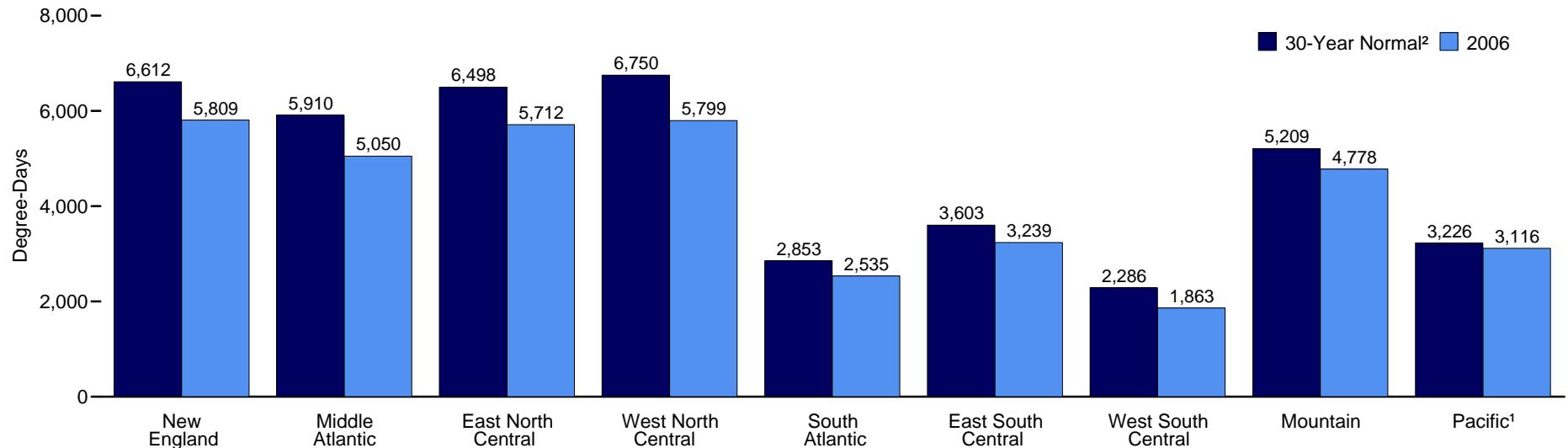
Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center, Asheville, North Carolina, Historical Climatology Series 5-2.

**Figure 1.9 Heating Degree-Days by Census Division**

**U.S.<sup>1</sup> Heating Degree-Days, 1949-2006**



**Heating Degree-Days by Census Division, 2006**



<sup>1</sup> Excludes Alaska and Hawaii.

<sup>2</sup> Normals are based on calculations of data from 1971 through 2000.

Note: See Appendix C for Census Divisions.

Source: Table 1.9.

**Table 1.9 Heating Degree-Days by Census Division, Selected Years, 1949-2006**

Year	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific <sup>1</sup>	United States <sup>1</sup>
1949	5,829	5,091	5,801	6,479	2,367	2,942	2,133	5,483	3,729	4,234
1950	6,470	5,765	6,619	7,136	2,713	3,315	1,974	4,930	3,355	4,536
1955	6,577	5,708	6,101	6,630	2,786	3,314	2,083	5,517	3,723	4,521
1960	6,561	5,901	6,544	6,884	3,147	3,958	2,551	5,328	3,309	4,724
1965	6,825	5,933	6,284	6,646	2,830	3,374	2,078	5,318	3,378	4,549
1970	6,839	5,943	6,455	6,835	2,997	3,685	2,396	5,436	3,257	4,664
1971	6,695	5,761	6,236	6,594	2,763	3,395	1,985	5,585	3,698	4,547
1972	7,001	6,064	6,772	7,094	2,759	3,438	2,259	5,352	3,376	4,705
1973	6,120	5,327	5,780	6,226	2,718	3,309	2,256	5,562	3,383	4,313
1974	6,621	5,670	6,259	6,478	2,551	3,171	2,080	5,281	3,294	4,406
1975	6,362	5,477	6,169	6,678	2,640	3,336	2,187	5,693	3,623	4,472
1976	6,839	6,097	6,768	6,670	3,040	3,881	2,446	5,303	3,115	4,726
1977	6,579	5,889	6,538	6,506	3,047	3,812	2,330	5,060	3,135	4,605
1978	7,061	6,330	7,095	7,324	3,187	4,062	2,764	5,370	3,168	4,958
1979	6,348	5,851	6,921	7,369	2,977	3,900	2,694	5,564	3,202	4,781
1980	6,900	6,143	6,792	6,652	3,099	3,855	2,378	5,052	2,986	4,707
1981	6,612	5,989	6,446	6,115	3,177	3,757	2,162	4,671	2,841	4,512
1982	6,697	5,866	6,542	7,000	2,721	3,357	2,227	5,544	3,449	4,619
1983	6,305	5,733	6,423	6,901	3,057	3,892	2,672	5,359	3,073	4,627
1984	6,442	5,777	6,418	6,582	2,791	3,451	2,194	5,592	3,149	4,514
1985	6,571	5,660	6,546	7,119	2,736	3,602	2,466	5,676	3,441	4,642
1986	6,517	5,665	6,150	6,231	2,686	3,294	2,058	4,870	2,807	4,295
1987	6,546	5,699	5,810	5,712	2,937	3,466	2,292	5,153	3,013	4,334
1988	6,715	6,088	6,590	6,634	3,122	3,800	2,346	5,148	2,975	4,653
1989	6,887	6,134	6,834	6,996	2,944	3,713	2,439	5,173	3,061	4,726
1990	5,848	4,998	5,681	6,011	2,230	2,929	1,944	5,146	3,148	4,016
1991	5,960	5,177	5,906	6,319	2,503	3,211	2,178	5,259	3,109	4,200
1992	6,844	5,964	6,297	6,262	2,852	3,498	2,145	5,054	2,763	4,441
1993	6,728	5,948	6,646	7,168	2,981	3,768	2,489	5,514	3,052	4,700
1994	6,672	5,934	6,378	6,509	2,724	3,394	2,108	5,002	3,155	4,483
1995	6,559	5,831	6,664	6,804	2,967	3,626	2,145	4,953	2,784	4,531
1996	6,679	5,986	6,947	7,345	3,106	3,782	2,285	5,011	2,860	4,713
1997	R <sup>6,661</sup>	5,809	6,617	R <sup>6,761</sup>	2,845	3,664	2,418	R <sup>5,188</sup>	2,754	4,542
1998	5,680	4,812	5,278	5,774	2,429	3,025	2,021	5,059	3,255	3,951
1999	5,952	5,351	5,946	5,921	2,652	3,142	1,835	4,768	3,158	4,169
2000	6,489	5,774	6,284	6,456	2,959	3,548	2,194	4,881	3,012	4,460
2001	R <sup>6,055</sup>	R <sup>5,323</sup>	5,824	R <sup>6,184</sup>	R <sup>2,641</sup>	R <sup>3,312</sup>	R <sup>2,187</sup>	R <sup>4,895</sup>	R <sup>3,136</sup>	R <sup>4,203</sup>
2002	6,099	5,372	6,122	R <sup>6,465</sup>	2,671	3,420	2,307	R <sup>5,018</sup>	3,132	R <sup>4,273</sup>
2003	6,851	6,090	6,528	6,539	2,891	3,503	2,230	R <sup>4,605</sup>	2,918	R <sup>4,459</sup>
2004	6,612	5,749	6,199	6,290	2,748	3,289	2,088	4,844	2,925	4,290
2005	R <sup>6,551</sup>	R <sup>5,804</sup>	R <sup>6,241</sup>	R <sup>6,202</sup>	R <sup>2,844</sup>	R <sup>3,402</sup>	R <sup>2,051</sup>	R <sup>4,759</sup>	R <sup>2,959</sup>	R <sup>4,315</sup>
2006 <sup>P</sup>	5,809	5,050	5,712	5,799	2,535	3,239	1,863	4,778	3,116	3,996
Normals <sup>2</sup>	6,612	5,910	6,498	6,750	2,853	3,603	2,286	5,209	3,226	4,524

<sup>1</sup> Excludes Alaska and Hawaii.

<sup>2</sup> Based on calculations of data from 1971 through 2000.

R=Revised. P=Preliminary.

Notes: • Degree-days are relative measurements of outdoor air temperature. Heating degree-days are deviations below the mean daily temperature of 65° F. For example, a weather station recording a mean daily temperature of 40° F would report 25 heating degree-days. • Temperature information recorded by weather stations is used to calculate State-wide degree-day averages based on resident State population.

Beginning in July 2001, data are weighted by the 2000 population. The population-weighted State figures are aggregated into Census divisions and the national average. • See Appendix C for Census divisions.

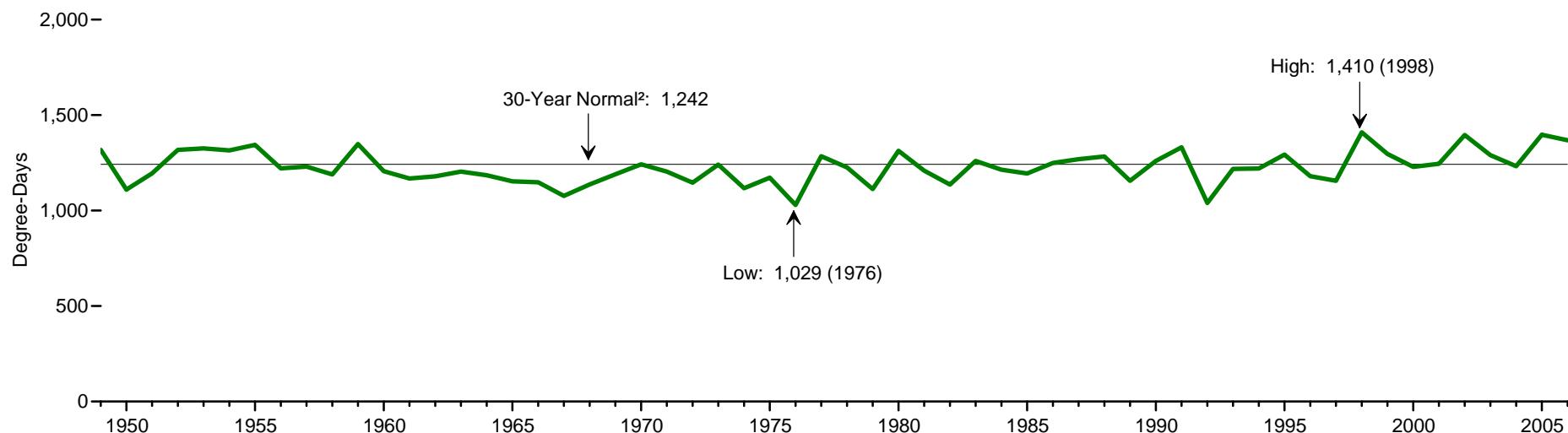
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

• For current data, see <http://www.eia.doe.gov/emeu/mer/overview.html>.

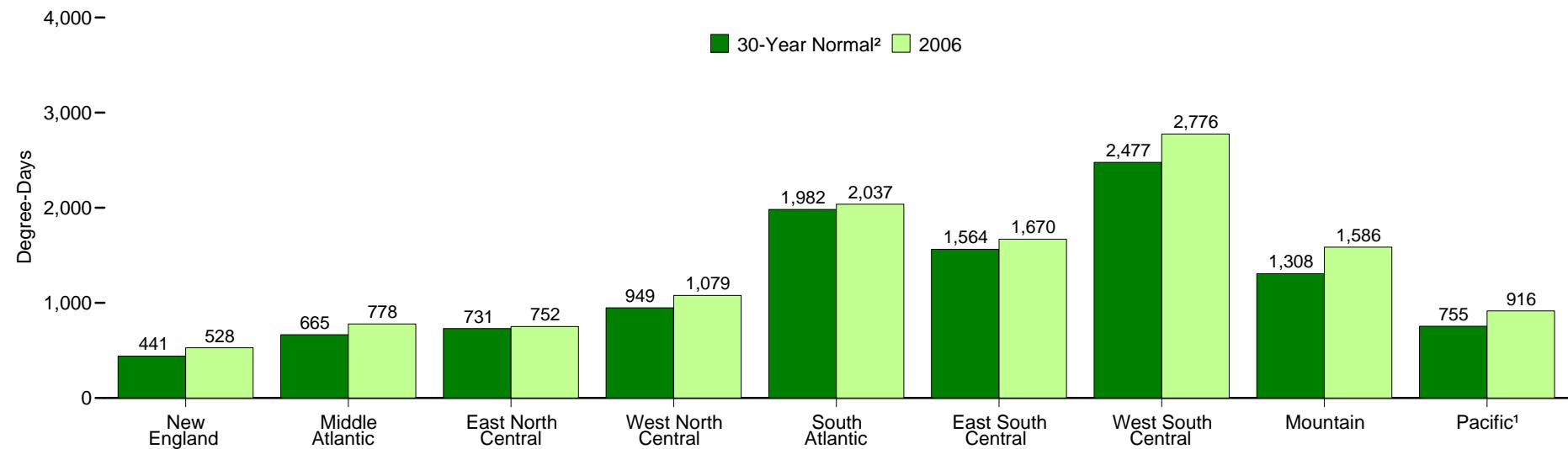
Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center, Asheville, North Carolina, Historical Climatology Series 5-1.

**Figure 1.10 Cooling Degree-Days by Census Division**

**U.S.<sup>1</sup> Cooling Degree-Days, 1949-2006**



**Cooling Degree-Days by Census Division, 2006**



<sup>1</sup> Excludes Alaska and Hawaii.

<sup>2</sup> Normals are based on calculations of data from 1971 through 2000.

Note: See Appendix C for Census Divisions.

Source: Table 1.10.

**Table 1.10 Cooling Degree-Days by Census Division, Selected Years, 1949-2006**

Year	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific <sup>1</sup>	United States <sup>1</sup>
1949	654	901	949	1,038	2,128	1,776	2,510	1,198	593	1,318
1950	353	542	602	729	1,919	1,568	2,473	1,120	597	1,110
1955	602	934	1,043	1,238	2,045	1,791	2,643	1,124	560	1,344
1960	368	640	722	961	1,926	1,613	2,492	1,308	770	1,206
1965	352	638	688	914	1,931	1,634	2,579	961	542	1,153
1970	479	779	827	1,066	2,007	1,662	2,375	1,163	689	1,242
1971	465	730	783	960	1,932	1,577	2,448	1,074	685	1,204
1972	364	614	643	908	1,843	1,525	2,513	1,141	698	1,146
1973	551	830	864	1,009	2,000	1,665	2,359	1,123	624	1,241
1974	393	614	626	878	1,842	1,382	2,342	1,188	690	1,117
1975	467	708	788	1,003	2,011	1,520	2,261	1,031	547	1,172
1976	402	597	619	939	1,675	1,232	2,035	1,058	620	1,029
1977	407	689	823	1,122	2,020	1,808	2,720	1,256	715	1,285
1978	378	615	741	1,027	1,972	1,685	2,638	1,174	738	1,226
1979	434	588	618	871	1,833	1,412	2,242	1,164	770	1,113
1980	487	793	816	1,217	2,075	1,834	2,734	1,202	658	1,313
1981	436	657	658	924	1,889	1,576	2,498	1,331	876	1,209
1982	321	541	643	859	1,958	1,537	2,502	1,121	619	1,136
1983	538	799	934	1,178	1,925	1,579	2,288	1,174	776	1,260
1984	468	649	724	955	1,865	1,508	2,469	1,190	956	1,214
1985	372	627	643	830	2,004	1,596	2,599	1,210	737	1,194
1986	301	626	738	1,021	2,149	1,792	2,618	1,188	664	1,249
1987	406	729	918	1,115	2,067	1,718	2,368	1,196	706	1,269
1988	545	782	975	1,230	1,923	1,582	2,422	1,320	729	1,283
1989	426	658	652	864	1,977	1,417	2,295	1,330	685	1,156
1990	477	656	647	983	2,143	1,622	2,579	1,294	827	1,260
1991	511	854	959	1,125	2,197	1,758	2,499	1,182	672	1,331
1992	276	460	449	637	1,777	1,293	2,201	1,206	905	1,040
1993	486	764	735	817	2,092	1,622	2,369	1,113	708	1,218
1994	548	722	664	887	2,005	1,448	2,422	1,436	801	1,220
1995	507	803	921	985	2,081	1,671	2,448	1,234	754	1,293
1996	400	623	629	821	1,867	1,474	2,515	1,381	856	1,180
1997	395	586	574	873	1,886	1,393	2,361	1,335	921	1,156
1998	505	788	889	1,138	2,277	1,928	3,026	1,271	732	1,410
1999	631	882	855	970	2,024	1,733	2,645	1,242	635	1,297
2000	317	542	658	1,023	1,929	1,736	2,787	1,488	756	1,229
2001	519	722	744	1,028	1,891	1,535	2,565	1,498	794	1,245
2002	570	863	933	R1,087	2,209	1,808	2,545	1,543	739	R1,396
2003	522	685	645	946	2,007	1,494	2,522	1,639	941	1,290
2004	402	670	604	752	2,037	1,549	2,485	1,376	823	1,232
2005	R642	R990	R960	R1,094	R2,081	R1,696	R2,636	R1,457	R728	R1,397
2006 <sup>P</sup>	528	778	752	1,079	2,037	1,670	2,776	1,586	916	1,368
Normals <sup>2</sup>	R441	R665	R731	R949	R1,982	R1,564	R2,477	R1,308	R755	R1,242

<sup>1</sup> Excludes Alaska and Hawaii.

<sup>2</sup> Based on calculations of data from 1971 through 2000.

R=Revised. P=Preliminary.

Notes: • Degree-days are relative measurements of outdoor air temperature. Cooling degree-days are deviations above the mean daily temperature of 65° F. For example, a weather station recording a mean daily temperature of 78° F would report 13 cooling degree-days. • Temperature information recorded by weather stations is used to calculate State-wide degree-day averages based on resident State population.

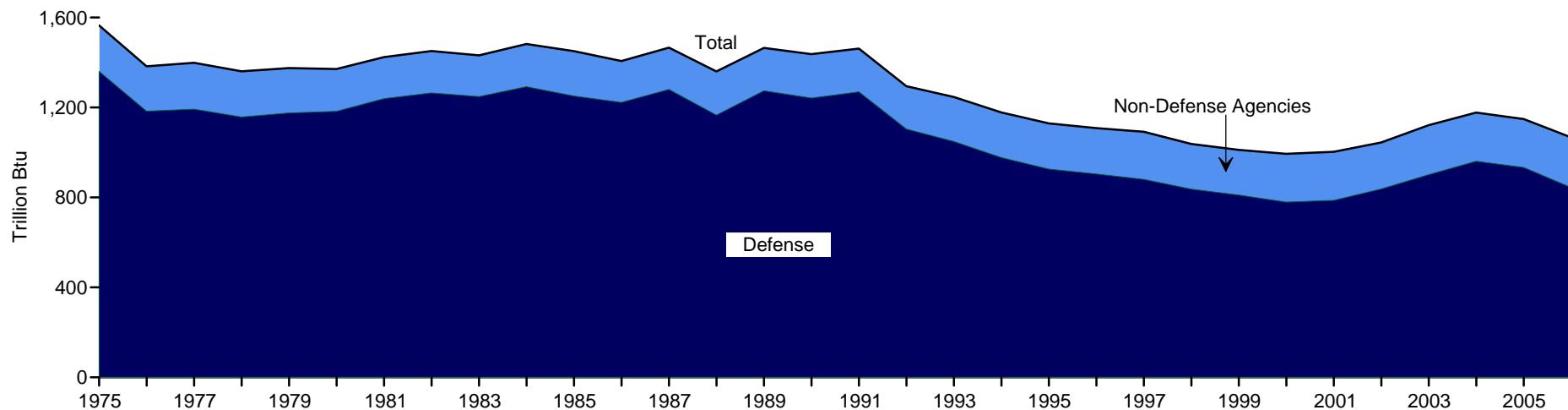
Beginning in 2002, data are weighted by the 2000 population. The population-weighted State figures are aggregated into Census divisions and the national average. • See Appendix C for Census divisions.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>. • For current data, see <http://www.eia.doe.gov/emeu/mer/overview.html>.

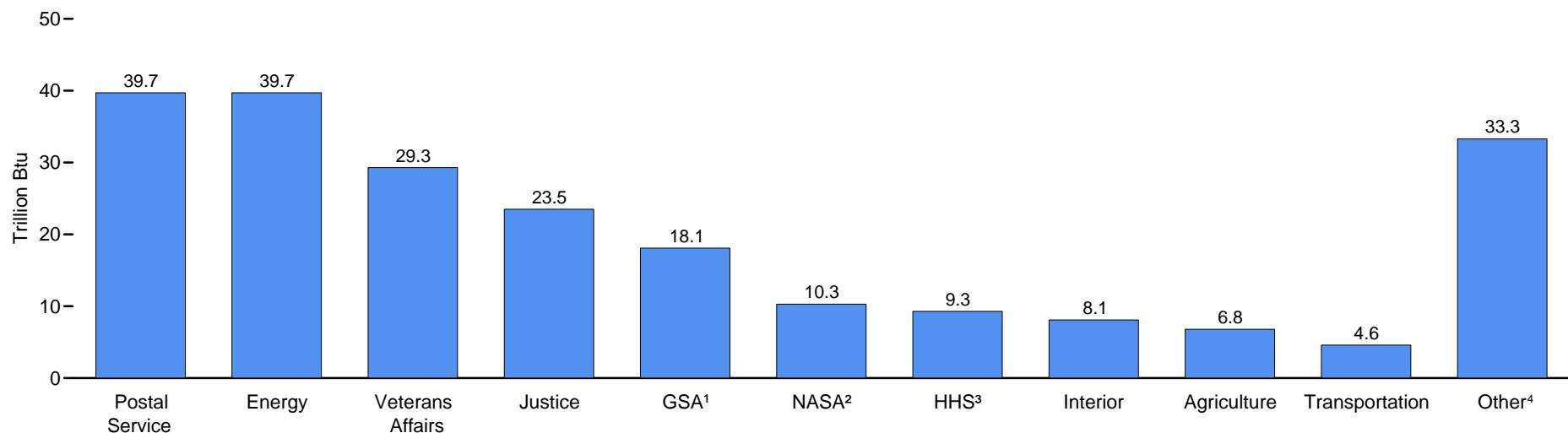
Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center, Asheville, North Carolina, Historical Climatology Series 5-2.

**Figure 1.11 U.S. Government Energy Consumption by Agency**

**Total and U.S. Department of Defense, Fiscal Years 1975-2006**



**Non-Defense Agencies, Fiscal Year 2006**



<sup>1</sup> General Services Administration.

<sup>2</sup> National Aeronautics and Space Administration.

<sup>3</sup> Health and Human Services.

<sup>4</sup> See Table 1.11 for list of agencies.

Notes: • The U.S. Government's fiscal year was October 1 through September 30, except in 1975 and 1976 when it was July 1 through June 30. • Because vertical scales differ, graphs should not be compared.

Source: Table 1.11.

**Table 1.11 U.S. Government Energy Consumption by Agency, Fiscal Years 1975-2006**  
 (Trillion Btu)

Year	Agencies													Total
	Agriculture	Defense	Energy	GSA <sup>1</sup>	HHS <sup>2</sup>	Interior	Justice	NASA <sup>3</sup>	Postal Service	Trans- portation	Veterans Affairs	Other <sup>4</sup>		
1975	9.5	1,360.2	50.4	22.3	6.5	9.4	5.9	13.4	30.5	19.3	27.1	10.5	1,565.0	
1976	9.3	1,183.3	50.3	20.6	6.7	9.4	5.7	12.4	30.0	19.5	25.0	11.2	1,383.4	
1977	8.9	1,192.3	51.6	20.4	6.9	9.5	5.9	12.0	32.7	20.4	25.9	11.9	1,398.5	
1978	9.1	1,157.8	50.1	20.4	6.5	9.2	5.9	11.2	30.9	20.6	26.8	12.4	1,360.9	
1979	9.2	1,175.8	49.6	19.6	6.4	10.4	6.4	11.1	29.3	19.6	25.7	12.3	1,375.4	
1980	8.6	1,183.1	47.4	18.1	6.0	8.5	5.7	10.4	27.2	19.2	24.8	12.3	1,371.2	
1981	7.9	1,239.5	47.3	18.0	6.7	7.6	5.4	10.0	27.9	18.8	24.0	11.1	1,424.2	
1982	7.6	1,264.5	49.0	18.1	6.4	7.4	5.8	10.1	27.5	19.1	24.2	11.6	1,451.4	
1983	7.4	1,248.3	49.5	16.1	6.2	7.7	5.5	10.3	26.5	19.4	24.1	10.8	1,431.8	
1984	7.9	1,292.1	51.6	16.2	6.4	8.4	6.4	10.6	27.7	19.8	24.6	10.7	1,482.5	
1985	8.4	1,250.6	52.2	20.7	6.0	7.8	8.2	10.9	27.8	19.6	25.1	13.1	1,450.3	
1986	6.8	1,222.8	46.9	14.0	6.2	6.9	8.6	11.2	28.0	19.4	25.0	10.8	1,406.7	
1987	7.3	1,280.5	48.5	13.1	6.6	6.6	8.1	11.3	28.5	19.0	24.9	11.9	1,466.3	
1988	7.8	1,165.8	49.9	12.4	6.4	7.0	9.4	11.3	29.6	18.7	26.3	15.8	1,360.3	
1989	8.7	1,274.4	44.2	12.7	6.7	7.1	7.7	12.4	30.3	18.5	26.2	15.6	1,464.7	
1990	9.6	1,241.7	43.5	17.0	7.1	7.4	7.0	12.4	30.6	19.0	24.9	17.5	1,437.5	
1991	9.6	1,269.3	42.1	14.0	6.2	7.1	8.0	12.5	30.8	19.0	25.1	18.1	1,461.7	
1992	9.1	1,104.0	44.3	13.8	6.8	7.0	7.5	12.6	31.7	17.0	25.3	15.7	1,294.8	
1993	9.3	1,048.8	43.4	14.1	7.2	7.5	9.1	12.4	33.7	19.4	25.7	16.2	1,246.8	
1994	9.4	977.0	42.1	14.0	7.5	7.9	10.3	12.6	35.0	19.8	25.6	17.1	1,178.2	
1995	9.0	926.0	47.3	13.7	6.1	6.4	10.2	12.4	36.2	18.7	25.4	17.9	1,129.3	
1996	9.1	904.5	44.6	14.5	6.6	4.3	12.1	11.5	36.4	19.6	26.8	18.5	1,108.5	
1997	7.4	880.0	43.1	14.4	7.9	6.6	12.0	12.0	40.8	19.1	27.3	21.6	1,092.0	
1998	7.9	837.1	31.5	14.1	7.4	6.4	15.8	11.7	39.5	18.5	27.6	20.3	1,037.9	
1999	7.8	810.7	27.0	14.4	7.1	7.5	15.4	11.4	39.8	22.6	27.5	20.6	1,011.6	
2000	7.4	779.1	30.5	17.6	8.0	7.8	19.7	11.1	43.3	21.2	27.0	21.0	993.8	
2001	7.4	787.2	31.1	18.4	8.5	9.5	19.7	10.9	43.4	17.8	27.7	21.4	1,003.0	
2002	7.2	837.5	30.7	17.5	8.0	8.2	17.7	10.7	41.6	18.3	27.7	19.8	1,044.8	
2003	R <sup>7.8</sup>	R <sup>901.4</sup>	R <sup>31.5</sup>	R <sup>18.5</sup>	R <sup>10.1</sup>	R <sup>8.2</sup>	R <sup>18.0</sup>	R <sup>10.1</sup>	R <sup>42.6</sup>	R <sup>5.6</sup>	R <sup>30.5</sup>	R <sup>37.4</sup>	R <sup>1,121.8</sup>	
2004	7.0	960.7	31.4	18.3	8.8	8.7	17.5	9.9	40.7	5.2	29.9	39.2	1,177.2	
2005	R <sup>7.5</sup>	R <sup>933.2</sup>	R <sup>29.6</sup>	R <sup>18.4</sup>	R <sup>9.6</sup>	R <sup>8.6</sup>	R <sup>18.8</sup>	R <sup>10.3</sup>	R <sup>41.1</sup>	R <sup>5.0</sup>	R <sup>30.0</sup>	R <sup>36.7</sup>	R <sup>1,148.7</sup>	
2006 <sup>P</sup>	6.8	843.7	39.7	18.1	9.3	8.1	23.5	10.3	39.7	4.6	29.3	33.3	1,066.5	

<sup>1</sup> General Services Administration.

<sup>2</sup> Health and Human Services.

<sup>3</sup> National Aeronautics and Space Administration.

<sup>4</sup> Includes National Archives and Records Administration, U.S. Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, U.S. Department of Labor, National Science Foundation, Federal Trade Commission, Federal Communications Commission, Environmental Protection Agency, U.S. Department of Homeland Security, U.S. Department of Housing and Urban Development, Railroad Retirement Board, Commodity Futures Trading Commission, Equal Employment Opportunity Commission, Nuclear Regulatory Commission, U.S. Department of State, U.S. Department of the Treasury, Small Business Administration, Office of Personnel Management, Federal Emergency Management Agency, Central Intelligence Agency, Social Security Administration, and U.S. Information Agency (International

Broadcasting Bureau).

R = Revised. P = Preliminary.

Notes: • The U.S. Government's fiscal year was October 1 through September 30, except in 1975 and 1976, when it was July 1 through June 30. • Data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded.

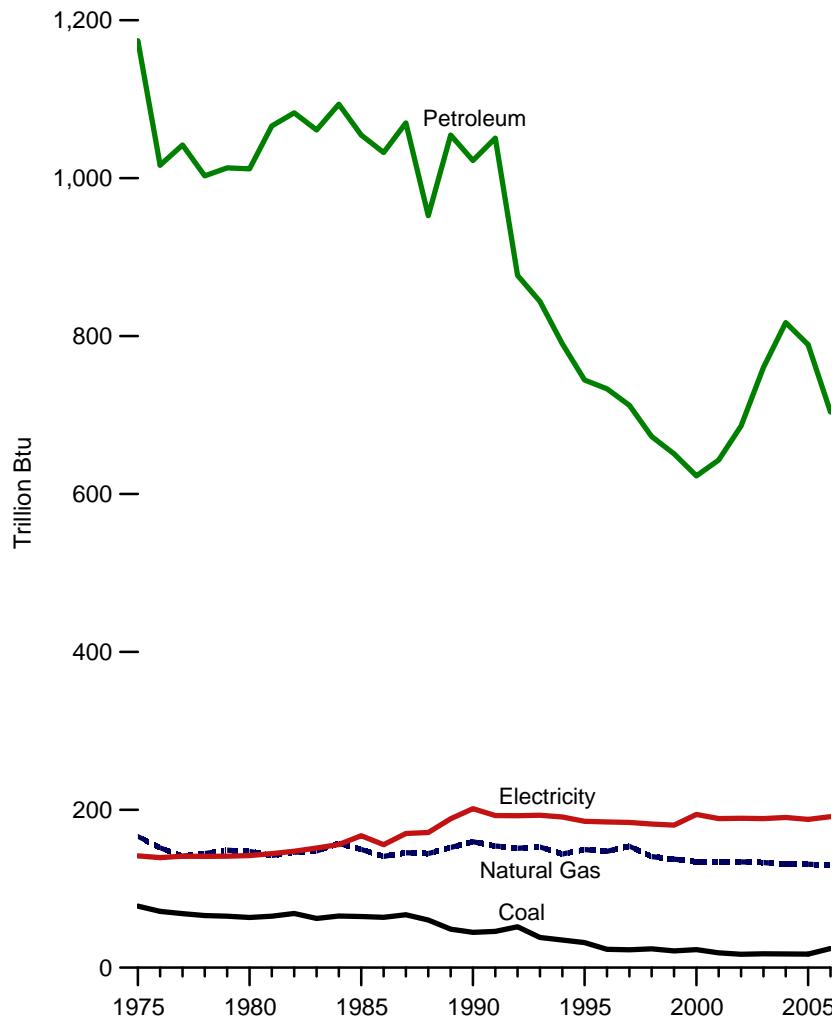
• Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see [http://www1.eere.energy.gov/femp/about/annual\\_report.html](http://www1.eere.energy.gov/femp/about/annual_report.html).

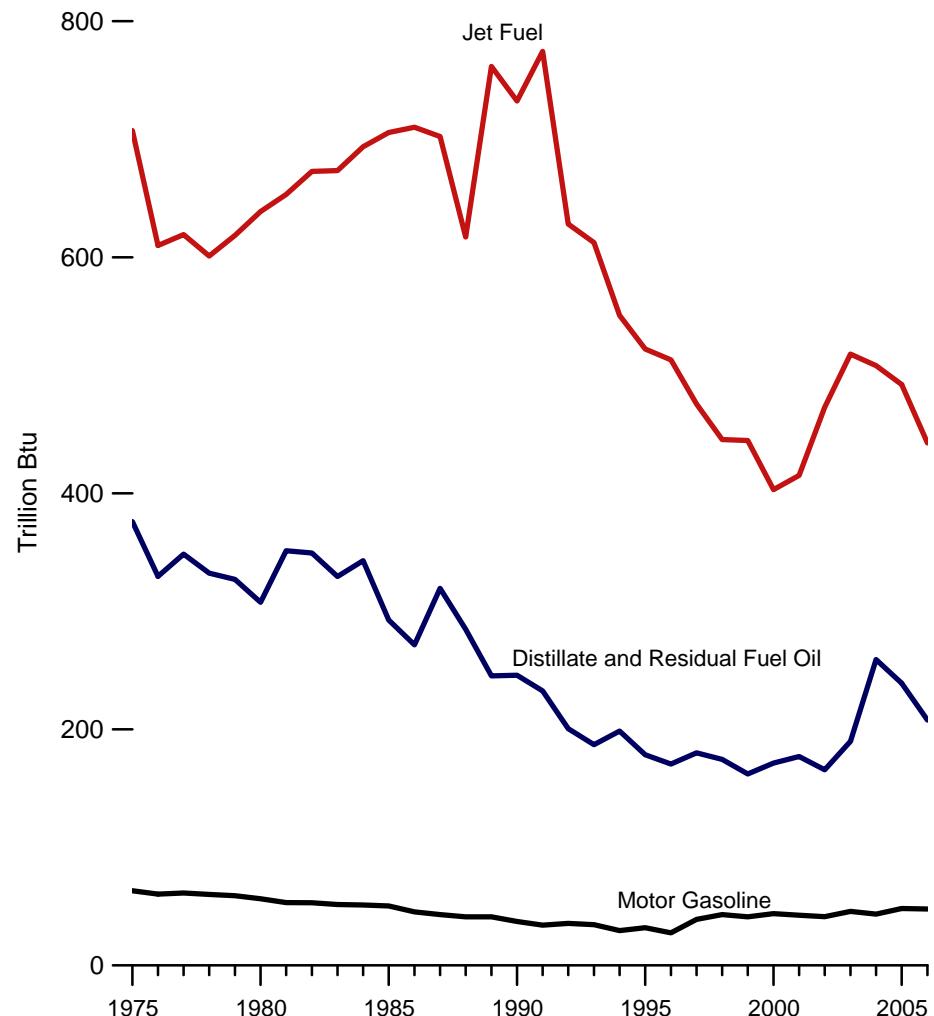
Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program.

**Figure 1.12 U.S. Government Energy Consumption by Source, Fiscal Years 1975-2006**

**By Major Energy Source**



**By Selected Petroleum Product**



Notes: • The U.S. Government's fiscal year was October 1 through September 30, except in 1975 and 1976 when it was July 1 through June 30. • Because vertical scales differ, graphs should not be compared.

Source: Table 1.12.

**Table 1.12 U.S. Government Energy Consumption by Source, Fiscal Years 1975-2006**  
(Trillion Btu)

Year	Coal	Natural Gas	Petroleum						Electricity	Purchased Steam and Other <sup>3</sup>	Total
			Aviation Gasoline	Distillate and Residual Fuel Oil	Jet Fuel	Motor Gasoline	LPG <sup>1</sup> and Other <sup>2</sup>	Total			
1975	77.9	166.2	22.0	376.0	707.4	63.2	5.6	1,174.2	141.5	5.1	1,565.0
1976	71.3	151.8	11.6	329.7	610.0	60.4	4.7	1,016.4	139.3	4.6	1,383.4
1977	68.4	141.2	8.8	348.5	619.2	61.4	4.1	1,042.1	141.1	5.7	1,398.5
1978	66.0	144.7	6.2	332.3	601.1	60.1	3.0	1,002.9	141.0	6.4	1,360.9
1979	65.1	148.9	4.7	327.1	618.6	59.1	3.7	1,013.1	141.2	7.1	1,375.4
1980	63.5	147.3	4.9	307.7	638.7	56.5	4.0	1,011.8	141.9	6.8	1,371.2
1981	65.1	142.2	4.6	351.3	653.3	53.2	3.7	1,066.2	144.5	6.2	1,424.2
1982	68.6	146.2	3.6	349.4	672.7	53.1	3.9	1,082.8	147.5	6.2	1,451.4
1983	62.4	147.8	2.6	329.5	673.4	51.6	4.0	1,061.1	151.5	9.0	1,431.8
1984	65.3	157.4	1.9	342.9	693.7	51.2	4.1	1,093.8	155.9	10.1	1,482.5
1985	64.8	149.9	1.9	292.6	705.7	50.4	4.0	1,054.6	167.2	13.9	1,450.3
1986	63.8	140.9	1.4	271.6	710.2	45.3	3.9	1,032.4	155.8	13.7	1,406.7
1987	67.0	145.6	1.0	319.5	702.3	43.1	4.0	1,069.9	169.9	13.9	1,466.3
1988	60.2	144.6	6.0	284.8	617.2	41.2	3.2	952.4	171.2	32.0	1,360.3
1989	48.7	152.4	.8	245.3	761.7	41.1	5.7	1,054.5	188.6	20.6	1,464.7
1990	44.7	159.7	.5	245.9	732.4	37.2	6.4	1,022.4	201.4	20.5	1,437.5
1991	45.9	154.1	.4	232.6	774.5	34.1	9.0	1,050.7	192.7	18.3	1,461.7
1992	51.7	151.2	1.0	200.6	628.2	35.6	11.4	876.8	192.5	22.5	1,294.8
1993	38.3	152.9	.7	187.0	612.4	34.5	9.3	843.9	193.1	18.6	1,246.8
1994	35.0	143.9	.6	198.5	550.7	29.5	10.9	790.2	190.9	18.2	1,178.2
1995	31.7	149.7	.3	178.5	522.3	31.9	11.4	744.4	185.3	18.2	1,129.3
1996	23.3	147.4	.2	170.6	513.0	27.6	21.7	733.2	184.5	20.1	1,108.5
1997	22.5	154.0	.3	180.1	475.7	39.0	17.2	712.2	184.0	19.2	1,092.0
1998	23.9	140.7	.2	174.6	445.5	43.1	9.4	672.8	181.8	18.8	1,037.9
1999	21.2	137.6	.1	162.2	444.7	41.1	2.9	650.9	180.4	21.5	1,011.6
2000	22.7	134.0	.2	171.4	403.1	43.9	4.3	622.9	194.0	20.2	993.8
2001	18.8	133.9	.2	177.0	415.2	42.5	7.9	642.9	188.8	18.6	1,003.0
2002	16.9	134.1	.2	165.7	472.9	41.3	6.0	686.1	189.1	18.5	1,044.8
2003	R17.6	R133.3	.3	R489.9	517.9	45.7	R6.6	R760.4	R188.7	R21.8	R1,121.8
2004	17.4	130.8	.2	259.2	508.2	43.5	6.0	817.1	190.2	21.7	1,177.2
2005	17.1	131.1	.4	R239.1	492.2	R48.2	R9.0	R789.0	R187.8	23.7	R1,148.7
2006 <sup>P</sup>	24.2	129.8	.6	207.9	442.7	47.8	4.7	703.8	191.2	17.4	1,066.5

<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Other types of fuel used in vehicles and equipment, primarily alternative fuels like methanol, ethanol, compressed natural gas, and biodiesel.

<sup>3</sup> "Other" is chilled water, renewable energy, and other fuels reported as used in facilities.

R = Revised. P = Preliminary.

Notes: • The U.S. Government's fiscal year was October 1 through September 30, except in 1975 and 1976, when it was July 1 through June 30. • This table uses a conversion factor for electricity of 3,412 Btu

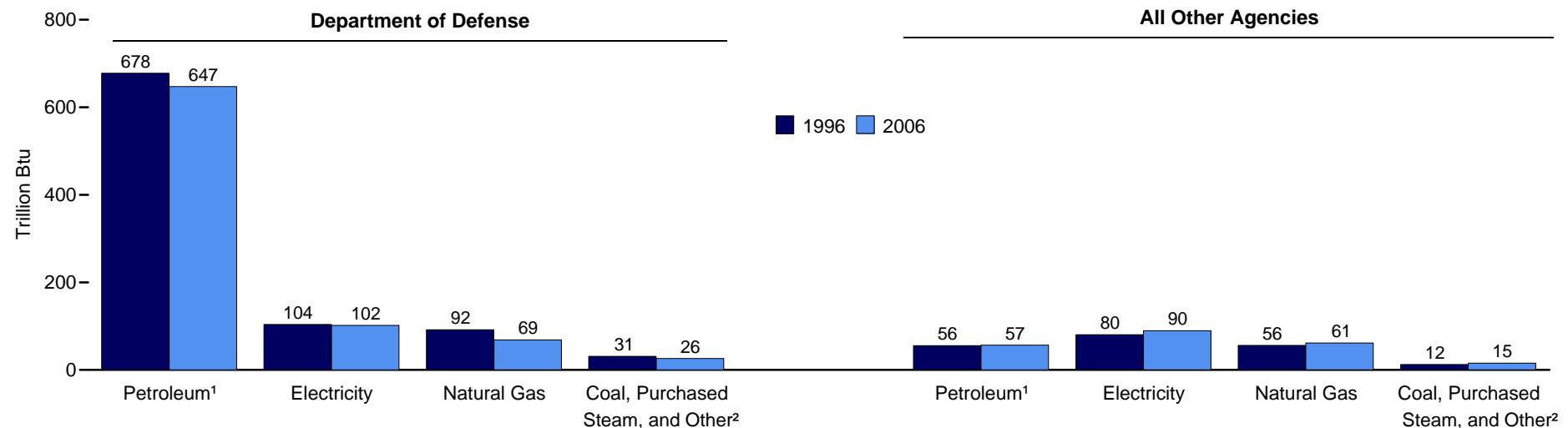
per kilowatthour and a conversion factor for purchased steam of 1,000 Btu per pound. • Data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see [http://www1.eere.energy.gov/femp/about/annual\\_report.html](http://www1.eere.energy.gov/femp/about/annual_report.html).

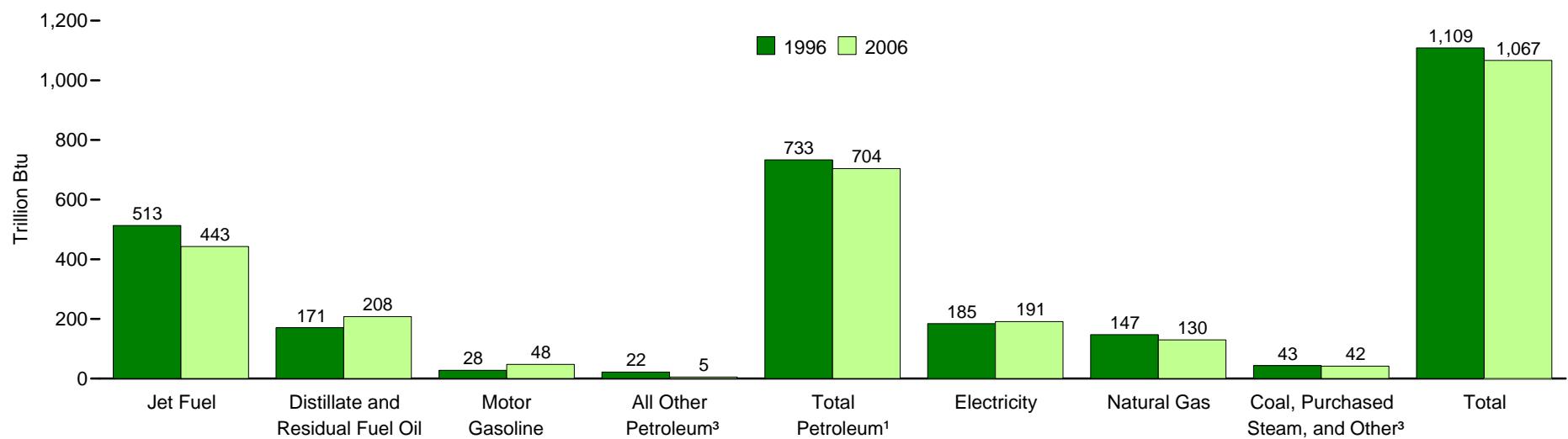
Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program.

**Figure 1.13 U.S. Government Energy Consumption by Agency and Source, Fiscal Years 1996 and 2006**

**By Agency**



**By Source**



<sup>1</sup> Includes small amount of renewable energy; see Table 1.13, footnote 2.

<sup>2</sup> Chilled water, renewable energy, and other fuels reported as used in facilities.

<sup>3</sup> Aviation gasoline, liquefied petroleum gas, and other types of fuel used in vehicles and equipment, primarily alternative fuels like methanol, ethanol, compressed natural gas, and biodiesel.

Notes: • The U.S. Government's fiscal year runs from October 1 through September 30.

• Because vertical scales differ, graphs should not be compared.

Source: Table 1.13.

**Table 1.13 U.S. Government Energy Consumption by Agency and Source, Fiscal Years 1996 and 2006**  
 (Trillion Btu)

Agency	Coal	Natural Gas	Petroleum						Electricity	Purchased Steam and Other <sup>3</sup>	Total
			Aviation Gasoline	Distillate and Residual Fuel Oil	Jet Fuel	Motor Gasoline	LPG <sup>1</sup> and Other <sup>2</sup>	Total			
<b>Total, 1996</b>	<b>23.3</b>	<b>147.4</b>	<b>0.2</b>	<b>170.6</b>	<b>513.0</b>	<b>27.6</b>	<b>21.7</b>	<b>733.2</b>	<b>184.5</b>	<b>20.1</b>	<b>1,108.5</b>
Defense	18.1	91.7	.0	155.9	504.8	3.3	13.6	677.7	104.0	13.0	904.5
Energy	5.0	16.7	.0	1.7	.3	1.0	.3	3.4	17.7	1.9	44.6
Postal Service	.0	5.9	.0	2.5	.0	12.3	.0	14.8	15.1	.6	36.4
Veterans Affairs	.1	13.8	.0	2.2	.0	.6	.0	2.8	8.9	1.2	26.8
Transportation	.0	1.2	.0	.8	4.8	.5	6.9	13.1	5.3	.1	19.6
General Services Administration	.0	3.4	.0	.3	.0	.1	.0	.4	9.0	1.6	14.5
Justice	.1	4.3	.1	.5	.9	2.7	.0	4.0	3.5	.3	12.1
NASA <sup>4</sup>	.0	2.7	.0	.7	1.2	.2	.0	2.2	6.3	.2	11.5
Agriculture	.0	1.6	.1	.5	.0	4.3	.2	5.0	2.0	.4	9.1
Health and Human Services	.0	2.4	.0	1.6	.0	.0	.1	1.7	2.5	.0	6.6
Interior	.0	.4	.0	1.0	.1	.9	.4	2.5	1.3	.1	4.3
Other <sup>5</sup>	.0	3.5	.1	2.9	.9	1.6	.1	5.6	8.8	.6	18.5
<b>Total, 2006 P</b>	<b>24.2</b>	<b>129.8</b>	<b>0.6</b>	<b>207.9</b>	<b>442.7</b>	<b>47.8</b>	<b>4.7</b>	<b>703.8</b>	<b>191.2</b>	<b>17.4</b>	<b>1,066.5</b>
Defense	17.0	68.6	.1	191.3	436.3	17.3	2.2	647.2	101.7	9.2	843.7
Postal Service	.0	6.2	.0	2.5	.0	13.4	.2	16.1	16.8	.6	39.7
Energy	7.0	7.4	.0	1.9	.1	.8	.2	3.1	21.0	1.3	39.7
Veterans Affairs	.2	15.1	.0	1.2	.0	.8	.0	2.0	10.4	1.6	29.3
Justice	.0	10.7	.1	1.0	.1	4.7	.1	5.9	6.1	.8	23.5
General Services Administration	.0	6.4	.0	.1	.0	.0	.0	.2	9.9	1.7	18.1
NASA <sup>4</sup>	.0	3.0	.0	.4	.8	.2	.1	1.4	5.5	.3	10.3
Health and Human Services	.0	5.1	.0	.4	.0	.3	.1	.8	2.9	.4	9.3
Interior	.0	1.3	.0	1.2	.1	2.1	1.0	4.4	2.3	.1	8.1
Agriculture	.0	1.7	.0	.4	.0	2.2	.2	2.9	2.0	.3	6.8
Transportation	.0	.7	.0	.2	.5	.4	.0	1.2	2.7	.1	4.6
Other <sup>6</sup>	.0	3.8	.4	7.2	4.8	5.6	.5	18.5	10.0	1.0	33.3

<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Other types of fuel used in vehicles and equipment, primarily alternative fuels like methanol, ethanol, compressed natural gas, and biodiesel.

<sup>3</sup> "Other" is chilled water, renewable energy, and other fuels reported as used in facilities.

<sup>4</sup> National Aeronautics and Space Administration.

<sup>5</sup> Includes U.S. Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, U.S. Department of Labor, U.S. Information Agency, U.S. Department of Housing and Urban Development, Federal Communications Commission, Office of Personnel Management, U.S. Department of State, Federal Emergency Management Agency, U.S. Department of the Treasury, National Archives and Records Administration, Nuclear Regulatory Commission, Railroad Retirement Board, Federal Trade Commission, Equal Employment Opportunity Commission, and Environmental Protection Agency.

<sup>6</sup> Includes National Archives and Records Administration, U.S. Department of Commerce, U.S. Department of Labor, U.S. Department of State, Environmental Protection Agency, Federal Communications Commission, Social Security Administration, International Broadcasting Bureau, Nuclear

Regulatory Commission, U.S. Department of Homeland Security, U.S. Department of Housing and Urban Development, U.S. Department of the Treasury, Railroad Retirement Board, Federal Trade Commission, Equal Employment Opportunity Commission, and Tennessee Valley Authority.

P=Preliminary.

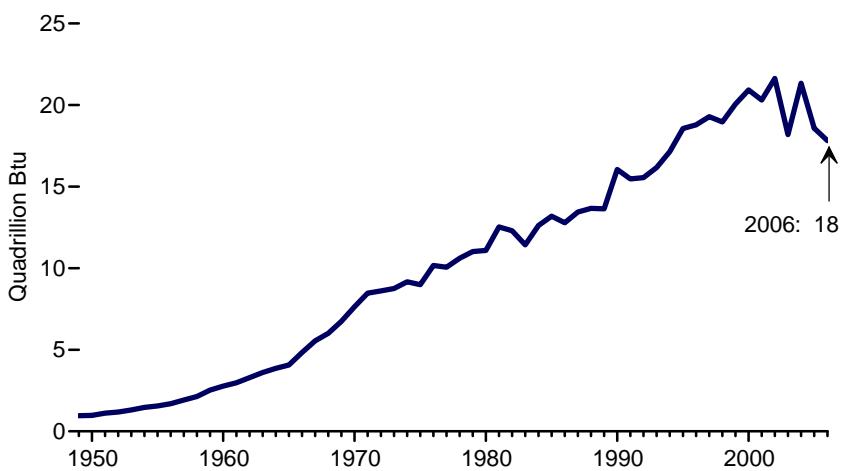
Notes: • The U.S. Government's fiscal year runs from October 1 through September 30. • This table uses a conversion factor for electricity of 3,412 Btu per kilowatthour and a conversion factor for purchased steam of 1,000 Btu per pound. • Data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see [http://www1.eere.energy.gov/femp/about/annual\\_report.html](http://www1.eere.energy.gov/femp/about/annual_report.html).

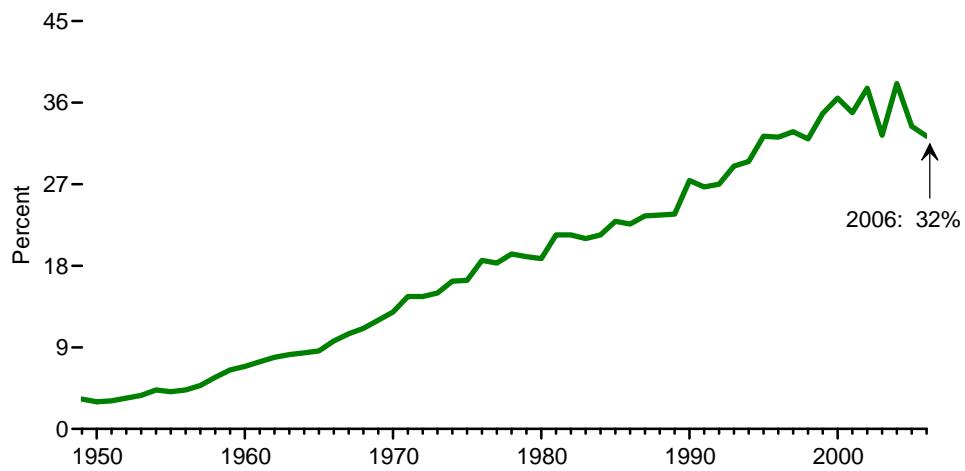
Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program.

**Figure 1.14 Fossil Fuel Production on Federally Administered Lands**

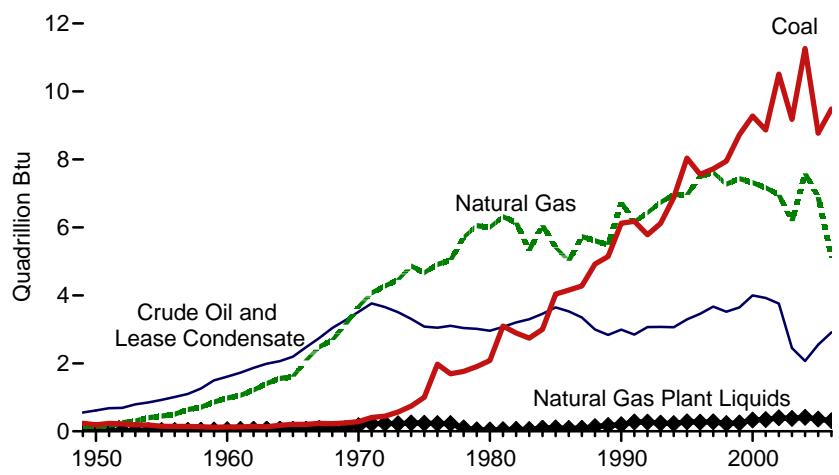
**Total, 1949-2006**



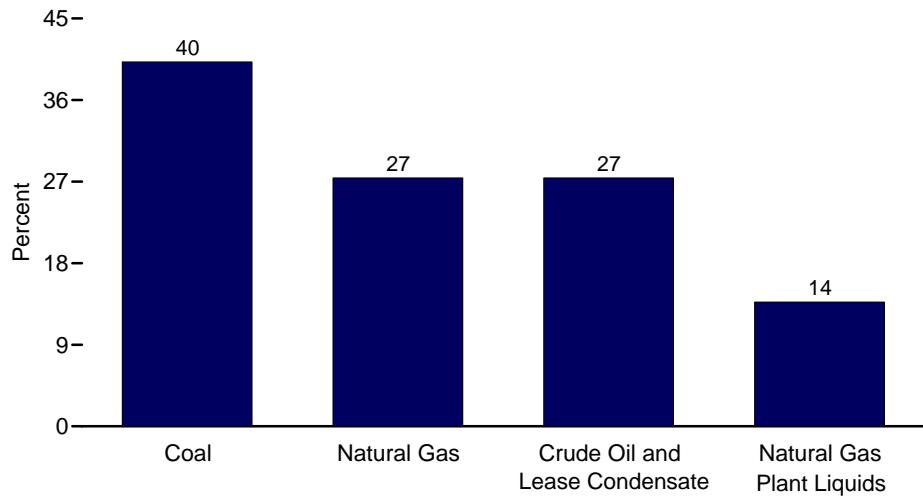
**Federal Lands Fossil Fuel Production as a Share of U.S. Fossil Fuel Production, 1949-2006**



**By Source, 1949-2006**



**Federal Lands Fossil Fuel Production as a Share of U.S. Fossil Fuel Production, By Source, 2006**



Notes: • Data through 2000 are on a calendar-year basis; data for 2001-2006 are on a fiscal-year basis (October–September). • “Federally Administered Lands” include all classes of land owned by the Federal Government, including acquired military, Outer Continental Shelf, and

public lands. • Because vertical scales differ, graphs should not be compared.

Source: Table 1.14.

**Table 1.14 Fossil Fuel Production on Federally Administered Lands, Selected Years, 1949-2006**

Year	Crude Oil and Lease Condensate			Natural Gas Plant Liquids <sup>1</sup>			Natural Gas <sup>2</sup>			Coal			Fossil Fuels	
	Million Barrels <sup>3</sup>	Quadrillion Btu	Percent of U.S. Total	Million Barrels <sup>3</sup>	Quadrillion Btu	Percent of U.S. Total	Trillion Cubic Feet <sup>3</sup>	Quadrillion Btu	Percent of U.S. Total	Million Short Tons <sup>3</sup>	Quadrillion Btu	Percent of U.S. Total	Quadrillion Btu	Percent of U.S. Total
<b>Calendar-Year Data <sup>4</sup></b>														
1949	95.2	0.55	5.2	4.4	0.02	2.8	0.15	0.15	2.8	9.5	0.24	2.0	0.96	3.3
1950	105.9	.61	5.4	4.4	.02	2.4	.14	.15	2.4	7.7	.19	1.4	.98	3.0
1955	159.5	.92	6.4	6.0	.03	2.1	.43	.45	4.8	5.9	.15	1.2	1.55	4.1
1960	277.3	1.61	10.8	11.6	.05	3.4	.95	.98	7.8	5.2	.13	1.2	2.77	6.9
1965	378.6	2.20	13.3	14.3	.06	3.2	1.56	1.61	10.2	8.2	.20	1.6	4.07	8.6
1970	605.6	3.51	17.2	40.6	.17	6.7	3.56	3.67	16.9	12.0	.29	2.0	7.64	12.9
1971	648.9	3.76	18.8	54.0	.22	8.7	3.95	4.08	18.3	17.3	.41	3.1	8.47	14.6
1972	630.5	3.66	18.2	56.7	.23	8.9	4.17	4.28	19.3	19.0	.44	3.1	8.61	14.6
1973	604.3	3.51	18.0	54.9	.22	8.7	4.37	4.46	20.1	24.2	.57	4.1	8.75	15.0
1974	570.2	3.31	17.8	61.9	.25	10.1	4.75	4.87	22.9	32.1	.74	5.3	9.16	16.3
1975	531.5	3.08	17.4	59.7	.24	10.0	4.57	4.67	23.8	43.6	1.00	6.7	8.99	16.4
1976	525.7	3.05	17.7	57.2	.23	9.7	4.81	4.91	25.2	86.4	1.98	12.6	10.16	18.6
1977	535.0	3.10	17.8	57.4	.23	9.7	4.94	5.04	25.8	74.8	1.69	10.7	10.06	18.3
1978	523.6	3.04	16.5	25.9	.10	4.5	5.60	5.71	29.3	79.2	1.76	11.8	10.61	19.3
1979	519.8	3.01	16.7	11.9	.05	2.1	5.93	6.05	30.1	84.9	1.91	10.9	11.02	19.0
1980	510.4	2.96	16.2	10.5	.04	1.8	5.85	6.01	30.2	92.9	2.08	11.2	11.09	18.8
1981	529.3	3.07	16.9	12.3	.05	2.1	6.15	6.31	32.1	138.8	3.10	16.8	12.53	21.4
1982	552.3	3.20	17.5	15.0	.06	2.7	5.97	6.14	33.5	130.0	2.89	15.5	12.29	21.4
1983	568.8	3.30	17.9	14.0	.05	2.5	5.17	5.33	32.1	124.3	2.74	15.9	11.43	21.0
1984	595.8	3.46	18.3	25.4	.10	4.3	5.88	6.07	33.7	136.3	3.00	15.2	12.62	21.4
1985	628.3	3.64	19.2	26.6	.10	4.5	5.24	5.41	31.8	184.6	4.04	20.9	13.19	22.9
1986	608.4	3.53	19.2	23.3	.09	4.1	4.87	5.01	30.3	189.7	4.16	21.3	12.79	22.6
1987	577.3	3.35	18.9	23.7	.09	4.1	5.56	5.73	33.4	195.2	4.28	21.2	13.45	23.5
1988	516.3	2.99	17.3	37.0	.14	6.2	5.45	5.61	31.9	225.4	4.92	23.7	13.67	23.6
1989	488.9	2.84	17.6	45.1	.17	8.0	5.32	5.49	30.7	236.3	5.14	24.1	13.64	23.7
1990	515.9	2.99	19.2	50.9	.19	8.9	6.55	6.74	36.8	280.6	6.12	R27.2	16.05	27.4
1991	491.0	2.85	18.1	72.7	.28	12.0	5.99	6.17	33.8	285.1	6.18	R28.5	15.47	R26.7
1992	529.1	3.07	20.2	70.7	.27	11.4	6.25	6.43	35.0	266.7	5.78	R26.6	15.55	27.0
1993	529.3	3.07	21.2	64.4	.24	10.2	6.56	6.74	36.3	285.7	6.12	R30.0	16.17	29.0
1994	527.7	3.06	21.7	60.0	.23	9.5	6.78	6.97	36.0	321.4	6.88	R30.9	17.14	R29.5
1995	567.4	3.29	23.7	74.0	.28	11.5	6.78	6.96	36.4	376.9	8.04	R36.2	18.56	32.3
1996	596.5	3.46	25.2	71.2	.27	10.6	7.31	7.50	38.8	354.5	7.56	R33.0	18.79	32.2
1997	632.8	3.67	26.9	74.7	.28	11.3	7.43	7.62	39.3	362.6	7.72	R33.0	19.29	32.8
1998	<sup>5</sup> 606.3	<sup>5</sup> 3.52	<sup>5</sup> 26.6	<sup>5</sup> 60.3	<sup>5</sup> .23	<sup>5</sup> 9.4	<sup>5</sup> 7.06	<sup>5</sup> 7.27	<sup>5</sup> 37.1	371.1	7.95	R33.0	<sup>5</sup> 18.97	<sup>5</sup> 32.0
1999	<sup>6</sup> 228.9	<sup>6</sup> 3.65	<sup>6</sup> 29.3	<sup>6</sup> 66.5	<sup>6</sup> .25	<sup>6</sup> 9.9	<sup>6</sup> 7.24	<sup>6</sup> 7.44	<sup>6</sup> 38.4	414.5	8.73	R37.4	<sup>6</sup> 20.07	<sup>6</sup> R34.8
2000	689.2	4.00	32.3	88.9	.33	12.7	7.14	7.32	37.2	440.2	9.27	R40.7	20.92	36.5
<b>Fiscal-Year Data <sup>7</sup></b>														
2001	676.5	3.92	32.0	93.0	0.35	14.0	6.98	R7.17	35.7	425.4	R8.87	R38.1	R20.31	R34.9
2002	647.8	3.76	30.5	106.5	.40	15.2	6.78	R6.96	35.4	507.8	R10.51	R45.7	R21.63	R37.6
2003	<sup>8</sup> 422.6	<sup>8</sup> 2.45	<sup>8</sup> 20.4	101.0	.38	16.0	6.01	6.19	31.5	446.7	9.18	R41.3	18.19	32.4
2004	356.4	2.07	17.7	110.7	.41	16.8	7.38	7.59	R39.4	551.1	11.27	R49.7	21.33	38.1
2005	439.9	2.55	R22.7	96.6	.36	14.8	6.70	6.89	R36.6	431.0	R8.78	R37.8	18.58	33.4
2006	502.1	2.91	27.4	84.1	.31	13.7	4.96	5.11	27.4	466.2	9.49	40.2	17.82	32.3

<sup>1</sup> Includes only those quantities for which the royalties were paid on the basis of the value of the natural gas plant liquids produced. Additional quantities of natural gas plant liquids were produced; however, the royalties paid were based on the value of natural gas processed. These latter quantities are included with natural gas.

<sup>2</sup> Includes some quantities of natural gas processed into liquids at natural gas processing plants and fractionators.

<sup>3</sup> Data from the U.S. Department of the Interior (DOI), U.S. Minerals Management Service (MMS), are for sales volumes.

<sup>4</sup> Through 2000, data are on a calendar-year (January through December) basis. The only exception is in 1949-1974 with production from Naval Petroleum Reserve No. 1, which is on a fiscal-year (July through June) basis.

<sup>5</sup> There is a discontinuity in this time series between 1997 and 1998 due to the sale of "Elk Hills," Naval Petroleum Reserve No. 1.

<sup>6</sup> There is a discontinuity in this time series between 1998 and 1999; beginning in 1999 Naval Petroleum Reserve data have become insignificant and are no longer included.

<sup>7</sup> Beginning in 2001, data are on a fiscal-year (October through September) basis; for example, fiscal-year 2006 data are for October 2005 through September 2006.

<sup>8</sup> A significant amount of Federal offshore crude oil was diverted to the Strategic Petroleum Reserve.  
R=Revised.

Note: "Federally Administered Lands" include all classes of land owned by the Federal Government,

including acquired military, Outer Continental Shelf, and public lands.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/overview.html>.

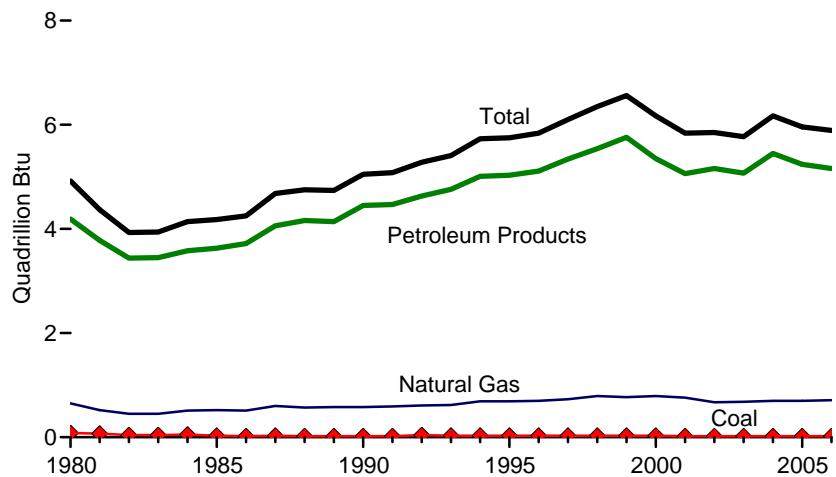
• For related information, see <http://www.mrm.mms.gov>.

Sources: **Physical Data (Columns 1, 4, 7, and 10):** • 1949-1980—U.S. Geological Survey (USGS), *Oil and Gas Production, Royalty Income, and Production, Royalty Income, and Related Statistics*, and *Coal, Phosphate, Potash, Sodium, and Other Mineral Production, Royalty Income, and Related Statistics* (June 1981); U.S. Department of Energy (DOE), Office of Naval Petroleum and Oil Shale Reserves (NPOS), unpublished data; and USGS, National Petroleum Reserve in Alaska, unpublished data.

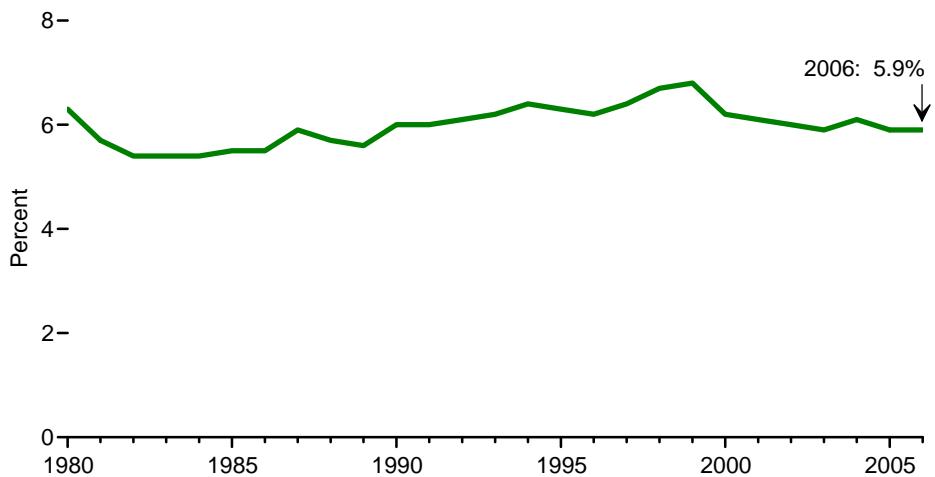
• 1981-1983—DOI, MMS, *Mineral Revenues Report on Receipts from Federal and Indian Leases*, annual reports; DOE, NPOS, unpublished data; and USGS, National Petroleum Reserve in Alaska, unpublished data. • 1984-1998—DOI, MMS, *Mineral Revenues Report on Receipts from Federal and Indian Leases*, annual reports; and DOE, NPOS, unpublished data. • 1999 and 2000—DOI, MMS, *Mineral Revenues Report on Receipts from Federal and American Indian Leases*, annual reports. • 2001 forward—DOI, MMS, "2001-Forward MRM Statistical Information." **Btu Data:** Data in columns 2, 5, 8, and 11 are calculated by multiplying the physical data by approximate heat contents for total U.S. production in Tables A2, A4, and A5. Data in column 13 are the sum of the other Btu columns. **Percent of U.S. Total:** Percentages are calculated by dividing production on federally administered lands by total U.S. production, then multiplying by 100. Calendar-year values for total U.S. production are from Tables 5.1, 6.1, and 7.1; fiscal-year values for total U.S. production are the sum of October-September values from the *Monthly Energy Review* (March 2007), Tables 3.1a, 4.1, and 6.1.

**Figure 1.15 Fossil Fuel Consumption for Nonfuel Use**

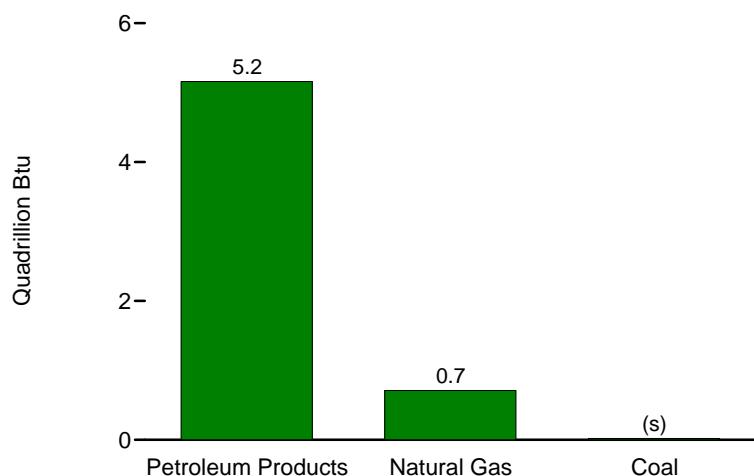
**Total, 1980-2006**



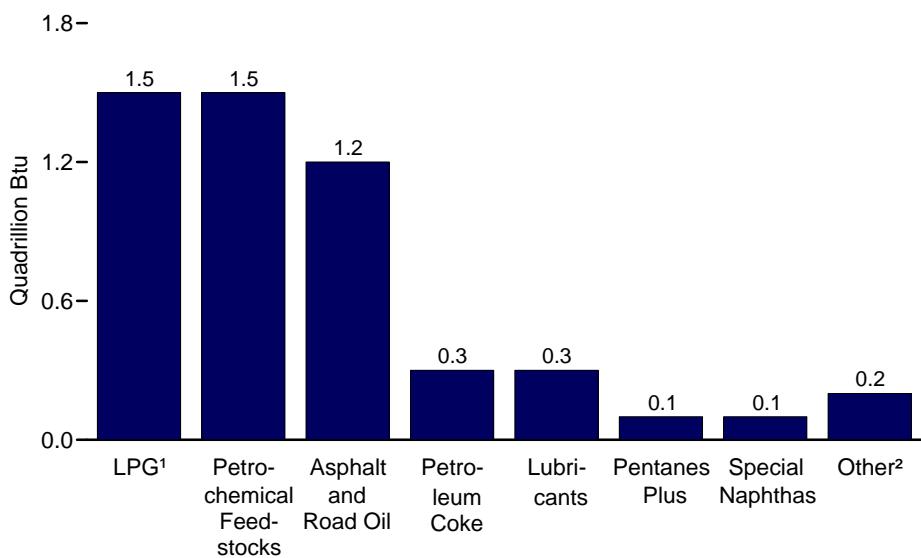
**As Share of Total Energy Consumption, 1980-2006**



**By Fuel, 2006**



**By Petroleum Product, 2006**



<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.

(s)=Less than 0.05 quadrillion Btu.

Notes: • See Note, "Nonfuel Use of Fossil Fuels," at end of section. • Because vertical scales differ, graphs should not be compared.

Source: Table 1.15.

**Table 1.15 Fossil Fuel Consumption for Nonfuel Use, 1980-2006**

Year	Petroleum Products									Natural Gas	Coal	Total	Percent of Total Energy Consumption
	Asphalt and Road Oil	Liquefied Petroleum Gases	Pentanes Plus	Lubricants	Petrochemical Feedstocks	Petroleum Coke	Special Naphthas	Other <sup>1</sup>	Total				
Physical Units <sup>2</sup>													
1980	145	230	( <sup>3</sup> )	58	253	24	37	58	805	639	2.4	--	--
1981	125	229	( <sup>3</sup> )	56	216	29	27	54	736	507	2.1	--	--
1982	125	256	( <sup>3</sup> )	51	157	23	25	48	686	438	1.4	--	--
1983	136	264	( <sup>3</sup> )	53	151	10	30	45	689	441	1.2	--	--
1984	150	247	10	57	145	16	40	41	705	495	1.5	--	--
1985	156	265	13	53	144	15	30	41	718	500	1.1	--	--
1986	164	248	17	52	169	14	25	38	727	496	.7	--	--
1987	170	303	12	59	170	24	28	36	802	578	.8	--	--
1988	171	319	21	57	173	25	22	40	827	554	.7	--	--
1989	165	332	17	58	172	23	20	39	827	563	.6	--	--
1990	176	344	18	60	199	30	20	39	886	R559	.6	--	--
1991	162	394	10	53	200	25	17	44	906	573	.6	--	--
1992	166	397	13	54	214	38	20	35	937	594	1.2	--	--
1993	174	389	60	55	216	21	20	33	969	607	.9	--	--
1994	176	437	56	58	222	23	15	35	1,022	673	.9	--	--
1995	178	450	66	57	215	22	13	34	1,035	668	.9	--	--
1996	177	470	69	55	217	25	14	34	1,061	R681	.9	--	--
1997	184	473	65	58	250	20	14	35	1,100	R706	.9	--	--
1998	190	494	44	61	252	35	20	39	1,137	762	.8	--	--
1999	200	520	57	62	238	47	28	37	1,188	753	.8	--	--
2000	192	479	51	61	243	23	19	38	1,106	767	.8	--	--
2001	189	445	44	56	214	34	15	39	1,036	R732	.7	--	--
2002	187	465	37	55	229	32	20	38	1,063	657	.7	--	--
2003	184	441	37	51	247	27	15	36	1,038	R660	.7	--	--
2004	196	453	37	52	287	R41	10	34	R1,110	R678	.7	--	--
2005	R199	R428	33	R51	R266	R38	R12	R34	R1,061	R682	.7	--	--
2006 <sup>p</sup>	185	439	23	42	271	43	13	37	1,052	688	.6	--	--
Quadrillion Btu													
1980	0.96	0.78	( <sup>3</sup> )	0.35	1.43	0.14	0.19	0.34	4.19	0.65	0.08	4.92	6.3
1981	.83	.77	( <sup>3</sup> )	.34	1.21	.17	.14	.31	3.78	.52	.07	4.37	5.7
1982	.83	.87	( <sup>3</sup> )	.31	.88	.14	.13	.28	3.44	.45	.04	3.93	5.4
1983	.90	.89	( <sup>3</sup> )	.32	.85	.06	.16	.26	3.45	.45	.04	3.94	5.4
1984	.99	.84	.05	.35	.82	.09	.21	.24	3.58	.51	.05	4.14	5.4
1985	1.03	.90	.06	.32	.82	.09	.16	.24	3.63	.52	.03	4.18	5.5
1986	1.09	.85	.08	.31	.95	.08	.13	.22	3.72	.51	.02	4.25	5.5
1987	1.13	1.06	.06	.36	.96	.14	.14	.21	4.06	.60	.03	4.68	5.9
1988	1.14	1.11	.10	.34	.97	.15	.11	.23	4.16	.57	.02	4.75	5.7
1989	1.10	1.18	.08	.35	.96	.14	.11	.23	4.14	.58	.02	4.74	5.6
1990	1.17	1.20	.08	.36	1.12	.18	.11	.23	4.45	.58	.02	5.05	6.0
1991	1.08	1.38	.04	.32	1.15	.15	.09	.26	4.47	.59	.02	5.08	6.0
1992	1.10	1.39	.06	.33	1.20	.23	.10	.20	4.63	.61	.04	5.28	6.1
1993	1.15	1.35	.28	.34	1.22	.12	.10	.20	4.76	.62	.03	5.41	6.2
1994	1.17	1.55	.26	.35	1.26	.14	.08	.20	5.01	.69	.03	5.73	6.4
1995	1.18	1.59	.30	.35	1.21	.13	.07	.20	5.03	.69	.03	5.75	6.3
1996	1.18	1.65	.32	.34	1.21	.15	.07	.20	5.11	.70	.03	5.84	6.2
1997	1.22	1.67	.30	.35	1.40	.12	.07	.21	5.34	R73	.03	6.10	6.4
1998	1.26	1.74	.20	.37	1.40	.21	.11	.23	5.54	.79	.03	6.35	6.7
1999	1.32	1.82	.26	.37	1.33	.28	.15	.22	5.76	.77	.03	6.56	6.8
2000	1.28	1.67	.24	.37	1.35	.14	.10	.22	5.35	.79	.03	6.17	6.2
2001	1.26	1.55	.20	.34	1.19	.21	.08	.23	5.06	.76	.02	5.84	6.1
2002	1.24	1.62	.17	.33	1.27	.19	.10	.22	5.16	.67	.02	5.85	6.0
2003	1.22	1.55	.17	.31	1.37	.16	.08	.21	5.07	R68	.02	5.77	5.9
2004	1.30	1.58	.17	.31	1.59	.25	.05	.20	R5.45	R70	.02	R6.17	6.1
2005	R1.32	R1.49	.15	.31	R1.47	R23	.06	R20	R5.24	R70	.02	R5.96	R5.9
2006 <sup>p</sup>	1.23	1.52	.11	.25	1.52	.26	.07	.21	5.16	.71	.02	5.89	5.9

<sup>1</sup> Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.

<sup>2</sup> Petroleum—million barrels; natural gas—billion cubic feet; and coal—million short tons.

<sup>3</sup> Included in "Liquefied Petroleum Gases."

R=Revised. P=Preliminary. -- = Not applicable.

Notes: • Estimates of consumption for nonfuel use shown in this table are included in total energy consumption (see Table 1.3). • See Note, "Nonfuel Use of Fossil Fuels," at end of section. • Because of

changes in methodology, data series may be revised annually. • Estimates of nonfuel use in this table are considered industrial uses with the exception of approximately half of the lubricants which are considered transportation use. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

Sources: See end of section.

## Energy Overview

**Note. Nonfuel Use of Fossil Fuels.** Most fossil fuels consumed in the United States and elsewhere are combusted to produce heat and power. However, some are used directly for nonfuel use as construction materials, lubricants, chemical feedstocks, solvents, and waxes. For example, asphalt and road oil are used for roofing and paving; liquefied petroleum gases are used to create intermediate products that are used in making plastics; lubricants, including motor oil and greases, are used in vehicles and various industrial processes; petrochemical feedstocks are used to make plastics, synthetic fabrics, and related products; and natural gas is used to make nitrogenous fertilizers and as feedstock in the chemical industry. For more information, see Energy Information Administration, “Emissions of Greenhouse Gases in the

United States” (“Nonfuel Use of Energy Inputs” section in Chapter 2), at <http://www.eia.doe.gov/environment.html>.

**Table 1.15 Sources; Petroleum Products:** • 1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual and Sales of Liquefied Petroleum Gases and Ethane in 1980*. • 1981 forward—EIA, *Petroleum Supply Annual*, annual reports, and unpublished data. **Natural Gas:** • 1980—Bureau of the Census, 1980 Survey of Manufactures, *Hydrocarbon, Coal, and Coke Materials Consumed*. • 1981 forward—U.S. Department of Commerce. **Coal:** • 1960-1995—U.S. International Trade Commission, *Synthetic Organic Chemicals, United States Production and Sales, 1995* (January 1997). • 1996 forward—EIA estimates. **Percent of Total Energy Consumption:** Derived by dividing total by total consumption on Table 1.3.

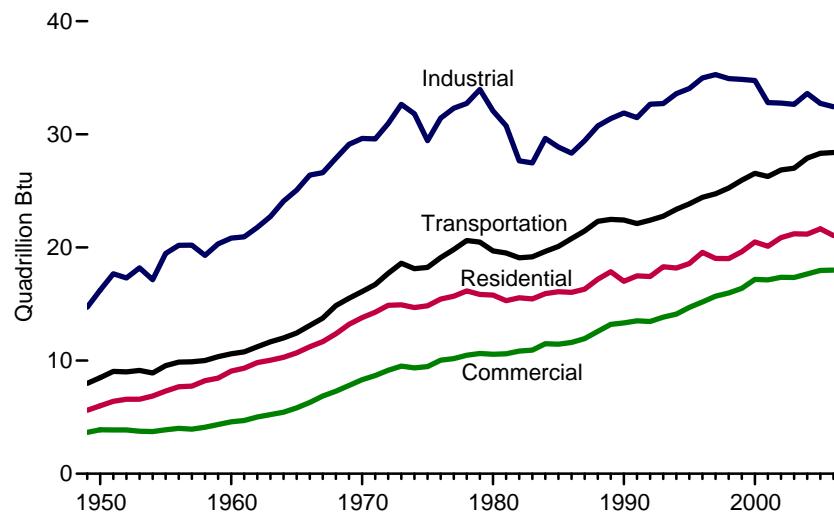
# Energy Consumption by Sector



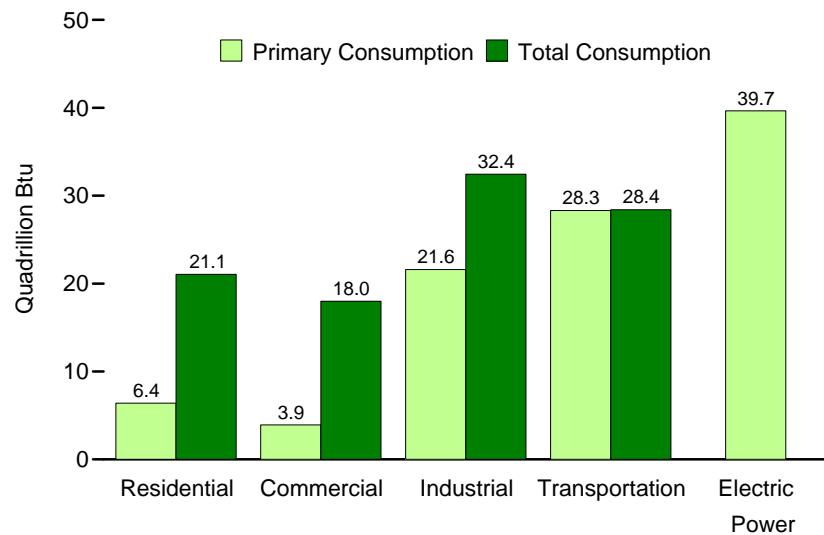
Office buildings, industries, residences, and transport systems, Baltimore, Maryland; east view from the inner harbor.  
Source: U.S. Department of Energy.

**Figure 2.1a Energy Consumption by Sector Overview**

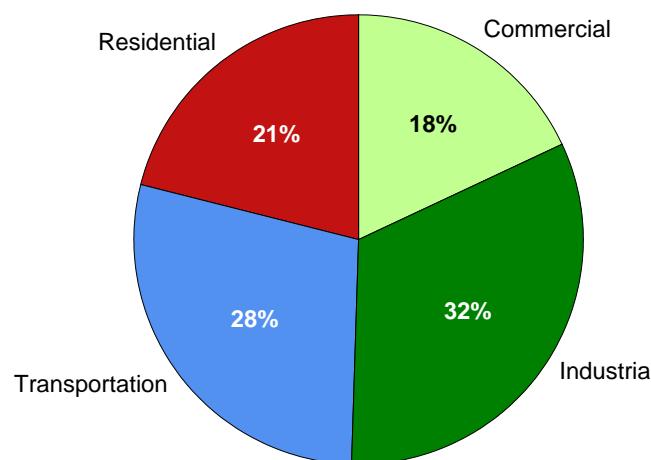
**Total Consumption by End-Use Sector, 1949-2006**



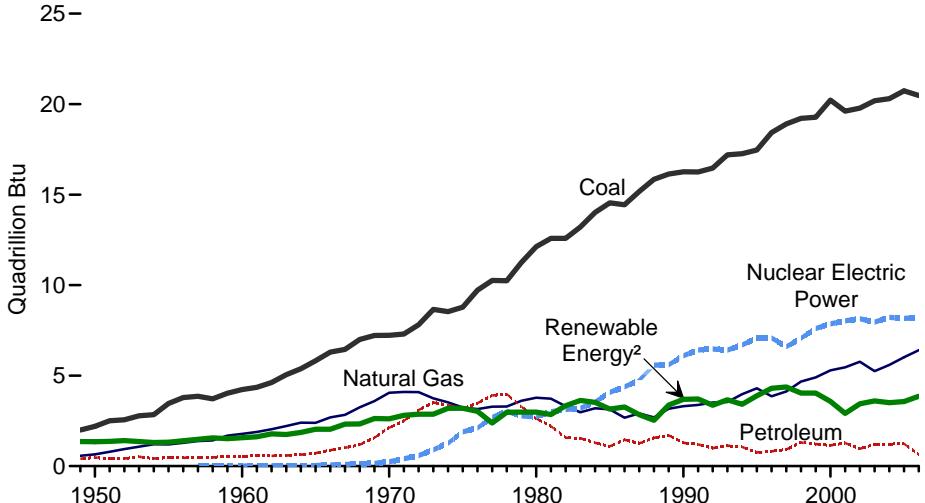
**Primary and Total Consumption by Sector, 2006**



**End-Use Sector Shares of Total Consumption, 2006<sup>1</sup>**



**Electric Power Sector, 1949-2006**



<sup>1</sup> Shares do not sum to 100 percent due to independent rounding.

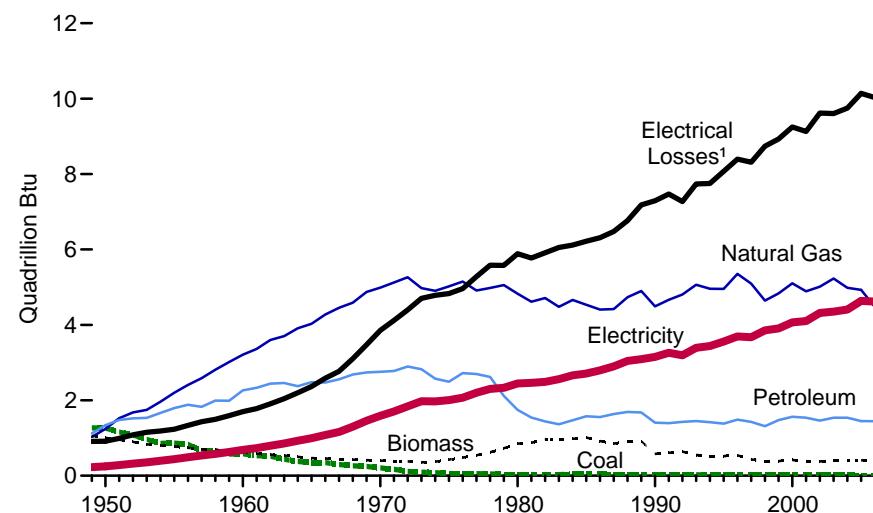
<sup>2</sup> Conventional hydroelectric power, biomass, geothermal, wind, and solar/PV.

Note: Because vertical scales differ, graphs should not be compared.

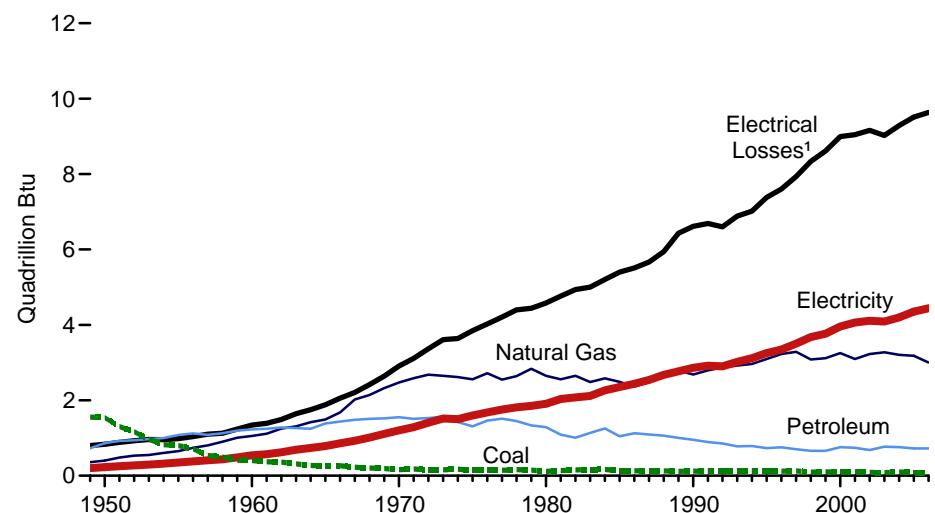
Sources: Tables 2.1a and 2.1f.

**Figure 2.1b Energy Consumption by End-Use Sector, 1949-2006**

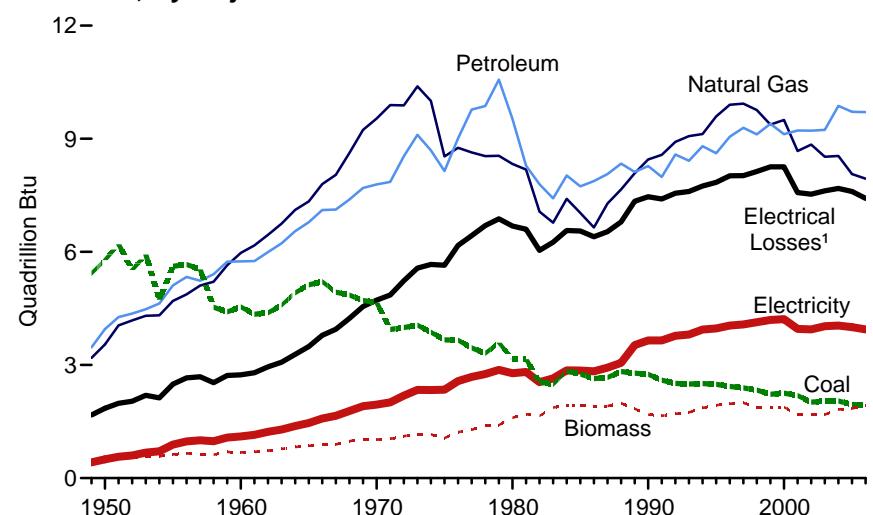
**Residential, By Major Source**



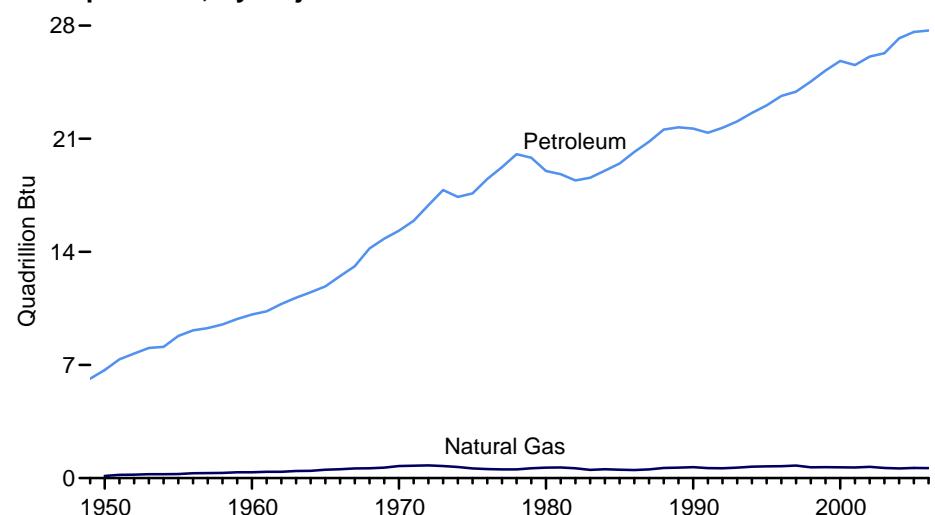
**Commercial, By Major Source**



**Industrial, By Major Source**



**Transportation, By Major Source**



<sup>1</sup> Electrical system energy losses associated with the generation, transmission, and distribution of energy in the form of electricity.

Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 2.1b-2.1e.

**Table 2.1a Energy Consumption by Sector, Selected Years, 1949-2006**  
(Trillion Btu)

Year	End-Use Sectors								Electric Power Sector <sup>3</sup>	Adjustments <sup>6</sup>	Total <sup>5</sup>			
	Residential		Commercial <sup>1</sup>		Industrial <sup>2</sup>		Transportation							
	Primary <sup>4</sup>	Total <sup>5</sup>	Primary <sup>4</sup>	Total <sup>5</sup>	Primary <sup>4</sup>	Total <sup>5</sup>	Primary <sup>4</sup>	Total <sup>5</sup>						
1949	4,475	5,614	2,661	3,661	12,627	14,717	7,880	7,990	4,339	(s)	31,982			
1950	4,848	6,007	2,824	3,883	13,881	16,233	8,384	8,493	4,679	(s)	34,616			
1955	5,633	7,303	2,548	3,882	16,091	19,472	9,475	9,551	6,461	(s)	40,208			
1960	6,689	9,078	2,702	4,589	16,977	20,823	10,560	10,597	8,158	(s)	45,087			
1965	7,328	10,689	3,150	5,820	20,124	25,075	12,400	12,434	11,014	(s)	54,017			
1970	8,353	13,798	4,196	8,307	22,975	29,641	16,061	16,098	16,259	(s)	67,844			
1971	8,457	14,278	4,283	8,681	22,732	29,601	16,693	16,729	17,124	(s)	69,289			
1972	8,655	14,891	4,369	9,145	23,532	30,953	17,681	17,716	18,466	(s)	72,704			
1973	8,250	14,930	4,381	9,507	24,741	32,653	18,576	18,612	19,753	7	75,708			
1974	7,928	14,683	4,221	9,363	23,816	31,819	18,086	18,119	19,933	7	73,991			
1975	8,006	14,842	4,023	9,466	21,454	29,447	18,209	18,244	20,307	1	71,999			
1976	8,408	15,441	4,333	10,035	22,685	31,430	19,065	19,099	21,513	8	76,012			
1977	8,207	15,689	4,217	10,177	23,193	32,307	19,784	19,820	22,591	7	78,000			
1978	8,272	16,156	4,269	10,481	23,276	32,733	20,580	20,615	23,587	2	79,986			
1979	7,934	15,842	4,333	10,627	24,211	33,962	20,436	20,471	23,987	2	80,903			
1980	R7,453	R15,787	R4,074	R10,563	R22,610	R32,077	R19,658	R19,696	R24,327	-1	R78,122			
1981	R7,058	R15,295	R3,805	R10,602	R21,338	R30,756	R19,476	R19,513	R24,488	3	R76,168			
1982	R7,154	R15,557	R3,835	R10,847	R19,075	R27,656	R19,051	R19,088	R24,034	4	R73,153			
1983	R6,841	R15,457	R3,806	R10,923	R18,577	R27,480	R19,132	R19,175	R24,679	3	R73,038			
1984	R7,148	R15,926	R4,026	R11,494	R20,211	R29,638	R19,607	R19,654	R25,719	3	R76,714			
1985	R7,161	R16,088	R3,695	R11,444	R19,466	R28,875	R20,041	R20,087	R26,132	-4	R76,491			
1986	R6,922	R16,029	R3,657	R11,604	R19,096	R28,331	R20,740	R20,789	R26,338	3	R76,756			
1987	R6,941	R16,321	R3,736	R11,943	R19,974	R29,441	R21,419	R21,469	R27,104	-3	R79,173			
1988	R7,372	R17,186	R3,958	R12,575	R20,882	R30,736	R22,267	R22,318	R28,338	3	R82,819			
1989	R7,586	R17,858	R4,004	R13,203	R20,895	R31,395	R22,425	R22,479	R30,025	9	R84,944			
1990	R6,570	R17,015	R3,858	R13,333	R21,206	R31,894	R22,366	R22,420	R30,660	-9	R84,652			
1991	R6,758	R17,490	R3,906	R13,512	R20,852	R31,485	R22,065	R22,118	R31,025	1	R84,607			
1992	R6,963	R17,427	R3,951	R13,454	R21,785	R32,659	R22,363	R22,416	R30,893	(s)	R85,956			
1993	R7,156	R18,289	R3,934	R13,836	R21,783	R32,719	R22,716	R22,770	R32,025	-10	R87,603			
1994	R6,991	R18,181	R3,979	R14,111	R22,420	R33,606	R23,312	R23,367	R32,563	-6	R89,260			
1995	R6,946	R18,578	R4,063	R14,698	R22,746	R34,045	R23,793	R23,849	R33,621	3	R91,173			
1996	R7,471	R19,562	R4,235	R15,181	R23,443	R34,988	R24,384	R24,439	R34,638	4	R94,175			
1997	R7,040	R19,026	R4,257	R15,694	R23,721	R35,288	R24,697	R24,752	R35,045	6	R94,765			
1998	R6,424	R19,021	R3,964	R15,979	R23,211	R34,928	R25,203	R25,258	R36,385	-3	R95,183			
1999	R6,784	R19,621	R4,007	R16,384	R22,991	R34,855	R25,894	R25,951	R37,136	6	R96,817			
2000	R7,169	R20,488	R4,227	R17,176	R22,871	R34,757	R26,492	R26,552	R38,214	2	R98,975			
2001	R6,879	R20,106	R4,036	R17,141	R21,836	R32,806	R26,215	R26,278	R37,366	R-6	R96,326			
2002	R6,938	R20,874	R4,099	R17,367	R21,857	R32,765	R26,787	R26,848	R38,171	5	R97,858			
2003	R7,252	R21,208	R4,239	R17,351	R21,576	R32,650	R26,928	R27,003	R38,218	-3	R98,209			
2004	R7,020	R21,179	R4,179	R17,663	R22,455	R33,610	R27,820	R27,899	R38,876	(s)	R100,351			
2005	R6,875	R21,652	R4,109	R17,971	R21,653	R32,733	R28,249	R28,331	R39,799	6	R100,691			
2006 <sup>P</sup>	6,403	21,054	3,927	18,001	21,586	32,426	28,313	28,401	39,653	-10	99,873			

<sup>1</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>2</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>3</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>4</sup> See "Primary Energy Consumption" in Glossary.

<sup>5</sup> Total consumption consists of primary energy consumption, electricity retail sales, and electrical

system energy losses. See Note, "Electrical System Energy Losses," at end of section.

<sup>6</sup> A balancing item. The sum of primary consumption in the five energy-use sectors equals the sum of total consumption in the four end-use sectors. However, total energy consumption does not equal the sum of the sectoral components due to the use of sector-specific conversion factors for natural gas and coal.

R=Revised. P=Preliminary. (s)=Less than 0.5 trillion Btu.

Notes: • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

• Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

Sources: Tables 2.1b-2.1f.

**Table 2.1b Residential Sector Energy Consumption, Selected Years, 1949-2006**  
(Trillion Btu)

Year	Primary Consumption <sup>1</sup>								Total Primary	Electricity Retail Sales <sup>4</sup>	Electrical System Energy Losses <sup>5</sup>	Total				
	Fossil Fuels				Renewable Energy <sup>2</sup>											
	Coal	Natural Gas <sup>3</sup>	Petroleum	Total	Geothermal	Solar/PV	Biomass	Total								
1949	1,272	1,027	1,121	3,420	NA	NA	1,055	1,055	4,475	228	911	5,614				
1950	1,261	1,240	1,340	3,842	NA	NA	1,006	1,006	4,848	246	913	6,007				
1955	867	2,198	1,792	4,858	NA	NA	775	775	5,633	438	1,232	7,303				
1960	585	3,212	2,265	6,062	NA	NA	627	627	6,689	687	1,701	9,078				
1965	352	4,028	2,481	6,860	NA	NA	468	468	7,328	993	2,368	10,689				
1970	209	4,987	2,755	7,952	NA	NA	401	401	8,353	1,591	3,854	13,798				
1971	172	5,126	2,777	8,075	NA	NA	382	382	8,457	1,704	4,116	14,278				
1972	116	5,264	2,895	8,276	NA	NA	380	380	8,655	1,838	4,397	14,891				
1973	94	4,977	2,825	7,896	NA	NA	354	354	8,250	1,976	4,703	14,930				
1974	82	4,901	2,573	7,557	NA	NA	371	371	7,928	1,973	4,783	14,683				
1975	63	5,023	2,495	7,580	NA	NA	425	425	8,006	2,007	4,829	14,842				
1976	59	5,147	2,720	7,927	NA	NA	482	482	8,408	2,069	4,963	15,441				
1977	57	4,913	2,695	7,666	NA	NA	542	542	8,207	2,202	5,280	15,689				
1978	49	4,981	2,620	7,651	NA	NA	622	622	8,272	2,301	5,582	16,156				
1979	37	5,055	2,114	7,206	NA	NA	728	728	7,934	2,330	5,578	15,842				
1980	31	R4,825	1,748	R6,603	NA	NA	850	850	R7,453	2,448	R5,885	R15,787				
1981	30	R4,614	1,543	R6,188	NA	NA	870	870	R7,058	2,464	R5,773	R15,295				
1982	32	R4,711	1,441	R6,184	NA	NA	970	970	R7,154	2,489	R5,914	R15,557				
1983	31	R4,478	1,362	R5,871	NA	NA	970	970	R6,841	2,562	R6,054	R15,457				
1984	40	R4,661	1,468	R6,168	NA	NA	980	980	R7,148	2,662	R6,116	R15,926				
1985	39	R4,534	1,578	R6,151	NA	NA	1,010	1,010	R7,161	2,709	R6,219	R16,088				
1986	40	R4,405	1,556	R6,002	NA	NA	920	920	R6,922	2,795	R6,313	R16,029				
1987	37	R4,420	1,634	R6,091	NA	NA	850	850	R6,941	2,902	R6,479	R16,321				
1988	37	R4,735	1,690	R6,462	NA	NA	910	910	R7,372	3,046	R6,768	R17,186				
1989	31	R4,899	1,679	R6,608	5	53	920	978	R7,586	3,090	R7,182	R17,858				
1990	31	R4,491	1,407	R5,929	6	56	580	641	R6,570	3,153	R7,291	R17,015				
1991	25	R4,667	1,392	R6,085	6	58	610	674	R6,758	3,260	R7,472	R17,490				
1992	26	R4,805	1,427	R6,257	6	60	640	706	R6,963	3,193	R7,270	R17,427				
1993	26	R5,063	1,448	R6,537	7	62	550	618	R7,156	3,394	R7,739	R18,289				
1994	21	R4,960	1,420	R6,401	6	64	520	590	R6,991	3,441	R7,750	R18,181				
1995	17	R4,954	1,383	R6,355	7	65	520	591	R6,946	3,557	R8,075	R18,578				
1996	17	R5,354	1,488	R6,859	7	65	540	612	R7,471	3,694	R8,397	R19,562				
1997	16	R5,093	1,428	R6,537	8	65	R430	R503	R7,040	3,671	R8,315	R19,026				
1998	12	R4,646	1,314	R5,971	8	65	380	452	R6,424	3,856	R8,741	R19,021				
1999	14	R4,835	1,473	R6,322	9	64	R390	R462	R6,784	3,906	R8,931	R19,621				
2000	11	R5,105	1,563	R6,679	9	61	R420	R490	R7,169	4,069	R9,250	R20,488				
2001	12	R4,889	1,539	R6,440	9	60	370	439	R6,879	R4,100	R9,127	R20,106				
2002	12	R5,014	R1,463	R6,489	10	59	380	449	R6,938	R4,317	R9,619	R20,874				
2003	12	R5,230	R1,539	R6,781	13	58	400	471	R7,252	R4,353	R9,603	R21,208				
2004	R13	R4,986	R1,539	R6,538	14	59	410	483	R7,020	R4,408	R9,750	R21,179				
2005	R8	R4,930	R1,450	R6,389	16	R61	R410	R487	R6,875	R4,638	R10,139	R21,652				
2006 <sup>P</sup>	8	4,475	1,445	5,929	18	65	390	474	6,403	4,621	10,031	21,054				

<sup>1</sup> See "Primary Energy Consumption" in Glossary.

<sup>2</sup> All values are estimated. See Table 10.2a for notes on series components.

<sup>3</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels.

<sup>4</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>5</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to

each sector's share of total electricity retail sales. See Note, "Electrical System Energy Losses," at end of section.

R=Revised. P=Preliminary. NA=Not available.

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

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

Sources: Tables 2.1f, 5.14a, 6.5, 7.3, 8.9, 10.2a, A4, A5, and A6.

**Table 2.1c Commercial Sector Energy Consumption, Selected Years, 1949-2006**  
(Trillion Btu)

Year	Primary Consumption <sup>1</sup>								Total Primary	Electricity Retail Sales <sup>6</sup>	Electrical System Energy Losses <sup>7</sup>	Total				
	Fossil Fuels				Renewable Energy <sup>2</sup>											
	Coal	Natural Gas <sup>3</sup>	Petroleum <sup>4</sup>	Total	Hydroelectric Power <sup>5</sup>	Geothermal	Biomass	Total								
1949	1,554	360	727	2,641	NA	NA	20	20	2,661	200	800	3,661				
1950	1,542	401	862	2,805	NA	NA	19	19	2,824	225	834	3,883				
1955	801	651	1,081	2,533	NA	NA	15	15	2,548	350	984	3,882				
1960	407	1,056	1,228	2,690	NA	NA	12	12	2,702	543	1,344	4,589				
1965	265	1,490	1,386	3,142	NA	NA	9	9	3,150	789	1,880	5,820				
1970	165	2,473	1,551	4,189	NA	NA	8	8	4,196	1,201	2,910	8,307				
1971	179	2,587	1,510	4,276	NA	NA	7	7	4,283	1,288	3,111	8,681				
1972	153	2,678	1,530	4,362	NA	NA	7	7	4,369	1,408	3,368	9,145				
1973	160	2,649	1,565	4,374	NA	NA	7	7	4,381	1,517	3,609	9,507				
1974	175	2,617	1,423	4,214	NA	NA	7	7	4,221	1,501	3,640	9,363				
1975	147	2,558	1,310	4,015	NA	NA	8	8	4,023	1,598	3,845	9,466				
1976	144	2,718	1,461	4,323	NA	NA	9	9	4,333	1,678	4,025	10,035				
1977	148	2,548	1,511	4,207	NA	NA	10	10	4,217	1,754	4,206	10,177				
1978	165	2,643	1,450	4,257	NA	NA	12	12	4,269	1,813	4,398	10,481				
1979	149	2,836	1,334	4,319	NA	NA	14	14	4,333	1,854	4,439	10,627				
1980	115	R2,651	1,287	R4,053	NA	NA	21	21	R4,074	1,906	R4,582	R10,563				
1981	137	R2,557	1,090	R3,784	NA	NA	21	21	R3,805	2,033	R4,763	R10,602				
1982	155	R2,650	1,008	R3,813	NA	NA	R22	22	R3,835	2,077	R4,935	R10,847				
1983	162	R2,486	1,136	R3,784	NA	NA	R22	22	R3,806	2,116	R5,001	R10,923				
1984	169	R2,582	1,252	R4,004	NA	NA	R22	22	R4,026	2,264	R5,203	R11,494				
1985	137	R2,488	1,045	R3,670	NA	NA	24	24	R3,695	2,351	R5,398	R11,444				
1986	135	R2,367	1,126	R3,629	NA	NA	27	27	R3,657	2,439	R5,508	R11,604				
1987	125	R2,489	1,093	R3,707	NA	NA	R30	R30	R3,736	2,539	R5,669	R11,943				
1988	131	R2,731	1,063	R3,925	NA	NA	R33	R33	R3,958	2,675	R5,943	R12,575				
1989	115	R2,785	1,002	R3,902	1	3	R99	102	R4,004	2,767	R6,431	R13,203				
1990	124	R2,682	953	R3,760	1	3	94	98	R3,858	2,860	R6,615	R13,333				
1991	116	R2,795	895	R3,806	1	3	95	R100	R3,906	2,918	R6,689	R13,512				
1992	117	R2,871	854	R3,842	1	3	R105	109	R3,951	2,900	R6,603	R13,454				
1993	117	R2,923	780	R3,820	1	3	109	R114	R3,934	3,019	R6,883	R13,836				
1994	118	R2,962	787	R3,867	1	4	106	R112	R3,979	3,116	R7,017	R14,111				
1995	117	R3,096	732	R3,945	1	5	113	118	R4,063	3,252	R7,382	R14,698				
1996	122	R3,226	751	R4,099	1	5	129	135	R4,235	3,344	R7,603	R15,181				
1997	129	R3,285	704	R4,118	1	6	131	138	R4,257	3,503	R7,935	R15,694				
1998	93	R3,083	661	R3,837	1	7	118	127	R3,964	3,678	R8,338	R15,979				
1999	103	R3,115	661	R3,879	1	7	121	R129	R4,007	3,766	R8,610	R16,384				
2000	92	R3,252	756	R4,099	1	8	119	R128	R4,227	3,956	R8,993	R17,176				
2001	97	R3,097	R741	R3,935	1	8	R92	R101	R4,036	R4,062	R9,043	R17,141				
2002	90	R3,225	681	R3,995	(s)	9	R95	R104	R4,099	R4,110	R9,158	R17,367				
2003	82	R3,274	R770	R4,126	1	11	R101	R113	R4,239	R4,090	R9,023	R17,351				
2004	R102	R3,204	R755	R4,061	1	12	R105	R118	R4,179	R4,198	R9,286	R17,663				
2005	R86	R3,182	R723	R3,990	1	14	R105	R119	R4,109	R4,351	R9,511	R17,971				
2006 <sup>p</sup>	85	3,003	723	3,811	1	14	101	116	3,927	4,439	9,635	18,001				

<sup>1</sup> See "Primary Energy Consumption" in Glossary.

<sup>2</sup> Most values are estimated. See Table 10.2a for notes on series components and estimation.

<sup>3</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels.

<sup>4</sup> Does not include the ethanol portion of motor gasoline—ethanol is included in "Biomass."

<sup>5</sup> Conventional hydroelectric power.

<sup>6</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>7</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to

each sector's share of total electricity retail sales. See Note, "Electrical System Energy Losses," at end of section.

R=Revised. P=Revised. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

Sources: Tables 2.1f, 5.14a, 6.5, 7.3, 8.9, 10.2a, A4, A5, and A6.

**Table 2.1d Industrial Sector Energy Consumption, Selected Years, 1949-2006**  
(Trillion Btu)

Year	Primary Consumption <sup>1</sup>										Total Primary	Electricity Retail Sales <sup>6</sup>	Electrical System Energy Losses <sup>7</sup>	Total				
	Fossil Fuels					Renewable Energy <sup>2</sup>												
	Coal	Coal Coke Net Imports	Natural Gas <sup>3</sup>	Petroleum <sup>4</sup>	Total	Hydroelectric Power <sup>5</sup>	Geothermal	Biomass	Total									
1949	5,433	-7	3,188	3,468	12,083	76	NA	468	544	12,627	418	1,672	14,717					
1950	5,781	1	3,546	3,951	13,279	69	NA	532	602	13,881	500	1,852	16,233					
1955	5,620	-10	4,701	5,111	15,421	38	NA	631	669	16,091	887	2,495	19,472					
1960	4,543	-6	5,973	5,747	16,258	39	NA	680	719	16,977	1,107	2,739	20,823					
1965	5,127	-18	7,339	6,789	19,236	33	NA	855	888	20,124	1,463	3,488	25,075					
1970	4,656	-58	9,536	7,787	21,922	34	NA	1,019	1,053	22,975	1,948	4,719	29,641					
1971	3,944	-33	9,892	7,856	21,659	34	NA	1,040	1,074	22,732	2,011	4,857	29,601					
1972	3,993	-26	9,884	8,534	22,385	34	NA	1,113	1,147	23,532	2,187	5,233	30,953					
1973	4,057	-7	10,388	9,104	23,541	35	NA	1,165	1,200	24,741	2,341	5,571	32,653					
1974	3,870	56	10,004	8,694	22,624	33	NA	1,159	1,192	23,816	2,337	5,666	31,819					
1975	3,667	14	8,532	8,146	20,359	32	NA	1,063	1,096	21,454	2,346	5,647	29,447					
1976	3,661	(s)	8,762	9,010	21,432	33	NA	1,220	1,253	22,685	2,573	6,171	31,430					
1977	3,454	15	8,635	9,774	21,879	33	NA	1,281	1,314	23,193	2,682	6,432	32,307					
1978	3,314	125	8,539	9,867	21,845	32	NA	1,400	1,432	23,276	2,761	6,696	32,733					
1979	3,593	63	8,549	10,568	22,773	34	NA	1,405	1,439	24,211	2,873	6,878	33,962					
1980	3,155	-35	R\$8,333	9,525	R\$20,977	33	NA	1,600	1,633	R\$22,610	2,781	R\$6,686	R\$32,077					
1981	3,157	-16	R\$8,185	8,285	R\$19,610	33	NA	R\$1,695	R\$1,728	R\$21,338	2,817	R\$6,600	R\$30,756					
1982	2,552	-22	R\$7,068	7,795	R\$17,393	33	NA	R\$1,649	R\$1,682	R\$19,075	2,542	R\$6,039	R\$27,656					
1983	2,490	-16	R\$6,776	7,420	R\$16,670	33	NA	R\$1,874	R\$1,907	R\$18,577	2,648	R\$6,256	R\$27,480					
1984	2,842	-11	R\$7,405	8,025	R\$18,260	33	NA	R\$1,917	R\$1,950	R\$20,211	2,859	R\$6,568	R\$29,638					
1985	2,760	-13	R\$7,032	7,738	R\$17,516	33	NA	R\$1,917	R\$1,950	R\$19,466	2,855	R\$6,554	R\$28,875					
1986	2,641	-17	R\$6,646	7,880	R\$17,150	33	NA	R\$1,914	R\$1,947	R\$19,096	2,834	R\$6,401	R\$28,331					
1987	2,673	9	R\$7,283	8,065	R\$18,029	33	NA	R\$1,912	R\$1,945	R\$19,974	2,928	R\$6,538	R\$29,441					
1988	2,828	40	R\$7,655	8,339	R\$18,861	33	NA	R\$1,988	R\$2,020	R\$20,882	3,059	R\$6,795	R\$30,736					
1989	2,787	30	R\$8,088	8,120	R\$19,025	28	2	R\$1,840	R\$1,870	R\$20,895	3,158	R\$7,342	R\$31,395					
1990	2,756	5	R\$8,451	8,278	R\$19,490	31	2	R\$1,683	R\$1,716	R\$21,206	3,226	R\$7,461	R\$31,894					
1991	2,601	10	R\$8,572	7,987	R\$19,169	30	2	R\$1,651	R\$1,683	R\$20,852	3,230	R\$7,403	R\$31,485					
1992	2,515	35	R\$8,918	8,581	R\$20,048	31	2	R\$1,704	R\$1,737	R\$21,785	3,319	R\$7,556	R\$32,659					
1993	2,496	27	R\$9,070	R\$8,417	R\$20,011	30	2	R\$1,740	R\$1,772	R\$21,783	3,334	R\$7,602	R\$32,719					
1994	2,510	58	R\$9,126	R\$8,799	R\$20,493	62	3	R\$1,862	R\$1,927	R\$22,420	3,439	R\$7,746	R\$33,606					
1995	2,488	61	R\$9,592	R\$8,613	R\$20,754	55	3	R\$1,935	R\$1,992	R\$22,746	3,455	R\$7,844	R\$34,045					
1996	2,434	23	R\$9,901	R\$9,052	R\$21,410	61	3	R\$1,970	R\$2,033	R\$23,443	3,527	R\$8,018	R\$34,988					
1997	2,395	46	R\$9,933	R\$9,289	R\$21,663	58	3	R\$1,997	R\$2,058	R\$23,721	3,542	R\$8,024	R\$35,288					
1998	2,335	67	R\$9,763	R\$9,114	R\$21,280	55	3	R\$1,873	R\$1,931	R\$23,211	3,587	R\$8,131	R\$34,928					
1999	2,227	58	R\$9,375	R\$9,395	R\$21,054	49	4	R\$1,883	R\$1,936	R\$22,991	3,611	R\$8,254	R\$34,855					
2000	2,256	65	R\$9,500	R\$9,119	R\$20,941	42	4	R\$1,884	R\$1,930	R\$22,871	3,631	R\$8,255	R\$34,757					
2001	2,192	29	R\$8,676	R\$9,217	R\$20,115	33	5	R\$1,684	R\$1,721	R\$21,836	R\$3,400	R\$7,570	R\$32,806					
2002	2,019	61	R\$8,845	R\$9,209	R\$20,135	39	5	R\$1,679	R\$1,723	R\$21,857	R\$3,379	R\$7,528	R\$32,765					
2003	2,041	51	R\$8,521	R\$9,232	R\$19,845	43	3	R\$1,684	R\$1,731	R\$21,576	R\$3,454	R\$7,620	R\$32,650					
2004	2,047	138	R\$8,544	R\$9,866	R\$20,594	33	4	R\$1,824	R\$1,861	R\$22,455	R\$3,473	R\$7,682	R\$33,610					
2005	R\$1,954	44	R\$8,064	R\$9,706	R\$19,768	32	4	R\$1,849	R\$1,885	R\$21,653	R\$3,477	R\$7,602	R\$32,733					
2006 <sup>p</sup>	1,938	61	7,943	9,696	19,638	30	4	1,914	1,949	21,586	3,419	7,421	32,426					

<sup>1</sup> See "Primary Energy Consumption" in Glossary.

<sup>2</sup> Most values are estimated. See Table 10.2b for notes on series components and estimation.

<sup>3</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels.

<sup>4</sup> Does not include the ethanol portion of motor gasoline—ethanol is included in "Biomass."

<sup>5</sup> Conventional hydroelectric power.

<sup>6</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>7</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to

each sector's share of total electricity retail sales. See Note, "Electrical System Energy Losses," at end of section.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

Sources: Tables 2.1f, 5.14b, 6.5, 7.3, 7.7, 8.9, 10.2b, A4, A5, and A6.

**Table 2.1e Transportation Sector Energy Consumption, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Primary Consumption <sup>1</sup>					Biomass	Total Primary	Electricity Retail Sales <sup>5</sup>	Electrical System Energy Losses <sup>6</sup>	Total					
	Fossil Fuels				Renewable Energy <sup>2</sup>										
	Coal	Natural Gas <sup>3</sup>	Petroleum <sup>4</sup>	Total											
1949	1,727	NA	6,152	7,880	NA	7,880	22	88	7,990						
1950	1,564	130	6,690	8,384	NA	8,384	23	86	8,493						
1955	421	254	8,800	9,475	NA	9,475	20	56	9,551						
1960	75	359	10,126	10,560	NA	10,560	10	26	10,597						
1965	16	517	11,868	12,400	NA	12,400	10	24	12,434						
1970	7	745	15,310	16,061	NA	16,061	11	26	16,098						
1971	5	766	15,923	16,693	NA	16,693	10	25	16,729						
1972	4	787	16,891	17,681	NA	17,681	10	25	17,716						
1973	3	743	17,831	18,576	NA	18,576	11	25	18,612						
1974	2	685	17,399	18,086	NA	18,086	10	24	18,119						
1975	1	595	17,614	18,209	NA	18,209	10	24	18,244						
1976	(s)	559	18,506	19,065	NA	19,065	10	24	19,099						
1977	(s)	543	19,241	19,784	NA	19,784	10	25	19,820						
1978	(7)	539	20,041	20,580	NA	20,580	10	24	20,615						
1979	(7)	612	19,825	20,436	NA	20,436	10	24	20,471						
1980	(7)	650	19,008	19,658	NA	19,658	11	27	19,696						
1981	(7)	658	18,811	19,469	7	19,476	11	R25	19,513						
1982	(7)	612	18,420	19,032	19	19,051	11	26	19,088						
1983	(7)	505	18,593	19,098	R34	R19,132	13	30	R19,175						
1984	(7)	545	19,020	19,565	R42	R19,607	14	33	R19,654						
1985	(7)	519	19,471	19,990	R51	R20,041	14	R32	R20,087						
1986	(7)	499	20,182	20,681	R59	R20,740	15	34	R20,789						
1987	(7)	535	20,816	21,352	R67	R21,419	16	35	R21,469						
1988	(7)	632	21,567	22,198	R68	R22,267	16	35	R22,318						
1989	(7)	649	21,706	22,355	R69	R22,425	16	38	R22,479						
1990	(7)	680	21,625	22,305	R62	R22,366	16	R37	R22,420						
1991	(7)	620	21,373	21,994	R72	R22,065	16	37	R22,118						
1992	(7)	608	21,674	22,282	R81	R22,363	16	37	R22,416						
1993	(7)	645	R21,976	R22,621	R96	22,716	16	37	22,770						
1994	(7)	709	R22,496	R23,205	R107	23,312	17	38	23,367						
1995	(7)	724	R22,954	R23,678	R115	23,793	17	39	23,849						
1996	(7)	737	R23,565	R24,302	R82	24,384	17	38	24,439						
1997	(7)	780	R23,813	R24,593	R104	24,697	17	38	24,752						
1998	(7)	666	R24,422	R25,088	R115	25,203	17	38	R25,258						
1999	(7)	675	R25,098	R25,774	R120	25,894	17	40	25,951						
2000	(7)	672	R25,682	R26,354	R138	26,492	18	42	R26,552						
2001	(7)	R658	R25,412	R26,071	R145	R26,215	R20	R43	R26,278						
2002	(7)	702	R25,913	R26,615	R172	R26,787	19	42	R26,848						
2003	(7)	630	R26,063	R26,693	R235	R26,928	23	R51	R27,003						
2004	(7)	R603	R26,922	R27,525	R295	R27,820	R25	R55	R27,899						
2005	(7)	R625	RP27,280	R27,904	R345	R28,249	R26	R56	R28,331						
2006 <sup>p</sup>	(7)	617	27,248	27,865	448	28,313	28	60	28,401						

<sup>1</sup> See "Primary Energy Consumption" in Glossary.

<sup>2</sup> All values are estimated. See Table 10.2b for notes on series components.

<sup>3</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels. Data are for natural gas consumed in the operation of pipelines (primarily in compressors) and small amounts consumed as vehicle fuel. See Table 6.5.

<sup>4</sup> Does not include the ethanol portion of motor gasoline—ethanol is included in "Biomass."

<sup>5</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>6</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the

energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note, "Electrical System Energy Losses," at end of section.

<sup>7</sup> Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

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

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

Sources: Tables 2.1f, 5.14c, 6.5, 7.3, 8.9, 10.2b, A4, A5, and A6.

**Table 2.1f Electric Power Sector Energy Consumption, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Primary Consumption <sup>1</sup>											Electricity Net Imports <sup>6</sup>	Total Primary		
	Fossil Fuels				Nuclear Electric Power	Renewable Energy <sup>2</sup>									
	Coal	Natural Gas <sup>3</sup>	Petroleum <sup>4</sup>	Total		Hydroelectric Power <sup>5</sup>	Geothermal	Solar/PV	Wind	Biomass	Total				
1949	1,995	569	415	2,979	0	1,349	NA	NA	NA	6	1,355	5	4,339		
1950	2,199	651	472	3,322	0	1,346	NA	NA	NA	5	1,351	6	4,679		
1955	3,458	1,194	471	5,123	0	1,322	NA	NA	NA	3	1,325	14	6,461		
1960	4,228	1,785	553	6,565	6	1,569	1	NA	NA	2	1,571	15	8,158		
1965	5,821	2,395	722	8,938	43	2,026	4	NA	NA	3	2,033	(s)	11,014		
1970	7,227	4,054	2,117	13,399	239	2,600	11	NA	NA	4	2,615	7	16,259		
1971	7,299	4,099	2,495	13,893	413	2,790	12	NA	NA	3	2,806	12	17,124		
1972	7,811	4,084	3,097	14,992	584	2,829	31	NA	NA	3	2,864	26	18,466		
1973	8,658	3,748	3,515	15,921	910	2,827	43	NA	NA	3	2,873	49	19,753		
1974	8,534	3,519	3,365	15,418	1,272	3,143	53	NA	NA	3	3,199	43	19,933		
1975	8,786	3,240	3,166	15,191	1,900	3,122	70	NA	NA	2	3,194	21	20,307		
1976	9,720	3,152	3,477	16,349	2,111	2,943	78	NA	NA	3	3,024	29	21,513		
1977	10,262	3,284	3,901	17,446	2,702	2,301	77	NA	NA	5	2,383	59	22,591		
1978	10,238	3,297	3,987	17,522	3,024	2,905	64	NA	NA	3	2,973	67	23,587		
1979	11,260	3,613	3,283	18,156	2,776	2,897	84	NA	NA	5	2,986	69	23,987		
1980	12,123	R3,778	2,634	R18,534	2,739	2,867	110	NA	NA	5	2,982	71	R24,327		
1981	12,583	R3,730	2,202	R18,516	3,008	2,725	123	NA	NA	4	2,852	113	R24,488		
1982	12,582	R3,312	1,568	R17,462	3,131	3,233	105	NA	NA	3	3,341	100	R24,034		
1983	13,213	R2,972	1,544	R17,729	3,203	3,494	129	NA	(s)	4	3,627	121	R24,679		
1984	14,019	R3,199	1,286	R18,504	3,553	3,353	165	(s)	(s)	9	3,527	135	R25,719		
1985	14,542	R3,135	1,090	R18,767	4,076	2,937	198	(s)	(s)	14	3,150	140	R26,132		
1986	14,444	R2,670	1,452	R18,566	4,380	3,038	219	(s)	(s)	12	3,270	122	R26,338		
1987	15,173	R2,916	1,257	R19,346	4,754	2,602	229	(s)	(s)	15	2,846	158	R27,104		
1988	15,850	R2,693	1,563	R20,106	5,587	2,302	217	(s)	(s)	17	2,536	108	R28,338		
1989 <sup>7</sup>	16,137	R3,173	1,703	R21,013	5,602	2,808	308	3	22	232	3,372	37	R30,025		
1990	16,261	R3,309	1,289	R20,859	6,104	3,014	326	4	29	317	3,689	8	R30,660		
1991	16,250	R3,377	1,198	R20,825	6,422	2,985	335	5	31	354	3,710	67	R31,025		
1992	16,466	R3,512	991	R20,968	6,479	2,586	338	4	30	402	3,360	87	R30,893		
1993	17,196	R3,538	1,124	R21,857	6,410	2,861	351	5	31	415	3,662	95	R32,025		
1994	17,261	R3,977	1,059	R22,297	6,694	2,620	325	5	36	434	3,420	153	R32,563		
1995	17,466	R4,302	755	R22,523	7,075	3,149	280	5	33	422	3,889	134	R33,621		
1996	18,429	R3,862	817	R23,109	7,087	3,528	300	5	33	438	4,305	137	R34,638		
1997	18,905	R4,126	927	R23,957	6,597	3,581	309	5	34	446	4,375	116	R35,045		
1998	19,216	R4,675	1,306	R25,197	7,068	3,241	311	5	31	444	4,032	88	R36,385		
1999	19,279	R4,902	1,211	R25,393	7,610	3,218	312	5	46	453	4,034	99	R37,136		
2000	20,220	R5,293	1,144	R26,658	7,862	2,768	296	5	57	453	3,579	115	R38,214		
2001	19,614	R5,458	1,277	R26,348	8,033	2,209	289	6	70	R337	R2,910	75	R37,366		
2002	19,783	R5,767	961	R26,511	8,143	2,650	305	6	105	R380	R3,445	72	R38,171		
2003	20,185	R5,246	1,205	R26,636	7,959	2,781	303	5	115	R397	R3,601	22	R38,218		
2004	20,305	R5,595	1,212	R27,112	8,222	2,656	311	6	142	R388	R3,503	39	R38,876		
2005	R20,737	R6,015	R1,235	R27,987	R8,160	R2,670	R309	6	R178	R406	R3,568	84	R39,799		
2006 <sup>p</sup>	20,480	6,402	646	27,527	8,208	2,858	312	5	258	423	3,857	60	39,653		

<sup>1</sup> See "Primary Energy Consumption" in Glossary.

<sup>2</sup> See Table 10.2c for notes on series components.

<sup>3</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels.

<sup>4</sup> See Table 5.14c for series components.

<sup>5</sup> Conventional hydroelectricity net generation.

<sup>6</sup> Net imports equal imports minus exports.

<sup>7</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

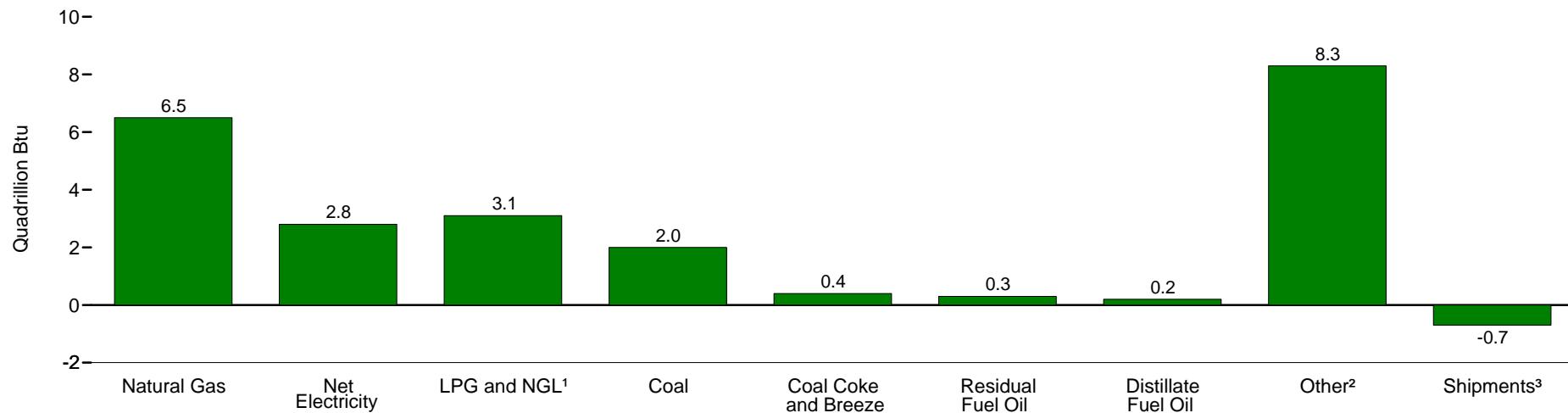
Notes: • Data are for fuels consumed to produce electricity and useful thermal output. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Note 3, "Electricity Imports and Exports," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/consump.html>.

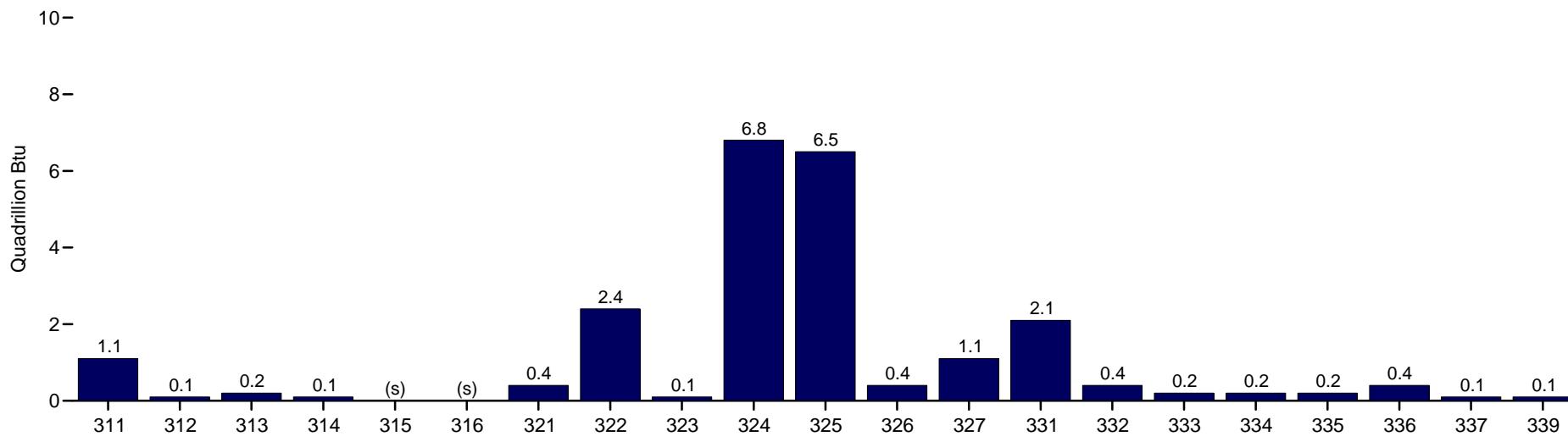
Sources: Tables 5.14c, 6.5, 7.3, 8.1, 8.2b, 10.2c, A4, A5, and A6.

**Figure 2.2 Manufacturing Consumption of Energy for All Purposes, 2002**

**By Energy Source**



**By North American Industry Classification System (NAICS)<sup>4</sup>**



<sup>1</sup> Liquefied petroleum gases and natural gas liquids.

<sup>2</sup> Includes all other types of energy that respondents indicated were consumed or allocated.

<sup>3</sup> Energy sources produced onsite from the use of other energy sources but sold or transferred to another entity.

<sup>4</sup> See Table 2.2 for Major Group titles of industries that correspond to the 3-digit NAICS codes.

(s)=Less than 0.05 quadrillion Btu.

Source: Table 2.2.

**Table 2.2 Manufacturing Consumption of Energy for All Purposes, 2002**  
 (Trillion Btu )

NAICS <sup>1</sup> Code	Major Group	Coal	Coal Coke and Breeze	Natural Gas	Distillate Fuel Oil	LPG <sup>2</sup> and NGL <sup>3</sup>	Residual Fuel Oil	Net Electricity <sup>4</sup>	Other <sup>5</sup>	Shipments of Energy Sources <sup>6</sup>	Total <sup>7</sup>
311	Food .....	184	1	582	19	5	13	230	89	0	1,123
312	Beverage and Tobacco Products .....	17	0	46	2	1	2	26	11	0	105
313	Textile Mills .....	22	0	75	2	2	4	86	15	0	207
314	Textile Product Mills .....	Q	0	29	Q	1	2	17	Q	0	60
315	Apparel .....	0	0	16	1	(s)	(s)	12	(s)	0	30
316	Leather and Allied Products .....	0	0	4	(s)	(s)	(s)	2	(s)	0	7
321	Wood Products .....	1	0	57	13	5	1	72	228	0	377
322	Paper .....	236	4	504	13	6	100	223	1,276	0	2,363
323	Printing and Related Support .....	0	0	46	(s)	1	(s)	50	1	0	98
324	Petroleum and Coal Products .....	Q	2	878	19	24	25	127	5,520	83	6,799
325	Chemicals .....	344	6	2,307	14	3,001	87	522	687	504	6,465
326	Plastics and Rubber Products .....	Q	0	128	2	6	7	181	5	0	351
327	Nonmetallic Mineral Products .....	309	11	422	34	3	3	142	136	0	1,059
331	Primary Metals .....	515	355	704	15	3	1	493	178	143	2,120
332	Fabricated Metal Products .....	1	Q	210	6	3	Q	161	3	0	388
333	Machinery .....	1	0	82	3	3	(s)	84	4	0	177
334	Computer and Electronic Products .....	(s)	0	65	1	(s)	1	131	3	0	201
335	Electrical Equipment, Appliances, and Components .....	(s)	(s)	53	1	1	(s)	47	70	0	172
336	Transportation Equipment .....	8	Q	203	4	4	6	172	30	0	429
337	Furniture and Related Products .....	1	0	25	1	1	(s)	24	11	0	64
339	Miscellaneous .....	0	0	32	1	1	(s)	35	2	0	71
—	Total Manufacturing .....	1,958	385	6,468	152	3,070	255	2,840	8,271	730	22,666

<sup>1</sup> North American Industry Classification System (NAICS).

<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Natural gas liquids.

<sup>4</sup> "Net Electricity" is the sum of purchases, transfers in, and onsite generation from noncombustible renewable energy sources, minus quantities sold and transferred out; it excludes onsite generation from combustible fuels.

<sup>5</sup> Includes all other types of energy that respondents indicated were consumed or allocated, such as asphalt and road oil, lubricants, naphtha < 401° F, other oils >= 401° F, special naphthas, waxes, and miscellaneous nonfuel products, which are nonfuel products assigned to the petroleum refining industry group (NAICS 324110).

<sup>6</sup> Energy sources produced onsite from the use of other energy sources but sold or transferred to another entity.

<sup>7</sup> The sum of coal, coal coke and breeze, natural gas, distillate fuel oil, liquefied petroleum gases, natural gas liquids, residual fuel oil, net electricity, and other, minus shipments of energy sources.

(s)=Less than 0.5 trillion Btu. Q=Data withheld because the relative standard error was greater than 50 percent.

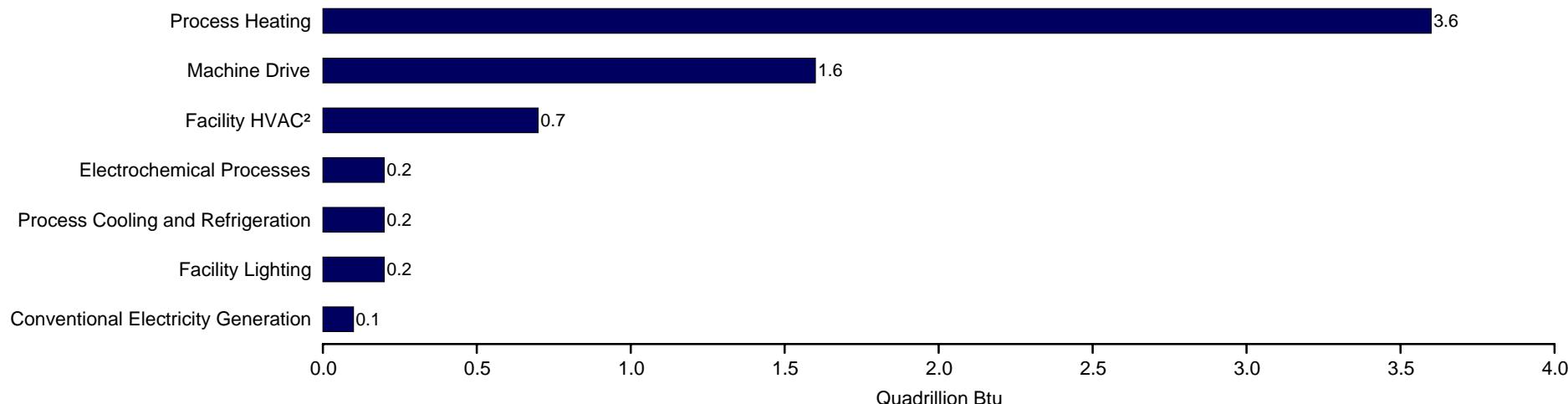
Notes: • Data are estimates for the first use of energy for heat and power and as feedstocks or raw material inputs. "First use" is the consumption of energy that was originally produced offsite or was produced onsite from input materials not classified as energy. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/meecs>.

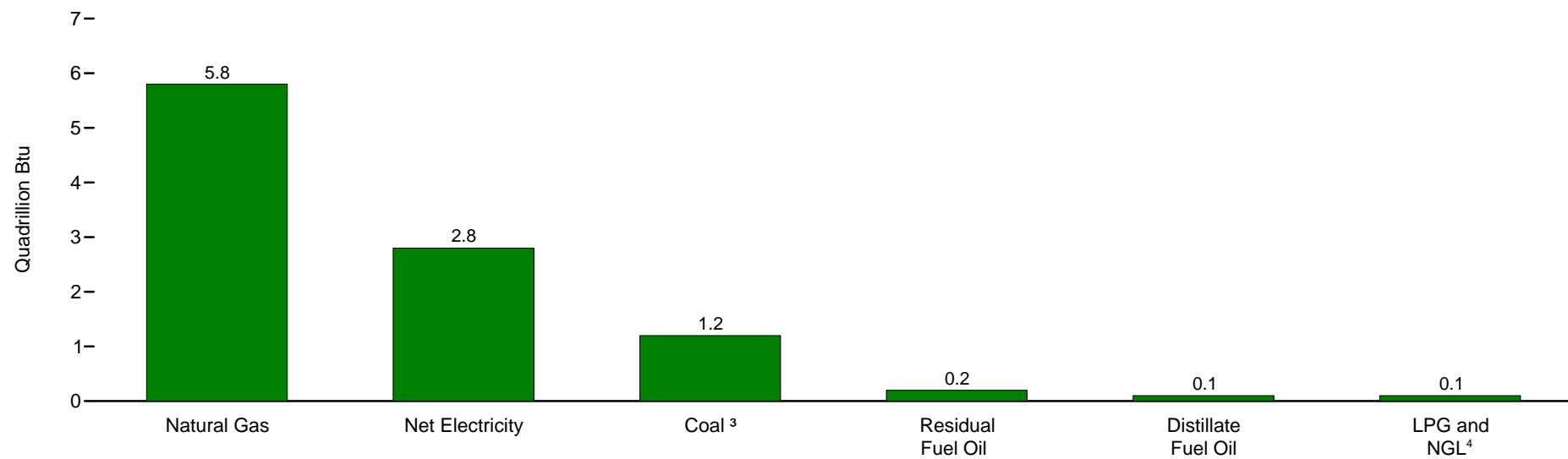
Source: Energy Information Administration, Form EIA-846, "2002 Manufacturing Energy Consumption Survey."

**Figure 2.3 Manufacturing Inputs for Heat, Power, and Electricity Generation, 2002**

**By Selected End Use<sup>1</sup>**



**By Energy Source**



<sup>1</sup> Excludes inputs of unallocated energy sources (6,006 trillion Btu).

<sup>2</sup> Heating, ventilation, and air conditioning. Excludes steam and hot water.

<sup>3</sup> Excludes coal coke and breeze.

<sup>4</sup> Liquefied petroleum gases and natural gas liquids.

Source: Table 2.3.

**Table 2.3 Manufacturing Inputs for Heat, Power, and Electricity Generation by End Use, 2002**

End-Use Category	Net Electricity <sup>1</sup>	Residual Fuel Oil	Distillate Fuel Oil	LPG <sup>2</sup> and NGL <sup>3</sup>	Natural Gas	Coal <sup>4</sup>	Total <sup>5</sup>
	Million Kilowatthours	Million Barrels			Billion Cubic Feet	Million Short Tons	
<b>Indirect End Use (Boiler Fuel) .....</b>	<b>3,540</b>	<b>20</b>	<b>6</b>	<b>2</b>	<b>2,105</b>	<b>35</b>	<b>--</b>
Conventional Boiler Use .....	2,496	12	4	2	1,271	11	--
CHP <sup>6</sup> and/or Cogeneration Process .....	1,043	8	2	(s)	834	23	--
<b>Direct End Use</b>							
<b>All Process Uses .....</b>	<b>650,100</b>	<b>10</b>	<b>7</b>	<b>16</b>	<b>2,878</b>	<b>17</b>	<b>--</b>
Process Heating .....	100,541	9	4	15	2,670	17	--
Process Cooling and Refrigeration .....	56,723	(s)	(s)	(s)	44	(s)	--
Machine Drive .....	417,998	(s)	3	1	106	(s)	--
Electrochemical Processes .....	71,045	--	--	--	--	--	--
Other Process Uses .....	3,793	(s)	(s)	(s)	58	(s)	--
<b>All Non-Process Uses .....</b>	<b>150,530</b>	<b>1</b>	<b>9</b>	<b>6</b>	<b>500</b>	<b>1</b>	<b>--</b>
Facility Heating, Ventilation, and Air Conditioning <sup>7</sup> ...	76,840	1	1	1	406	(s)	--
Facility Lighting .....	57,460	--	--	--	--	--	--
Other Facility Support .....	14,087	(s)	(s)	(s)	29	(s)	--
Onsite Transportation .....	1,212	--	6	5	2	--	--
Conventional Electricity Generation .....	--	(s)	Q	(s)	54	1	--
Other Non-Process Use .....	931	(s)	Q	(s)	10	0	--
<b>End Use Not Reported .....</b>	<b>28,087</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>157</b>	<b>(s)</b>	<b>--</b>
<b>Total .....</b>	<b>832,257</b>	<b>33</b>	<b>24</b>	<b>26</b>	<b>5,641</b>	<b>53</b>	<b>--</b>
Trillion Btu							
<b>Indirect End Use (Boiler Fuel) .....</b>	<b>12</b>	<b>127</b>	<b>35</b>	<b>8</b>	<b>2,162</b>	<b>776</b>	<b>3,120</b>
Conventional Boiler Use .....	9	76	25	8	1,306	255	1,679
CHP <sup>6</sup> and/or Cogeneration Process .....	4	51	10	(s)	857	521	1,443
<b>Direct End Use</b>							
<b>All Process Uses .....</b>	<b>2,218</b>	<b>60</b>	<b>43</b>	<b>64</b>	<b>2,956</b>	<b>381</b>	<b>5,722</b>
Process Heating .....	343	58	24	60	2,742	368	3,595
Process Cooling and Refrigeration .....	194	(s)	2	(s)	45	(s)	241
Machine Drive .....	1,426	2	16	4	109	5	1,562
Electrochemical Processes .....	242	--	--	--	--	--	242
Other Process Uses .....	13	(s)	1	(s)	60	7	81
<b>All Non-Process Uses .....</b>	<b>514</b>	<b>4</b>	<b>50</b>	<b>24</b>	<b>513</b>	<b>19</b>	<b>1,124</b>
Facility Heating, Ventilation, and Air Conditioning <sup>7</sup> ...	262	3	5	5	417	5	697
Facility Lighting .....	196	--	--	--	--	--	196
Other Facility Support .....	48	(s)	1	(s)	30	(s)	79
Onsite Transportation .....	4	--	35	18	2	--	59
Conventional Electricity Generation .....	--	1	Q	(s)	55	14	70
Other Non-Process Use .....	3	(s)	Q	(s)	10	0	13
<b>End Use Not Reported .....</b>	<b>96</b>	<b>17</b>	<b>12</b>	<b>6</b>	<b>162</b>	<b>6</b>	<b>299</b>
<b>Total .....</b>	<b>2,840</b>	<b>208</b>	<b>141</b>	<b>103</b>	<b>5,794</b>	<b>1,182</b>	<b>10,268</b>

<sup>1</sup> "Net Electricity" is the sum of purchases, transfers in, and onsite generation from noncombustible renewable energy sources, minus quantities sold and transferred out; it excludes onsite generation from combustible fuels.

<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Natural gas liquids.

<sup>4</sup> Excludes coal coke and breeze.

<sup>5</sup> Total of listed energy sources. Excludes inputs of unallocated energy sources (6,006 trillion Btu).

<sup>6</sup> Combined-heat-and-power plants.

<sup>7</sup> Excludes steam and hot water.

-- = Not applicable. (s)=Estimate less than 0.5. Q=Withheld because relative standard error is greater than 50 percent.

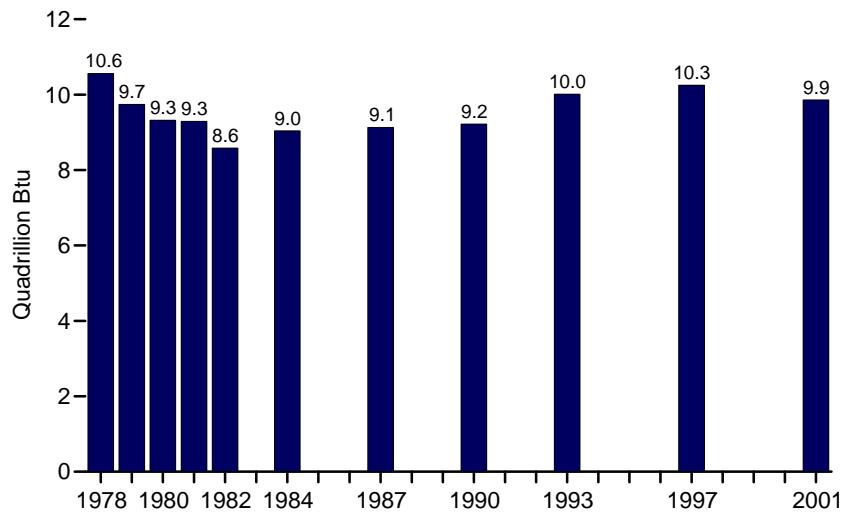
Notes: • Data are estimates for the total consumption of energy for the production of heat, power, and electricity generation, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy, or were extracted from captive (onsite) mines or wells. • Allocations to end uses are made on the basis of reasonable approximations by respondents. • Totals may not equal sum of components due to independent rounding, the presence of estimates that round to zero, and the presence of estimates that are withheld because the relative standard error is greater than 50 percent.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/meccs>.

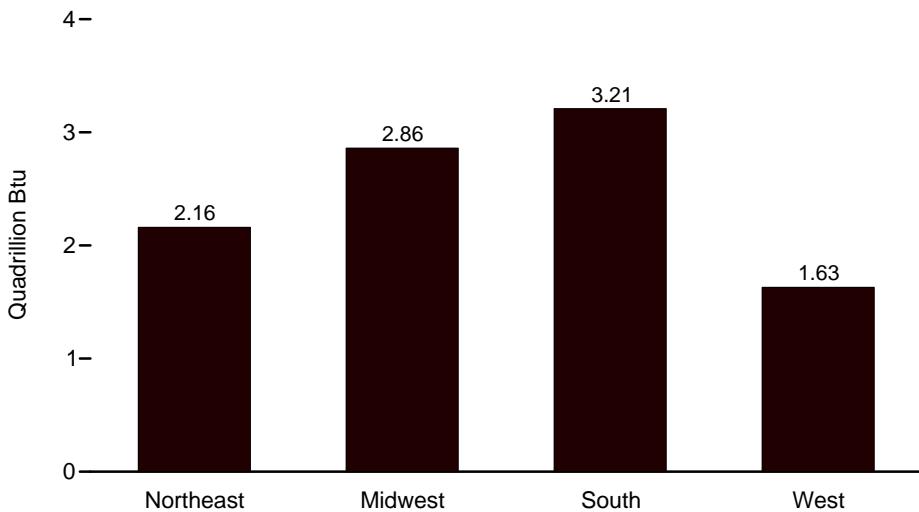
Source: Energy Information Administration, Form EIA-846, "2002 Manufacturing Energy Consumption Survey."

**Figure 2.4 Household Energy Consumption**

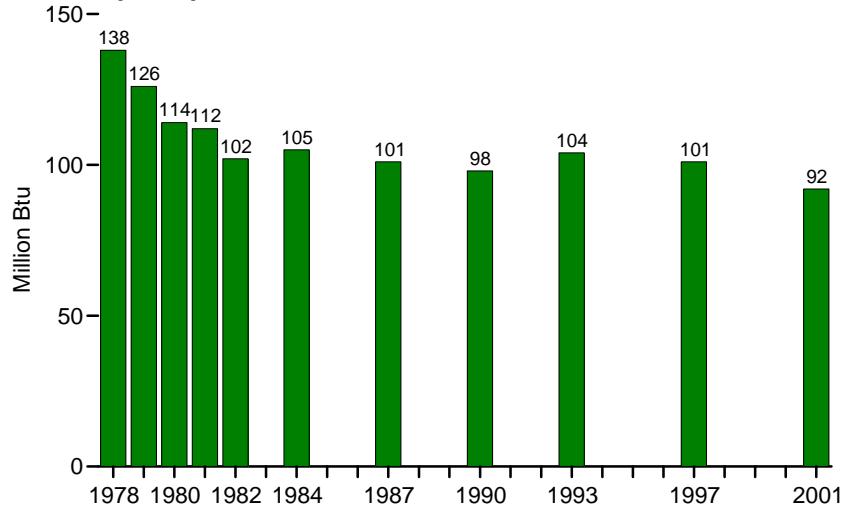
**Consumption by All Households, Selected Years, 1978-2001**



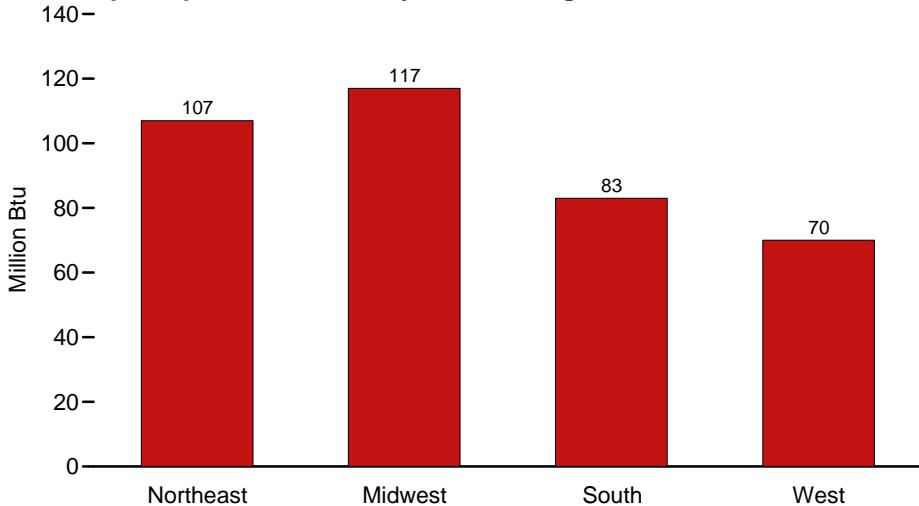
**Consumption by All Households, by Census Region, 2001**



**Consumption per Household, Selected Years, 1978-2001**



**Consumption per Household, by Census Region, 2001**



Notes: • Data include natural gas, electricity, distillate fuel oil, kerosene, and liquefied petroleum gases; data do not include wood. • For years not shown, there are no data available. Data for 1978-1984 are for April of the year shown through March of following year; data for

1987 forward are for the calendar year. • Because vertical scales differ, graphs should not be compared. • See Appendix C for Census regions.

Source: Table 2.4.

**Table 2.4 Household Energy Consumption by Census Region, Selected Years, 1978-2001**  
 (Quadrillion Btu, Except as Noted)

Census Region <sup>1</sup>	1978	1979	1980	1981	1982	1984	1987	1990	1993	1997	2001
<b>Northeast</b> (total does not include wood) .....	<b>2.89</b>	<b>2.50</b>	<b>2.44</b>	<b>2.36</b>	<b>2.19</b>	<b>2.29</b>	<b>2.37</b>	<b>2.30</b>	<b>2.38</b>	<b>2.38</b>	<b>2.16</b>
Natural Gas .....	1.14	1.05	.94	1.01	.96	.93	1.03	1.03	1.11	1.03	.98
Electricity <sup>2</sup> .....	.39	.39	.41	.40	.37	.41	.44	.47	.47	.49	.53
Distillate Fuel Oil and Kerosene .....	1.32	1.03	1.07	.93	.83	.93	.87	.78	.78	.84	.60
Liquefied Petroleum Gases .....	.03	.03	.03	.03	.02	.03	.02	.02	.03	.03	.05
Wood <sup>3</sup> .....	NA	NA	.26	.27	.24	.21	.17	.12	.14	.14	.10
Consumption per Household (million Btu) <sup>3</sup> .....	166	145	138	132	122	125	124	120	122	121	107
<b>Midwest</b> (total does not include wood) .....	<b>3.70</b>	<b>3.48</b>	<b>2.96</b>	<b>3.09</b>	<b>2.61</b>	<b>2.80</b>	<b>2.73</b>	<b>2.81</b>	<b>3.13</b>	<b>3.22</b>	<b>2.86</b>
Natural Gas .....	2.53	2.48	2.05	2.22	1.78	1.99	1.83	1.88	2.07	2.20	1.84
Electricity <sup>2</sup> .....	.60	.59	.60	.56	.56	.55	.61	.66	.74	.75	.81
Distillate Fuel Oil and Kerosene .....	.46	.31	.17	.19	.16	.13	.16	.13	.13	.11	.06
Liquefied Petroleum Gases .....	.12	.10	.15	.13	.11	.13	.13	.13	.19	.17	.15
Wood <sup>3</sup> .....	NA	NA	.25	.25	.27	.27	.25	.17	.11	.08	.09
Consumption per Household (million Btu) <sup>3</sup> .....	180	168	141	146	122	129	123	122	134	134	117
<b>South</b> (total does not include wood) .....	<b>2.43</b>	<b>2.30</b>	<b>2.57</b>	<b>2.41</b>	<b>2.45</b>	<b>2.50</b>	<b>2.61</b>	<b>2.60</b>	<b>2.95</b>	<b>3.01</b>	<b>3.21</b>
Natural Gas .....	.96	.91	1.12	1.15	1.14	1.15	1.09	1.03	1.18	1.13	1.13
Electricity <sup>2</sup> .....	1.00	.97	1.06	1.01	1.01	1.06	1.22	1.36	1.51	1.67	1.89
Distillate Fuel Oil and Kerosene .....	.32	.28	.25	.14	.18	.16	.17	.11	.13	.10	.08
Liquefied Petroleum Gases .....	.15	.14	.14	.12	.12	.12	.12	.10	.13	.12	.12
Wood <sup>3</sup> .....	NA	NA	.23	.21	.33	.33	.26	.17	.17	R.11	.09
Consumption per Household (million Btu) <sup>3</sup> .....	99	92	95	87	87	85	84	81	88	84	83
<b>West</b> (total does not include wood) .....	<b>1.54</b>	<b>1.47</b>	<b>1.34</b>	<b>1.42</b>	<b>1.33</b>	<b>1.45</b>	<b>1.42</b>	<b>1.51</b>	<b>1.55</b>	<b>1.63</b>	<b>1.63</b>
Natural Gas .....	.95	.88	.86	.90	.85	.91	.88	.92	.91	.93	.90
Electricity <sup>2</sup> .....	.48	.47	.41	.46	.41	.47	.48	.54	.56	.64	.66
Distillate Fuel Oil and Kerosene .....	.09	.09	.04	.03	.03	.04	.02	.02	.03	.03	.02
Liquefied Petroleum Gases .....	.03	.04	.04	.04	.04	.03	.05	.03	.04	.04	.06
Wood <sup>3</sup> .....	NA	NA	.11	.13	.13	.17	.17	.12	.12	.10	.10
Consumption per Household (million Btu) <sup>3</sup> .....	110	100	84	87	81	85	78	78	76	75	70
<b>United States</b> (total does not include wood) .....	<b>10.56</b>	<b>9.74</b>	<b>9.32</b>	<b>9.29</b>	<b>8.58</b>	<b>9.04</b>	<b>9.13</b>	<b>9.22</b>	<b>10.01</b>	<b>10.25</b>	<b>9.86</b>
Natural Gas .....	5.58	5.31	4.97	5.27	4.74	4.98	4.83	4.86	5.27	5.28	4.84
Electricity <sup>2</sup> .....	2.47	2.42	2.48	2.42	2.35	2.48	2.76	3.03	3.28	3.54	3.89
Distillate Fuel Oil and Kerosene .....	2.19	1.71	1.52	1.28	1.20	1.26	1.22	1.04	1.07	1.07	.75
Liquefied Petroleum Gases .....	.33	.31	.35	.31	.29	.31	.32	.28	.38	.36	.38
Wood <sup>3</sup> .....	NA	NA	.85	.87	.97	.98	.85	.58	.55	R.43	.37
Consumption per Household (million Btu) <sup>3</sup> .....	138	126	114	112	102	105	101	98	104	101	92

<sup>1</sup> See Appendix C for Census regions.

<sup>2</sup> Retail electricity. One kilowatthour = 3,412 Btu.

<sup>3</sup> Wood is not included in the region and U.S. totals, or in the consumption-per-household data.

R=Revised. NA=Not available.

Notes: • Data are estimates, and are for major energy sources only. • For years not shown, there are no data available. • Data for 1978-1984 are for April of year shown through March of following year; data

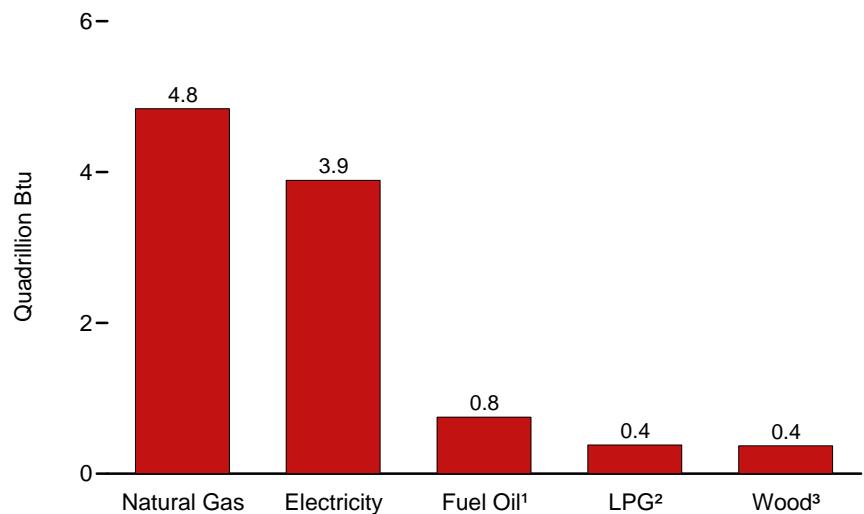
for 1987 forward are for the calendar year. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/recs>.

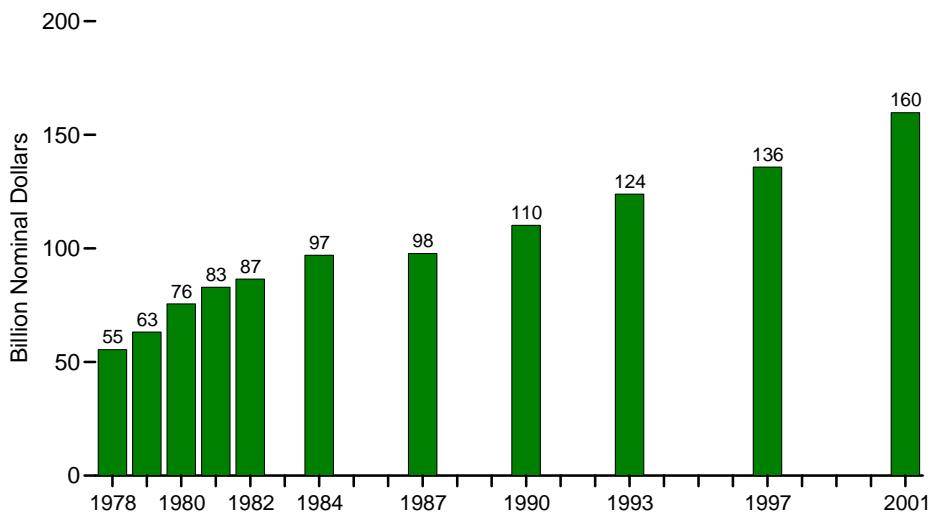
Sources: • 1978 and 1979—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

**Figure 2.5 Household Energy Consumption and Expenditures**

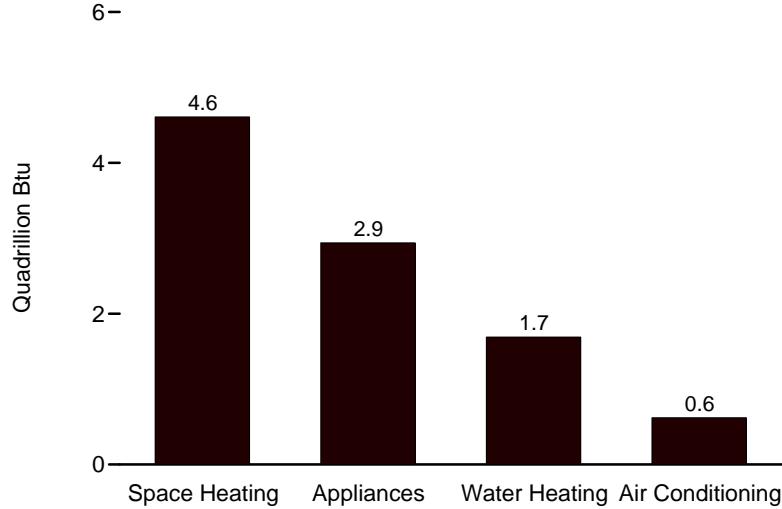
**Consumption by Energy Source, 2001**



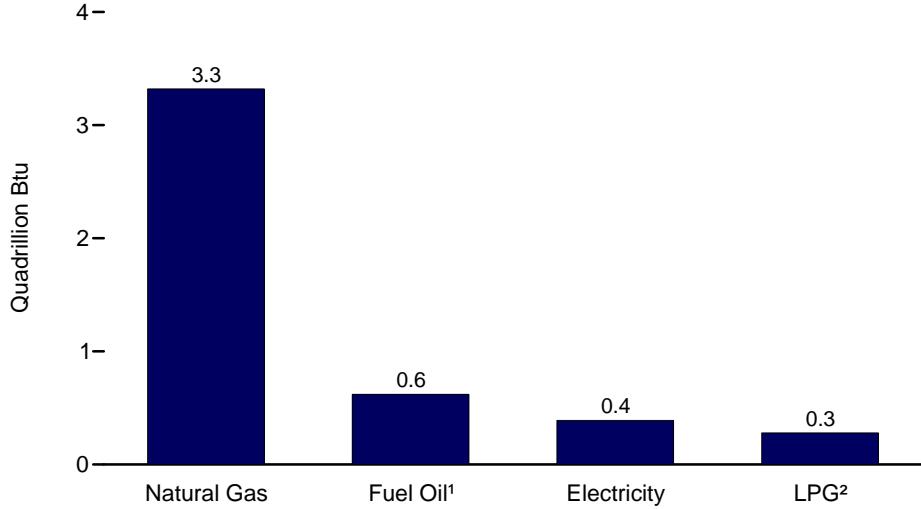
**Expenditures<sup>4</sup>, Selected Years, 1978-2001**



**Consumption<sup>4</sup> by End Use, 2001**



**Consumption<sup>4</sup> for Space Heating, 2001**



<sup>1</sup> Distillate fuel oil and kerosene.

<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Used for both space heating and ambience.

<sup>4</sup> Does not include wood, which is used for both space heating and ambience.

Notes: • For years not shown, there are no data available. • Because vertical scales differ, graphs should not be compared.

Source: Table 2.5.

**Table 2.5 Household Energy Consumption and Expenditures by End Use and Energy Source, Selected Years, 1978-2001**

Year	Space Heating <sup>1</sup>				Air Conditioning <sup>2</sup>		Water Heating				Appliances <sup>3,4</sup>			Total			
	Natural Gas	Elec-tricity <sup>5</sup>	Fuel Oil <sup>6</sup>	LPG <sup>7</sup>	Electricity <sup>5</sup>	Natural Gas	Elec-tricity <sup>5</sup>	Fuel Oil <sup>6</sup>	LPG <sup>7</sup>	Natural Gas	Elec-tricity <sup>5</sup>	LPG <sup>7</sup>	Natural Gas <sup>2</sup>	Elec-tricity <sup>5</sup>	Fuel Oil <sup>4,6</sup>	LPG <sup>7</sup>	Wood <sup>8</sup>
Consumption (quadrillion Btu)																	
1978	4.26	0.40	2.05	0.23	0.32	1.04	0.29	0.14	0.06	0.28	1.45	0.03	5.58	2.47	2.19	0.33	NA
1979	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.31	2.42	1.71	.31	NA
1980	3.41	.27	1.30	.23	.36	1.15	.30	.22	.07	.36	1.54	.05	4.97	2.48	1.52	.35	.85
1981	3.69	.26	1.06	.21	.34	1.13	.30	.22	.06	.43	1.52	.05	5.27	2.42	1.28	.31	.87
1982	3.14	.25	1.04	.19	.31	1.15	.28	.15	.06	.43	1.50	.05	4.74	2.35	1.20	.29	.97
1984	3.51	.25	1.11	.21	.32	1.10	.32	.15	.06	.35	1.59	.04	4.98	2.48	1.26	.31	.98
1987	3.38	.28	1.05	.22	.44	1.10	.31	.17	.06	.34	1.72	.04	4.83	2.76	1.22	.32	.85
1990	3.37	.30	.93	.19	.48	1.16	.34	.11	.06	.33	1.91	.03	4.86	3.03	1.04	.28	.58
1993	3.67	.41	.95	.30	.46	1.31	.34	.12	.05	.29	2.08	.03	5.27	3.28	1.07	.38	.55
1997	3.61	.40	.91	.26	.42	1.29	.39	.16	.08	.37	2.33	.02	5.28	3.54	1.07	.36	R.43
2001	3.32	.39	.62	.28	.62	1.15	.36	.13	.05	.37	2.52	.05	4.84	3.89	.75	.38	.37
Expenditures (billion nominal dollars <sup>9</sup> )																	
1978	11.49	3.53	8.06	1.05	4.12	2.88	3.14	0.56	0.36	0.93	19.10	0.25	15.30	29.89	8.62	1.66	NA
1979	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.84	32.56	10.73	2.06	NA
1980	13.22	3.78	10.48	1.78	5.84	4.51	4.45	1.76	.57	1.91	26.74	.44	19.77	40.81	12.24	2.80	NA
1981	16.62	3.93	9.44	1.78	6.23	5.13	4.94	1.94	.51	2.17	29.70	.52	24.03	44.80	11.29	2.81	NA
1982	17.74	4.21	8.80	1.69	6.23	6.51	5.00	1.28	.54	2.58	31.29	.52	26.96	46.74	10.07	2.75	NA
1984	20.66	4.62	8.51	2.00	7.06	6.63	6.44	1.09	.58	2.31	36.36	.54	29.78	54.48	9.60	3.12	NA
1987	18.05	5.53	6.25	1.85	9.77	6.02	6.45	.94	.50	2.02	39.83	.46	26.15	61.58	7.21	2.81	NA
1990	18.59	6.16	7.42	2.01	11.23	6.59	7.21	.83	.65	2.03	46.95	.48	27.26	71.54	8.25	3.14	NA
1993	21.95	8.66	6.24	2.81	11.31	8.08	7.58	.74	.58	1.98	53.52	.42	32.04	81.08	6.98	3.81	NA
1997	24.11	8.56	6.57	2.79	10.20	8.84	8.99	1.04	.89	2.86	60.57	.36	35.81	88.33	7.61	4.04	NA
2001	31.84	8.98	5.66	4.04	15.94	11.31	8.47	1.15	.69	3.83	66.94	.86	46.98	100.34	6.83	5.60	NA

<sup>1</sup> Wood used for space heating is included in "Total Wood."

<sup>2</sup> A small amount of natural gas used for air conditioning is included in "Total Natural Gas."

<sup>3</sup> Includes refrigerators.

<sup>4</sup> A small amount of distillate fuel oil and kerosene used for appliances is included in "Fuel Oil" under "Total."

<sup>5</sup> Retail electricity. One kilowatthour = 3,412 Btu.

<sup>6</sup> Distillate fuel oil and kerosene.

<sup>7</sup> Liquefied petroleum gases.

<sup>8</sup> Wood used for both space heating and ambience.

<sup>9</sup> See "Nominal Dollars" in Glossary.

R=Revised. NA=Not available.

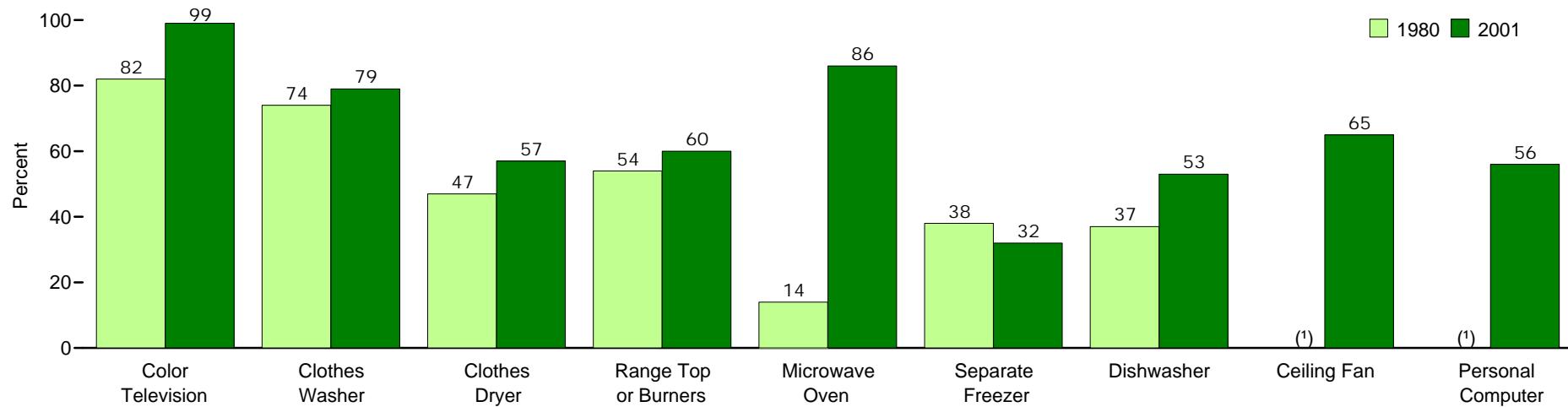
Notes: • Data are estimates. • For years not shown, there are no data available. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/recs>.

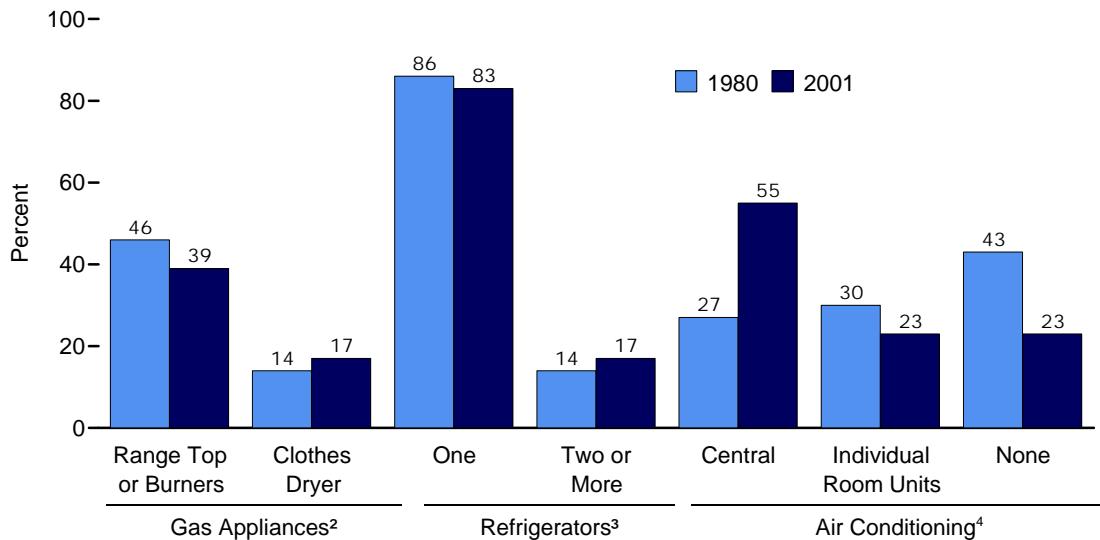
Sources: • 1978 and 1979—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

**Figure 2.6 Households With Selected Appliances and Types of Main Heating Fuel**

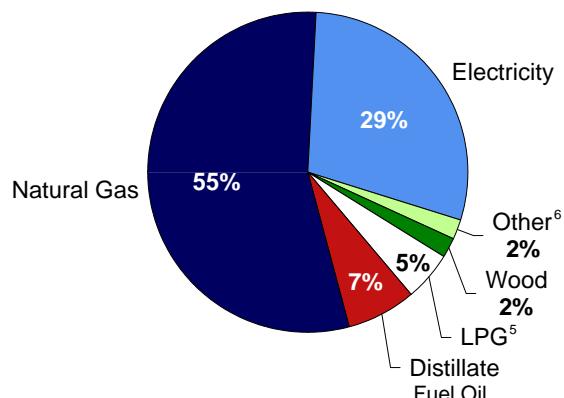
**Households With Selected Electric Appliances, 1980 and 2001**



**Households With Other Selected Appliances, 1980 and 2001**



**Type of Main Heating Fuel, 2001**



<sup>1</sup> Not collected in 1980.

<sup>2</sup> Natural gas or liquefied petroleum gases.

<sup>3</sup> Fewer than 0.5 percent of the households do not have a refrigerator.

<sup>4</sup> Households with both central and individual room units are counted only under "Central."

<sup>5</sup> Liquefied petroleum gases.

<sup>6</sup> Kerosene, district steam, coal, solar, other, and no heat.

Source: Table 2.6.

**Table 2.6 Households With Selected Appliances and Types of Main Heating Fuel, Selected Years, 1978-2001**

Appliance	Year											Change 1980 to 2001
	1978	1979	1980	1981	1982	1984	1987	1990	1993	1997	2001	
Total Households (millions) .....	77	78	82	83	84	86	91	94	97	101	107	25
Percent of Households												
<b>Type of Main Heating Fuel</b>												
Natural Gas .....	55	55	55	56	57	55	55	55	53	53	55	1
Electricity <sup>1</sup> .....	16	17	18	17	16	17	20	23	26	29	29	11
Liquefied Petroleum Gases .....	4	5	5	4	5	5	5	5	5	5	5	0
Distillate Fuel Oil .....	20	17	15	14	13	12	12	11	11	9	7	-8
Wood .....	2	4	6	6	7	7	6	4	3	2	2	-4
Other <sup>2</sup> .....	3	2	2	3	3	3	3	2	2	2	2	0
<b>Type of Appliances</b>												
<b>Electric Appliances</b>												
Television Set (Color) .....	NA	NA	82	83	85	88	93	96	98	99	99	17
Television Set (B/W) .....	NA	NA	51	48	46	43	36	31	20	NA	NA	NA
Television Set (Any) .....	NA	NA	98	98	98	98	98	99	99	NA	NA	NA
Clothes Washer .....	74	NA	74	73	71	73	75	76	77	77	79	4
Range Top or Burners .....	53	NA	54	54	53	54	57	58	61	60	60	6
Oven, Microwave .....	8	NA	14	17	21	34	61	79	84	83	86	72
Clothes Dryer .....	45	NA	47	45	45	46	51	53	57	55	57	10
Separate Freezer .....	35	NA	38	38	37	37	34	34	35	33	32	-6
Dishwasher .....	35	NA	37	37	36	38	43	45	45	50	53	16
Dehumidifier .....	NA	NA	9	9	9	9	10	12	9	NA	11	2
Waterbed Heaters .....	NA	NA	NA	NA	NA	10	14	15	12	8	5	NA
Window or Ceiling Fan .....	NA	NA	NA	NA	28	35	46	51	60	NA	NA	NA
Ceiling Fan .....	NA	54	61	65	NA							
Whole House Fan .....	NA	NA	NA	NA	8	8	9	10	4	NA	NA	NA
Evaporative Cooler .....	NA	NA	4	4	4	4	3	4	3	NA	3	-1
Personal Computer .....	NA	16	23	35	56	NA						
Pump for Well Water .....	NA	15	13	14	13	NA						
Swimming-Pool Pump <sup>3</sup> .....	NA	NA	3	4	3	NA	NA	5	5	5	6	3
<b>Gas <sup>4</sup> Appliances</b>												
Range Top or Burners .....	48	NA	46	46	47	45	43	42	38	39	39	-7
Clothes Dryer .....	14	NA	14	16	15	16	15	16	15	16	17	2
Outdoor Gas Grill .....	6	NA	9	9	11	13	20	26	29	NA	NA	NA
Outdoor Gas Light .....	2	NA	2	2	2	1	1	1	1	1	(s)	-1
Swimming Pool Heater <sup>5</sup> .....	NA	NA	(s)	(s)	(s)	1	1	1	1	1	1	0
<b>Refrigerators <sup>6</sup></b>												
One .....	86	NA	86	87	86	88	86	84	85	85	83	-3
Two or More .....	14	NA	14	13	13	12	14	15	15	15	17	3
<b>Air Conditioning (A/C)</b>												
Central <sup>7</sup> .....	23	24	27	27	28	30	34	39	44	47	55	28
Individual Room Units <sup>7</sup> .....	33	31	30	31	30	30	30	29	25	25	23	-7
None .....	44	45	43	42	42	40	36	32	32	28	23	-20
<b>Portable Kerosene Heaters</b> .....	(s)	NA	(s)	1	3	6	6	5	3	2	2	2

<sup>1</sup> Retail electricity.

<sup>2</sup> Kerosene, district steam, coal, solar, other, or no heat.

<sup>3</sup> Through 1990, data are for all reported swimming pools, which were assumed to have an electric pump for filtering and circulating the water. Beginning in 1993, data are explicitly for pools with filters.

<sup>4</sup> Natural gas or liquefied petroleum gases.

<sup>5</sup> In 1984 and 1987, also includes heaters for jacuzzis and hot tubs.

<sup>6</sup> Fewer than 0.5 percent of the households do not have a refrigerator.

<sup>7</sup> Households with both central and individual room units are counted only under "Central."

NA=Not available. (s)=Less than 0.5 percent.

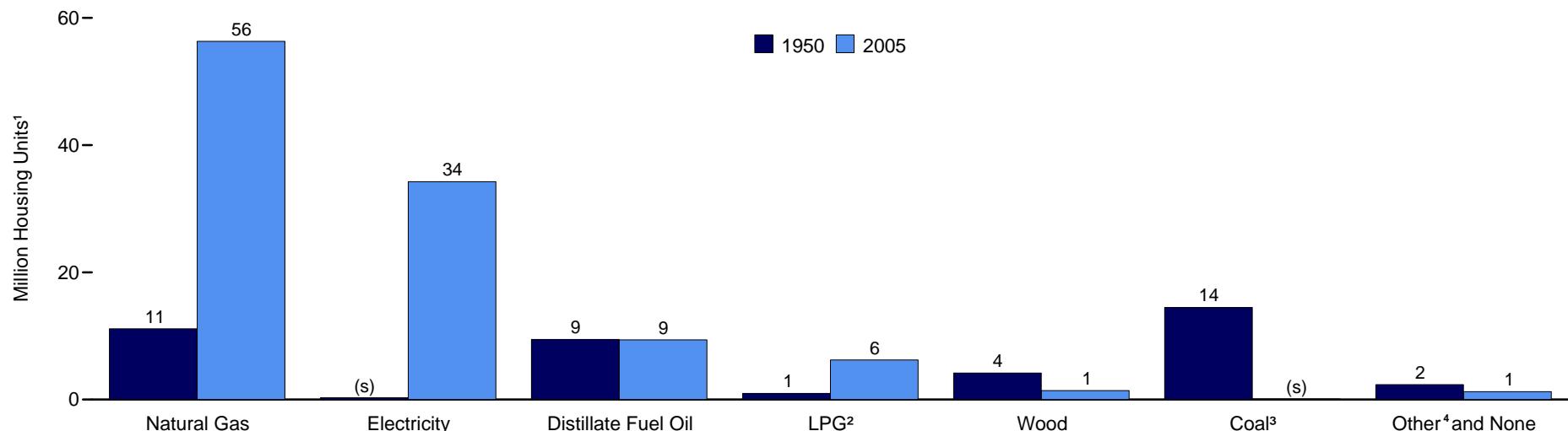
Notes: • Data are estimates. • For years not shown, there are no data available.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/recs>.

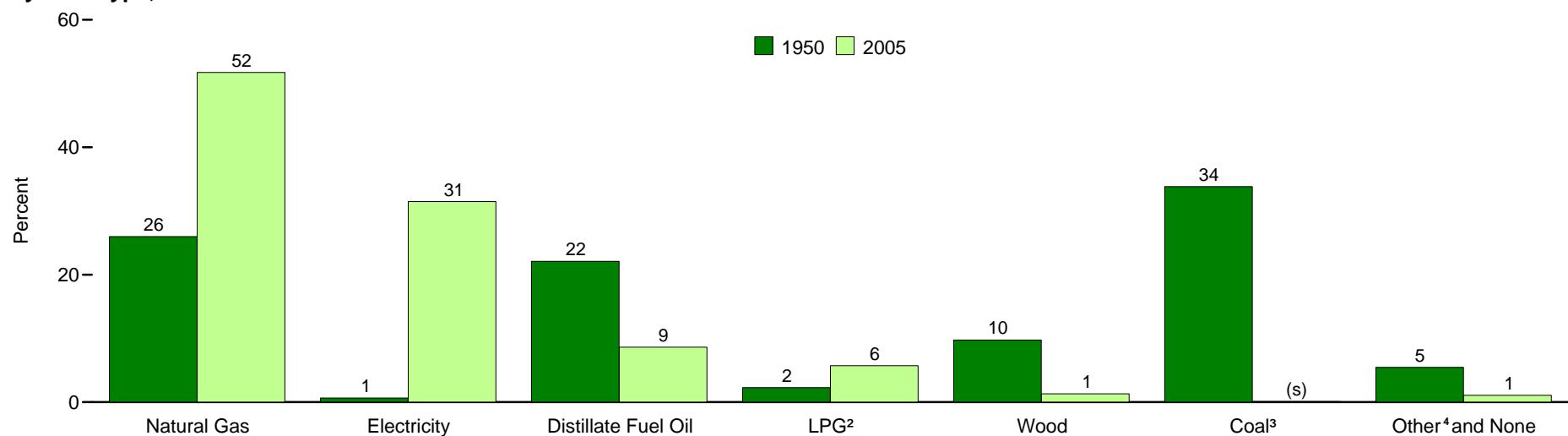
Sources: • 1978 and 1979—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

**Figure 2.7 Type of Heating in Occupied Housing Units, 1950 and 2005**

**By Fuel Type**



**By Fuel Type, Share of Total**



<sup>1</sup> Sum of components do not equal total due to independent rounding.

<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Includes coal coke.

<sup>4</sup> Kerosene, solar, and other.

(s)=Less than 0.5.

Source: Table 2.7.

**Table 2.7 Type of Heating in Occupied Housing Units, Selected Years, 1950-2005**

Year	Coal <sup>1</sup>	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Natural Gas	Electricity	Wood	Solar	Other <sup>2</sup>	None <sup>3</sup>	Total
Millions											
1950	14.48	9.46	( <sup>4</sup> )	0.98	11.12	0.28	4.17	NA	0.77	1.57	42.83
1960	6.46	17.16	( <sup>4</sup> )	2.69	22.85	.93	2.24	NA	.22	.48	53.02
1970	1.82	16.47	( <sup>4</sup> )	3.81	35.01	4.88	.79	NA	.27	.40	63.45
1973	.80	17.24	( <sup>4</sup> )	4.42	38.46	7.21	.60	NA	.15	.45	69.34
1974	.74	16.84	( <sup>4</sup> )	4.14	39.47	8.41	.66	NA	.09	.48	70.83
1975	.57	16.30	( <sup>4</sup> )	4.15	40.93	9.17	.85	NA	.08	.47	72.52
1976	.48	16.45	( <sup>4</sup> )	4.24	41.22	10.15	.91	NA	.09	.46	74.01
1977	.45	15.62	.44	4.18	41.54	11.15	1.24	NA	.15	.51	75.28
1978	.40	15.65	.42	4.13	42.52	12.26	1.07	NA	.12	.60	77.17
1979	.36	15.30	.41	4.13	43.32	13.24	1.14	NA	.10	.57	78.57
1980	.33	14.50	.37	4.17	44.40	14.21	1.38	NA	.11	.61	80.07
1981	.36	14.13	.37	4.17	46.08	15.49	1.89	NA	.10	.59	83.18
1983 <sup>5</sup>	.43	12.59	.45	3.87	46.70	15.68	4.09	NA	.16	.68	84.64
1985	.45	12.44	1.06	3.58	45.33	18.36	6.25	.05	.37	.53	88.43
1987	.41	12.74	1.08	3.66	45.96	20.61	5.45	.05	.28	.66	90.89
1989	.34	12.47	1.07	3.66	47.40	23.06	4.59	.04	.40	.66	93.68
1991	.32	11.47	.99	3.88	47.02	23.71	4.44	.03	.41	.86	93.15
1993	.30	11.17	1.02	3.92	47.67	25.11	4.10	.03	.50	.91	94.73
1995	.21	10.98	1.06	4.25	49.20	26.77	3.53	.02	.64	1.04	97.69
1997	.18	10.10	.75	5.40	51.05	29.20	1.79	.03	.36	.62	99.49
1999	.17	10.03	.72	5.91	52.37	31.14	1.70	.02	.21	.54	102.80
2001 <sup>6</sup>	.13	9.81	.65	6.04	54.13	32.41	1.67	.02	.19	.39	105.44
2003	.13	9.50	.64	6.13	54.93	32.34	1.56	.02	.16	.44	105.84
2005	.10	9.38	.55	6.23	56.32	34.26	1.41	.02	.21	.40	108.87
Percent											
1950	33.8	22.1	( <sup>4</sup> )	2.3	26.0	0.6	9.7	NA	1.8	3.7	100.0
1960	12.2	32.4	( <sup>4</sup> )	5.1	43.1	1.8	4.2	NA	.4	.9	100.0
1970	2.9	26.0	( <sup>4</sup> )	6.0	55.2	7.7	1.3	NA	.4	.6	100.0
1973	1.2	24.9	( <sup>4</sup> )	6.4	55.5	10.4	.9	NA	.2	.7	100.0
1974	1.0	23.8	( <sup>4</sup> )	5.8	55.7	11.9	.9	NA	.1	.7	100.0
1975	.8	22.5	( <sup>4</sup> )	5.7	56.4	12.6	1.2	NA	.1	.6	100.0
1976	.7	22.2	( <sup>4</sup> )	5.7	55.7	13.7	1.2	NA	.1	.6	100.0
1977	.6	20.7	.6	5.6	55.2	14.8	1.6	NA	.2	.7	100.0
1978	.5	20.3	.5	5.4	55.1	15.9	1.4	NA	.2	.8	100.0
1979	.5	19.5	.5	5.3	55.1	16.9	1.4	NA	.1	.7	100.0
1980	.4	18.1	.5	5.2	55.4	17.7	1.7	NA	.1	.8	100.0
1981	.4	17.0	.4	5.0	55.4	18.6	2.3	NA	.1	.7	100.0
1983 <sup>5</sup>	.5	14.9	.5	4.6	55.2	18.5	4.8	NA	.2	.8	100.0
1985	.5	14.1	1.2	4.1	51.3	20.8	7.1	.1	.4	.6	100.0
1987	.4	14.0	1.2	4.0	50.6	22.7	6.0	.1	.3	.7	100.0
1989	.4	13.3	1.1	3.9	50.6	24.6	4.9	(s)	.4	.7	100.0
1991	.3	12.3	1.1	4.2	50.5	25.5	4.8	(s)	.4	.9	100.0
1993	.3	11.8	1.1	4.1	50.3	26.5	4.3	(s)	.5	1.0	100.0
1995	.2	11.2	1.1	4.4	50.4	27.4	3.6	(s)	.7	1.1	100.0
1997	.2	10.2	.8	5.4	51.3	29.4	1.8	(s)	.4	.6	100.0
1999	.2	9.8	.7	5.7	50.9	30.3	1.7	(s)	.2	.5	100.0
2001 <sup>6</sup>	.1	9.3	.6	5.7	51.3	30.7	1.6	(s)	.2	.4	100.0
2003	.1	9.0	.6	5.8	51.9	30.6	1.5	(s)	.1	.4	100.0
2005	.1	8.6	.5	5.7	51.7	31.5	1.3	(s)	.2	.4	100.0

<sup>1</sup> Includes coal coke.

<sup>2</sup> Includes briquettes (made of pitch and sawdust), coal dust, waste material (such as corncobs, purchased steam, and other fuels not separately displayed).

<sup>3</sup> In 1950 and 1960, also includes nonreporting units, which totaled 997 and 2,000 units, respectively.

<sup>4</sup> Included in "Distillate Fuel Oil."

<sup>5</sup> Beginning in 1983, the *American Housing Survey for the United States* has been a biennial survey.

<sup>6</sup> Beginning in 2001, data are consistent with the 2000 Census. For 2001 data consistent with the 1990 Census, see *American Housing Survey for the United States: 2001*.

NA=Not available. (s)=Less than 0.05 percent.

Notes: • Includes mobile homes and individual housing units in apartment buildings. Housing units with more than one type of heating system are classified according to the principal type of heating system.

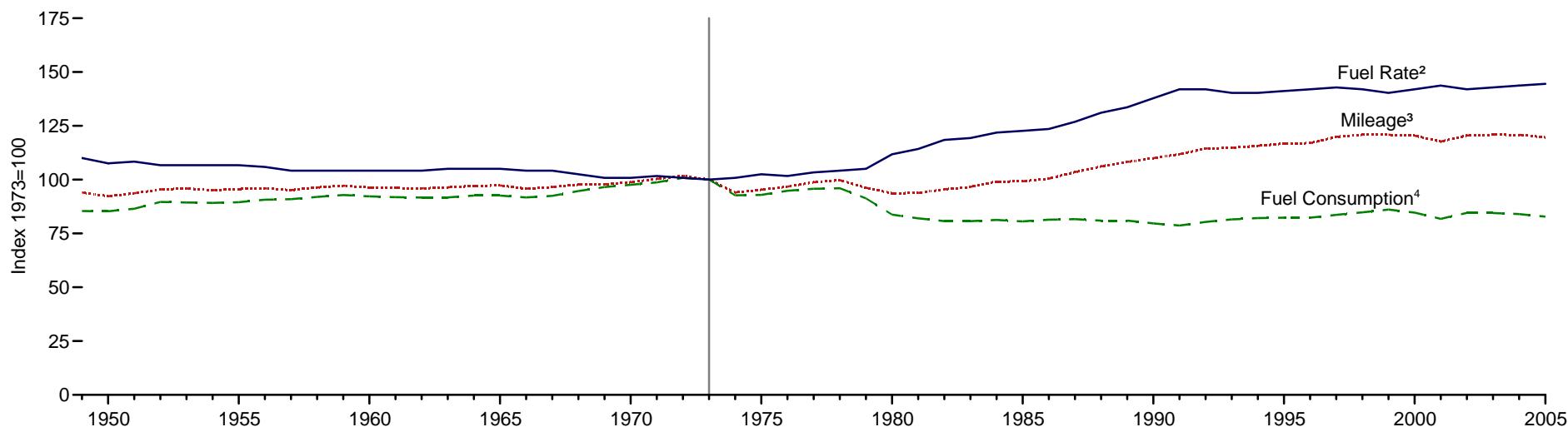
• Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.census.gov/hhes/www/ahs.html>.

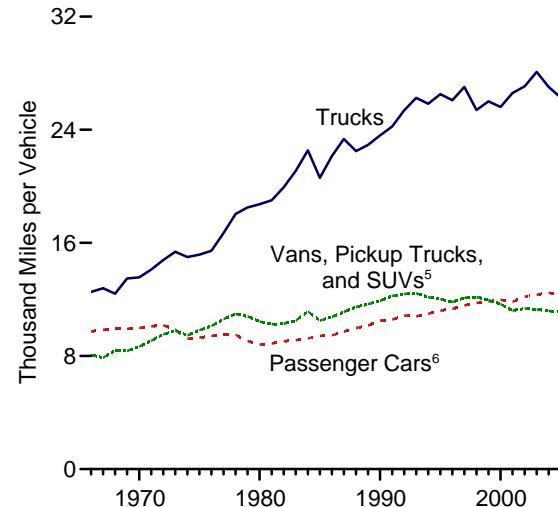
Sources: • 1950, 1960, and 1970—Bureau of the Census, *Census of Population and Housing*. • 1973 forward—Bureau of the Census, *American Housing Survey for the United States*, biennial surveys, Table 2-5.

**Figure 2.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates**

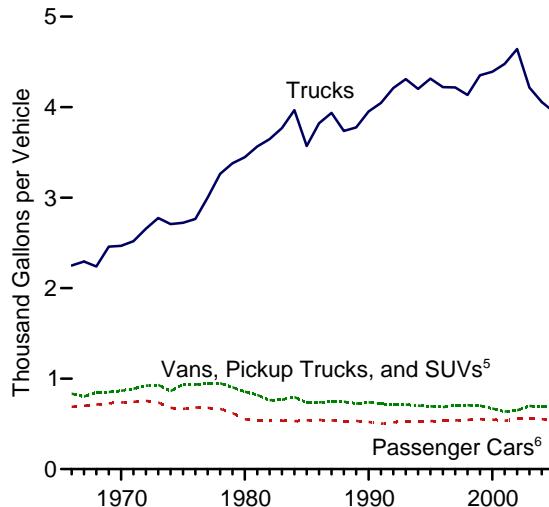
**All Motor Vehicles,<sup>1</sup> 1949-2005**



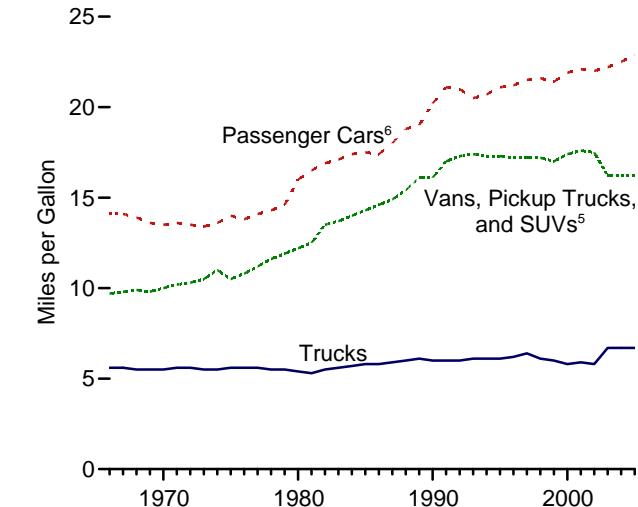
**Mileage, 1966-2005**



**Fuel Consumption, 1966-2005**



**Fuel Rates, 1966-2005**



<sup>1</sup> Passenger cars, motorcycles, vans, pickup trucks, sport utility vehicles, trucks, and buses.

<sup>2</sup> Miles per gallon.

<sup>3</sup> Miles per vehicle.

<sup>4</sup> Gallons per vehicle.

<sup>5</sup> Sport utility vehicle.

<sup>6</sup> Through 1989, includes motorcycles.

Source: Table 2.8.

**Table 2.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates, Selected Years, 1949-2005**

Year	Passenger Cars <sup>1</sup>			Vans, Pickup Trucks, and Sport Utility Vehicles <sup>2</sup>			Trucks <sup>3</sup>			All Motor Vehicles <sup>4</sup>		
	Mileage	Fuel Consumption	Fuel Rate	Mileage	Fuel Consumption	Fuel Rate	Mileage	Fuel Consumption	Fuel Rate	Mileage	Fuel Consumption	Fuel Rate
	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon	Miles per vehicle	Gallons per vehicle	Miles per Gallon	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon
1949	9,388	627	15.0	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	9,712	1,080	9.0	9,498	726	13.1
1950	9,060	603	15.0	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	10,316	1,229	8.4	9,321	725	12.8
1955	9,447	645	14.6	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	10,576	1,293	8.2	9,661	761	12.7
1960	9,518	668	14.3	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	10,693	1,333	8.0	9,732	784	12.4
1965	9,603	661	14.5	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	10,851	1,387	7.8	9,826	787	12.5
1970	9,989	737	13.5	8,676	866	10.0	13,565	2,467	5.5	9,976	830	12.0
1971	10,097	743	13.6	9,082	888	10.2	14,117	2,519	5.6	10,133	839	12.1
1972	10,171	754	13.5	9,534	922	10.3	14,780	2,657	5.6	10,279	857	12.0
1973	9,884	737	13.4	9,779	931	10.5	15,370	2,775	5.5	10,099	850	11.9
1974	9,221	677	13.6	9,452	862	11.0	14,995	2,708	5.5	9,493	788	12.0
1975	9,309	665	14.0	9,829	934	10.5	15,167	2,722	5.6	9,627	790	12.2
1976	9,418	681	13.8	10,127	934	10.8	15,438	2,764	5.6	9,774	806	12.1
1977	9,517	676	14.1	10,607	947	11.2	16,700	3,002	5.6	9,978	814	12.3
1978	9,500	665	14.3	10,968	948	11.6	18,045	3,263	5.5	10,077	816	12.4
1979	9,062	620	14.6	10,802	905	11.9	18,502	3,380	5.5	9,722	776	12.5
1980	8,813	551	16.0	10,437	854	12.2	18,736	3,447	5.4	9,458	712	13.3
1981	8,873	538	16.5	10,244	819	12.5	19,016	3,565	5.3	9,477	697	13.6
1982	9,050	535	16.9	10,276	762	13.5	19,931	3,647	5.5	9,644	686	14.1
1983	9,118	534	17.1	10,497	767	13.7	21,083	3,769	5.6	9,760	686	14.2
1984	9,248	530	17.4	11,151	797	14.0	22,550	3,967	5.7	10,017	691	14.5
1985	9,419	538	17.5	10,506	735	14.3	20,597	3,570	5.8	10,020	685	14.6
1986	9,464	543	17.4	10,764	738	14.6	22,143	3,821	5.8	10,143	692	14.7
1987	9,720	539	18.0	11,114	744	14.9	23,349	3,937	5.9	10,453	694	15.1
1988	9,972	531	18.8	11,465	745	15.4	22,485	3,736	6.0	10,721	688	15.6
1989	<sup>1</sup> 10,157	<sup>1</sup> 533	<sup>1</sup> 19.0	11,676	724	16.1	22,926	3,776	6.1	10,932	688	15.9
1990	10,504	520	20.2	11,902	738	16.1	23,603	3,953	6.0	11,107	677	16.4
1991	10,571	501	21.1	12,245	721	17.0	24,229	4,047	6.0	11,294	669	16.9
1992	10,857	517	21.0	12,381	717	17.3	25,373	4,210	6.0	11,558	683	16.9
1993	10,804	527	20.5	12,430	714	17.4	26,262	4,309	6.1	11,595	693	16.7
1994	10,992	531	20.7	12,156	701	17.3	25,838	4,202	6.1	11,683	698	16.7
1995	11,203	530	21.1	12,018	694	17.3	26,514	4,315	6.1	11,793	700	16.8
1996	11,330	534	21.2	11,811	685	17.2	26,092	4,221	6.2	11,813	700	16.9
1997	11,581	539	21.5	12,115	703	17.2	27,032	4,218	6.4	12,107	711	17.0
1998	11,754	544	21.6	12,173	707	17.2	25,397	4,135	6.1	12,211	721	16.9
1999	11,848	553	21.4	11,957	701	17.0	26,014	4,352	6.0	12,206	732	16.7
2000	11,976	547	21.9	11,672	669	17.4	25,617	4,391	5.8	12,164	720	16.9
2001	11,831	534	22.1	11,204	636	17.6	26,602	4,477	5.9	11,887	695	17.1
2002	12,202	555	22.0	11,364	650	17.5	27,071	4,642	5.8	12,171	719	16.9
2003	12,325	556	22.2	11,287	697	16.2	28,093	4,215	6.7	12,208	718	17.0
2004	R12,460	R553	R22.5	R11,184	R690	16.2	R27,023	R4,057	6.7	R12,200	R714	17.1
2005 <sup>P</sup>	12,375	541	22.9	11,114	686	16.2	26,272	3,944	6.7	12,084	704	17.2

<sup>1</sup> Through 1989, includes motorcycles.

<sup>2</sup> Includes a small number of trucks with 2 axles and 4 tires, such as step vans.

<sup>3</sup> Single-unit trucks with 2 axles and 6 or more tires, and combination trucks.

<sup>4</sup> Includes buses and motorcycles, which are not separately displayed.

<sup>5</sup> Included in "Trucks."

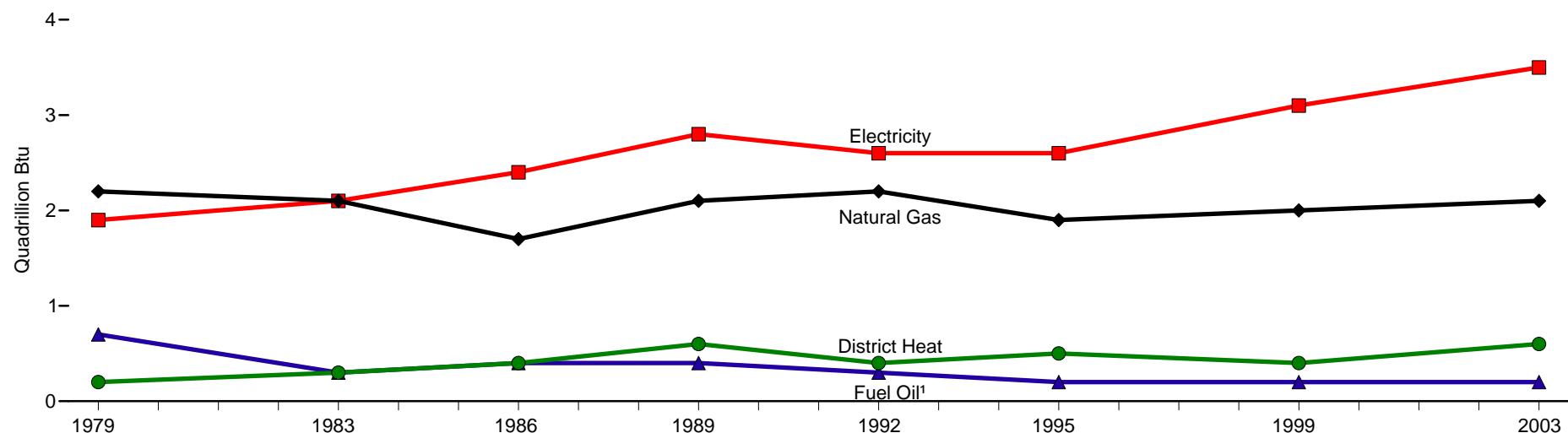
R=Revised. P=Preliminary.

Web Pages: For data not shown for 1951-1969, see <http://www.eia.doe.gov/aer/consump.html>. • For related information, see <http://www.fhwa.dot.gov/policyohpi/hss/index.htm>.

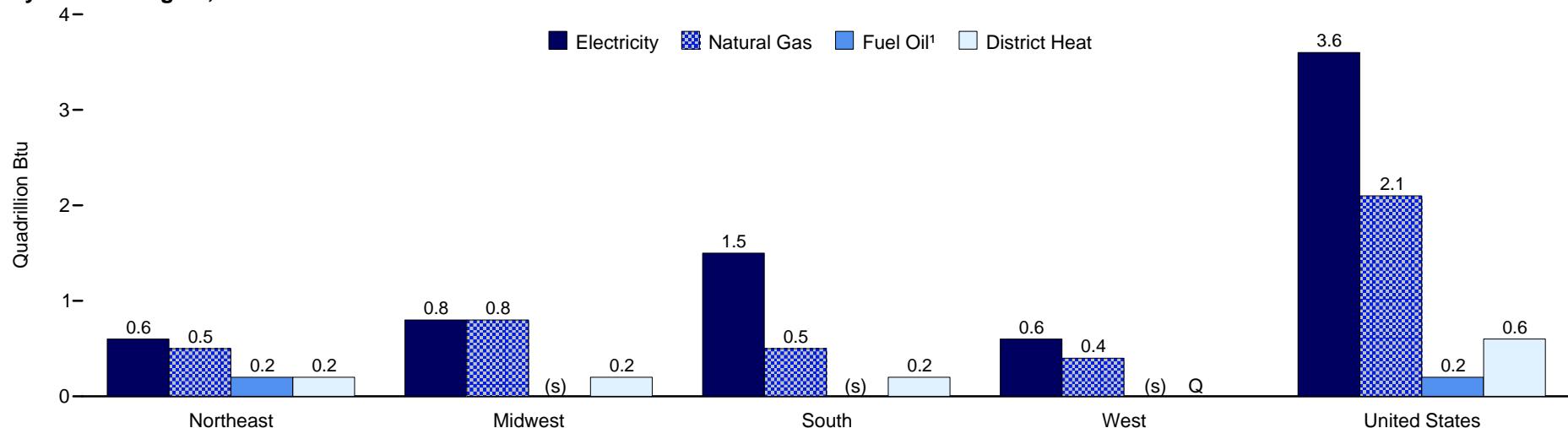
Sources: **Passenger Cars, 1990-1994:** U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics* 1998, Table 4-13. **All Other Data:** • 1949-1994—Federal Highway Administration (FHWA), *Highway Statistics Summary to 1995*, Table VM-201A. • 1995 forward—FHWA, *Highway Statistics*, annual reports, Table VM-1.

**Figure 2.9 Commercial Buildings Consumption by Energy Source**

**By Survey Year, 1979-2003**



**By Census Region, 2003**



<sup>1</sup> Distillate fuel oil, residual fuel oil, and kerosene.

(s)=Less than 0.05 quadrillion Btu.

Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 20 buildings were sampled.

Note: See Appendix C for Census regions.

Source: Table 2.9.

**Table 2.9 Commercial Buildings Consumption by Energy Source, Selected Years, 1979-2003**  
 (Trillion Btu)

Energy Source and Year	Square Footage Category			Principal Building Activity								Census Region <sup>1</sup>				All Buildings	
	1,001 to 10,000	10,001 to 100,000	Over 100,000	Education	Food Sales	Food Service	Health Care	Lodging	Mercantile and Service	Office	All Other	Northeast	Midwest	South	West		
<b>Major Sources <sup>2</sup></b>																	
1979 .....	1,255	2,202	1,508	511	( <sup>3</sup> )	336	469	278	894	861	1,616	1,217	1,826	1,395	526	4,965	
1983 .....	1,242	1,935	1,646	480	( <sup>3</sup> )	414	463	362	812	1,018	1,274	858	1,821	1,462	682	4,823	
1986 .....	1,273	2,008	1,696	633	147	247	456	299	985	1,008	1,202	1,037	1,585	1,459	896	4,977	
1989 .....	1,259	2,402	2,127	704	139	255	449	425	1,048	1,230	1,538	1,354	1,659	1,648	1,126	5,788	
1992 .....	1,258	2,301	1,932	637	137	307	403	463	892	1,247	1,404	1,090	1,578	1,825	998	5,490	
1995 <sup>4</sup> .....	1,332	2,152	1,838	614	137	332	561	461	973	1,019	1,225	1,035	1,497	1,684	1,106	5,321	
1999 .....	1,381	2,300	2,053	649	201	447	515	450	1,145	1,089	1,237	1,116	1,509	1,961	1,147	5,733	
2003 .....	1,248	2,553	2,721	820	251	427	594	510	1,333	1,134	1,455	1,396	1,799	2,265	1,063	6,523	
<b>Electricity</b>																	
1979 .....	429	872	608	163	( <sup>3</sup> )	171	129	119	361	424	543	425	593	662	227	1,908	
1983 .....	469	903	758	152	( <sup>3</sup> )	212	147	151	426	509	532	324	673	801	331	2,129	
1986 .....	654	927	809	179	99	121	132	120	536	641	563	430	584	867	510	2,390	
1989 .....	572	1,145	1,056	217	105	113	154	138	550	781	715	586	609	975	604	2,773	
1992 .....	586	991	1,033	235	113	138	138	189	444	704	649	419	622	1,002	566	2,609	
1995 <sup>4</sup> .....	618	1,064	926	221	119	166	211	187	508	676	521	436	558	1,027	587	2,608	
1999 .....	698	1,235	1,164	257	165	216	232	196	659	767	606	543	662	1,247	645	3,098	
2003 .....	685	1,405	1,469	371	208	217	248	235	883	719	679	587	799	1,542	631	3,559	
<b>Natural Gas</b>																	
1979 .....	646	996	532	214	( <sup>3</sup> )	145	221	115	422	272	784	443	1,007	470	255	2,174	
1983 .....	684	809	597	246	( <sup>3</sup> )	188	218	170	327	365	576	278	978	523	311	2,091	
1986 .....	485	715	523	254	45	114	205	105	332	258	409	244	742	426	311	1,723	
1989 .....	568	836	670	323	27	128	186	187	417	238	566	353	831	498	391	2,073	
1992 .....	572	1,017	586	291	24	157	189	193	381	388	552	354	747	697	376	2,174	
1995 <sup>4</sup> .....	535	830	580	245	18	158	258	213	395	239	420	297	750	528	371	1,946	
1999 .....	604	803	616	227	31	216	217	181	446	219	486	299	709	618	396	2,023	
2003 .....	482	909	709	268	39	203	243	215	403	269	460	462	751	527	360	2,100	
<b>Fuel Oil <sup>5</sup></b>																	
1979 .....	177	272	231	107	( <sup>3</sup> )	15	97	20	103	107	232	285	133	237	26	681	
1983 .....	85	140	90	61	( <sup>3</sup> )	Q	28	18	43	75	79	172	28	104	Q	314	
1986 .....	114	206	121	103	Q	Q	Q	20	105	39	130	270	63	86	23	442	
1989 .....	101	170	86	71	Q	Q	Q	17	76	43	122	237	61	50	Q	357	
1992 .....	86	111	75	62	Q	Q	Q	21	55	47	67	194	26	48	Q	272	
1995 <sup>4</sup> .....	71	104	60	57	Q	Q	Q	21	49	28	70	168	16	45	7	235	
1999 .....	29	73	60	48	Q	Q	Q	19	Q	18	29	138	5	29	8	179	
2003 .....	71	74	83	47	Q	Q	Q	11	35	41	18	68	181	24	15	9	228
<b>District Heat <sup>6</sup></b>																	
1979 .....	Q	61	136	27	( <sup>3</sup> )	Q	22	24	Q	58	57	64	93	Q	Q	201	
1983 .....	Q	83	202	21	( <sup>3</sup> )	Q	70	22	Q	68	87	84	141	34	30	289	
1986 .....	Q	159	243	97	Q	Q	80	Q	12	71	99	94	196	81	51	422	
1989 .....	19	252	315	Q	Q	Q	92	Q	Q	167	134	179	159	126	121	585	
1992 .....	Q	182	238	49	NC	Q	55	65	Q	109	135	123	183	78	51	435	
1995 <sup>4</sup> .....	Q	154	271	91	Q	Q	70	57	Q	75	214	135	173	83	Q	533	
1999 .....	Q	158	213	117	Q	Q	46	68	Q	74	126	136	132	67	98	433	
2003 .....	Q	165	460	134	NC	Q	Q	Q	Q	128	247	166	225	182	Q	636	

<sup>1</sup> See Appendix C for Census regions.

<sup>2</sup> Includes electricity, natural gas, fuel oil, and district heat.

<sup>3</sup> Included in "Food Service."

<sup>4</sup> Beginning in 1995, excludes commercial buildings at multi-building manufacturing facilities, and parking garages.

<sup>5</sup> Distillate fuel oil, residual fuel oil, and kerosene.

<sup>6</sup> Through 1983, includes purchased steam only. Beginning in 1986, includes purchased and non-purchased steam and hot water.

Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 20

buildings were sampled. NC=No cases in the sample.

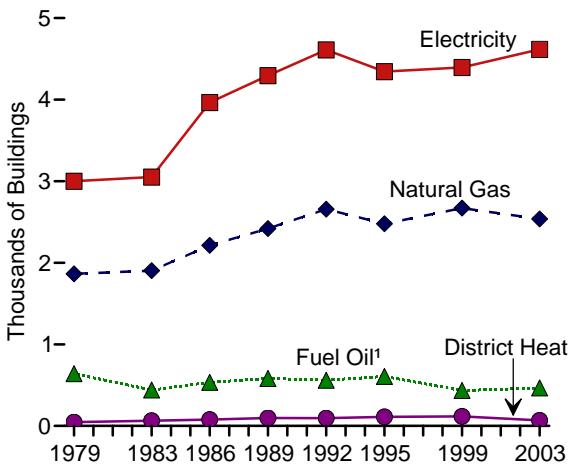
Note: Data are estimates. Statistics for individual fuels are for all buildings using each fuel. Statistics for "Major Sources" are for the sum of "Electricity," "Natural Gas," "Fuel Oil," and "District Heat," across all buildings using any of those fuels.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/cbecs>.

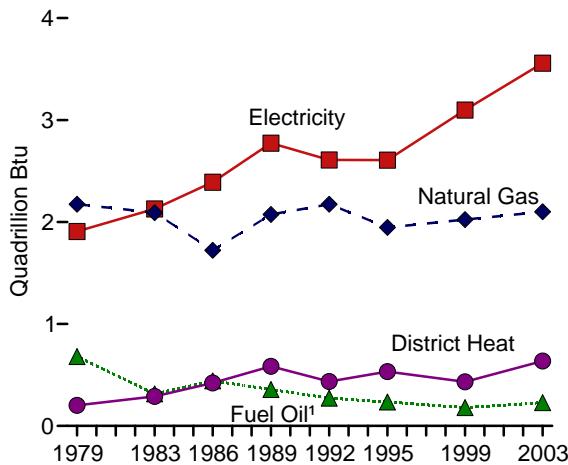
Sources: • 1979—Energy Information Administration (EIA), Form EIA-143, "Nonresidential Buildings Energy Consumption Survey." • 1983—EIA, Form EIA-788, "Nonresidential Buildings Energy Consumption Survey." • 1986—EIA, Form EIA-871, "Nonresidential Buildings Energy Consumption Survey." • 1989 forward—EIA, Form EIA-871A-F, "Commercial Buildings Energy Consumption Survey."

**Figure 2.10 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-2003**

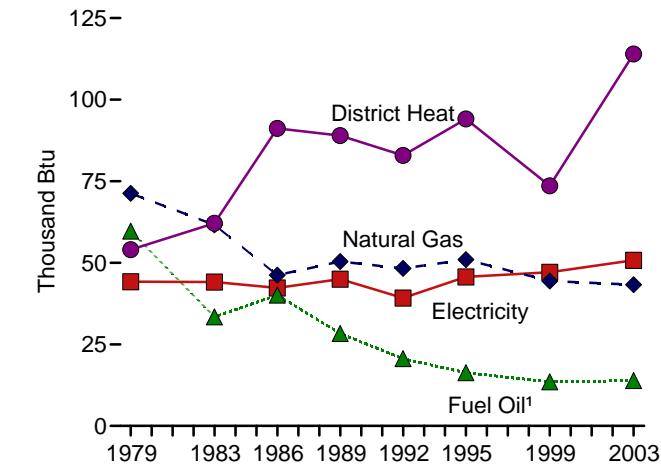
**Buildings by Energy Source Used**



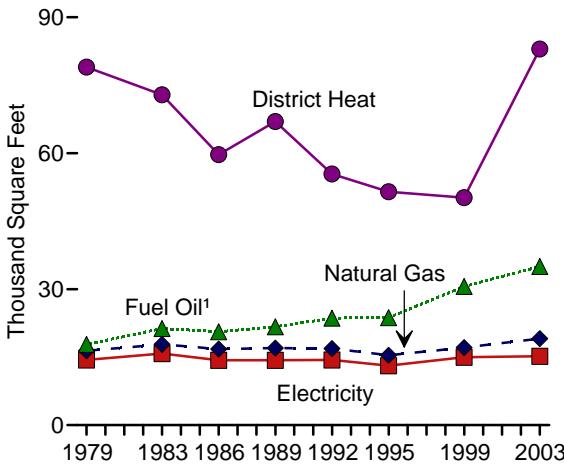
**Consumption**



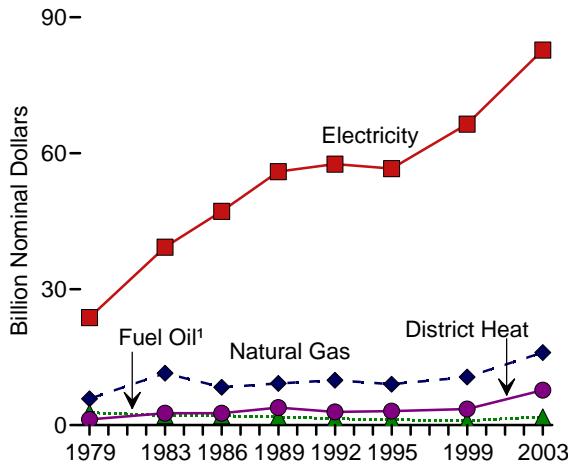
**Consumption per Square Foot**



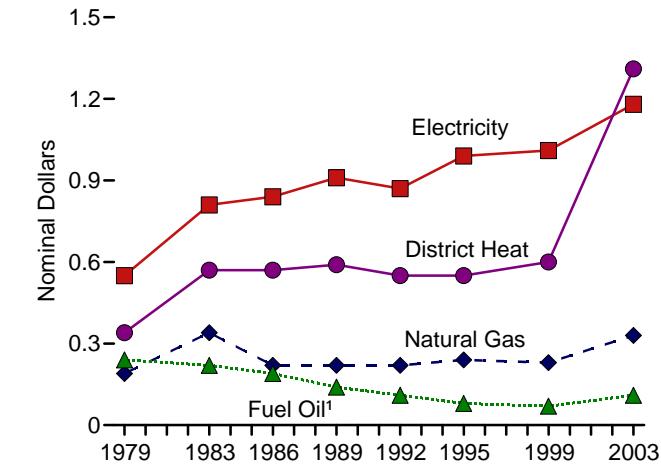
**Square Footage per Building by Energy Source Used**



**Expenditures**



**Expenditures Per Square Foot**



<sup>1</sup> Distillate fuel oil, residual fuel oil, and kerosene.

Notes: • For years not shown, there are no data available.

• Because vertical scales differ, graphs should not be compared.

Source: Table 2.10.

**Table 2.10 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-2003**

Energy Source and Year	Building Characteristics			Energy Consumption				Energy Expenditures			
	Number of Buildings	Total Square Feet	Square Feet per Building	Total	Per Building	Per Square Foot	Per Employee	Total	Per Building	Per Square Foot	Per Million Btu
	Thousands	Millions	Thousands	Trillion Btu	Million Btu	Thousand Btu	Million Btu	Million Nominal Dollars <sup>1</sup>	Thousand Nominal Dollars <sup>1</sup>	Nominal Dollars <sup>1</sup>	Nominal Dollars <sup>1</sup>
<b>Major Sources <sup>2</sup></b>											
1979 .....	3,073	43,546	14.2	5,008	1,630	115.0	85.0	33,821	11.0	.78	6.75
1983 .....	3,185	49,471	15.5	4,856	1,525	98.2	65.7	55,764	17.5	1.13	11.48
1986 .....	4,154	58,199	14.0	5,040	1,213	86.6	68.6	60,762	14.6	1.04	12.06
1989 .....	4,528	63,184	14.0	5,788	1,278	91.6	81.9	70,826	15.6	1.12	12.24
1992 .....	4,806	67,876	14.1	5,490	1,142	80.9	77.1	71,821	14.9	1.06	13.08
1995 <sup>3</sup> .....	4,579	58,772	12.8	5,321	1,162	90.5	69.3	69,918	15.3	1.19	13.14
1999 .....	4,657	67,338	14.5	5,733	1,231	85.1	70.0	81,552	17.5	1.21	14.22
2003 .....	4,859	71,658	14.7	6,523	1,342	91.0	( <sup>4</sup> )	107,897	22.2	1.51	16.54
<b>Electricity</b>											
1979 .....	3,001	43,153	14.4	1,908	636	44.2	32.4	23,751	7.9	.55	12.45
1983 .....	3,052	48,327	15.8	2,129	697	44.1	28.9	39,279	12.9	.81	18.45
1986 .....	3,965	56,508	14.3	2,390	603	42.3	32.7	47,186	11.9	.84	19.74
1989 .....	4,294	61,563	14.3	2,773	646	45.0	39.3	55,943	13.0	.91	20.17
1992 .....	4,611	66,525	14.4	2,609	566	39.2	36.6	57,619	12.5	.87	22.09
1995 <sup>3</sup> .....	4,343	57,076	13.1	2,608	600	45.7	34.1	56,621	13.0	.99	21.71
1999 .....	4,395	65,716	15.0	3,098	706	47.1	37.9	66,424	15.1	1.01	21.44
2003 .....	4,617	70,181	15.2	3,559	771	50.7	( <sup>4</sup> )	82,783	17.9	1.18	23.26
<b>Natural Gas</b>											
1979 .....	1,864	30,477	16.4	2,174	1,167	71.3	52.5	5,814	3.1	.19	2.67
1983 .....	1,904	33,935	17.8	2,091	1,098	61.6	40.6	11,443	6.0	.34	5.47
1986 .....	2,214	37,263	16.8	1,723	778	46.2	35.2	8,355	3.8	.22	4.85
1989 .....	2,420	41,143	17.0	2,073	857	50.4	43.2	9,204	3.8	.22	4.44
1992 .....	2,657	44,994	16.9	2,174	818	48.3	42.5	9,901	3.7	.22	4.55
1995 <sup>3</sup> .....	2,478	38,145	15.4	1,946	785	51.0	38.7	9,018	3.6	.24	4.63
1999 .....	2,670	45,525	17.1	2,023	758	44.4	36.0	10,609	4.0	.23	5.24
2003 .....	2,538	48,473	19.1	2,100	828	43.3	( <sup>4</sup> )	16,010	6.3	.33	7.62
<b>Fuel Oil <sup>5</sup></b>											
1979 .....	641	11,397	17.8	681	1,063	59.7	40.5	2,765	4.3	.24	4.06
1983 .....	441	9,409	21.3	314	714	33.4	19.8	2,102	4.8	.22	6.68
1986 .....	534	11,005	20.6	442	827	40.1	27.7	2,059	3.9	.19	4.66
1989 .....	581	12,600	21.7	357	614	28.3	21.0	1,822	3.1	.14	5.11
1992 .....	560	13,215	23.6	272	487	20.6	15.1	1,400	2.5	.11	5.14
1995 <sup>3</sup> .....	607	14,421	23.7	235	387	16.3	10.2	1,175	1.9	.08	5.00
1999 .....	434	13,285	30.6	179	412	13.5	9.1	956	2.2	.07	5.35
2003 .....	465	16,265	35.0	228	490	14.0	( <sup>4</sup> )	1,826	3.9	.11	8.01
<b>District Heat <sup>6</sup></b>											
1979 .....	47	3,722	79.0	201	4,267	54.0	26.5	1,267	26.9	.34	6.30
1983 .....	64	4,643	72.9	289	4,530	62.1	34.4	2,627	41.2	.57	9.10
1986 .....	77	4,625	59.7	422	5,446	91.2	52.4	2,620	33.8	.57	6.21
1989 .....	98	6,578	67.0	585	5,964	89.0	56.5	3,857	39.3	.59	6.59
1992 .....	95	5,245	55.4	435	4,596	82.9	60.9	2,901	30.7	.55	6.67
1995 <sup>3</sup> .....	110	5,658	51.5	533	4,849	94.1	51.2	3,103	28.3	.55	5.83
1999 .....	117	5,891	50.2	433	3,692	73.6	50.1	3,564	30.4	.60	8.23
2003 .....	67	5,576	83.0	636	9,470	114.0	( <sup>4</sup> )	7,279	108.4	1.31	11.45

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Includes electricity, natural gas, fuel oil, and district heat.

<sup>3</sup> Beginning in 1995, excludes commercial buildings at multi-building manufacturing facilities, and parking garages.

<sup>4</sup> Total number of employees not collected in 2003.

<sup>5</sup> Distillate fuel oil, residual fuel oil, and kerosene.

<sup>6</sup> Through 1983, includes purchased steam only. Beginning in 1986, includes purchased and non-purchased steam and hot water.

Note: Data are estimates. Statistics for individual fuels are for all buildings using each fuel. Statistics for major sources are for all buildings, even buildings using no major fuel.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/cbecs>.

Sources: • 1979—Energy Information Administration (EIA), Form EIA-143, "Nonresidential Buildings Energy Consumption Survey." • 1983—EIA, Form EIA-788, "Nonresidential Buildings Energy Consumption Survey." • 1986—EIA, Form EIA-871, "Nonresidential Buildings Energy Consumption Survey." • 1989 forward—EIA, Form EIA-871A-F, "Commercial Buildings Energy Consumption Survey."

## Energy Consumption by Sector

**Note. Electrical System Energy Losses.** Electrical system energy losses are calculated as the difference between total primary consumption by the electric power sector—see Table 2.1f—and the total energy content of electricity retail sales—see Tables 8.9 and A6. Most of these losses occur at steam-electric power plants (conventional and nuclear) in the conversion of heat energy into mechanical energy to turn electric generators. The loss is a thermodynamically necessary feature of the steam-electric cycle. Part of the energy input-to-output

losses is a result of imputing fossil energy equivalent inputs for hydroelectric, solar, and wind energy sources, since there is no generally accepted practice for measuring those thermal conversion rates. In addition to conversion losses, other losses include power plant use of electricity, transmission and distribution of electricity from power plants to end-use consumers (also called "line losses"), and unaccounted for electricity. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales. Overall, approximately 67 percent of total energy input is lost in conversion; of electricity generated, approximately 5 percent is lost in plant use and 9 percent is lost in transmission and distribution.

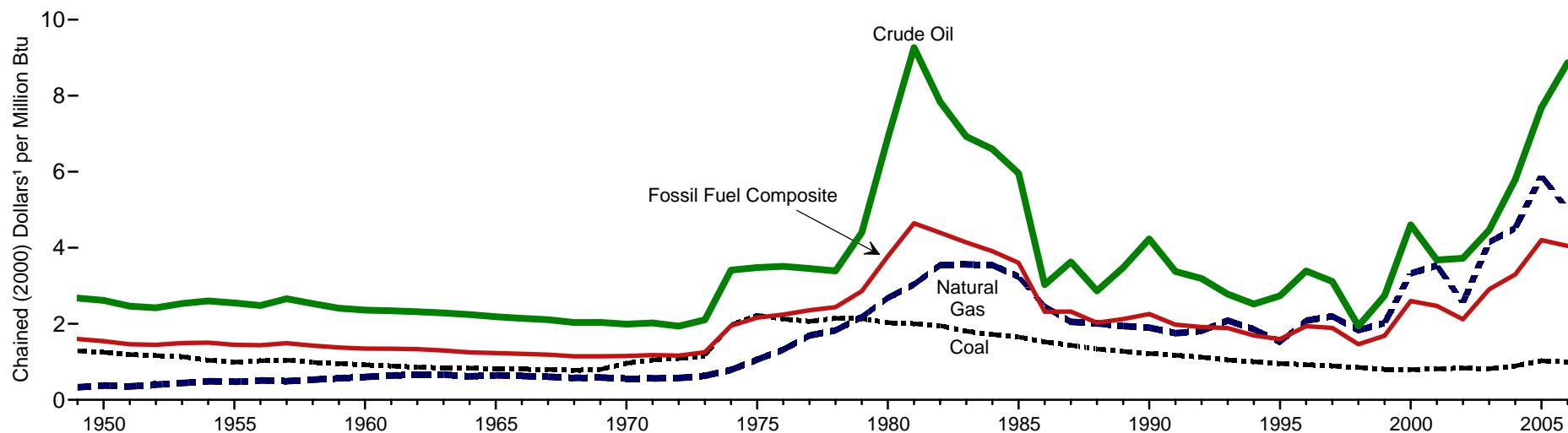
3

# Financial Indicators

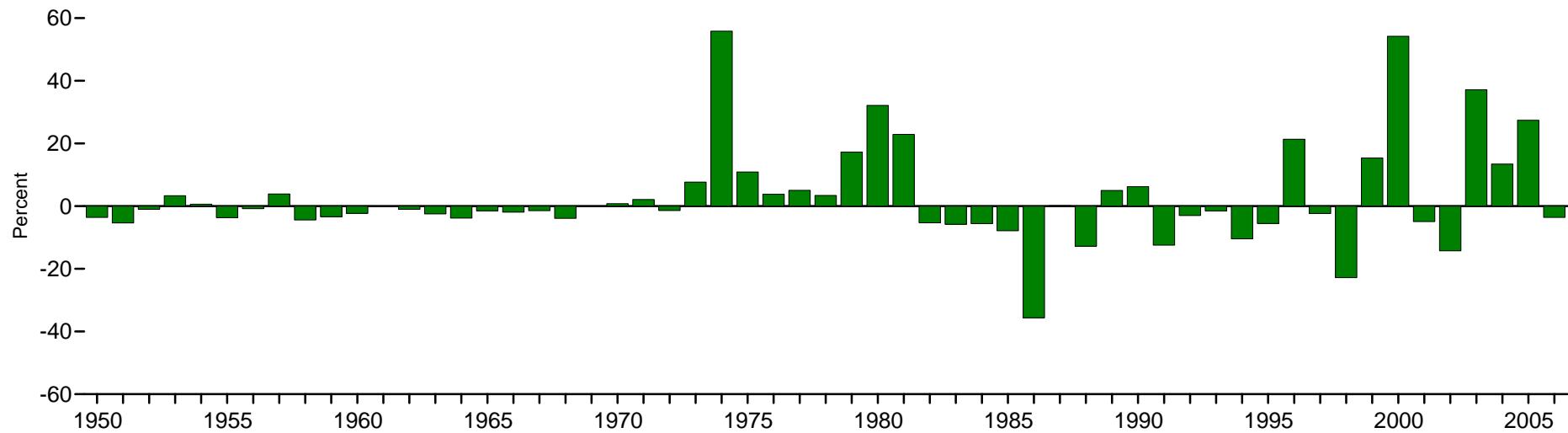


**Figure 3.1 Fossil Fuel Production Prices**

**Prices, 1949-2006**



**Fossil Fuel Composite Price<sup>2</sup>, Change From Previous Year, 1950-2006**



<sup>1</sup> Calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> Based on real prices.

Source: Table 3.1.

**Table 3.1 Fossil Fuel Production Prices, Selected Years, 1949-2006**

(Dollars per Million Btu)

Year	Coal <sup>1</sup>		Natural Gas <sup>2</sup>		Crude Oil <sup>3</sup>		Fossil Fuel Composite <sup>4</sup>		
	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Percent Change <sup>7</sup>
1949	0.21	1.29	0.05	0.33	0.44	2.68	0.26	1.60	--
1950	.21	1.25	.06	.38	.43	2.62	.26	1.54	-3.6
1955	.19	.99	.09	.48	.48	2.55	.27	1.45	-3.7
1960	.19	.92	.13	.60	.50	2.36	.28	1.35	-2.3
1965	.18	.82	.15	.65	.49	2.19	.28	1.23	-1.5
1970	.27	.97	.15	.56	.55	1.99	.32	1.15	.8
1971	.30	1.05	.16	.56	.58	2.02	.34	1.18	2.1
1972	.33	1.09	.17	.57	.58	1.94	.35	1.16	-1.4
1973	.37	1.15	.20	.63	.67	2.11	.40	1.25	7.7
1974	.69	1.98	.27	.79	1.18	3.41	.68	1.95	55.8
1975	.85	2.22	.40	1.06	1.32	3.48	.82	2.16	10.9
1976	.86	2.13	.53	1.32	1.41	3.51	.90	2.24	3.8
1977	.88	2.07	.72	1.69	1.48	3.46	1.01	2.36	5.1
1978	.98	2.15	.84	1.83	1.55	3.39	1.12	2.44	3.4
1979	1.06	2.14	1.08	2.18	2.18	4.40	1.42	2.86	17.3
1980	1.10	2.04	1.45	2.68	3.72	6.89	2.04	3.78	32.1
1981	1.18	2.00	1.80	3.04	5.48	9.27	2.75	4.64	22.9
1982	1.23	1.95	2.22	3.54	4.92	7.84	2.76	4.40	-5.3
1983	1.18	1.81	2.32	3.56	4.52	6.93	2.70	4.14	-5.8
1984	1.16	1.72	2.40	3.55	4.46	6.60	2.65	3.91	-5.6
1985	1.15	1.65	2.26	3.24	4.15	5.96	2.51	3.60	-7.8
1986	1.09	1.52	1.75	2.45	2.16	3.03	1.65	2.32	-35.6
1987	1.05	1.44	1.50	2.05	2.66	3.63	1.70	2.32	.1
1988	1.01	1.34	1.52	2.01	2.17	2.87	1.53	2.03	-12.8
1989	1.00	1.28	1.53	1.94	2.73	3.48	1.67	2.13	5.0
1990	1.00	1.22	1.55	1.90	3.45	4.23	1.84	2.26	6.2
1991	.99	1.17	1.48	1.75	2.85	3.38	1.67	1.98	-12.5
1992	.97	1.12	1.57	1.82	2.76	3.19	1.66	1.92	-3.0
1993	.93	1.05	1.84	2.09	2.46	2.78	1.67	1.89	-1.5
1994	.91	1.01	1.67	1.86	2.27	2.52	1.53	1.69	-10.4
1995	.88	.96	1.40	1.52	2.52	2.74	1.47	1.60	-5.5
1996	.87	.92	1.96	2.09	3.18	3.39	1.82	1.94	R21.3
1997	.85	.89	2.10	2.20	2.97	3.11	1.81	R1.89	-2.4
1998	.83	.86	1.77	1.83	1.87	1.94	1.41	1.46	-22.8
1999	.79	.81	1.98	2.02	2.68	2.74	1.65	1.69	15.4
2000	.80	.80	3.32	3.32	4.61	4.61	2.60	2.60	R54.2
2001	R.84	.82	3.62	3.54	3.77	3.68	2.53	2.47	R4.9
2002	.87	.84	2.67	2.56	3.88	3.73	2.21	2.12	-14.2
2003	.87	.82	4.41	4.15	4.75	4.47	R3.09	2.91	R37.1
2004	.98	.89	R4.94	R4.52	6.34	R5.79	R3.61	R3.30	R13.4
2005	R1.16	R1.03	R6.64	R5.89	8.67	R7.69	R4.74	R4.20	R27.4
2006 <sup>p</sup>	1.17	1.01	5.81	5.01	10.29	8.87	4.71	4.06	-3.4

<sup>1</sup> Free-on-board (f.o.b.) rail/barge prices, which are the f.o.b. prices of coal at the point of first sale, excluding freight or shipping and insurance costs. See "Free on Board (F.O.B.)" in Glossary.

<sup>2</sup> Wellhead prices (converted to dollars per million Btu using marketed production heat contents). See "Natural Gas Wellhead Price" in Glossary.

<sup>3</sup> Domestic first purchase prices. See "Crude Oil Domestic First Purchase Price" in Glossary.

<sup>4</sup> Derived by multiplying the price per Btu of each fossil fuel by the total Btu content of the production of each fossil fuel and dividing this accumulated value of total fossil fuel production by the accumulated Btu content of total fossil fuel production.

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>7</sup> Based on real values.

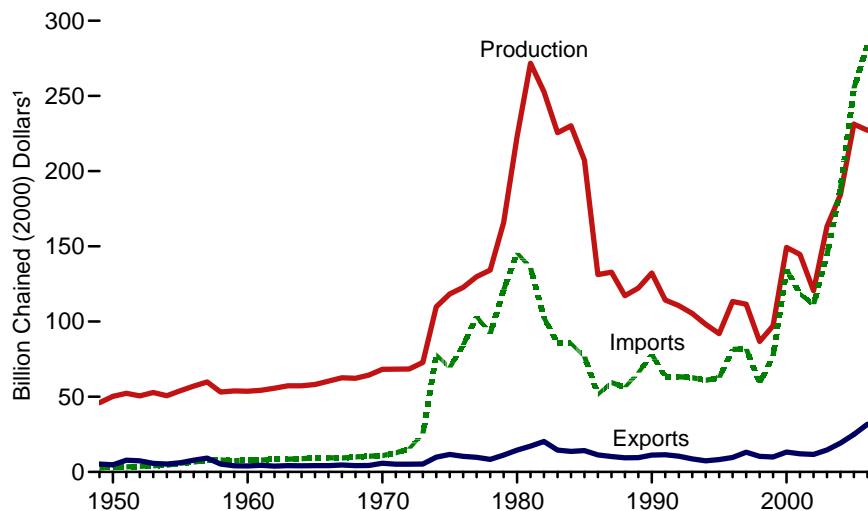
R=Revised. P=Preliminary. -- = Not applicable.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/finan.html>.

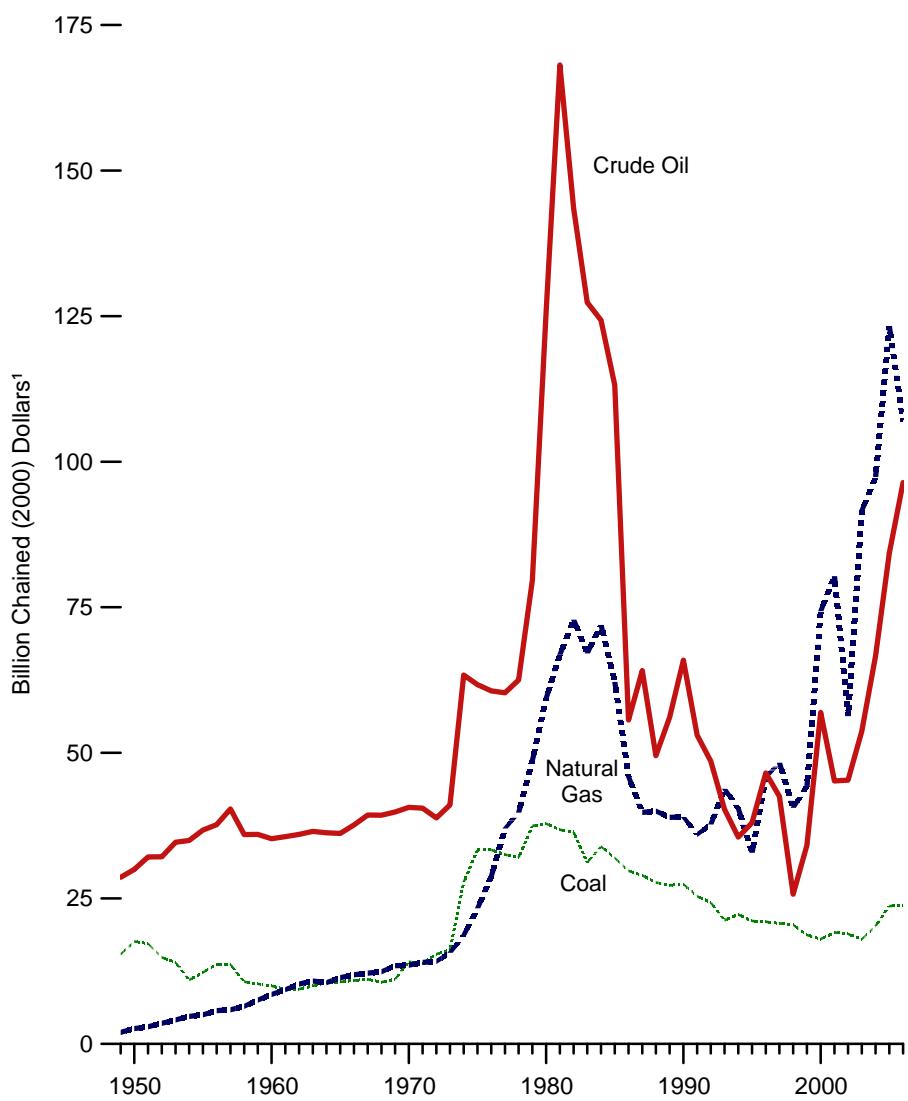
Sources: Tables 5.18, 6.7, 7.8, A2, A4, and A5.

**Figure 3.2 Value of Fossil Fuel Production**

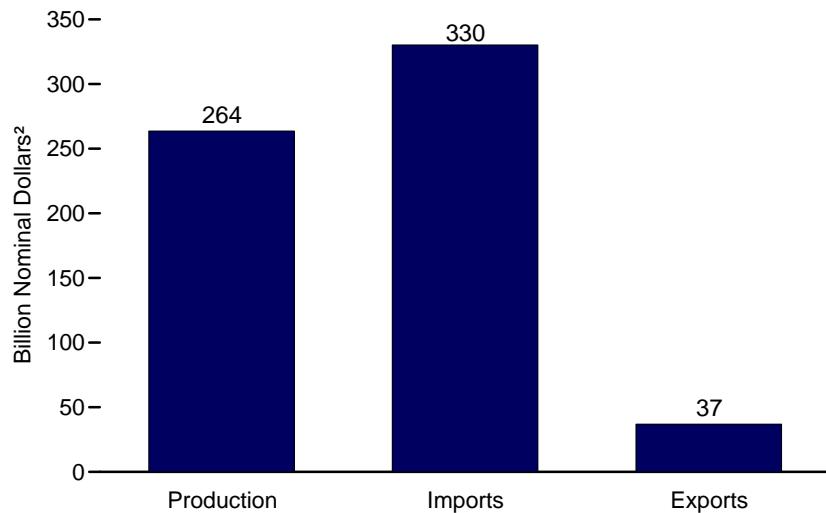
**Overview, 1949-2006**



**By Fuel, 1949-2006**



**Overview, 2006**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 3.2, 3.7, and 3.8.

**Table 3.2 Value of Fossil Fuel Production, Selected Years, 1949-2006**  
 (Billion Dollars)

Year	Coal <sup>1</sup>		Natural Gas <sup>2</sup>		Crude Oil <sup>3,4</sup>		Total	
	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>
1949	2.52	15.40	0.33	1.99	4.68	28.61	7.52	46.00
1950	2.91	17.59	.44	2.66	4.95	29.97	8.30	50.22
1955	2.30	12.28	.94	5.02	6.88	36.72	10.12	54.02
1960	2.10	9.97	1.79	8.50	7.42	35.24	11.30	53.71
1965	2.40	10.64	2.57	11.39	8.15	36.15	13.11	58.18
1970	3.88	14.11	3.73	13.53	11.19	40.62	18.80	68.27
1971	4.01	13.87	4.05	14.00	11.71	40.50	19.77	68.38
1972	4.65	15.42	4.28	14.19	11.71	38.83	20.65	68.44
1973	5.14	16.14	4.98	15.64	13.07	41.05	23.20	72.84
1974	9.65	27.79	6.48	18.66	22.00	63.36	38.13	109.81
1975	12.67	33.33	8.85	23.28	23.45	61.70	44.96	118.31
1976	13.40	33.33	11.57	28.79	24.37	60.64	49.34	122.76
1977	13.91	32.53	15.82	37.00	25.79	60.32	55.52	129.86
1978	14.65	32.02	18.18	39.72	28.60	62.51	61.43	134.25
1979	18.55	37.44	24.16	48.75	39.45	79.63	82.16	165.82
1980	20.45	37.84	32.09	59.37	67.93	125.70	120.47	222.91
1981	21.75	36.79	39.51	66.84	99.40	168.13	160.66	271.75
1982	22.84	36.41	45.71	72.88	90.03	143.53	158.58	252.81
1983	20.32	31.16	43.73	67.06	83.05	127.36	147.10	225.58
1984	22.94	33.91	48.69	71.97	84.10	124.31	155.74	230.19
1985	22.27	31.94	43.35	62.18	78.88	113.16	144.50	207.28
1986	21.18	29.73	32.71	45.90	39.63	55.63	93.52	131.26
1987	21.20	28.96	29.11	39.77	46.93	64.12	97.24	132.85
1988	20.97	27.71	30.28	40.01	37.48	49.51	88.73	117.22
1989	21.40	27.24	30.58	38.93	44.07	56.10	96.05	122.27
1990	22.39	27.45	31.80	38.97	53.77	65.91	107.96	132.32
1991	21.40	25.35	30.39	35.99	44.77	53.02	96.57	114.36
1992	20.98	24.28	32.56	37.69	41.97	48.58	95.50	110.56
1993	18.77	21.23	38.72	43.81	35.61	40.29	93.10	105.34
1994	20.06	22.23	36.46	40.40	32.07	35.53	88.59	98.16
1995	19.45	21.12	30.24	32.83	35.00	38.00	84.69	91.95
1996	19.68	20.97	42.99	45.81	43.68	46.54	106.35	113.32
1997	19.77	20.72	46.09	48.30	40.57	42.52	106.43	111.55
1998	19.75	20.47	39.12	40.56	24.80	25.71	83.68	86.74
1999	18.30	18.70	43.37	44.32	33.40	34.13	95.08	97.15
2000	18.02	18.02	74.33	74.33	56.93	56.93	149.27	149.27
2001	19.60	19.14	82.28	80.35	46.25	45.16	148.13	144.66
2002	19.68	18.88	58.66	56.30	47.21	45.31	125.54	120.50
2003	19.13	R17.98	97.47	R91.61	57.14	R53.71	173.75	R163.29
2004	22.16	R20.25	R106.57	R97.39	72.93	R66.64	R201.66	R184.28
2005	R26.69	R23.68	R138.91	R123.21	R95.03	R84.30	R260.64	R231.19
2006 <sup>P</sup>	27.62	23.80	124.13	106.97	111.89	96.42	263.63	227.19

<sup>1</sup> Coal values are based on free-on-board (f.o.b.) rail/barge prices, which are the f.o.b. prices of coal at the point of first sale, excluding freight or shipping and insurance costs. See "Free on Board (F.O.B.)" in Glossary.

<sup>2</sup> Natural gas values are for marketed production based on wellhead prices. See "Natural Gas Marketed Production" and "Natural Gas Wellhead Price" in Glossary.

<sup>3</sup> Includes lease condensate.

<sup>4</sup> Crude oil values are based on domestic first purchase prices. See "Crude Oil Domestic First Purchase Price" in Glossary.

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised. P=Preliminary.

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

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/finan.html>.

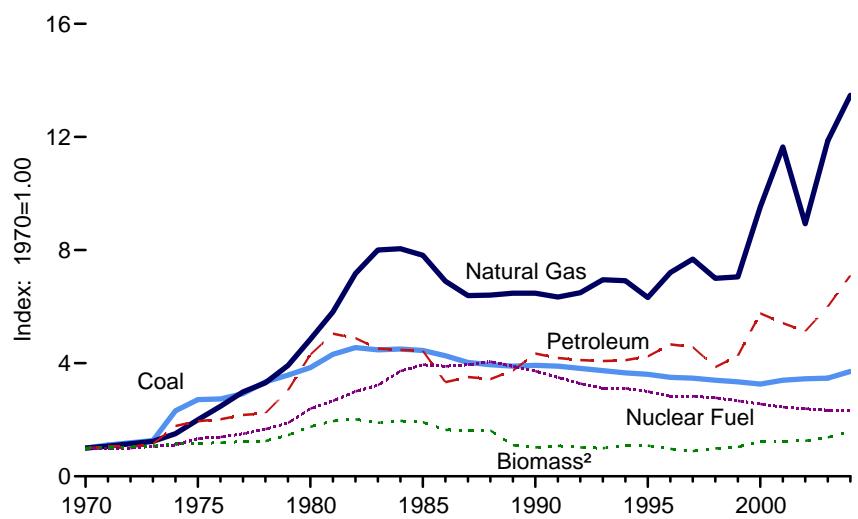
Sources: Tables 5.1, 5.18, 6.2, 6.7, 7.2, and 7.8.

**Figure 3.3 Consumer Price Estimates for Energy by Source**

**Total Energy, 1970-2004**



**Prices<sup>3</sup> by Energy Type, Indexed, 1970-2004**



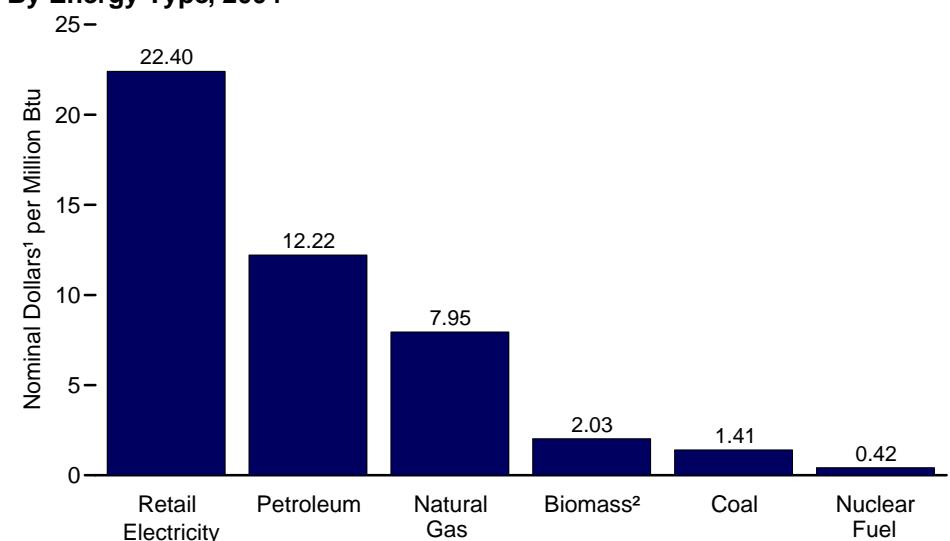
<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Wood and waste; excludes ethanol and biodiesel.

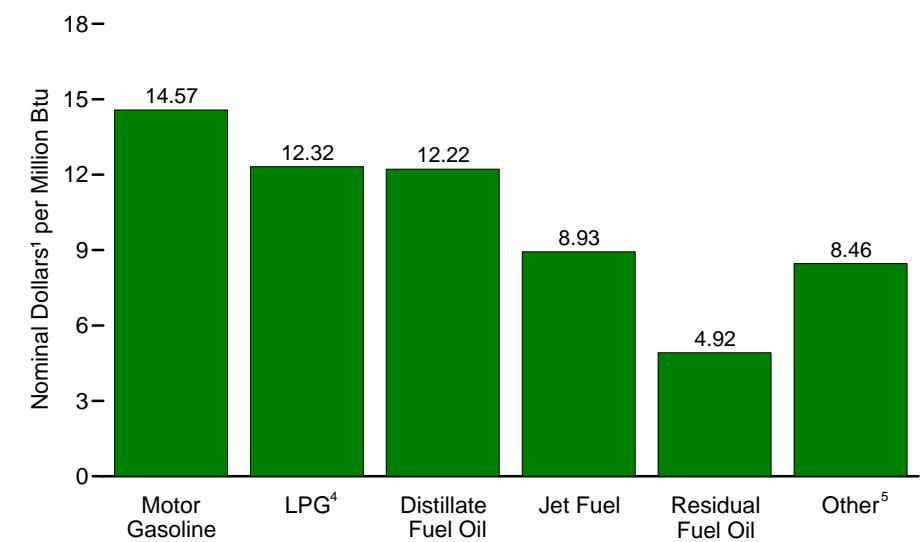
<sup>3</sup> Based on nominal dollars.

<sup>4</sup> Liquefied petroleum gases.

**By Energy Type, 2004**



**By Petroleum Product, 2004**



<sup>5</sup> Consumption-weighted average price for asphalt and road oil, aviation gasoline, kerosene, lubricants, petrochemical feedstocks, petroleum coke, special naphthas, waxes, and miscellaneous petroleum products.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.3.

**Table 3.3 Consumer Price Estimates for Energy by Source, 1970-2004**

(Nominal Dollars<sup>1</sup> per Million Btu)

Year	Coal	Natural Gas <sup>3</sup>	Primary Energy <sup>2</sup>									Electric Power Sector <sup>10,11</sup>	Retail Electricity <sup>12</sup>	Total Energy <sup>8,9,13</sup>		
			Petroleum							Nuclear Fuel	Biomass <sup>7</sup>	Total <sup>8,9</sup>				
			Distillate Fuel Oil	Jet Fuel	LPG <sup>4</sup>	Motor Gasoline <sup>5</sup>	Residual Fuel Oil	Other <sup>6</sup>	Total							
1970	0.38	0.59	1.16	0.73	1.46	2.85	0.42	1.38	1.72	0.18	1.29	1.08	0.32	4.98	1.65	
1971	.42	.63	1.22	.77	1.49	2.90	.58	1.45	1.79	.18	1.31	1.15	.38	5.30	1.76	
1972	.45	.68	1.22	.79	1.52	2.88	.62	1.49	1.78	.18	1.33	1.18	.42	5.54	1.84	
1973	.48	.73	1.46	.92	2.02	3.10	.75	1.58	1.97	.19	1.39	1.29	.47	5.86	2.02	
1974	.88	.89	2.44	1.58	2.81	4.32	1.82	2.60	3.06	.20	1.50	1.94	.87	7.42	2.87	
1975	1.03	1.18	2.60	2.05	2.97	4.65	1.93	2.94	3.35	.24	1.50	2.19	.96	8.61	3.33	
1976	1.04	1.46	2.77	2.25	3.21	4.84	1.90	3.08	3.47	.25	1.53	2.34	1.03	9.13	3.57	
1977	1.11	1.76	3.11	2.59	3.65	5.13	2.14	3.27	3.73	.27	1.58	2.58	1.17	10.11	3.98	
1978	1.27	1.95	3.26	2.87	3.60	5.24	2.08	3.45	3.84	.30	1.61	2.71	1.26	10.92	4.23	
1979	1.36	2.31	4.69	3.90	4.50	7.11	2.83	4.70	5.23	.34	1.88	3.47	1.49	11.78	5.21	
1980	1.46	2.86	6.70	6.36	5.64	9.84	3.88	7.04	7.40	.43	2.26	4.57	R <sup>17.7</sup>	13.95	6.89	
1981	1.64	3.43	8.03	7.57	6.18	10.94	4.91	8.67	8.68	.48	2.52	5.24	2.02	16.14	8.03	
1982	1.73	4.23	7.78	7.23	6.66	10.39	4.65	7.87	8.40	.54	2.60	5.32	2.03	18.16	8.46	
1983	1.70	4.72	7.32	6.53	7.17	9.12	4.50	7.60	7.77	.58	2.44	5.11	2.00	18.62	8.39	
1984	1.71	4.75	7.37	6.25	6.93	8.89	4.75	7.67	7.68	.67	2.53	5.03	2.00	18.50	8.28	
1985	1.69	4.61	7.22	5.91	6.55	9.01	4.30	7.55	7.63	.71	2.47	4.92	1.88	19.05	8.37	
1986	1.62	4.07	5.68	3.92	6.44	6.79	2.37	5.80	5.73	.70	2.12	3.97	R <sup>1.59</sup>	19.05	7.30	
1987	1.53	3.77	5.97	4.03	6.07	7.23	2.86	5.63	6.04	.71	2.07	3.99	1.55	18.74	7.34	
1988	1.50	3.78	5.83	3.80	5.88	7.33	2.35	5.26	5.91	.73	2.09	3.89	1.47	18.68	7.26	
1989	1.48	3.82	7.68	5.68	6.77	9.12	3.17	5.82	7.47	.67	1.32	4.45	R <sup>1.51</sup>	18.98	7.55	
1990	1.49	3.82	7.68	5.68	6.77	9.12	3.17	5.82	7.47	.67	1.32	4.45	R <sup>1.48</sup>	19.32	8.25	
1991	1.48	3.74	7.29	4.83	6.81	8.93	2.62	5.74	7.20	.63	1.39	4.28	1.39	19.84	8.20	
1992	1.45	3.83	7.09	4.52	6.21	8.96	2.28	5.52	7.07	.59	1.32	4.24	1.37	20.06	8.13	
1993	1.42	4.10	7.08	4.29	6.23	8.83	2.26	5.50	7.01	.56	1.28	4.25	1.39	20.38	8.25	
1994	1.39	4.08	6.99	3.95	6.66	8.96	2.32	5.47	7.06	.56	1.39	4.27	1.35	20.33	8.30	
1995	1.37	3.73	6.98	4.00	6.56	9.22	2.46	5.74	7.29	.54	1.40	4.23	1.28	20.29	8.28	
1996	1.33	4.25	7.87	4.82	8.03	9.85	2.80	6.19	8.02	.51	1.25	4.63	1.34	20.16	8.75	
1997	1.32	4.53	7.66	4.53	7.43	9.81	2.93	5.88	7.86	.51	1.15	R <sup>4.65</sup>	1.36	20.13	8.80	
1998	1.29	4.13	6.57	3.35	6.01	8.45	2.15	5.04	6.64	.50	1.27	4.07	1.30	19.80	8.20	
1999	1.27	4.16	7.19	4.01	6.65	9.31	2.51	5.30	7.33	.48	1.34	4.36	1.31	19.52	8.53	
2000	1.24	5.62	9.86	6.60	10.20	12.01	4.32	6.97	9.91	.46	1.58	5.71	1.64	20.03	10.33	
2001	1.29	6.87	9.17	5.72	9.61	11.35	3.99	6.37	9.32	.44	1.61	5.79	1.78	21.49	10.73	
2002	R <sup>1.31</sup>	5.27	8.63	5.33	8.15	10.67	R <sup>3.91</sup>	R <sup>6.58</sup>	8.82	R <sup>4.43</sup>	R <sup>1.62</sup>	5.23	1.51	21.21	10.07	
2003	1.32	7.00	10.04	6.46	10.41	12.34	4.75	7.60	10.32	.42	1.78	6.26	1.80	21.81	11.41	
2004	1.41	7.95	12.22	8.93	12.32	14.57	4.92	8.46	12.22	.42	2.03	7.35	1.96	22.40	12.91	

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Consumption-weighted average prices for all sectors, including the electric power sector.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Liquefied petroleum gases.

<sup>5</sup> Beginning in 1993, includes ethanol blended into motor gasoline.

<sup>6</sup> Consumption-weighted average price for asphalt and road oil, aviation gasoline, kerosene, lubricants, petrochemical feedstocks, petroleum coke, special naphthas, waxes, and miscellaneous petroleum products.

<sup>7</sup> Wood and waste; excludes ethanol and biodiesel.

<sup>8</sup> Includes coal coke imports and exports, which are not separately displayed. In 2004, coal coke imports averaged 7.23 dollars per million Btu, and coal coke exports averaged 3.28 dollars per million Btu.

<sup>9</sup> Includes electricity imports, which are not separately displayed. Also, in 1981-1992, includes ethanol blended into motor gasoline that is not included in the motor gasoline data for those years.

<sup>10</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and

heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>11</sup> Consumption-weighted average electric power sector price for coal, natural gas, petroleum, nuclear fuel, wood, waste, and electricity imports.

<sup>12</sup> Retail electricity prices paid by ultimate customers, reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>13</sup> Consumption-weighted average price for primary energy and retail electricity in the four end-use sectors (residential, commercial, industrial, and transportation); excludes energy in the electric power sector.

R=Revised.

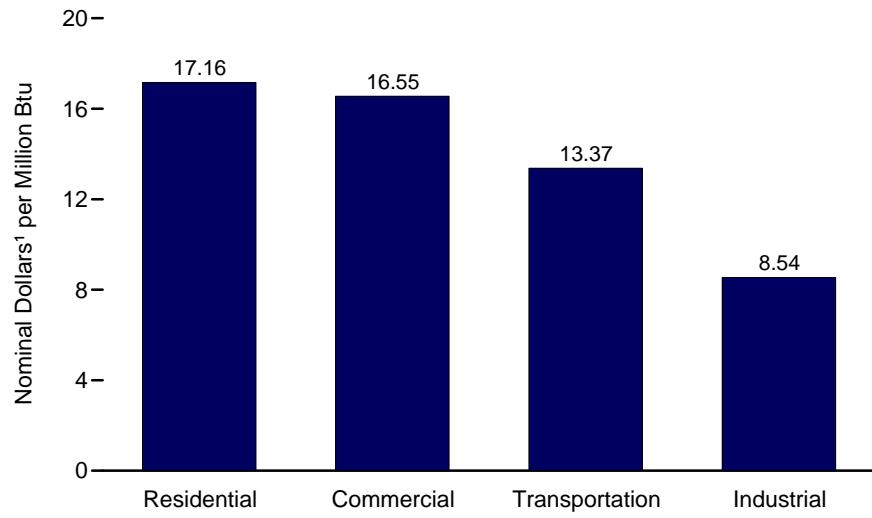
Notes: • Prices include taxes where data are available. • There are no direct fuel costs for hydroelectric, geothermal, wind, or solar energy.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/states/\\_seds.html](http://www.eia.doe.gov/emeu/states/_seds.html).

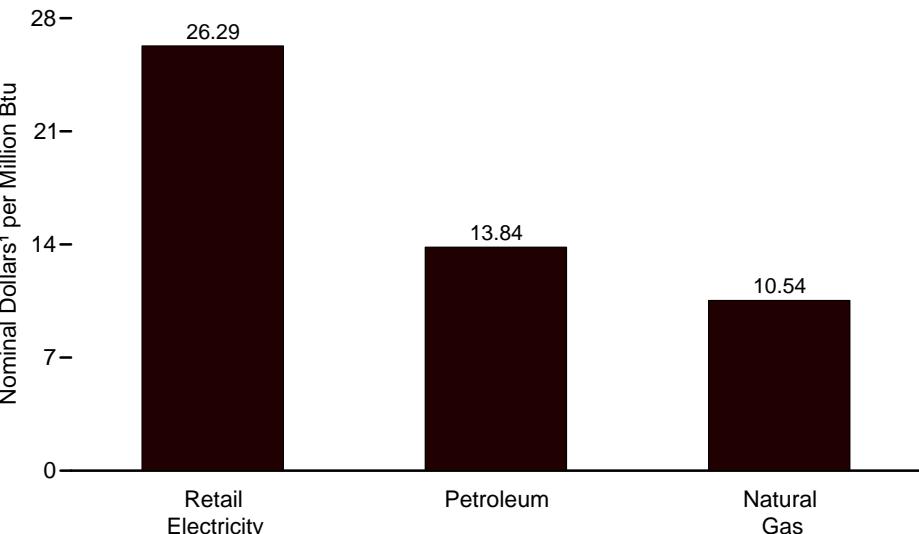
Source: Energy Information Administration, "State Energy Data 2004: Prices and Expenditures" (June 2007), U.S. Table 1.

**Figure 3.4 Consumer Price Estimates for Energy by End-Use Sector, 2004**

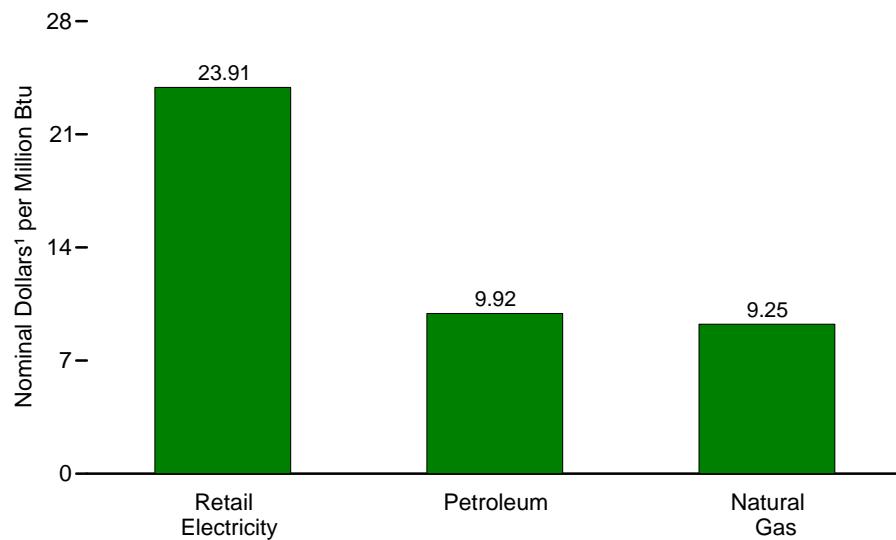
**By Sector**



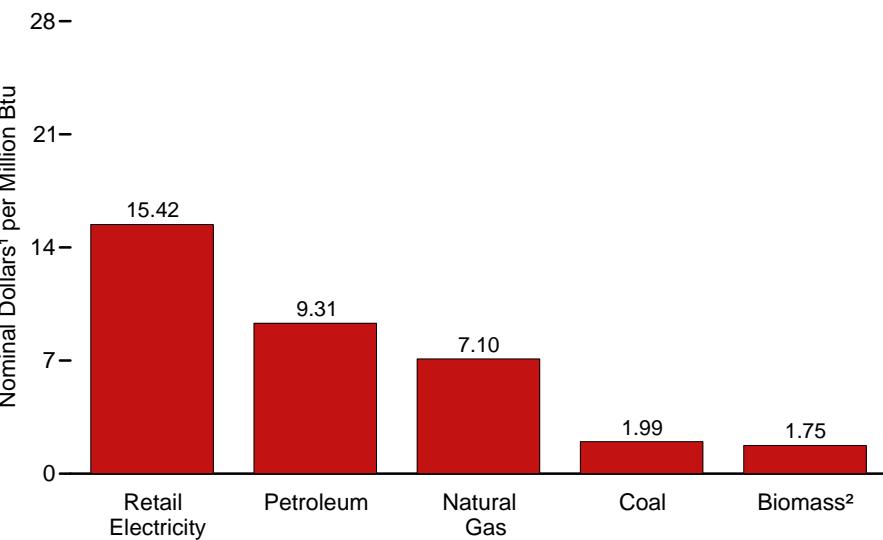
**Residential Sector by Major Sources**



**Commercial Sector by Major Sources**



**Industrial Sector by Major Sources**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Wood and waste; excludes ethanol and biodiesel.

Notes: • Consumer prices are intended to represent prices paid by consumers. As such they include taxes where data are available. • There are no direct fuel costs for hydroelectric,

geothermal, wind, or solar energy. • Because vertical scales differ, graphs should not be compared.

Source: Table 3.4.

**Table 3.4 Consumer Price Estimates for Energy by End-Use Sector, 1970-2004**

(Nominal Dollars<sup>1</sup> per Million Btu)

Year	Residential				Commercial				Industrial						Transportation	
	Natural Gas <sup>2</sup>	Petroleum	Retail Electricity <sup>3</sup>	Total <sup>4</sup>	Natural Gas <sup>2</sup>	Petroleum <sup>5</sup>	Retail Electricity <sup>3</sup>	Total <sup>6</sup>	Coal	Natural Gas <sup>2</sup>	Petroleum <sup>5</sup>	Biomass <sup>7</sup>	Retail Electricity <sup>3</sup>	Total <sup>8</sup>	Petroleum <sup>5</sup>	Total <sup>9</sup>
1970	1.06	1.56	6.51	2.10	0.75	0.90	6.09	1.98	0.45	0.38	0.98	1.59	2.99	0.84	2.31	2.31
1971	1.12	1.61	6.80	2.24	.80	1.01	6.44	2.16	.50	.41	1.05	1.59	3.22	.92	2.37	2.37
1972	1.18	1.63	7.09	2.37	.86	1.04	6.71	2.33	.55	.46	1.05	1.59	3.40	.99	2.38	2.38
1973	1.26	2.11	7.44	2.72	.91	1.20	7.06	2.56	.63	.50	1.18	1.60	3.66	1.10	2.57	2.57
1974	1.42	2.87	9.09	3.38	1.05	2.25	8.91	3.41	1.22	.67	2.24	1.60	4.95	1.78	3.70	3.70
1975	1.67	3.04	10.29	3.81	1.32	2.39	10.11	4.08	1.50	.95	2.46	1.60	6.07	2.20	4.02	4.02
1976	1.94	3.26	10.93	4.13	1.61	2.49	10.82	4.39	1.50	1.21	2.57	1.60	6.48	2.43	4.20	4.21
1977	2.30	3.66	11.87	4.77	2.00	2.84	11.99	5.13	1.56	1.48	2.84	1.59	7.33	2.78	4.47	4.48
1978	2.52	3.79	12.63	5.13	2.20	2.92	12.78	5.51	1.73	1.66	2.96	1.60	8.18	3.03	4.59	4.59
1979	2.92	5.33	13.60	6.00	2.69	4.15	13.72	6.28	1.75	1.96	3.99	1.60	8.94	3.63	6.19	6.19
1980	3.60	7.26	15.71	7.46	3.32	5.64	16.06	7.85	1.87	2.52	5.75	1.67	10.81	4.71	8.60	8.61
1981	4.19	8.68	18.17	8.82	3.91	7.00	18.44	9.49	2.06	3.07	6.84	1.67	12.57	5.52	9.83	9.84
1982	5.05	8.69	20.11	9.78	4.70	6.65	20.11	10.37	2.09	3.80	6.51	1.67	14.51	6.05	9.42	9.43
1983	5.88	8.43	21.04	10.66	5.43	6.51	20.57	10.94	1.91	4.10	6.57	1.67	14.54	6.21	8.44	8.45
1984	5.95	8.47	20.96	10.68	5.40	6.49	20.89	11.10	1.91	4.13	6.56	1.67	14.16	6.12	8.25	8.26
1985	5.94	8.17	21.66	10.91	5.34	6.38	21.30	11.65	1.90	3.87	6.29	1.67	14.57	6.03	8.26	8.27
1986	5.67	6.82	21.75	10.75	4.94	4.32	21.10	11.22	1.80	3.20	4.92	1.65	14.45	5.36	6.21	6.22
1987	5.39	6.66	21.82	10.71	4.64	4.65	20.44	10.98	1.67	2.88	4.96	1.65	13.98	5.17	6.57	6.59
1988	5.32	6.63	21.92	10.66	4.51	4.38	20.34	10.82	1.68	2.90	4.62	1.65	13.78	5.00	6.56	6.57
1989	5.47	7.59	22.41	11.02	4.61	4.99	20.77	11.27	1.68	2.93	4.69	1.20	13.85	4.92	7.17	7.18
1990	5.63	8.75	22.96	11.88	4.70	5.95	21.20	11.89	1.69	2.95	5.48	.99	13.92	5.23	8.27	8.28
1991	5.66	8.56	23.57	12.08	4.69	5.44	21.73	12.07	1.67	2.80	5.31	1.14	14.18	5.18	7.98	7.99
1992	5.73	7.89	24.06	11.98	4.75	5.23	22.15	12.17	1.69	2.91	5.00	1.13	14.18	5.13	7.91	7.93
1993	5.99	7.73	24.40	12.28	5.08	5.00	22.40	12.58	1.63	3.12	4.93	1.12	14.22	5.16	7.87	7.88
1994	6.23	7.81	24.57	12.63	5.35	4.89	22.35	12.74	1.62	3.09	5.04	1.15	14.00	5.15	7.91	7.92
1995	5.89	7.75	24.63	12.63	4.94	4.97	22.29	12.64	1.63	2.80	5.20	1.21	13.68	4.97	8.08	8.09
1996	6.16	8.92	24.50	12.73	5.26	6.01	22.17	12.78	1.62	3.30	6.04	1.01	13.49	5.40	8.76	8.77
1997	6.75	8.90	24.71	13.29	5.67	5.92	22.03	13.05	1.62	3.53	5.68	1.01	13.29	5.34	8.69	8.70
1998	6.61	7.88	24.21	13.48	5.38	4.88	21.48	13.07	1.58	3.16	4.54	1.24	13.13	4.91	7.47	7.48
1999	6.50	8.12	23.93	13.19	5.22	5.35	21.01	12.87	1.58	3.21	5.07	1.38	12.98	5.12	8.23	8.23
2000	7.64	11.55	24.14	14.27	6.56	8.09	21.52	13.93	1.55	4.61	7.50	1.43	13.60	6.49	10.78	10.78
2001	9.41	R <sup>11.65</sup>	25.29	15.72	8.32	R <sup>7.64</sup>	23.15	R <sup>15.62</sup>	1.63	5.71	6.75	1.54	14.59	6.80	10.21	10.21
2002	7.71	R <sup>10.40</sup>	24.81	R <sup>14.74</sup>	6.49	R <sup>6.96</sup>	22.85	14.70	1.75	4.37	R <sup>6.44</sup>	R <sup>1.55</sup>	14.39	R <sup>6.28</sup>	9.63	R <sup>9.63</sup>
2003	9.23	12.30	25.50	15.82	8.02	8.38	23.44	15.56	1.74	6.03	7.79	1.52	14.99	7.47	11.20	11.21
2004	10.54	13.84	26.29	17.16	9.25	9.92	23.91	16.55	1.99	7.10	9.31	1.75	15.42	8.54	13.36	13.37

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>3</sup> Retail electricity prices paid by ultimate customers, reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>4</sup> Includes coal and wood, which are not separately displayed.

<sup>5</sup> Beginning in 1993, includes ethanol blended into motor gasoline.

<sup>6</sup> Includes coal, wood, and waste, which are not separately displayed.

<sup>7</sup> Wood and waste; excludes ethanol and biodiesel.

<sup>8</sup> Includes coal coke imports and exports, which are not separately displayed.

<sup>9</sup> Includes coal, natural gas, and retail electricity, which are not separately displayed. Also, in 1981-1992, includes ethanol blended into motor gasoline that is not included in the petroleum data for those years.

R=Revised.

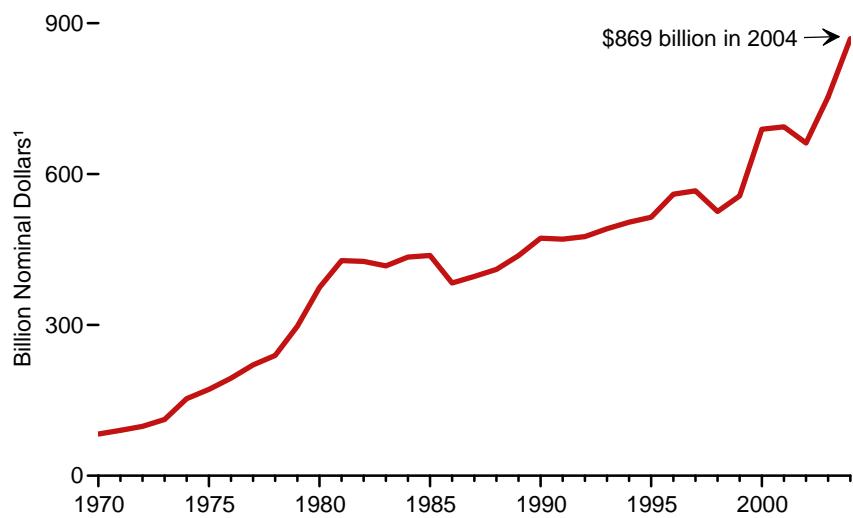
Notes: • Prices include taxes where data are available. • There are no direct fuel costs for hydroelectric, geothermal, wind, or solar energy.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/states/\\_seds.html](http://www.eia.doe.gov/emeu/states/_seds.html).

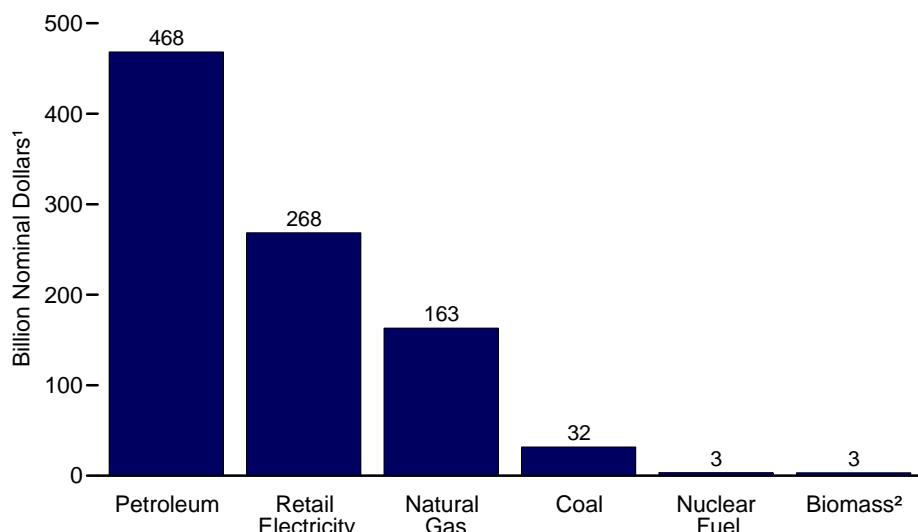
Source: Energy Information Administration, "State Energy Data 2004: Prices and Expenditures" (June 2007), U.S. Tables 2-5.

**Figure 3.5 Consumer Expenditure Estimates for Energy by Source**

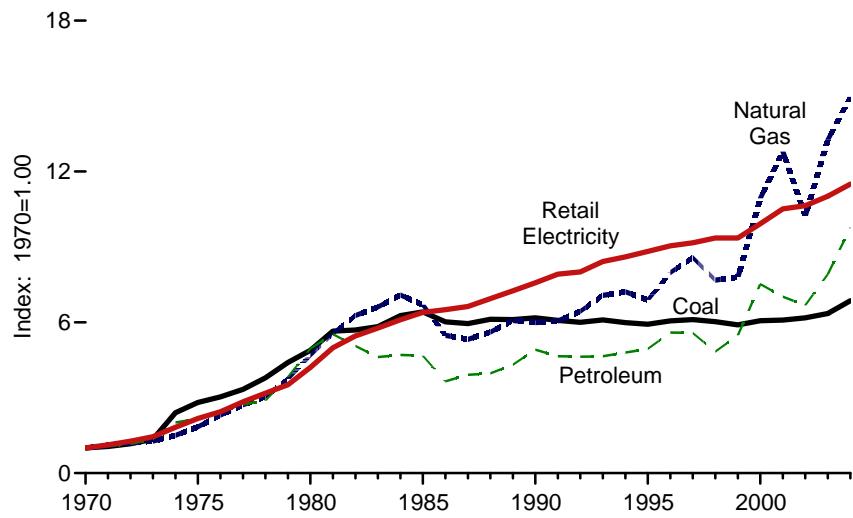
**Total Energy, 1970-2004**



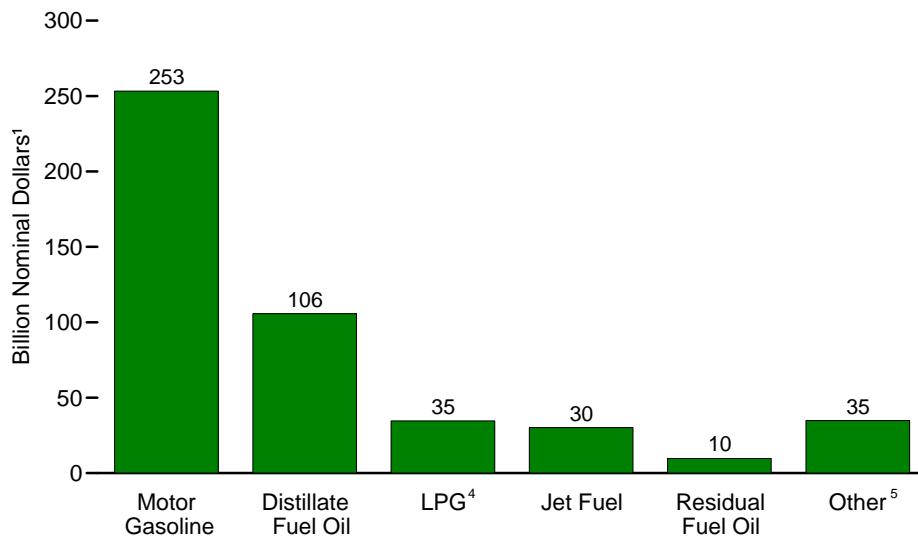
**By Energy Type, 2004**



**Expenditures<sup>3</sup> by Energy Type, Indexed, 1970-2004**



**By Petroleum Product, 2004**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Wood and waste; excludes ethanol and biodiesel.

<sup>3</sup> Based on nominal dollars.

<sup>4</sup> Liquefied petroleum gases.

<sup>5</sup> Asphalt and road oil, aviation gasoline, kerosene, lubricants, petrochemical feedstocks, petroleum coke, special naphthas, waxes, and miscellaneous petroleum products.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.5.

**Table 3.5 Consumer Expenditure Estimates for Energy by Source, 1970-2004**  
 (Million Nominal Dollars <sup>1</sup>)

Year	Primary Energy <sup>2</sup>													Electric Power Sector <sup>10,11,12</sup>	Retail Electricity <sup>13</sup>	Total Energy <sup>9,14</sup>			
	Coal	Coal Coke Net Imports <sup>3</sup>	Natural Gas <sup>4</sup>	Petroleum							Nuclear Fuel	Biomass <sup>8</sup>	Total <sup>9,10</sup>						
				Distillate Fuel Oil	Jet Fuel	LPG <sup>5</sup>	Motor Gasoline <sup>6</sup>	Residual Fuel Oil	Other <sup>7</sup>	Total									
1970	4,630	-75	10,891	6,253	1,441	2,446	31,596	2,046	4,172	47,955	44	438	R63,910	R-4,344	23,345	82,911			
1971	4,902	-40	12,065	6,890	1,582	2,531	33,478	2,933	4,449	51,864	73	446	R69,344	R-5,475	26,202	90,071			
1972	5,415	-26	13,198	7,552	1,682	2,889	35,346	3,458	4,777	55,702	104	476	R74,922	R-6,526	29,712	98,108			
1973	6,243	7	13,933	9,524	2,001	3,933	39,667	4,667	5,318	65,109	177	502	R86,063	R-7,909	33,774	111,928			
1974	11,118	150	16,380	15,217	3,208	5,273	54,194	10,547	8,284	96,723	259	544	R125,288	R-14,504	42,586	153,370			
1975	13,021	82	20,061	15,680	4,193	5,231	59,446	10,374	8,493	103,416	448	534	R137,664	R-16,498	50,680	171,846			
1976	14,051	44	25,097	18,402	4,567	5,993	64,977	11,648	9,925	115,513	520	622	R155,953	R-19,029	56,972	193,897			
1977	15,416	67	29,602	22,004	5,517	6,824	70,591	14,381	11,790	131,106	743	694	R177,848	R-23,612	66,225	220,461			
1978	17,551	362	33,185	23,587	6,205	6,621	74,513	13,747	13,348	138,021	915	782	R191,075	R-26,004	74,159	239,230			
1979	20,376	259	40,785	32,854	8,603	9,383	95,916	17,656	18,785	183,197	941	964	R246,823	R-31,331	82,051	297,543			
1980	22,607	-78	51,061	40,797	13,923	10,926	124,408	21,573	26,049	237,676	1,189	1,231	R314,089	R-37,838	98,095	374,346			
1981	26,159	-31	60,544	48,200	15,607	11,900	138,138	22,668	28,571	265,084	1,436	1,429	R355,377	R-43,955	116,455	427,877			
1982	26,349	-52	68,292	44,087	14,974	12,925	130,305	17,632	22,447	242,372	1,684	1,510	R341,065	R-42,021	127,393	426,437			
1983	26,987	-44	72,000	41,846	13,979	14,083	115,803	14,099	21,573	221,382	1,859	1,517	R324,861	R-42,173	134,731	417,419			
1984	29,025	-22	77,169	44,668	15,097	14,143	114,429	14,410	22,646	225,392	2,384	1,608	R336,830	R-44,269	142,420	434,982			
1985	29,678	-34	72,938	43,972	14,747	13,579	118,048	11,493	22,088	223,928	2,878	1,597	R332,454	R-43,503	149,233	438,184			
1986	27,855	-40	59,702	35,113	10,505	12,726	91,529	7,486	17,647	175,005	3,061	1,352	R268,222	R-36,605	151,793	383,409			
1987	27,532	7	58,019	37,729	11,448	12,887	99,864	8,062	17,687	187,677	3,378	1,300	R279,502	R-37,672	154,685	396,515			
1988	28,333	116	61,089	38,776	11,318	12,806	103,323	7,259	16,779	190,260	4,057	1,378	R286,542	R-38,179	162,063	410,426			
1989	28,284	137	66,198	43,159	13,434	12,187	112,720	8,357	17,060	206,917	3,939	2,270	R308,856	R-40,577	169,332	437,611			
1990	28,602	22	65,278	49,335	17,784	13,715	126,558	8,721	19,255	235,368	4,104	1,997	R336,315	R-40,467	176,691	472,539			
1991	28,129	44	65,956	45,269	14,609	14,976	123,118	6,784	18,231	222,987	4,073	2,165	R324,350	R-38,558	184,767	470,559			
1992	27,776	126	70,086	45,019	13,559	14,213	125,249	5,585	18,363	221,988	3,802	2,194	R327,130	R-38,448	186,906	475,587			
1993	28,229	96	77,052	45,732	13,002	14,018	126,560	5,449	18,318	223,079	3,597	2,193	R334,675	R-40,039	196,532	491,168			
1994	27,715	214	78,581	47,002	12,474	16,361	130,068	5,296	18,701	229,901	3,777	2,521	R343,363	R-39,990	200,831	504,204			
1995	27,431	234	75,020	47,533	12,525	16,306	136,647	4,676	19,218	236,905	3,810	2,938	R346,928	R-38,755	205,876	514,049			
1996	28,028	156	86,904	56,455	15,770	21,208	148,344	5,313	21,086	268,176	3,624	2,668	R390,123	R-41,274	211,105	559,954			
1997	28,277	170	93,382	55,910	15,000	19,905	149,668	5,206	21,578	267,266	3,369	2,423	R395,442	R-42,515	213,843	566,770			
1998	27,888	188	83,620	48,350	11,239	15,388	132,730	4,280	19,912	231,898	3,555	2,477	R350,167	R-42,791	218,361	525,737			
1999	27,310	140	84,960	54,586	13,878	19,184	149,260	4,686	21,226	262,820	3,643	2,661	R382,259	R-44,134	218,413	556,538			
2000	28,080	146	119,092	78,207	23,636	29,879	193,947	8,870	26,212	360,751	3,628	3,196	R515,396	R-57,775	231,577	689,199			
2001	R28,202	82	139,296	74,924	19,602	25,734	185,892	7,266	R22,959	R336,377	R3,524	2,912	R510,821	R-62,204	245,449	R694,066			
2002	R28,612	180	R111,415	R69,271	17,802	23,148	R179,511	R6,156	R24,114	R320,002	R3,504	R2,792	R466,910	R-53,496	248,357	R661,772			
2003	29,402	169	144,453	83,767	21,096	28,401	209,597	8,325	27,959	379,145	3,362	2,978	559,857	-63,542	257,082	753,397			
2004	31,764	1,125	163,024	105,662	30,219	34,641	253,233	9,717	34,819	468,290	3,445	3,301	671,351	-70,498	268,465	869,319			

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Expenditures by all sectors, including the electric power sector.

<sup>3</sup> Values derive from U.S. Department of Commerce, Bureau of the Census, "Monthly Report IM-145" and "Monthly Report EM-545," and may differ slightly from those shown on Table 3.9, which derive from Bureau of the Census, U.S. *International Trade in Goods and Services*, FT600 series.

<sup>4</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>5</sup> Liquefied petroleum gases.

<sup>6</sup> Beginning in 1993, includes ethanol blended into motor gasoline.

<sup>7</sup> Asphalt and road oil, aviation gasoline, kerosene, lubricants, petrochemical feedstocks, petroleum coke, special naphthas, waxes, and miscellaneous petroleum products.

<sup>8</sup> Wood and waste; excludes ethanol and biodiesel.

<sup>9</sup> Includes electricity imports, which are not separately displayed. Also, in 1981-1992, includes ethanol blended into motor gasoline that is not included in the motor gasoline data for those years.

<sup>10</sup> Revisions are due to the removal of electricity exports.

<sup>11</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the

public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>12</sup> Expenditures by the electric power sector for coal, natural gas, petroleum, nuclear fuel, wood, waste, and electricity imports. Values are negative so the columns will sum to the "Total Energy" column.

<sup>13</sup> Retail electricity expenditures by ultimate customers, reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>14</sup> Expenditures for primary energy and retail electricity by the four end-use sectors (residential, commercial, industrial, and transportation); excludes expenditures for energy by the electric power sector.

R=Revised.

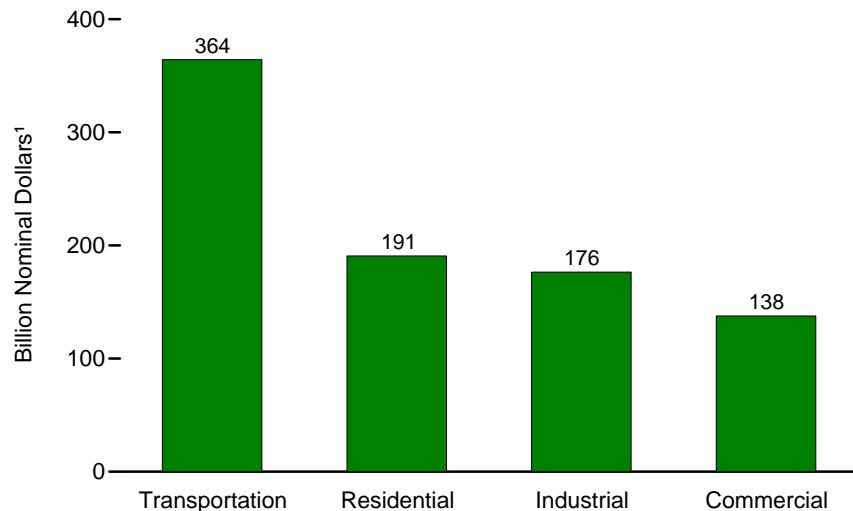
Notes: • Expenditures include taxes where data are available. • There are no direct fuel costs for hydroelectric, geothermal, wind, or solar energy. • Totals may not equal the sum of components due to independent rounding.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/states/\\_seds.html](http://www.eia.doe.gov/emeu/states/_seds.html).

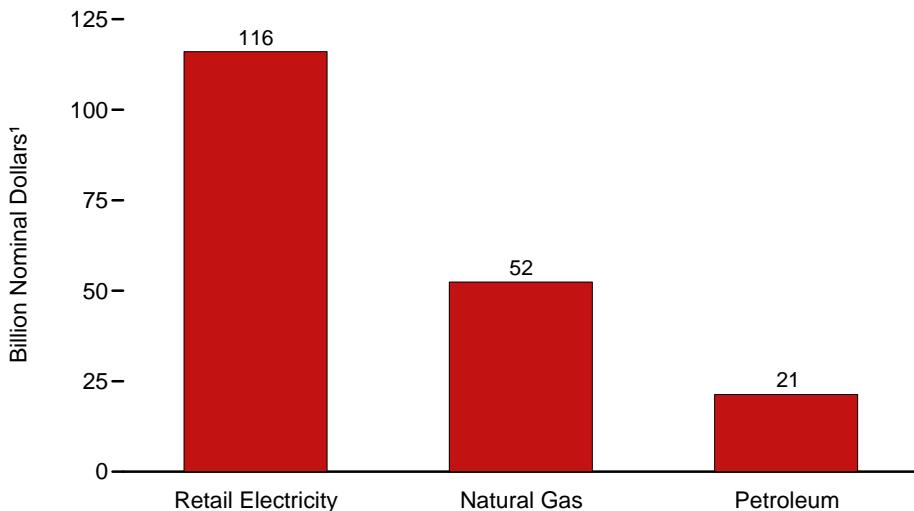
Source: Energy Information Administration, "State Energy Data 2004: Prices and Expenditures" (June 2007), U.S. Table 1.

**Figure 3.6 Consumer Expenditure Estimates for Energy by End-Use Sector, 2004**

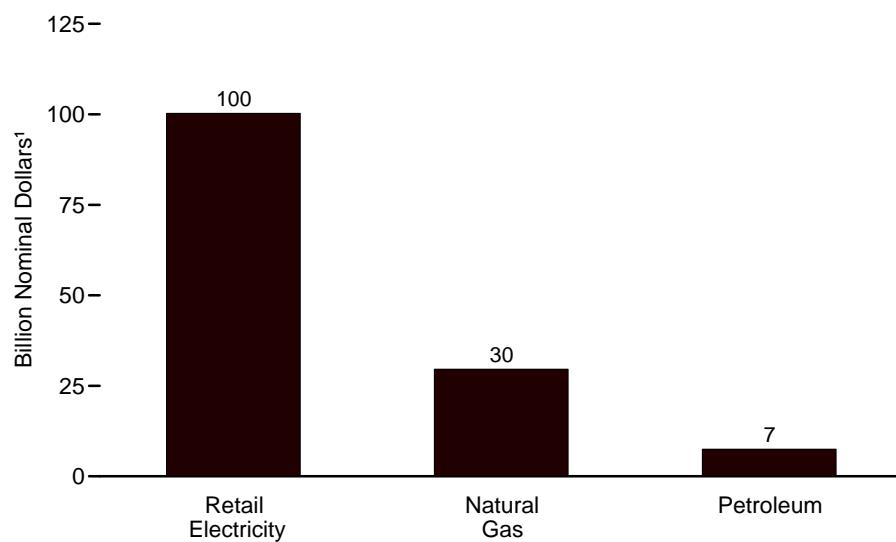
**By Sector**



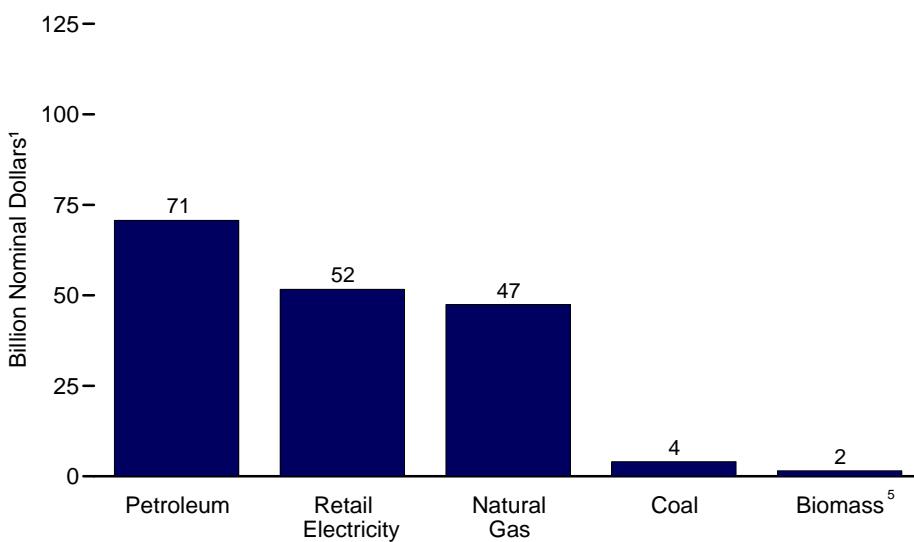
**Residential Sector by Major Sources<sup>2</sup>**



**Commercial Sector by Major Sources<sup>3</sup>**



**Industrial Sector by Major Sources<sup>4</sup>**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Expenditures for coal and wood are not displayed.

<sup>3</sup> Expenditures for coal, wood, and waste are not displayed.

<sup>4</sup> Expenditures for imports and exports of coal coke are not displayed.

<sup>5</sup> Wood and waste; excludes ethanol and biodiesel.

Notes: • Petroleum accounts for nearly all transportation sector expenditures. • There are no direct fuel costs for hydroelectric, geothermal, wind, or solar energy. • Totals may not equal the sum of components due to independent rounding. • Because vertical scales differ, graphs should not be compared.

Source: Table 3.6.

**Table 3.6 Consumer Expenditure Estimates for Energy by End-Use Sector, 1970-2004**  
 (Million Nominal Dollars <sup>1</sup>)

Year	Residential				Commercial				Industrial						Transportation	
	Natural Gas <sup>2</sup>	Petroleum	Retail Electricity <sup>3</sup>	Total <sup>4</sup>	Natural Gas <sup>2</sup>	Petroleum <sup>5</sup>	Retail Electricity <sup>3</sup>	Total <sup>6</sup>	Coal	Natural Gas <sup>2</sup>	Petroleum <sup>5</sup>	Biomass <sup>7</sup>	Retail Electricity <sup>3</sup>	Total <sup>8</sup>	Petroleum <sup>5</sup>	Total <sup>9</sup>
1970	5,272	4,286	10,352	20,213	1,844	1,391	7,319	10,628	2,082	2,625	6,069	366	5,624	16,691	35,327	35,379
1971	5,702	4,466	11,589	22,033	2,060	1,523	8,301	11,970	1,971	3,019	6,663	374	6,256	18,244	37,766	37,824
1972	6,223	4,731	13,034	24,203	2,289	1,599	9,443	13,410	2,212	3,335	7,180	404	7,173	20,278	40,154	40,218
1973	6,282	5,957	14,712	27,137	2,421	1,881	10,707	15,094	2,527	3,936	8,600	425	8,284	23,779	45,846	45,918
1974	6,949	7,392	17,924	32,563	2,741	3,205	13,373	19,494	4,704	4,971	15,408	421	11,184	36,837	64,368	64,476
1975	8,410	7,582	20,644	36,932	3,385	3,133	16,157	22,869	5,498	5,844	15,544	386	13,760	41,113	70,813	70,933
1976	9,992	8,857	22,621	41,785	4,379	3,638	18,148	26,345	5,448	7,484	18,384	443	16,083	47,887	77,759	77,880
1977	11,324	9,872	26,132	47,694	5,094	4,297	21,023	30,611	5,360	8,958	22,190	464	18,956	55,996	86,047	86,160
1978	12,565	9,926	29,069	51,949	5,812	4,230	23,166	33,443	5,722	10,114	23,203	511	21,798	61,710	92,003	92,128
1979	14,772	11,276	31,683	58,267	7,623	5,534	25,433	38,819	6,247	12,110	33,705	512	24,797	77,630	122,688	122,826
1980	17,497	12,695	38,458	69,418	8,858	7,267	30,611	46,932	5,888	16,350	42,765	529	28,863	94,316	163,517	163,680
1981	19,502	13,394	44,780	78,630	10,085	7,628	37,484	55,462	6,441	20,432	47,171	558	34,007	108,578	184,946	185,207
1982	23,987	12,526	50,045	87,618	12,565	6,706	41,759	61,343	5,301	20,504	41,841	540	35,364	103,498	173,553	173,978
1983	26,564	11,486	53,918	92,948	13,602	7,392	43,529	64,825	4,735	21,461	38,437	610	37,017	102,216	156,841	157,430
1984	27,873	12,433	55,777	97,170	14,012	8,121	47,304	69,763	5,420	23,763	41,563	622	39,050	110,395	156,979	157,654
1985	27,136	12,894	58,672	99,772	13,368	6,671	50,092	70,396	5,252	21,615	38,876	619	40,190	106,518	160,745	161,498
1986	25,147	10,613	60,776	97,353	11,770	4,869	51,449	68,337	4,745	16,479	30,567	639	39,271	91,661	125,353	126,058
1987	23,926	10,875	63,318	98,851	11,601	5,078	51,900	68,795	4,448	15,909	31,092	636	39,109	91,201	136,807	137,667
1988	25,332	11,204	66,793	104,104	12,377	4,655	54,411	71,669	4,744	17,257	29,123	662	40,507	92,410	141,382	142,244
1989	26,951	12,739	69,243	109,770	12,908	4,998	57,460	75,610	4,650	18,770	28,561	1,323	42,255	95,695	155,591	156,536
1990	25,439	12,308	72,378	111,097	12,681	5,669	60,627	79,284	4,636	19,348	34,132	906	43,358	102,402	178,852	179,757
1991	26,508	11,916	76,828	116,212	13,175	4,871	63,407	81,740	4,332	18,912	32,511	1,034	44,201	101,034	170,589	171,572
1992	27,599	11,264	76,848	116,631	13,685	4,469	64,233	82,676	4,245	20,553	32,225	1,079	45,474	103,703	171,482	172,577
1993	30,533	11,200	82,814	125,351	14,967	3,903	67,626	86,790	4,060	22,367	31,550	1,146	45,726	104,946	173,704	174,082
1994	31,028	11,089	84,552	127,395	15,927	3,847	69,637	89,694	4,060	22,556	33,626	1,279	46,257	107,992	178,724	179,123
1995	29,362	10,715	87,610	128,388	15,383	3,638	72,481	91,788	4,068	21,487	34,170	1,699	45,402	107,060	186,411	186,813
1996	33,219	13,278	90,503	137,822	17,106	4,518	74,121	96,053	3,943	26,167	40,796	1,432	46,102	118,596	207,078	207,483
1997	34,590	12,712	90,704	138,674	18,755	4,168	77,153	100,396	3,887	28,411	39,833	1,435	45,610	119,347	207,940	208,353
1998	30,875	10,352	93,360	135,101	16,667	3,222	78,999	99,138	3,566	24,515	32,220	1,600	45,634	107,723	183,368	183,775
1999	31,577	11,956	93,482	137,573	16,351	3,540	79,141	99,290	3,457	24,079	36,941	1,786	45,429	111,833	207,433	207,843
2000	38,959	18,051	98,209	156,089	21,339	6,121	85,129	112,870	3,507	34,624	53,512	1,888	47,859	141,536	278,257	278,703
2001	46,189	R\$17,924	103,665	R\$168,504	25,879	R\$5,666	94,081	R\$125,910	3,572	38,597	R\$47,031	1,751	47,298	R\$138,331	260,813	261,322
2002	38,490	R\$15,208	107,106	R\$161,478	20,926	R\$4,741	93,960	R\$119,916	3,526	31,031	R\$45,567	R\$1,537	46,894	R\$128,736	R\$251,163	R\$251,641
2003	48,278	18,923	110,794	178,832	26,411	6,464	95,759	128,951	3,552	41,168	54,043	1,400	50,009	150,342	294,625	295,271
2004	52,406	21,309	116,037	190,734	29,586	7,495	100,255	137,749	4,064	47,438	70,694	1,509	51,667	176,497	363,667	364,337

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>3</sup> Retail electricity expenditures by ultimate customers, reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>4</sup> Includes coal and wood, which are not separately displayed.

<sup>5</sup> Beginning in 1993, includes ethanol blended into motor gasoline.

<sup>6</sup> Includes coal, wood, and waste, which are not separately displayed.

<sup>7</sup> Wood and waste; excludes ethanol and biodiesel.

<sup>8</sup> Includes coal coke imports and exports, which are not separately displayed.

<sup>9</sup> Includes coal, natural gas, and retail electricity, which are not separately displayed. Also, in

1981-1992, includes ethanol blended into motor gasoline that is not included in the petroleum data for those years.

R=Revised.

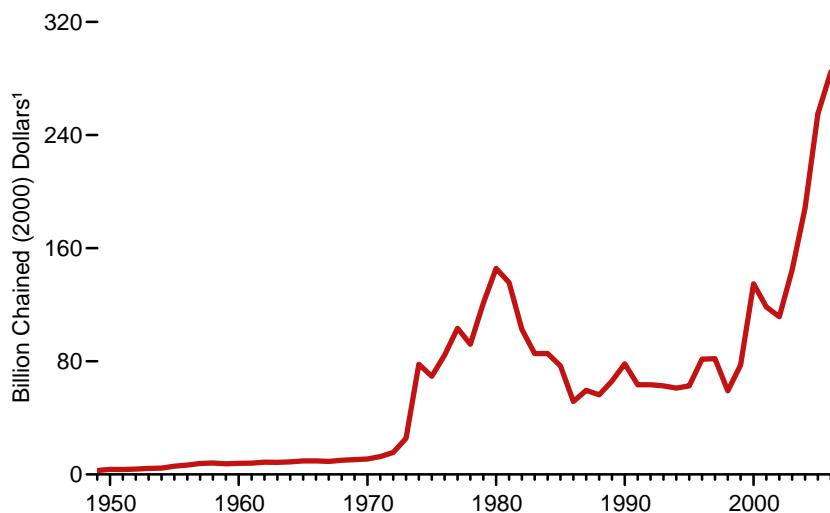
Notes: • Expenditures include taxes where data are available. • There are no direct fuel costs for hydroelectric, geothermal, wind, or solar energy. • Totals may not equal the sum of components due to independent rounding.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/states/\\_seds.html](http://www.eia.doe.gov/emeu/states/_seds.html).

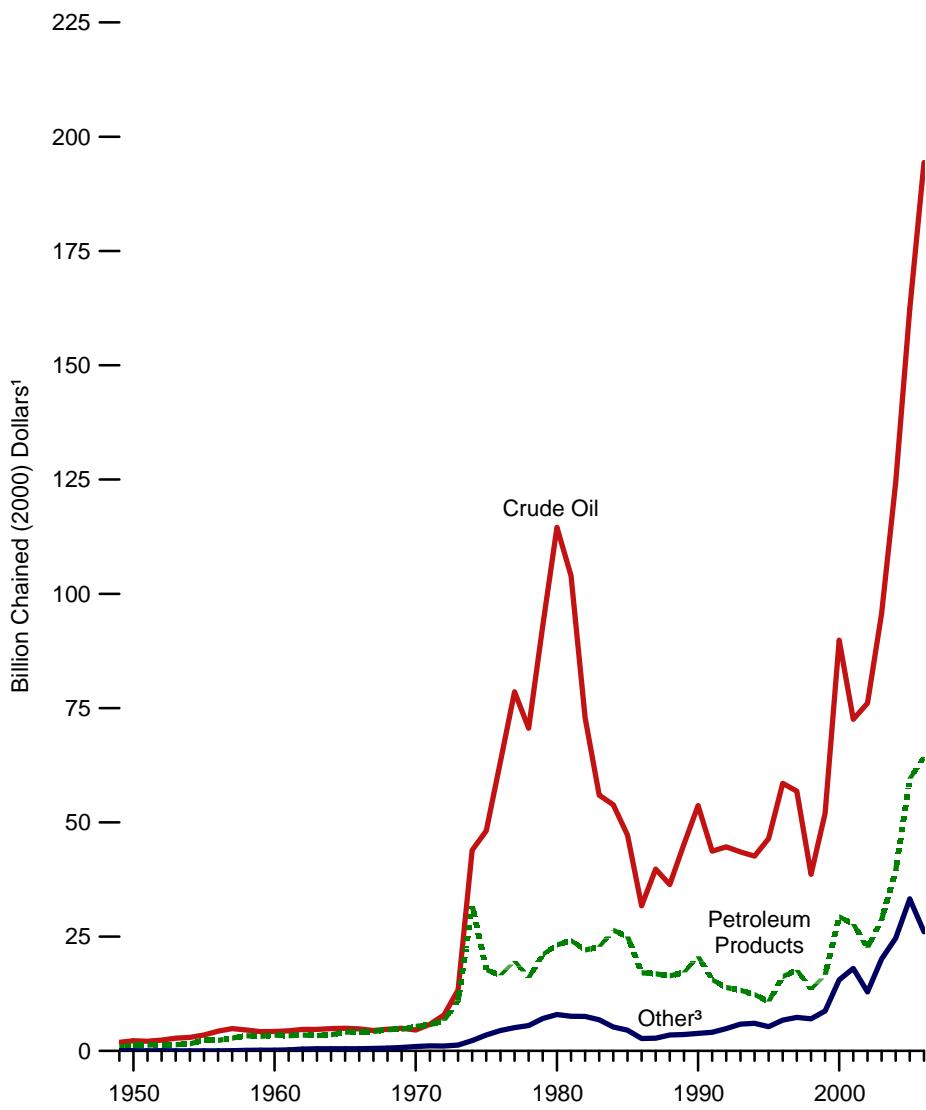
Source: Energy Information Administration, "State Energy Data 2004: Prices and Expenditures" (June 2007), U.S. Tables 2-5.

**Figure 3.7 Value of Fossil Fuel Imports**

**Total, 1949-2006**



**By Fuel, 1949-2006**



<sup>1</sup> Calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Natural gas, coal, and coal coke.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.7.

**Table 3.7 Value of Fossil Fuel Imports, Selected Years, 1949-2006**  
 (Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil <sup>1</sup>		Petroleum Products <sup>2</sup>		Total	
	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>
1949	(s)	0.01	(s)	0.02	0.00	0.00	0.30	1.86	0.14	0.84	0.45	2.74
1950	(s)	.02	.01	.03	.00	.00	.37	2.23	.21	1.30	.59	3.58
1955	(s)	.01	(s)	.01	(s)	.01	.65	3.49	.44	2.36	1.10	5.88
1960	(s)	.01	(s)	.01	.03	.13	.90	4.25	.73	3.48	1.66	7.88
1965	(s)	.01	(s)	.01	.11	.47	1.12	4.97	.92	4.10	2.15	9.55
1970	(s)	(s)	(s)	.01	.26	.94	1.26	4.58	1.48	5.38	3.00	10.91
1971	(s)	.01	.01	.02	.31	1.08	1.69	5.84	1.66	5.73	3.66	12.67
1972	(s)	(s)	(s)	.02	.31	1.04	2.37	7.85	1.99	6.59	4.68	15.51
1973	(s)	.01	.04	.12	.36	1.14	4.24	13.31	3.50	10.98	8.14	25.56
1974	.06	.17	.19	.56	.53	1.53	15.25	43.92	11.01	31.71	27.05	77.89
1975	.02	.06	.16	.41	1.15	3.03	18.29	48.13	6.77	17.81	26.39	69.44
1976	.02	.04	.11	.28	1.66	4.13	25.46	63.33	6.65	16.55	33.90	84.33
1977	.04	.09	.13	.31	2.00	4.68	33.59	78.57	8.42	19.69	44.18	103.34
1978	.07	.16	.41	.89	2.06	4.50	32.30	70.59	7.30	15.96	42.15	92.11
1979	.05	.10	.34	.69	3.13	6.31	46.06	92.96	10.45	21.09	60.03	121.15
1980	.03	.06	.05	.10	4.21	7.80	61.90	114.54	12.54	23.21	78.74	145.69
1981	.03	.05	.04	.07	4.41	7.46	61.46	103.96	14.30	24.18	80.24	135.73
1982	.02	.04	.01	.01	4.69	7.48	45.72	72.89	13.86	22.10	64.31	102.53
1983	.04	.07	(s)	(s)	4.39	6.73	36.49	55.96	14.84	22.76	55.77	85.52
1984	.05	.07	.05	.07	3.44	5.08	36.44	53.87	17.87	26.41	57.84	85.49
1985	.07	.10	.04	.06	3.05	4.37	32.90	47.20	17.47	25.05	53.53	76.79
1986	.08	.11	.03	.04	1.82	2.56	22.61	31.73	12.18	17.10	36.72	51.53
1987	.06	.08	.05	.08	1.93	2.64	29.13	39.80	12.37	16.89	43.54	59.48
1988	.06	.08	.19	.26	2.38	3.14	27.55	36.39	12.43	16.43	42.62	56.30
1989	.10	.12	.22	.28	2.51	3.19	35.53	45.23	13.50	17.18	51.85	66.00
1990	.09	.11	.07	.09	2.97	3.64	43.78	53.66	16.90	20.72	63.83	78.23
1991	.11	.13	.09	.11	3.24	3.83	36.90	43.70	13.17	15.60	53.51	63.37
1992	.13	.15	.14	.17	3.96	4.58	38.55	44.63	11.98	13.87	54.77	63.40
1993	.25	.29	.17	.19	4.77	5.40	38.47	43.53	11.74	13.28	55.40	62.68
1994	.27	.30	.27	.30	4.90	5.43	38.48	42.63	11.14	12.35	55.07	61.01
1995	.32	.35	.33	.35	4.23	4.59	42.81	46.48	9.95	10.80	57.64	62.58
1996	.27	.29	.24	.26	5.79	6.17	54.93	58.53	15.27	16.27	76.51	81.52
1997	.26	.27	.25	.27	6.50	6.81	54.23	56.83	<sup>5</sup> 16.93	<sup>5</sup> 17.74	78.16	81.91
1998	.28	.29	.29	.30	6.21	6.44	37.25	38.61	13.01	13.49	57.05	59.13
1999	.28	.29	.23	.23	8.03	8.21	50.89	52.00	16.28	16.64	75.71	77.36
2000	.38	.38	.25	.25	14.94	14.94	89.88	89.88	29.38	29.38	134.81	134.81
2001	.67	.66	.19	.19	17.62	17.21	74.29	72.55	28.45	27.79	121.23	118.39
2002	.60	.58	.24	.23	12.61	12.10	79.25	76.07	23.52	22.57	116.22	111.55
2003	.79	.74	.24	.22	20.39	R\$19.16	101.80	R\$95.67	30.64	R\$28.79	153.85	R\$144.59
2004	1.02	.94	1.23	1.13	24.74	R\$22.61	136.03	R\$124.31	43.24	R\$39.51	206.26	R\$188.50
2005	1.42	R\$1.26	.78	R\$.69	R\$35.25	R\$31.27	R\$182.94	R\$162.28	R\$67.12	R\$59.54	R\$287.52	R\$255.04
2006	R\$1.78	R\$1.53	R\$.64	R\$.55	R\$27.83	R\$23.99	R\$225.53	R\$194.35	R\$74.54	R\$64.24	R\$330.32	R\$284.65

<sup>1</sup> Beginning in 1977, includes imports into the Strategic Petroleum Reserve.

<sup>2</sup> Includes petroleum preparations, liquefied propane and butane, and, beginning in 1997, other mineral fuels.

<sup>3</sup> See "Nominal Dollars" in Glossary.

<sup>4</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>5</sup> There is a discontinuity in this time series between 1996 and 1997 due to the addition of the commodity category "Other Mineral Fuels."

R=Revised. P=Preliminary. E=Estimate. (s)=Less than 0.005 billion.

Notes: • Includes value of imports into Puerto Rico from foreign countries; excludes receipts into the 50 States and the District of Columbia from the Virgin Islands and Puerto Rico. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/finan.html>.

Sources: Coal and Coal Coke: Bureau of the Census, Foreign Trade Division, unpublished data.

**Natural Gas:** • 1949-1962—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT110. • 1963—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT125.

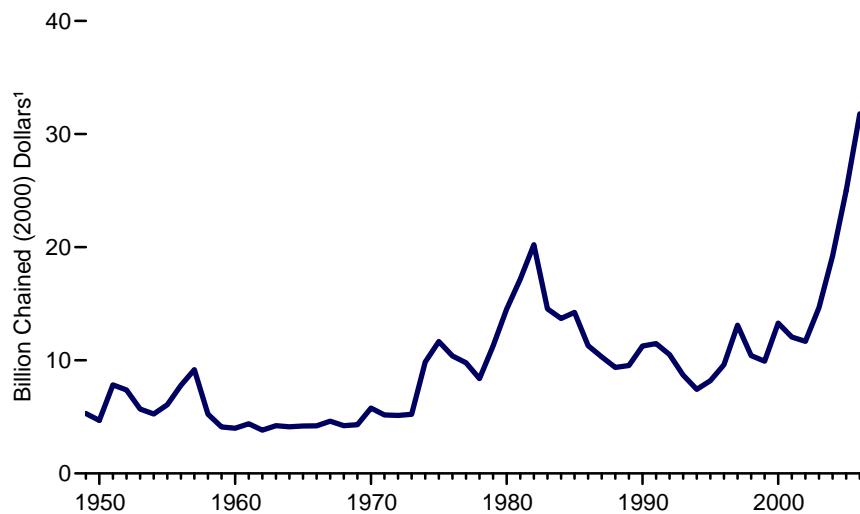
• 1964-1971—Bureau of the Census, *U.S. Imports for Consumption and General Imports*, FT246. • 1972 and 1973—Federal Power Commission, *Pipeline Imports and Exports of Natural Gas - Imports and Exports of LNG*. • 1974-1977—Federal Power Commission, *United States Imports and Exports of Natural Gas*, annual reports. • 1978-1981—Energy Information Administration (EIA), *U.S. Imports and Exports of Natural Gas*, annual reports. • 1982-2001—EIA, *Natural Gas Monthly (NFM)*, monthly reports.

• 2002-2005—EIA, *NGM* (March 2007), Table 5. • 2006—EIA estimate. **Crude Oil and Petroleum Products:**

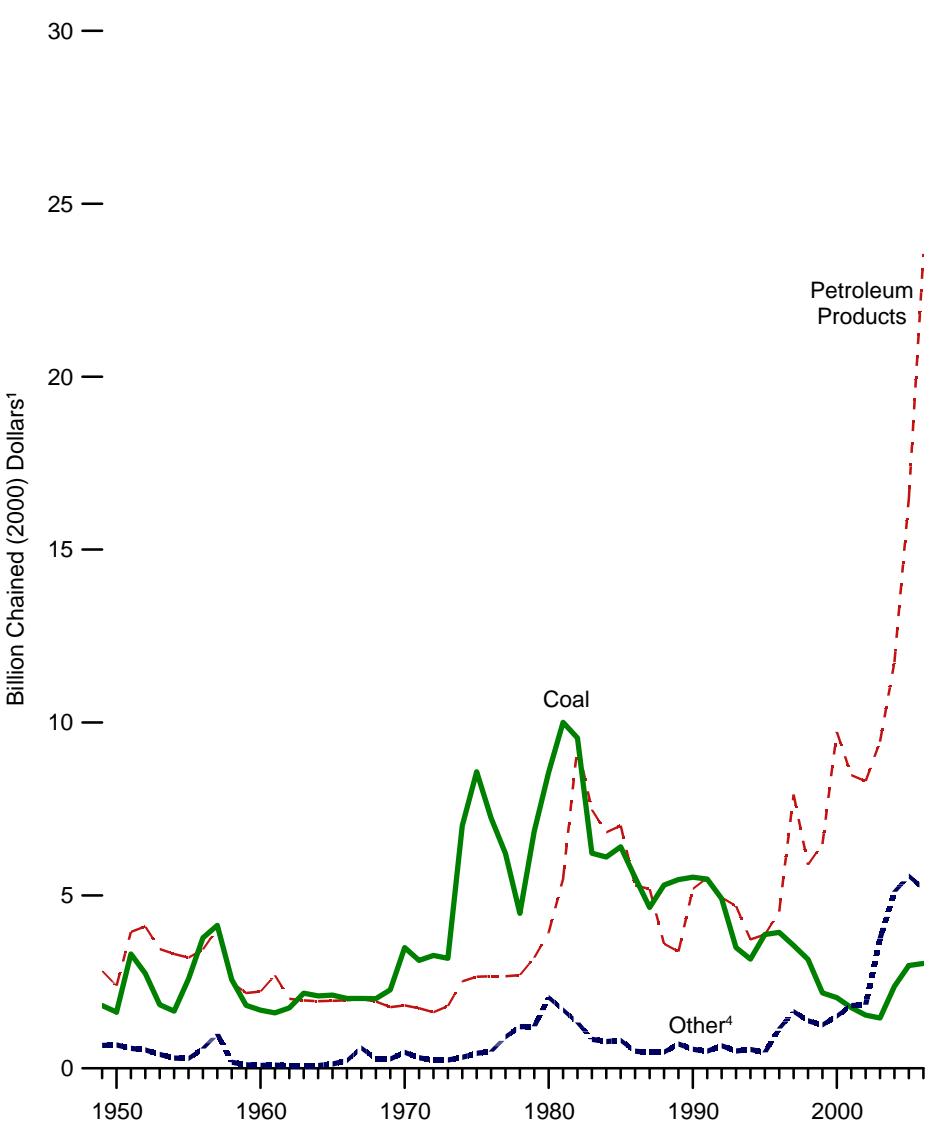
• 1949-1962—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT110. • 1963—Bureau of the Census, *U.S. Imports of Merchandise for Consumption*, FT125. • 1964-1988—Bureau of the Census, *U.S. Imports for Consumption*, FT135. • 1989 forward—Bureau of the Census, Foreign Trade Division, *U.S. Merchandise Trade*, FT900, "Exhibit 15. Exports and Imports of Goods by Principal SITC Commodity Groupings," December issues.

**Figure 3.8 Value of Fossil Fuel Exports**

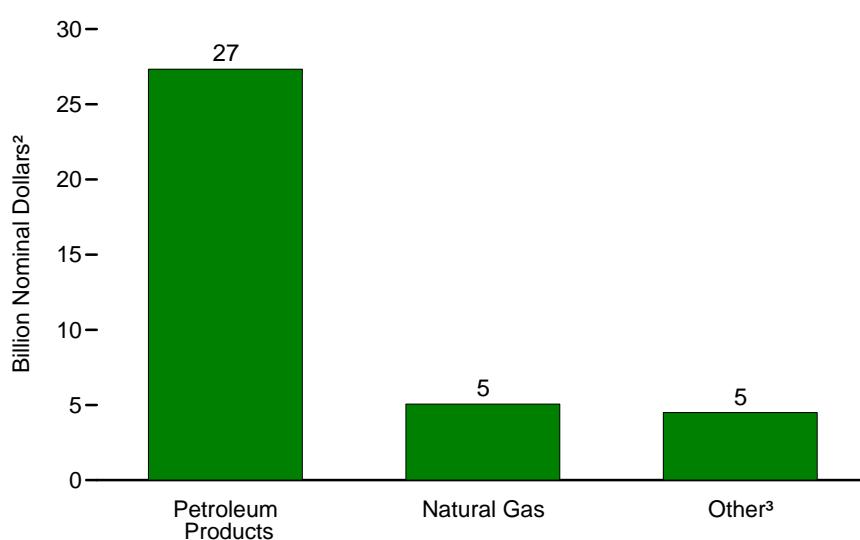
**Total, 1949-2006**



**By Fuel, 1949-2006**



**By Fuel, 2006**



<sup>1</sup> Calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Coal, crude oil, and coal coke.

<sup>4</sup> Natural gas, crude oil, and coal coke.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.8.

**Table 3.8 Value of Fossil Fuel Exports, Selected Years, 1949-2006**  
(Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil		Petroleum Products <sup>1</sup>		Total	
	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>
1949	0.30	1.82	0.01	0.05	(s)	0.01	0.10	0.60	0.46	2.82	0.87	5.30
1950	.27	1.63	.01	.04	(s)	.02	.10	.62	.39	2.39	.78	4.69
1955	.48	2.59	.01	.04	.01	.03	.04	.21	.60	3.20	1.14	6.07
1960	.35	1.68	.01	.03	(s)	.02	.01	.04	.47	2.22	.84	3.99
1965	.48	2.12	.02	.07	.01	.03	(s)	.02	.44	1.95	.95	4.19
1970	.96	3.49	.08	.29	.03	.11	.02	.07	.50	1.82	1.59	5.78
1971	.90	3.12	.04	.16	.04	.13	.01	.02	.50	1.74	1.49	5.16
1972	.98	3.26	.03	.10	.04	.13	(s)	.01	.49	1.62	1.55	5.12
1973	1.01	3.18	.03	.10	.04	.13	(s)	.01	.57	1.80	1.66	5.22
1974	2.44	7.02	.04	.13	.05	.16	.01	.04	.87	2.51	3.42	9.85
1975	3.26	8.58	.07	.20	.09	.24	(s)	(s)	1.01	2.65	4.43	11.66
1976	2.91	7.24	.07	.17	.10	.25	.03	.07	1.07	2.66	4.17	10.39
1977	2.66	6.21	.07	.17	.11	.25	.21	.49	1.14	2.66	4.18	9.78
1978	2.05	4.48	.05	.11	.11	.24	.39	.85	1.23	2.69	3.83	8.38
1979	3.40	6.86	.08	.16	.13	.26	.39	.80	1.58	3.20	5.58	11.27
1980	4.63	8.56	.13	.24	.23	.42	.75	1.39	2.12	3.92	7.86	14.54
1981	5.92	10.01	.07	.13	.35	.59	.58	.98	3.24	5.48	10.16	17.18
1982	5.99	9.55	.06	.10	.30	.48	.47	.75	5.86	9.34	12.68	20.22
1983	4.06	6.22	.05	.07	.28	.43	.22	.34	4.88	7.48	9.48	14.54
1984	4.13	6.11	.07	.10	.27	.40	.19	.27	4.62	6.82	9.27	13.71
1985	4.47	6.41	.08	.11	.26	.38	.23	.32	4.90	7.02	9.93	14.24
1986	3.93	5.52	.07	.09	.17	.24	.12	.16	3.77	5.29	8.05	11.30
1987	3.40	4.65	.05	.07	.17	.23	.13	.17	3.80	5.19	7.54	10.30
1988	4.01	5.30	.08	.10	.20	.27	.08	.10	2.72	3.60	7.09	9.37
1989	4.29	5.46	.08	.10	.27	.34	.21	.26	2.65	3.38	7.49	9.54
1990	4.51	5.53	.05	.06	.27	.32	.14	.17	4.23	5.19	9.20	11.27
1991	4.62	5.47	.05	.06	.33	.40	.03	.04	4.65	5.51	9.69	11.48
1992	4.24	4.91	.04	.05	.49	.56	.03	.04	4.27	4.94	9.07	10.50
1993	3.09	3.49	.06	.07	.36	.41	.02	.02	4.15	4.69	7.68	8.69
1994	2.85	3.16	.04	.04	.40	.45	.05	.05	3.36	3.72	6.71	7.43
1995	3.57	3.87	.05	.05	.37	.40	.01	.01	3.56	3.87	7.55	8.20
1996	3.69	3.93	.06	.07	.46	.49	.56	.60	4.25	4.53	9.02	9.61
1997	3.39	3.55	.05	.06	.47	.50	1.04	1.09	4 <sup>7</sup> .55	4 <sup>7</sup> .91	12.51	13.11
1998	3.04	3.15	.04	.05	.39	.40	.90	.93	5.68	5.89	10.04	10.41
1999	2.13	2.18	.03	.03	.43	.44	.77	.79	6.35	6.48	9.71	9.92
2000	2.04	2.04	.05	.05	1.00	1.00	.46	.46	9.73	9.73	13.28	13.28
2001	1.80	1.76	.11	.11	1.56	1.53	.19	.18	8.68	8.48	12.34	12.05
2002	1.60	1.54	.06	.06	1.76	1.69	.09	.09	8.65	8.30	12.17	11.68
2003	1.55	R <sup>1</sup> 4.45	.07	.07	3.77	3.54	.16	.15	10.05	9.45	15.59	R <sup>1</sup> 4.65
2004	2.60	R <sup>2</sup> 3.7	.11	.10	5.20	R <sup>4</sup> .75	.28	.25	12.85	R <sup>11</sup> .75	21.04	R <sup>19</sup> .22
2005	3.35	R <sup>2</sup> .97	.15	.13	R <sup>5</sup> .53	R <sup>4</sup> .91	R <sup>6</sup> .0	R <sup>.53</sup>	R <sup>18</sup> .56	R <sup>16</sup> .46	R <sup>28</sup> .18	R <sup>25</sup> .00
2006	P <sup>3</sup> .52	P <sup>3</sup> .03	P <sup>1</sup> .13	P <sup>1</sup> .11	E <sup>5</sup> .06	E <sup>4</sup> .36	P <sup>.85</sup>	P <sup>.73</sup>	P <sup>27</sup> .33	P <sup>23</sup> .55	P <sup>36</sup> .90	P <sup>31</sup> .80

<sup>1</sup> Includes petroleum preparations, liquefied propane and butane, and, beginning in 1997, other mineral fuels.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>4</sup> There is a discontinuity in this time series between 1996 and 1997 due to the addition of the commodity category "Other Mineral Fuels."

R=Revised. P=Preliminary. E=Estimate. (s)=Less than 0.005 billion.

Notes: • Includes value of exports from Puerto Rico to foreign countries; excludes shipments from the 50 States and the District of Columbia to the Virgin Islands and Puerto Rico. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/finan.html>.

Sources: **Coal** and **Coal Coke**: Bureau of the Census, Foreign Trade Division, unpublished data.

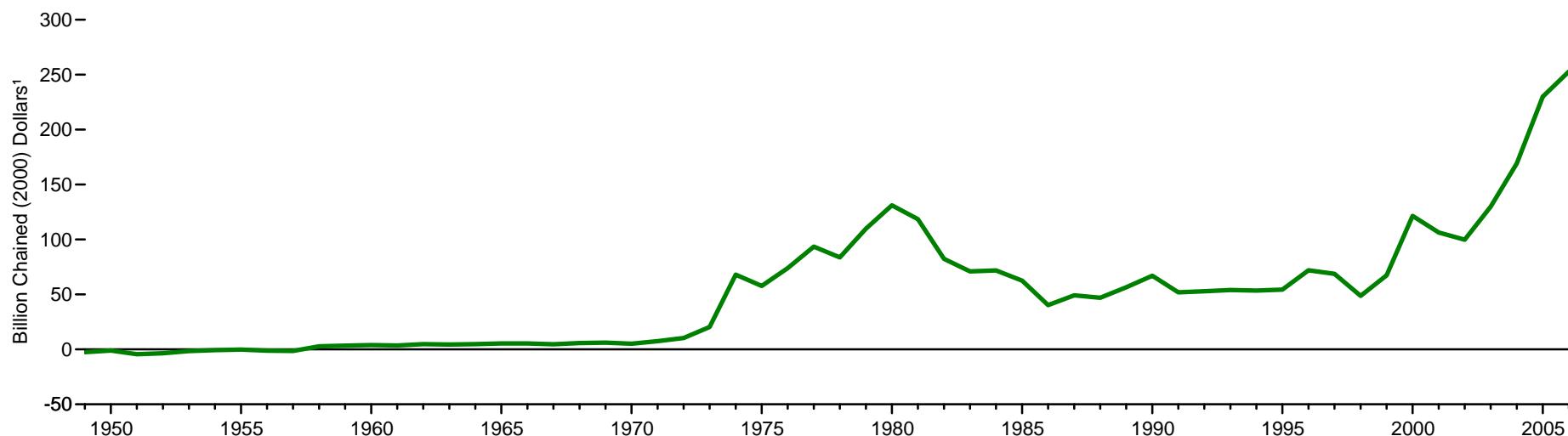
**Natural Gas:** • 1949-1971—Bureau of the Census, *U.S. Exports*, FT410. • 1972 and 1973—Federal Power Commission, *Pipeline Imports and Exports of Natural Gas - Imports and Exports of LNG*.

• 1974-1977—Federal Power Commission, *United States Imports and Exports of Natural Gas*, annual reports. • 1978-1981—Energy Information Administration (EIA), *U.S. Imports and Exports of Natural Gas*, annual reports. • 1982-2001—EIA, *Natural Gas Monthly (NGM)*, monthly reports. • 2002-2005—EIA, *NGM* (March 2007), Table 5. • 2006—EIA estimate. **Crude Oil** and **Petroleum Products**:

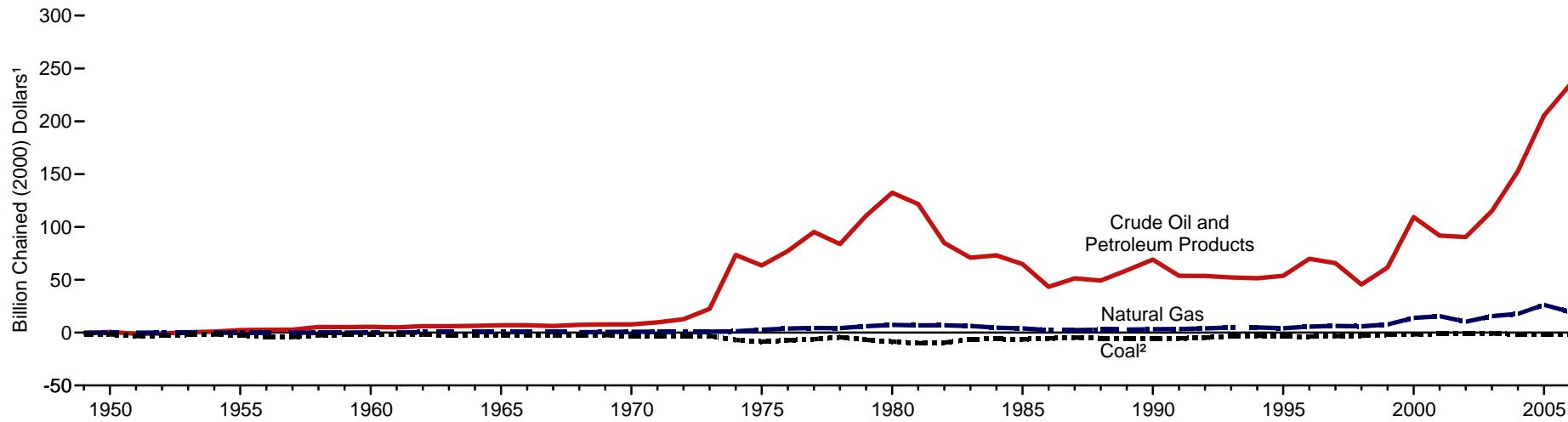
• 1949-1988—Bureau of the Census, *U.S. Exports*, FT410. • 1989 forward—Bureau of the Census, Foreign Trade Division, *U.S. Merchandise Trade*, FT900, "Exhibit 15. Exports and Imports of Goods by Principal SITC Commodity Groupings," December issues.

**Figure 3.9 Value of Fossil Fuel Net Imports, 1949-2006**

**Value of Fossil Fuel Net Imports**



**Value of Fossil Fuel Net Imports by Fuel**



<sup>1</sup> Calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> Includes small amounts of coal coke.

Note: Negative imports indicate that the value of exports is greater than the value of imports.

Source: Table 3.9.

**Table 3.9 Value of Fossil Fuel Net Imports, Selected Years, 1949-2006**  
 (Billion Dollars)

Year	Coal		Coal Coke		Natural Gas		Crude Oil		Petroleum Products <sup>1</sup>		Total	
	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>	Nominal <sup>2</sup>	Real <sup>3</sup>						
1949	-0.29	-1.80	(s)	-0.03	(s)	-0.01	0.21	1.26	-0.32	-1.98	-0.42	-2.56
1950	-.27	-1.61	(s)	-.01	(s)	-.02	.27	1.61	-.18	-1.09	-.18	-1.11
1955	-.48	-2.57	-.01	-.04	-.01	-.03	.62	3.29	-.16	-.84	-.04	-.19
1960	-.35	-1.67	-.01	-.03	.02	.12	.89	4.22	.26	1.26	.82	3.89
1965	-.48	-2.11	-.01	-.07	.10	.44	1.11	4.95	.48	2.15	1.21	5.36
1970	-.96	-3.49	-.08	-.27	.23	.83	1.24	4.51	.98	3.56	1.41	5.14
1971	-.90	-3.11	-.04	-.14	.27	.95	1.68	5.82	1.15	3.99	2.17	7.50
1972	-.98	-3.26	-.03	-.09	.28	.91	2.37	7.85	1.50	4.97	3.13	10.39
1973	-1.01	-3.18	.01	.02	.32	1.01	4.24	13.31	2.93	9.19	6.48	20.34
1974	-2.38	-6.85	.15	.43	.48	1.37	15.24	43.89	10.14	29.20	23.63	68.04
1975	-3.24	-8.52	.08	.22	1.06	2.79	18.29	48.13	5.76	15.16	21.96	57.78
1976	-2.89	-7.20	.04	.11	1.56	3.88	25.43	63.26	5.58	13.89	29.72	73.94
1977	-2.62	-6.12	.06	.14	1.89	4.43	33.38	78.08	7.28	17.03	40.00	93.56
1978	-1.98	-4.32	.36	.79	1.95	4.26	31.91	69.73	6.07	13.27	38.31	83.73
1979	-3.35	-6.75	.26	.52	3.00	6.05	45.66	92.16	8.87	17.89	54.44	109.88
1980	-4.60	-8.51	-.08	-.14	3.98	7.37	61.15	113.15	10.42	19.28	70.88	131.15
1981	-5.89	-9.96	-.03	-.05	4.06	6.87	60.88	102.98	11.06	18.71	70.09	118.55
1982	-5.97	-9.52	-.05	-.08	4.39	7.00	45.25	72.15	8.00	12.76	51.63	82.31
1983	-4.01	-6.16	-.04	-.07	4.11	6.30	36.27	55.62	9.96	15.28	46.28	70.98
1984	-4.09	-6.04	-.02	-.03	3.17	4.68	36.26	53.59	13.25	19.58	48.57	71.79
1985	-4.39	-6.30	-.03	-.05	2.79	4.00	32.68	46.87	12.57	18.03	43.60	62.55
1986	-3.85	-5.40	-.04	-.06	1.65	2.32	22.49	31.57	8.42	11.81	28.67	40.23
1987	-3.35	-4.58	.01	.01	1.76	2.41	29.00	39.63	8.57	11.71	36.00	49.18
1988	-3.95	-5.22	.12	.15	2.18	2.88	27.47	36.29	9.71	12.83	35.53	46.93
1989	-4.19	-5.33	.14	.17	2.24	2.85	35.32	44.97	10.85	13.81	44.35	56.46
1990	-4.42	-5.41	.02	.03	2.71	3.32	43.65	53.50	12.67	15.53	54.63	66.96
1991	-4.51	-5.34	.04	.05	2.90	3.43	36.87	43.66	8.52	10.09	43.82	51.90
1992	-4.11	-4.76	.10	.11	3.47	4.02	38.52	44.59	7.72	8.93	45.70	52.90
1993	-2.83	-3.21	.11	.12	4.41	4.99	38.45	43.50	7.59	8.59	47.72	54.00
1994	-2.58	-2.86	.23	.26	4.50	4.98	38.43	42.58	7.78	8.62	48.37	53.58
1995	-3.24	-3.52	.27	.30	3.86	4.19	42.81	46.48	6.39	6.94	50.09	54.38
1996	-3.41	-3.64	.18	.19	5.33	5.68	54.37	57.93	11.01	11.74	67.49	71.91
1997	-3.13	-3.28	.20	.21	6.02	6.31	53.19	55.74	49.82	65.65	68.80	
1998	-2.75	-2.86	.25	.26	5.82	6.03	36.36	37.69	7.33	7.60	47.00	48.72
1999	-1.85	-1.90	.20	.20	7.61	7.77	50.12	51.21	9.94	10.15	66.00	67.44
2000	-1.66	-1.66	.20	.20	13.94	13.94	89.41	89.41	19.65	19.65	121.53	121.53
2001	-1.13	-1.10	.08	.08	16.05	15.68	74.11	72.37	19.77	19.31	108.89	106.34
2002	-1.00	-.96	.18	.17	10.85	10.41	79.16	75.98	14.87	14.27	104.06	99.87
2003	-.76	R-.71	.17	.16	16.62	R15.62	101.64	R95.52	20.59	R19.35	138.26	R129.93
2004	-1.57	-1.44	1.12	1.03	19.54	R17.86	135.75	R124.06	30.38	R27.77	185.23	R169.27
2005	-1.93	R-1.71	.63	.56	R29.72	R26.36	R182.35	R161.75	R48.56	R43.08	R259.34	R230.04
2006	P-1.74	P-1.50	P.51	P.44	E22.77	E19.62	P224.68	P193.62	P47.21	P40.68	P293.42	P252.86

<sup>1</sup> Includes petroleum preparations, liquefied propane and butane, and, beginning in 1997, other mineral fuels.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>4</sup> There is a discontinuity in this time series between 1996 and 1997 due to the addition of the commodity category "Other Mineral Fuels."

R=Revised. P=Preliminary. E=Estimate. (s)=Less than 0.005 billion.

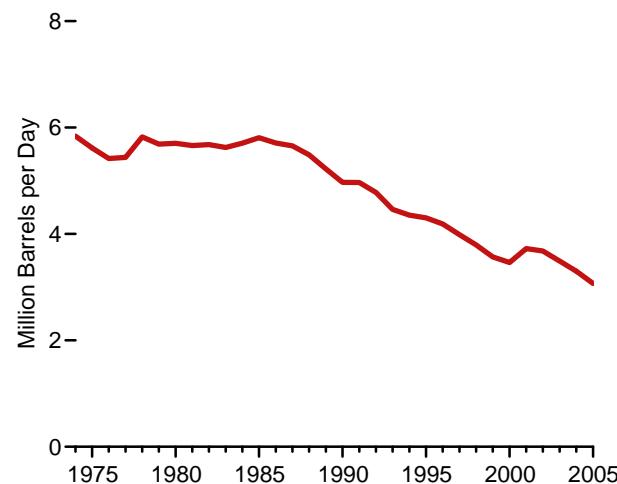
Notes: • Net imports equal imports minus exports. Minus sign indicates that the value of exports is greater than the value of imports. • Totals may not equal sum of components due to independent rounding. • Data on this table may not equal data on Table 3.7 minus data on Table 3.8 due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/finan.html>.

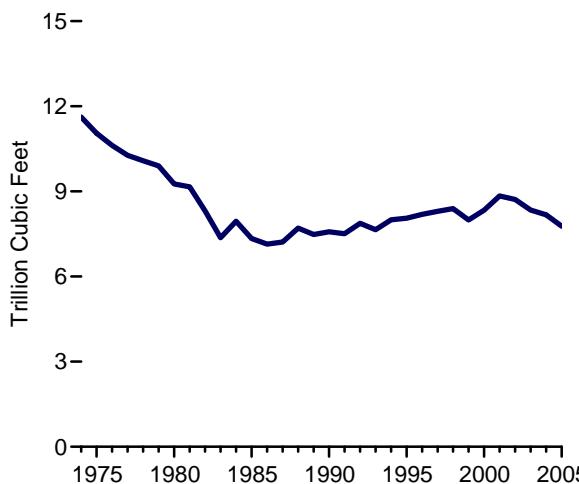
Sources: Tables 3.7 and 3.8.

**Figure 3.10 Major U.S. Energy Companies' Domestic Production and Refining, 1974-2005**

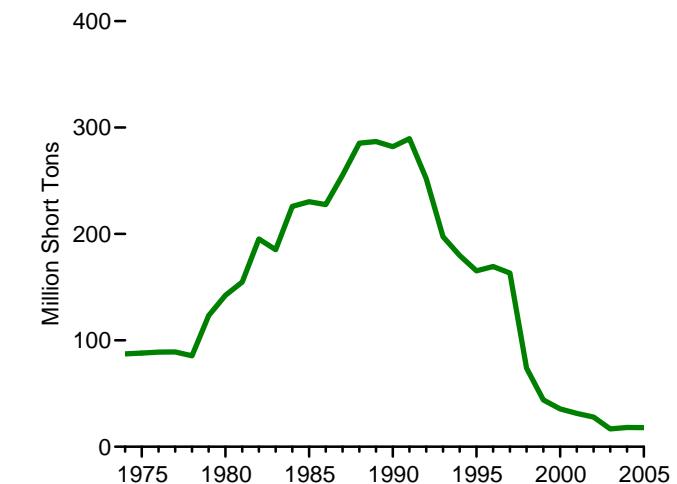
**Crude Oil and Natural Gas Liquids Production by Major Energy Companies**



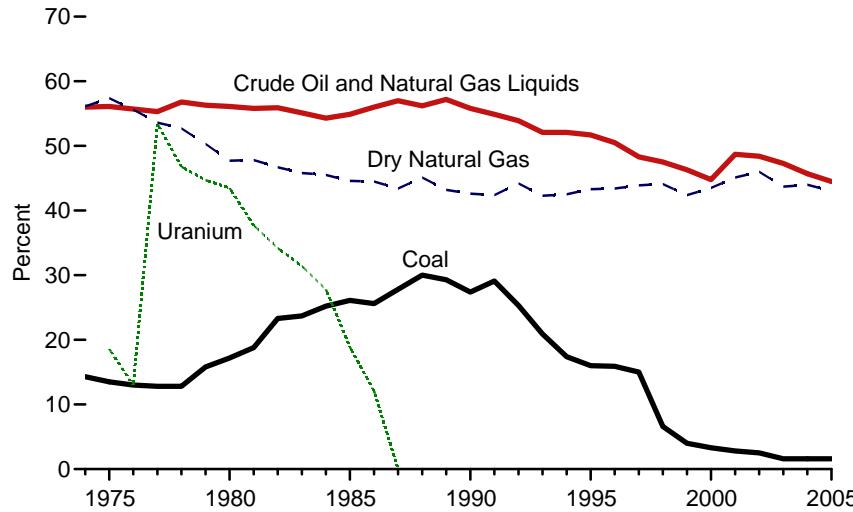
**Dry Natural Gas Production by Major Energy Companies**



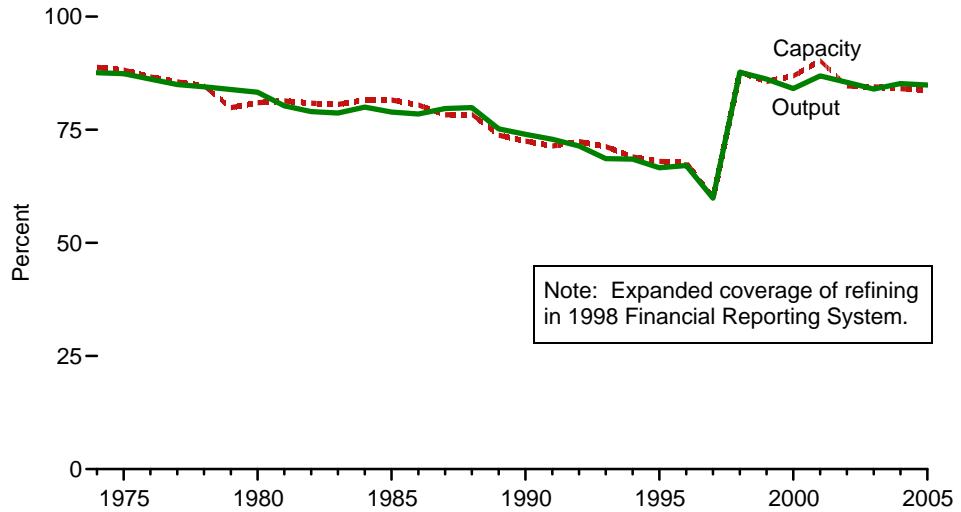
**Coal Production by Major Energy Companies**



**Major Energy Companies' Shares of U.S. Total Production**



**Major Energy Companies' Shares of U.S. Refining Capacity and Output**



Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.14. • Because vertical scales differ, graphs should not be compared.

Source: Table 3.10.

**Table 3.10 Major U.S. Energy Companies' Domestic Production and Refining, 1974-2005**

Year	Production								Refining			
	Crude Oil and Natural Gas Liquids <sup>1</sup>		Dry Natural Gas <sup>1</sup>		Coal <sup>2</sup>		Uranium		Capacity <sup>3</sup>		Output	
	Million Barrels per Day	Percent of U.S. Total	Trillion Cubic Feet	Percent of U.S. Total	Million Short Tons	Percent of U.S. Total	Million Pounds <sup>4</sup>	Percent of U.S. Total <sup>5</sup>	Million Barrels per Day	Percent of U.S. Total <sup>6</sup>	Million Barrels per Day	Percent of U.S. Total <sup>6</sup>
1974	5.9	56.0	11.6	56.1	87.4	14.3	NA	NA	13.3	R88.8	11.8	87.6
1975	5.6	56.1	11.0	57.4	88.1	13.5	4.3	18.6	13.4	R88.2	12.0	87.4
1976	5.4	55.7	10.6	55.6	89.0	13.0	3.3	13.0	14.2	R86.7	12.6	R86.2
1977	5.5	55.3	10.3	53.6	89.1	12.8	16.0	53.4	14.6	R85.6	13.5	85.0
1978	5.8	56.8	10.1	52.7	85.5	12.8	17.3	46.8	14.8	R84.7	13.5	84.5
1979	5.7	56.3	9.9	50.3	123.3	15.8	16.7	44.7	14.4	R79.9	13.2	83.9
1980	5.7	56.1	9.3	47.7	142.3	17.2	19.0	43.5	15.1	R81.0	12.2	R83.3
1981	5.7	55.8	9.2	47.8	154.8	18.8	14.5	37.7	14.6	R81.4	11.2	80.3
1982	5.7	55.9	8.3	46.7	195.2	23.3	9.2	34.2	13.6	R80.9	10.6	79.0
1983	5.6	55.1	7.4	45.8	185.2	23.7	6.6	31.4	13.0	R80.6	10.3	78.7
1984	5.7	54.3	7.9	45.5	226.0	25.2	4.1	27.8	12.8	R81.6	10.9	R80.0
1985	5.8	54.9	7.3	44.6	230.4	26.1	2.1	18.9	12.6	R81.6	10.8	78.9
1986	5.7	56.0	7.1	44.5	227.6	25.6	1.6	12.1	12.5	R80.5	11.4	78.5
1987	5.7	57.0	7.2	43.4	255.3	27.8	R NA	R NA	12.5	R78.3	11.7	79.7
1988	R5.5	R56.2	R7.7	R45.1	285.3	30.0	R NA	R NA	12.3	R78.4	12.0	R79.9
1989	5.2	57.2	7.5	43.2	286.9	29.3	R NA	R NA	11.5	R73.8	11.4	75.2
1990	5.0	55.8	7.6	42.6	282.0	27.4	R NA	R NA	11.4	R72.5	11.3	74.0
1991	5.0	54.9	7.5	42.4	289.6	29.1	R NA	R NA	11.2	R71.4	11.1	72.9
1992	4.8	53.9	7.9	44.2	251.9	25.3	.0	.0	11.0	R72.4	11.0	R71.4
1993	4.5	52.1	7.7	42.3	197.3	20.9	.0	.0	10.7	R71.3	10.8	68.6
1994	4.4	52.1	8.0	42.5	179.7	17.4	.0	.0	10.6	R69.0	10.8	68.5
1995	4.3	51.7	8.1	43.3	165.4	16.0	.0	.0	10.4	R68.0	10.7	66.6
1996	4.2	50.5	8.2	43.4	169.4	15.9	.0	.0	10.5	R67.8	11.0	R67.1
1997	4.0	48.3	8.3	43.9	163.3	15.0	.0	.0	9.4	R59.9	10.0	59.9
1998	3.8	47.5	8.4	44.1	73.9	6.6	.0	.0	714.3	7R87.8	714.9	787.7
1999	3.6	46.3	8.0	42.4	44.0	4.0	.0	.0	14.2	R85.7	14.6	86.2
2000	3.5	44.8	8.3	43.5	R34.6	R3.2	.0	.0	14.4	R86.9	14.5	R84.1
2001	3.7	48.7	8.8	45.1	R31.3	R2.8	.0	.0	R15.2	R90.3	15.0	86.9
2002	3.7	48.4	8.7	46.0	R27.8	R2.5	.0	.0	R14.2	R84.7	14.8	85.5
2003	3.5	47.3	8.3	43.7	R16.8	R1.6	.0	.0	R14.3	R84.5	14.7	84.0
2004	3.3	45.7	8.2	R44.0	R18.1	R1.6	.0	.0	R14.4	R84.1	15.2	R85.2
2005	3.1	44.5	7.8	43.0	18.0	1.6	.0	.0	14.5	83.8	15.1	84.9

<sup>1</sup> Production is on a net ownership basis. "Net ownership" is all reserve quantities owned, regardless of type of ownership (e.g., working interest or royalty).

<sup>2</sup> Bituminous coal, subbituminous coal, and lignite.

<sup>3</sup> Operable capacity as of January 1 of the following year.

<sup>4</sup> Production of uranium oxide ( $U_3O_8$ ). See "Uranium Oxide" in Glossary.

<sup>5</sup> Percent of U.S. total uranium concentrate production. See "Uranium Concentrate" in Glossary.

<sup>6</sup> The Financial Reporting System (FRS) data include Puerto Rico and the Virgin Islands; U.S. Totals do not include Puerto Rico and the Virgin Islands.

<sup>7</sup> There is a discontinuity in this time series between 1997 and 1998 due to the expanded coverage of

the FRS.

R=Revised. NA=Not available.

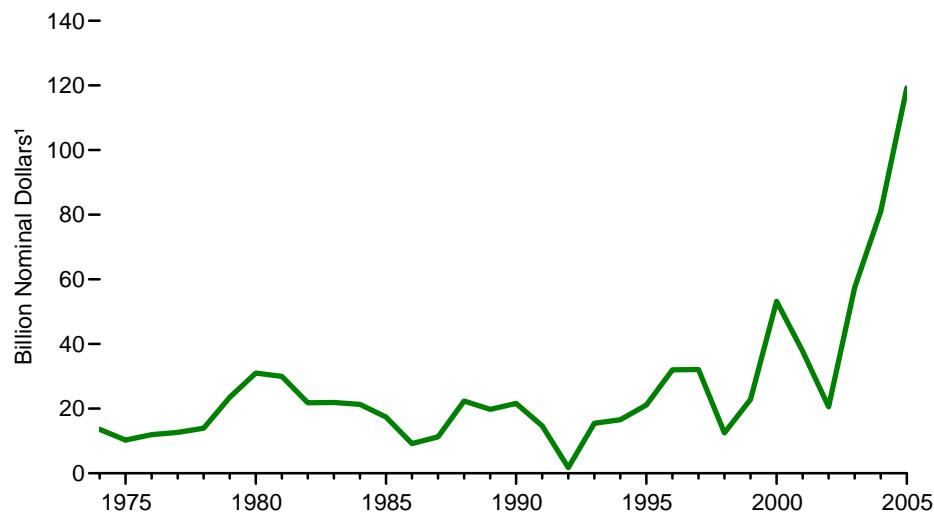
Note: "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the FRS. See Table 3.14.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

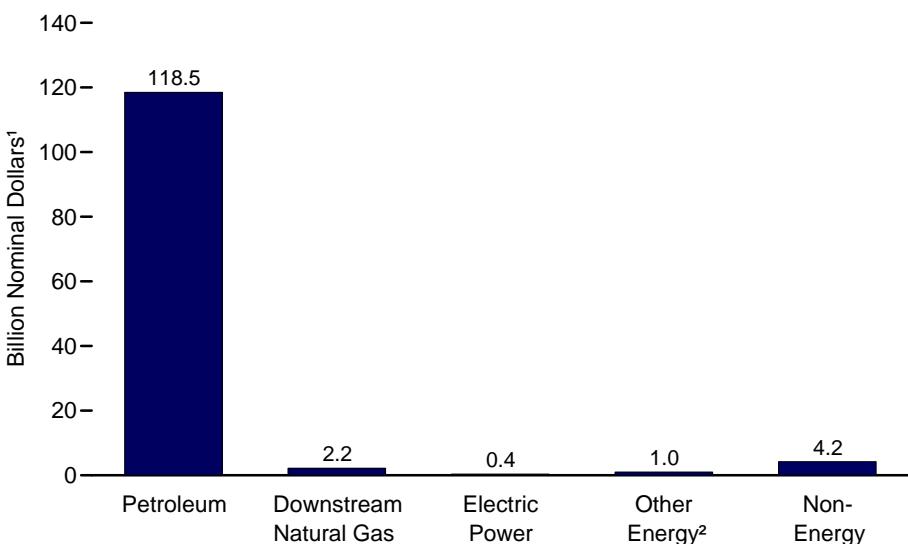
Sources: **Production and Refining:** • 1974-1976—Energy Information Administration (EIA), Form EIA-28, "Financial Reporting System" database, November 1998. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports. **Percent of U.S. Total:** Tables 5.1, 5.8, 5.9, 6.1, 7.1, and 9.3.

**Figure 3.11 Major U.S. Energy Companies' Net Income**

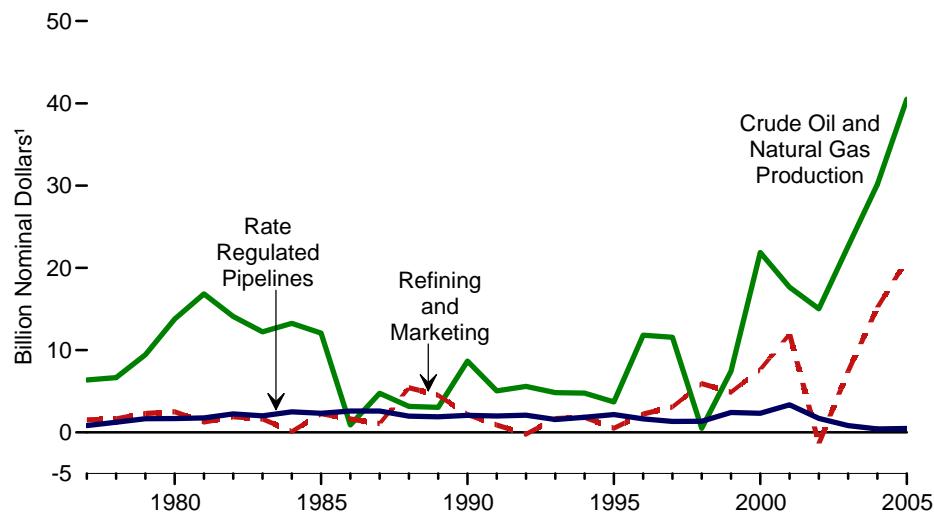
**Total, 1974-2005**



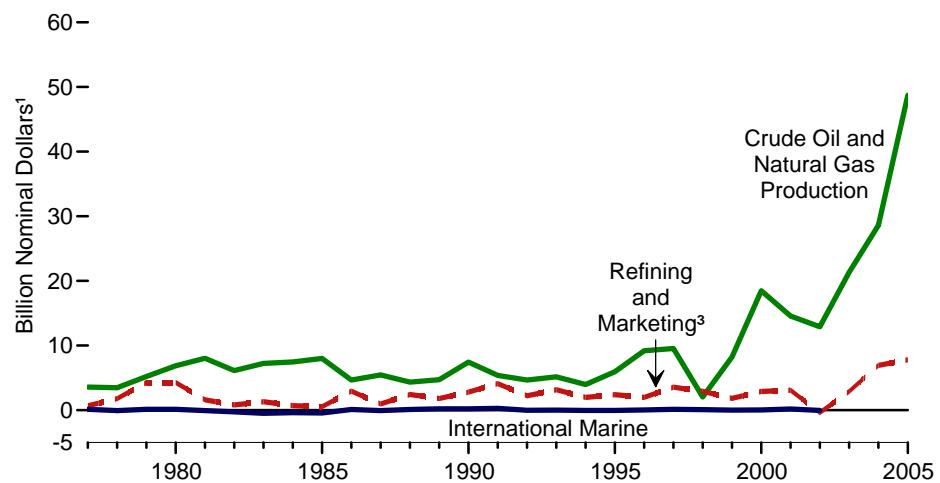
**Total by Type of Business, 2005**



**U.S. Petroleum, 1977-2005**



**Foreign Petroleum, 1977-2005**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Coal, nuclear, renewable fuels, and nonconventional energy.

<sup>3</sup> Beginning in 2003, includes International Marine.

Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.14. • Because vertical scales differ, graphs should not be compared.

Source: Table 3.11.

**Table 3.11 Major U.S. Energy Companies' Net Income, 1974-2005**  
 (Billion Nominal Dollars <sup>1</sup>)

Year	Petroleum <sup>2</sup>										Down-stream Natural Gas <sup>2,3</sup>	Electric Power	Coal	Other Energy <sup>4</sup>	Non-Energy	Total <sup>5</sup>						
	United States				Foreign				Total Petroleum													
	Crude Oil and Natural Gas Production	Refining and Marketing	Rate Regulated Pipelines	Total	Crude Oil and Natural Gas Production	Refining and Marketing	International Marine	Total														
1974	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.6						
1975	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.3						
1976	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.0						
1977	6.4	1.5	.8	8.6	3.6	.7	.1	4.4	13.0	(6)	(7)	.2	(s)	1.7	12.7							
1978	6.7	1.6	1.2	9.5	3.5	1.8	-1	5.2	14.7	(6)	(7)	.1	-1	1.8	13.9							
1979	9.4	2.3	1.7	13.4	5.2	4.3	.1	9.7	23.0	(6)	(7)	.3	-1	2.8	23.5							
1980	13.8	2.5	1.7	17.9	6.9	4.3	.1	11.2	29.1	(6)	(7)	.3	(s)	2.3	31.0							
1981	16.8	1.3	1.8	19.9	8.0	1.6	-1	9.6	29.5	(6)	(7)	.4	-3	1.6	30.0							
1982	14.1	1.9	2.3	18.3	6.1	.8	-3	6.7	25.0	(6)	(7)	.4	-3	.4	21.8							
1983	12.2	1.6	2.0	15.9	7.2	1.3	-5	8.2	24.0	(6)	(7)	.5	(s)	1.8	21.9							
1984	13.3	.1	2.5	15.8	7.5	.7	-4	7.8	23.6	(6)	(7)	.6	-1	2.9	21.3							
1985	12.1	2.3	2.3	16.7	8.0	.5	-4	8.1	24.8	(6)	(7)	.4	-3	2.5	17.4							
1986	.9	1.6	2.6	5.2	4.7	2.9	.1	7.7	12.9	(6)	(7)	.2	(s)	2.8	9.2							
1987	4.7	1.1	2.6	8.4	5.4	1.0	-1	6.4	14.8	(6)	(7)	.4	(s)	7.1	11.3							
1988	3.2	5.4	2.0	10.6	4.3	2.4	.1	6.9	17.5	(6)	(7)	.6	-1	10.8	22.3							
1989	3.1	4.5	1.9	9.5	4.7	1.8	.2	6.7	16.2	(6)	(7)	.4	-1	8.7	19.8							
1990	8.7	2.2	2.1	12.9	7.4	2.8	.2	10.5	23.4	(6)	(7)	.3	.1	4.3	21.6							
1991	5.1	.9	2.0	7.9	5.4	4.1	.3	9.8	17.7	(6)	(7)	.6	.1	1.6	14.7							
1992	5.6	-.2	2.1	7.5	4.7	2.2	(s)	6.9	14.4	(6)	(7)	-.5	.1	1.2	1.8							
1993	4.8	1.7	1.6	8.1	5.2	3.2	(s)	8.4	16.5	(6)	(7)	.4	.1	2.7	15.5							
1994	4.8	1.8	1.8	8.5	4.0	2.0	(s)	5.9	14.4	(6)	(7)	.2	.2	6.2	16.5							
1995	3.7	.5	2.2	6.4	5.9	2.4	(s)	8.3	14.7	(6)	(7)	.3	.2	12.6	21.1							
1996	11.8	2.3	1.6	15.7	9.2	2.0	(s)	11.2	26.9	(6)	(7)	.5	.2	8.0	32.0							
1997	11.6	3.1	1.3	16.0	9.6	3.6	.1	13.3	29.3	(6)	(7)	.3	.3	6.3	32.1							
1998	.5	5.9	1.4	7.8	2.0	2.9	.1	5.1	12.8	(6)	(7)	.5	.9	1.8	12.5							
1999	7.4	4.9	2.4	14.8	8.2	1.9	(s)	10.1	24.8	(6)	(7)	.2	.7	2.8	22.9							
2000	21.9	7.7	2.3	31.8	18.5	2.9	(s)	21.4	53.3	(6)	(7)	(s)	2.7	3.6	53.2							
2001	17.6	12.0	3.3	32.9	14.6	3.1	.2	17.8	50.8	(6)	(7)	.1	2.0	-2.7	37.7							
2002	15.0	-1.4	1.7	15.4	12.9	-.4	(s)	12.5	27.9	(6)	(7)	(s)	-1.5	1.8	20.6							
2003	<sup>2</sup> 22.6	<sup>2</sup> 7.4	<sup>2</sup> .8	<sup>2</sup> 30.9	<sup>2</sup> 21.3	<sup>2</sup> 82.9	(8)	224.3	255.1	3.6	1.0	(7)	.1	.9	57.4							
2004	R30.1	R15.2	R.4	R45.8	28.6	R7.0	(8)	R35.5	R81.3	R3.3	.6	(7)	1.1	4.2	81.1							
2005	40.5	21.0	.5	61.9	48.7	7.8	(8)	56.5	118.5	2.2	.4	(7)	1.0	4.2	119.2							

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Through 2002, natural gas operations are included in the "Petroleum" line of business. Beginning in 2003, downstream natural gas operations are included in their own line of business.

<sup>3</sup> "Downstream Natural Gas" is a line of business that begins with the procurement of natural gas, processes and gathers natural gas, produces natural gas liquids, imports liquefied natural gas, markets and trades natural gas and natural gas liquids, and delivers wholesale and retail volumes of natural gas and natural gas liquids.

<sup>4</sup> Through 2002, includes electric power, nuclear, renewable fuels, and nonconventional energy (including oil shale, tar sands, coal liquefaction and gasification, geothermal, and solar). Beginning in 2003, includes coal, nuclear, renewable fuels, and nonconventional energy.

<sup>5</sup> Total is sum of components shown, minus eliminations and nontraceables (see Notes).

<sup>6</sup> Included in "Petroleum."

<sup>7</sup> Included in "Other Energy."

<sup>8</sup> "International Marine" is included with "Foreign Refining and Marketing" to prevent disclosure.

R=Revised. NA=Not available. (s)=Less than 0.05 billion and greater than -0.05 billion.

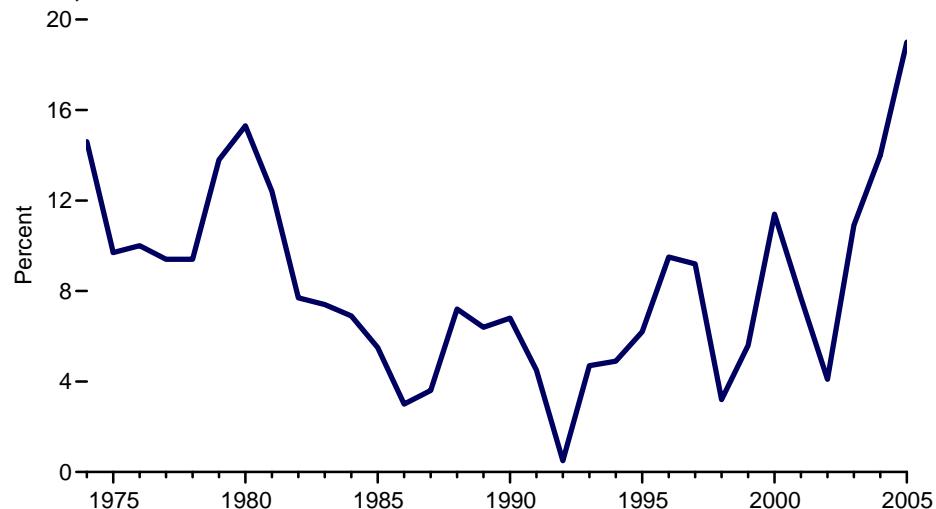
Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System. See Table 3.14. • "Net income" is operating income plus other income and extraordinary income less operating expenses, taxes, interest charges, other deductions, and extraordinary deductions. • "Eliminations" are revenues and expenses resulting from transactions between segments of the energy industry. Consolidated company accounts do not include intersegment revenues and expenses. Therefore, such intersegment transactions must be eliminated. • "Nontraceables" are energy companies' revenues, costs, assays, and liabilities that cannot be directly attributed to a type of business by use of a reasonable allocation method developed on the basis of operating-level utilities.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

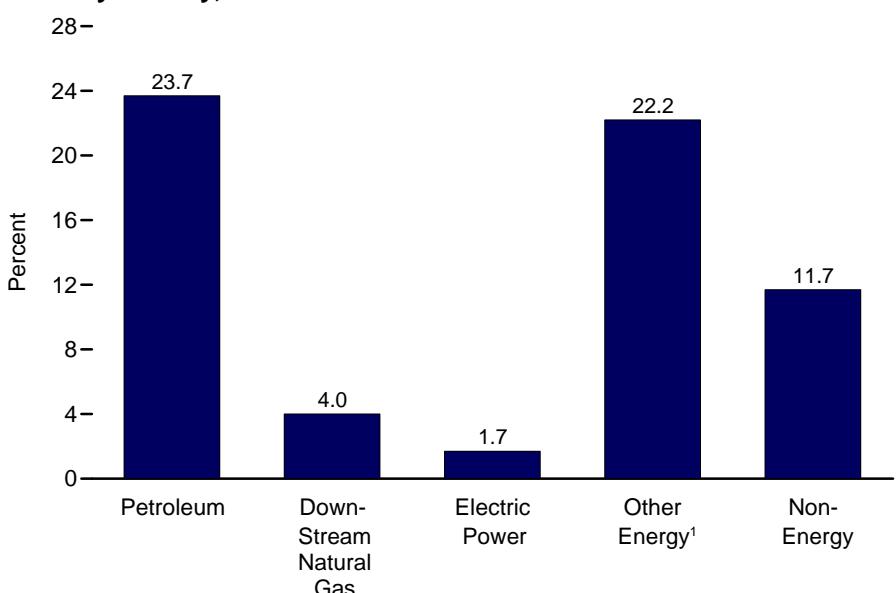
Sources: • 1974-1976—Energy Information Administration (EIA), Form EIA-28, "Financial Reporting System" database, November 1997. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports.

**Figure 3.12 Major U.S. Energy Companies' Profitability**

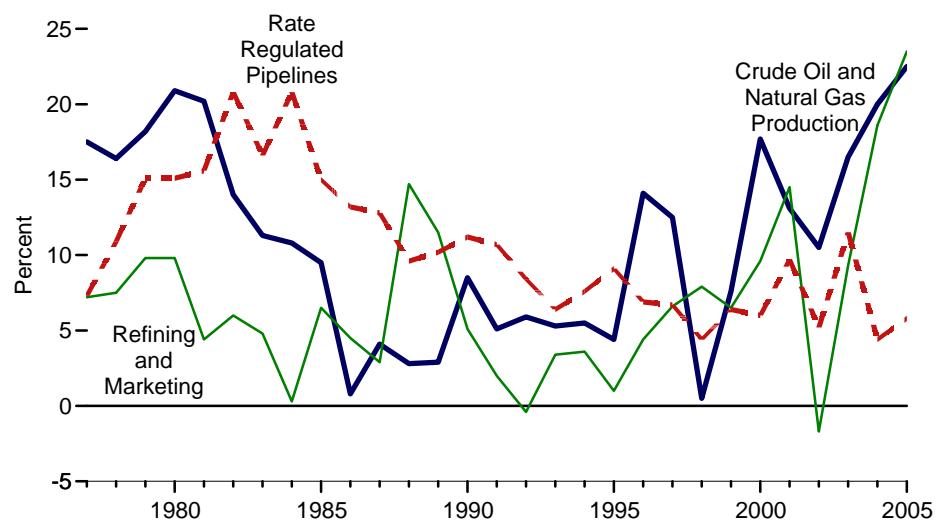
**Total, 1974-2005**



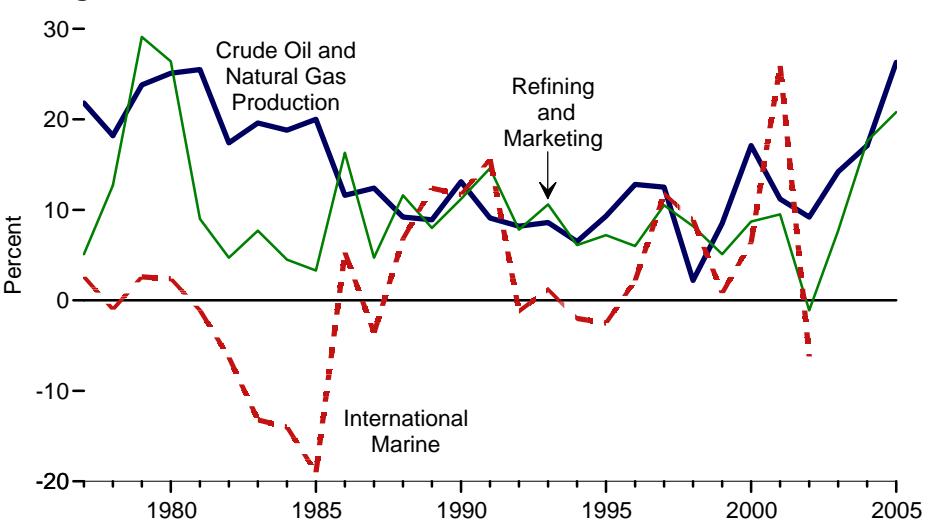
**Total by Activity, 2005**



**U.S. Petroleum, 1977-2005**



**Foreign Petroleum, 1977-2005**



<sup>1</sup> Coal, nuclear, renewable fuels, and nonconventional energy.

Notes: • "Major U.S. Energy Companies" are the top publicly-owned crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table

3.14. • Because vertical scales differ, graphs should not be compared.

Source: Table 3.12.

**Table 3.12 Major U.S. Energy Companies' Profitability, 1974-2005**  
(Percent)

Year	Petroleum <sup>1</sup>										Down-stream Natural Gas <sup>1,2</sup>	Electric Power	Coal	Other Energy <sup>3</sup>	Non- Energy	Total						
	United States				Foreign				Total Petroleum													
	Crude Oil and Natural Gas Production	Refining and Marketing	Rate Regulated Pipelines	Total	Crude Oil and Natural Gas Production	Refining and Marketing	Inter- national Marine	Total														
1974	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.6					
1975	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7					
1976	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.0					
1977	17.5	7.2	7.3	12.5	21.8	5.1	2.6	12.4	12.5	( <sup>4</sup> )	( <sup>5</sup> )	8.8	-2.6	7.1	9.4							
1978	16.4	7.5	10.9	12.8	18.2	12.7	-1.0	13.6	13.1	( <sup>4</sup> )	( <sup>5</sup> )	4.1	-4.2	6.5	9.4							
1979	18.2	9.8	15.1	15.5	23.8	29.1	2.6	23.1	18.0	( <sup>4</sup> )	( <sup>5</sup> )	6.3	-3.7	8.8	13.8							
1980	20.9	9.8	15.1	17.5	25.1	26.4	2.4	23.0	19.2	( <sup>4</sup> )	( <sup>5</sup> )	5.6	-7	5.9	15.3							
1981	20.2	4.4	15.6	16.1	25.5	9.0	-1.1	17.7	16.6	( <sup>4</sup> )	( <sup>5</sup> )	6.1	-6.8	3.5	12.4							
1982	14.0	6.0	20.8	12.7	17.4	4.7	-6.3	11.8	12.5	( <sup>4</sup> )	( <sup>5</sup> )	4.4	-5.2	.6	7.7							
1983	11.3	4.8	16.6	10.3	19.6	7.7	-13.2	14.1	11.3	( <sup>4</sup> )	( <sup>5</sup> )	5.0	.5	2.9	7.4							
1984	10.8	.3	20.8	9.4	18.8	4.5	-14.0	13.3	10.4	( <sup>4</sup> )	( <sup>5</sup> )	6.2	-1.8	4.8	6.9							
1985	9.5	6.5	15.0	9.4	20.0	3.3	-19.0	13.8	10.5	( <sup>4</sup> )	( <sup>5</sup> )	4.6	-8.4	4.2	5.5							
1986	.8	4.5	13.2	3.0	11.6	16.3	5.3	12.8	5.5	( <sup>4</sup> )	( <sup>5</sup> )	2.7	-.8	5.1	3.0							
1987	4.1	2.9	12.8	4.9	12.4	4.7	-3.6	9.5	6.2	( <sup>4</sup> )	( <sup>5</sup> )	5.1	.5	12.2	3.6							
1988	2.8	14.7	9.6	6.3	9.2	11.6	6.8	9.9	7.3	( <sup>4</sup> )	( <sup>5</sup> )	6.7	-2.5	20.3	7.2							
1989	2.9	11.5	10.2	5.8	8.9	8.0	12.4	8.7	6.7	( <sup>4</sup> )	( <sup>5</sup> )	5.0	-2.3	17.3	6.4							
1990	8.5	5.1	11.2	7.9	13.1	11.2	11.7	12.5	9.5	( <sup>4</sup> )	( <sup>5</sup> )	3.3	2.6	7.8	6.8							
1991	5.1	2.0	10.7	4.9	9.1	14.6	15.6	11.0	7.0	( <sup>4</sup> )	( <sup>5</sup> )	8.7	2.8	2.9	4.5							
1992	5.9	-.4	8.4	4.4	8.2	7.8	-1.2	7.9	5.6	( <sup>4</sup> )	( <sup>5</sup> )	-9.3	1.8	2.1	.5							
1993	5.3	3.4	6.4	4.9	8.6	10.6	1.2	9.2	6.4	( <sup>4</sup> )	( <sup>5</sup> )	7.6	4.1	4.7	4.7							
1994	5.5	3.6	7.6	5.2	6.5	6.1	-2.0	6.2	5.6	( <sup>4</sup> )	( <sup>5</sup> )	4.0	4.8	10.5	4.9							
1995	4.4	1.0	9.1	4.0	9.3	7.2	-2.5	8.4	5.7	( <sup>4</sup> )	( <sup>5</sup> )	6.9	6.1	19.4	6.2							
1996	14.1	4.4	6.9	9.9	12.8	6.0	2.2	10.6	10.1	( <sup>4</sup> )	( <sup>5</sup> )	9.9	7.9	15.0	9.5							
1997	12.5	6.6	6.7	10.0	12.5	10.5	11.8	11.9	10.8	( <sup>4</sup> )	( <sup>5</sup> )	7.2	7.0	10.9	9.2							
1998	.5	7.9	4.4	3.8	2.2	8.2	8.9	4.0	3.9	( <sup>4</sup> )	( <sup>5</sup> )	26.4	13.2	4.5	3.2							
1999	7.6	6.5	6.4	7.0	8.5	5.1	.8	7.6	7.2	( <sup>4</sup> )	( <sup>5</sup> )	9.5	7.6	5.8	5.6							
2000	17.7	9.6	6.0	13.2	17.1	8.7	6.4	15.1	13.9	( <sup>4</sup> )	( <sup>5</sup> )	1.7	11.0	7.3	11.4							
2001	13.1	14.5	9.7	13.1	11.2	9.5	25.9	10.9	12.2	( <sup>4</sup> )	( <sup>5</sup> )	9.0	9.0	-6.6	7.7							
2002	10.5	-1.7	5.2	6.0	9.2	-1.1	-6.2	7.2	6.5	( <sup>4</sup> )	( <sup>5</sup> )	-8.5	-6.8	4.7	4.1							
2003	<sup>1</sup> 16.5	<sup>1</sup> 9.3	<sup>1</sup> 11.5	<sup>1</sup> 13.7	<sup>1</sup> 14.2	<sup>1</sup> 7.7	W	113.0	<sup>1</sup> 13.4	8.8	<sup>5</sup> 2	( <sup>5</sup> )	2.8	2.4	10.9							
2004	R20.0	R18.6	R4.4	18.9	17.1	R17.6	W	R17.3	R18.2	R5.9	3.1	( <sup>5</sup> )	R24.7	R10.7	14.0							
2005	22.5	23.5	5.8	22.3	26.3	20.8	W	25.5	23.7	4.0	1.7	( <sup>5</sup> )	22.2	11.7	19.0							

<sup>1</sup> Through 2002, natural gas operations are included in the "Petroleum" line of business. Beginning in 2003, downstream natural gas operations are included in their own line of business.

<sup>2</sup> "Downstream Natural Gas" is a line of business that begins with the procurement of natural gas, processes and gathers natural gas, produces natural gas liquids, imports liquefied natural gas, markets and trades natural gas and natural gas liquids, and delivers wholesale and retail volumes of natural gas and natural gas liquids.

<sup>3</sup> Through 2002, includes electric power, nuclear, renewable fuels, and nonconventional energy (including oil shale, tar sands, coal liquefaction and gasification, geothermal, and solar). Beginning in 2003, includes coal, nuclear, renewable fuels, and nonconventional energy.

<sup>4</sup> Included in "Petroleum."

<sup>5</sup> Included in "Other Energy."

R=Revised. NA=Not available. W=Value withheld to avoid disclosure of individual company data.

Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System. See Table 3.14.

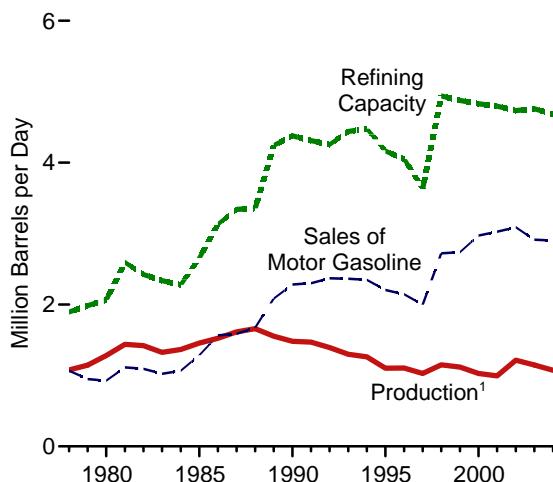
• Data are for return on investment, measured as net income divided by net investment in place. "Net income" is operating income plus other income and extraordinary income less operating expenses, taxes, interest charges, other deductions, and extraordinary deductions. "Net investment in place" is net property, plant, and equipment plus investments and advances to unconsolidated affiliates.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

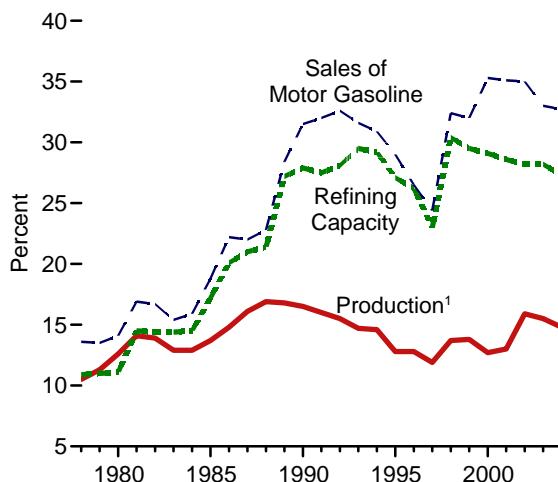
Sources: • 1974-1976—Energy Information Administration (EIA), Form EIA-28, "Financial Reporting System" database, October 1996. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports.

**Figure 3.13 U.S. Energy Activities by Foreign-Affiliated Companies, 1978-2004**

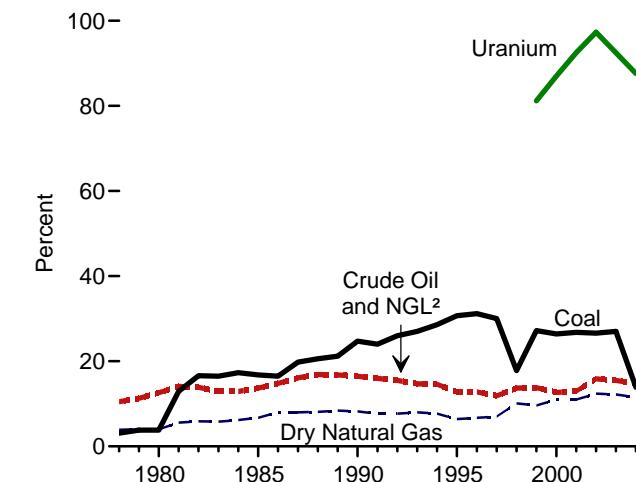
**Petroleum Activities**



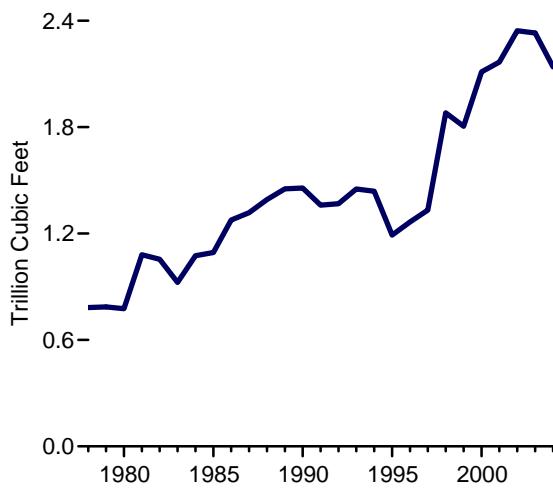
**Petroleum Activities Share of U.S. Total**



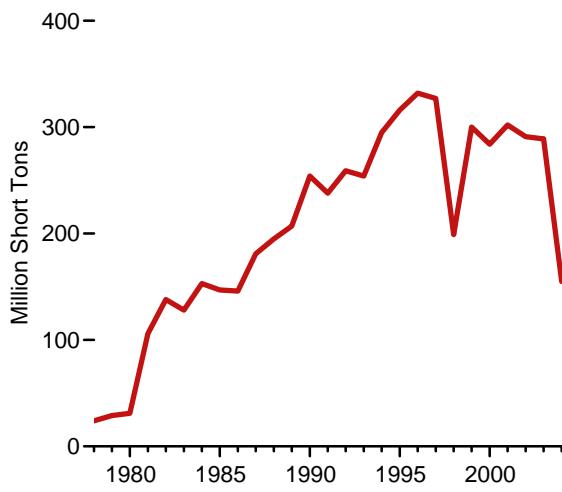
**Share of U.S. Total Production by Fuel Type**



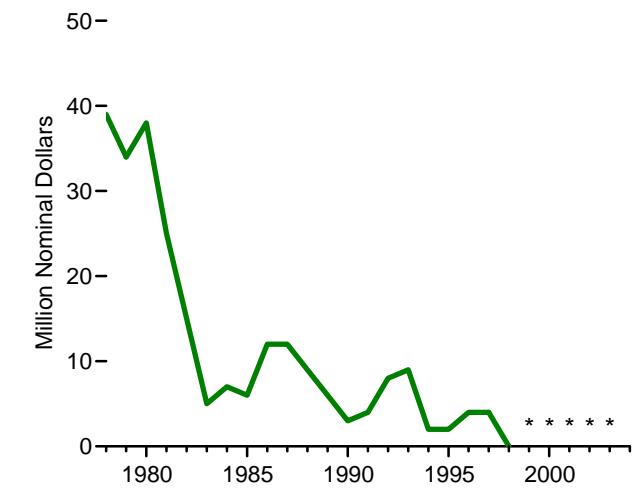
**Dry Natural Gas Production**



**Coal Production**



**Expenditures for Exploration and Development of Uranium**



<sup>1</sup> Crude oil and natural gas liquids.

<sup>2</sup> Natural gas liquids.

\* 1999-2002 uranium values are withheld to avoid disclosure of individual company data; 2003 and 2004 values are not available.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 3.13.

**Table 3.13 U.S. Energy Activities by Foreign-Affiliated Companies, 1978-2004**

Year	Production								Refining Capacity <sup>1</sup>		Sales of Motor Gasoline		Expenditures for Exploration and Development of Uranium	
	Crude Oil and Natural Gas Liquids		Dry Natural Gas		Coal		Uranium							
	Thousand Barrels per Day	Percent of U.S. Total	Billion Cubic Feet	Percent of U.S. Total	Million Short Tons	Percent of U.S. Total	Thousand Pounds <sup>2</sup>	Percent of U.S. Total <sup>3</sup>	Thousand Barrels per Day	Percent of U.S. Total	Thousand Barrels per Day	Percent of U.S. Total	Million Nominal Dollars <sup>4</sup>	Percent of U.S. Total
1978	1,076	10.5	783	3.9	24	3.1	NA	NA	1,895	10.9	1,066	13.6	39	12.5
1979	1,145	11.3	786	4.0	29	3.8	NA	NA	1,984	11.0	948	13.5	34	10.8
1980	1,280	12.6	776	4.0	31	3.8	NA	NA	2,066	11.1	926	14.1	38	14.1
1981	1,438	14.1	1,080	5.6	106	12.9	NA	NA	2,595	14.5	1,114	16.9	25	17.0
1982	1,421	13.9	1,055	5.9	138	16.6	NA	NA	2,423	14.4	1,092	16.7	15	19.8
1983	1,325	12.9	924	5.8	128	16.5	NA	NA	2,337	14.4	1,022	15.4	5	13.0
1984	1,365	12.9	1,075	6.2	153	17.3	NA	NA	2,276	14.5	1,066	15.9	7	24.9
1985	1,455	13.7	1,093	6.7	147	16.8	NA	NA	2,656	17.2	1,285	18.8	6	27.9
1986	1,523	14.8	1,276	8.0	146	16.5	NA	NA	3,133	20.1	1,565	22.2	12	54.3
1987	1,614	16.1	1,318	8.0	181	19.8	NA	NA	3,342	21.0	1,586	22.0	12	60.4
1988	1,659	16.9	1,392	8.1	195	20.6	NA	NA	3,356	21.4	1,673	22.8	9	44.2
1989	1,553	16.8	1,452	8.4	207	21.2	NA	NA	4,243	27.2	2,084	28.4	6	41.2
1990	1,481	16.5	1,457	8.2	254	24.7	NA	NA	4,379	27.9	2,282	31.5	3	14.6
1991	1,469	16.0	1,360	7.7	238	24.0	NA	NA	4,312	27.5	2,299	32.0	4	19.7
1992	1,392	15.5	1,368	7.7	259	26.0	NA	NA	4,256	28.1	2,369	32.6	8	55.2
1993	1,299	14.7	1,451	8.0	254	27.0	NA	NA	4,440	29.5	2,362	31.6	9	76.0
1994	1,261	14.6	1,439	7.7	295	28.6	NA	NA	4,479	29.2	2,346	30.9	2	51.0
1995	1,103	12.8	1,191	6.4	316	30.7	NA	NA	4,164	27.1	2,204	29.0	2	35.0
1996	1,105	12.8	1,265	6.7	332	31.2	NA	NA	4,050	26.2	2,145	26.5	4	44.0
1997	1,028	11.9	1,332	7.0	327	30.0	NA	NA	3,637	23.0	1,998	24.4	4	14.0
1998	1,149	13.7	1,881	10.1	199	17.8	NA	NA	4,940	30.4	2,721	32.4	(s)	1.0
1999	1,118	13.8	1,805	9.6	300	27.2	<sup>5</sup> 3,745	<sup>5</sup> 81.2	4,877	29.5	2,737	32.0	W	W
2000	1,027	12.7	2,112	11.0	284	26.4	3,443	87.0	4,831	29.1	2,971	35.3	W	W
2001	994	13.0	2,167	11.0	302	26.8	2,440	92.5	4,797	28.6	3,027	35.1	W	W
2002	R1,214	R <sup>15.9</sup>	R <sup>2,344</sup>	R <sup>12.4</sup>	291	26.6	2,280	97.3	4,733	28.2	3,090	35.0	W	W
2003	R <sup>1,147</sup>	R <sup>15.5</sup>	R <sup>2,331</sup>	R <sup>12.2</sup>	289	27.0	2,024	<sup>6</sup> NM	4,761	28.2	2,914	33.0	NA	NA
2004	1,073	14.8	2,140	11.5	155	13.9	2,000	87.6	4,683	27.3	2,900	32.7	NA	NA

<sup>1</sup> Operable capacity as of January 1 of the following year.

<sup>2</sup> Production of uranium oxide ( $U_3O_8$ ). See "Uranium Oxide" in Glossary.

<sup>3</sup> Percent of U.S. total uranium concentrate production. See "Uranium Concentrate" in Glossary.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> Includes a small amount produced by a U.S. company, which left the industry by the close of 1999.

<sup>6</sup> Total U.S. uranium production is slightly below that of the foreign-affiliated companies shown in this table. The U.S. data were rounded to avoid disclosure of individual company data.

R=Revised. NA=Not available. NM=Not meaningful. (s)=Less than 0.5 million dollars. W=Value withheld to avoid disclosure of individual company data.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

Sources: • 1978—U.S. Department of Energy, *Secretary's Annual Report to Congress*, (September 1983). • 1979-1992—Energy Information Administration (EIA), *Profiles of Foreign Direct Investment in U.S. Energy*, annual reports. • 1993-1996—EIA, *Performance Profiles of Major Energy Producers*, annual reports. • 1997 forward—EIA, *Foreign Direct Investment in U.S. Energy*, annual reports.

**Table 3.14 Companies Reporting to the Financial Reporting System, 1974-2005**

Company	1974-1981	1982	1983-84	1985-86	1987	1988	1989-90	1991	1992-93	1994-96	1997	1998	1999	2000	2001	2002	2003-05
Amerada Hess Corporation .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American Petrofina, Inc. <sup>1</sup> .....	X	X	X	X	X	X	X										
Anadarko Petroleum Corporation .....								X	X	X	X	X	X	X	X	X	X
Apache Corporation .....																X	X
Ashland Inc. <sup>2</sup> .....	X	X	X	X	X	X	X	X	X	X	X						
Atlantic Richfield Co. (ARCO) <sup>3</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X				
BP America, Inc. <sup>4,5</sup> .....						X	X	X	X	X	X	X	X			X	X
BP Amoco Corporation <sup>3,4,6</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Burlington Northern Inc. <sup>7</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Burlington Resources Inc. <sup>7</sup> .....						X	X	X	X	X	X	X	X	X	X	X	X
Chesapeake Energy Corporation .....																	X
Chevron Corporation <sup>8,9,10</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Citgo Petroleum Corporation .....												X	X	X	X	X	X
Cities Service <sup>11</sup> .....	X	X															
ConocoPhillips Company <sup>12,13,14</sup> .....	X											X	X	X	X	X	X
Devon Energy Corporation .....														X	X	X	X
Dominion Resources .....														X	X	X	X
E.I. du Pont de Nemours and Co. <sup>12,13</sup> .....		X	X	X	X	X	X	X	X	X	X						
El Paso Energy Corporation <sup>15</sup> .....			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enron Corporation .....									X	X	X	X	X	X			
EOG Resources, Inc. ....														X	X	X	X
Equilon Enterprises, LLC <sup>16</sup> .....											X	X	X	X			
Equitable Resources, Inc. ....																	X
Exxon Mobil Corporation <sup>17</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Getty Oil <sup>18</sup> .....		X	X	X													
Gulf Oil <sup>9</sup> .....		X	X	X													
Kerr-McGee Corporation <sup>19</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LYONDELL-CITGO Refining, LP <sup>20</sup> .....											X	X	X	X	X	X	X
Marathon Oil Corporation <sup>21</sup> .....		X															X
Mobil Corporation <sup>17,22</sup> .....		X	X	X	X	X	X	X	X	X	X	X	X				
Motiva Enterprises, LLC <sup>23</sup> .....			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nerco, Inc. <sup>24</sup> .....										X							
Occidental Petroleum Corporation <sup>11</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Oryx Energy Company <sup>19,25</sup> .....					X	X	X	X	X	X	X	X	X	X	X	X	X
Phillips Petroleum Company <sup>14,26</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Premcor, Inc. <sup>27</sup> .....											X	X	X	X	X	X	X
Shell Oil Company .....		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sonat Inc. ....											X	X					
Standard Oil Co. (Ohio) (Sohio) <sup>5</sup> .....	X	X	X	X													
Sunoco, Inc. <sup>25,28</sup> .....		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Superior Oil <sup>22</sup> .....		X	X	X													
Tenneco Inc. <sup>29</sup> .....		X	X	X	X	X	X										
Tesoro Petroleum Corporation .....												X	X	X	X	X	X
Texaco Inc. <sup>10,18</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
The Coastal Corporation <sup>15</sup> .....		X	X	X	X	X	X	X	X	X	X	X	X	X			
The Williams Companies, Inc. ....												X	X	X	X	X	X
Tosco Corporation <sup>26</sup> .....												X	X	X	X	X	X
Total Holdings, USA, Inc. <sup>1,30,31</sup> .....									X	X	X	X	X	X	X	X	X
Total Petroleum (North America) Ltd. <sup>32</sup> .....									X	X							
Ultramar Diamond Shamrock Corporation <sup>33</sup> .....											X	X	X	X	X	X	X
Union Pacific Resources Group, Inc. <sup>34,35</sup> .....	X	X	X	X	X	X	X	X	X	X	X	X	X				
Unocal Corporation .....		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
USX Corporation .....		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Valero Energy Corporation <sup>33</sup> .....											X	X	X	X	X	X	X
XTO Energy, Inc. ....														X	X		

Footnotes: See the following two pages.

Note: "X" indicates that the company was included in the Financial Reporting System for the year indicated.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

Source: Energy Information Administration, Form EIA-28, "Financial Reporting System."

## Footnotes for Table 3.14

<sup>1</sup>American Petrofina, Inc. changed its name to Fina, Inc., effective April 17, 1991.

<sup>2</sup>Ashland was dropped from the FRS system for 1998 after spinning off downstream and coal operations and disposing of upstream operations.

<sup>3</sup>BP Amoco acquired Atlantic Richfield Company (ARCO) in April of 2000. The reporting was consolidated under BP Amoco for 2000. Data for ARCO is not included in the database for the period from January 1, 2000, to April 14, 2000.

<sup>4</sup>Amoco merged with British Petroleum plc and became BP Amoco plc on December 31, 1998. BP America was renamed BP Amoco, Inc. The companies reported separately for 1998 and 1999.

<sup>5</sup>In 1987, British Petroleum acquired all shares in Standard Oil Company (Ohio) that it did not already control and renamed its U.S. affiliate, BP America, Inc.

<sup>6</sup>Formerly Standard Oil Company (Indiana).

<sup>7</sup>Burlington Resources was added to the FRS system and Burlington Northern was dropped for 1988. Data for Burlington Resources covers the full year 1988 even though that company was not created until May of that year.

<sup>8</sup>Formerly Standard Oil Company of California.

<sup>9</sup>Chevron acquired Gulf Oil in 1984, but separate data for Gulf continued to be available for the full 1984 year.

<sup>10</sup>In October 2000, Chevron and Texaco agreed to merge. Both companies reported separately for 2000. In May 2005, Chevron Texaco renamed itself Chevron.

<sup>11</sup>Occidental acquired Cities Service in 1982. Separate financial reports were available for 1982, so each company continued to be treated separately until 1983.

<sup>12</sup>DuPont acquired Conoco in 1981. Separate data for Conoco were available for 1981; DuPont was included in the FRS system in 1982.

<sup>13</sup>Dupont was dropped from the FRS system when Conoco was spun-off in 1998. Conoco began reporting separately again in 1998.

<sup>14</sup>In November 2001, Phillips and Conoco agreed to merge forming ConocoPhillips in 2002. Both companies reported separately in 2001. The companies reported separately in 2002 until the time of the merger.

<sup>15</sup>In January 2001, Coastal merged with a wholly owned subsidiary of El Paso Energy Corporation. The name was changed to El Paso CGP Company. Data were reported separately in 2000 under the name The Coastal Company.

<sup>16</sup>Equilon is a joint venture combining Shell's and Texaco's western and midwestern U.S. refining and marketing businesses and nationwide trading transportation and lubricants businesses. Net income is duplicated in the FRS system since Shell and Texaco account for this investment using the equity method.

<sup>17</sup>In December 1998, Exxon and Mobil agreed to merge. Both companies reported separately for 1998.

<sup>18</sup>Texaco acquired Getty in 1984; however, Getty was treated as a separate FRS company for that year.

<sup>19</sup>In 1998, Kerr-McGee and Oryx merged. The financial reporting for both was consolidated under Kerr-McGee for 1998.

<sup>20</sup>LYONDELL-CITGO is a limited partnership owned by Lyondell Chemical Company and Citgo. There will be some duplication of net income since Citgo accounts for its investment using the equity method.

<sup>21</sup>U.S. Steel (now USX) acquired Marathon in 1982.

<sup>22</sup>Mobil acquired Superior in 1984, but both companies were treated separately for that year.

<sup>23</sup>Motiva is a joint venture approximately equally owned by Shell, Texaco, and Saudi Refining, Inc. The joint venture combines the company's Gulf and east coast refining and marketing businesses. Duplication exists for the net income related to Shell and Texaco's interests, which are accounted for under the equity method.

<sup>24</sup>RTZ America acquired the common stock of Nerco, Inc., on February 17, 1994. In September 1993, Nerco, Inc. sold Nerco Oil & Gas, Inc., its subsidiary. Nerco's 1993 submission includes operations of Nerco Oil & Gas, Inc., through September 28, 1993.

<sup>25</sup>Sun Company spun off Sun Exploration and Development Company (later renamed Oryx Energy Company) during 1988. Both companies were included in the FRS system for 1988; therefore, some degree of duplication exists for that year.

<sup>26</sup>In September 2001, Phillips acquired Tosco. Both companies reported separately in 2001.

<sup>27</sup>In May 2000, Clark Refining & Marketing changed its name to Premcor Refining Group. At a later date the name was changed to Premcor, Inc.

<sup>28</sup>Sun company withdrew from oil and gas exploration and production in 1996. Sun's 1996 submission includes oil and gas exploration and production activities through September 30, 1996. Refining/marketing activities are included for the entire 1996 calendar year. In 1998 the company changed its name to Sunoco, Inc.

<sup>29</sup>Tenneco sold its worldwide oil and gas assets and its refining and marketing assets in 1988. Other FRS companies purchased approximately 70 percent of Tenneco's assets.

<sup>30</sup>Prior submissions were reported at the FINA, Inc. level. FINA, Inc. was the parent of Fina Oil and Chemical Company, which is now ATOFINA Petrochemicals. Due to a series of mergers and acquisitions, beginning in 2000, the submission is reported at the American Petrofina Holding Company level, which is the holding company of ATOFINA.

<sup>31</sup>In 2002, the name was changed to Total Fina Elf and changed to Total Holdings, USA in 2003.

<sup>32</sup>Effective June 1, 1991, Total's exploration, production, and marketing operations in Canada were spun off to Total Oil & Gas, a new public entity.

<sup>33</sup>In December 2001, Valero and Ultramar Diamond Shamrock agreed to merge. Both companies reported separately in 2001.

<sup>34</sup>Effective October 15, 1996, Union Pacific Corporation distributed its ownership in the Union Pacific Resources Group, Inc. to its shareholders. Prior to 1996, the FRS system included Union Pacific Corporation. The FRS system includes only Union Pacific Resources Group, Inc. for 1996.

<sup>35</sup>Union Pacific merged with Anadarko on July 14, 2000. Anadarko's 2000 submission includes data for Union Pacific after July 14, 2000. Data for Union Pacific was not submitted for the period from January 1, 2000, to July 14, 2000.

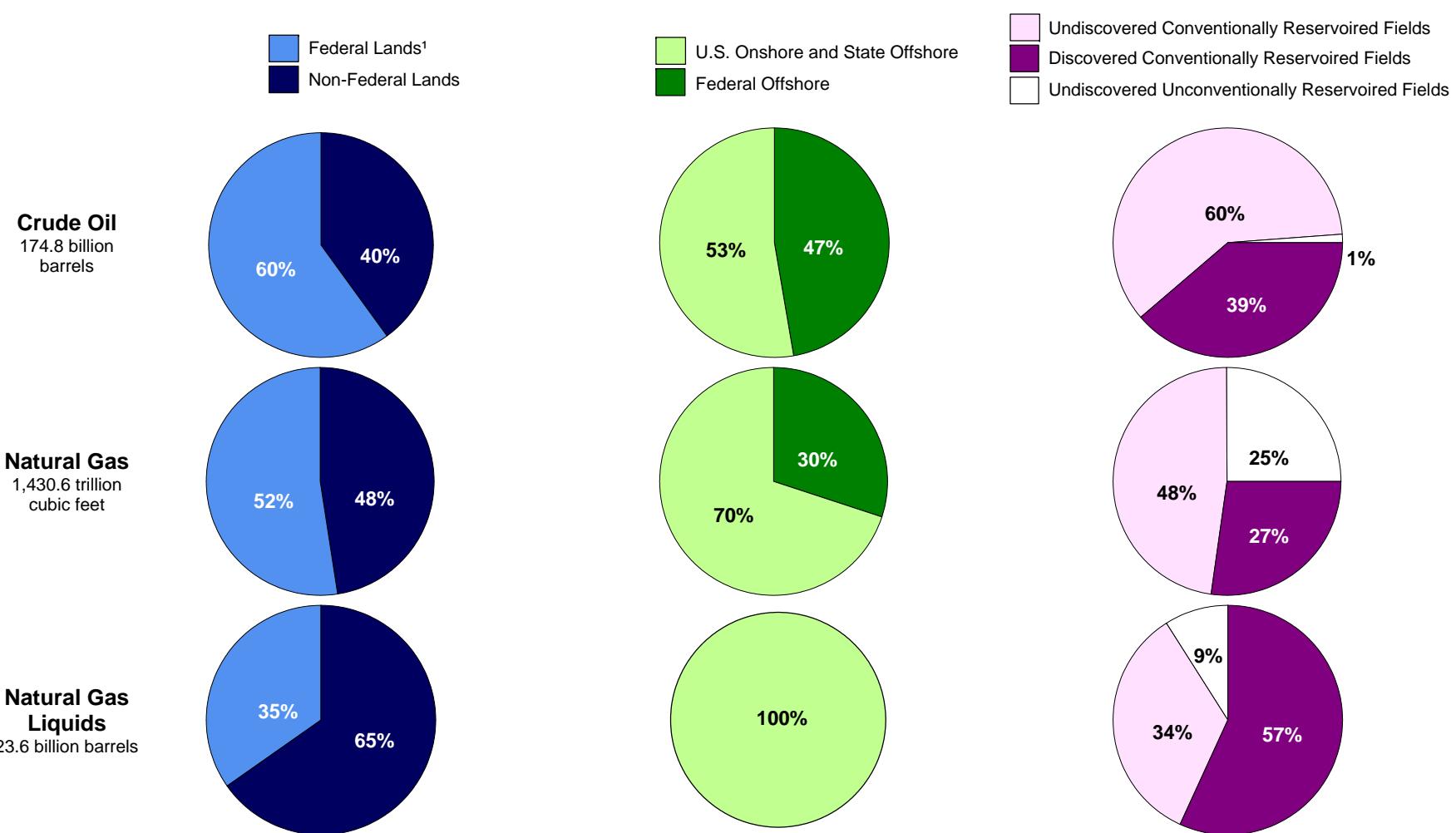
# 4

# Energy Resources



Semisubmersible drilling rig in the Gulf of Mexico. Source: U.S. Department of Energy.

**Figure 4.1 Technically Recoverable Crude Oil, Natural Gas, and Natural Gas Liquids Resource Estimates, 2005**



<sup>1</sup> Lands owned or under the jurisdiction of the Federal government.

Source: Table 4.1.

**Table 4.1 Technically Recoverable Crude Oil, Natural Gas, and Natural Gas Liquids Resource Estimates, 2005**

Region	Crude Oil <sup>1</sup>			Natural Gas (Dry)			Natural Gas Liquids <sup>1</sup>		
	Federal Lands <sup>2</sup>	Non-Federal Lands	Total	Federal Lands <sup>2</sup>	Non-Federal Lands	Total	Federal Lands <sup>2</sup>	Non-Federal Lands	Total
Billion Barrels			Trillion Cubic Feet			Billion Barrels			
<b>Undiscovered Conventionally Reservoired Fields <sup>3</sup></b>	<b>82.54</b>	<b>22.51</b>	<b>105.05</b>	<b>420.14</b>	<b>261.78</b>	<b>681.92</b>	<b>1.80</b>	<b>6.25</b>	<b>8.05</b>
Alaska Onshore and State Offshore <sup>4</sup>	3.75	4.68	8.43	33.97	95.37	129.34	0.54	.61	1.15
Alaska Federal Offshore <sup>5</sup>	24.90	--	24.90	122.60	--	122.60	0.00	--	.00
48 States Onshore and State Offshore <sup>4</sup>	3.79	17.83	21.62	23.97	166.41	190.38	1.26	5.64	6.90
48 States Federal Offshore <sup>5</sup>	50.10	--	50.10	239.60	--	239.60	0.00	--	.00
<b>Discovered Conventionally Reservoired Fields <sup>3</sup> (Ultimate Recovery Appreciation) <sup>6</sup></b>	<b>22.03</b>	<b>45.67</b>	<b>67.70</b>	<b>186.70</b>	<b>203.30</b>	<b>390.00</b>	<b>4.94</b>	<b>8.46</b>	<b>13.40</b>
U.S. Onshore and State Offshore <sup>4</sup>	14.33	45.67	60.00	118.70	203.30	322.00	4.94	8.46	13.40
U.S. Federal Offshore <sup>5</sup>	7.70	--	7.70	68.00	--	68.00	0.00	--	.00
<b>Undiscovered Unconventionally Reservoired Fields <sup>7</sup> (Continuous-Type Deposits (all onshore))</b>	<b>.32</b>	<b>1.75</b>	<b>2.07</b>	<b>143.16</b>	<b>215.55</b>	<b>358.71</b>	<b>1.45</b>	<b>.67</b>	<b>2.12</b>
<b>U.S. Total</b>	<b>104.89</b>	<b>69.93</b>	<b>174.82</b>	<b>750.00</b>	<b>680.63</b>	<b>1,430.63</b>	<b>8.19</b>	<b>15.38</b>	<b>23.57</b>
U.S. Onshore and State Offshore <sup>4</sup>	22.19	69.93	92.12	319.80	680.63	1,000.43	8.19	15.38	23.57
Federal Offshore <sup>5</sup>	82.70	--	82.70	430.20	--	430.20	0.00	--	.00

<sup>1</sup> To the extent that lease condensate is measured or estimated it is included in "Natural Gas Liquids"; otherwise, lease condensate is included in "Crude Oil."

<sup>2</sup> Lands owned or under the jurisdiction of the Federal government, excluding Indian and Native lands even when Federally managed in trust.

<sup>3</sup> Conventionally reservoired deposits are discrete subsurface accumulations of crude oil or natural gas usually defined, controlled, or limited by hydrocarbon/water contacts.

<sup>4</sup> Onshore (Federal and State) plus State offshore waters (near-shore, shallow-water areas under State jurisdiction).

<sup>5</sup> Federal offshore jurisdictions (Outer Continental Shelf and deeper water areas seaward of State offshore).

<sup>6</sup> Proved reserves (see Table 4.2) are not included in these estimates. Ultimate recovery appreciation (reserve growth) is the volume by which the estimate of total recovery from a known crude oil or natural gas reservoir or aggregation of such reservoirs is expected to increase during the time between discovery and permanent abandonment. The estimates of ultimate recovery appreciation for onshore and State offshore lands were imputed by assuming that the total estimates reported by the U.S. Geological Survey could be apportioned according to the ratio of 1996 production from onshore Federal lands to total U.S. production.

<sup>7</sup> Unconventionally reservoired deposits (continuous-type accumulations) are geographically extensive subsurface accumulations of crude oil or natural gas that generally lack well-defined hydrocarbon/water contacts. Examples include coalbed methane, "tight gas," and auto-sourced oil- and gas-shale reservoirs.

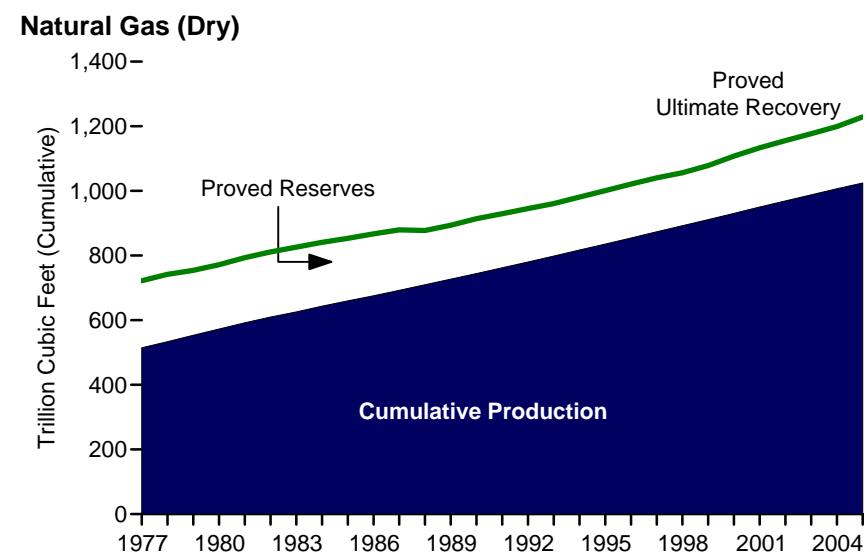
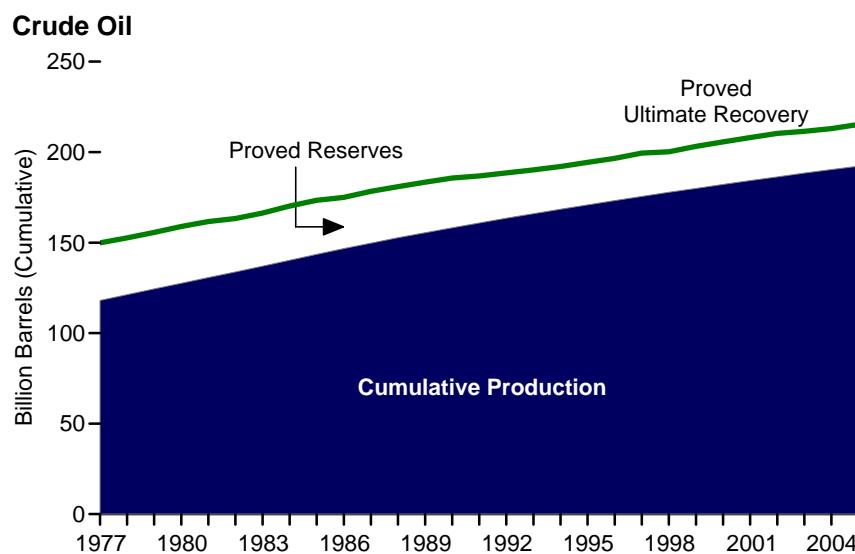
-- = Not applicable.

Notes: • "Technically recoverable" resources are those that are producible using current technology without reference to the economic viability thereof. • Resource estimates are as of the latest estimates generated by the U.S. Department of the Interior, U.S. Geological Survey (USGS) and the Minerals Management Service (MMS). They were not necessarily generated in the current year. • For purposes of comparison, the Potential Gas Committee, an industry-sponsored group of experts, biennially provides another geologically-based estimate of the Nation's natural gas resources. The latest mean estimate, published in "Potential Supply of Natural Gas in the United States," December 31, 2004, is 1,119 trillion cubic feet. This volume includes undiscovered conventionally reservoired deposits, expected ultimate recovery appreciation, coalbed methane, and tight gas where it is believed to be technically recoverable and marketable at reasonable costs. • A value of zero indicates either that none exists in this area or that no estimate of this resource has been made for this area. • "48 States" is the United States excluding Alaska and Hawaii.

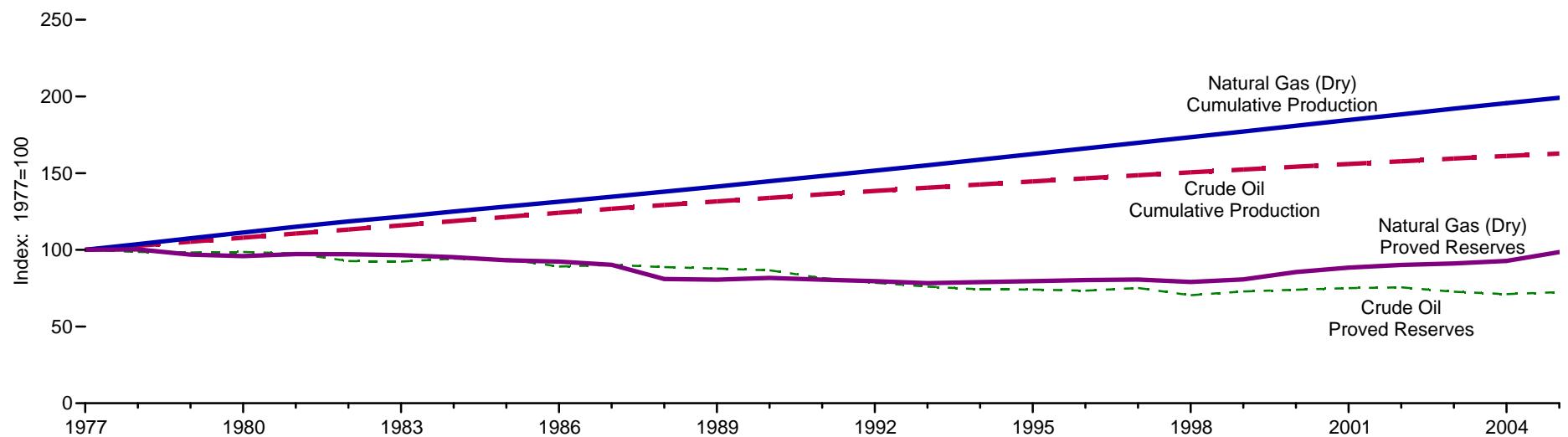
Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

Source: Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2005 Annual Report* (December 2006), Table G1, which in turn is based on the latest resource estimates generated by the U.S. Department of the Interior, U.S. Geological Survey and the Minerals Management Service.

**Figure 4.2 Crude Oil and Natural Gas Cumulative Production, Proved Reserves, and Proved Ultimate Recovery, 1977-2005**



**Cumulative Production and Proved Reserves, Indexed**



Notes: • Data are at end of year. • Crude oil includes lease condensate.

Source: Table 4.2.

**Table 4.2 Crude Oil and Natural Gas Cumulative Production, Proved Reserves, and Proved Ultimate Recovery, 1977-2005**

Year	Crude Oil and Lease Condensate <sup>1</sup>			Natural Gas (Dry)		
	Cumulative Production	Proved Reserves	Proved Ultimate Recovery	Cumulative Production	Proved Reserves	Proved Ultimate Recovery
Year	Billion Barrels			Trillion Cubic Feet		
1977	118.1	31.8	149.9	514.4	207.4	721.9
1978	121.3	31.4	152.6	533.6	208.0	741.6
1979	124.4	31.2	155.6	553.2	201.0	754.2
1980	127.5	31.3	158.9	572.6	199.0	771.6
1981	130.7	31.0	161.7	591.8	201.7	793.5
1982	133.8	29.5	163.3	609.6	201.5	811.1
1983	137.0	29.3	166.3	625.7	200.2	826.0
1984	140.2	30.0	170.2	643.2	197.5	840.7
1985	143.5	29.9	173.4	659.6	193.4	853.0
1986	146.7	28.3	175.0	675.7	191.6	867.3
1987	149.7	28.7	178.4	692.3	187.2	879.5
1988	152.7	28.2	180.9	709.4	168.0	877.4
1989	155.5	27.9	183.4	726.7	167.1	893.9
1990	158.2	27.6	185.7	744.5	169.3	913.9
1991	160.9	25.9	186.8	762.2	167.1	929.3
1992	163.5	25.0	188.5	780.1	165.0	945.1
1993	166.0	24.1	190.2	798.2	162.4	960.6
1994	168.4	23.6	192.0	817.0	163.8	980.8
1995	170.8	23.5	194.4	835.6	165.1	1,000.7
1996	173.2	23.3	196.5	854.5	166.5	1,020.9
1997	175.6	23.9	199.4	873.4	167.2	1,040.6
1998	177.8	22.4	200.2	892.4	164.0	1,056.4
1999	180.0	23.2	203.1	911.2	167.4	1,078.6
2000	182.1	23.5	205.6	930.4	177.4	1,107.8
2001	184.2	23.8	208.1	950.0	183.5	1,133.5
2002	186.3	24.0	210.4	968.9	186.9	1,155.9
2003	188.4	23.1	211.5	988.0	189.0	R <sup>1</sup> ,177.1
2004	190.4	22.6	213.0	R <sup>1</sup> ,006.6	192.5	R <sup>1</sup> ,199.1
2005	192.3	23.0	215.3	1,024.6	204.4	1,229.0

<sup>1</sup> Lease condensate is the portion of natural gas liquids that is separated from the wellhead gas stream at a lease or field separation facility.

R=Revised.

Notes: • Data are at end of year. • See "Proved Reserves, Crude Oil," "Proved Reserves, Lease Condensate," "Proved Reserves, Natural Gas," and "Proved Reserves, Natural Gas Liquids" in Glossary.

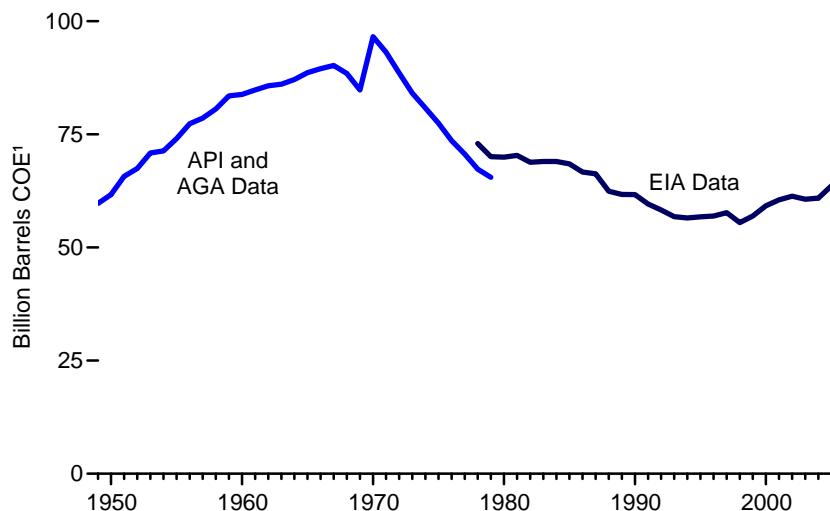
Web Pages: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) and [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html) for related information.

Sources: **Cumulative Production:** Calculated from Energy Information Administration (EIA), *Petroleum Supply Annual*, annual reports and *Natural Gas Annual*, annual reports. **Proved Reserves:**

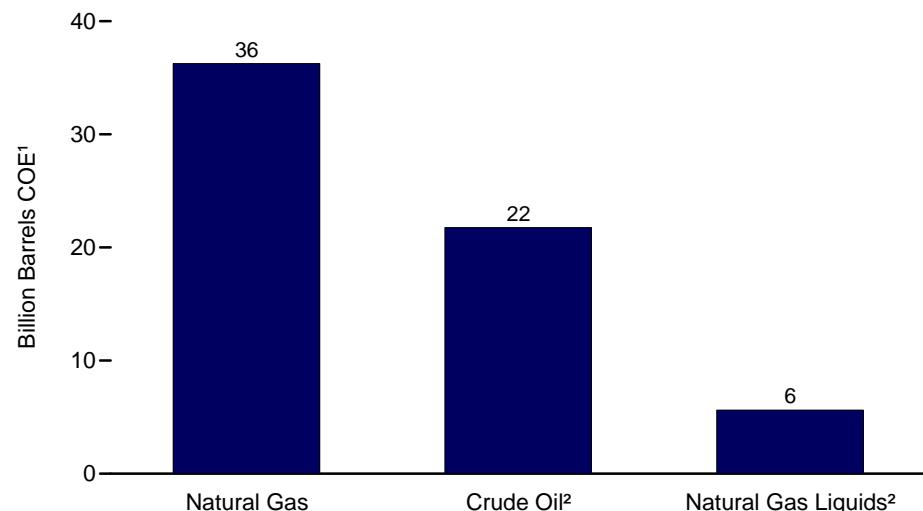
- 1977-2004—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, annual reports.
- 2005—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2005 Annual Report* (December 2006), Tables 6, 8, and 15. **Proved Ultimate Recovery:** Calculated as the sum of cumulative production and proved reserves.

**Figure 4.3 Crude Oil, Natural Gas, and Natural Gas Liquids Proved Reserves**

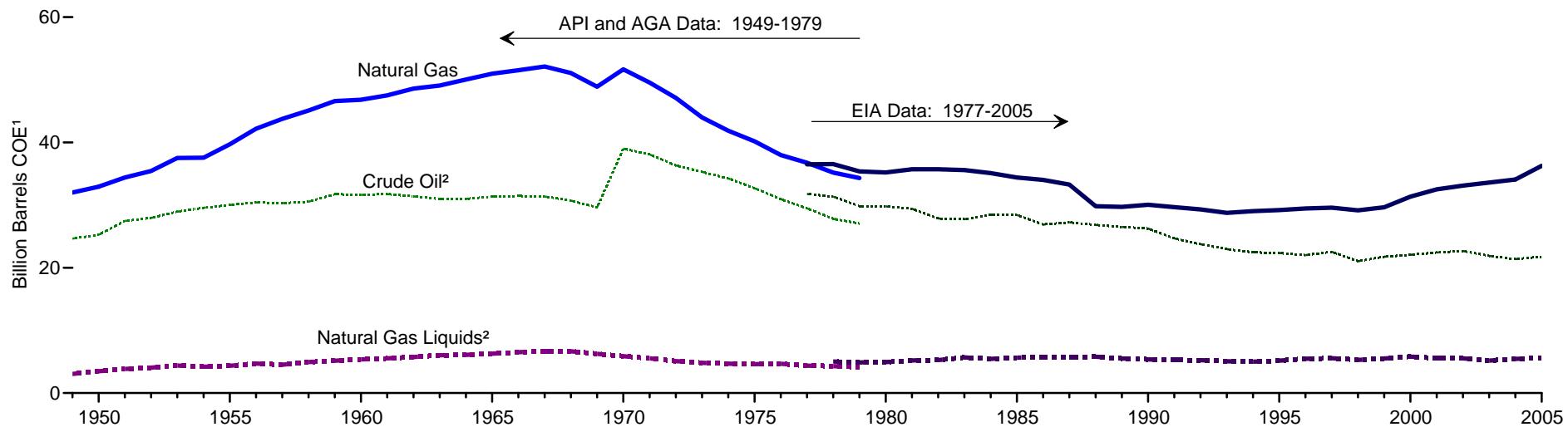
**Total, 1949-2005**



**By Type, 2005**



**By Type, 1949-2005**



<sup>1</sup> COE=crude oil equivalent.

<sup>2</sup> To the extent that lease condensate is measured or estimated it is included in "Natural Gas Liquids"; otherwise, lease condensate is included in "Crude Oil."

Notes: • Data are at end of year. • API=American Petroleum Institute. AGA=American Gas Association. EIA=Energy Information Administration. • Because vertical scales differ, graphs should not be compared.

Source: Table 4.3.

**Table 4.3 Crude Oil, Natural Gas, and Natural Gas Liquids Proved Reserves, Selected Years, 1949-2005**

Year	Crude Oil <sup>1</sup>	Natural Gas (Dry)		Natural Gas Liquids <sup>1</sup>		Total
	Billion Barrels	Trillion Cubic Feet <sup>2</sup>	Billion Barrels COE <sup>3</sup>	Billion Barrels	Billion Barrels COE <sup>3</sup>	Billion Barrels COE <sup>3</sup>
<b>American Petroleum Institute and American Gas Association Data</b>						
1949	24.6	179.4	32.0	3.7	3.1	59.7
1950	25.3	184.6	32.9	4.3	3.5	61.7
1955	30.0	222.5	39.7	5.4	4.4	74.1
1960	31.6	262.3	46.8	6.8	5.4	83.8
1965	31.4	286.5	51.0	8.0	6.3	88.6
1970	39.0	290.7	51.7	7.7	5.9	96.6
1971	38.1	278.8	49.6	7.3	5.5	93.2
1972	36.3	266.1	47.1	6.8	5.1	88.5
1973	35.3	250.0	44.0	6.5	4.8	84.1
1974	34.2	237.1	41.9	6.4	4.7	80.8
1975	32.7	228.2	40.2	6.3	4.6	77.5
1976	30.9	216.0	38.0	6.4	4.7	73.6
1977	29.5	208.9	36.8	6.0	4.4	70.6
1978	27.8	200.3	35.2	5.9	4.3	67.3
1979	27.1	194.9	34.3	5.7	4.1	65.5
<b>Energy Information Administration Data</b>						
1977	31.8	207.4	36.5	NA	NA	NA
1978	31.4	208.0	36.5	6.8	5.0	73.0
1979	29.8	201.0	35.4	6.6	4.9	70.1
1980	29.8	199.0	35.2	6.7	5.0	70.0
1981	29.4	201.7	35.7	7.1	5.2	70.4
1982	27.9	201.5	35.7	7.2	5.3	68.8
1983	27.7	200.2	35.6	7.9	5.7	69.0
1984	28.4	197.5	35.1	7.6	5.5	69.0
1985	28.4	193.4	34.4	7.9	5.6	68.5
1986	26.9	191.6	34.0	8.2	5.8	66.7
1987	27.3	187.2	33.3	8.1	5.8	66.3
1988	26.8	168.0	29.8	8.2	5.8	62.4
1989	26.5	167.1	29.7	7.8	5.5	61.7
1990	26.3	169.3	30.0	7.6	5.4	61.7
1991	24.7	167.1	29.7	7.5	5.3	59.6
1992	23.7	165.0	29.3	7.5	5.2	58.3
1993	23.0	162.4	28.8	7.2	5.1	56.8
1994	22.5	163.8	29.0	7.2	5.0	56.5
1995	22.4	165.1	29.2	7.4	5.2	56.8
1996	22.0	166.5	29.4	7.8	5.5	56.9
1997	22.5	167.2	29.6	8.0	5.6	57.7
1998	21.0	164.0	29.2	7.5	5.3	55.5
1999	21.8	167.4	29.6	7.9	5.5	56.9
2000	22.0	177.4	31.4	8.3	5.8	59.2
2001	22.4	183.5	R32.5	8.0	5.6	R60.5
2002	22.7	186.9	33.1	8.0	5.6	61.3
2003	21.9	189.0	33.6	7.5	5.2	60.7
2004	21.4	192.5	34.1	7.9	5.5	60.9
2005	21.8	204.4	36.3	8.2	5.6	63.6

<sup>1</sup> To the extent that lease condensate is measured or estimated it is included in "Natural Gas Liquids"; otherwise, lease condensate is included in "Crude Oil."

<sup>2</sup> The American Gas Association estimates of natural gas proved reserves include volumes of natural gas held in underground storage. In 1979, this volume amounted to 4.9 trillion cubic feet. Energy Information Administration (EIA) data do not include natural gas in underground storage.

<sup>3</sup> Natural gas is converted to crude oil equivalent (COE) by multiplying by the natural gas dry production approximate heat content (see Table A4) and then dividing by the crude oil production approximate heat content (see Table A2). The lease condensate portion of natural gas liquids is converted to COE by multiplying by the lease condensate production approximate heat content (5.5 million Btu per barrel) and then dividing by the crude oil production approximate heat content. Other natural gas liquids are converted to COE by multiplying by the natural gas plant liquids production approximate heat content (see Table A2) and then dividing by the crude oil production approximate heat content.

R=Revised. NA=Not available.

Notes: • Data are at end of year. • See "Proved Reserves, Crude Oil," "Proved Reserves, Natural Gas," and "Proved Reserves, Natural Gas Liquids" in Glossary.

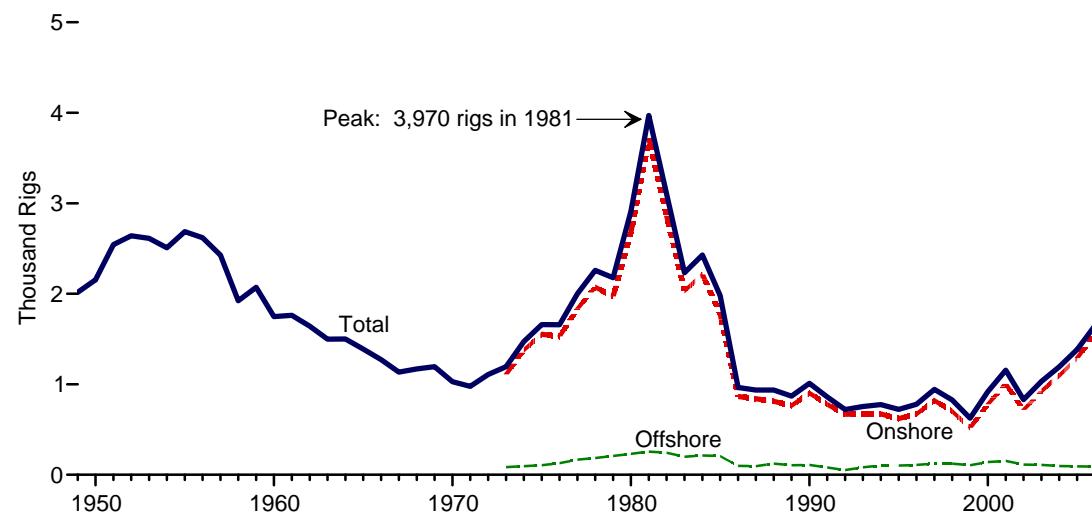
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)

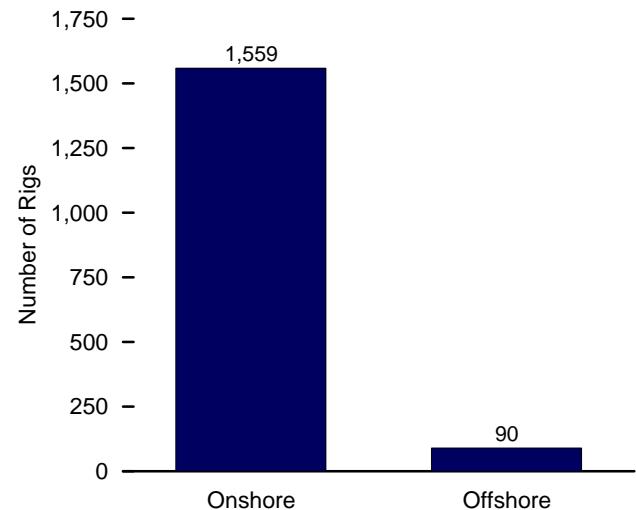
Sources: **American Petroleum Institute and American Gas Association Data:** American Petroleum Institute, American Gas Association, and Canadian Petroleum Association (published jointly), *Reserves of Crude Oil, Natural Gas Liquids and Natural Gas in the United States and Canada as of December 31, 1979*, Volume 34 (June 1980). **Energy Information Administration Data:** • 1977-1994—EIA, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, annual reports. • 1995 forward—EIA, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2005 Annual Report (December 2006), Table 1.

**Figure 4.4 Crude Oil and Natural Gas Rotary Rigs in Operation**

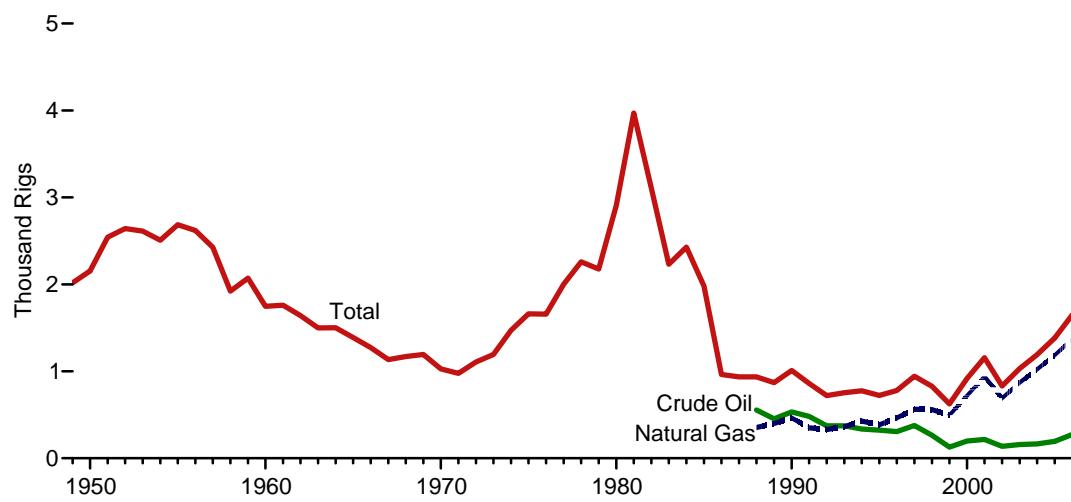
**By Site, 1949-2006**



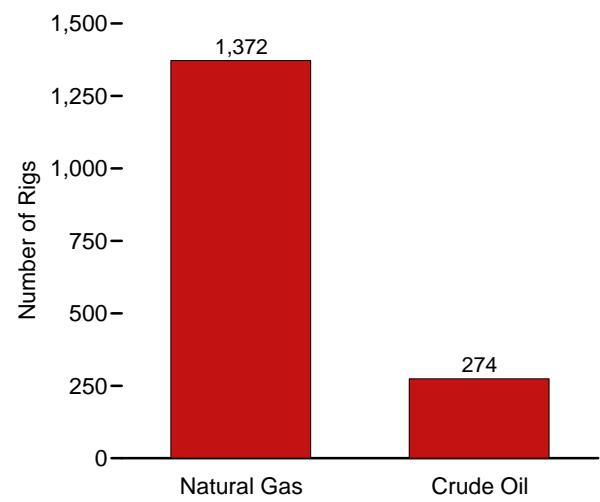
**By Site, 2006**



**By Type, 1949-2006**



**By Type, 2006**



Source: Table 4.4.

**Table 4.4 Crude Oil and Natural Gas Rotary Rigs in Operation, Selected Years, 1949-2006**  
 (Number of Rigs)

Year	By Site		By Type		Total <sup>1</sup>
	Onshore	Offshore	Crude Oil	Natural Gas	
1949	NA	NA	NA	NA	2,017
1950	NA	NA	NA	NA	2,154
1955	NA	NA	NA	NA	2,686
1960	NA	NA	NA	NA	1,748
1965	NA	NA	NA	NA	1,388
1970	NA	NA	NA	NA	1,028
1971	NA	NA	NA	NA	976
1972	NA	NA	NA	NA	1,107
1973	1,110	84	NA	NA	1,194
1974	1,378	94	NA	NA	1,472
1975	1,554	106	NA	NA	1,660
1976	1,529	129	NA	NA	1,658
1977	1,834	167	NA	NA	2,001
1978	2,074	185	NA	NA	2,259
1979	1,970	207	NA	NA	2,177
1980	2,678	231	NA	NA	2,909
1981	3,714	256	NA	NA	3,970
1982	2,862	243	NA	NA	3,105
1983	2,033	199	NA	NA	2,232
1984	2,215	213	NA	NA	2,428
1985	1,774	206	NA	NA	1,980
1986	865	99	NA	NA	964
1987	841	95	NA	NA	936
1988	813	123	554	354	936
1989	764	105	453	401	869
1990	902	108	532	464	1,010
1991	779	81	482	351	860
1992	669	52	373	331	721
1993	672	82	373	364	754
1994	673	102	335	427	775
1995	622	101	323	385	723
1996	671	108	306	464	779
1997	821	122	376	564	943
1998	703	123	264	560	827
1999	519	106	128	496	625
2000	778	140	197	720	918
2001	1,003	153	217	939	1,156
2002	717	113	137	691	830
2003	924	108	157	872	1,032
2004	1,095	97	165	1,025	1,192
2005	1,290	93	194	1,186	1,383
2006	1,559	90	274	1,372	1,649

<sup>1</sup> Sum of rigs drilling for crude oil, rigs drilling for natural gas, and other rigs (not shown) drilling for miscellaneous purposes, such as service wells, injection wells, and stratigraphic tests.

NA=Not available.

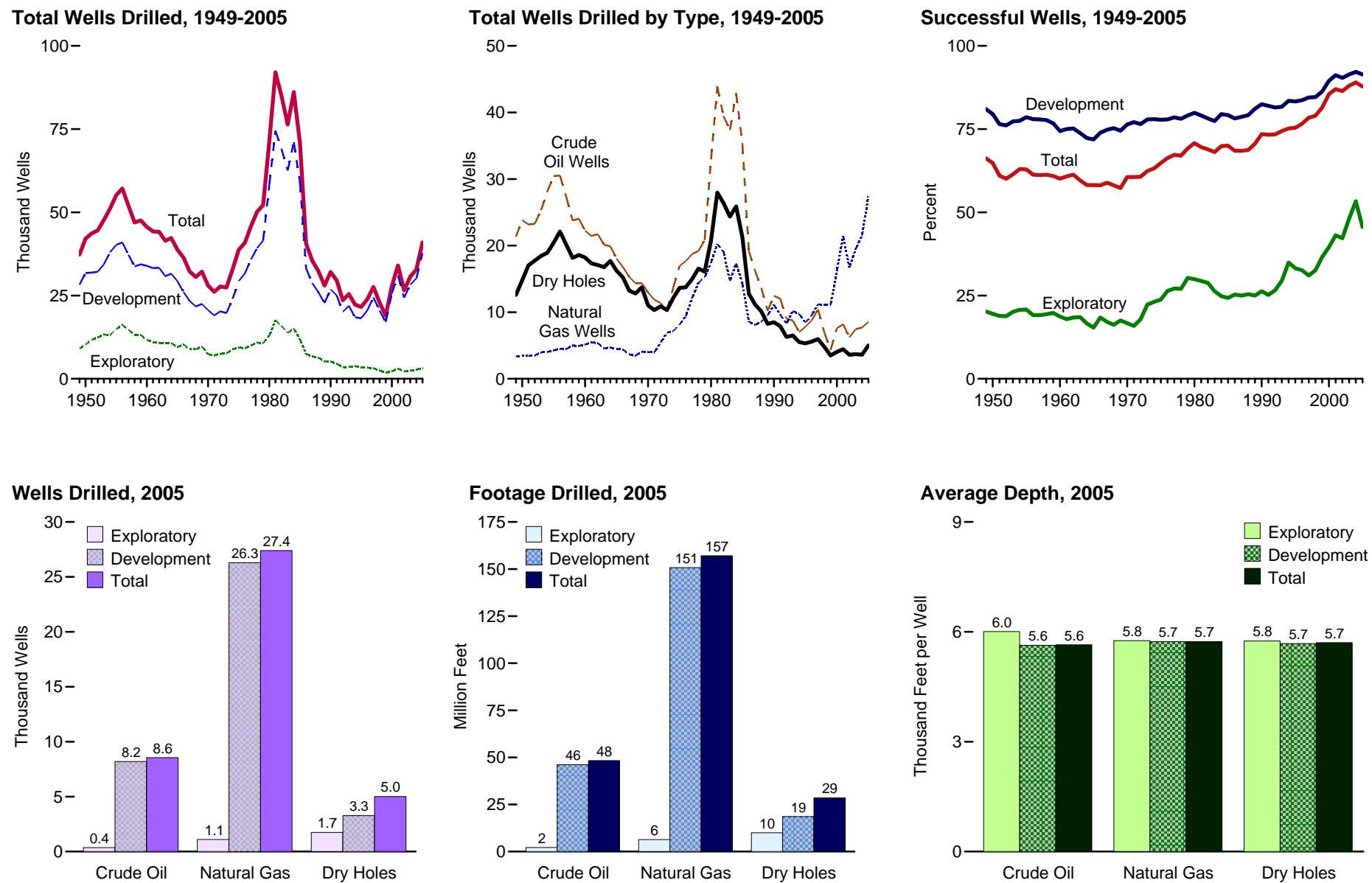
Notes: • Data are not for the exact calendar year but are an average for the 52 or 53 consecutive whole

weeks that most nearly coincide with the calendar year. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Web Page: For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

Source: Baker Hughes, Inc., Houston, Texas, *Rotary Rigs Running—By State*.

**Figure 4.5 Crude Oil and Natural Gas Exploratory and Development Wells**



Sources: Tables 4.5-4.7.

**Table 4.5 Crude Oil and Natural Gas Exploratory and Development Wells, Selected Years, 1949-2005**

	Wells Drilled				Successful Wells	Footage Drilled <sup>1</sup>				Average Depth			
	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total		Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total
Year	Number				Percent	Thousand Feet				Feet per Well			
1949	21,352	3,363	12,597	37,312	66.2	79,428	12,437	43,754	135,619	3,720	3,698	3,473	3,635
1950	23,812	3,439	14,799	42,050	64.8	92,695	13,685	50,977	157,358	3,893	3,979	3,445	3,742
1955	30,432	4,266	20,452	55,150	62.9	121,148	19,930	85,103	226,182	3,981	4,672	4,161	4,101
1960	22,258	5,149	18,212	45,619	60.1	86,568	28,246	77,361	192,176	3,889	5,486	4,248	4,213
1965	18,065	4,482	16,226	38,773	58.2	73,322	24,931	76,629	174,882	4,059	5,562	4,723	4,510
1970	12,968	4,011	11,031	28,010	60.6	56,859	23,623	58,074	138,556	4,385	5,860	5,265	4,943
1971	11,853	3,971	10,309	26,133	60.6	49,109	23,460	54,685	127,253	4,126	5,890	5,305	4,858
1972	11,378	5,440	10,891	27,709	60.7	49,269	30,006	58,556	137,831	4,330	5,516	5,377	4,974
1973	10,167	6,933	10,320	27,420	62.4	44,416	38,045	55,761	138,223	4,369	5,488	5,403	5,041
1974	13,647	7,138	12,116	32,901	63.2	52,025	38,449	62,899	153,374	3,812	5,387	5,191	4,662
1975	16,948	8,127	13,646	38,721	64.8	66,819	44,454	69,220	180,494	3,943	5,470	5,073	4,661
1976	17,688	9,409	13,758	40,855	66.3	68,892	49,113	68,977	186,982	3,895	5,220	5,014	4,577
1977	18,745	12,122	14,985	45,852	67.3	75,451	63,686	76,728	215,866	4,025	5,254	5,120	4,708
1978	19,181	14,413	16,551	50,145	67.0	77,041	75,841	85,788	238,669	4,017	5,262	5,183	4,760
1979	20,851	15,254	16,099	52,204	69.2	82,688	80,468	81,642	244,798	3,966	5,275	5,071	4,689
1980	32,959	17,461	20,785	71,205	70.8	125,262	92,106	99,575	316,943	3,801	5,275	4,791	4,451
1981	43,887	20,250	27,953	92,090	69.6	172,167	108,353	134,934	415,454	3,923	5,351	4,827	4,511
1982	39,459	19,076	26,379	84,914	68.9	149,674	107,149	123,746	380,569	3,793	5,617	4,691	4,482
1983	37,366	14,684	24,355	76,405	68.1	136,849	78,108	105,222	320,179	3,662	5,319	4,320	4,191
1984	42,906	17,338	25,884	86,128	69.9	162,653	91,480	119,860	373,993	3,791	5,276	4,631	4,342
1985	35,261	14,324	21,211	70,796	70.0	137,728	76,293	100,388	314,409	3,906	5,326	4,733	4,441
1986	19,213	8,599	12,799	40,611	68.5	76,825	45,039	60,961	182,825	3,999	5,238	4,763	4,502
1987	16,210	8,096	11,167	35,473	68.5	66,358	42,584	53,588	162,530	4,094	5,260	4,799	4,582
1988	13,646	8,578	10,119	32,343	68.7	58,639	45,363	52,517	156,519	4,297	5,288	5,190	4,839
1989	10,230	9,522	8,236	27,988	70.6	43,266	49,081	42,099	134,446	4,229	5,154	5,112	4,804
1990	12,445	11,126	8,496	32,067	73.5	55,269	56,775	44,160	156,204	4,441	5,103	5,198	4,871
1991	12,035	9,611	7,882	29,528	73.3	55,268	50,757	40,307	146,332	4,592	5,281	5,114	4,956
1992	9,019	8,305	6,284	23,608	73.4	44,851	46,615	31,814	123,280	4,973	5,613	5,063	5,222
1993	8,764	10,174	6,513	25,451	74.4	43,922	61,186	33,323	138,431	5,012	6,014	5,116	5,439
1994	7,001	9,739	5,515	22,255	75.2	37,270	61,576	30,293	129,139	5,324	6,323	5,493	5,803
1995	7,827	8,454	5,319	21,600	75.4	39,125	52,872	29,312	121,309	4,999	6,254	5,511	5,616
1996	8,760	9,539	5,587	23,886	76.6	42,196	59,800	31,366	133,362	4,817	6,269	5,614	5,583
1997	10,445	11,186	5,955	27,586	78.4	51,466	69,593	34,233	155,292	4,927	6,221	5,749	5,629
1998	6,979	11,127	4,805	22,911	79.0	34,340	67,789	29,008	131,137	4,920	6,092	6,037	5,724
1999	4,314	11,121	3,504	18,939	81.5	18,860	55,331	20,404	94,595	4,372	4,975	5,823	4,995
2000	7,585	16,242	4,046	27,873	85.5	33,777	79,605	23,193	136,575	4,453	4,901	5,732	4,900
2001	8,186	21,403	4,432	34,021	87.0	38,716	108,482	25,047	172,245	4,730	5,069	5,651	5,063
2002	6,226	16,728	3,610	26,564	86.4	27,869	91,788	20,316	139,973	4,476	5,487	5,628	5,269
2003 <sup>E</sup>	7,465	19,522	3,688	30,675	88.0	35,220	112,990	20,968	169,178	4,718	5,788	5,685	5,515
2004 <sup>E</sup>	7,703	21,529	3,624	32,856	89.0	37,477	132,660	21,666	191,803	4,865	6,162	5,978	5,838
2005 <sup>E</sup>	8,551	27,397	5,005	40,953	87.8	48,274	157,080	28,549	233,903	5,645	5,733	5,704	5,711

<sup>1</sup> See "Footage Drilled" in Glossary.

<sup>2</sup> See "Crude Oil Well" in Glossary.

<sup>3</sup> See "Natural Gas Well" in Glossary.

<sup>4</sup> See "Dry Hole" in Glossary.

E=Estimate.

Notes: • Data in this table do not include recent updates (see the Energy Information Administration's *Monthly Energy Review*, Table 5.2). • Data are for exploratory and development wells combined; see Table 4.6 for exploratory wells only, and Table 4.7 for development wells only. • Service wells, stratigraphic tests, and core tests are excluded. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year. The as-received well completion data for recent years are incomplete due to delays in the reporting of wells

drilled. The Energy Information Administration (EIA) therefore statistically imputes the missing data to provide estimates of total well completions and footage where necessary. See "Completion (Crude Oil/Natural Gas Production)" in Glossary. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

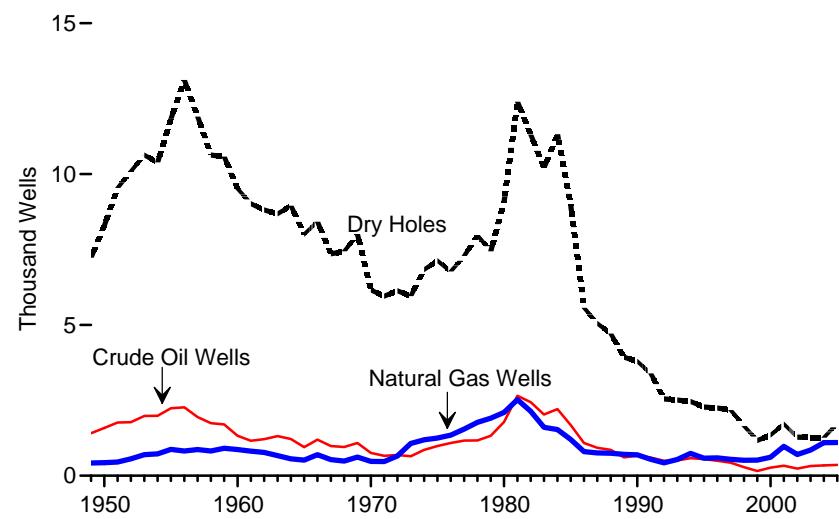
• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

Sources: • 1949-1965—Gulf Publishing Company, *World Oil*, "Forecast-Review" issue.

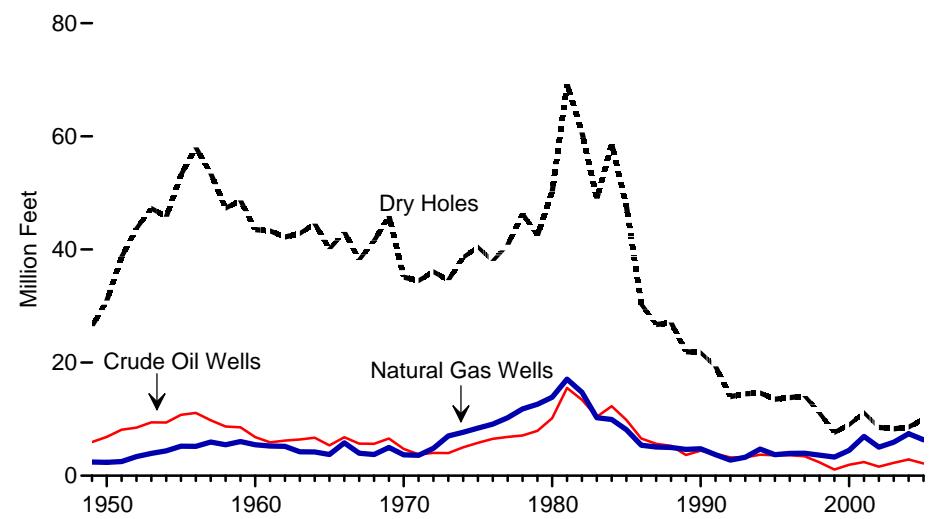
• 1966-1969—American Petroleum Institute (API), *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • 1970-1994—EIA computations based on well reports submitted to the API. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA, *Monthly Energy Review*, Table 5.2.

**Figure 4.6 Crude Oil and Natural Gas Exploratory Wells, 1949-2005**

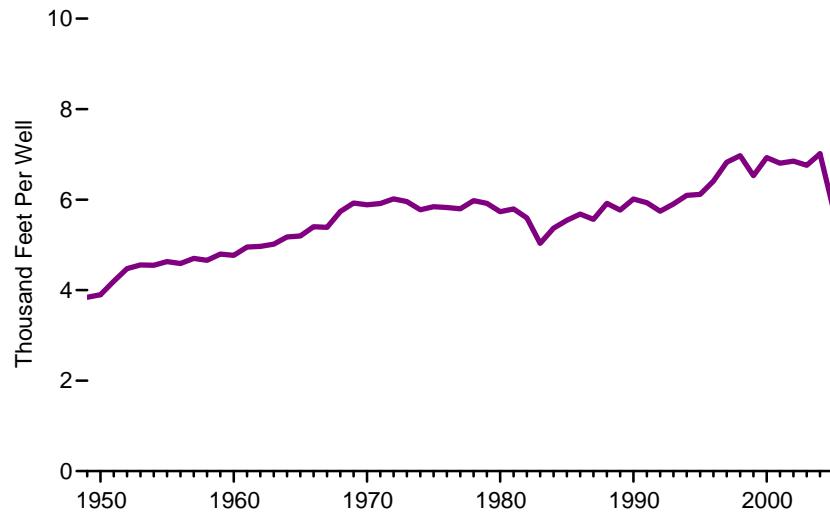
**Exploratory Wells Drilled by Well Type**



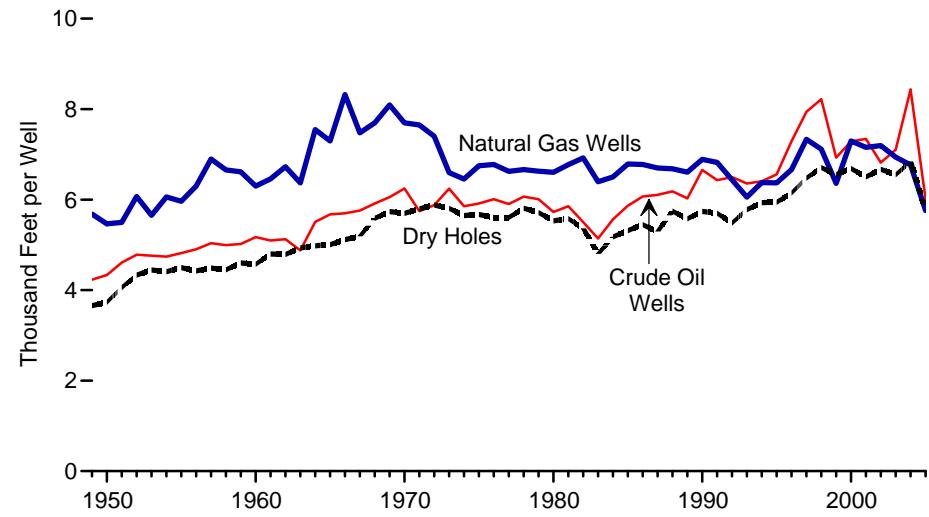
**Exploratory Footage Drilled by Well Type**



**Exploratory Wells Average Depth, All Wells**



**Exploratory Wells Average Depth by Well Type**



Note: These graphs depict exploratory wells only; see Figure 4.5 for all wells and Figure 4.7 for development wells only.

Source: Table 4.6.

**Table 4.6 Crude Oil and Natural Gas Exploratory Wells, Selected Years, 1949-2005**

	Wells Drilled				Successful Wells	Footage Drilled <sup>1</sup>				Average Depth			
	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total		Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total
Year	Number				Percent	Thousand Feet				Feet per Well			
1949	1,406	424	7,228	9,058	20.2	5,950	2,409	26,439	34,798	4,232	5,682	3,658	3,842
1950	1,583	431	8,292	10,306	19.5	6,862	2,356	30,957	40,175	4,335	5,466	3,733	3,898
1955	2,236	874	11,832	14,942	20.8	10,774	5,212	53,220	69,206	4,819	5,964	4,498	4,632
1960	1,321	868	9,515	11,704	18.7	6,829	5,466	43,535	55,831	5,170	6,298	4,575	4,770
1965	946	515	8,005	9,466	15.4	5,366	3,757	40,081	49,204	5,672	7,295	5,007	5,198
1970	757	477	6,162	7,396	16.7	4,729	3,678	35,123	43,530	6,247	7,695	5,700	5,885
1971	659	470	5,952	7,081	15.9	3,786	3,610	34,499	41,895	5,745	7,649	5,796	5,915
1972	685	656	6,134	7,475	17.9	4,028	4,847	36,081	44,956	5,880	7,400	5,882	6,015
1973	642	1,067	5,952	7,661	22.3	4,008	7,038	34,571	45,618	6,243	6,596	5,808	5,955
1974	859	1,190	6,833	8,882	23.1	5,029	7,683	38,603	51,315	5,855	6,456	5,649	5,777
1975	982	1,248	7,129	9,359	23.8	5,806	8,422	40,448	54,677	5,913	6,748	5,674	5,842
1976	1,086	1,346	6,772	9,204	26.4	6,527	9,121	37,969	53,617	6,010	6,777	5,607	5,825
1977	1,164	1,548	7,283	9,995	27.1	6,870	10,255	40,823	57,949	5,902	6,625	5,605	5,798
1978	1,171	1,771	7,965	10,907	27.0	7,105	11,798	46,295	65,197	6,067	6,662	5,812	5,978
1979	1,321	1,907	7,437	10,665	30.3	7,941	12,643	42,512	63,096	6,011	6,630	5,716	5,916
1980	1,777	2,099	9,081	12,957	29.9	10,177	13,862	50,249	74,288	5,727	6,604	5,533	5,733
1981	2,651	2,522	12,400	17,573	29.4	15,515	17,079	69,214	101,808	5,853	6,772	5,582	5,793
1982	2,437	2,133	11,307	15,877	28.8	13,413	14,763	60,680	88,856	5,504	6,921	5,367	5,597
1983	2,030	1,605	10,206	13,841	26.3	10,437	10,264	48,989	69,690	5,141	6,395	4,800	5,035
1984	2,209	1,528	11,321	15,058	24.8	12,294	9,935	58,624	80,853	5,565	6,502	5,178	5,369
1985	1,680	1,200	8,954	11,834	24.3	9,854	8,144	47,604	65,602	5,865	6,787	5,317	5,544
1986	1,084	797	5,567	7,448	25.3	6,579	5,401	30,325	42,305	6,069	6,777	5,447	5,680
1987	926	756	5,052	6,734	25.0	5,652	5,064	26,746	37,462	6,104	6,698	5,294	5,563
1988	855	747	4,711	6,313	25.4	5,286	4,992	27,079	37,357	6,182	6,683	5,748	5,917
1989	607	706	3,934	5,247	25.0	3,659	4,664	21,947	30,270	6,028	6,606	5,579	5,769
1990	664	693	3,793	5,150	26.3	4,420	4,774	21,777	30,971	6,657	6,889	5,741	6,014
1991	601	544	3,390	4,535	25.2	3,865	3,712	19,330	26,907	6,431	6,824	5,702	5,933
1992	498	427	2,550	3,475	26.6	3,236	2,749	13,983	19,968	6,498	6,438	5,484	5,746
1993	509	541	2,509	3,559	29.5	3,235	3,277	14,504	21,016	6,356	6,057	5,781	5,905
1994	579	740	2,465	3,784	34.9	3,708	4,720	14,632	23,060	6,404	6,378	5,936	6,094
1995	549	583	2,279	3,411	33.2	3,601	3,713	13,545	20,859	6,559	6,369	5,943	6,115
1996	496	591	2,246	3,333	32.6	3,615	3,938	13,805	21,358	7,288	6,663	6,146	6,408
1997	434	543	2,178	3,155	31.0	3,446	3,981	14,105	21,532	7,940	7,331	6,476	6,825
1998	286	510	1,649	2,445	32.6	2,351	3,629	11,062	17,042	8,220	7,116	6,708	6,970
1999	156	519	1,167	1,842	36.6	1,081	3,300	7,648	12,029	6,929	6,358	6,554	6,530
2000	267	615	1,349	2,231	39.5	1,945	4,488	9,024	15,457	7,285	7,298	6,689	6,928
2001	330	972	1,716	3,018	43.1	2,423	6,954	11,165	20,542	7,342	7,154	6,506	6,806
2002	236	701	1,283	2,220	42.2	1,609	5,042	8,559	15,210	6,818	7,193	6,671	6,851
2003 <sup>E</sup>	321	853	1,266	2,440	48.1	2,280	5,920	8,291	16,491	7,103	6,940	6,549	6,759
2004 <sup>E</sup>	340	1,097	1,258	2,695	53.3	2,867	7,425	8,608	18,900	8,432	6,768	6,843	7,013
2005 <sup>E</sup>	358	1,102	1,740	3,200	45.6	2,150	6,348	10,005	18,503	6,006	5,760	5,750	5,782

<sup>1</sup> See "Footage Drilled" in Glossary.

<sup>2</sup> See "Crude Oil Well" in Glossary.

<sup>3</sup> See "Natural Gas Well" in Glossary.

<sup>4</sup> See "Dry Hole" in Glossary.

E=Estimate.

Notes: • Data in this table do not include recent updates (see the Energy Information Administration's *Monthly Energy Review*, Table 5.2). • Data are for exploratory wells only; see Table 4.5 for exploratory and development wells combined, and Table 4.7 for development wells only. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute (API) during the reporting year. For 1970 forward, the data represent wells completed in a given year. The as-received well completion data for recent years are incomplete due to delays in the reporting of wells drilled. The Energy Information Administration (EIA) therefore statistically imputes the missing data to provide estimates of total well completions and footage where necessary. See

"Completion (Crude Oil/Natural Gas Production)" in Glossary. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

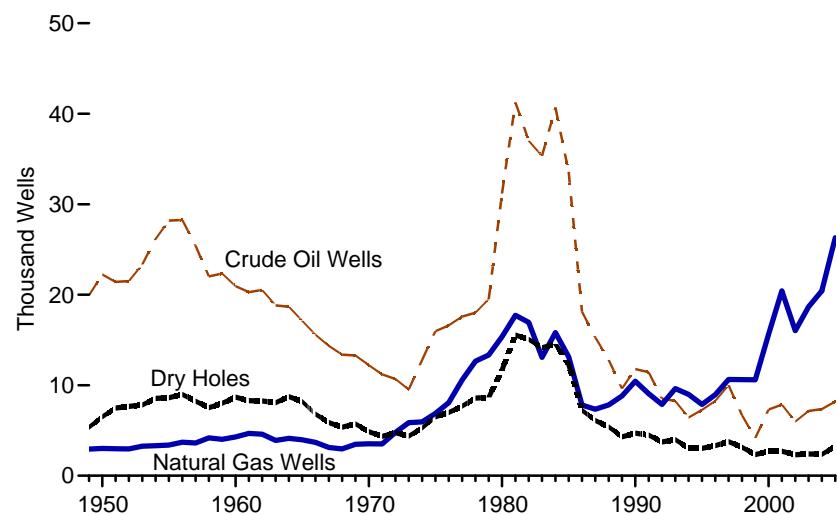
• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

Sources: • 1949-1960—American Association of Petroleum Geologists, *Statistics on Exploratory Drilling in the United States, 1940 through 1960* (1962), pp. 4-19. • 1961-1965—*Bulletin of the American Association of Petroleum Geologists, "North American Developments" issue*. • 1966-1969—API, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports.

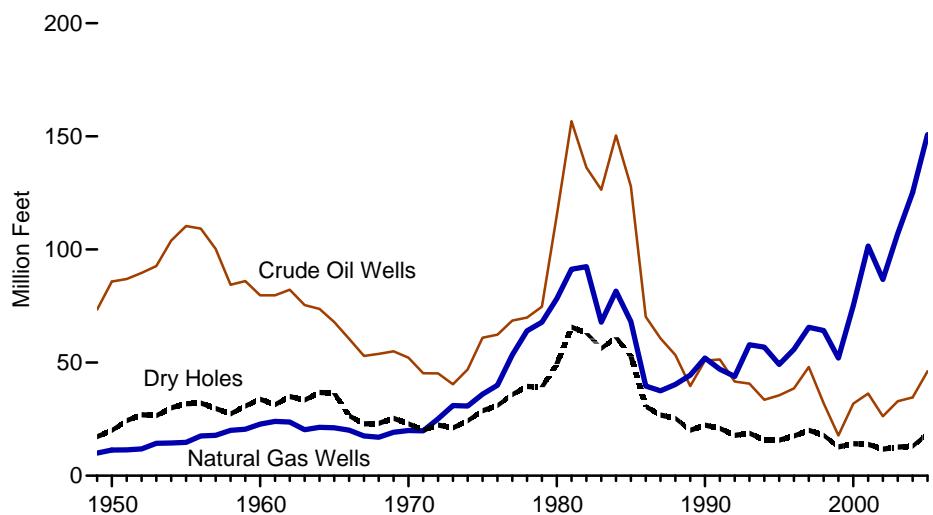
• 1970-1994—EIA computations based on well reports submitted to the API. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA, *Monthly Energy Review*, Table 5.2.

**Figure 4.7 Crude Oil and Natural Gas Development Wells, 1949-2005**

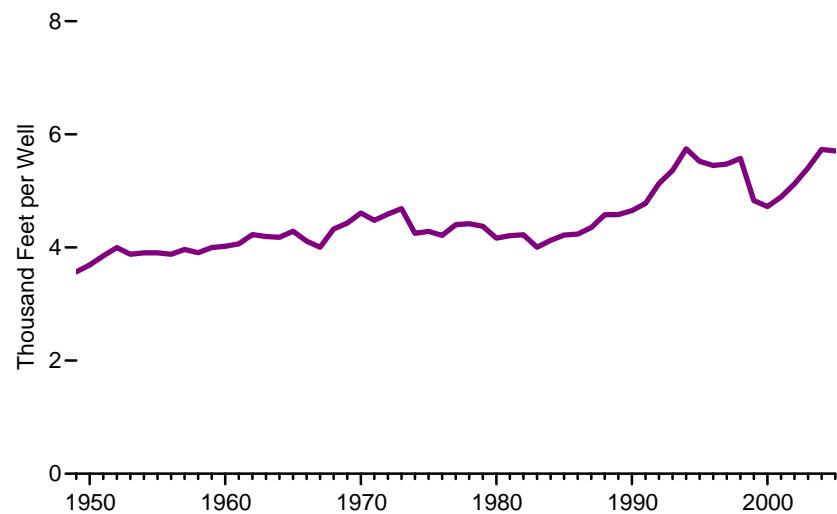
**Development Wells Drilled by Well Type**



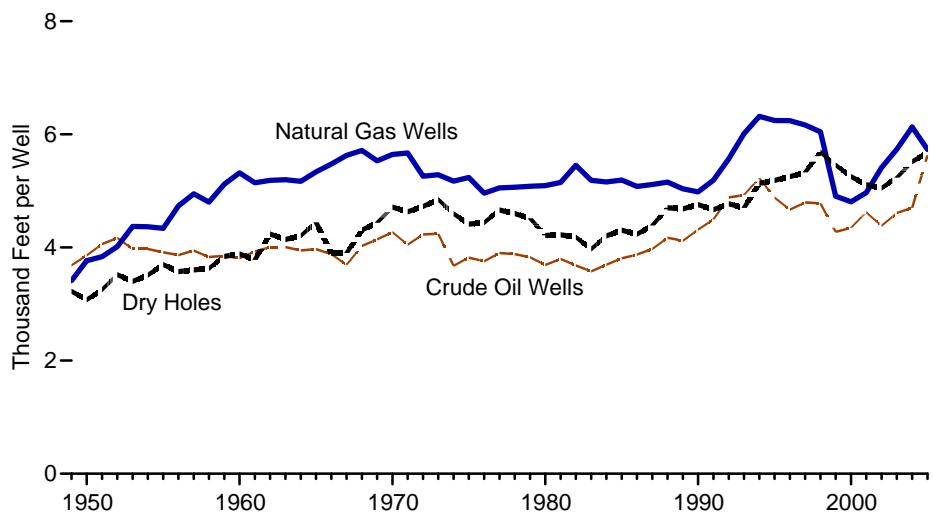
**Development Footage Drilled by Well Type**



**Development Wells Average Depth, All Wells**



**Development Wells Average Depth by Well Type**



Note: These graphs depict development wells only; see Figure 4.5 for all wells and Figure 4.6 for exploratory wells only.

Source: Table 4.7.

**Table 4.7 Crude Oil and Natural Gas Development Wells, Selected Years, 1949-2005**

	Wells Drilled				Successful Wells	Footage Drilled <sup>1</sup>				Average Depth			
	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total		Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total	Crude Oil <sup>2</sup>	Natural Gas <sup>3</sup>	Dry Holes <sup>4</sup>	Total
Year	Number				Percent	Thousand Feet				Feet per Well			
1949	19,946	2,939	5,369	28,254	81.0	73,478	10,028	17,315	100,821	3,684	3,412	3,225	3,568
1950	22,229	3,008	6,507	31,744	79.5	85,833	11,329	20,020	117,183	3,861	3,766	3,077	3,691
1955	28,196	3,392	8,620	40,208	78.6	110,374	14,718	31,883	156,976	3,915	4,339	3,699	3,904
1960	20,937	4,281	8,697	33,915	74.4	79,739	22,780	33,826	136,345	3,809	5,321	3,889	4,020
1965	17,119	3,967	8,221	29,307	71.9	67,956	21,174	36,548	125,678	3,970	5,337	4,446	4,288
1970	12,211	3,534	4,869	20,614	76.4	52,130	19,945	22,951	95,026	4,269	5,644	4,714	4,610
1971	11,194	3,501	4,357	19,052	77.1	45,323	19,850	20,186	85,358	4,049	5,670	4,633	4,480
1972	10,693	4,784	4,757	20,234	76.5	45,241	25,159	22,475	92,875	4,231	5,259	4,725	4,590
1973	9,525	5,866	4,368	19,759	77.9	40,408	31,007	21,190	92,605	4,242	5,286	4,851	4,687
1974	12,788	5,948	5,283	24,019	78.0	46,996	30,766	24,296	102,059	3,675	5,173	4,599	4,249
1975	15,966	6,879	6,517	29,362	77.8	61,013	36,032	28,772	125,817	3,821	5,238	4,415	4,285
1976	16,602	8,063	6,986	31,651	77.9	62,365	39,992	31,008	133,365	3,756	4,960	4,439	4,214
1977	17,581	10,574	7,702	35,857	78.5	68,581	53,431	35,905	157,917	3,901	5,053	4,662	4,404
1978	18,010	12,642	8,586	39,238	78.1	69,936	64,043	39,493	173,472	3,883	5,066	4,600	4,421
1979	19,530	13,347	8,662	41,539	79.1	74,747	67,825	39,130	181,702	3,827	5,082	4,517	4,374
1980	31,182	15,362	11,704	58,248	79.9	115,085	78,244	49,326	242,655	3,691	5,093	4,214	4,166
1981	41,236	17,728	15,553	74,517	79.1	156,652	91,274	65,720	313,646	3,799	5,149	4,226	4,209
1982	37,022	16,943	15,072	69,037	78.2	136,261	92,386	63,066	291,713	3,681	5,453	4,184	4,225
1983	35,336	13,079	14,149	62,564	77.4	126,412	67,844	56,233	250,489	3,577	5,187	3,974	4,004
1984	40,697	15,810	14,563	71,070	79.5	150,359	81,545	61,236	293,140	3,695	5,158	4,205	4,125
1985	33,581	13,124	12,257	58,962	79.2	127,874	68,149	52,784	248,807	3,808	5,193	4,306	4,220
1986	18,129	7,802	7,232	33,163	78.2	70,246	39,638	30,636	140,520	3,875	5,080	4,236	4,237
1987	15,284	7,340	6,115	28,739	78.7	60,706	37,520	26,842	125,068	3,972	5,112	4,390	4,352
1988	12,791	7,831	5,408	26,030	79.2	53,353	40,371	25,438	119,162	4,171	5,155	4,704	4,578
1989	9,623	8,816	4,302	22,741	81.1	39,607	44,417	20,152	104,176	4,116	5,038	4,684	4,581
1990	11,781	10,433	4,703	26,917	82.5	50,849	52,001	22,383	125,233	4,316	4,984	4,759	4,653
1991	11,434	9,067	4,492	24,993	82.0	51,403	47,045	20,977	119,425	4,496	5,189	4,670	4,778
1992	8,521	7,878	3,734	20,133	81.5	41,615	43,866	17,831	103,312	4,884	5,568	4,775	5,131
1993	8,255	9,633	4,004	21,892	81.7	40,687	57,909	18,819	117,415	4,929	6,012	4,700	5,363
1994	6,422	8,999	3,050	18,471	83.5	33,562	56,856	15,661	106,079	5,226	6,318	5,135	5,743
1995	7,278	7,871	3,040	18,189	83.3	35,524	49,159	15,767	100,450	4,881	6,246	5,187	5,523
1996	8,264	8,948	3,341	20,553	83.7	38,581	55,862	17,561	112,004	4,669	6,243	5,256	5,450
1997	10,011	10,643	3,777	24,431	84.5	48,020	65,612	20,128	133,760	4,797	6,165	5,329	5,475
1998	6,693	10,617	3,156	20,466	84.6	31,989	64,160	17,946	114,095	4,779	6,043	5,686	5,575
1999	4,158	10,602	2,337	17,097	86.3	17,779	52,031	12,756	82,566	4,276	4,908	5,458	4,829
2000	7,318	15,627	2,697	25,642	89.5	31,832	75,117	14,169	121,118	4,350	4,807	5,254	4,723
2001	7,856	20,431	2,716	31,003	91.2	36,293	101,528	13,882	151,703	4,620	4,969	5,111	4,893
2002	5,990	16,027	2,327	24,344	90.4	26,260	86,746	11,757	124,763	4,384	5,412	5,052	5,125
2003 <sup>E</sup>	7,144	18,669	2,422	28,235	91.4	32,940	107,070	12,677	152,687	4,611	5,735	5,234	5,408
2004 <sup>E</sup>	7,363	20,432	2,366	30,161	92.2	34,610	125,235	13,058	172,903	4,701	6,129	5,519	5,733
2005 <sup>E</sup>	8,193	26,295	3,265	37,753	91.4	46,124	150,732	18,544	215,400	5,630	5,732	5,680	5,706

<sup>1</sup> See "Footage Drilled" in Glossary.

<sup>2</sup> See "Crude Oil Well" in Glossary.

<sup>3</sup> See "Natural Gas Well" in Glossary.

<sup>4</sup> See "Dry Hole" in Glossary.

E=Estimate.

Notes: • Data in this table do not include recent updates (see the Energy Information Administration's *Monthly Energy Review*, Table 5.2). • Data are for development wells only; see Table 4.5 for exploratory and development wells combined, and Table 4.6 for exploratory wells only. • Service wells, stratigraphic tests, and core tests are excluded. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year. The as-received well completion data for recent years are incomplete due to delays in the reporting of wells drilled. The Energy

Information Administration (EIA) therefore statistically imputes the missing data to provide estimates of total well completions and footage where necessary. See "Completion (Crude Oil/Natural Gas Production)" in Glossary. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to independent rounding.

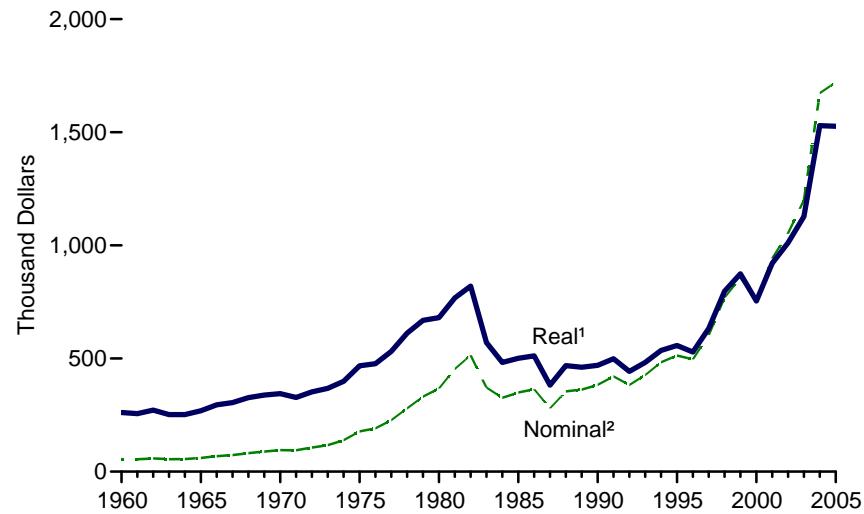
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

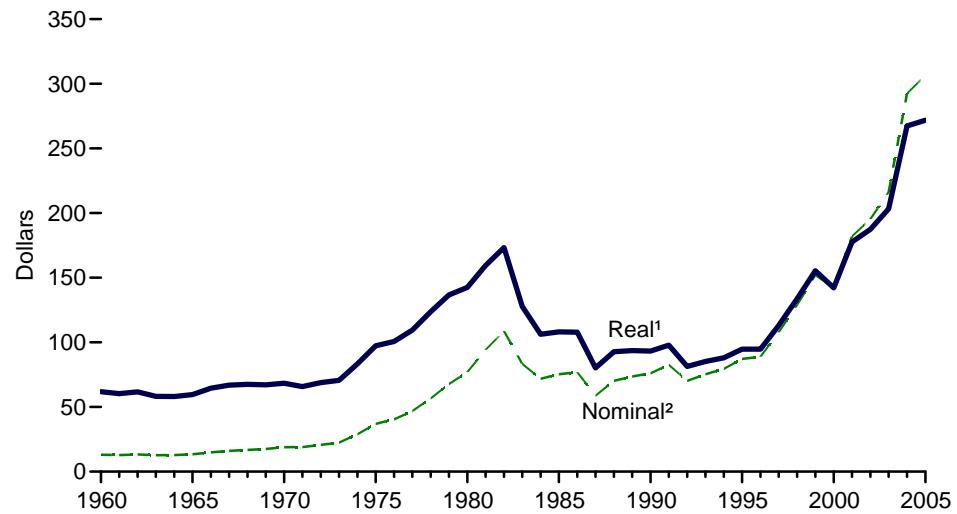
Sources: • 1949-1965—Gulf Publishing Company, *World Oil*, "Forecast-Review" issue. • 1966-1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • 1970-1994—EIA computations based on well reports submitted to the American Petroleum Institute. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA, *Monthly Energy Review*, Table 5.2.

**Figure 4.8 Costs of Crude Oil and Natural Gas Wells Drilled**

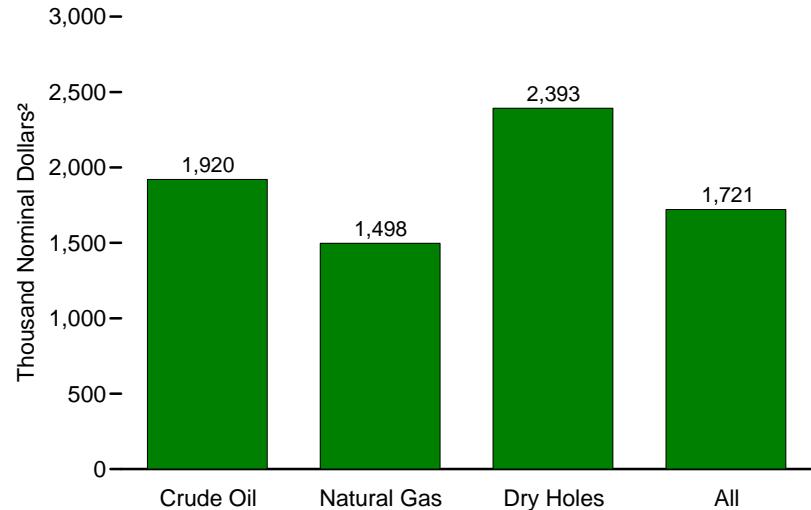
**Costs per Well, All Wells, 1960-2005**



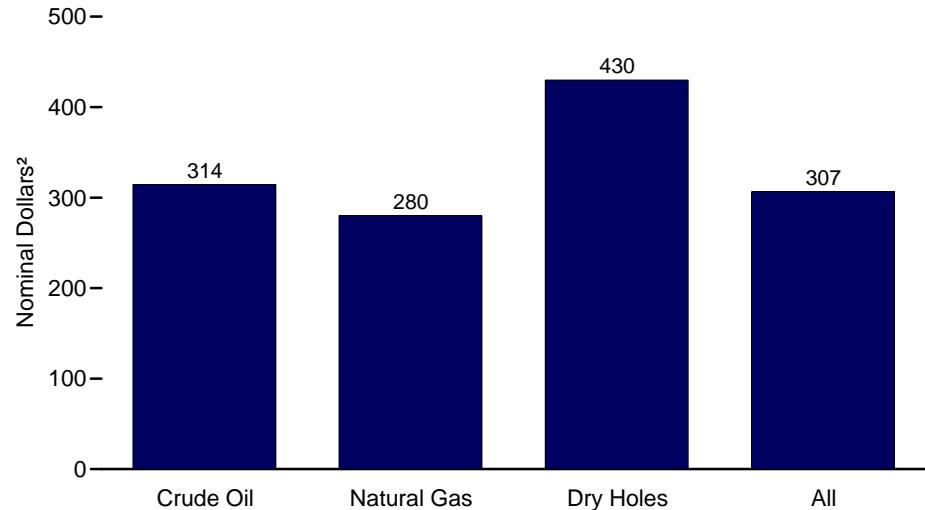
**Costs per Foot, All Wells, 1960-2005**



**Costs per Well by Well Type, 2005**



**Costs per Foot by Well Type, 2005**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

Note: Because vertical scales differ, graphs should not be compared.  
Source: Table 4.8.

**Table 4.8 Costs of Crude Oil and Natural Gas Wells Drilled, 1960-2005**

Year	Thousand Dollars per Well					Dollars per Foot				
	Crude Oil <sup>1</sup>	Natural Gas <sup>2</sup>	Dry Holes <sup>3</sup>	All		Crude Oil <sup>1</sup>	Natural Gas <sup>2</sup>	Dry Holes <sup>3</sup>	All	
	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Real <sup>5</sup>	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Nominal <sup>4</sup>	Real <sup>5</sup>
1960	52.2	102.7	44.0	54.9	261.1	13.22	18.57	10.56	13.01	61.83
1961	51.3	94.7	45.2	54.5	256.2	13.11	17.65	10.56	12.85	60.39
1962	54.2	97.1	50.8	58.6	271.8	13.41	18.10	11.20	13.31	61.71
1963	51.8	92.4	48.2	55.0	252.4	13.20	17.19	10.58	12.69	58.22
1964	50.6	104.8	48.5	55.8	252.2	13.12	18.57	10.64	12.86	58.11
1965	56.6	101.9	53.1	60.6	269.1	13.94	18.35	11.21	13.44	59.64
1966	62.2	133.8	56.9	68.4	295.1	15.04	21.75	12.34	14.95	64.51
1967	66.6	141.0	61.5	72.9	305.1	16.61	23.05	12.87	15.97	66.84
1968	79.1	148.5	66.2	81.5	327.0	18.63	24.05	12.88	16.83	67.56
1969	86.5	154.3	70.2	88.6	338.7	19.28	25.58	13.23	17.56	67.15
1970	86.7	160.7	80.9	94.9	344.6	19.29	26.75	15.21	18.84	68.42
1971	78.4	166.6	86.8	94.7	327.6	18.41	27.70	16.02	19.03	65.82
1972	93.5	157.8	94.9	106.4	352.8	20.77	27.78	17.28	20.76	68.82
1973	103.8	155.3	105.8	117.2	367.8	22.54	27.46	19.22	22.50	70.65
1974	110.2	189.2	141.7	138.7	399.5	27.82	34.11	26.76	28.93	83.31
1975	138.6	262.0	177.2	177.8	467.9	34.17	46.23	33.86	36.99	97.34
1976	151.1	270.4	190.3	191.6	476.7	37.35	49.78	36.94	40.46	100.66
1977	170.0	313.5	230.2	227.2	531.4	41.16	57.57	43.49	46.81	109.49
1978	208.0	374.2	281.7	280.0	611.8	49.72	68.37	52.55	56.63	123.76
1979	243.1	443.1	339.6	331.4	668.8	58.29	80.66	64.60	67.70	136.64
1980	272.1	536.4	376.5	367.7	680.4	66.36	95.16	73.70	77.02	142.52
1981	336.3	698.6	464.0	453.7	767.4	80.40	122.17	90.03	94.30	159.51
1982	347.4	864.3	515.4	514.4	820.0	86.34	146.20	104.09	108.73	173.34
1983	283.8	608.1	366.5	371.7	570.1	72.65	108.37	79.10	83.34	127.81
1984	262.1	489.8	329.2	326.5	482.5	66.32	88.80	67.18	71.90	106.27
1985	270.4	508.7	372.3	349.4	501.2	66.78	93.09	73.69	75.35	108.09
1986	284.9	522.9	389.2	364.6	511.7	68.35	93.02	76.53	76.88	107.90
1987	246.0	380.4	259.1	279.6	382.0	58.35	69.55	51.05	58.71	80.21
1988	279.4	460.3	366.4	354.7	468.6	62.28	84.65	66.96	70.23	92.78
1989	282.3	457.8	355.4	362.2	461.1	64.92	86.86	67.61	73.55	93.63
1990	321.8	471.3	367.5	383.6	470.2	69.17	90.73	67.49	76.07	93.23
1991	346.9	506.6	441.2	421.5	499.1	73.75	93.10	83.05	82.64	97.86
1992	362.3	426.1	357.6	382.6	442.9	69.50	72.83	67.82	70.27	81.35
1993	356.6	521.2	387.7	426.8	482.9	67.52	83.15	72.56	75.30	85.20
1994	409.5	535.1	491.5	483.2	535.4	70.57	81.90	86.60	79.49	88.07
1995	415.8	629.7	481.2	513.4	557.4	78.09	95.97	84.60	87.22	94.70
1996	341.0	616.0	541.0	496.1	528.6	70.60	98.67	95.74	88.92	94.74
1997	445.6	728.6	655.6	603.9	632.9	90.48	117.55	115.09	107.83	113.01
1998	566.0	815.6	973.2	769.1	797.2	108.88	127.94	157.79	128.97	133.69
1999	783.0	798.4	1,115.5	856.1	874.8	156.45	138.42	182.99	152.02	155.33
2000	593.4	756.9	1,075.4	754.6	754.6	125.96	138.39	181.83	142.16	142.16
2001	729.1	896.5	1,620.4	943.2	921.1	153.72	172.05	271.63	181.94	177.68
2002	882.8	991.9	1,673.4	1,054.2	1,011.9	194.55	175.78	284.17	195.31	187.46
2003	1,037.3	1,106.0	2,065.1	1,199.5	R1,127.4	221.13	189.95	345.94	216.27	R203.25
2004	1,441.8	1,716.4	1,977.3	1,673.1	R1,529.0	298.45	284.78	327.91	292.57	R267.37
2005	1,920.4	1,497.6	2,392.9	1,720.7	1,526.3	314.36	280.03	429.92	306.50	271.87

<sup>1</sup> See "Crude Oil Well" in Glossary.

<sup>2</sup> See "Natural Gas Well" in Glossary.

<sup>3</sup> See "Dry Hole" in Glossary.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised.

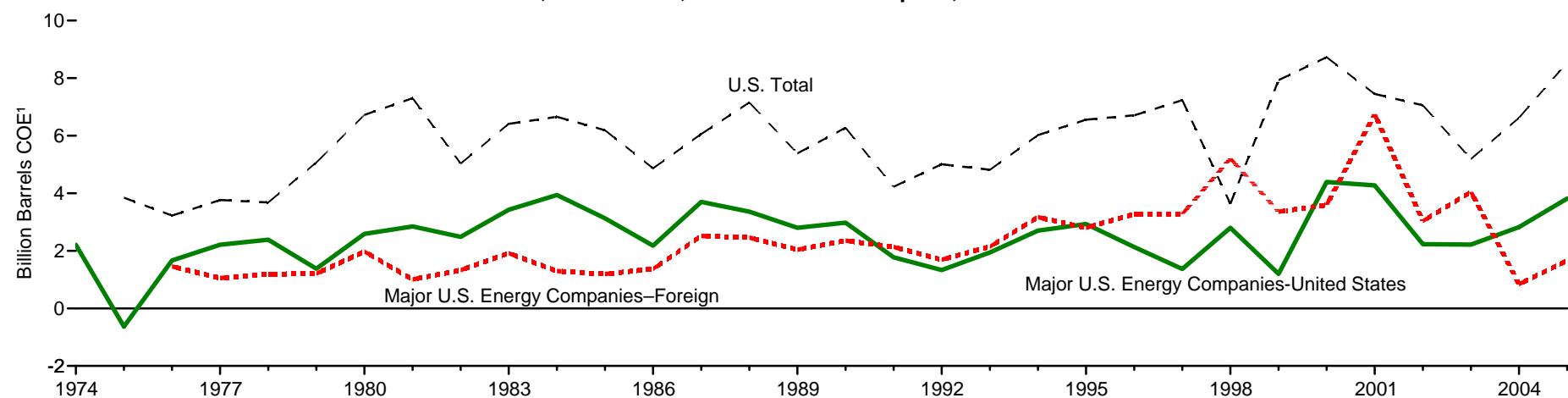
Notes: • The information reported for 1965 and prior years is not strictly comparable to that in more recent surveys. • Average cost is the arithmetic mean and includes all costs for drilling and equipping wells and for surface-producing facilities. Wells drilled include exploratory and development wells; excludes service wells, stratigraphic tests, and core tests. See "Development Well" and "Exploratory Well" in Glossary.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/statistics/energy\\_prices/costs.html](http://www.eia.doe.gov/emeu/statistics/energy_prices/costs.html).

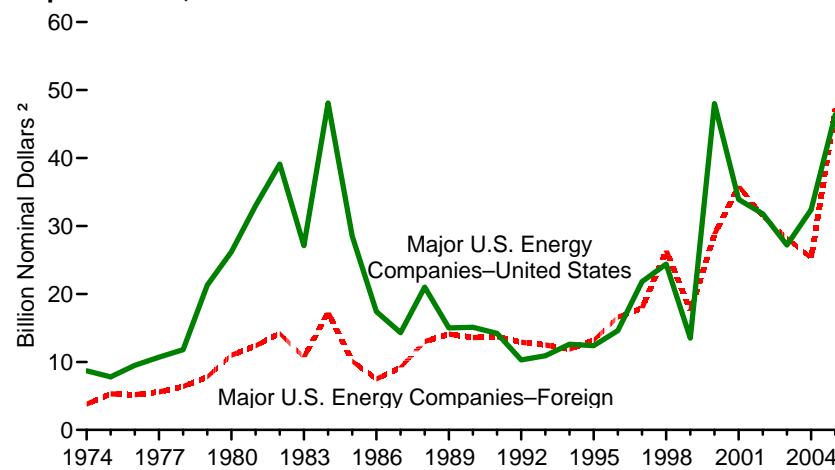
Source: American Petroleum Institute, 2005 Joint Association Survey on Drilling Costs (June 2007).

**Figure 4.9 Crude Oil, Natural Gas, and Natural Gas Liquids Gross Additions to Proved Reserves, and Exploration and Development Expenditures**

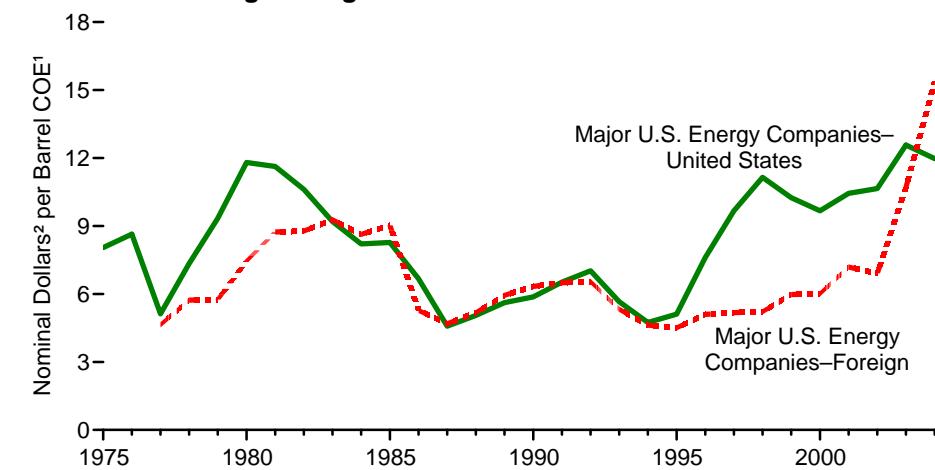
**Gross Additions to Proved Reserves of Crude Oil, Natural Gas, and Natural Gas Liquids, 1974-2005**



**Crude Oil and Natural Gas Exploration and Development Expenditures, 1974-2005**



**Expenditures per Barrel of Reserve Additions, 1975-2004  
Three-Year Moving Average**



<sup>1</sup> Crude oil equivalent.

<sup>2</sup> See "Nominal Price" in Glossary.

Note: "Major U.S. Energy Companies" are the top publicly-owned crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.14.

Source: Table 4.9.

**Table 4.9 Crude Oil, Natural Gas, and Natural Gas Liquids Gross Additions to Proved Reserves, and Exploration and Development Expenditures, 1974-2005**

Year	Gross Additions to Proved Reserves <sup>1</sup> of Crude Oil, Natural Gas, and Natural Gas Liquids			Crude Oil and Natural Gas Exploration and Development Expenditures		Expenditures per Barrel of Reserve Additions, Three-Year Moving Average	
	U.S. Total	Major U.S. Energy Companies <sup>2</sup>		Major U.S. Energy Companies <sup>2</sup>		Major U.S. Energy Companies <sup>2</sup>	
		United States	Foreign	United States	Foreign	United States	Foreign
Year	Million Barrels COE <sup>3</sup>			Billion Nominal Dollars <sup>4</sup>		Nominal Dollars <sup>4</sup> per Barrel COE <sup>3</sup>	
1974	NA	2,205	NA	8.7	3.8	NA	NA
1975	3,846	-634	NA	7.8	5.3	8.05	NA
1976	3,224	1,663	1,459	9.5	5.2	8.64	NA
1977	3,765	2,210	1,055	10.7	5.6	5.12	4.64
1978	3,679	2,383	1,191	11.8	6.4	7.34	5.73
1979	5,071	1,378	<sup>5</sup> 1,208	21.3	7.8	9.34	<sup>5</sup> 5.75
1980	6,723	2,590	1,977	26.2	11.0	11.80	7.45
1981	7,304	2,848	1,006	33.0	12.4	11.63	8.74
1982	5,030	2,482	1,332	39.1	14.2	<sup>6</sup> 10.62	<sup>6</sup> 8.78
1983	6,412	3,427	1,918	27.1	10.7	9.20	9.28
1984	6,653	3,941	1,298	48.1	17.3	<sup>6</sup> 8.21	<sup>6</sup> 8.63
1985	6,190	<sup>7</sup> 3,129	1,192	28.5	10.1	78.27	9.03
1986	4,866	2,178	<sup>5</sup> 1,375	17.4	7.5	6.67	<sup>5</sup> 5.28
1987	6,059	<sup>7</sup> 3,698	2,516	14.3	9.2	74.58	4.69
1988	7,156	3,359	2,460	21.0	13.0	5.05	5.18
1989	5,385	2,798	2,043	15.0	14.1	5.62	5.94
1990	6,275	2,979	2,355	15.1	13.6	5.87	6.34
1991	4,227	1,772	2,135	14.2	13.7	6.52	6.50
1992	5,006	1,332	1,694	10.3	12.9	7.02	6.55
1993	4,814	1,945	2,147	10.9	12.5	5.66	5.33
1994	6,021	2,703	3,173	12.6	11.9	4.74	4.63
1995	6,558	2,929	2,799	12.4	13.2	5.11	4.51
1996	6,707	2,131	3,280	14.6	16.6	7.61	5.10
1997	7,233	1,367	3,279	21.8	17.9	9.67	5.18
1998	3,628	2,798	5,206	24.4	26.4	11.15	5.22
1999	7,929	1,197	3,360	13.5	17.5	10.25	5.98
2000	8,725	4,392	3,593	48.0	28.8	9.67	6.01
2001	7,449	4,271	6,744	33.9	35.9	10.44	7.19
2002	7,056	2,232	3,036	31.8	31.4	10.65	6.91
2003	5,189	2,216	4,047	27.2	28.2	12.57	<sup>R</sup> 10.71
2004	6,624	2,825	841	32.4	25.3	<sup>R</sup> 11.97	<sup>R</sup> 15.38
2005	8,543	3,818	1,664	46.4	47.3	NA	NA

<sup>1</sup> Gross additions to proved reserves equal annual change in proved reserves plus annual production. See "Proved Reserves, Crude Oil," "Proved Reserves, Natural Gas," and "Proved Reserves, Natural Gas Liquids" in Glossary.

<sup>2</sup> "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS) (see Table 3.14).

<sup>3</sup> Crude oil equivalent: converted to Btu on the basis of annual average conversion factors. See Appendix A.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> Data for 1979 exclude downward revisions of 1,225 million barrels COE due to Iranian policies. Data for 1986 exclude downward revisions due to Libyan sanctions.

<sup>6</sup> Data for 1982 and 1984 are adjusted to exclude purchases of proved reserves associated with mergers among the FRS companies.

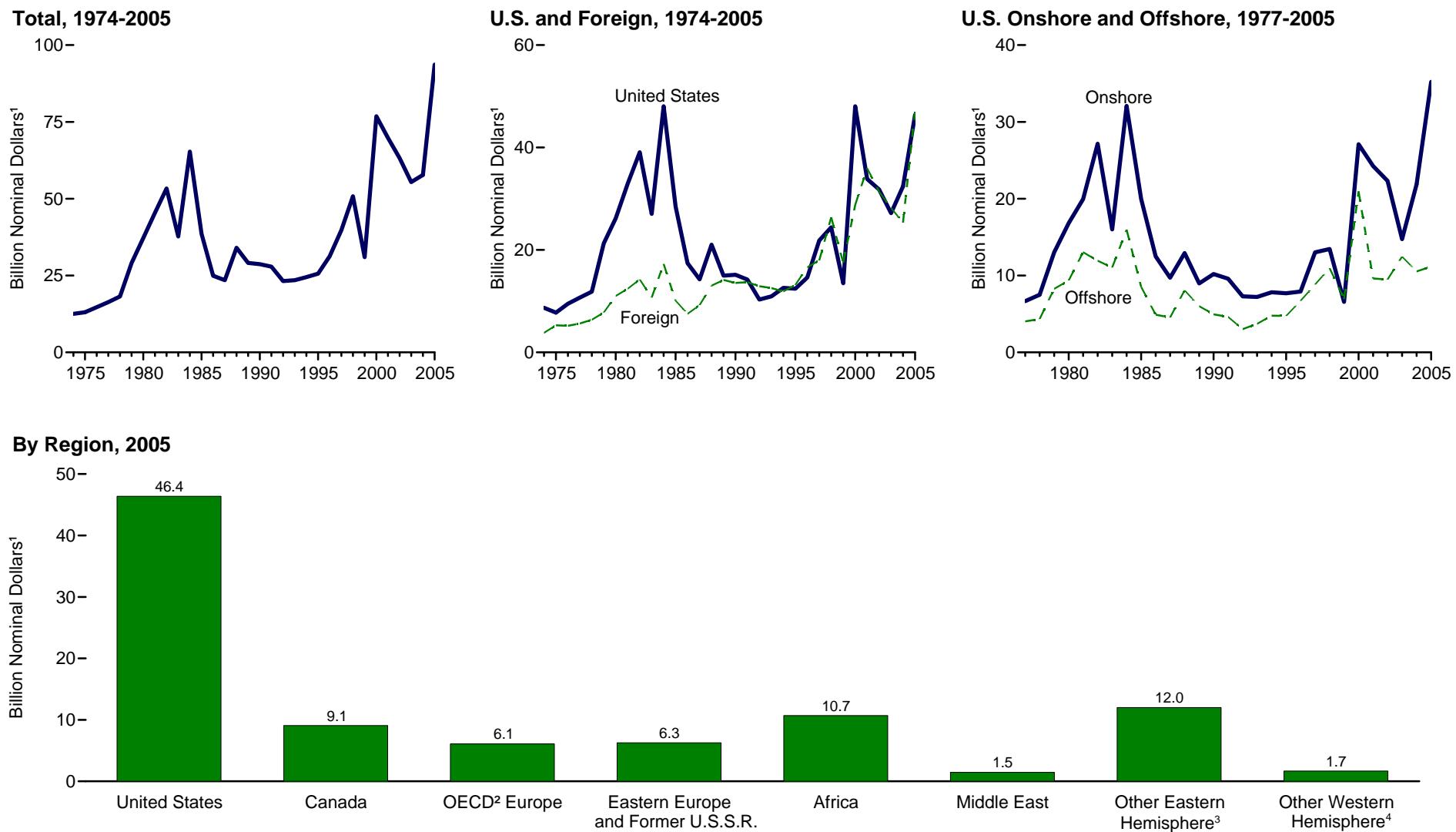
<sup>7</sup> Data for 1985 and 1987 exclude downward revisions of 1,477 million barrels COE and 2,396 million barrels COE, respectively, of Alaska North Slope natural gas reserves.

R=Revised. NA=Not available.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

Sources: **Major U.S. Energy Companies:** • 1974-1976—Energy Information Administration (EIA), Form EIA-28, "Financial Reporting System" database, November 1997. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports. **U.S. Total, Gross Additions to Proved Reserves:** • 1975-1979—American Gas Association, American Petroleum Institute, and Canadian Petroleum Association (published jointly), *Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas in the United States and Canada as of December 31, 1979*, Volume 34 (June 1980). • 1980 forward—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, annual reports.

**Figure 4.10 Major U.S. Energy Companies' Expenditures for Crude Oil and Natural Gas Exploration and Development by Region**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Organization for Economic Cooperation and Development. See Glossary.

<sup>3</sup> This region includes areas that are eastward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

<sup>4</sup> This region includes areas that are westward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.14. • Because vertical scales differ, graphs should not be compared.  
Source: Table 4.10.

**Table 4.10 Major U.S. Energy Companies' Expenditures for Crude Oil and Natural Gas Exploration and Development by Region, 1974-2005** (Billion Nominal Dollars <sup>1</sup>)

Year	United States			Foreign								Total
	Onshore	Offshore	Total	Canada	OECD Europe <sup>2</sup>	Eastern Europe and Former U.S.S.R.	Africa	Middle East	Other Eastern Hemisphere <sup>3</sup>	Other Western Hemisphere <sup>4</sup>	Total	
1974	NA	NA	8.7	NA	NA	--	NA	NA	NA	NA	3.8	12.5
1975	NA	NA	7.8	NA	NA	--	NA	NA	NA	NA	5.3	13.1
1976	NA	NA	9.5	NA	NA	--	NA	NA	NA	NA	5.2	14.7
1977	6.7	4.0	10.7	1.5	2.5	--	.7	.2	.3	.4	5.6	16.3
1978	7.5	4.3	11.8	1.6	2.6	--	.8	.3	.4	.6	6.4	18.2
1979	13.0	8.3	21.3	2.3	3.0	--	.8	.2	.5	.8	7.8	29.1
1980	16.8	9.4	26.2	3.1	4.3	--	1.4	.2	.8	1.0	11.0	37.2
1981	19.9	13.0	33.0	1.8	5.0	--	2.1	.3	1.9	1.3	12.4	45.4
1982	27.2	11.9	39.1	1.9	6.3	--	2.1	.4	2.4	1.1	14.2	53.3
1983	16.0	11.1	27.1	1.6	4.3	--	1.7	.5	2.0	.6	10.7	37.7
1984	32.1	16.0	48.1	5.4	5.5	--	3.4	.5	2.0	.5	17.3	65.3
1985	20.0	8.5	28.5	1.9	3.7	--	1.6	.9	1.3	.7	10.1	38.6
1986	12.5	4.9	17.4	1.1	3.2	--	1.1	.3	1.2	.6	7.5	24.9
1987	9.7	4.5	14.3	1.9	3.0	--	.8	.4	2.8	.5	9.2	23.5
1988	12.9	8.1	21.0	5.4	4.3	--	.8	.4	1.4	.7	13.0	34.1
1989	9.0	6.0	15.0	6.3	3.5	--	1.0	.4	2.3	.6	14.1	29.1
1990	10.2	4.9	15.1	1.8	6.6	--	1.4	.6	2.4	.7	13.6	28.7
1991	9.6	4.6	14.2	1.7	6.8	--	1.5	.5	2.4	.7	13.7	27.9
1992	7.3	3.0	10.3	1.1	6.8	--	1.4	.6	2.4	.6	12.9	23.2
1993	7.2	3.7	10.9	1.6	5.5	.3	1.5	.7	2.5	.6	12.5	23.5
1994	7.8	4.8	12.6	1.8	4.4	.3	1.4	.4	2.8	.7	11.9	24.5
1995	7.7	4.7	12.4	1.9	5.2	.4	2.0	.4	2.4	.9	13.2	25.6
1996	7.9	6.7	14.6	1.6	5.6	.5	2.8	.5	4.1	1.6	16.6	31.3
1997	13.0	8.8	21.8	2.0	7.1	.6	3.0	.6	3.0	1.6	17.9	39.8
1998	13.5	11.0	24.4	4.8	8.6	1.3	3.1	.9	3.9	3.7	26.4	50.8
1999	6.6	6.9	13.5	2.1	4.1	.6	3.1	.4	3.4	3.8	17.5	31.0
2000	27.1	21.0	48.0	4.9	7.5	.9	2.7	.6	6.8	5.4	28.8	76.8
2001	24.2	9.6	33.9	15.3	5.4	.9	5.5	.7	5.0	3.1	35.9	69.8
2002	22.3	9.5	31.8	6.7	9.8	1.3	5.1	.8	6.2	1.6	31.4	63.2
2003	14.7	12.5	27.2	4.9	5.7	2.1	9.2	1.0	4.2	1.1	28.2	55.4
2004	21.9	10.5	32.4	5.3	4.4	2.0	6.9	1.3	3.8	1.6	25.3	57.7
2005	35.2	11.2	46.4	9.1	6.1	6.3	10.7	1.5	12.0	1.7	47.3	93.6

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> The European members of the Organization for Economic Cooperation and Development (OECD) are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom, and, for 1997 forward, Czech Republic, Hungary, and Poland.

<sup>3</sup> This region includes areas that are eastward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

<sup>4</sup> This region includes areas that are westward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

NA=Not available. --=Not applicable.

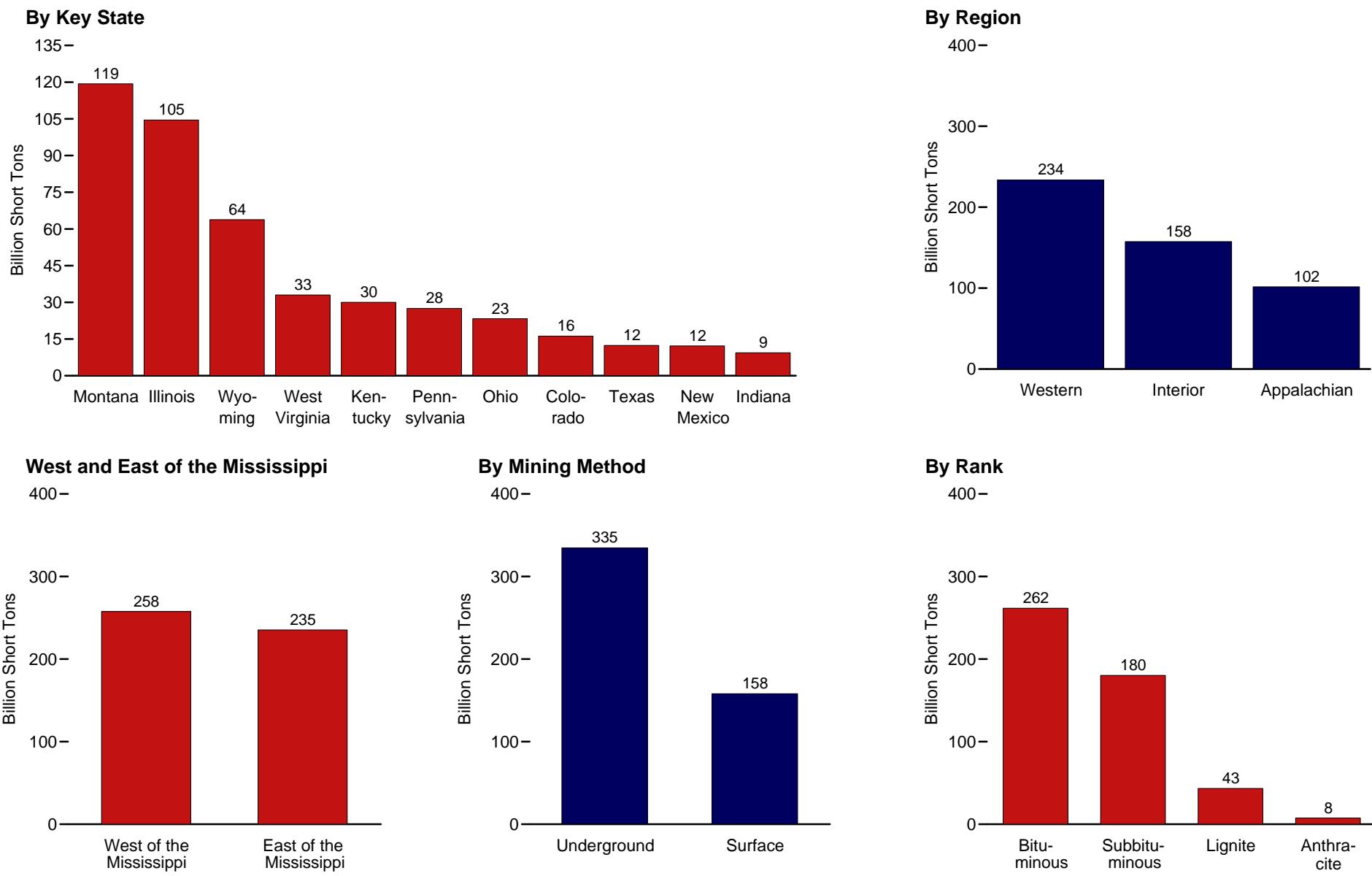
Notes: • "Major U.S. Energy Companies" are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.14.

• Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/finance>.

Sources: • 1974-1976—Energy Information Administration (EIA), Office of Energy Markets and End Use, FRS Database, November 1997. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports.

**Figure 4.11 Coal Demonstrated Reserve Base, January 1, 2006**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 4.11.

**Table 4.11 Coal Demonstrated Reserve Base, January 1, 2006**  
 (Billion Short Tons)

Region and State	Anthracite	Bituminous Coal		Subbituminous Coal		Lignite	Total		
		Underground	Surface	Underground	Surface	Surface <sup>1</sup>	Underground	Surface	Total
<b>Appalachian</b> .....	<b>7.4</b>	<b>70.4</b>	<b>22.8</b>	<b>0.0</b>	<b>0.0</b>	<b>1.1</b>	<b>74.4</b>	<b>27.3</b>	<b>101.7</b>
Alabama .....	.0	1.0	2.1	.0	.0	1.1	1.0	3.2	4.2
Kentucky, Eastern .....	.0	1.2	9.3	.0	.0	.0	1.2	9.3	10.5
Ohio .....	.0	17.5	5.8	.0	.0	.0	17.5	5.8	23.3
Pennsylvania .....	7.2	19.4	.9	.0	.0	.0	23.2	4.3	27.5
Virginia .....	.1	1.0	.6	.0	.0	.0	1.1	.6	1.7
West Virginia .....	.0	29.2	3.8	.0	.0	.0	29.2	3.8	33.0
Other <sup>2</sup> .....	.0	1.1	.3	.0	.0	.0	1.1	.3	1.4
<b>Interior</b> .....	<b>.1</b>	<b>117.3</b>	<b>27.3</b>	<b>.0</b>	<b>.0</b>	<b>12.8</b>	<b>117.4</b>	<b>40.1</b>	<b>157.5</b>
Illinois .....	.0	87.9	16.6	.0	.0	.0	87.9	16.6	104.5
Indiana .....	.0	8.7	.7	.0	.0	.0	8.7	.7	9.4
Iowa .....	.0	1.7	.5	.0	.0	.0	1.7	.5	2.2
Kentucky, Western .....	.0	15.9	3.6	.0	.0	.0	15.9	3.6	19.5
Missouri .....	.0	1.5	4.5	.0	.0	.0	1.5	4.5	6.0
Oklahoma .....	.0	1.2	.3	.0	.0	.0	1.2	.3	1.5
Texas .....	.0	.0	.0	.0	.0	12.4	.0	12.4	12.4
Other <sup>3</sup> .....	.1	.3	1.1	.0	.0	0.4	.4	1.5	1.9
<b>Western</b> .....	<b>(s)</b>	<b>21.7</b>	<b>2.3</b>	<b>121.3</b>	<b>59.0</b>	<b>29.4</b>	<b>143.0</b>	<b>90.7</b>	<b>233.7</b>
Alaska .....	.0	.6	.1	4.8	.6	(s)	5.4	.7	6.1
Colorado .....	(s)	7.7	.6	3.7	.0	4.2	11.4	4.8	16.2
Montana .....	.0	1.4	.0	69.6	32.5	15.8	71.0	48.3	119.3
New Mexico .....	(s)	2.7	.9	3.5	5.1	.0	6.2	6.0	12.2
North Dakota .....	.0	.0	.0	.0	.0	9.1	.0	9.1	9.1
Utah .....	.0	5.1	.3	(s)	.0	.0	5.1	.3	5.4
Washington .....	.0	.3	.0	1.0	.0	(s)	1.3	.0	1.3
Wyoming .....	.0	3.8	.5	38.7	20.8	.0	42.5	21.3	63.8
Other <sup>4</sup> .....	.0	.0	.0	(s)	(s)	.4	.0	.4	.4
<b>U.S. Total</b> .....	<b>7.5</b>	<b>209.3</b>	<b>52.3</b>	<b>121.3</b>	<b>59.0</b>	<b>43.3</b>	<b>334.7</b>	<b>158.0</b>	<b>492.7</b>
States East of the Mississippi River .....	7.4	183.1	43.7	.0	.0	1.1	187.1	48.2	235.3
States West of the Mississippi River .....	.1	26.3	8.7	121.3	59.0	42.2	147.7	109.9	257.6

<sup>1</sup> Lignite resources are not mined underground in the United States.

<sup>2</sup> Georgia, Maryland, North Carolina, and Tennessee.

<sup>3</sup> Arkansas, Kansas, Louisiana, and Michigan.

<sup>4</sup> Arizona, Idaho, Oregon, and South Dakota.

(s)=Less than 0.05 billion short tons.

Notes: • See U.S. Coal Reserves: 1997 Update on the Web Page for a description of the methodology used to produce these data. • Data represent remaining measured and indicated coal resources, analyzed

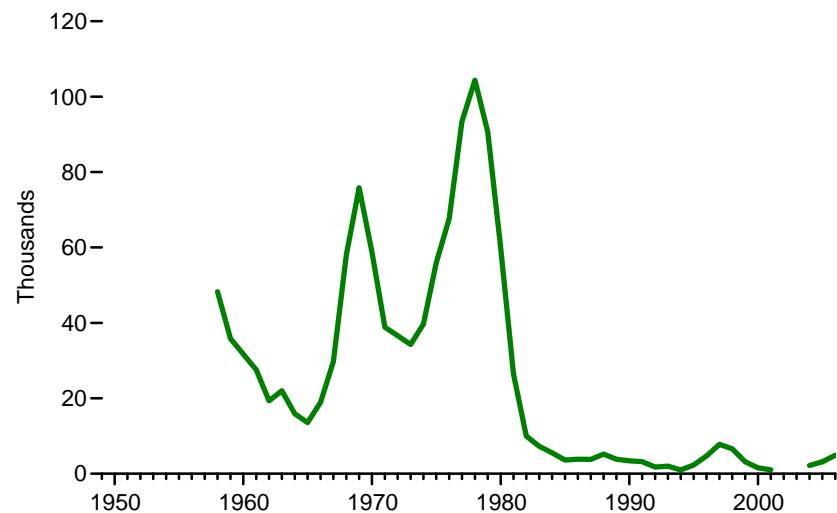
and on file, meeting minimum seam and depth criteria, and in the ground as of January 1, 2006. These coal resources are not totally recoverable. Net recoverability with current mining technologies ranges from 0 percent (in far northern Alaska) to more than 90 percent. Fifty-four percent of the demonstrated reserve base of coal in the United States is estimated to be recoverable. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

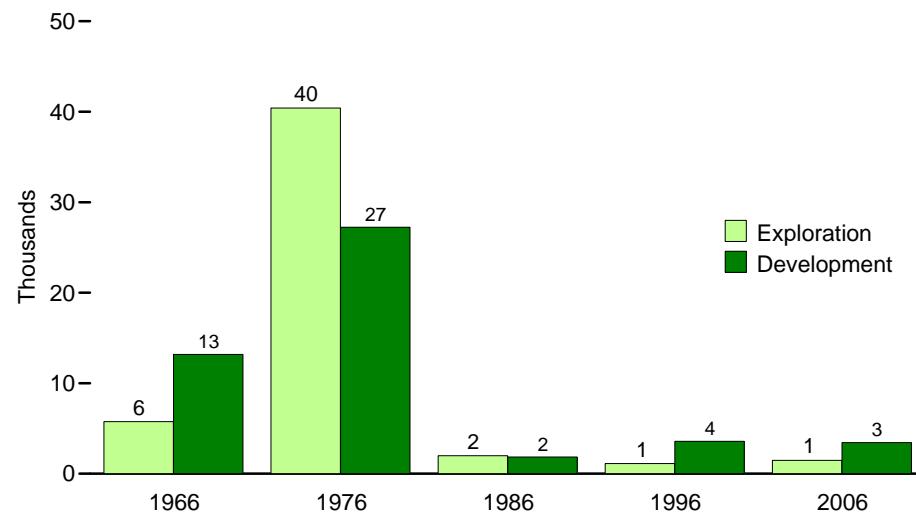
Source: Energy Information Administration, Coal Reserves Database.

**Figure 4.12 Uranium Exploration and Development Drilling**

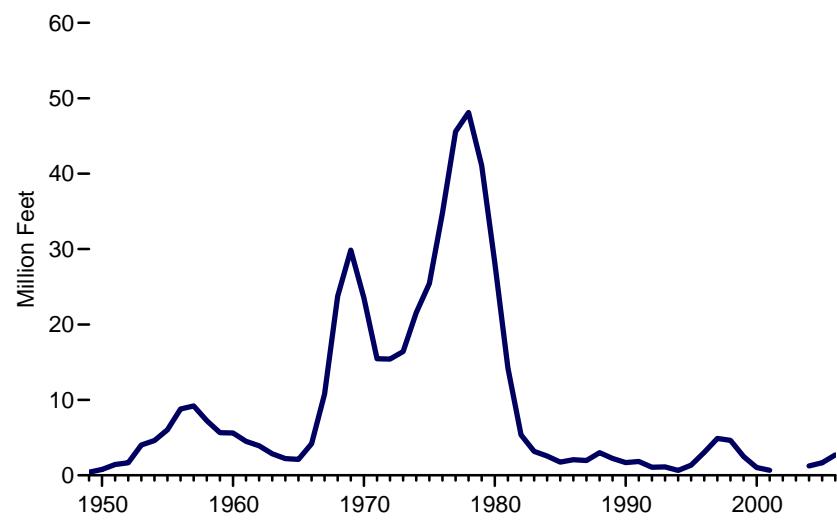
**Total Holes Drilled, 1958-2001 and 2004-2006**



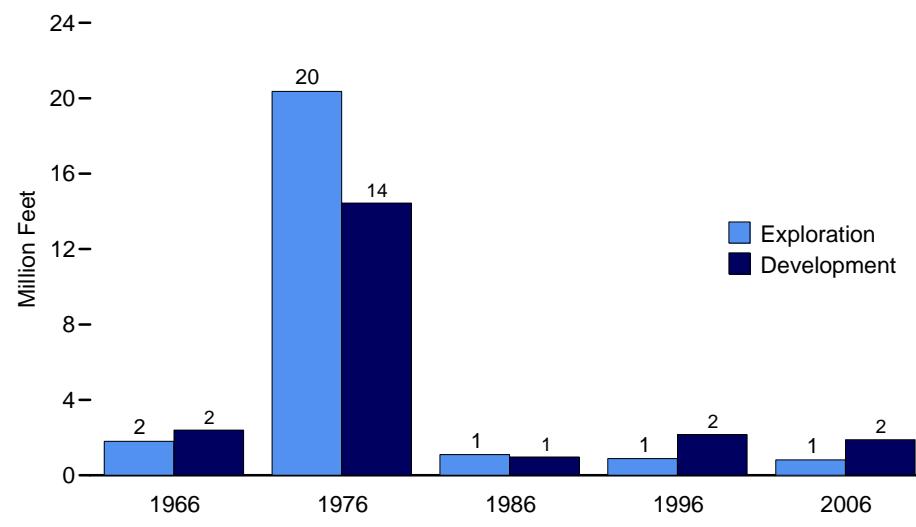
**Holes Drilled, Selected Years**



**Total Footage Drilled, 1949-2001 and 2004-2006**



**Footage Drilled, Selected Years**



Source: Table 4.12.

**Table 4.12 Uranium Exploration and Development Drilling, Selected Years, 1949-2006**

	Exploration <sup>1</sup>		Development <sup>2</sup>		Total	
	Holes Drilled	Footage Drilled	Holes Drilled	Footage Drilled	Holes Drilled	Footage Drilled
Year	Thousands	Million Feet	Thousands	Million Feet	Thousands	Million Feet
1949	NA	0.36	NA	0.05	NA	0.41
1950	NA	.57	NA	.21	NA	.78
1955	NA	5.27	NA	.76	NA	6.03
1960	7.34	1.40	24.40	4.21	31.73	5.61
1965	6.23	1.16	7.33	.95	13.56	2.11
1970	43.98	17.98	14.87	5.55	58.85	23.53
1971	28.42	11.40	10.44	4.05	38.86	15.45
1972	26.91	11.82	9.71	3.61	36.62	15.42
1973	22.56	10.83	11.70	5.59	34.26	16.42
1974	27.40	14.72	12.30	6.84	39.70	21.56
1975	34.29	15.69	21.60	9.73	55.89	25.42
1976	40.41	20.36	27.23	14.44	67.64	34.80
1977	62.60	27.96	30.86	17.62	93.45	45.58
1978	75.07	28.95	29.29	19.15	104.35	48.10
1979	60.46	28.07	30.19	13.01	90.65	41.08
1980	39.61	19.60	20.19	8.59	59.80	28.19
1981	17.75	10.87	8.67	3.35	26.42	14.22
1982	6.97	4.23	3.00	1.13	9.97	5.36
1983	4.29	2.09	3.01	1.08	7.30	3.17
1984	4.80	2.26	.72	.29	5.52	2.55
1985	2.88	1.42	.77	.34	3.65	1.76
1986	1.99	1.10	1.85	.97	3.83	2.07
1987	1.82	1.11	1.99	.86	3.81	1.97
1988	2.03	1.28	3.18	1.73	5.21	3.01
1989	2.09	1.43	1.75	.80	3.84	2.23
1990	1.51	.87	1.91	.81	3.42	1.68
1991	1.62	.97	1.57	.87	3.20	1.84
1992	.94	.56	.83	.50	1.77	1.06
1993	.36	.22	1.67	.89	2.02	1.11
1994	.52	.34	.48	.32	1.00	.66
1995	.58	.40	1.73	.95	2.31	1.35
1996	1.12	.88	3.58	2.16	4.70	3.05
1997	1.94	1.33	5.86	3.56	7.79	4.88
1998	1.37	.89	5.23	3.75	6.60	4.64
1999	.27	.18	2.91	2.33	3.18	2.50
2000	W	W	W	W	1.55	1.02
2001	.00	.00	1.02	.66	1.02	.66
2002	W	W	W	W	W	W
2003	NA	NA	NA	NA	W	W
2004	W	W	W	W	2.19	1.25
2005	W	W	W	W	R3.14	R1.67
2006	1.47	.82	3.43	1.89	4.90	2.71

<sup>1</sup> Includes surface drilling in search of new ore deposits or extensions of known deposits and drilling at the location of a discovery up to the time the company decides sufficient ore reserves are present to justify commercial exploitation.

<sup>2</sup> Includes all surface drilling on an ore deposit to determine more precisely size, grade, and configuration subsequent to the time that commercial exploitation is deemed feasible.

R=Revised. NA=Not available. W=Value withheld to avoid disclosure of individual company data.

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

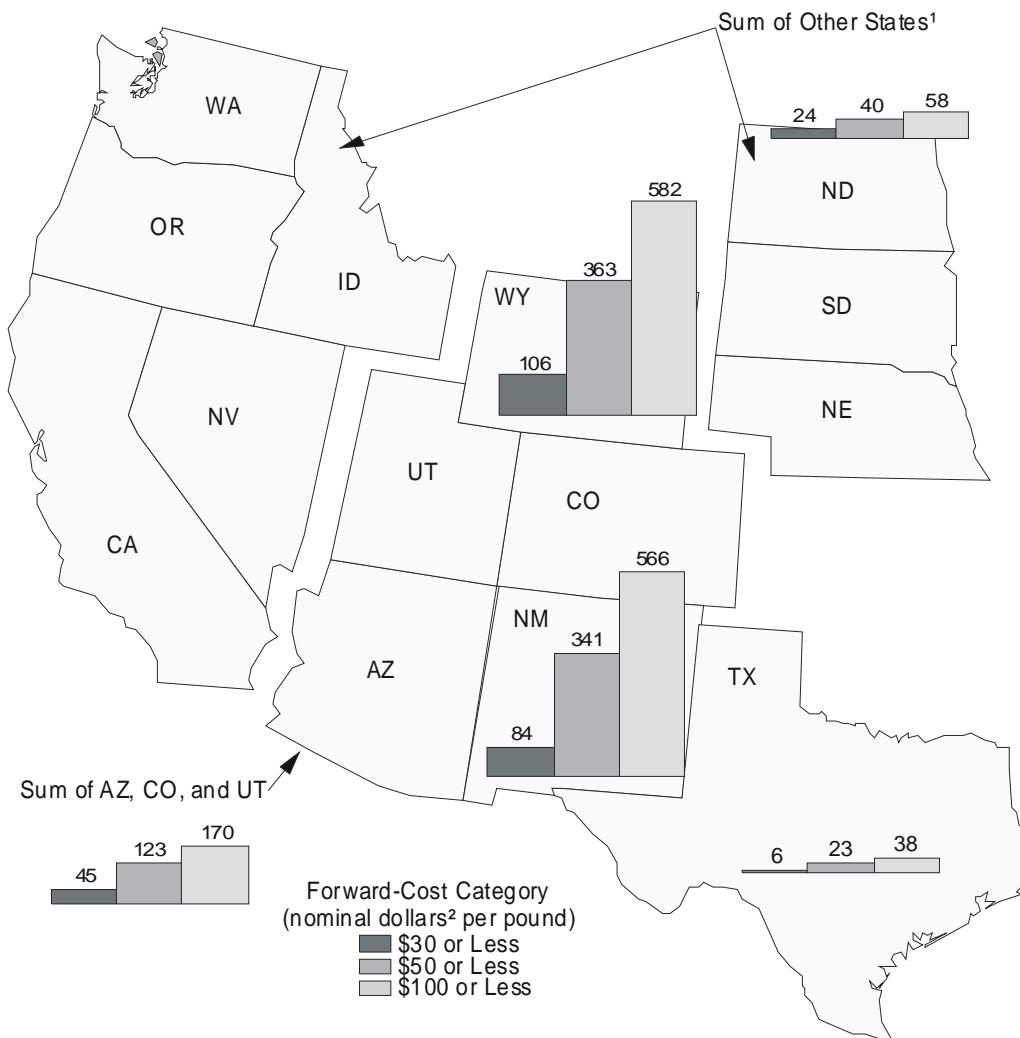
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/resource.html>.

• For related information, see <http://www.eia.doe.gov/fuelnuclear.html>.

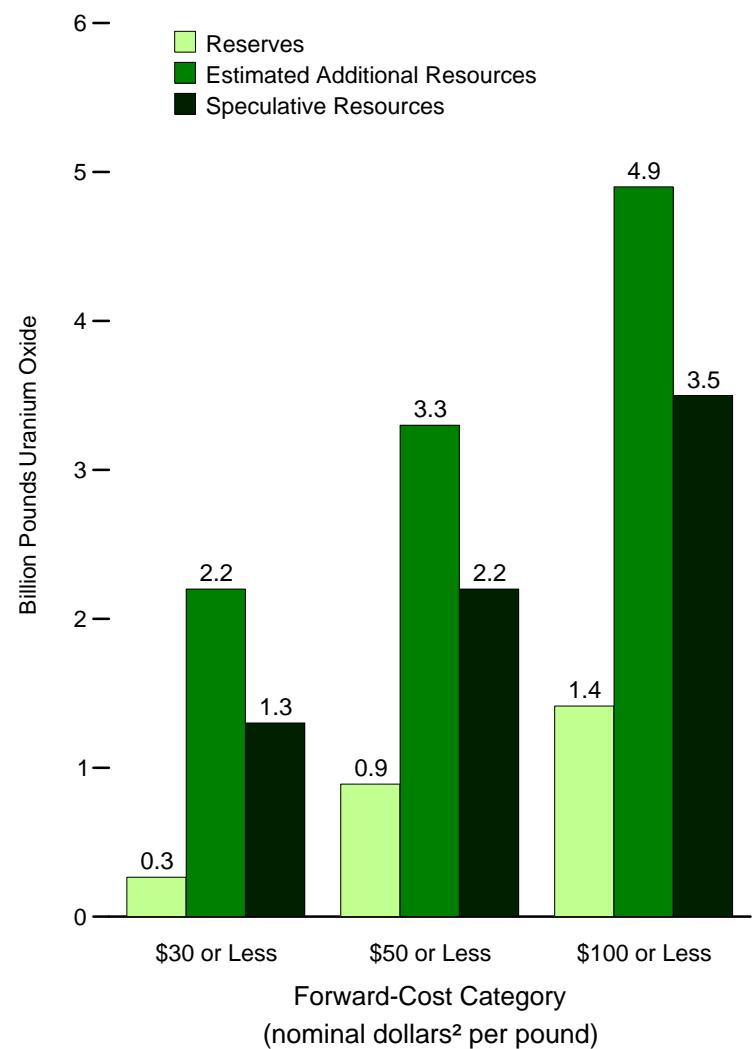
Sources: • 1949-1981—U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry, January 1, 1983*, Report No. GJO-100 (1983), Table VIII-5. • 1982-2002—Energy Information Administration (EIA), *Uranium Industry Annual*, annual reports. • 2003 forward—EIA, "Domestic Uranium Production Report" (May 2007).

**Figure 4.13 Uranium Reserves and Resources, 2003**

**Reserves**  
(Million Pounds Uranium Oxide)



**Reserves and Resources**



<sup>1</sup>California, Idaho, Nebraska, Nevada, North Dakota, Oregon, South Dakota, and Washington.

<sup>2</sup> See "Nominal Dollars" in Glossary.

Notes: • See "Uranium Oxide" in Glossary. • Data are at end of year.  
Source: Table 4.13.

**Table 4.13 Uranium Reserves and Resources, 2003**  
 (Million Pounds U<sub>3</sub>O<sub>8</sub>)

Resource Category and State	Forward-Cost <sup>1</sup> Category (nominal dollars <sup>2</sup> per pound)		
	\$30 or Less	\$50 or Less	\$100 or Less
<b>Reserves <sup>3</sup></b> .....	<b>265</b>	<b>890</b>	<b>1,414</b>
New Mexico .....	84	341	566
Wyoming .....	106	363	582
Texas .....	6	23	38
Arizona, Colorado, Utah .....	45	123	170
Others <sup>4</sup> .....	24	40	58
<b>Potential Resources <sup>5</sup></b>			
Estimated Additional Resources .....	2,180	3,310	4,850
Speculative Resources .....	1,310	2,230	3,480

<sup>1</sup> Forward costs are all operating and capital costs yet to be incurred in the production of uranium from estimated resources. Excluded are previous expenditures (such as exploration and land acquisitions), taxes, profit, and the cost of money. Generally, forward costs are lower than market prices. Resource values in forward-cost categories are cumulative; that is, the quantity at each level of forward cost includes all reserves/resources at the lower cost in that category.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> The Energy Information Administration (EIA) category of uranium reserves is equivalent to the internationally reported category of "Reasonably Assured Resources" (RAR).

<sup>4</sup> California, Idaho, Nebraska, Nevada, North Dakota, Oregon, South Dakota, and Washington.

<sup>5</sup> Shown are the mean values for the distribution of estimates for each forward-cost category, rounded to the nearest million pounds U<sub>3</sub>O<sub>8</sub>.

Notes: • Data are at end of year. • Until further notice, these estimates will not be updated annually.

• U<sub>3</sub>O<sub>8</sub> is uranium oxide. See "Uranium Oxide" in Glossary.

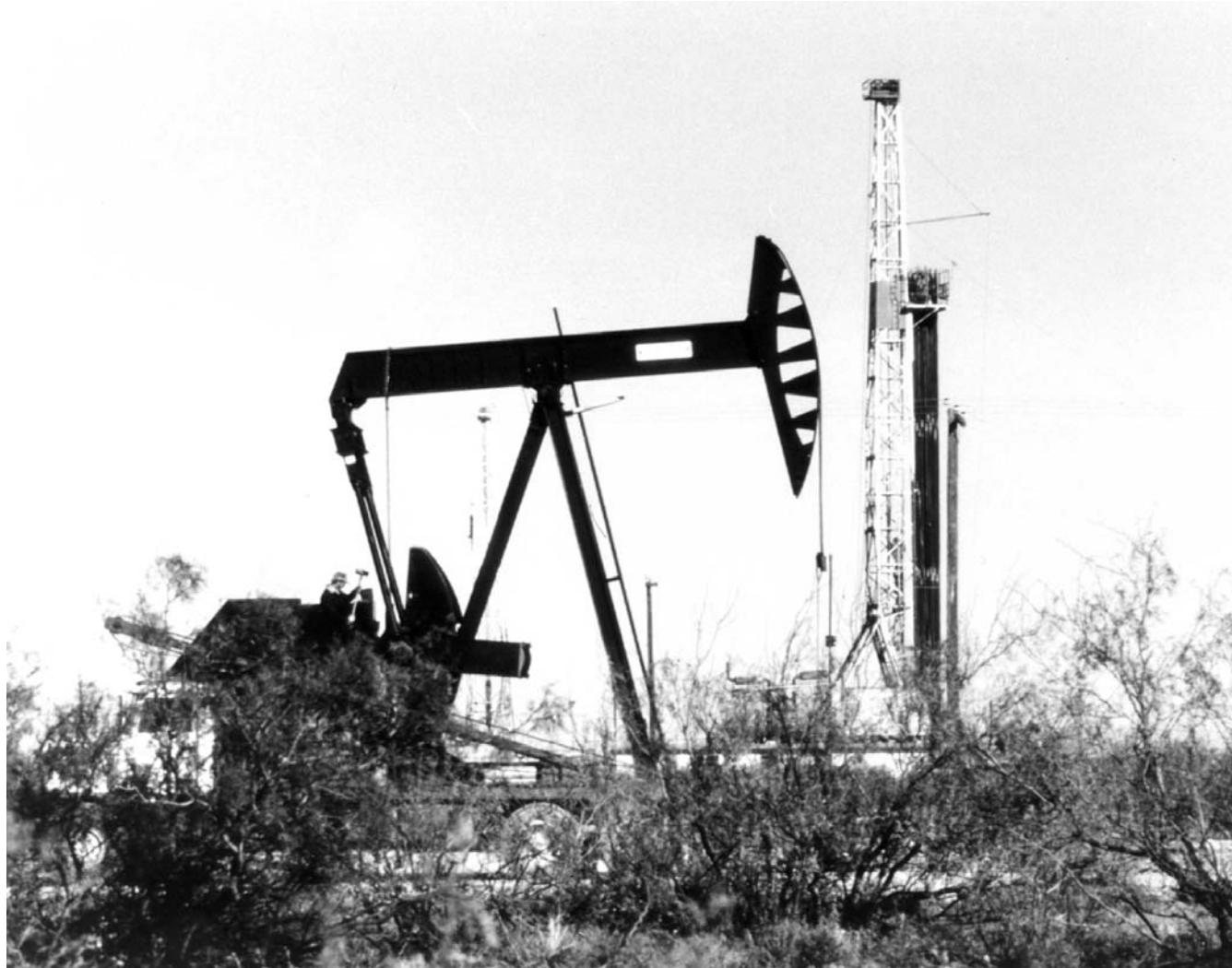
Web Page: For related information, see <http://www.eia.doe.gov/fuelnuclear.html>.

Sources: • **Forward Costs \$30 or Less and \$50 or Less:** EIA, "U.S. Uranium Reserves Estimates" (June 2004). • **Forward Costs \$100 or Less:** EIA, Office of Coal, Nuclear, Electric and Alternate Fuels database as of June 2004.



# 5

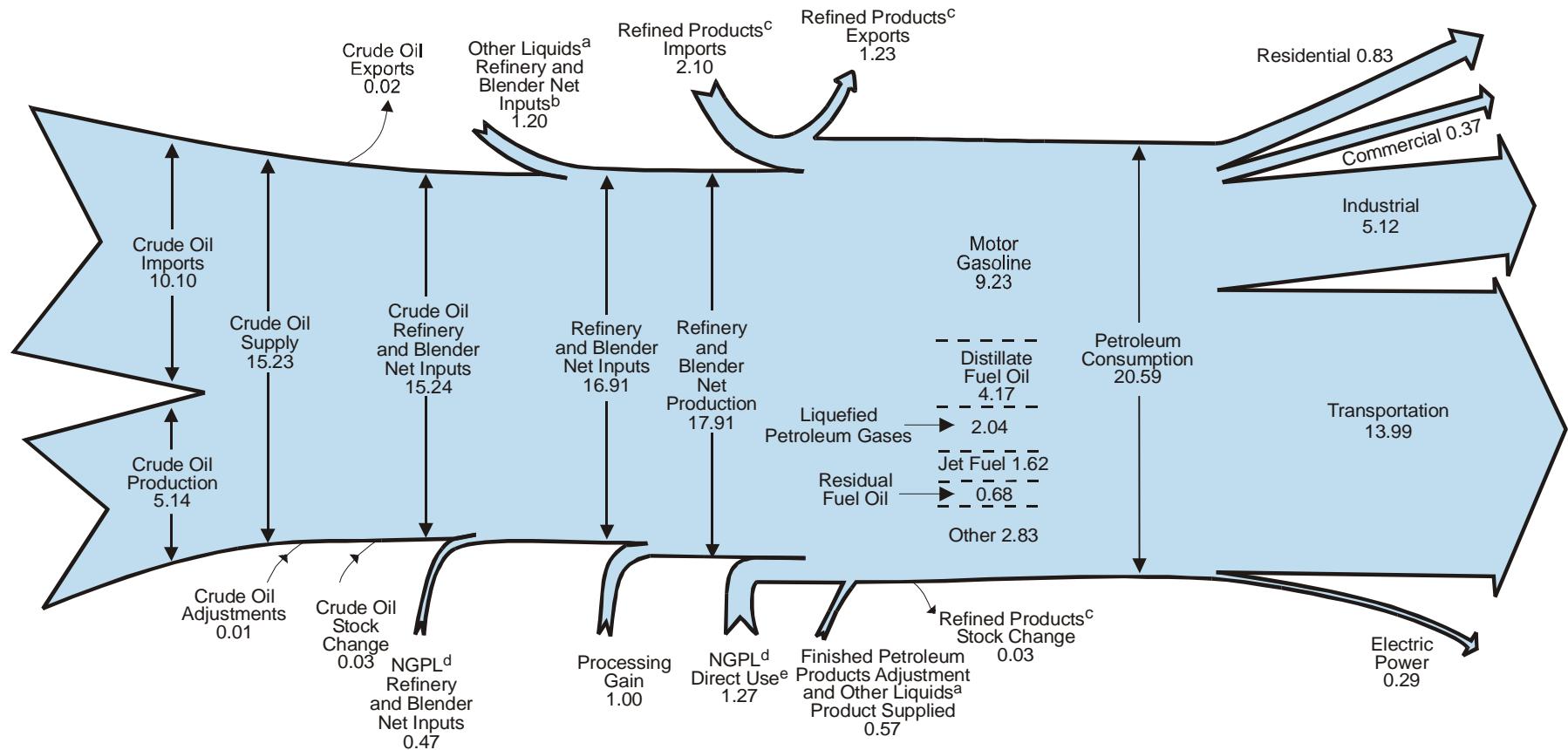
# Petroleum



Oil pumping unit and drilling rig, Texas. Source: U.S. Department of Energy.



**Diagram 2. Petroleum Flow, 2006**  
 (Million Barrels per Day)



<sup>a</sup> Unfinished oils, other hydrocarbons/hydrogen, and motor gasoline and aviation gasoline blending components.

<sup>b</sup> Net imports (1.34) and adjustments (-0.03) minus stock change (0.07) and product supplied (0.03).

<sup>c</sup> Finished petroleum products, liquefied petroleum gases, and pentanes plus.

<sup>d</sup> Natural gas plant liquids.

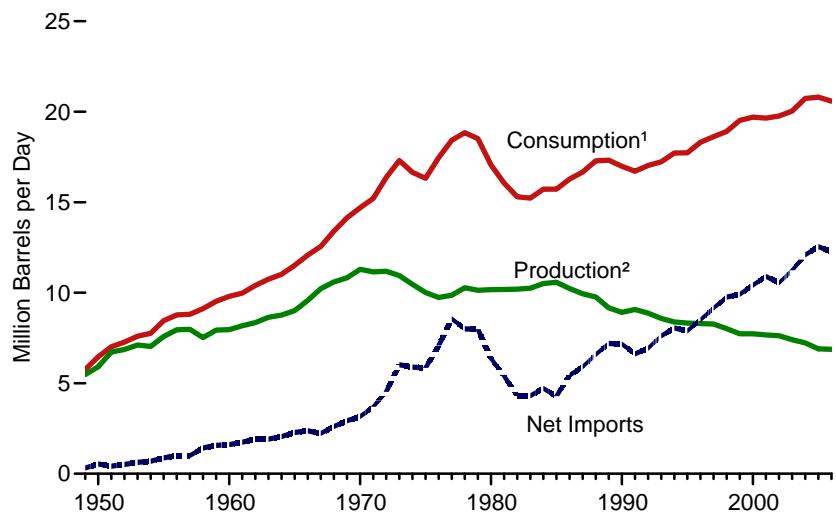
<sup>e</sup> Production minus refinery input.

Notes: • Data are preliminary. • Values are derived from source data prior to rounding for publication. • Totals may not equal sum of components due to independent rounding.

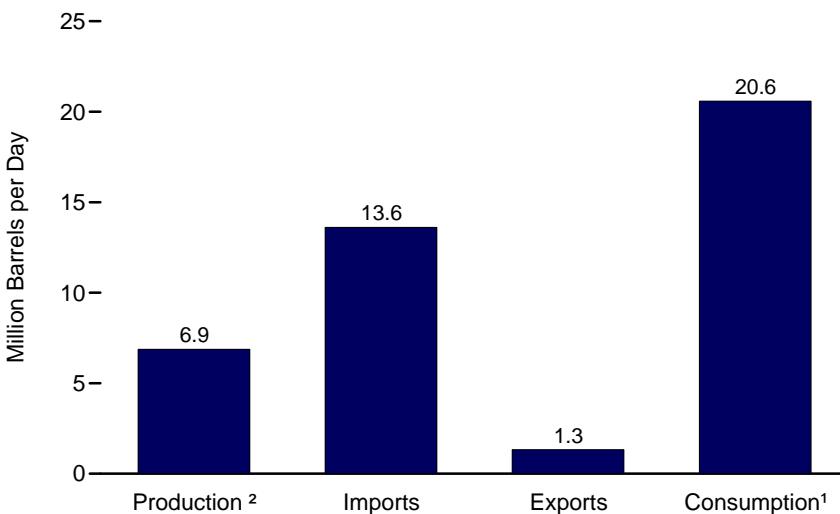
Sources: Tables 5.1, 5.3, 5.5, 5.8, 5.11, 5.13a-5.13d, 5.16, and *Petroleum Supply Monthly*, February 2007, Table 4.

**Figure 5.1 Petroleum Overview**

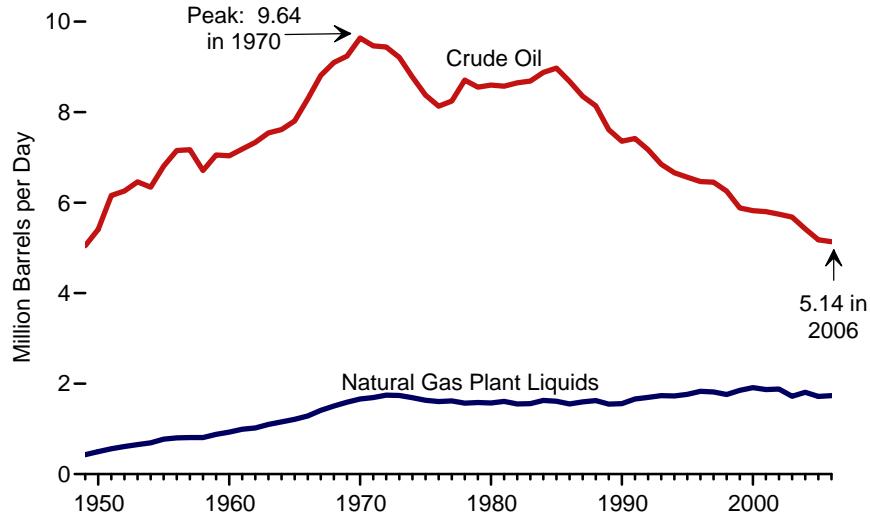
**Overview, 1949-2006**



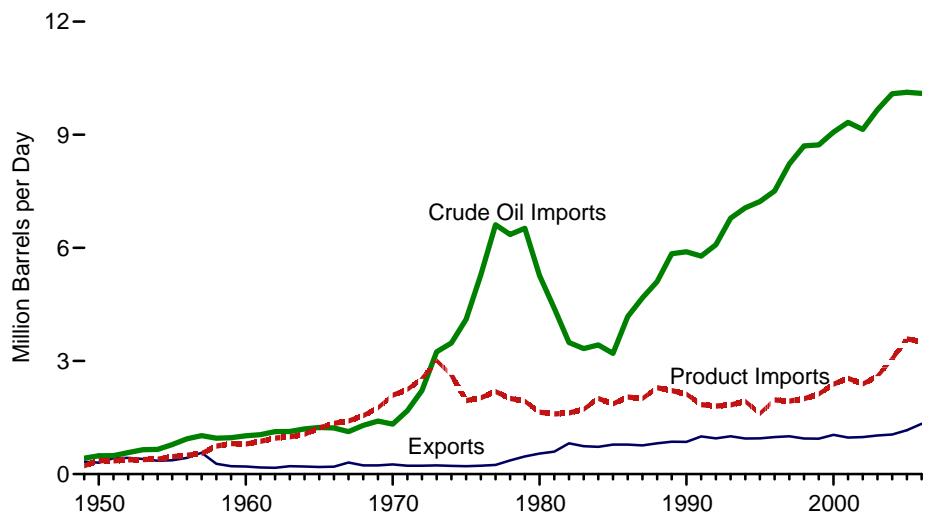
**Overview, 2006**



**Crude Oil and Natural Gas Plant Liquids Production, 1949-2006**



**Trade, 1949-2006**



<sup>1</sup> Petroleum products supplied is used as an approximation for consumption.

<sup>2</sup> Crude oil and natural gas plant liquids production.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 5.1 and 5.3.

**Table 5.1 Petroleum Overview, Selected Years, 1949-2006**

(Thousand Barrels per Day)

Year	Production <sup>1</sup>					Processing Gain <sup>3</sup>	Trade			Stock Change <sup>5</sup>	Adjustments <sup>6</sup>	Petroleum Products Supplied				
	Crude Oil			Natural Gas Plant Liquids	Total		Imports	Exports	Net Imports <sup>4</sup>							
	48 States <sup>2</sup>	Alaska	Total													
1949	5,046	0	5,046	430	5,477	-2	645	327	318	-8	-38	5,763				
1950	5,407	0	5,407	499	5,906	2	850	305	545	-56	-51	6,458				
1955	6,807	0	6,807	771	7,578	34	1,248	368	880	(s)	-37	8,455				
1960	7,034	2	7,035	929	7,965	146	1,815	202	1,613	-83	-8	9,797				
1965	7,774	30	7,804	1,210	9,014	220	2,468	187	2,281	-8	-10	11,512				
1970	9,408	229	9,637	1,660	11,297	359	3,419	259	3,161	103	-16	14,697				
1971	9,245	218	9,463	1,693	11,155	382	3,926	224	3,701	71	45	15,212				
1972	9,242	199	9,441	1,744	11,185	388	4,741	222	4,519	-232	43	16,367				
1973	9,010	198	9,208	1,738	10,946	453	6,256	231	6,025	135	18	17,308				
1974	8,581	193	8,774	1,688	10,462	480	6,112	221	5,892	179	-2	16,653				
1975	8,183	191	8,375	1,633	10,007	460	6,056	209	5,846	32	41	16,322				
1976	7,958	173	8,132	1,604	9,736	477	7,313	223	7,090	-58	101	17,461				
1977	7,781	464	8,245	1,618	9,862	524	8,807	243	8,565	548	28	18,431				
1978	7,478	1,229	8,707	1,567	10,275	496	8,363	362	8,002	-94	-20	18,847				
1979	7,151	1,401	8,552	1,584	10,135	527	8,456	471	7,985	173	38	18,513				
1980	6,980	1,617	8,597	1,573	10,170	597	6,909	544	6,365	140	64	17,056				
1981	6,962	1,609	8,572	1,609	10,180	508	5,996	595	5,401	160	129	16,058				
1982	6,953	1,696	8,649	1,550	10,199	531	5,113	815	4,298	-147	121	15,296				
1983	6,974	1,714	8,688	1,559	10,246	488	5,051	739	4,312	-20	165	15,231				
1984	7,157	1,722	8,879	1,630	10,509	553	5,437	722	4,715	280	228	15,726				
1985	7,146	1,825	8,971	1,609	10,581	557	5,067	781	4,286	-103	200	15,726				
1986	6,814	1,867	8,680	1,551	10,231	616	6,224	785	5,439	202	197	16,281				
1987	6,387	1,962	8,349	1,595	9,944	639	6,678	764	5,914	41	209	16,665				
1988	6,123	2,017	8,140	1,625	9,765	655	7,402	815	6,587	-28	249	17,283				
1989	5,739	1,874	7,613	1,546	9,159	661	8,061	859	7,202	-43	260	17,325				
1990	5,582	1,773	7,355	1,559	8,914	683	8,018	857	7,161	107	338	16,988				
1991	5,618	1,798	7,417	1,659	9,076	715	7,627	1,001	6,626	-10	287	16,714				
1992	5,457	1,714	7,171	1,697	8,868	772	7,888	950	6,938	-68	386	17,033				
1993	5,264	1,582	6,847	1,736	8,582	766	8,620	1,003	7,618	151	422	17,237				
1994	5,103	1,559	6,662	1,727	8,388	768	8,996	942	8,054	15	523	17,718				
1995	5,076	1,484	6,560	1,762	8,322	774	8,835	949	7,886	-246	496	17,725				
1996	5,071	1,393	6,465	1,830	8,295	837	9,478	981	8,498	-151	528	18,309				
1997	5,156	1,296	6,452	1,817	8,269	850	10,162	1,003	9,158	143	487	18,620				
1998	5,077	1,175	6,252	1,759	8,011	886	10,708	945	9,764	239	495	18,917				
1999	4,832	1,050	5,881	1,850	7,731	886	10,852	940	9,912	-422	567	19,519				
2000	4,851	970	5,822	1,911	7,733	948	11,459	1,040	10,419	-69	532	19,701				
2001	4,839	963	5,801	1,868	7,670	903	11,871	971	10,900	325	501	19,649				
2002	4,761	984	5,746	1,880	7,626	957	11,530	984	10,546	-105	527	19,761				
2003	4,706	974	5,681	1,719	7,400	974	12,264	1,027	11,238	56	478	20,034				
2004	4,510	908	5,419	1,809	7,228	1,051	13,145	1,048	12,097	209	564	20,731				
2005	R4,314	864	R5,178	R1,717	R6,895	R989	R13,714	R1,165	R12,549	R145	R513	R20,802				
2006 <sup>p</sup>	4,395	741	5,136	1,735	6,872	998	13,612	1,333	12,278	69	508	20,588				

<sup>1</sup> Crude oil production on leases, and natural gas plant liquids (liquefied petroleum gases, pentanes plus, and a small amount of finished petroleum products) production at natural gas processing plants. Excludes what was previously classified as "Field Production" of finished motor gasoline, motor gasoline blending components, and other hydrocarbons and oxygenates; these are now included in "Adjustments."

<sup>2</sup> United States excluding Alaska and Hawaii.

<sup>3</sup> Refinery and blender net production minus refinery and blender net inputs. See Table 5.8.

<sup>4</sup> Net imports equal imports minus exports.

<sup>5</sup> A negative number indicates a decrease in stocks and a positive number indicates an increase. Distillate stocks in the "Northeast Heating Oil Reserve" are not included.

<sup>6</sup> An adjustment for crude oil, motor gasoline blending components, and fuel ethanol.

R=Revised. P=Preliminary. (s)=Less than 500 barrels per day.

Notes: • Crude oil includes lease condensate. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption." Note 2, "Adjustment to Total Petroleum Products Supplied," and Note 3, "Changes Affecting Petroleum Production and Product Supplied Statistics," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

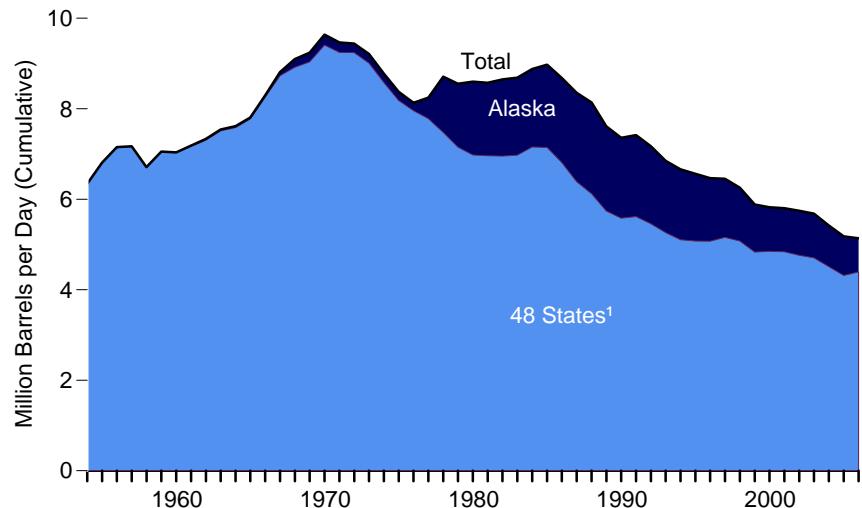
• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports.

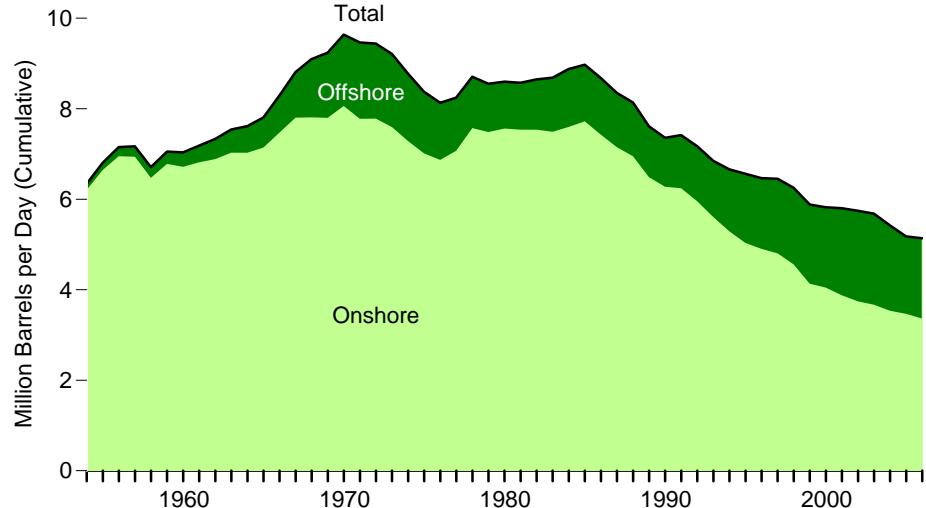
• 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.2 Crude Oil Production and Crude Oil Well Productivity, 1954-2006**

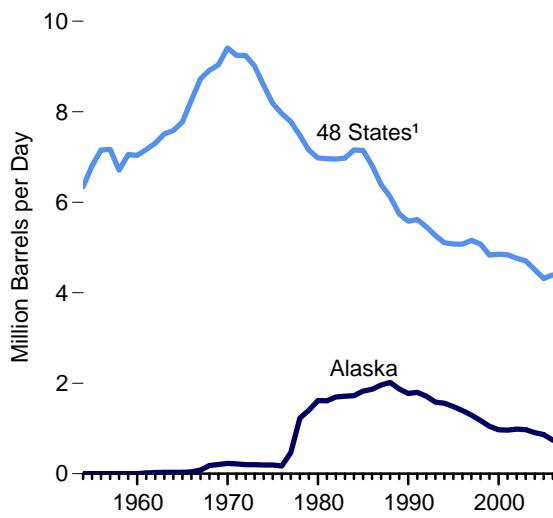
**By Geographic Location**



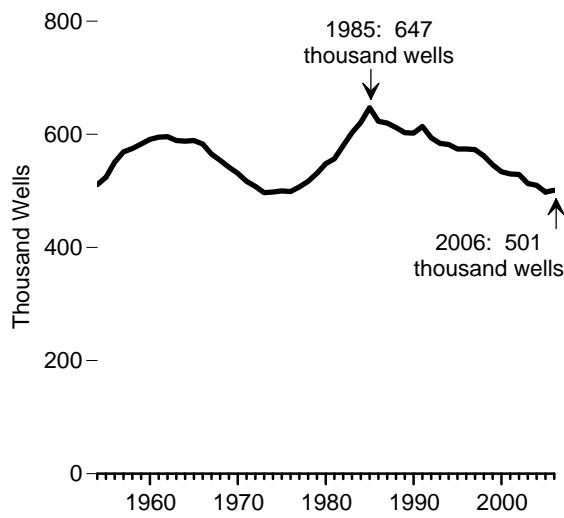
**By Site**



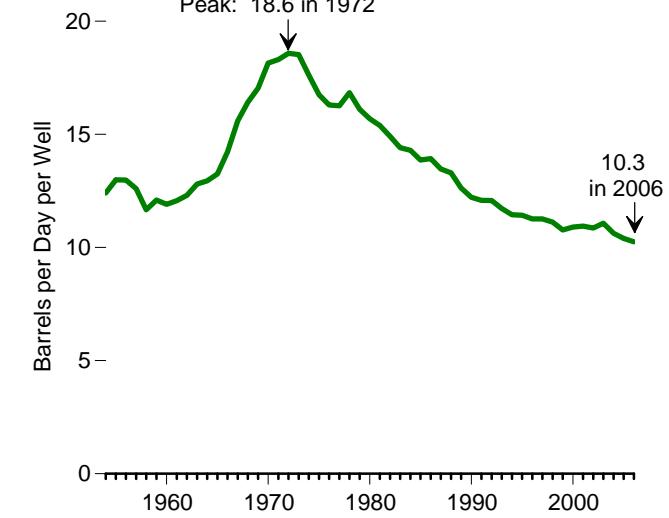
**48 States<sup>1</sup> and Alaska**



**Number of Producing Wells**



**Average Productivity**



<sup>1</sup> United States excluding Alaska and Hawaii.

Note: Crude oil includes lease condensate.

Source: Table 5.2.

**Table 5.2 Crude Oil Production and Crude Oil Well Productivity, 1954-2006**

Year	Geographic Location		Site		Type		Total Production	Crude Oil Well <sup>1</sup> Productivity		
	48 States <sup>2</sup>	Alaska	Onshore	Offshore	Crude Oil	Lease Condensate		Producing Wells <sup>3</sup>	Average Productivity <sup>4</sup>	
	Thousand Barrels per Day								Thousands	Barrels per Day per Well
1954	6,342	0	6,209	133	6,342	( 5 )	6,342	511	12.4	
1955	6,807	0	6,645	162	6,807	( 5 )	6,807	524	13.0	
1956	7,151	0	6,951	201	7,151	( 5 )	7,151	551	13.0	
1957	7,170	0	6,940	229	7,170	( 5 )	7,170	569	12.6	
1958	6,710	0	6,473	236	6,710	( 5 )	6,710	575	11.7	
1959	7,053	1	6,779	274	7,054	( 5 )	7,054	583	12.1	
1960	7,034	2	6,716	319	7,035	( 5 )	7,035	591	11.9	
1961	7,166	17	6,817	365	7,183	( 5 )	7,183	595	12.1	
1962	7,304	28	6,888	444	7,332	( 5 )	7,332	596	12.3	
1963	7,512	29	7,026	515	7,542	( 5 )	7,542	589	12.8	
1964	7,584	30	7,027	587	7,614	( 5 )	7,614	588	12.9	
1965	7,774	30	7,140	665	7,804	( 5 )	7,804	589	13.2	
1966	8,256	39	7,473	823	8,295	( 5 )	8,295	583	14.2	
1967	8,730	80	7,802	1,009	8,810	( 5 )	8,810	565	15.6	
1968	8,915	181	7,808	1,287	8,660	436	9,096	554	16.4	
1969	9,035	203	7,797	1,441	8,778	460	9,238	542	17.0	
1970	9,408	229	8,060	1,577	9,180	457	9,637	531	18.1	
1971	9,245	218	7,779	1,684	9,032	431	9,463	517	18.3	
1972	9,242	199	7,780	1,660	8,998	443	9,441	508	18.6	
1973	9,010	198	7,592	1,616	8,784	424	9,208	497	18.5	
1974	8,581	193	7,285	1,489	8,375	399	8,774	498	17.6	
1975	8,183	191	7,012	1,362	8,007	367	8,375	500	16.8	
1976	7,958	173	6,868	1,264	7,776	356	8,132	499	16.3	
1977	7,881	464	7,069	1,176	7,875	370	8,245	507	16.3	
1978	7,478	1,229	7,571	1,136	8,353	355	8,707	517	16.8	
1979	7,151	1,401	7,485	1,067	8,181	371	8,552	531	16.1	
1980	6,980	1,617	7,562	1,034	8,210	386	8,597	548	15.7	
1981	6,962	1,609	7,537	1,034	8,176	395	8,572	557	15.4	
1982	6,953	1,696	7,538	1,110	8,261	387	8,649	580	14.9	
1983	6,974	1,714	7,492	1,196	8,688	( 5 )	8,688	603	14.4	
1984	7,157	1,722	7,596	1,283	8,879	( 5 )	8,879	621	14.3	
1985	7,146	1,825	7,722	1,250	8,971	( 5 )	8,971	647	13.9	
1986	6,814	1,867	7,426	1,254	8,680	( 5 )	8,680	623	13.9	
1987	6,387	1,962	7,153	1,196	8,349	( 5 )	8,349	620	13.5	
1988	6,123	2,017	6,949	1,191	8,140	( 5 )	8,140	612	13.3	
1989	5,739	1,874	6,486	1,127	7,613	( 5 )	7,613	603	12.6	
1990	5,582	1,773	6,273	1,082	7,355	( 5 )	7,355	602	12.2	
1991	5,618	1,798	6,245	1,172	7,417	( 5 )	7,417	614	12.1	
1992	5,457	1,714	5,953	1,218	7,171	( 5 )	7,171	594	12.1	
1993	5,264	1,582	5,606	1,241	6,847	( 5 )	6,847	584	11.7	
1994	5,103	1,559	5,291	1,370	6,662	( 5 )	6,662	582	11.4	
1995	5,076	1,484	5,035	1,525	6,560	( 5 )	6,560	574	11.4	
1996	5,071	1,393	4,902	1,562	6,465	( 5 )	6,465	574	11.3	
1997	5,156	1,296	4,803	1,648	6,452	( 5 )	6,452	573	11.3	
1998	5,077	1,175	4,560	1,692	6,252	( 5 )	6,252	562	11.1	
1999	4,832	1,050	4,132	1,750	5,881	( 5 )	5,881	546	10.8	
2000	4,851	970	4,049	1,773	5,822	( 5 )	5,822	534	10.9	
2001	4,839	963	3,879	1,923	5,801	( 5 )	5,801	530	10.9	
2002	4,761	984	3,743	2,003	5,746	( 5 )	5,746	529	10.9	
2003	4,706	974	3,668	2,012	5,681	( 5 )	5,681	513	11.1	
2004	4,510	908	3,536	1,883	5,419	( 5 )	5,419	510	10.6	
2005	R4,314	864	R3,466	R4,712	R5,178	( 5 )	R5,178	R498	R10.4	
2006	R4,395	P741	E3,363	E1,774	P5,136	( 5 )	P5,136	P501	P10.3	

<sup>1</sup> See "Crude Oil Well" in Glossary.

<sup>2</sup> United States excluding Alaska and Hawaii.

<sup>3</sup> As of December 31.

<sup>4</sup> Through 1976, average productivity is based on the average number of producing wells. Beginning in 1977, average productivity is based on the number of wells producing at end of year.

<sup>5</sup> Included in "Crude Oil."

R=Revised. P=Preliminary. E=Estimate.

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

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

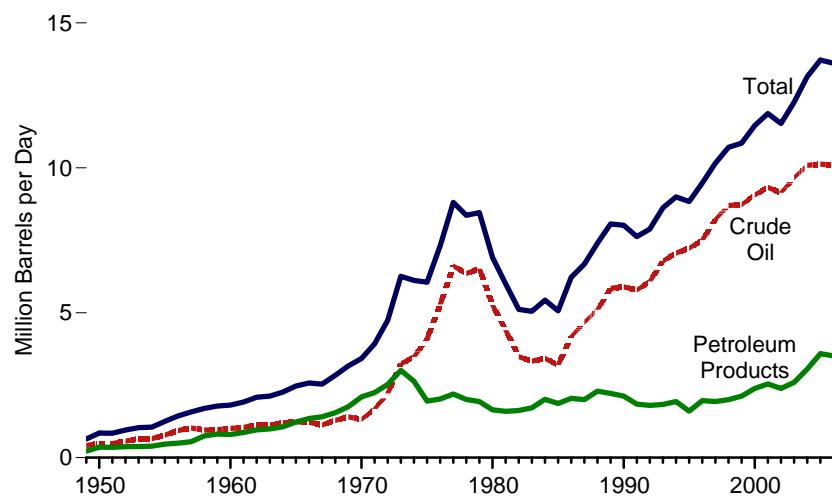
Sources: **Onshore:** • 1954-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement (PS)*, *Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data

Reports, *PS, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual (PSA)*, annual reports.

• 2006—EIA estimate. **Offshore:** • 1954-1969—U.S. Geological Survey, *Outer Continental Shelf Statistics* (June 1979). • 1970-1975—Bureau of Mines, Mineral Industry Surveys, *PS, Annual*, annual reports. • 1976-1980—EIA, *Energy Data Reports, PS, Annual*, annual reports. • 1981-2005—EIA, *PSA, Annual*, annual reports. • 2006—EIA estimate. **Producing Wells:** • 1954-1975—Bureau of Mines, *Minerals Yearbook, Crude Petroleum and Petroleum Products* chapter. • 1976-1980—EIA, *Energy Data Reports, PS, Annual*, annual reports. • 1981-1994—Independent Petroleum Association of America, *The Oil Producing Industry in Your State*. • 1995 forward—Gulf Publishing Co., *World Oil*, February issues. **All Other Data:** • 1954-1975—Bureau of Mines, Mineral Industry Surveys, *PS, Annual*, annual reports. • 1976-1980—EIA, *Energy Data Reports, PS, Annual*, annual reports. • 1981-2005—EIA, *PSA, Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

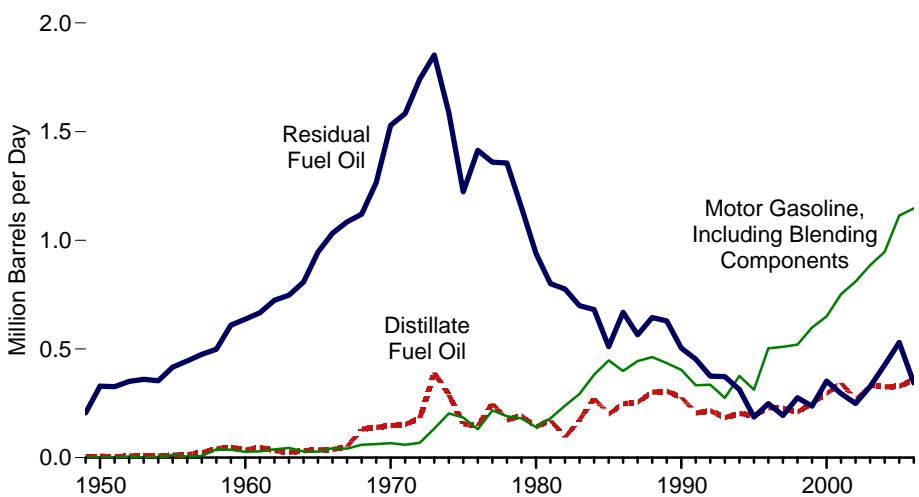
**Figure 5.3 Petroleum Imports by Type**

**Total, 1949-2006**

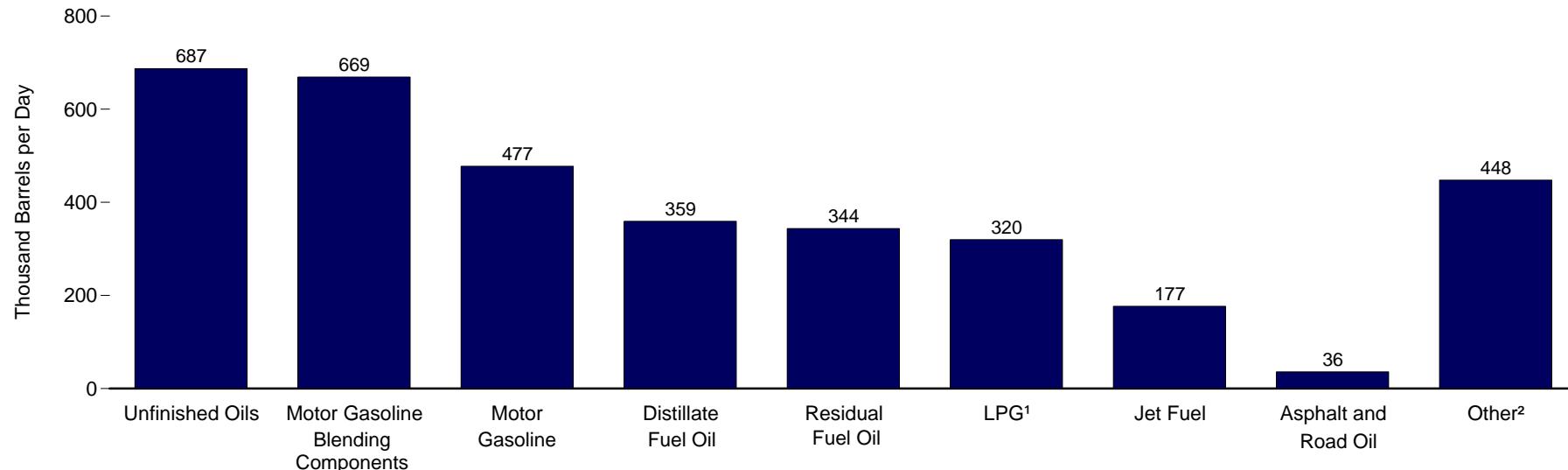


**By Selected Product, 1949-2006**

**By Selected Product, 1949-2006**



**By Product, 2006**



<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Aviation gasoline and blending components, kerosene, lubricants, pentanes plus, petrochemical feedstocks, petroleum coke, special naphthas, waxes, other hydrocarbons and oxygenates, and miscellaneous products.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.3.

**Table 5.3 Petroleum Imports by Type, Selected Years, 1949-2006**

(Thousand Barrels per Day)

Year	Crude Oil <sup>1</sup>	Petroleum Products										Total Petroleum	
		Asphalt and Road Oil	Distillate Fuel Oil	Jet Fuel <sup>2</sup>	Liquefied Petroleum Gases		Motor Gasoline <sup>4</sup>	Motor Gasoline Blending Components	Residual Fuel Oil	Unfinished Oils	Other Products <sup>5</sup>		
					Propane <sup>3</sup>	Total							
1949	421	3	5	( <sup>2</sup> )	0	0	0	0	206	10	0	224	645
1950	487	5	7	( <sup>2</sup> )	0	0	(s)	( <sup>6</sup> )	329	21	1	363	850
1955	782	9	12	( <sup>2</sup> )	0	0	13	( <sup>6</sup> )	417	15	0	466	1,248
1960	1,015	17	35	34	NA	4	27	( <sup>6</sup> )	637	45	(s)	799	1,815
1965	1,238	17	36	81	NA	21	28	( <sup>6</sup> )	946	92	10	1,229	2,468
1970	1,324	17	147	144	26	52	67	( <sup>6</sup> )	1,528	108	32	2,095	3,419
1971	1,681	20	153	180	32	70	59	( <sup>6</sup> )	1,583	124	56	2,245	3,926
1972	2,216	25	182	194	43	89	68	( <sup>6</sup> )	1,742	125	101	2,525	4,741
1973	3,244	23	392	212	71	132	134	( <sup>6</sup> )	1,853	137	129	3,012	6,256
1974	3,477	31	289	163	59	123	204	( <sup>6</sup> )	1,587	121	117	2,635	6,112
1975	4,105	14	155	133	60	112	184	( <sup>6</sup> )	1,223	36	95	1,951	6,056
1976	5,287	11	146	76	68	130	131	( <sup>6</sup> )	1,413	32	87	2,026	7,313
1977	6,615	4	250	75	86	161	217	( <sup>6</sup> )	1,359	31	95	2,193	8,807
1978	6,356	2	173	86	57	123	190	( <sup>6</sup> )	1,355	27	50	2,008	8,363
1979	6,519	4	193	78	88	217	181	( <sup>6</sup> )	1,151	59	54	1,937	8,456
1980	5,263	4	142	80	69	216	140	( <sup>6</sup> )	939	55	72	1,646	6,909
1981	4,396	4	173	38	70	244	157	24	800	112	48	1,599	5,996
1982	3,488	5	93	29	63	226	197	42	776	174	84	1,625	5,113
1983	3,329	7	174	29	44	190	247	47	699	234	94	1,722	5,051
1984	3,426	18	272	62	67	195	299	83	681	231	171	2,011	5,437
1985	3,201	35	200	39	67	187	381	67	510	318	130	1,866	5,067
1986	4,178	29	247	57	110	242	326	72	669	250	153	2,045	6,224
1987	4,674	36	255	67	88	190	384	60	565	299	146	2,004	6,678
1988	5,107	31	302	90	106	209	405	57	644	360	196	2,295	7,402
1989	5,843	31	306	106	111	181	369	66	629	348	183	2,217	8,061
1990	5,894	32	278	108	115	188	342	62	504	413	198	2,123	8,018
1991	5,782	28	205	67	91	147	297	36	453	413	198	1,844	7,627
1992	6,083	27	216	82	85	131	294	41	375	443	195	1,805	7,888
1993	6,787	32	184	100	103	160	247	27	373	491	219	1,833	8,620
1994	7,063	37	203	117	124	183	356	20	314	413	291	1,933	8,996
1995	7,230	36	193	106	102	146	265	48	187	349	276	1,605	8,835
1996	7,508	27	230	111	119	166	336	166	248	367	319	1,971	9,478
1997	8,225	32	228	91	113	169	309	200	194	353	360	1,936	10,162
1998	8,706	28	210	124	137	194	311	209	275	302	350	2,002	10,708
1999	8,731	34	250	128	122	182	382	217	237	317	375	2,122	10,852
2000	9,071	28	295	162	161	215	427	223	352	274	414	2,389	11,459
2001	9,328	26	344	148	140	206	454	298	295	378	393	2,543	11,871
2002	9,140	27	267	107	145	183	498	311	249	410	337	2,390	11,530
2003	9,665	12	333	109	168	225	518	367	327	335	373	2,599	12,264
2004	10,088	43	325	127	209	263	496	451	426	490	436	3,057	13,145
2005	R10,126	R43	R329	R190	R233	R328	R603	R510	R530	R582	R473	R3,588	R13,714
2006 <sup>p</sup>	10,095	36	359	177	218	320	477	669	344	687	448	3,517	13,612

<sup>1</sup> Includes imports for the Strategic Petroleum Reserve, which began in 1977.

<sup>2</sup> Through 1955, naphtha-type jet fuel is included in "Motor Gasoline." Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products." Beginning in 2005, naphtha-type jet fuel is included in "Other Products."

<sup>3</sup> Includes propylene.

<sup>4</sup> Finished motor gasoline. Through 1955, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components.

<sup>5</sup> Aviation gasoline blending components, kerosene, lubricants, pentanes plus, petrochemical feedstocks, petroleum coke, waxes, other hydrocarbons and oxygenates, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes aviation gasoline and

special naphthas. Beginning in 2005, also includes naphtha-type jet fuel.

<sup>6</sup> Included in "Motor Gasoline."

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 500 barrels per day.

Notes: • Includes imports from U.S. possessions and territories. • Totals may not equal sum of components due to independent rounding.

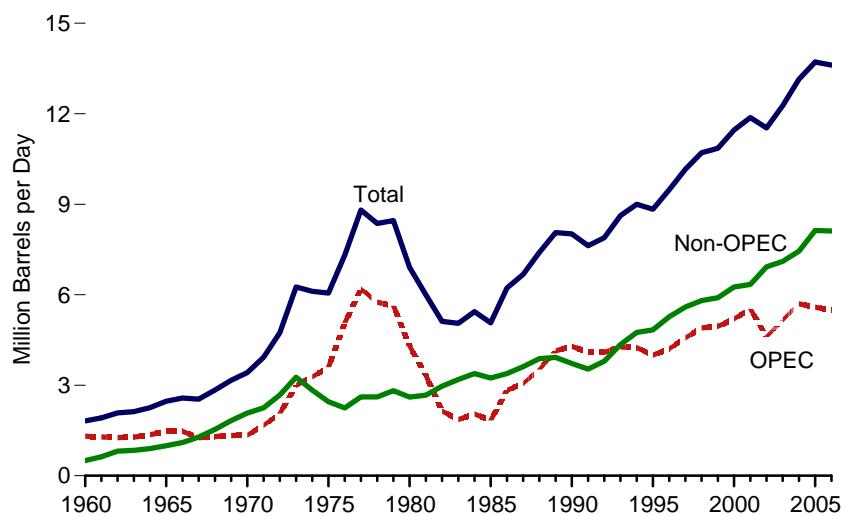
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

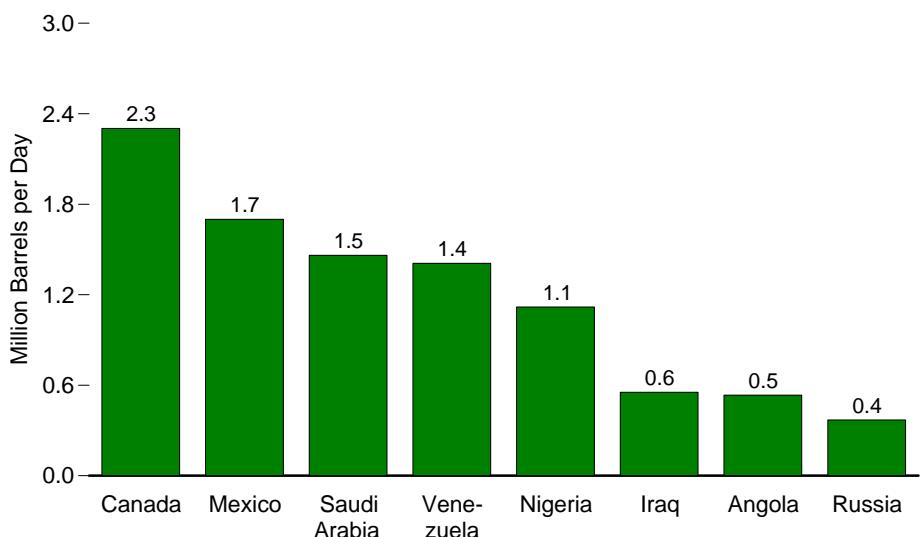
Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.4 Petroleum Imports by Country of Origin**

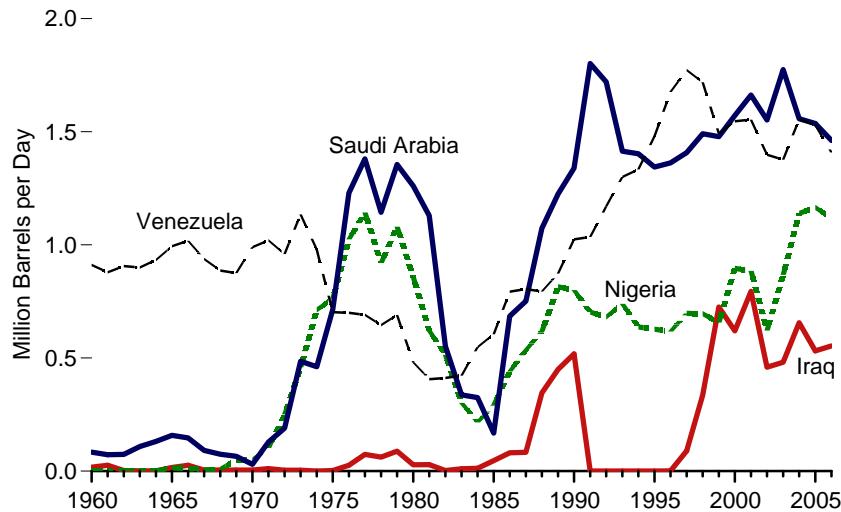
**Total, OPEC, and Non-OPEC, 1960-2006**



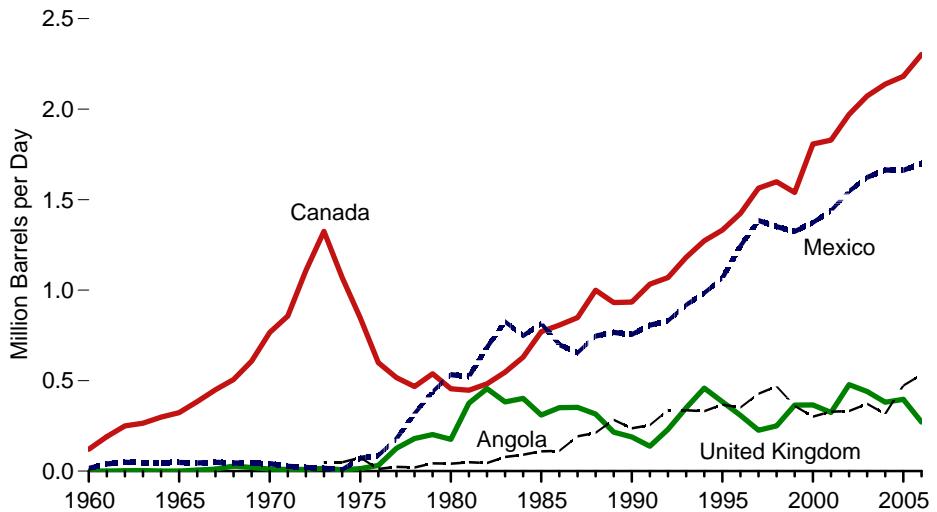
**Selected Countries, 2006**



**Selected OPEC Countries, 1960-2006**



**Selected Non-OPEC Countries, 1960-2006**



Notes: • OPEC=Organization of the Petroleum Exporting Countries. • Because vertical scales differ, graphs should not be compared.

Source: Table 5.4.

**Table 5.4 Petroleum Imports by Country of Origin, 1960-2006**

Year	Persian Gulf <sup>2</sup>	Selected OPEC <sup>1</sup> Countries					Selected Non-OPEC Countries					Total Imports	Imports From Persian Gulf <sup>2</sup> as Share of Total Imports	Imports From OPEC <sup>1</sup> as Share of Total Imports	
		Iraq	Nigeria	Saudi Arabia	Venezuela	Total OPEC <sup>3</sup>	Angola	Canada	Mexico	Russia <sup>4</sup>	United Kingdom				
Thousand Barrels per Day															
1960	NA	17	0	84	911	1,314	0	120	16	0	(s)	500	1,815	NA	72.4
1961	346	25	0	73	879	1,286	0	190	40	0	1	631	1,917	18.0	67.1
1962	272	2	0	74	906	1,265	0	250	49	0	2	816	2,082	13.0	60.8
1963	303	1	0	108	900	1,283	0	265	48	0	3	839	2,123	14.3	60.5
1964	315	1	0	131	933	1,361	0	299	47	0	(s)	898	2,259	13.9	60.2
1965	345	16	15	158	994	1,476	0	323	48	0	(s)	992	2,468	14.0	59.8
1966	306	26	11	147	1,018	1,471	0	384	45	0	6	1,102	2,573	11.9	57.2
1967	198	5	5	92	938	1,259	(s)	450	49	0	11	1,278	2,537	7.8	49.6
1968	202	5	9	74	886	1,302	0	506	45	0	28	1,538	2,840	7.1	45.9
1969	179	5	49	65	875	1,336	1	608	43	2	20	1,830	3,166	5.7	42.2
1970	121	5	50	30	989	1,343	0	766	42	3	11	2,076	3,419	3.5	39.3
1971	299	11	102	128	1,020	1,673	4	857	27	0	10	2,253	3,926	7.6	42.6
1972	471	4	251	190	959	2,063	16	1,108	21	8	9	2,678	4,741	9.9	43.5
1973	848	4	459	486	1,135	2,993	49	1,325	16	26	15	3,263	6,256	13.6	47.8
1974	1,039	0	713	461	979	3,280	49	1,070	8	20	8	2,832	6,112	17.0	53.7
1975	1,165	2	762	715	702	3,601	75	846	71	14	14	2,454	6,056	19.2	59.5
1976	1,840	26	1,025	1,230	700	5,066	12	599	87	11	31	2,247	7,313	25.2	69.3
1977	2,448	74	1,143	1,380	690	6,193	24	517	179	12	126	2,614	8,807	27.8	70.3
1978	2,219	62	919	1,144	646	5,751	20	467	318	8	180	2,612	8,363	26.5	68.8
1979	2,069	88	1,080	1,356	690	5,637	43	538	439	1	202	2,819	8,456	24.5	66.7
1980	1,519	28	857	1,261	481	4,300	42	455	533	1	176	2,609	6,909	22.0	62.2
1981	1,219	(s)	620	1,129	406	3,323	49	447	522	5	375	2,672	5,996	20.3	55.4
1982	696	3	514	552	412	2,146	44	482	685	1	456	2,968	5,113	13.6	42.0
1983	442	10	302	337	422	1,862	78	547	826	1	382	3,189	5,051	8.8	36.9
1984	506	12	216	325	548	2,049	90	630	748	13	402	3,388	5,437	9.3	37.7
1985	311	46	293	168	605	1,830	110	770	816	8	310	3,237	5,067	6.1	36.1
1986	912	81	440	685	793	2,837	112	807	699	18	350	3,387	6,224	14.7	45.6
1987	1,077	83	535	751	804	3,060	192	848	655	11	352	3,617	6,678	16.1	45.8
1988	1,541	345	618	1,073	794	3,520	212	999	747	29	315	3,882	7,402	20.8	47.6
1989	1,861	449	815	1,224	873	4,140	284	931	767	48	215	3,921	8,061	23.1	51.4
1990	1,966	518	800	1,339	1,025	4,296	237	934	755	45	189	3,721	8,018	24.5	53.6
1991	1,845	0	703	1,802	1,035	4,092	254	1,033	807	29	138	3,535	7,627	24.2	53.7
1992	1,778	0	681	1,720	1,170	4,092	336	1,069	830	18	230	3,796	7,888	22.5	51.9
1993	1,782	0	740	1,414	1,300	4,273	336	1,181	919	55	350	4,347	8,620	20.7	49.6
1994	1,728	0	637	1,402	1,334	4,247	331	1,272	984	30	458	4,749	8,996	19.2	47.2
1995	1,573	0	627	1,344	1,480	4,002	367	1,332	1,068	25	383	4,833	8,835	17.8	45.3
1996	1,604	1	617	1,363	1,676	4,211	351	1,424	1,244	25	308	5,267	9,478	16.9	44.4
1997	1,755	89	698	1,407	1,773	4,569	427	1,563	1,385	13	226	5,593	10,162	17.3	45.0
1998	2,136	336	696	1,491	1,719	4,905	468	1,598	1,351	24	250	5,803	10,708	19.9	45.8
1999	2,464	725	657	1,478	1,493	4,953	361	1,539	1,324	89	365	5,899	10,852	22.7	45.6
2000	2,488	620	896	1,572	1,546	5,203	301	1,807	1,373	72	366	6,257	11,459	21.7	45.4
2001	2,761	795	885	1,662	1,553	5,528	328	1,828	1,440	90	324	6,343	11,871	23.3	46.6
2002	2,269	459	621	1,552	1,398	4,605	332	1,971	1,547	210	478	6,925	11,530	19.7	39.9
2003	2,501	481	867	1,774	1,376	5,162	371	2,072	1,623	254	440	7,103	12,264	20.4	42.1
2004	2,493	656	1,140	1,558	1,554	5,701	316	2,138	1,665	298	380	7,444	13,145	19.0	43.4
2005	R <sup>2</sup> ,334	R <sup>531</sup>	R <sup>1,166</sup>	R <sup>1,537</sup>	R <sup>1,529</sup>	R <sup>5,587</sup>	473	R <sup>2,181</sup>	R <sup>1,662</sup>	410	R <sup>396</sup>	R <sup>8,127</sup>	R <sup>13,714</sup>	17.0	40.7
2006 <sup>P</sup>	2,209	553	1,119	1,461	1,409	5,499	534	2,303	1,700	370	271	8,113	13,612	16.2	40.4

<sup>1</sup> Organization of the Petroleum Exporting Countries. See Glossary for current membership.

<sup>2</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>3</sup> Ecuador withdrew from OPEC on December 31, 1992. Through 1992, Ecuador is included in "Total OPEC"; beginning in 1993, Ecuador is included in "Total Non-OPEC." Gabon withdrew from OPEC on December 31, 1994. Through 1994, Gabon is included in "Total OPEC"; beginning in 1995, Gabon is included in "Total Non-OPEC."

<sup>4</sup> Through 1992, may include imports from republics other than Russia in the former U.S.S.R.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 500 barrels per day.

Notes: • The country of origin for refined petroleum products may not be the country of origin for the crude oil from which the refined products were produced. For example, refined products imported from

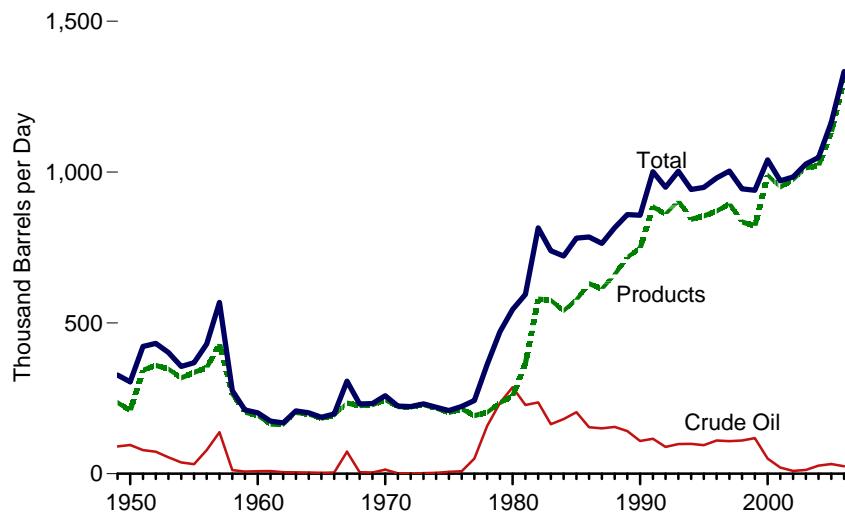
refineries in the Caribbean may have been produced from Middle East crude oil. • Data include any imports for the Strategic Petroleum Reserve, which began in 1977. • Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

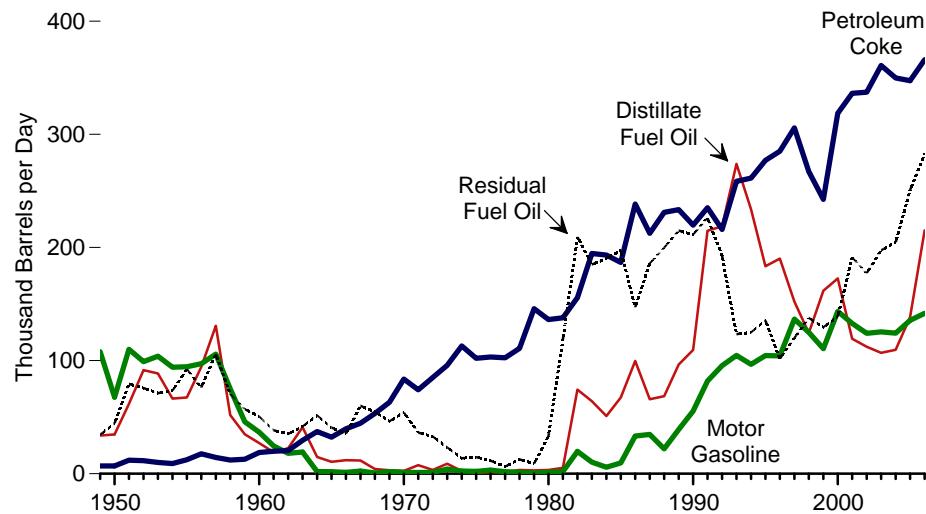
Sources: • 1960-1975—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *P.A.D. Districts Supply/Demand, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.5 Petroleum Exports by Type**

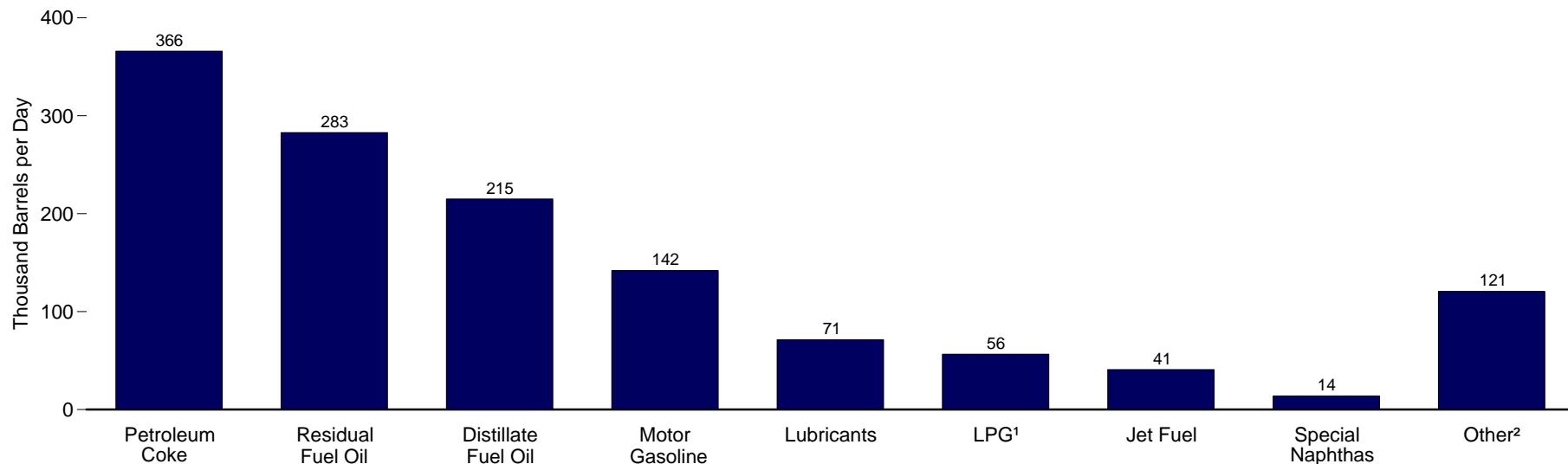
**Total, 1949-2006**



**By Selected Product, 1949-2006**



**By Product, 2006**



<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Asphalt and road oil, aviation gasoline, kerosene, motor gasoline blending components, pentanes plus, waxes, other hydrocarbons and oxygenates, and miscellaneous products.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.5.

**Table 5.5 Petroleum Exports by Type, Selected Years, 1949-2006**

(Thousand Barrels per Day)

Year	Crude Oil	Petroleum Products												Total Petroleum	
		Distillate Fuel Oil	Jet Fuel <sup>1</sup>	Liquefied Petroleum Gases		Lubricants	Motor Gasoline <sup>3</sup>	Petroleum Coke	Petrochemical Feedstocks	Residual Fuel Oil	Special Naphthas	Other Products <sup>4</sup>	Total		
				Propane <sup>2</sup>	Total										
1949	91	34	( <sup>1</sup> )	NA	4	35	108	7	0	35	NA	15	236	327	
1950	95	35	( <sup>1</sup> )	NA	4	39	68	7	0	44	NA	12	210	305	
1955	32	67	(s)	NA	12	39	95	12	0	93	NA	18	336	368	
1960	8	27	(s)	NA	8	43	37	19	0	51	NA	9	193	202	
1965	3	10	3	NA	21	45	2	32	5	41	4	20	184	187	
1970	14	2	6	6	27	44	1	84	10	54	4	12	245	259	
1971	1	8	4	13	26	43	1	74	14	36	4	12	223	224	
1972	1	3	3	18	31	41	1	85	13	33	4	8	222	222	
1973	2	9	4	15	27	35	4	96	19	23	5	8	229	231	
1974	3	2	3	14	25	33	2	113	15	14	4	7	218	221	
1975	6	1	2	13	26	25	2	102	22	15	3	6	204	209	
1976	8	1	2	13	25	26	3	103	30	12	7	6	215	223	
1977	50	1	2	10	18	26	2	102	24	6	4	7	193	243	
1978	158	3	1	9	20	27	1	111	23	13	2	2	204	362	
1979	235	3	1	8	15	23	(s)	146	31	9	5	3	236	471	
1980	287	3	1	10	21	23	1	136	29	33	5	4	258	544	
1981	228	5	2	18	42	19	2	138	26	118	11	4	367	595	
1982	236	74	6	31	65	16	20	156	24	209	5	4	579	815	
1983	164	64	6	43	73	16	10	195	20	185	3	3	575	739	
1984	181	51	9	30	48	15	6	193	21	190	2	6	541	722	
1985	204	67	13	48	62	15	10	187	19	197	1	4	577	781	
1986	154	100	18	28	42	23	33	238	22	147	1	8	631	785	
1987	151	66	24	24	38	23	35	213	20	186	2	7	613	764	
1988	155	69	28	31	49	26	22	231	23	200	7	6	661	815	
1989	142	97	27	24	35	19	39	233	26	215	12	15	717	859	
1990	109	109	43	28	40	20	55	220	26	211	11	13	748	857	
1991	116	215	43	28	41	18	82	235	0	226	15	9	885	1,001	
1992	89	219	43	33	49	16	96	216	0	193	14	16	861	950	
1993	98	274	59	26	43	19	105	258	0	123	4	20	904	1,003	
1994	99	234	20	24	38	22	97	261	0	125	20	26	843	942	
1995	95	183	26	38	58	25	104	277	0	136	21	25	855	949	
1996	110	190	48	28	51	34	104	285	0	102	21	36	871	981	
1997	108	152	35	32	50	31	137	306	0	120	22	44	896	1,003	
1998	110	124	26	25	42	25	125	267	0	138	18	70	835	945	
1999	118	162	32	33	50	28	111	242	0	129	16	52	822	940	
2000	50	173	32	53	74	26	144	319	0	139	20	64	990	1,040	
2001	20	119	29	31	44	26	133	336	0	191	23	50	951	971	
2002	9	112	15	55	67	33	124	337	0	177	15	94	975	984	
2003	12	107	20	37	56	37	125	361	0	197	22	89	1,014	1,027	
2004	27	110	40	28	43	41	124	350	0	205	27	82	1,021	1,048	
2005	R32	138	53	37	53	40	136	347	0	251	21	94	1,133	R1,165	
2006 <sup>p</sup>	25	215	41	45	56	71	142	366	0	283	14	121	1,309	1,333	

<sup>1</sup> Through 1952, naphtha-type jet fuel is included in the products from which it was blended: gasoline, kerosene, and distillate fuel oil. Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products." Beginning in 2005, naphtha-type jet fuel is included in "Other Products."

<sup>2</sup> Includes propylene.

<sup>3</sup> Finished motor gasoline. Through 1963, also includes aviation gasoline.

<sup>4</sup> Asphalt and road oil, kerosene, motor gasoline blending components, pentanes plus, waxes, other hydrocarbons and oxygenates, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes aviation gasoline. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 500 barrels per day.

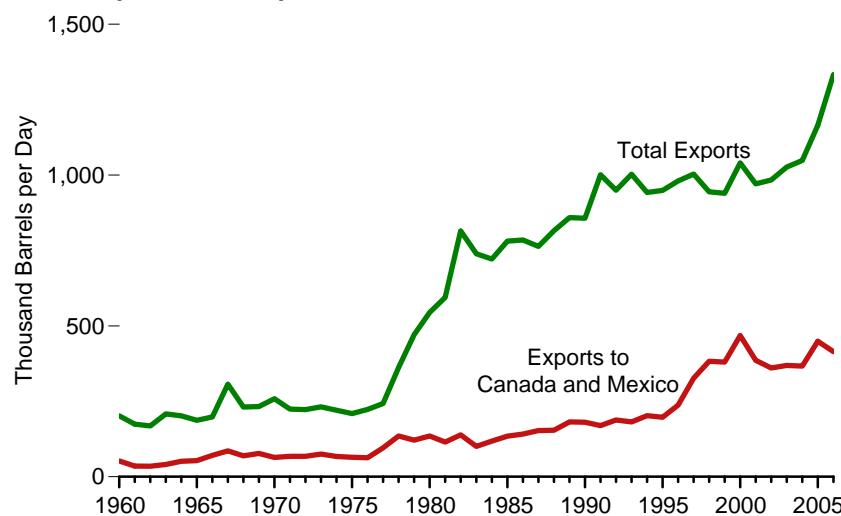
Notes: • Includes exports to U.S. possessions and territories. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

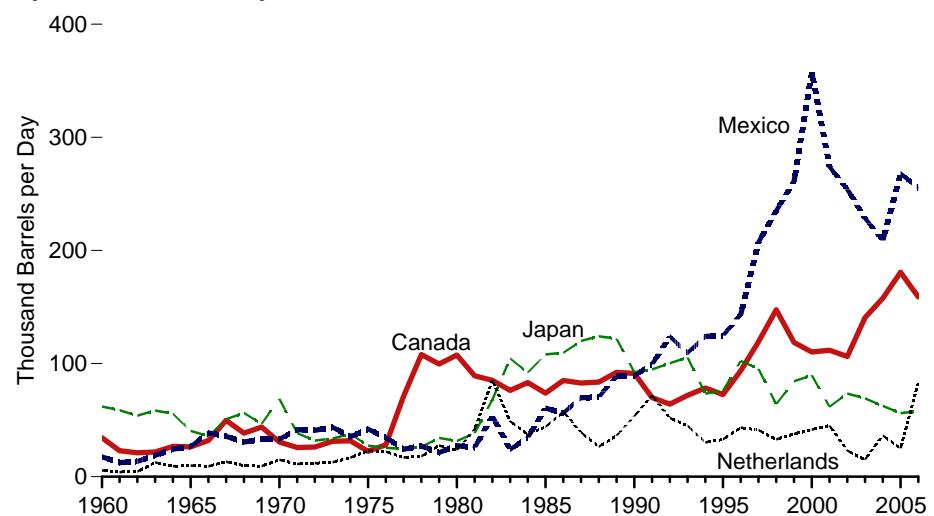
Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.6 Petroleum Exports by Country of Destination**

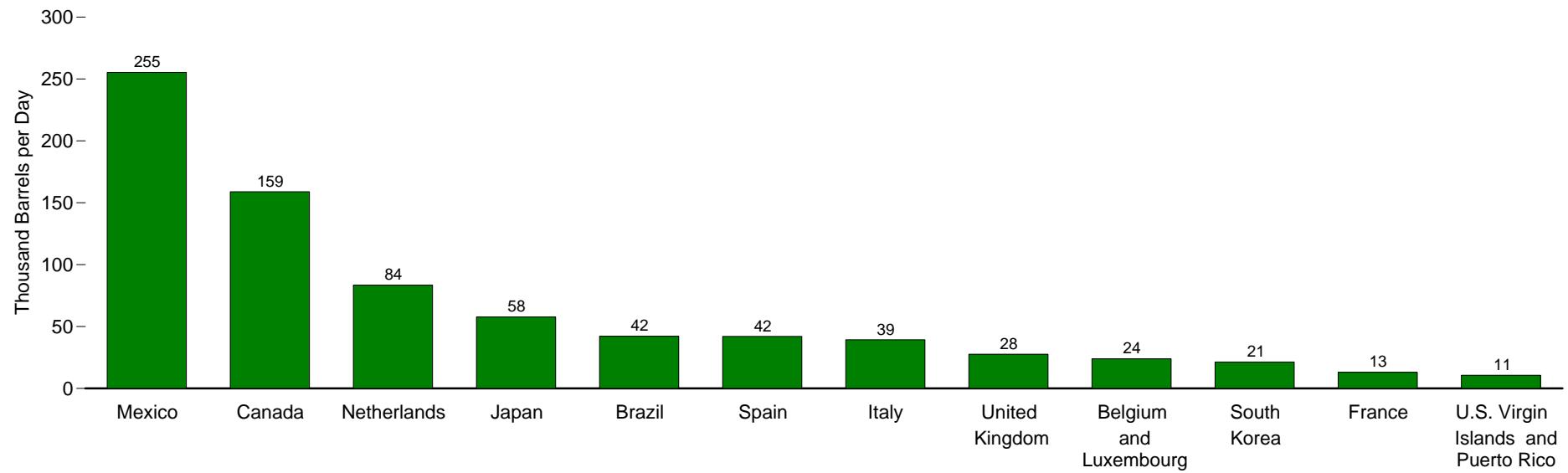
**Total Exports and Exports to Canada and Mexico, 1960-2006**



**By Selected Country, 1960-2006**



**By Selected Country, 2006**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.6.

**Table 5.6 Petroleum Exports by Country of Destination, 1960-2006**

(Thousand Barrels per Day)

Year	Belgium and Luxembourg	Brazil	Canada	France	Italy	Japan	Mexico	Netherlands	South Korea	Spain	United Kingdom	U.S. Virgin Islands and Puerto Rico	Other	Total
1960	3	4	34	4	6	62	18	6	NA	NA	12	1	52	202
1961	4	4	23	4	5	59	12	4	NA	NA	10	1	48	174
1962	3	5	21	3	5	54	14	5	NA	NA	8	1	50	168
1963	9	4	22	4	8	58	19	13	NA	NA	11	1	59	208
1964	4	4	27	4	8	56	24	9	NA	NA	10	2	55	202
1965	3	3	26	3	7	40	27	10	NA	NA	12	1	54	187
1966	3	4	32	4	7	36	39	9	NA	NA	12	3	49	198
1967	5	6	50	3	9	51	36	13	NA	NA	62	7	65	307
1968	4	8	39	4	8	56	31	10	NA	NA	14	2	55	231
1969	4	7	44	4	9	47	33	9	NA	NA	13	2	59	233
1970	5	7	31	5	10	69	33	15	NA	NA	12	2	71	259
1971	7	9	26	5	8	39	42	11	NA	NA	9	3	67	224
1972	13	9	26	5	9	32	41	12	NA	4	10	4	59	222
1973	15	8	31	5	9	34	44	13	NA	4	9	3	56	231
1974	13	9	32	4	9	38	35	17	NA	4	6	6	48	221
1975	9	6	22	6	10	27	42	23	NA	4	7	12	40	209
1976	12	7	28	6	10	25	35	22	NA	4	13	22	39	223
1977	16	6	71	9	10	25	24	17	NA	5	9	11	39	243
1978	15	8	108	9	10	26	27	18	NA	5	7	86	42	362
1979	19	7	100	13	15	34	21	28	2	9	7	170	45	471
1980	20	4	108	11	14	32	28	23	2	8	7	220	70	544
1981	12	1	89	15	22	38	26	42	10	18	5	220	97	595
1982	17	8	85	24	32	68	53	85	28	24	14	212	165	815
1983	22	2	76	23	35	104	24	49	15	34	8	144	202	739
1984	21	1	83	18	39	92	35	37	17	29	14	152	182	722
1985	26	3	74	11	30	108	61	44	27	28	14	162	193	781
1986	30	3	85	11	39	110	56	58	12	39	8	113	222	785
1987	17	2	83	12	42	120	70	39	25	31	6	136	179	764
1988	25	3	84	12	29	124	70	26	24	36	9	147	226	815
1989	23	5	92	11	37	122	89	36	17	28	9	141	249	859
1990	20	2	91	17	48	92	89	54	60	33	11	101	240	857
1991	22	13	70	27	55	95	99	72	66	23	13	117	330	1,001
1992	22	20	64	9	38	100	124	52	80	21	12	95	315	950
1993	21	16	72	8	34	105	110	45	74	30	10	108	370	1,003
1994	26	15	78	11	35	74	124	30	66	30	10	104	338	942
1995	21	16	73	11	46	76	125	33	57	38	14	123	317	949
1996	27	29	94	18	32	102	143	43	60	34	9	72	318	981
1997	21	15	119	11	30	95	207	41	50	42	12	18	340	1,003
1998	14	18	148	8	30	64	235	33	33	30	11	4	317	945
1999	11	27	119	7	25	84	261	38	49	26	9	8	276	940
2000	14	28	110	10	34	90	358	42	20	40	10	10	277	1,040
2001	16	23	112	13	33	62	274	45	14	51	13	4	312	971
2002	19	26	106	12	29	74	254	23	11	54	12	9	354	984
2003	13	27	141	9	39	69	228	15	10	39	6	9	421	1,027
2004	20	27	158	18	32	63	209	36	12	42	14	10	408	1,048
2005	21	39	R <sup>181</sup>	R <sup>14</sup>	28	56	268	25	16	35	21	11	449	R <sup>1,165</sup>
2006 <sup>p</sup>	24	42	159	13	39	58	255	84	21	42	28	11	558	1,333

R=Revised. P=Preliminary. NA=Not available.

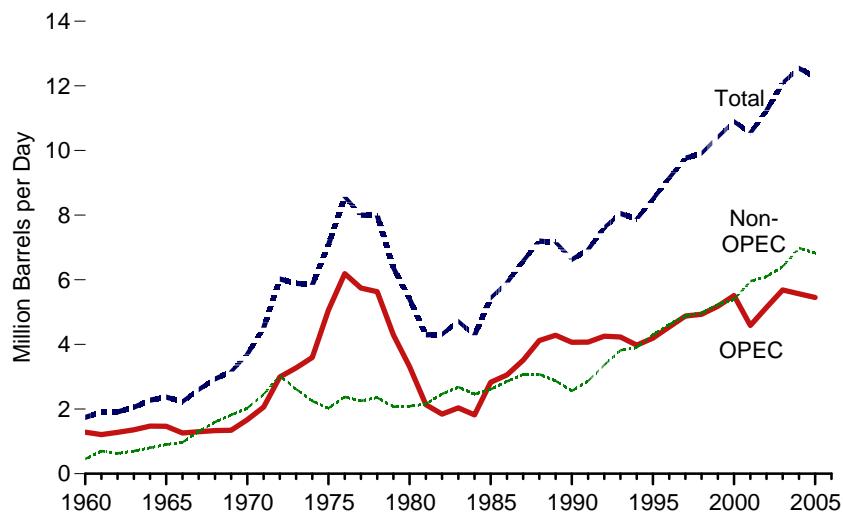
Note: Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

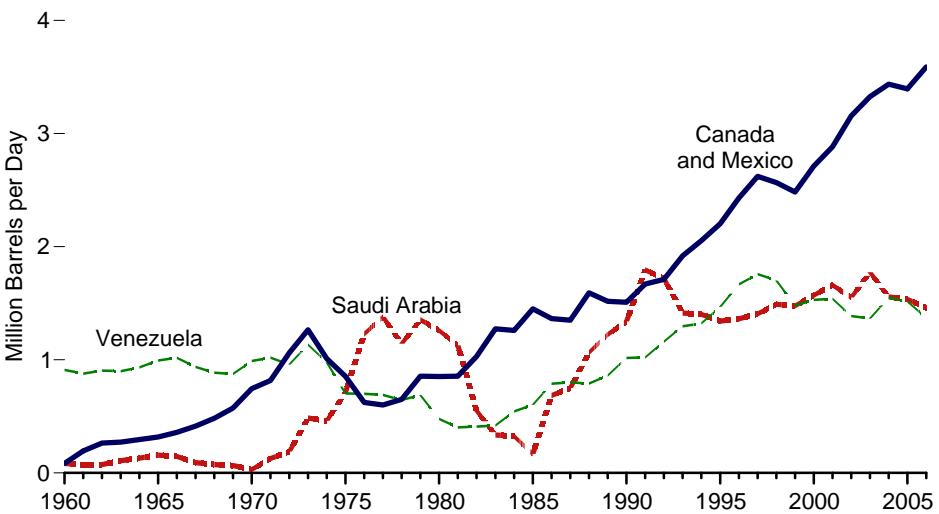
Sources: • 1960-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.7 Petroleum Net Imports by Country of Origin, 1960-2006**

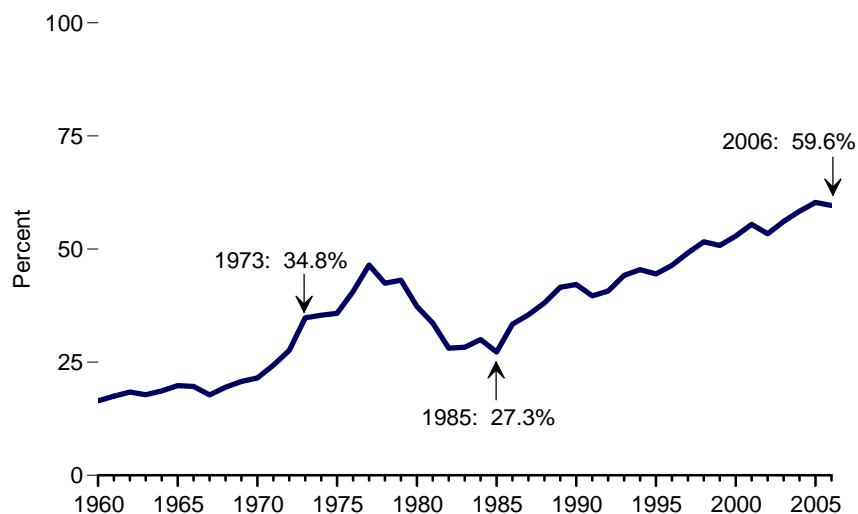
**Total, OPEC, and Non-OPEC**



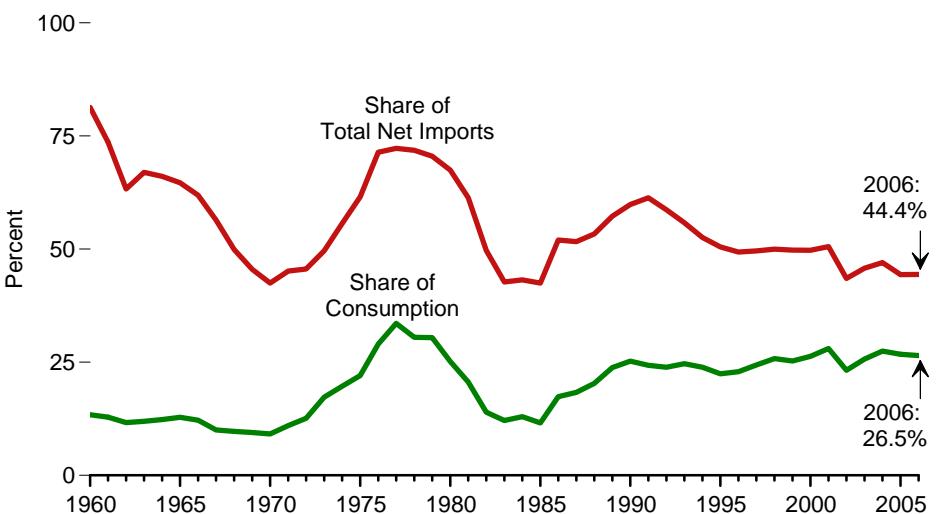
**By Selected Country**



**Total Net Imports as Share of Consumption**



**Net Imports From OPEC**



Notes: • OPEC=Organization of the Petroleum Exporting Countries. • Because vertical scales differ, graphs should not be compared.

Source: Table 5.7.

**Table 5.7 Petroleum Net Imports by Country of Origin, 1960-2006**

Year	Persian Gulf <sup>2</sup>	Selected OPEC <sup>1</sup> Countries					Selected Non-OPEC Countries					Total Net Imports	Total Net Imports as Share of Consumption <sup>4</sup>	Net Imports From OPEC <sup>1</sup>	
		Algeria	Nigeria	Saudi Arabia	Venezuela	Total OPEC <sup>3</sup>	Canada	Mexico	United Kingdom	U.S. Virgin Islands and Puerto Rico	Total Non-OPEC <sup>3</sup>			Share of Total Net Imports <sup>5</sup>	Share of Consumption <sup>6</sup>
Thousand Barrels per Day															Percent
1960	NA	NA	0	84	910	1,311	86	-2	-12	34	302	1,613	16.5	81.3	13.4
1961	NA	NA	0	73	878	1,283	167	27	-10	42	460	1,743	17.5	73.6	12.9
1962	NA	NA	0	74	905	1,210	229	35	-6	40	703	1,913	18.4	63.3	11.6
1963	NA	NA	0	108	899	1,282	243	29	-7	43	632	1,915	17.8	67.0	11.9
1964	NA	NA	0	131	932	1,359	272	23	-9	45	698	2,057	18.7	66.1	12.3
1965	NA	NA	15	158	994	1,475	297	21	-11	45	806	2,281	19.8	64.7	12.8
1966	NA	NA	11	147	1,018	1,470	352	6	-6	58	904	2,375	19.7	61.9	12.2
1967	NA	NA	5	92	937	1,258	400	13	-51	89	972	2,230	17.8	56.4	10.0
1968	NA	NA	9	74	886	1,302	468	15	13	143	1,307	2,609	19.5	49.9	9.7
1969	NA	NA	49	65	875	1,336	564	10	7	186	1,598	2,933	20.8	45.5	9.5
1970	NA	NA	50	30	989	1,343	736	9	-1	270	1,817	3,161	21.5	42.5	9.1
1971	NA	NA	102	128	1,019	1,671	831	-14	1	365	2,030	3,701	24.3	45.2	11.0
1972	NA	NA	251	189	959	2,061	1,082	-20	-1	428	2,458	4,519	27.6	45.6	12.6
1973	NA	NA	459	485	1,134	2,991	1,294	-28	6	426	3,034	6,025	34.8	49.6	17.3
1974	NA	NA	713	461	978	3,277	1,038	-27	1	475	2,615	5,892	35.4	55.6	19.7
1975	NA	NA	762	714	702	3,599	824	29	7	484	2,248	5,846	35.8	61.6	22.1
1976	NA	NA	1,025	1,229	699	5,063	571	53	19	488	2,027	7,090	40.6	71.4	29.0
1977	NA	NA	1,143	1,379	689	6,190	446	155	117	560	2,375	8,565	46.5	72.3	33.6
1978	NA	NA	919	1,142	644	5,747	359	291	173	436	2,255	8,002	42.5	71.8	30.5
1979	NA	NA	1,080	1,354	688	5,633	438	418	196	353	2,352	7,985	43.1	70.5	30.4
1980	NA	NA	857	1,259	478	4,293	347	506	169	256	2,071	6,365	37.3	67.5	25.2
1981	1,215	311	620	1,128	403	3,315	358	497	370	169	2,086	5,401	33.6	61.4	20.6
1982	692	170	512	551	409	2,136	397	632	442	154	2,163	4,298	28.1	49.7	14.0
1983	439	240	299	336	420	1,843	471	802	374	178	2,469	4,312	28.3	42.7	12.1
1984	502	323	215	324	544	2,037	547	714	388	184	2,679	4,715	30.0	43.2	13.0
1985	309	187	293	167	602	1,821	696	755	295	114	2,465	4,286	27.3	42.5	11.6
1986	909	271	440	685	788	2,828	721	642	342	152	2,611	5,439	33.4	52.0	17.4
1987	1,074	295	535	751	801	3,055	765	585	346	158	2,859	5,914	35.5	51.7	18.3
1988	1,529	300	618	1,064	790	3,513	916	677	306	117	3,074	6,587	38.1	53.3	20.3
1989	1,858	269	815	1,224	861	4,124	839	678	206	212	3,078	7,202	41.6	57.3	23.8
1990	1,962	280	800	1,339	1,016	4,285	843	666	179	213	2,876	7,161	42.2	59.8	25.2
1991	1,833	253	703	1,796	1,020	4,065	963	707	125	153	2,561	6,626	39.6	61.3	24.3
1992	1,773	196	680	1,720	1,161	4,071	1,005	706	219	180	2,867	6,938	40.7	58.7	23.9
1993	1,774	219	736	1,413	1,296	4,253	1,109	809	340	175	3,365	7,618	44.2	55.8	24.7
1994	1,723	243	637	1,402	1,322	4,233	1,194	860	448	246	3,822	8,054	45.5	52.6	23.9
1995	1,563	234	626	1,343	1,468	3,980	1,260	943	369	170	3,906	7,886	44.5	50.5	22.5
1996	1,596	256	616	1,362	1,667	4,193	1,330	1,101	299	262	4,305	8,498	46.4	49.3	22.9
1997	1,747	285	693	1,407	1,758	4,542	1,444	1,178	214	298	4,616	9,158	49.2	49.6	24.4
1998	2,132	290	693	1,491	1,700	4,880	1,451	1,116	239	305	4,884	9,764	51.6	50.0	25.8
1999	2,459	259	655	1,478	1,480	4,934	1,421	1,063	356	284	4,978	9,912	50.8	49.8	25.3
2000	2,483	225	896	1,571	1,530	5,181	1,697	1,015	356	297	5,238	10,419	52.9	49.7	26.3
2001	2,758	278	884	1,662	1,540	5,510	1,717	1,166	311	268	5,390	10,900	55.5	50.5	28.0
2002	2,265	264	620	1,551	1,387	4,589	1,864	1,292	467	224	5,958	10,546	53.4	43.5	23.2
2003	2,497	381	866	1,774	1,364	5,144	1,932	1,395	434	279	6,094	11,238	56.1	45.8	25.7
2004	2,489	452	1,139	1,557	1,548	5,688	1,980	1,456	366	321	6,409	12,097	58.4	47.0	27.4
2005 <sup>R</sup>	2,330	R478	R1,165	R1,536	R1,515	R5,567	R2,001	R1,394	R375	R317	R6,982	R12,549	R60.3	44.4	R26.8
2006 <sup>P</sup>	2,206	650	1,115	1,460	1,370	5,451	2,144	1,445	243	315	6,827	12,278	59.6	44.4	26.5

<sup>1</sup> Organization of the Petroleum Exporting Countries. See Glossary for membership.

<sup>2</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>3</sup> Ecuador withdrew from OPEC on December 31, 1992. Through 1992, Ecuador is included in "Total OPEC"; beginning in 1993, Ecuador is included in "Total Non-OPEC." Gabon withdrew from OPEC on December 31, 1994. Through 1994, Gabon is included in "Total OPEC"; beginning in 1995, Gabon is included in "Total Non-OPEC."

<sup>4</sup> Calculated by dividing total net petroleum imports by total U.S. petroleum products supplied (consumption).

<sup>5</sup> Calculated by dividing net petroleum imports from OPEC countries by total net petroleum imports.

<sup>6</sup> Calculated by dividing net petroleum imports from OPEC countries by total U.S. petroleum product supplied (consumption).

R=Revised. P=Preliminary. NA=Not available.

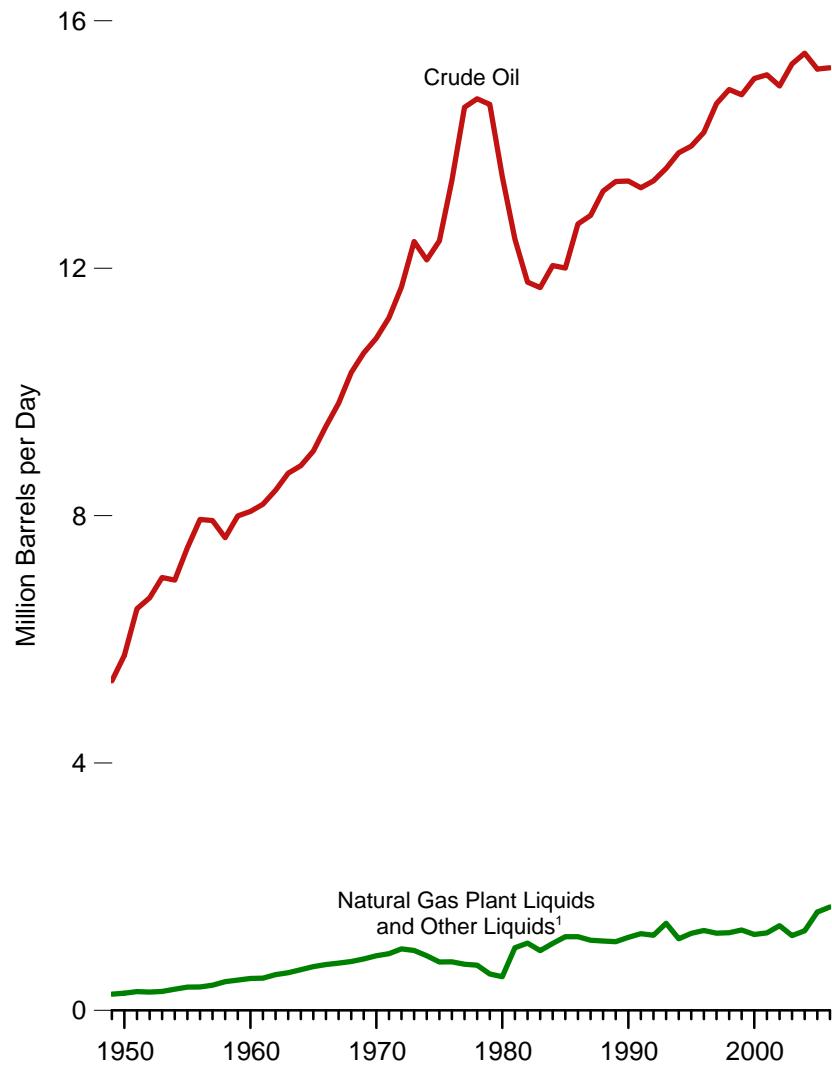
Notes: • The country of origin for refined petroleum products may not be the country of origin for the crude oil from which the refined products were produced. For example, refined products imported from refineries in the Caribbean may have been produced from Middle East crude oil. • Net imports equal imports minus exports. Minus sign indicates exports are greater than imports. • Data include any imports for the Strategic Petroleum Reserve, which began in 1977. • Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

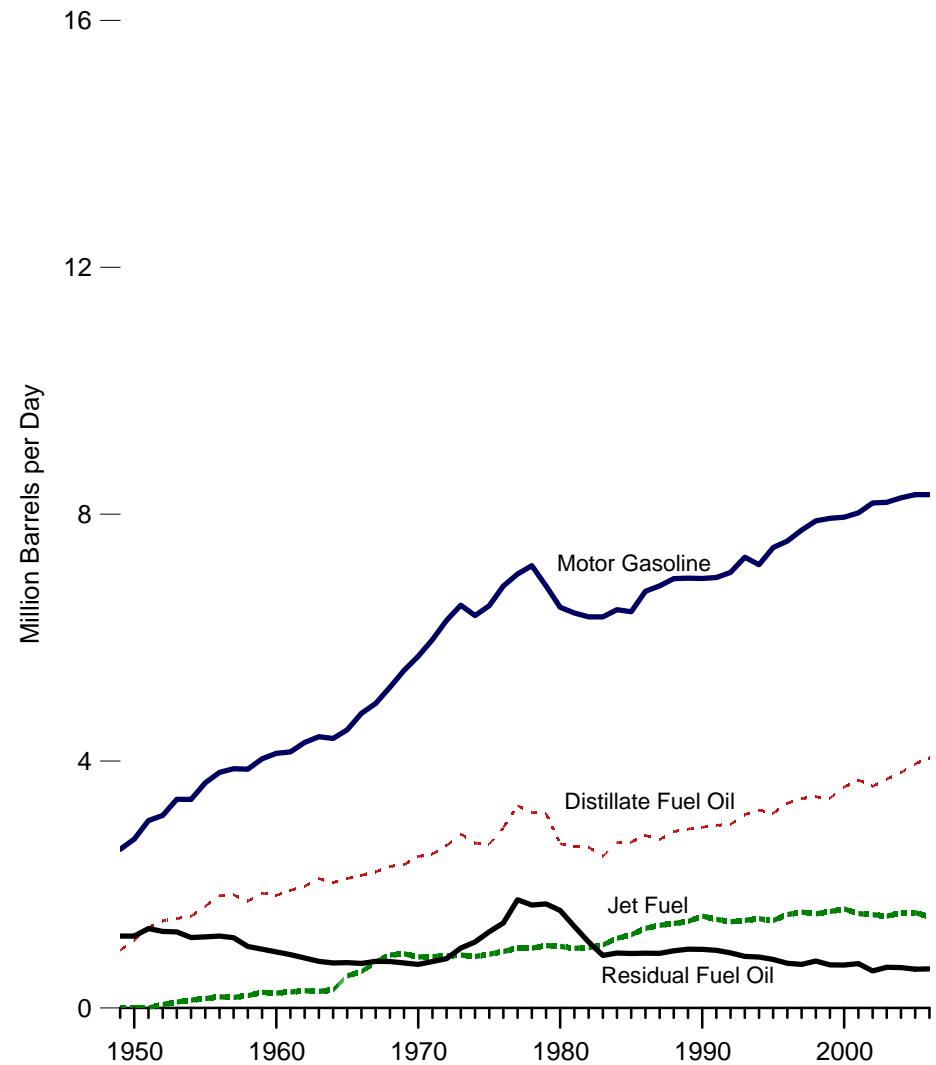
Sources: • 1960-1975—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. • 1976-1980—Energy Information Administration (EIA), *Energy Data Reports, P.A.D. Districts Supply/Demand, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.8 Refinery and Blender Net Inputs and Net Production, 1949-2006**

**Refinery and Blender Net Inputs**



**Refinery and Blender Net Production**



<sup>1</sup> See Table 5.8, footnote 3.

Source: Table 5.8.

**Table 5.8 Refinery and Blender Net Inputs and Net Production, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Refinery and Blender Net Inputs <sup>1</sup>				Refinery and Blender Net Production <sup>2</sup>										Processing Gain
	Crude Oil	Natural Gas Plant Liquids	Other Liquids <sup>3</sup>	Total	Asphalt and Road Oil	Distillate Fuel Oil	Jet Fuel <sup>4</sup>	Liquefied Petroleum Gases	Motor Gasoline <sup>5</sup>	Petroleum Coke	Residual Fuel Oil	Still Gas	Other Products <sup>6</sup>	Total	
1949	5,327	234	28	5,588	155	934	( <sup>4</sup> )	64	2,572	46	1,164	226	425	5,587	R-2
1950	5,739	259	19	6,018	179	1,093	( <sup>4</sup> )	80	2,735	47	1,165	229	492	6,019	R <sup>2</sup>
1955	7,480	345	32	7,857	251	1,651	155	119	3,648	78	1,152	319	518	7,891	34
1960	8,067	455	61	8,583	286	1,823	241	212	4,126	164	908	354	616	8,729	146
1965	9,043	618	88	9,750	357	2,096	523	293	4,507	236	736	395	827	9,970	220
1970	10,870	763	121	11,754	428	2,454	827	345	5,699	296	706	483	876	12,113	359
1971	11,199	781	136	12,116	454	2,495	835	357	5,970	299	753	474	861	12,498	382
1972	11,696	826	168	12,691	446	2,630	847	356	6,281	327	799	507	886	13,080	388
1973	12,431	815	155	13,401	480	2,820	859	375	6,527	362	971	518	940	13,854	453
1974	12,133	746	138	13,018	470	2,668	836	338	6,358	339	1,070	521	900	13,498	480
1975	12,442	710	72	13,225	408	2,653	871	311	6,518	354	1,235	523	811	13,685	460
1976	13,416	725	59	14,200	391	2,924	918	340	6,838	356	1,377	541	993	14,677	477
1977	14,602	673	74	15,349	431	3,277	973	352	7,031	369	1,754	572	1,114	15,874	524
1978	14,739	639	92	15,470	482	3,167	970	355	7,167	369	1,667	603	1,186	15,966	496
1979	14,648	510	78	15,236	467	3,152	1,012	340	6,837	376	1,687	598	1,296	15,763	527
1980	13,481	462	81	14,025	393	2,661	999	330	6,492	370	1,580	581	1,215	14,622	597
1981	12,470	524	488	13,482	340	2,613	968	315	6,400	390	1,321	565	1,078	13,990	508
1982	11,774	515	572	12,861	329	2,606	978	270	6,336	410	1,070	554	839	13,391	531
1983	11,685	460	505	12,650	372	2,456	1,022	328	6,338	420	852	550	801	13,138	488
1984	12,044	500	581	13,126	386	2,680	1,132	363	6,453	439	891	559	776	13,679	553
1985	12,002	509	681	13,192	401	2,686	1,189	391	6,419	455	882	584	743	13,750	557
1986	12,716	479	711	13,906	410	2,796	1,293	417	6,752	506	889	641	818	14,522	616
1987	12,854	466	667	13,987	434	2,729	1,343	449	6,841	512	885	643	791	14,626	639
1988	13,246	511	610	14,367	443	2,857	1,370	499	6,956	544	926	670	758	15,022	655
1989	13,401	499	613	14,513	424	2,899	1,403	554	6,963	542	954	681	755	15,175	661
1990	13,409	467	713	14,589	449	2,925	1,488	499	6,959	552	950	673	778	15,272	683
1991	13,301	472	768	14,541	430	2,962	1,438	536	6,975	568	934	651	761	15,256	715
1992	13,411	469	745	14,626	419	2,974	1,399	607	7,058	596	892	659	796	15,398	772
1993	13,613	491	917	15,021	451	3,132	1,422	592	7,304	619	835	653	780	15,787	766
1994	13,866	465	691	15,023	451	3,205	1,448	611	7,181	622	826	657	790	15,791	768
1995	13,973	471	775	15,220	467	3,155	1,416	654	7,459	630	788	647	778	15,994	774
1996	14,195	450	843	15,487	459	3,316	1,515	662	7,565	664	726	654	764	16,324	837
1997	14,662	416	832	15,909	485	3,392	1,554	691	7,743	689	708	661	836	16,759	850
1998	14,889	403	853	16,144	498	3,424	1,526	674	7,892	712	762	656	886	17,030	886
1999	14,804	372	927	16,103	505	3,399	1,565	684	7,934	713	698	656	835	16,989	886
2000	15,067	380	849	16,295	525	3,580	1,606	705	7,951	727	696	659	793	17,243	948
2001	15,128	429	825	16,382	485	3,695	1,530	667	8,022	767	721	670	729	17,285	903
2002	14,947	429	941	16,316	492	3,592	1,514	671	8,183	781	601	667	771	17,273	957
2003	15,304	419	791	16,513	496	3,707	1,488	658	8,194	798	660	702	784	17,487	974
2004	15,475	422	866	16,762	508	3,814	1,547	645	8,265	836	655	704	838	17,814	1,051
2005	R <sup>15</sup> ,220	R <sup>441</sup>	R <sup>1,149</sup>	R <sup>16,811</sup>	R <sup>512</sup>	R <sup>3,954</sup>	R <sup>1,546</sup>	R <sup>573</sup>	R <sup>8,318</sup>	R <sup>835</sup>	R <sup>628</sup>	684	R <sup>752</sup>	R <sup>17,800</sup>	R <sup>989</sup>
2006 <sup>p</sup>	15,240	470	1,202	16,912	506	4,049	1,481	602	8,317	849	634	709	762	17,909	998

<sup>1</sup> See "Refinery Input" in Glossary.

<sup>2</sup> See "Refinery Output" in Glossary.

<sup>3</sup> Through 1980, includes unfinished oils (net), other hydrocarbons, and hydrogen; beginning in 1981, includes unfinished oils (net), other hydrocarbons, hydrogen, and oxygenates. See Note 2, "Adjustment to Total Petroleum Products Supplied," at end of section.

<sup>4</sup> Through 1951, naphtha-type jet fuel is included in the products from which it was blended: in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products." Beginning in 2005, naphtha-type jet fuel is included in "Other Products."

<sup>5</sup> Finished motor gasoline. Through 1963, also includes aviation gasoline and special naphthas.

<sup>6</sup> Kerosene, lubricants, petrochemical feedstocks, waxes, and miscellaneous products. Through 1964,

also includes kerosene-type jet fuel. Beginning in 1964, also includes aviation gasoline and special naphthas. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. P=Preliminary.

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

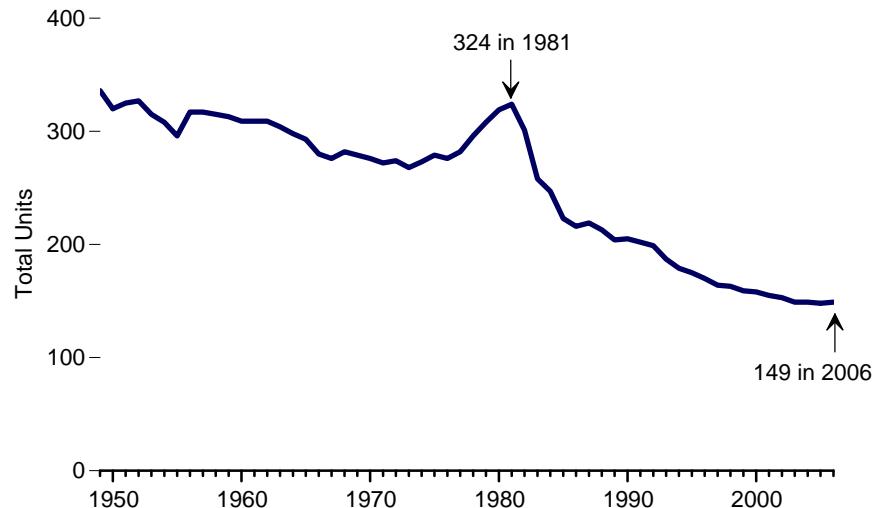
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

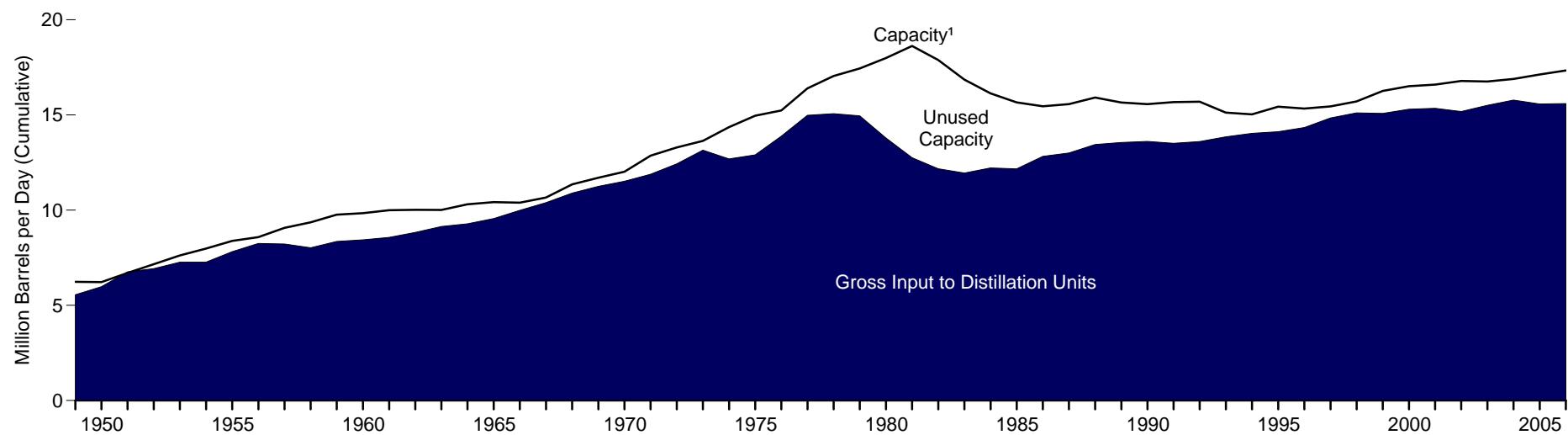
Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.9 Refinery Capacity and Utilization, 1949-2006**

**Number of Operable Refineries**



**Capacity**



<sup>1</sup> Operable refineries capacity on January 1.

Source: Table 5.9.

**Table 5.9 Refinery Capacity and Utilization, Selected Years, 1949-2006**

Year	Operable Refineries <sup>1</sup>	Operable Refineries Capacity		Gross Input to Distillation Units <sup>3</sup>	Utilization <sup>4</sup>
		On January 1	Annual Average <sup>2</sup>		
Year	Number	Thousand Barrels per Day		Thousand Barrels per Day	Percent
1949	336	6,231	NA	5,556	89.2
1950	320	6,223	NA	5,980	92.5
1955	296	8,386	NA	7,820	92.2
1960	309	9,843	NA	8,439	85.1
1965	293	10,420	NA	9,557	91.8
1970	276	12,021	NA	11,517	92.6
1971	272	12,860	NA	11,881	90.9
1972	274	13,292	NA	12,431	92.3
1973	268	13,642	NA	13,151	93.9
1974	273	14,362	NA	12,689	86.6
1975	279	14,961	NA	12,902	85.5
1976	276	15,237	NA	13,884	87.8
1977	282	16,398	NA	14,982	89.6
1978	296	17,048	NA	15,071	87.4
1979	308	17,441	NA	14,955	84.4
1980	319	17,988	NA	13,796	75.4
1981	324	18,621	18,603	12,752	68.6
1982	301	17,890	17,432	12,172	69.9
1983	258	16,859	16,668	11,947	71.7
1984	247	16,137	16,035	12,216	76.2
1985	223	15,659	15,671	12,165	77.6
1986	216	15,459	15,459	12,826	82.9
1987	219	15,566	15,642	13,003	83.1
1988	213	15,915	15,927	13,447	84.7
1989	204	15,655	15,701	13,551	86.6
1990	205	15,572	15,623	13,610	87.1
1991	202	15,676	15,707	13,508	86.0
1992	199	15,696	15,460	13,600	87.9
1993	187	15,121	15,143	13,851	91.5
1994	179	15,034	15,150	14,032	92.6
1995	175	15,434	15,346	14,119	92.0
1996	170	15,333	15,239	14,337	94.1
1997	164	15,452	15,594	14,838	95.2
1998	163	15,711	15,802	15,113	95.6
1999	159	16,261	16,282	15,080	92.6
2000	158	16,512	16,525	15,299	92.6
2001	155	16,595	16,582	R15,352	92.6
2002	153	16,785	16,744	15,180	90.7
2003	149	16,757	16,748	15,508	92.6
2004	149	16,894	16,974	15,783	93.0
2005	148	17,125	17,196	R15,578	R90.6
2006 <sup>P</sup>	149	17,339	17,384	15,601	89.7

<sup>1</sup> Through 1956, includes only those refineries in operation on January 1; beginning in 1957, includes all "operable" refineries on January 1. See "Operable Refineries" in Glossary.

<sup>2</sup> Weighted average of monthly capacity data.

<sup>3</sup> See Note 4, "Gross Input to Distillation Units," at end of section.

<sup>4</sup> Through 1980, utilization is calculated by dividing gross input to distillation units by one-half of the sum of the current year's January 1 capacity and the following year's January 1 capacity. Beginning in 1981, utilization is calculated by dividing gross input to distillation units by the annual average capacity.

R=Revised. P=Preliminary. NA=Not available.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

Sources: Operable Refineries and Operable Refineries Capacity: • 1949-1961—Bureau of Mines

Information Circular, "Petroleum Refineries, Including Cracking Plants in the United States."

• 1962-1977—Bureau of Mines, Mineral Industry Surveys, *Petroleum Refineries*, Annual, annual reports.

• 1978-1981—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Refineries in the United States*. • 1982-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Refinery Capacity Report* (June 2006), Table 1. Gross Input to Distillation Units:

• 1949-1966—Bureau of Mines, *Minerals Yearbook*, "Natural Gas Liquids" and "Crude Petroleum and Petroleum Products" chapters.

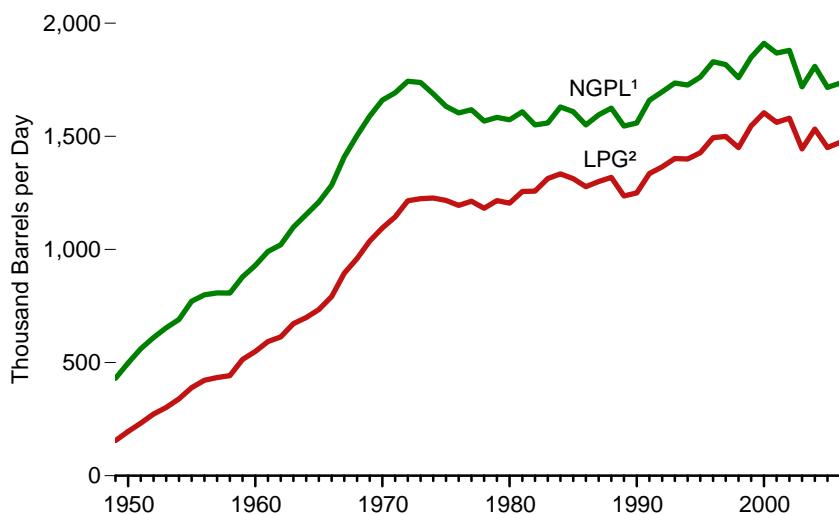
• 1967-1977—Bureau of Mines, Mineral Industry Surveys, *Petroleum Refineries*, Annual, annual reports.

• 1978-1980—EIA, Energy Data Reports, *Petroleum Refineries in the United States and U.S. Territories*.

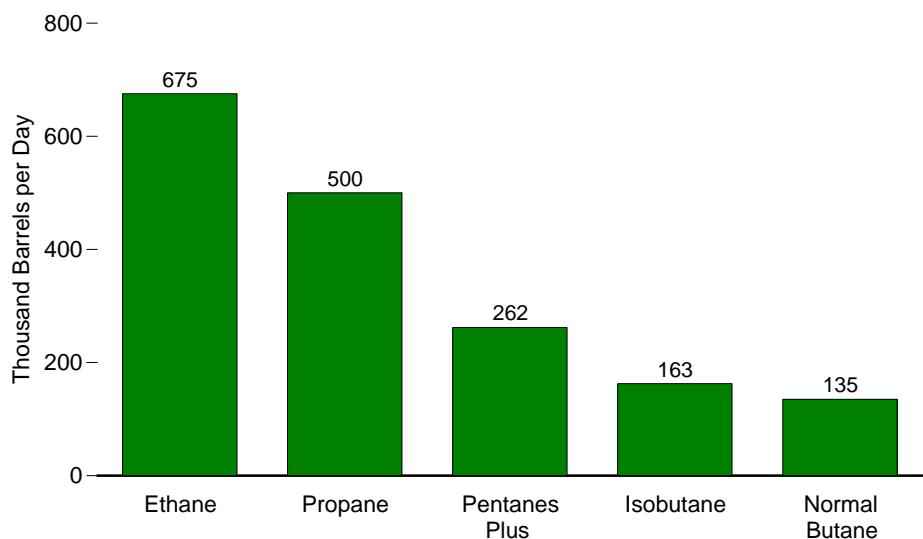
• 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (January-December 2006 issues). Utilization: • 1949-1980—Calculated. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—Calculated.

**Figure 5.10 Natural Gas Plant Liquids Production**

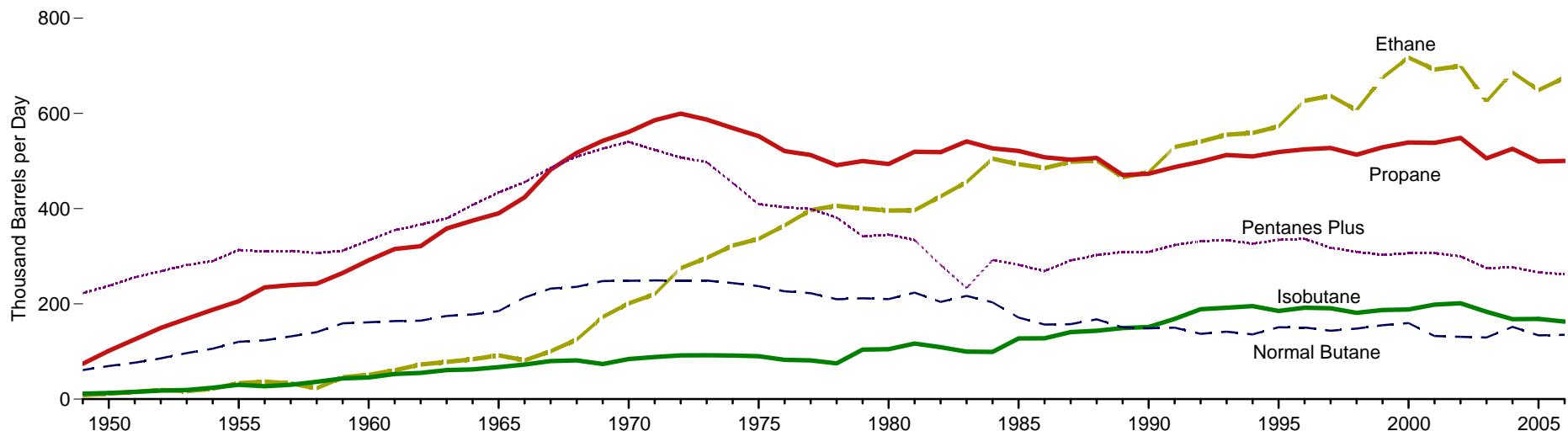
**Total, 1949-2006**



**By Product, 2006**



**By Selected Product, 1949-2006**



<sup>1</sup> Natural gas plant liquids.

<sup>2</sup> Liquefied petroleum gases.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.10.

**Table 5.10 Natural Gas Plant Liquids Production, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Finished Petroleum Products <sup>1</sup>	Liquefied Petroleum Gases					Pentanes Plus <sup>4</sup>	Total
		Ethane <sup>2</sup>	Isobutane	Normal Butane <sup>3</sup>	Propane <sup>2,3</sup>	Total		
1949	53	8	11	61	74	155	223	430
1950	66	12	13	69	101	195	238	499
1955	68	34	30	120	205	390	313	771
1960	47	51	45	161	291	549	333	929
1965	41	92	67	185	390	734	434	1,210
1970	25	201	84	248	561	1,095	540	1,660
1971	25	221	88	249	586	1,144	523	1,693
1972	21	275	92	249	600	1,215	507	1,744
1973	16	296	92	249	587	1,225	497	1,738
1974	7	323	92	244	569	1,227	454	1,688
1975	7	337	90	237	552	1,217	409	1,633
1976	6	365	82	227	521	1,195	403	1,604
1977	5	397	81	223	513	1,214	399	1,618
1978	3	406	75	210	491	1,182	382	1,567
1979	26	400	104	212	500	1,216	342	1,584
1980	23	396	105	210	494	1,205	345	1,573
1981	18	397	117	224	519	1,256	334	1,609
1982	11	426	109	204	519	1,258	282	1,550
1983	12	456	100	217	541	1,314	233	1,559
1984	4	505	99	203	527	1,334	292	1,630
1985	14	493	127	171	521	1,313	282	1,609
1986	4	485	128	157	508	1,277	269	1,551
1987	4	499	141	157	503	1,300	291	1,595
1988	4	501	144	167	506	1,319	302	1,625
1989	NA	466	149	151	471	1,237	309	1,546
1990	NA	477	151	149	474	1,250	309	1,559
1991	NA	530	169	150	487	1,336	324	1,659
1992	NA	541	189	137	499	1,365	332	1,697
1993	NA	556	192	142	513	1,402	334	1,736
1994	NA	559	195	136	510	1,400	326	1,727
1995	NA	573	185	151	519	1,428	335	1,762
1996	NA	627	192	150	525	1,494	336	1,830
1997	NA	637	191	144	528	1,499	318	1,817
1998	NA	607	181	148	513	1,450	309	1,759
1999	NA	675	187	155	529	1,547	303	1,850
2000	NA	717	188	160	539	1,605	306	1,911
2001	NA	692	198	133	538	1,562	307	1,868
2002	NA	700	201	131	549	1,581	300	1,880
2003	NA	625	183	129	506	1,444	275	1,719
2004	NA	686	168	152	526	1,532	277	1,809
2005	NA	R <sup>649</sup>	168	R <sup>134</sup>	R <sup>499</sup>	R <sup>1,451</sup>	R <sup>266</sup>	R <sup>1,717</sup>
2006 <sup>p</sup>	NA	675	163	135	500	1,473	262	1,735

<sup>1</sup> Motor gasoline, aviation gasoline, special naphthas, distillate fuel oil, and miscellaneous products.

<sup>2</sup> Reported production of ethane-propane mixtures has been allocated 70 percent ethane and 30 percent propane.

<sup>3</sup> Reported production of butane-propane mixtures has been allocated 60 percent butane and 40 percent propane.

<sup>4</sup> Through 1983, "Pentanes Plus" was reported separately as natural gasoline, isopentane, and plant condensate.

R=Revised. P=Preliminary. NA=Not available.

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

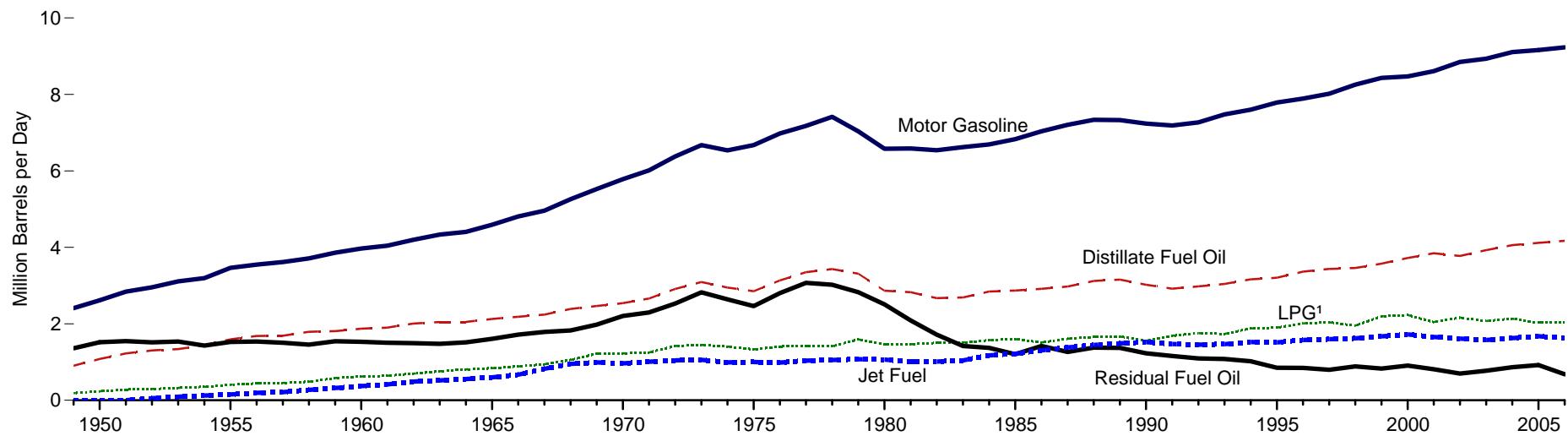
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

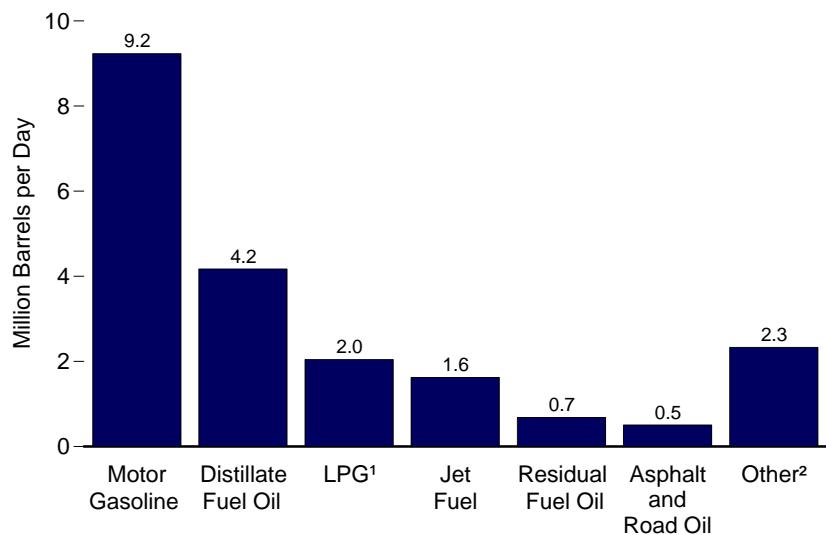
Sources: • 1949-1968—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. • 1969-1975—Bureau of Mines, *Mineral Industry Surveys*, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.11 Petroleum Products Supplied by Type**

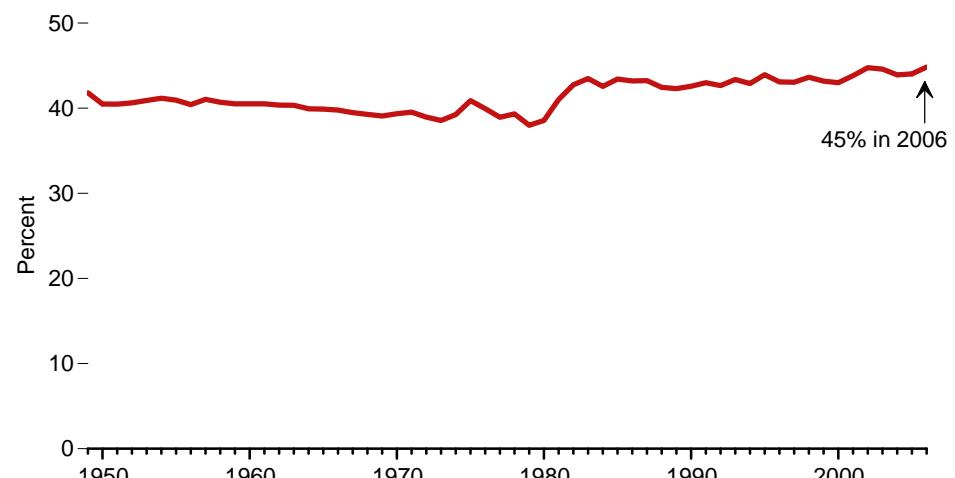
**By Selected Product, 1949-2006**



**By Product, 2006**



**Motor Gasoline's Share of Total Petroleum Products Supplied, 1949-2006**



<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Aviation gasoline, kerosene, lubricants, naphtha-type jet fuel, pentanes plus, petrochemical-feedstocks, petroleum coke, special naphthas, still gas (refinery gas), waxes, miscellaneous products, and crude oil burned as fuel.

Source: 5.11.

**Table 5.11 Petroleum Products Supplied by Type, Selected Years, 1949-2006**

(Thousand Barrels per Day)

Year	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel <sup>1</sup>	Kerosene	Liquefied Petroleum Gases		Lubricants	Motor Gasoline <sup>3</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>4</sup>	Total	Percentage Change From Previous Year <sup>5</sup>
						Propane <sup>2</sup>	Total							
1949	157	93	902	( <sup>1</sup> )	281	NA	187	91	2,410	40	1,359	243	5,763	--
1950	180	108	1,082	( <sup>1</sup> )	323	NA	234	106	2,616	41	1,517	250	6,458	12.1
1955	254	192	1,592	154	320	NA	404	116	3,463	67	1,526	366	8,455	9.0
1960	302	161	1,872	371	271	NA	621	117	3,969	149	1,529	435	9,797	3.1
1965	368	120	2,126	602	267	NA	841	129	4,593	202	1,608	657	11,512	4.2
1970	447	55	2,540	967	263	776	1,224	136	5,785	212	2,204	866	14,697	4.0
1971	458	49	2,661	1,010	249	794	1,251	135	6,014	219	2,296	870	15,212	3.5
1972	468	46	2,913	1,045	235	893	1,420	144	6,376	241	2,529	949	16,367	7.9
1973	522	45	3,092	1,059	216	872	1,449	162	6,674	261	2,822	1,005	17,308	5.5
1974	481	44	2,948	993	176	830	1,406	155	6,537	239	2,639	1,034	16,653	-3.8
1975	419	39	2,851	1,001	159	783	1,333	137	6,675	247	2,462	1,001	16,322	-2.0
1976	411	37	3,133	987	169	830	1,404	152	6,978	243	2,801	1,145	17,461	7.3
1977	436	38	3,352	1,039	175	821	1,422	160	7,177	268	3,071	1,294	18,431	5.3
1978	479	39	3,432	1,057	175	778	1,413	172	7,412	256	3,023	1,391	18,847	2.3
1979	476	38	3,311	1,076	188	849	1,592	180	7,034	246	2,826	1,546	18,513	-1.8
1980	396	35	2,866	1,068	158	754	1,469	159	6,579	237	2,508	1,581	17,056	-7.6
1981	342	31	2,829	1,007	127	773	1,466	153	6,588	252	2,088	1,176	16,058	-6.1
1982	342	25	2,671	1,013	129	798	1,499	140	6,539	248	1,716	973	15,296	-4.7
1983	373	26	2,690	1,046	127	751	1,509	146	6,622	229	1,421	1,042	15,231	-4.4
1984	408	24	2,845	1,175	115	833	1,572	156	6,693	247	1,369	1,120	15,726	3.5
1985	425	27	2,868	1,218	114	883	1,599	145	6,831	264	1,202	1,032	15,726	-3.3
1986	448	32	2,914	1,307	98	831	1,512	142	7,034	268	1,418	1,105	16,281	3.5
1987	467	25	2,976	1,385	95	924	1,612	161	7,206	299	1,264	1,176	16,665	2.4
1988	468	27	3,122	1,449	96	923	1,656	155	7,336	312	1,378	1,286	17,283	4.0
1989	453	26	3,157	1,489	84	990	1,668	159	7,328	307	1,370	1,284	17,325	.0
1990	483	24	3,021	1,522	43	917	1,556	164	7,235	339	1,229	1,373	16,988	-1.9
1991	444	23	2,921	1,471	46	982	1,689	146	7,188	328	1,158	1,299	16,714	-1.6
1992	454	22	2,979	1,454	41	1,032	1,755	149	7,268	382	1,094	1,434	17,033	2.2
1993	474	21	3,041	1,469	50	1,006	1,734	152	7,476	366	1,080	1,373	17,237	.9
1994	484	21	3,162	1,527	49	1,082	1,880	159	7,601	361	1,021	1,454	17,718	2.8
1995	486	21	3,207	1,514	54	1,096	1,899	156	7,789	365	852	1,381	17,725	.0
1996	484	20	3,365	1,578	62	1,136	2,012	151	7,891	379	848	1,518	18,309	3.6
1997	505	22	3,435	1,599	66	1,170	2,038	160	8,017	377	797	1,605	18,620	1.4
1998	521	19	3,461	1,622	78	1,120	1,952	168	8,253	447	887	1,508	18,917	1.6
1999	547	21	3,572	1,673	73	1,246	2,195	169	8,431	477	830	1,532	19,519	3.2
2000	525	20	3,722	1,725	67	1,235	2,231	166	8,472	406	909	1,458	19,701	1.2
2001	519	19	3,847	1,655	72	1,142	2,044	153	8,610	437	811	1,481	19,649	-.5
2002	512	18	3,776	1,614	43	1,248	2,163	151	8,848	463	700	1,474	19,761	.6
2003	503	16	3,927	1,578	55	1,215	2,074	140	8,935	455	772	1,579	20,034	1.4
2004	537	17	4,058	1,630	64	1,276	2,132	141	9,105	524	865	1,657	20,731	3.8
2005	R546	19	R4,118	R1,679	R70	R1,229	R2,030	R141	R9,159	R515	R920	R1,605	R20,802	R1
2006 <sup>p</sup>	506	18	4,172	1,624	54	1,203	2,044	115	9,233	518	681	1,623	20,588	-1.0

<sup>1</sup> Through 1951, naphtha-type jet fuel is included in the products from which it was blended; in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Beginning in 1952, includes naphtha-type jet fuel. Beginning in 1957, also includes kerosene-type jet fuel. Beginning in 2005, naphtha-type jet fuel is included in "Other."

<sup>2</sup> Includes propylene.

<sup>3</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>4</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

<sup>5</sup> Percent change from previous year calculated from data in thousand barrels per year.

R=Revised. P=Preliminary. NA=Not available. -- = Not applicable.

Notes: • Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," Note 2, "Adjustment to Total Petroleum Products Supplied," and Note 3, "Changes Affecting Petroleum Production and Product Supplied Statistics," at end of section.

• Totals may not equal sum of components due to independent rounding.

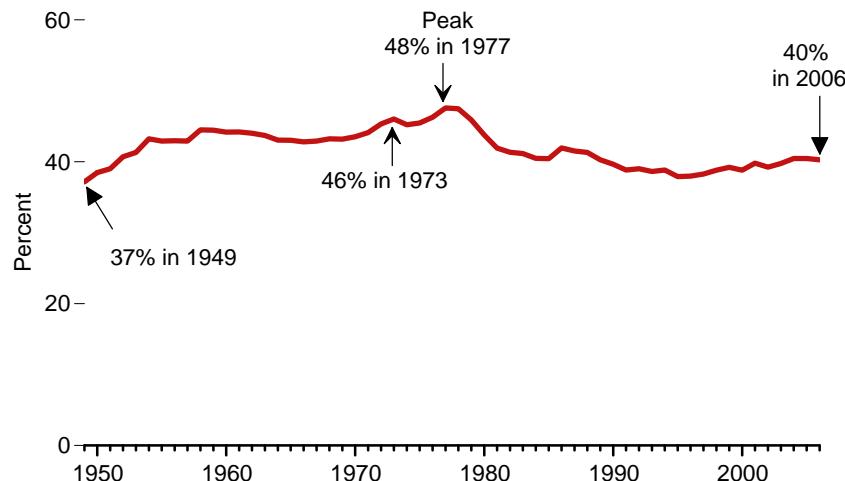
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html).

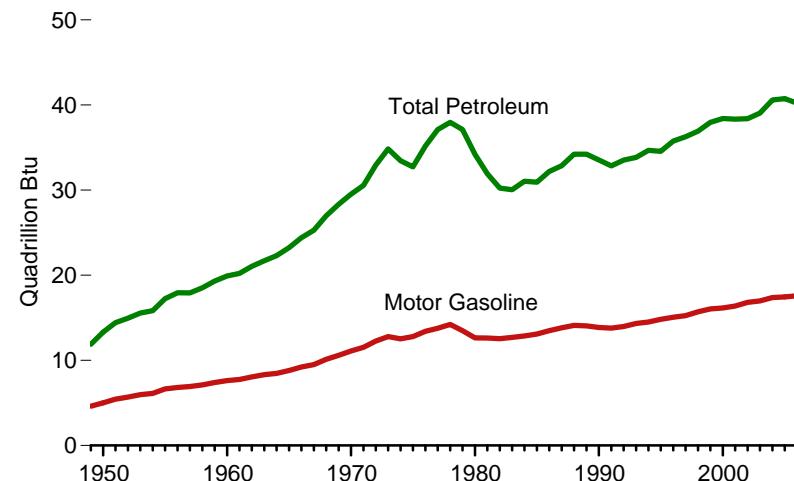
Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.12 Heat Content of Petroleum Products Supplied**

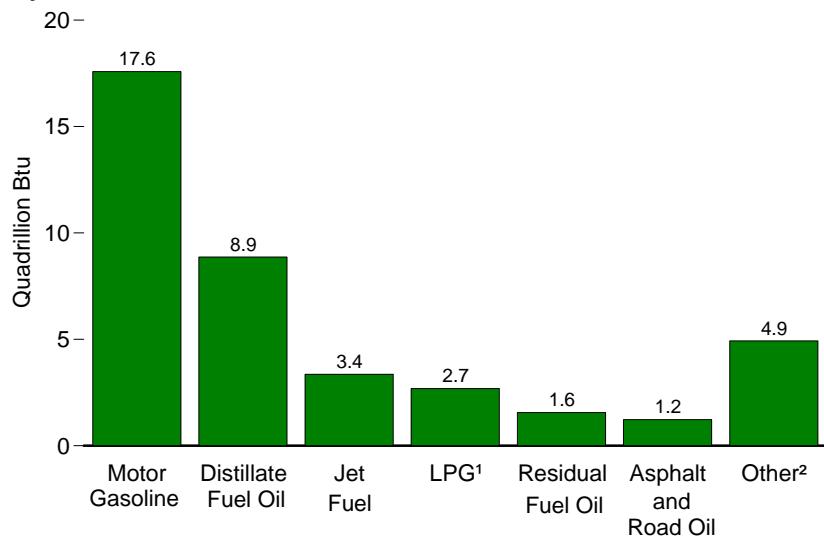
**Petroleum Products Supplied as Share of Total Energy Consumption, 1949-2006**



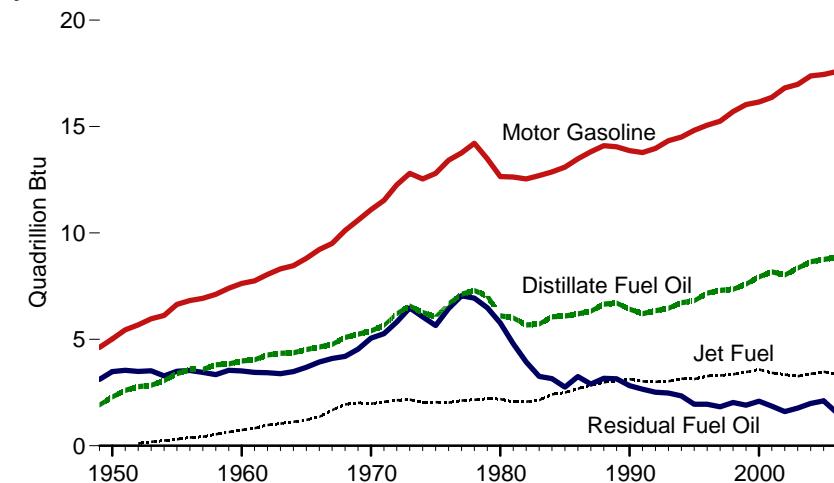
**Total Petroleum and Motor Gasoline Product Supplied, 1949-2006**



**By Product, 2006**



**By Selected Product, 1949-2006**



<sup>1</sup> Liquefied petroleum gases.

<sup>2</sup> Aviation gasoline, kerosene, lubricants, naphtha-type jet fuel, pentanes plus, petrochemical feedstocks, petroleum coke, special naphthas, still gas (refinery gas), waxes, miscellaneous products, and crude burned as fuel.

Sources: Tables 1.3 and 5.12.

**Table 5.12 Heat Content of Petroleum Products Supplied, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel <sup>1</sup>	Kerosene	Liquefied Petroleum Gases		Lubricants	Motor Gasoline <sup>3</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>4</sup>	Total	Percentage Change From Previous Year
						Propane <sup>2</sup>	Total							
1949	380	172	1,918	( <sup>1</sup> )	582	NA	274	201	4,621	87	3,118	530	11,883	--
1950	435	199	2,300	( <sup>1</sup> )	668	NA	343	236	5,015	90	3,482	546	13,315	12.1
1955	615	354	3,385	301	662	NA	592	258	6,640	147	3,502	798	17,255	8.9
1960	734	298	3,992	739	563	NA	912	259	7,631	328	3,517	947	19,919	3.1
1965	890	222	4,519	1,215	553	NA	1,232	286	8,806	444	3,691	1,390	23,246	4.2
1970	1,082	100	5,401	1,973	544	1,086	1,689	301	11,091	465	5,057	1,817	29,521	4.2
1971	1,108	90	5,658	2,061	515	1,111	1,723	299	11,532	481	5,269	1,825	30,561	3.5
1972	1,137	85	6,210	2,141	487	1,254	1,955	320	12,259	532	5,820	2,001	32,947	7.8
1973	1,264	83	6,575	2,167	447	1,221	1,981	359	12,797	573	6,477	2,117	34,840	5.7
1974	1,165	82	6,267	2,030	365	1,163	1,914	344	12,535	524	6,056	2,173	33,455	-4.0
1975	1,014	71	6,061	2,047	329	1,097	1,807	304	12,798	542	5,649	2,107	32,731	-2.2
1976	998	67	6,679	2,026	351	1,166	1,907	338	13,415	537	6,445	2,410	35,175	7.5
1977	1,056	70	7,126	2,126	363	1,150	1,908	354	13,760	589	7,047	2,722	37,122	5.5
1978	1,160	71	7,296	2,164	363	1,089	1,892	380	14,211	562	6,936	2,930	37,965	2.3
1979	1,153	70	7,039	2,204	389	1,189	2,138	397	13,487	541	6,485	3,219	37,123	-2.2
1980	962	64	6,110	2,190	329	1,059	1,976	354	12,648	522	5,772	3,275	34,202	-7.9
1981	828	56	6,014	2,062	263	1,082	1,949	339	12,631	553	4,791	2,445	31,931	-6.6
1982	829	47	5,679	2,072	266	1,117	1,978	309	12,538	545	3,939	2,029	30,232	-5.3
1983	904	48	5,720	2,141	263	1,051	1,990	324	12,697	503	3,260	2,204	30,054	-6
1984	992	44	6,065	2,414	239	1,170	2,071	346	12,867	545	3,151	2,317	31,051	3.3
1985	1,029	50	6,098	2,497	236	1,236	2,103	322	13,098	582	2,759	2,149	30,922	-4
1986	1,086	59	6,196	2,682	203	1,163	2,009	315	13,487	590	3,255	2,313	32,196	4.1
1987	1,130	46	6,328	2,843	196	1,294	2,153	356	13,816	657	2,901	2,440	32,865	2.1
1988	1,136	49	6,655	2,982	200	1,296	2,213	343	14,105	687	3,170	2,681	34,222	4.1
1989	1,096	48	6,712	3,059	174	1,387	2,243	352	14,050	676	3,144	2,658	34,211	-0
1990	1,170	45	6,422	3,129	88	1,284	2,059	362	13,872	745	2,820	2,840	33,553	-1.9
1991	1,077	42	6,210	3,025	96	1,374	2,227	324	13,781	722	2,657	2,685	32,845	-2.1
1992	1,102	41	6,351	3,001	86	1,449	2,328	330	13,973	843	2,518	2,953	33,527	2.1
1993	1,149	38	6,466	3,028	103	1,409	2,282	337	14,335	804	2,479	2,821	33,841	.9
1994	1,173	38	6,723	3,154	101	1,515	2,494	352	14,511	793	2,342	2,988	34,670	2.4
1995	1,178	40	6,818	3,132	112	1,534	2,512	346	14,825	802	1,955	2,834	34,553	-.3
1996	1,176	37	7,175	3,274	128	1,594	2,660	335	15,064	837	1,952	3,119	35,757	3.5
1997	1,224	40	7,304	3,308	136	1,638	2,690	354	15,254	829	1,828	3,298	36,266	1.4
1998	1,263	35	7,359	3,357	162	1,568	2,575	371	15,701	982	2,036	3,093	36,934	1.8
1999	1,324	39	7,595	3,462	151	1,745	2,897	375	16,036	1,048	1,905	3,128	37,960	2.8
2000	1,276	36	7,935	3,580	140	1,734	2,945	369	16,155	895	2,091	2,981	38,404	1.2
2001	1,257	35	8,179	3,426	150	1,598	2,697	338	16,373	961	1,861	3,056	38,333	-.2
2002	1,240	34	8,028	3,340	90	1,747	2,852	334	16,819	1,018	1,605	3,041	38,401	.2
2003	1,220	30	8,349	3,265	113	1,701	2,747	309	16,981	1,000	1,772	3,260	39,047	1.7
2004	1,304	31	8,652	3,383	133	1,791	2,824	313	17,379	1,156	1,990	3,429	40,594	4.0
2005	R <sup>a</sup> 1,323	35	R <sup>a</sup> 8,755	R <sup>a</sup> 3,475	R <sup>a</sup> 144	R <sup>a</sup> 1,721	R <sup>a</sup> 2,682	R <sup>a</sup> 312	R <sup>a</sup> 17,444	R <sup>a</sup> 1,133	R <sup>a</sup> 2,111	R <sup>a</sup> 3,320	R <sup>a</sup> 40,735	R <sup>a</sup> .3
2006 <sup>b</sup>	1,226	34	8,871	3,360	111	1,684	2,688	254	17,584	1,140	1,563	3,387	40,217	-1.3

<sup>1</sup> Through 1951, naphtha-type jet fuel is included in the products from which it was blended; in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Beginning in 1952, includes naphtha-type jet fuel. Beginning in 1957, also includes kerosene-type jet fuel. Beginning in 2005, naphtha-type jet fuel is included in "Other."

<sup>2</sup> Includes propylene.

<sup>3</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>4</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes

crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. P=Preliminary. NA=Not available. --=Not applicable.

Notes: • Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," Note 2, "Adjustment to Total Petroleum Products Supplied," and Note 3, "Changes Affecting Petroleum Production and Product Supplied Statistics," at end of section.

• Totals may not equal sum of components due to independent rounding.

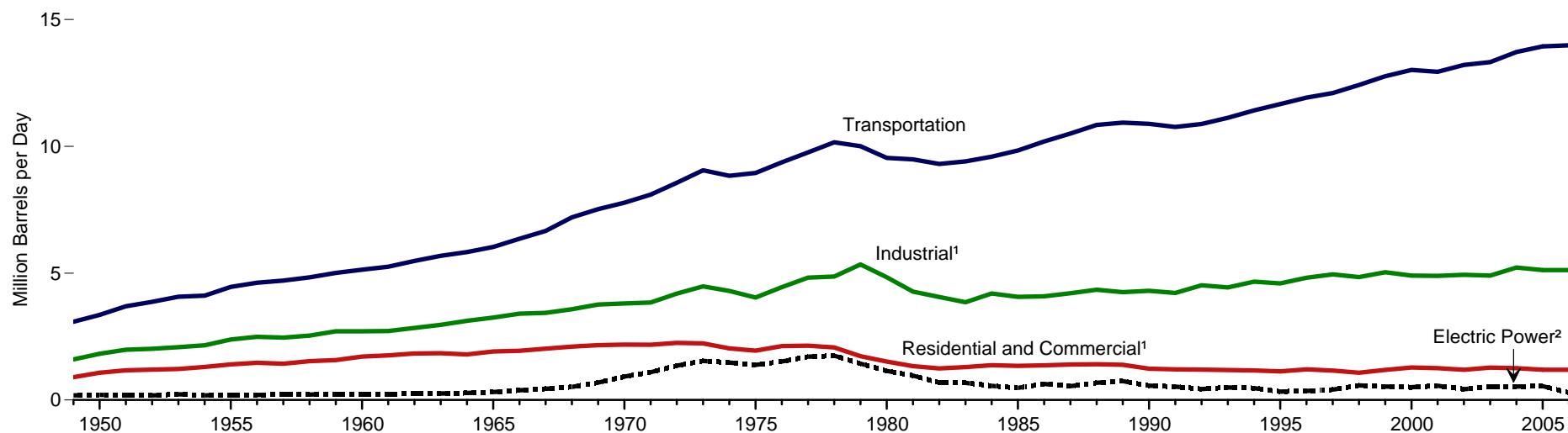
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)

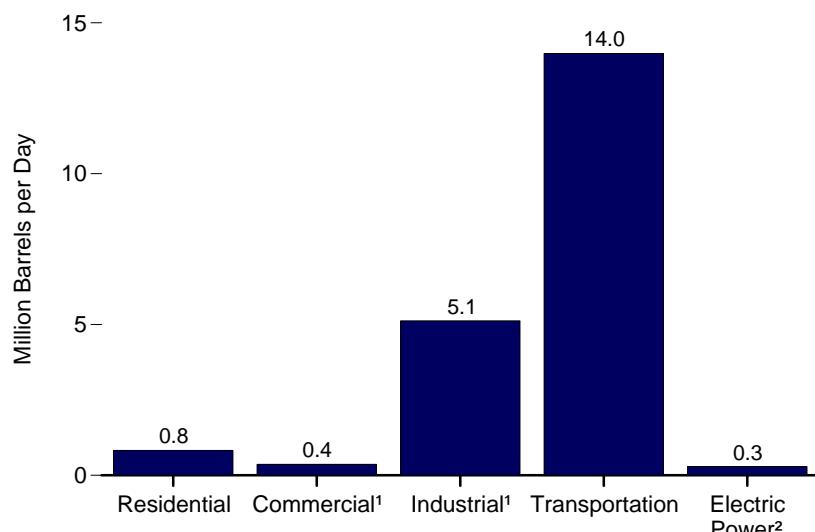
Sources: Tables 5.11, A1, and A3.

**Figure 5.13a Estimated Petroleum Consumption by Sector**

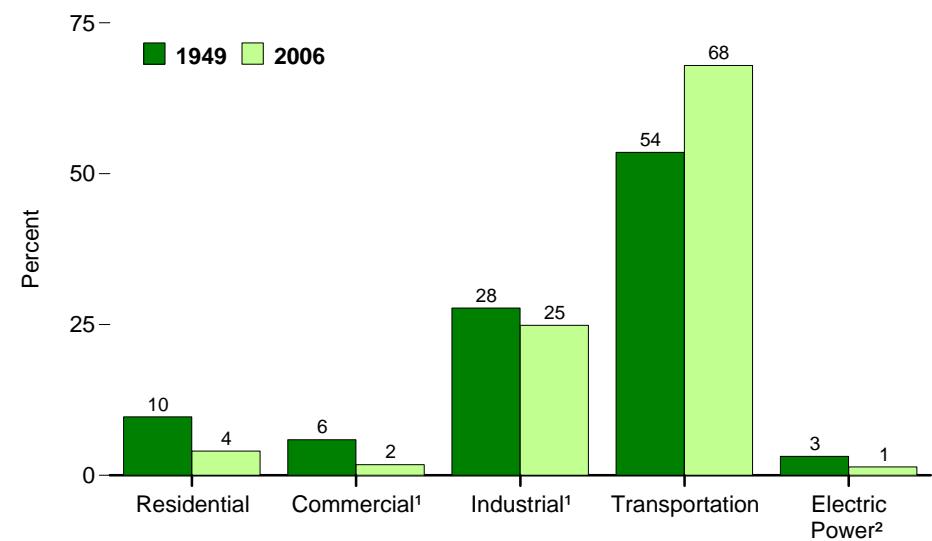
**By Sector, 1949-2006**



**By Sector, 2006**



**Sectors Shares, 1949 and 2006**



<sup>1</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

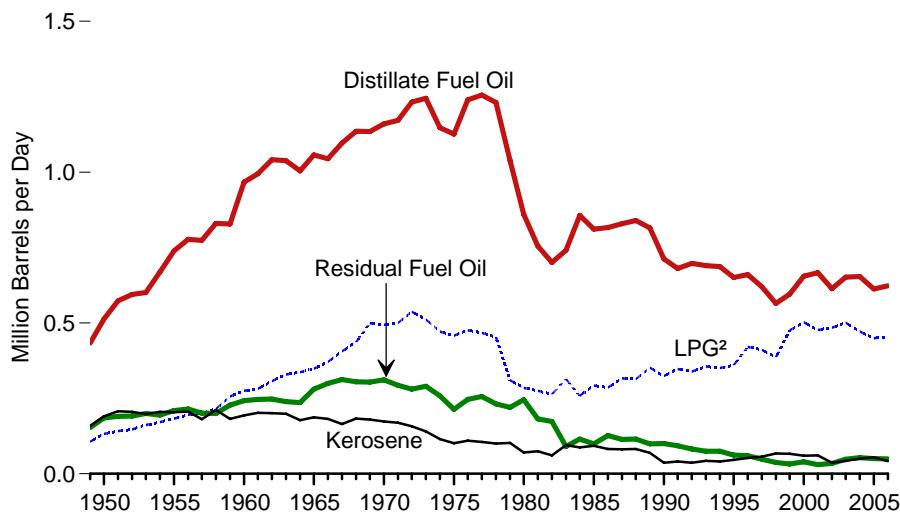
<sup>2</sup> Electricity-only and combined-heat-and-power plants whose primary business is to sell electricity, or electricity and heat, to the public.

Note: See related Figure 5.13b.

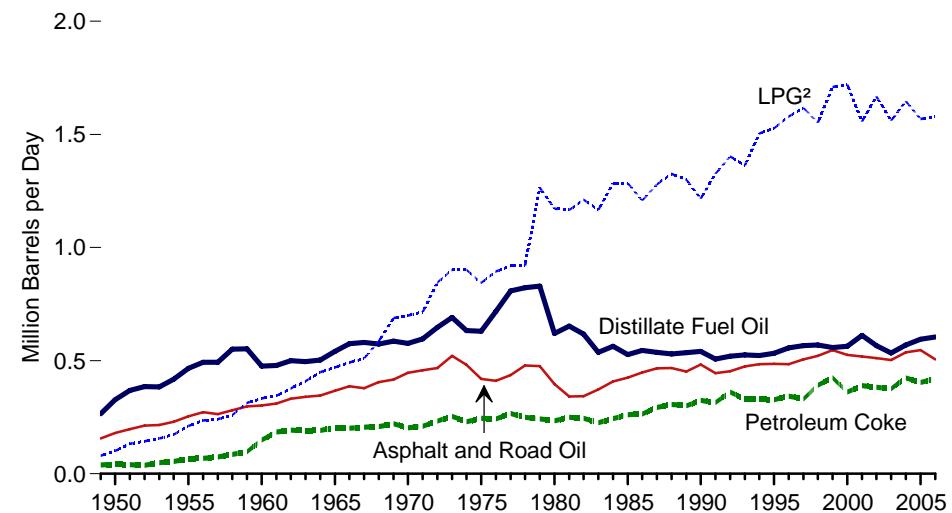
Sources: Tables 5.13a–5.13d.

**Figure 5.13b Estimated Petroleum Consumption by Product by Sector, 1949-2006**

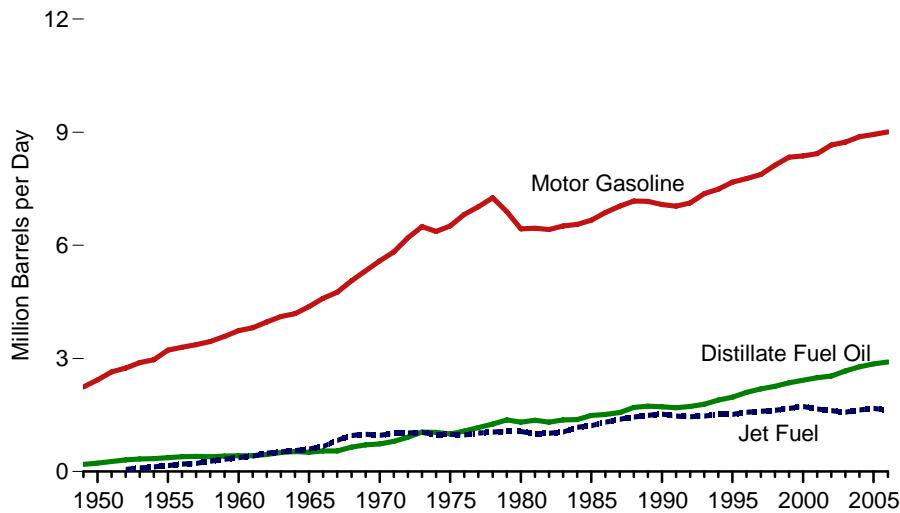
**Residential and Commercial<sup>1</sup> Sectors, Selected Products**



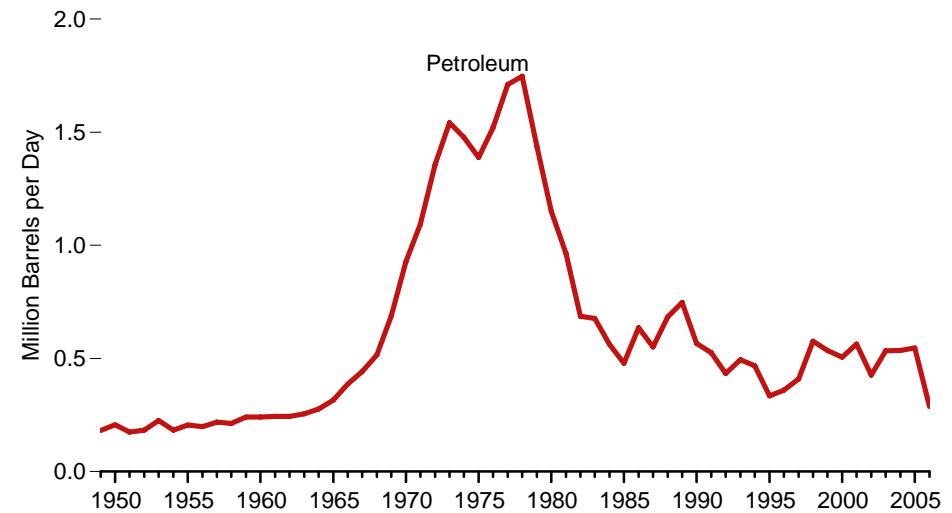
**Industrial<sup>1</sup> Sector, Selected Products**



**Transportation Sector, Selected Products**



**Electric Power Sector<sup>3</sup>**



<sup>1</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Electricity-only and combined-heat-and-power plants whose primary business is to sell electricity, or electricity and heat, to the public.

Notes: • See related Figure 5.13a. • Because vertical scales differ, graphs should not be compared.

Sources: Tables 5.13a–5.13d.

**Table 5.13a Estimated Petroleum Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Residential Sector				Commercial Sector											Total	
	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Total	Distillate Fuel Oil			Kerosene	Liquefied Petroleum Gases	Motor Gasoline <sup>3</sup>	Petroleum Coke	Residual Fuel Oil					
					CHP <sup>1</sup>	Other <sup>2</sup>	Total					CHP <sup>1</sup>	Other <sup>2</sup>	Total			
1949	329	140	90	559	( <sup>4</sup> )	104	104	19	16	48	NA	( <sup>4</sup> )	153	153	340		
1950	390	168	112	670	( <sup>4</sup> )	123	123	23	20	52	NA	( <sup>4</sup> )	185	185	403		
1955	562	179	155	896	( <sup>4</sup> )	177	177	24	27	69	NA	( <sup>4</sup> )	209	209	508		
1960	736	171	234	1,140	( <sup>4</sup> )	232	232	23	41	35	NA	( <sup>4</sup> )	243	243	573		
1965	805	161	296	1,263	( <sup>4</sup> )	251	251	26	52	40	NA	( <sup>4</sup> )	281	281	651		
1970	883	144	420	1,447	( <sup>4</sup> )	276	276	30	74	45	NA	( <sup>4</sup> )	311	311	736		
1971	892	143	425	1,460	( <sup>4</sup> )	280	280	27	75	44	NA	( <sup>4</sup> )	293	293	718		
1972	936	131	456	1,523	( <sup>4</sup> )	296	296	27	81	45	NA	( <sup>4</sup> )	280	280	729		
1973	942	110	435	1,487	( <sup>4</sup> )	303	303	31	77	45	NA	( <sup>4</sup> )	290	290	746		
1974	867	89	401	1,357	( <sup>4</sup> )	280	280	26	71	43	NA	( <sup>4</sup> )	259	259	679		
1975	850	78	389	1,316	( <sup>4</sup> )	276	276	24	69	46	NA	( <sup>4</sup> )	214	214	629		
1976	932	89	404	1,425	( <sup>4</sup> )	308	308	21	71	50	NA	( <sup>4</sup> )	247	247	697		
1977	938	81	397	1,416	( <sup>4</sup> )	318	318	25	70	52	NA	( <sup>4</sup> )	256	256	722		
1978	917	74	386	1,377	( <sup>4</sup> )	313	313	26	68	56	NA	( <sup>4</sup> )	232	232	695		
1979	765	64	264	1,093	( <sup>4</sup> )	274	274	38	47	54	NA	( <sup>4</sup> )	220	220	634		
1980	617	51	242	911	( <sup>4</sup> )	243	243	20	43	56	NA	( <sup>4</sup> )	245	245	606		
1981	540	41	234	815	( <sup>4</sup> )	215	215	34	41	48	NA	( <sup>4</sup> )	182	182	519		
1982	494	46	224	764	( <sup>4</sup> )	207	207	15	40	46	NA	( <sup>4</sup> )	174	174	480		
1983	435	41	267	743	( <sup>4</sup> )	306	306	54	47	53	NA	( <sup>4</sup> )	91	91	552		
1984	512	42	220	774	( <sup>4</sup> )	345	345	45	39	56	NA	( <sup>4</sup> )	115	115	600		
1985	514	77	249	839	( <sup>4</sup> )	297	297	16	44	50	NA	( <sup>4</sup> )	99	99	506		
1986	523	59	243	825	( <sup>4</sup> )	293	293	24	43	55	NA	( <sup>4</sup> )	126	126	542		
1987	544	57	269	870	( <sup>4</sup> )	286	286	24	48	58	NA	( <sup>4</sup> )	114	114	529		
1988	558	69	267	894	( <sup>4</sup> )	281	281	13	47	57	NA	( <sup>4</sup> )	115	115	513		
1989	546	57	299	901	3	267	270	13	53	53	0	2	97	99	488		
1990	460	31	276	767	3	249	252	6	49	58	0	3	97	100	465		
1991	438	35	295	768	2	241	243	6	52	44	0	2	91	92	438		
1992	460	31	288	779	1	236	238	5	51	41	(s)	2	80	82	418		
1993	458	37	303	797	2	230	232	7	53	15	(s)	2	73	75	383		
1994	451	31	298	781	3	233	236	9	53	13	(s)	2	73	75	386		
1995	426	36	306	767	2	223	225	11	54	10	(s)	1	61	62	361		
1996	434	43	358	835	2	225	227	10	63	14	(s)	1	58	60	373		
1997	411	45	349	805	3	206	209	12	62	22	(s)	1	47	48	353		
1998	363	52	329	744	2	199	202	15	58	20	(s)	3	35	37	332		
1999	389	54	404	847	2	204	206	13	71	15	(s)	2	30	32	338		
2000	424	46	427	897	2	228	230	14	75	23	(s)	2	38	40	383		
2001	427	46	406	879	3	236	239	15	72	20	(s)	2	28	30	376		
2002	404	29	412	845	2	207	209	8	73	24	(s)	1	34	35	348		
2003	425	R <sup>34</sup>	R <sup>426</sup>	R <sup>885</sup>	2	225	226	R <sup>9</sup>	R <sup>75</sup>	R <sup>32</sup>	(s)	2	46	48	R <sup>391</sup>		
2004	433	R <sup>41</sup>	R <sup>401</sup>	R <sup>875</sup>	3	218	221	R <sup>10</sup>	R <sup>71</sup>	R <sup>25</sup>	(s)	2	51	53	R <sup>380</sup>		
2005	R <sup>402</sup>	RP <sup>44</sup>	RP <sup>382</sup>	RP <sup>828</sup>	2	R <sup>208</sup>	R <sup>210</sup>	RP <sup>11</sup>	RP <sup>67</sup>	RP <sup>26</sup>	(s)	R <sup>2</sup>	R <sup>48</sup>	R <sup>50</sup>	RP <sup>365</sup>		
2006	P <sup>409</sup>	P <sup>34</sup>	P <sup>384</sup>	P <sup>827</sup>	P <sup>1</sup>	P <sup>213</sup>	P <sup>214</sup>	P <sup>8</sup>	P <sup>68</sup>	P <sup>26</sup>	P (s)	P <sup>1</sup>	P <sup>49</sup>	P <sup>49</sup>	P <sup>366</sup>		

<sup>1</sup> Commercial combined-heat-and-power (CHP) and a small number of commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

<sup>2</sup> All commercial sector fuel use other than that in "CHP."

<sup>3</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>4</sup> Included in "Other."

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 500 barrels per day.

Notes: • For total petroleum consumption by all sectors, see petroleum product supplied data in Table 5.11. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with

the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see [http://www.eia.doe.gov/emeu/states\\_seds.html](http://www.eia.doe.gov/emeu/states_seds.html).

Sources: **CHP and Petroleum Coke:** Table 8.7c. **All Other Data:** • 1949-1959—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports, and Energy Information Administration (EIA) estimates. • 1960-2004—EIA, "State Energy Data 2004: Consumption" (June 2007), U.S. Tables 8 and 9. • 2005 and 2006—EIA estimates.

**Table 5.13b Estimated Petroleum Consumption: Industrial Sector, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Asphalt and Road Oil	Industrial Sector													Other Petroleum <sup>4</sup>	Total		
		Distillate Fuel Oil			Kerosene	Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>3</sup>	Petroleum Coke			Residual Fuel Oil						
		CHP <sup>1</sup>	Other <sup>2</sup>	Total					CHP <sup>1</sup>	Other <sup>2</sup>	Total	CHP <sup>1</sup>	Other <sup>2</sup>	Total				
1949	157	( 5 )	265	265	123	80	36	121	( 5 )	40	40	( 5 )	534	534	243	1,598		
1950	180	( 5 )	328	328	132	100	43	131	( 5 )	41	41	( 5 )	617	617	250	1,822		
1955	254	( 5 )	466	466	116	212	47	173	( 5 )	67	67	( 5 )	686	686	366	2,387		
1960	302	( 5 )	476	476	78	333	48	198	( 5 )	149	149	( 5 )	689	689	435	2,708		
1965	368	( 5 )	541	541	80	470	62	179	( 5 )	202	202	( 5 )	689	689	657	3,247		
1970	447	( 5 )	577	577	89	699	70	150	( 5 )	203	203	( 5 )	708	708	866	3,808		
1971	458	( 5 )	596	596	80	715	69	143	( 5 )	211	211	( 5 )	705	705	870	3,845		
1972	468	( 5 )	648	648	77	846	73	132	( 5 )	233	233	( 5 )	765	765	949	4,191		
1973	522	( 5 )	691	691	75	902	88	133	( 5 )	254	254	( 5 )	809	809	1,005	4,479		
1974	481	( 5 )	633	633	61	901	85	123	( 5 )	230	230	( 5 )	753	753	1,034	4,301		
1975	419	( 5 )	630	630	58	844	68	116	( 5 )	246	246	( 5 )	658	658	1,001	4,038		
1976	411	( 5 )	717	717	59	895	75	110	( 5 )	242	242	( 5 )	792	792	1,145	4,447		
1977	436	( 5 )	809	809	69	918	82	102	( 5 )	266	266	( 5 )	844	844	1,294	4,821		
1978	479	( 5 )	823	823	75	921	88	93	( 5 )	250	250	( 5 )	748	748	1,391	4,867		
1979	476	( 5 )	830	830	86	1,266	92	84	( 5 )	243	243	( 5 )	721	721	1,546	5,343		
1980	396	( 5 )	621	621	87	1,172	82	82	( 5 )	234	234	( 5 )	586	586	1,581	4,842		
1981	342	( 5 )	653	653	52	1,166	79	83	( 5 )	250	250	( 5 )	471	471	1,176	4,273		
1982	342	( 5 )	617	617	68	1,211	72	72	( 5 )	246	246	( 5 )	456	456	973	4,058		
1983	373	( 5 )	537	537	32	1,166	75	59	( 5 )	225	225	( 5 )	345	345	1,042	3,854		
1984	408	( 5 )	564	564	28	1,283	80	83	( 5 )	244	244	( 5 )	386	386	1,120	4,198		
1985	425	( 5 )	526	526	21	1,285	75	114	( 5 )	261	261	( 5 )	326	326	1,032	4,065		
1986	448	( 5 )	546	546	16	1,207	73	108	( 5 )	264	264	( 5 )	321	321	1,105	4,087		
1987	467	( 5 )	537	537	14	1,279	83	107	( 5 )	294	294	( 5 )	253	253	1,176	4,210		
1988	468	( 5 )	530	530	14	1,326	80	100	( 5 )	306	306	( 5 )	237	237	1,286	4,347		
1989	453	5	531	536	14	1,300	82	104	5	295	300	58	121	178	1,284	4,251		
1990	483	7	534	541	6	1,215	84	97	25	300	325	64	115	179	1,373	4,304		
1991	444	12	495	507	5	1,326	75	101	22	293	315	55	91	146	1,299	4,219		
1992	454	10	509	519	5	1,402	77	101	26	336	362	59	109	168	1,434	4,522		
1993	474	10	515	525	6	1,363	78	94	22	308	330	65	129	194	1,373	4,438		
1994	484	10	513	522	8	1,505	82	101	25	304	329	69	113	183	1,454	4,667		
1995	486	6	526	532	7	1,527	80	105	26	302	328	60	87	147	1,381	4,594		
1996	484	8	549	557	9	1,580	78	105	27	317	343	66	80	146	1,518	4,819		
1997	505	8	558	566	9	1,617	82	111	37	294	331	56	71	127	1,605	4,953		
1998	521	16	554	570	11	1,553	86	105	29	362	390	60	40	100	1,508	4,844		
1999	547	16	542	558	6	1,709	87	80	31	395	426	52	38	90	1,532	5,035		
2000	525	10	553	563	8	1,720	86	79	19	342	361	48	57	105	1,458	4,903		
2001	519	9	602	611	11	1,557	79	155	15	375	390	46	42	89	1,481	4,892		
2002	512	6	561	566	7	1,668	78	163	21	362	383	37	46	83	1,474	4,934		
2003	503	10	525	534	R12	R1,561	72	R171	17	358	375	38	58	96	1,579	R4,903		
2004	537	9	561	570	R14	R1,647	73	R195	18	405	423	46	62	108	1,657	R5,223		
2005	R546	R11	R583	R594	RP15	RP1,568	RP72	RP196	14	R390	R404	R46	R77	R123	RP1,605	RP5,124		
2006	P506	P3	P602	P605	P11	P1,579	P59	P198	P15	P406	P420	P30	P90	P120	P1,623	P5,121		

<sup>1</sup> Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.  
 See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

<sup>2</sup> All industrial sector fuel use other than that in "CHP."

<sup>3</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>4</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

<sup>5</sup> Included in "Other."

R=Revised. P=Preliminary.

Notes: • For total petroleum consumption by all sectors, see petroleum product supplied data in Table

5.11. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see [http://www.eia.doe.gov/emeu/states/\\_seeds.html](http://www.eia.doe.gov/emeu/states/_seeds.html).

Sources: CHP: Table 8.7c. All Other Data: • 1949-1959—Bureau of Mines, Mineral Industry Surveys, Petroleum Statement, Annual, annual reports, and Energy Information Administration (EIA) estimates.

• 1960-2004—EIA, "State Energy Data 2004: Consumption" (June 2007), U.S. Table 10. • 2005 and 2006—EIA estimates.

**Table 5.13c Estimated Petroleum Consumption: Transportation Sector, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Transportation Sector								
	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel		Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>2</sup>	Residual Fuel Oil	Total
			Kerosene Type	Total <sup>1</sup>					
1949	93	190	0	(1)	1	54	2,241	504	3,084
1950	108	226	0	(1)	2	64	2,433	524	3,356
1955	192	372	0	154	9	70	3,221	440	4,458
1960	161	418	91	371	13	68	3,736	367	5,135
1965	120	514	334	602	23	67	4,374	336	6,036
1970	55	738	718	967	32	66	5,589	332	7,778
1971	49	800	751	1,010	37	67	5,827	305	8,095
1972	46	910	779	1,021	38	71	6,199	280	8,566
1973	45	1,045	825	1,042	35	74	6,496	317	9,054
1974	44	1,036	757	979	33	71	6,372	304	8,838
1975	39	998	782	992	31	70	6,512	310	8,951
1976	37	1,073	777	976	33	77	6,817	358	9,372
1977	38	1,171	814	1,022	36	78	7,022	396	9,761
1978	39	1,260	845	1,044	38	83	7,264	431	10,160
1979	38	1,366	867	1,067	16	87	6,896	535	10,005
1980	35	1,311	845	1,062	13	77	6,441	608	9,546
1981	31	1,365	808	1,005	24	74	6,456	531	9,487
1982	25	1,312	803	1,011	24	68	6,421	444	9,307
1983	26	1,367	839	1,046	29	71	6,510	358	9,406
1984	24	1,383	953	1,175	30	76	6,554	351	9,592
1985	27	1,491	1,005	1,218	21	71	6,667	342	9,838
1986	32	1,514	1,105	1,307	19	69	6,871	379	10,191
1987	25	1,568	1,181	1,385	15	78	7,041	392	10,505
1988	27	1,701	1,236	1,449	17	75	7,179	399	10,846
1989	26	1,734	1,284	1,489	16	77	7,171	423	10,937
1990	24	1,722	1,340	1,522	16	80	7,080	443	10,888
1991	23	1,694	1,296	1,471	15	71	7,042	447	10,763
1992	22	1,728	1,310	1,454	14	72	7,125	465	10,881
1993	21	1,785	1,357	1,469	14	74	7,367	393	11,124
1994	21	1,896	1,480	1,527	24	77	7,487	385	11,417
1995	21	1,973	1,497	1,514	13	76	7,674	397	11,668
1996	20	2,096	1,575	1,578	11	73	7,772	370	11,921
1997	22	2,198	1,598	1,599	10	78	7,883	310	12,099
1998	19	2,263	1,623	1,622	13	81	8,128	294	12,420
1999	21	2,352	1,675	1,673	10	82	8,336	290	12,765
2000	20	2,422	1,725	1,725	8	81	8,370	386	13,012
2001	19	2,489	1,656	1,655	10	74	8,435	255	12,938
2002	18	2,536	1,621	1,614	10	73	8,662	295	13,208
2003	16	2,665	1,578	1,578	R12	68	R8,733	249	R13,321
2004	17	2,783	1,630	1,630	R14	69	R8,885	321	R13,718
2005	19	R2,858	R1,679	R1,679	RP13	RP68	RP8,937	R365	RP13,939
2006	P18	P2,909	P1,624	P1,624	P13	P56	P9,009	P357	P13,985

<sup>1</sup> Through 1951, naphtha-type jet fuel is included in the products from which jet fuel was blended; in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Beginning in 1952, includes naphtha-type jet fuel. Beginning in 1957, also includes kerosene-type jet fuel. Beginning in 2005, includes kerosene-type jet fuel only.

<sup>2</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

R=Revised. P=Preliminary.

Notes: • For total petroleum consumption by all sectors, see petroleum product supplied data in Table 5.11. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with

the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see [http://www.eia.doe.gov/emeu/states\\_seeds.html](http://www.eia.doe.gov/emeu/states_seeds.html).

Sources: • 1949-1959—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports, and Energy Information Administration (EIA) estimates. • 1960-2004—EIA, "State Energy Data 2004: Consumption" (June 2007), U.S. Table 11. • 2005 and 2006—EIA estimates.

**Table 5.13d Petroleum Consumption: Electric Power Sector, Selected Years, 1949-2006**  
 (Thousand Barrels per Day)

Year	Electric Power Sector <sup>1</sup>											
	Electricity Only				Combined Heat and Power (CHP)				Total			
	Distillate Fuel Oil <sup>2</sup>	Petroleum Coke	Residual Fuel Oil <sup>3</sup>	Total	Distillate Fuel Oil <sup>2</sup>	Petroleum Coke	Residual Fuel Oil <sup>3</sup>	Total	Distillate Fuel Oil <sup>2</sup>	Petroleum Coke	Residual Fuel Oil <sup>3</sup>	Total
1949	13	NA	169	182	NA	NA	NA	NA	13	NA	169	182
1950	15	NA	192	207	NA	NA	NA	NA	15	NA	192	207
1955	15	NA	191	206	NA	NA	NA	NA	15	NA	191	206
1960	10	NA	231	241	NA	NA	NA	NA	10	NA	231	241
1965	14	NA	302	316	NA	NA	NA	NA	14	NA	302	316
1970	66	9	853	928	NA	NA	NA	NA	66	9	853	928
1971	94	8	992	1,095	NA	NA	NA	NA	94	8	992	1,095
1972	146	9	1,203	1,358	NA	NA	NA	NA	146	9	1,203	1,358
1973	129	7	1,406	1,542	NA	NA	NA	NA	129	7	1,406	1,542
1974	146	9	1,324	1,478	NA	NA	NA	NA	146	9	1,324	1,478
1975	107	1	1,280	1,388	NA	NA	NA	NA	107	1	1,280	1,388
1976	114	1	1,405	1,520	NA	NA	NA	NA	114	1	1,405	1,520
1977	134	1	1,575	1,710	NA	NA	NA	NA	134	1	1,575	1,710
1978	130	5	1,612	1,747	NA	NA	NA	NA	130	5	1,612	1,747
1979	84	4	1,350	1,437	NA	NA	NA	NA	84	4	1,350	1,437
1980	79	2	1,069	1,151	NA	NA	NA	NA	79	2	1,069	1,151
1981	58	2	904	964	NA	NA	NA	NA	58	2	904	964
1982	42	2	642	686	NA	NA	NA	NA	42	2	642	686
1983	45	4	627	676	NA	NA	NA	NA	45	4	627	676
1984	42	3	517	562	NA	NA	NA	NA	42	3	517	562
1985	40	3	435	478	NA	NA	NA	NA	40	3	435	478
1986	39	4	592	636	NA	NA	NA	NA	39	4	592	636
1987	42	5	504	551	NA	NA	NA	NA	42	5	504	551
1988	51	6	627	683	NA	NA	NA	NA	51	6	627	683
1989 <sup>4</sup>	70	7	663	740	2	0	6	8	72	7	669	748
1990	41	14	497	551	4	0	10	15	45	14	507	566
1991	38	13	469	520	1	0	4	5	39	13	473	526
1992	33	18	371	422	2	2	8	12	34	20	379	434
1993	37	21	409	467	4	15	9	27	41	36	418	494
1994	46	16	369	431	11	15	10	36	56	32	379	467
1995	44	15	237	296	7	22	9	38	51	37	247	334
1996	47	14	263	325	4	22	10	36	51	36	273	360
1997	48	23	301	373	4	23	10	37	52	46	311	410
1998	61	30	448	539	3	26	8	37	64	56	456	576
1999	63	26	409	497	3	25	9	38	66	51	418	535
2000	77	20	370	466	6	25	8	39	82	45	378	505
2001	76	25	430	531	4	22	7	33	80	47	437	564
2002	59	54	281	394	1	26	6	33	60	80	287	427
2003	71	66	373	510	5	14	6	24	76	79	379	534
2004	49	83	376	509	3	17	6	26	52	101	382	535
2005	R <sup>51</sup>	R <sup>94</sup>	R <sup>376</sup>	R <sup>521</sup>	3	17	6	26	R <sup>54</sup>	R <sup>111</sup>	R <sup>382</sup>	R <sup>547</sup>
2006 <sup>p</sup>	34	83	149	266	1	15	6	22	35	98	155	288

<sup>1</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Electric utility CHP plants are included in "Electricity Only."

<sup>2</sup> Fuel oil nos. 1, 2, and 4. For 1949-1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980-2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. For 1949-1979, data are for steam plant use of petroleum. For 1980-2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available.

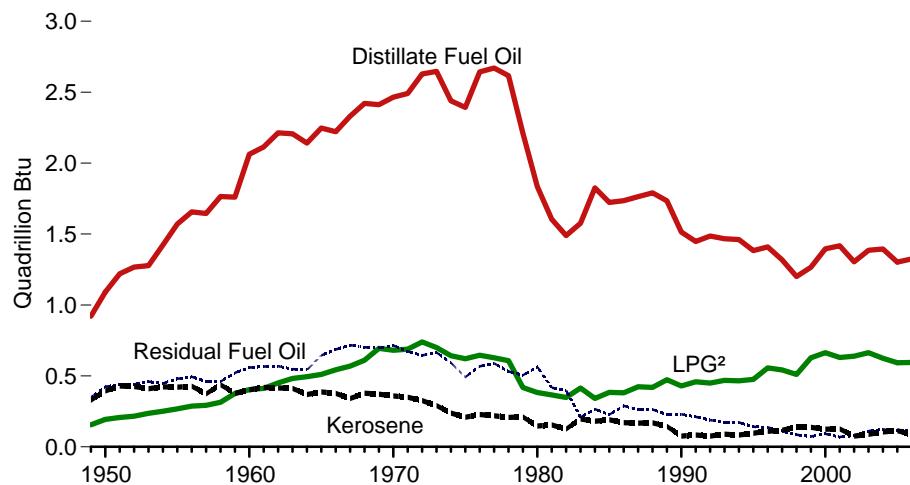
Notes: • For total petroleum consumption by all sectors, see petroleum product supplied data in Table 5.11. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • See Tables 8.5a-8.5d for the amount of petroleum used to produce electricity and Tables 8.6a-8.6c for the amount of petroleum used to produce useful thermal output. • See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

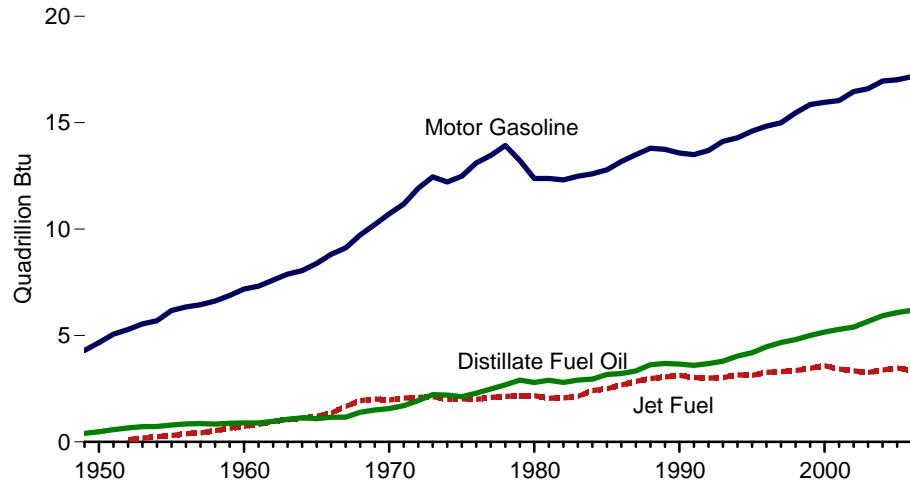
Sources: Tables 8.5b, 8.5c, 8.6b, and 8.7b.

**Figure 5.14 Heat Content of Petroleum Consumption by Product by Sector, 1949-2006**

**Residential and Commercial<sup>1</sup> Sectors, Selected Products**



**Transportation Sector, Selected Products**

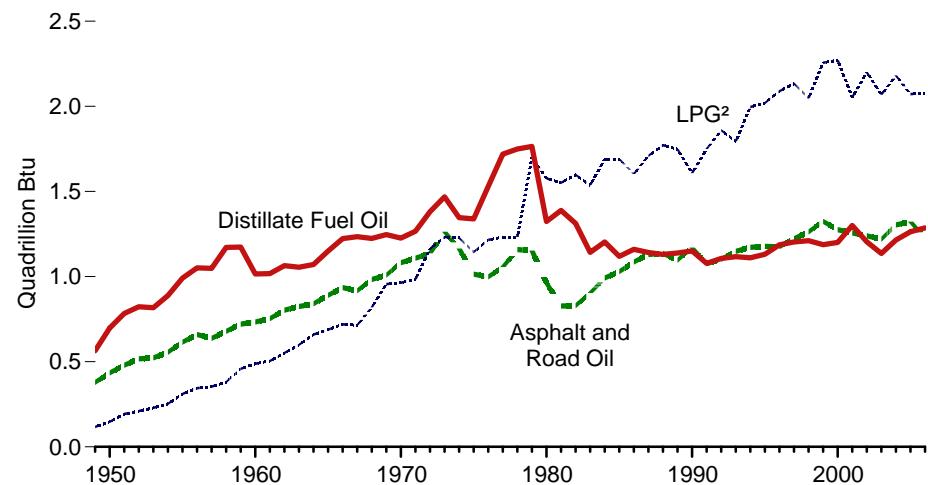


<sup>1</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

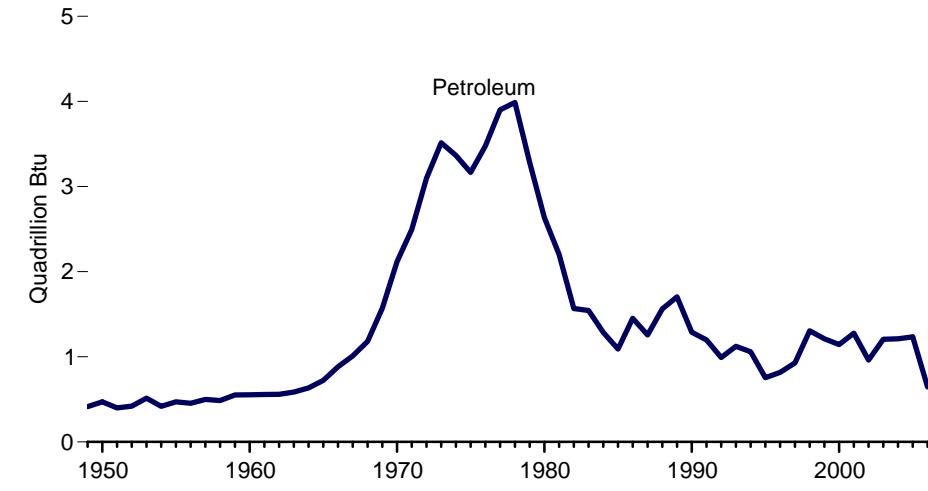
<sup>2</sup> Liquefied petroleum gases.

<sup>3</sup> Electricity-only and combined-heat-and-power plants whose primary business is to sell electricity, or electricity and heat, to the public.

**Industrial<sup>1</sup> Sector, Selected Products**



**Electric Power Sector<sup>3</sup>**



Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 5.14a-5.14c.

**Table 5.14a Heat Content of Petroleum Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Residential Sector				Commercial Sector						
	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Total	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Motor Gasoline <sup>1</sup>	Petroleum Coke	Residual Fuel Oil	Total
1949	700	289	132	1,121	221	39	23	92	NA	351	727
1950	829	347	164	1,340	262	47	29	100	NA	424	862
1955	1,194	371	227	1,792	377	51	40	133	NA	480	1,081
1960	1,568	354	343	2,265	494	48	61	67	NA	559	1,228
1965	1,713	334	434	2,481	534	54	77	77	NA	645	1,386
1970	1,878	298	579	2,755	587	61	102	86	NA	714	1,551
1971	1,897	295	585	2,777	595	55	103	84	NA	672	1,510
1972	1,996	271	628	2,895	632	55	111	87	NA	645	1,530
1973	2,003	227	595	2,825	644	65	105	87	NA	665	1,565
1974	1,844	184	546	2,573	596	55	96	83	NA	593	1,423
1975	1,807	161	528	2,495	587	49	93	89	NA	492	1,310
1976	1,987	184	549	2,720	656	44	97	97	NA	567	1,461
1977	1,994	167	533	2,695	676	52	94	101	NA	588	1,511
1978	1,951	153	516	2,620	666	55	91	107	NA	532	1,450
1979	1,626	133	355	2,114	584	78	63	104	NA	505	1,334
1980	1,316	107	325	1,748	518	41	57	107	NA	565	1,287
1981	1,147	85	311	1,543	457	69	55	92	NA	417	1,090
1982	1,050	95	296	1,441	440	30	52	88	NA	399	1,008
1983	924	85	352	1,362	651	111	62	102	NA	208	1,136
1984	1,091	88	290	1,468	735	93	51	107	NA	266	1,252
1985	1,092	159	327	1,578	631	33	58	96	NA	228	1,045
1986	1,111	121	323	1,556	623	50	57	106	NA	290	1,126
1987	1,156	119	360	1,634	607	49	63	111	NA	263	1,093
1988	1,190	144	356	1,690	600	26	63	110	NA	264	1,063
1989	1,160	117	402	1,679	574	28	71	102	0	228	1,002
1990	978	64	365	1,407	536	12	64	111	0	230	953
1991	930	72	389	1,392	517	12	69	85	0	212	895
1992	980	65	382	1,427	507	11	68	80	(s)	189	854
1993	974	76	399	1,448	493	14	70	30	(s)	173	780
1994	960	65	395	1,420	501	19	70	25	(s)	172	787
1995	905	74	404	1,383	479	22	71	18	(s)	141	732
1996	926	89	473	1,488	483	21	84	27	(s)	137	751
1997	874	93	461	1,428	444	25	81	43	(s)	111	704
1998	772	108	434	1,314	429	31	77	39	(s)	85	661
1999	828	111	534	1,473	438	27	94	28	(s)	73	661
2000	905	95	564	1,563	491	30	99	45	(s)	92	756
2001	908	95	535	1,539	508	31	94	37	(s)	70	742
2002	860	60	543	R1,463	444	16	96	45	(s)	80	681
2003	905	R70	R564	R1,539	481	R19	R100	R60	(s)	111	R771
2004	924	R85	R531	R1,539	470	R20	R94	R49	(s)	122	R756
2005	R854	RP92	RP504	RP1,450	R447	RP22	RP89	RP49	(s)	R116	RP723
2006	R870	P70	P505	P1,445	P456	P17	P89	P49	P (s)	P113	P724

<sup>1</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 5.12. Petroleum product supplied is an

approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see <http://www.eia.doe.gov/emeu/sedr/contents.html>.

Sources: Tables 5.13a, A1, and A3.

**Table 5.14b Heat Content of Petroleum Consumption: Industrial Sector, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Industrial Sector									
	Asphalt and Road Oil	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>1</sup>	Petroleum Coke	Residual Fuel Oil	Other Petroleum <sup>2</sup>	Total
1949	380	564	254	117	80	231	87	1,225	530	3,468
1950	435	698	274	147	94	251	90	1,416	546	3,951
1955	615	991	241	310	103	332	147	1,573	798	5,111
1960	734	1,016	161	489	107	381	328	1,584	947	5,747
1965	890	1,150	165	688	137	342	444	1,582	1,390	6,789
1970	1,082	1,226	185	964	155	288	446	1,624	1,817	7,787
1971	1,108	1,266	165	984	152	275	463	1,618	1,825	7,856
1972	1,137	1,381	160	1,164	163	254	513	1,761	2,001	8,534
1973	1,264	1,469	156	1,233	195	255	558	1,858	2,117	9,104
1974	1,165	1,346	126	1,227	187	235	506	1,728	2,173	8,694
1975	1,014	1,339	119	1,144	149	223	540	1,509	2,107	8,146
1976	998	1,530	123	1,216	166	211	535	1,822	2,410	9,010
1977	1,056	1,719	143	1,232	182	196	586	1,937	2,722	9,774
1978	1,160	1,750	156	1,233	195	178	550	1,716	2,930	9,867
1979	1,153	1,764	177	1,700	204	162	533	1,655	3,219	10,568
1980	962	1,324	181	1,577	182	158	516	1,349	3,275	9,525
1981	828	1,389	108	1,551	175	160	549	1,081	2,445	8,285
1982	829	1,313	141	1,598	159	138	541	1,047	2,029	7,795
1983	904	1,142	66	1,537	167	112	495	791	2,204	7,420
1984	992	1,203	58	1,691	178	160	538	889	2,317	8,025
1985	1,029	1,119	44	1,690	166	218	575	748	2,149	7,738
1986	1,086	1,160	32	1,603	162	206	581	736	2,313	7,880
1987	1,130	1,141	28	1,709	183	206	646	582	2,440	8,065
1988	1,136	1,130	30	1,772	177	193	675	546	2,681	8,339
1989	1,096	1,139	30	1,748	181	199	660	410	2,658	8,120
1990	1,170	1,150	12	1,608	186	185	714	411	2,840	8,278
1991	1,077	1,078	11	1,749	167	193	693	334	2,685	7,987
1992	1,102	1,107	10	1,860	170	194	798	387	2,953	8,581
1993	1,149	1,117	13	1,794	173	180	725	446	2,821	8,418
1994	1,173	1,111	17	1,997	181	192	723	419	2,988	8,801
1995	1,178	1,131	15	2,019	178	200	721	337	2,834	8,614
1996	1,176	1,187	18	2,089	173	200	757	335	3,119	9,053
1997	1,224	1,203	19	2,134	182	212	727	291	3,298	9,290
1998	1,263	1,211	22	2,048	191	199	858	230	3,093	9,116
1999	1,324	1,187	13	2,256	193	152	936	207	3,128	9,396
2000	1,276	1,200	16	2,271	190	150	796	241	2,981	9,120
2001	1,257	1,300	23	2,054	174	295	858	203	3,056	9,220
2002	1,240	1,204	14	2,200	172	309	842	190	3,041	9,213
2003	1,220	1,136	R24	R2,068	159	R324	825	220	3,260	R9,237
2004	1,304	1,214	R28	R2,181	161	R372	934	249	3,429	R9,872
2005	R1,323	R1,264	RP31	RP2,072	RP160	RP374	R889	R281	RP3,320	RP9,714
2006	P1,226	P1,286	P23	P2,077	P131	P377	P924	P275	P3,387	P9,705

<sup>1</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>2</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1983, also includes crude oil burned as fuel.

R=Revised. P=Preliminary.

Notes: • Data are estimates. • For total heat content of petroleum consumption by all sectors, see data

for heat content of petroleum products supplied in Table 5.12. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see <http://www.eia.doe.gov/emeu/sedr/contents.html>.

Sources: Tables 5.13b, A1, and A3.

**Table 5.14c Heat Content of Petroleum Consumption: Transportation and Electric Power Sectors, Selected Years, 1949-2006** (Trillion Btu)

Year	Transportation Sector									Electric Power Sector <sup>1</sup>			
	Aviation Gasoline	Distillate Fuel Oil	Jet Fuel		Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>3</sup>	Residual Fuel Oil	Total	Distillate Fuel Oil <sup>4</sup>	Petroleum Coke	Residual Fuel Oil <sup>5</sup>	Total
Kerosene Type	Total <sup>2</sup>												
1949	172	405	0	0	2	120	4,298	1,156	6,152	28	NA	387	415
1950	199	480	0	0	3	141	4,664	1,201	6,690	32	NA	440	472
1955	354	791	0	301	14	155	6,175	1,009	8,800	32	NA	439	471
1960	298	892	188	739	20	152	7,183	844	10,126	22	NA	530	553
1965	222	1,093	691	1,215	33	149	8,386	770	11,868	29	NA	693	722
1970	100	1,569	1,486	1,973	44	147	10,716	761	15,310	141	19	1,958	2,117
1971	90	1,701	1,554	2,061	50	147	11,173	701	15,923	200	18	2,277	2,495
1972	85	1,941	1,617	2,091	52	158	11,918	645	16,891	310	19	2,768	3,097
1973	83	2,222	1,707	2,131	48	163	12,455	727	17,831	273	15	3,226	3,515
1974	82	2,202	1,566	2,001	44	156	12,217	697	17,399	309	19	3,038	3,365
1975	71	2,121	1,619	2,029	42	155	12,485	711	17,614	226	2	2,937	3,166
1976	67	2,288	1,613	2,002	45	172	13,107	824	18,506	243	2	3,232	3,477
1977	70	2,489	1,684	2,090	48	172	13,464	908	19,241	283	3	3,614	3,901
1978	71	2,679	1,750	2,138	52	184	13,927	990	20,041	276	12	3,699	3,987
1979	70	2,905	1,795	2,186	21	193	13,221	1,228	19,825	178	8	3,097	3,283
1980	64	2,795	1,754	2,179	17	172	12,383	1,398	19,008	169	5	2,459	2,634
1981	56	2,901	1,671	2,058	32	165	12,379	1,219	18,811	124	4	2,073	2,202
1982	47	2,790	1,661	2,069	32	150	12,312	1,020	18,420	89	4	1,474	1,568
1983	48	2,905	1,736	2,141	38	157	12,482	821	18,593	96	8	1,440	1,544
1984	44	2,948	1,977	2,414	40	168	12,600	807	19,020	88	8	1,190	1,286
1985	50	3,170	2,079	2,497	28	156	12,784	786	19,471	85	7	998	1,090
1986	59	3,218	2,287	2,682	26	153	13,174	870	20,182	83	9	1,359	1,452
1987	46	3,335	2,444	2,843	21	173	13,499	R900	20,816	90	10	1,157	1,257
1988	49	3,626	2,565	2,982	22	167	13,802	919	21,567	109	12	1,442	1,563
1989	48	3,687	2,658	3,059	22	171	13,749	971	21,706	152	16	1,535	1,703
1990	45	3,661	2,774	3,129	22	176	13,575	1,016	21,625	97	30	1,163	1,289
1991	42	3,601	2,681	3,025	20	157	13,503	1,026	21,373	84	29	1,085	1,198
1992	41	3,684	2,718	3,001	18	161	13,699	1,070	21,674	74	45	872	991
1993	38	3,796	2,809	3,028	19	163	14,126	901	22,072	86	79	959	1,124
1994	38	4,032	3,063	3,154	32	171	14,293	883	22,603	120	70	869	1,059
1995	40	4,195	3,099	3,132	17	168	14,607	911	23,069	108	81	566	755
1996	37	4,469	3,268	3,274	15	163	14,837	851	23,647	109	80	628	817
1997	40	4,672	3,307	3,308	13	172	14,999	712	23,917	111	102	715	927
1998	35	4,812	3,359	3,357	17	180	15,463	674	24,537	136	124	1,047	1,306
1999	39	5,001	3,466	3,462	13	182	15,855	665	25,218	140	112	959	1,211
2000	36	5,165	3,580	3,580	11	179	15,960	888	25,820	175	99	871	1,144
2001	35	5,292	3,427	3,426	13	164	16,041	586	25,556	171	103	1,003	1,277
2002	34	5,392	3,354	3,340	13	162	16,465	677	26,084	127	175	659	961
2003	30	5,666	3,266	3,265	R16	150	R16,597	571	R26,296	161	175	869	1,205
2004	31	5,932	3,382	3,383	R18	152	R16,959	740	R27,214	111	222	879	1,212
2005	35	R6,076	R3,475	R3,475	RP17	RP151	RP17,022	R837	RP27,614	R115	R243	R876	R1,235
2006	R34	R6,185	R3,360	R3,360	R17	R123	R17,158	R819	R27,696	R75	R215	R356	R646

<sup>1</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>2</sup> Through 1951, naphtha-type jet fuel is included in the products from which jet fuel was blended: in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Beginning in 1952, includes naphtha-type jet fuel. Beginning in 1957, also includes kerosene-type jet fuel. Beginning in 2005, includes kerosene-type jet fuel only.

<sup>3</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes ethanol blended into motor gasoline.

<sup>4</sup> Fuel oil nos. 1, 2, and 4. For 1949-1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980-2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>5</sup> Fuel oil nos. 5 and 6. For 1949-1979, data are for steam plant use of petroleum. For 1980-2000, electric utility data also include a small amount of fuel oil no. 4.

R=Revised. P=Preliminary. NA=Not available.

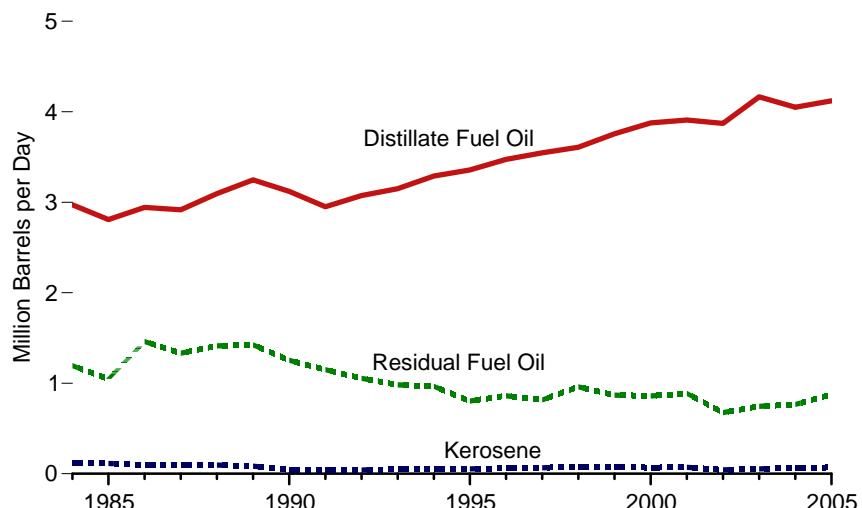
Notes: • Data for "Transportation Sector" are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 5.12. Petroleum product supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 5.13a-d and 5.14a-c. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>. • For related information, see <http://www.eia.doe.gov/emeu/sedr/contents.html>.

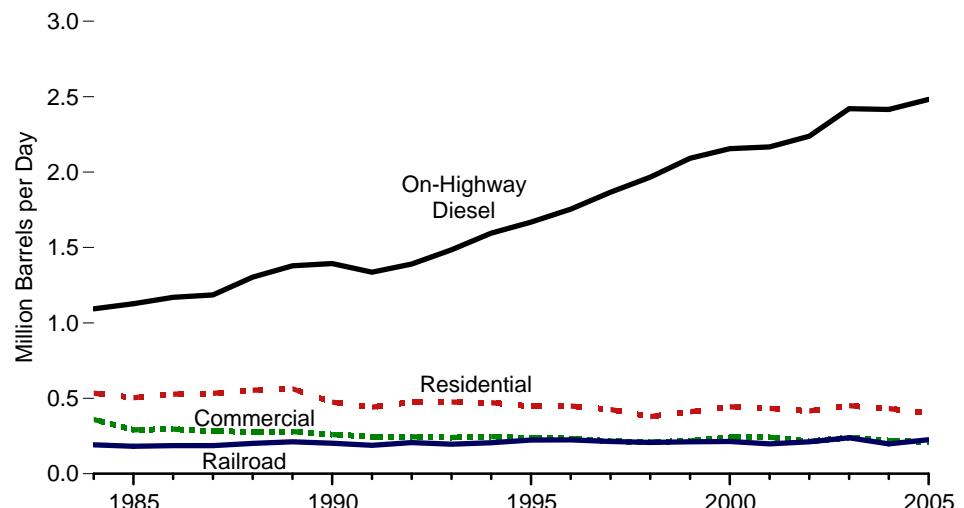
Sources: Tables 5.13c, 5.13d, A1, and A3.

**Figure 5.15 Fuel Oil and Kerosene Sales, 1984-2005**

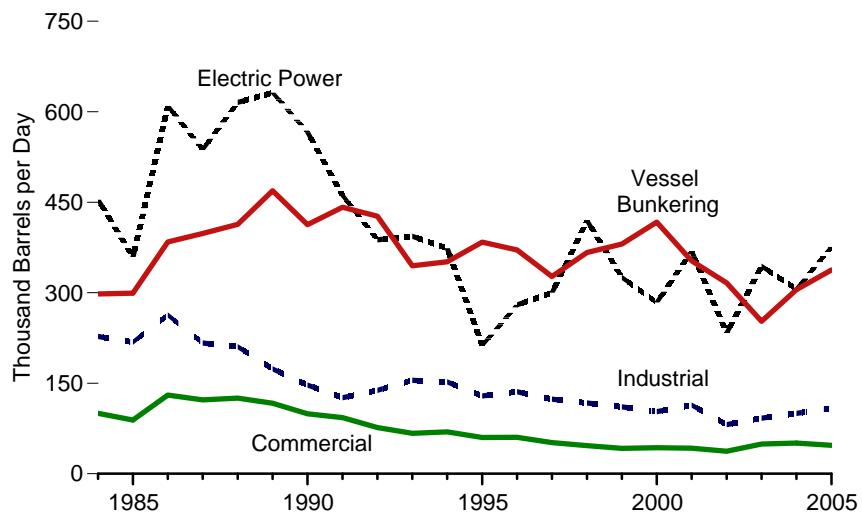
**Total by Fuel**



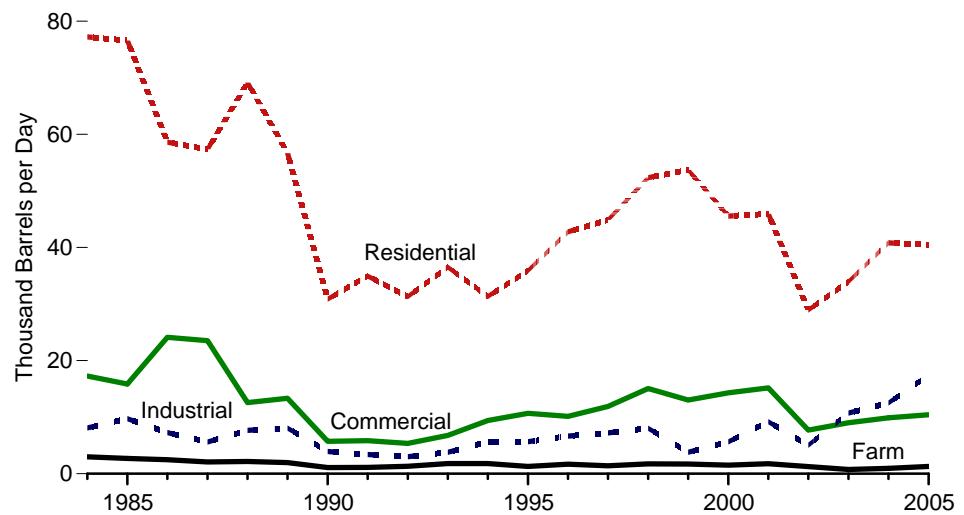
**Distillate Fuel Oil by Selected End Use**



**Residual Fuel Oil by Major End Use**



**Kerosene by Major End Use**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.15.

**Table 5.15 Fuel Oil and Kerosene Sales, 1984-2005**

(Thousand Barrels per Day)

Year	Distillate Fuel Oil													
	Residential	Commercial	Industrial	Oil Company	Farm	Electric Power <sup>1</sup>	Railroad	Vessel Bunkering	On-Highway Diesel	Military	Off-Highway Diesel	Other	Total	
1984	534	360	166	55	208	42	192	115	1,093	46	114	46	2,971	
1985	504	291	159	45	202	34	182	111	1,127	43	99	11	2,809	
1986	528	296	175	41	218	38	186	127	1,169	47	108	10	2,944	
1987	534	280	184	40	196	37	186	122	1,185	46	102	5	2,917	
1988	554	279	167	41	206	47	201	130	1,304	54	109	4	3,095	
1989	564	279	178	45	219	158	211	147	1,378	56	110	2	3,248	
1990	475	260	169	49	222	50	203	135	1,393	46	118	(s)	3,120	
1991	442	246	151	48	206	39	188	133	1,336	53	107	(s)	2,949	
1992	474	245	150	43	228	35	206	144	1,391	42	114	(s)	3,075	
1993	475	241	139	46	222	36	196	141	1,485	32	137	(s)	3,150	
1994	472	246	148	44	213	43	205	143	1,594	40	140	(s)	3,289	
1995	447	237	146	45	227	39	224	153	1,668	30	142	--	3,357	
1996	450	234	149	48	234	43	224	162	1,754	30	146	--	3,472	
1997	426	216	151	56	231	41	214	168	1,867	28	149	--	3,546	
1998	380	211	161	51	222	55	207	169	1,967	23	162	--	3,608	
1999	411	218	162	43	223	53	211	158	2,091	23	162	--	3,756	
2000	444	241	152	45	225	66	214	147	2,155	20	168	--	3,877	
2001	433	243	161	49	234	88	198	133	2,167	26	177	--	3,908	
2002	416	215	156	50	223	49	212	136	2,238	23	154	--	3,871	
2003	452	240	156	33	209	75	239	145	2,420	27	169	--	4,165	
2004	432	220	151	31	207	54	198	139	2,415	23	179	--	4,050	
2005	401	210	160	31	210	59	225	131	2,482	18	193	--	4,120	
Residual Fuel Oil								Kerosene						
Commercial	Industrial	Oil Company	Electric Power <sup>1</sup>	Vessel Bunkering	Military	Other <sup>2</sup>	Total	Residential	Commercial	Industrial	Farm	Other	Total	
1984	100	228	81	454	298	6	26	1,194	77	17	8	3	10	115
1985	89	218	62	359	299	8	13	1,048	77	16	10	3	9	114
1986	130	263	52	610	384	E7	15	1,462	59	24	7	2	6	98
1987	123	217	44	537	398	10	3	1,332	57	24	6	2	6	95
1988	125	211	36	616	413	8	4	1,413	69	13	8	2	5	96
1989	117	174	24	1,632	469	6	2	1,424	57	13	8	2	4	84
1990	99	147	21	566	413	7	2	1,255	31	6	4	1	1	43
1991	93	126	20	461	442	8	1	1,150	35	6	3	1	1	46
1992	77	138	18	388	427	6	1	1,054	31	5	3	1	(s)	41
1993	67	155	17	394	345	5	(s)	983	37	7	4	2	1	50
1994	69	152	16	374	351	4	(s)	967	31	9	6	2	1	49
1995	60	129	14	213	384	3	(s)	804	36	11	6	1	(s)	54
1996	60	136	11	280	371	4	1	862	43	10	7	2	(s)	62
1997	52	124	10	300	327	3	(s)	816	45	12	7	1	(s)	66
1998	47	117	8	420	367	2	(s)	961	52	15	8	2	1	78
1999	42	111	8	326	381	2	(s)	869	54	13	4	2	1	73
2000	43	103	10	284	417	2	(s)	859	46	14	6	2	(s)	67
2001	42	114	9	368	353	1	(s)	888	46	15	9	2	(s)	72
2002	37	82	7	233	316	(s)	(s)	676	29	8	5	1	(s)	43
2003	49	92	5	344	253	1	(s)	744	34	9	11	1	(s)	55
2004	51	100	3	306	305	2	(s)	767	41	10	13	1	(s)	64
2005	47	109	5	376	338	2	(s)	877	40	10	17	1	(s)	70

<sup>1</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>2</sup> Sales to railroads are included in "Other."

E = Annual estimate based on eleven months of data. -- = Not applicable. (s)=Less than 0.5 thousand barrels per day.

Notes: • For definitions of energy-use sectors used in this table, see <http://www.eia.doe.gov/pub/>

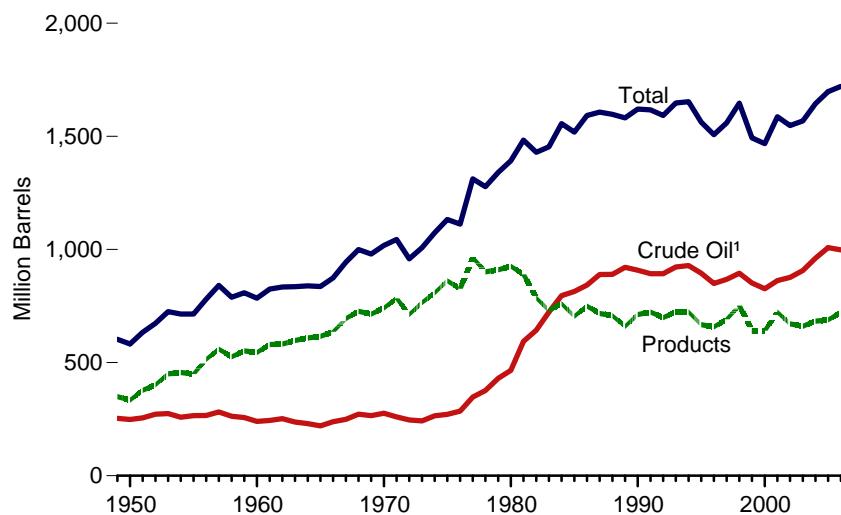
[oil\\_gas/petroleum/data\\_publications/fuel\\_oil\\_and\\_kerosene\\_sales/current/pdf/appenda.pdf](http://oil_gas/petroleum/data_publications/fuel_oil_and_kerosene_sales/current/pdf/appenda.pdf). • Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

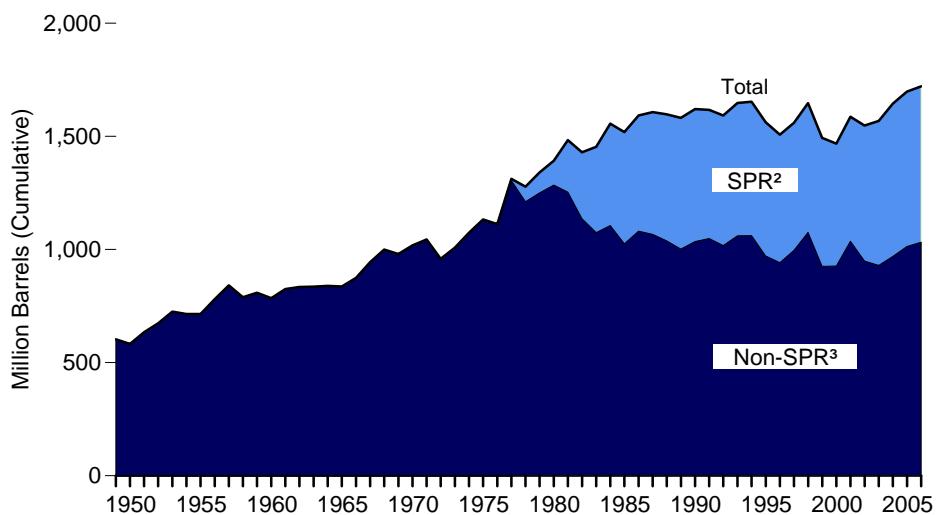
Sources: • 1984—EIA, *Petroleum Marketing Annual* 1988 (October 1989), Tables A1-A3. • 1985-2000—EIA, *Fuel Oil and Kerosene Sales*, annual reports, Tables 1-3. • 2001 forward—EIA, *Fuel Oil and Kerosene Sales 2005* (December 2006), Tables 1-3.

**Figure 5.16 Petroleum Primary Stocks by Type**

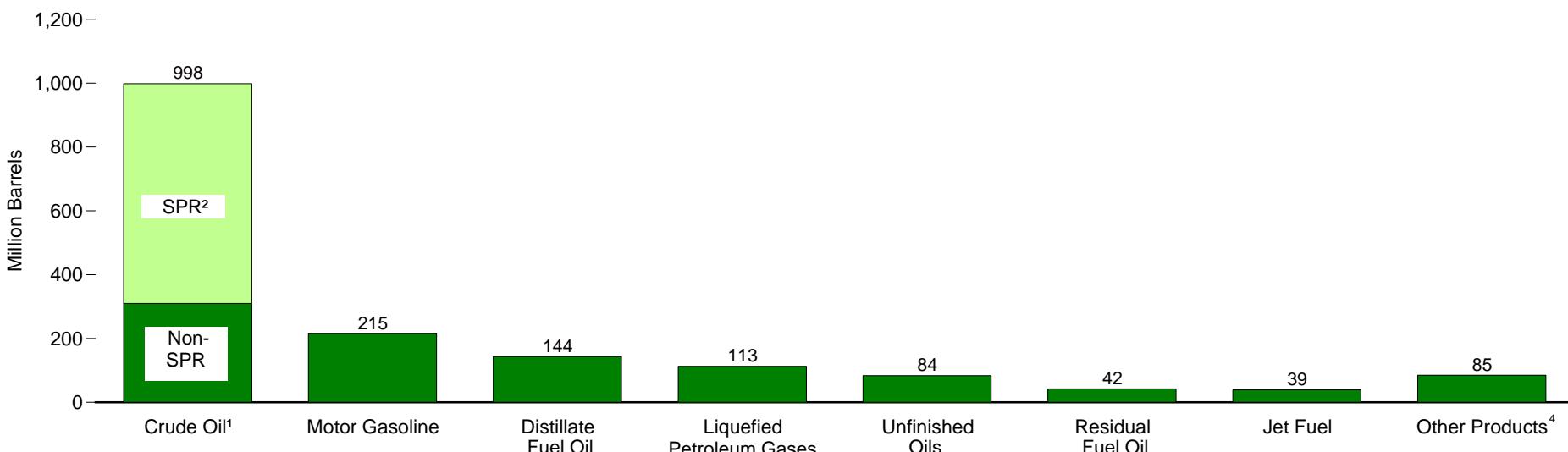
**Total, Crude Oil<sup>1</sup>, and Products, 1949-2006**



**Total Stocks and Strategic Petroleum Reserve (SPR) Stocks, 1949-2006**



**By Type, 2006**



<sup>1</sup> Includes lease condensate and crude oil stored in the Strategic Petroleum Reserve (SPR).

<sup>2</sup> Crude oil stocks in the SPR include non-U.S. stocks held under foreign or commercial storage agreements. See Figure 5.17 for additional information about the SPR.

<sup>3</sup> Crude oil and products.

<sup>4</sup> Asphalt and road oil, aviation gasoline and blending components, kerosene, lubricants, naphtha-type jet fuel, pentanes plus, petrochemical feedstocks, petroleum coke, special naphtha, waxes, other hydrocarbons and oxygenates, and miscellaneous products.

Notes: • Stocks are at end of year. • Because vertical scales differ, graphs should not be compared.

Sources: Table 5.16.

**Table 5.16 Petroleum Primary Stocks by Type, Selected Years, 1949-2006**  
 (Million Barrels)

Year	Crude Oil and Lease Condensate			Petroleum Products									Total Petroleum
	SPR <sup>1</sup>	Non-SPR <sup>2</sup>	Total	Distillate Fuel Oil	Jet Fuel <sup>3</sup>	Liquefied Petroleum Gases		Motor Gasoline <sup>5</sup>	Residual Fuel Oil	Unfinished Oils	Other Products <sup>6</sup>	Total Products	
						Propane <sup>4</sup>	Total						
1949	0	253	253	75	( <sup>3</sup> )	( <sup>7</sup> )	1	110	60	66	37	350	603
1950	0	248	248	72	( <sup>3</sup> )	( <sup>7</sup> )	2	116	41	70	34	334	583
1955	0	266	266	111	3	( <sup>7</sup> )	7	165	39	68	55	449	715
1960	0	240	240	138	7	( <sup>7</sup> )	23	195	45	62	76	545	785
1965	0	220	220	155	19	( <sup>7</sup> )	30	175	56	89	92	616	836
1970	0	276	276	195	28	( <sup>7</sup> )	67	209	54	99	89	741	1,018
1971	0	260	260	191	28	( <sup>7</sup> )	95	219	60	101	92	784	1,044
1972	0	246	246	154	25	( <sup>7</sup> )	86	213	55	95	84	713	959
1973	0	242	242	196	29	65	99	209	53	99	80	766	1,008
1974	0	265	265	200	29	69	113	218	60	106	82	809	1,074
1975	0	271	271	209	30	82	125	235	74	106	82	862	1,133
1976	0	285	285	186	32	74	116	231	72	110	78	826	1,112
1977	7	340	348	250	35	81	136	258	90	113	82	964	1,312
1978	67	309	376	216	34	87	132	238	90	109	82	901	1,278
1979	91	339	430	229	39	64	111	237	96	118	82	911	1,341
1980	108	358	466	205	42	65	120	261	92	124	82	926	1,392
1981	230	363	594	192	41	76	135	253	78	111	80	890	1,484
1982	294	350	644	179	37	54	94	235	66	105	70	786	1,430
1983	379	344	723	140	39	48	101	222	49	108	72	731	1,454
1984	451	345	796	161	42	58	101	243	53	94	67	760	1,556
1985	493	321	814	144	40	39	74	223	50	107	67	705	1,519
1986	512	331	843	155	50	63	103	233	47	94	68	750	1,593
1987	541	349	890	134	50	48	97	226	47	93	70	718	1,607
1988	560	330	890	124	44	50	97	228	45	100	70	707	1,597
1989	580	341	921	106	41	32	80	213	44	106	70	660	1,581
1990	586	323	908	132	52	49	98	220	49	99	63	712	1,621
1991	569	325	893	144	49	48	92	219	50	98	72	724	1,617
1992	575	318	893	141	43	39	89	216	43	95	73	699	1,592
1993	587	335	922	141	40	51	106	226	44	88	78	725	1,647
1994	592	337	929	145	47	46	99	215	42	91	84	724	1,653
1995	592	303	895	130	40	43	93	202	37	86	79	668	1,563
1996	566	284	850	127	40	43	86	195	46	88	76	658	1,507
1997	563	305	868	138	44	44	89	210	40	89	81	692	1,560
1998	571	324	895	156	45	65	115	216	45	91	85	752	1,647
1999	567	284	852	125	41	43	89	193	36	86	70	641	1,493
2000	541	286	826	118	45	41	83	196	36	87	77	641	1,468
2001	550	312	862	145	42	66	121	210	41	88	78	724	1,586
2002	599	278	877	134	39	53	106	209	31	76	76	671	1,548
2003	638	269	907	137	39	50	94	207	38	76	71	661	1,568
2004	676	286	961	126	40	55	104	218	42	81	72	683	1,645
2005	685	R <sup>324</sup>	1,008	136	42	57	R <sup>109</sup>	R <sup>208</sup>	37	86	71	R <sup>689</sup>	R <sup>1,698</sup>
2006 <sup>p</sup>	689	310	998	144	39	62	113	215	42	84	85	722	1,721

<sup>1</sup> "SPR" is the Strategic Petroleum Reserve. Crude oil stocks in the SPR include non-U.S. stocks held under foreign or commercial storage agreements.

<sup>2</sup> All crude oil and lease condensate stocks other than those in "SPR."

<sup>3</sup> Through 1951, naphtha-type jet fuel is included in the products from which it was blended: in 1952, 71 percent gasoline, 17 percent kerosene, and 12 percent distillate fuel oil. Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products." Beginning in 2005, naphtha-type jet fuel is included in "Other Products."

<sup>4</sup> Includes propylene.

<sup>5</sup> Finished motor gasoline and motor gasoline blending components. Through 1963, also includes aviation gasoline and special naphthas.

<sup>6</sup> Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, pentanes plus, petrochemical feedstocks, petroleum coke, waxes, other hydrocarbons and oxygenates, and miscellaneous

products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes aviation gasoline and special naphthas. Beginning in 2005, also includes naphtha-type jet fuel.

<sup>7</sup> Included in "Liquefied Petroleum Gases Total."

R=Revised. P=Preliminary.

Notes: • Stocks are at end of year. • Distillate stocks in the "Northeast Heating Oil Reserve" are not included. • Totals may not equal sum of components due to independent rounding.

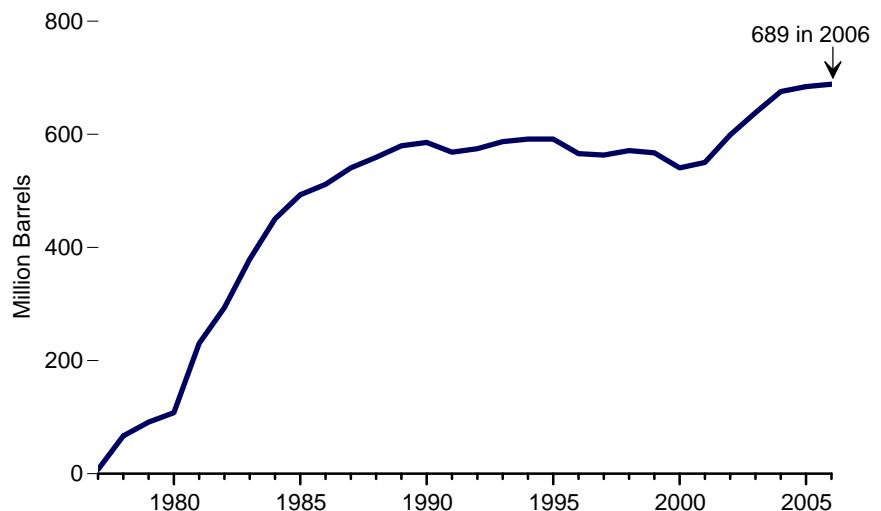
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)

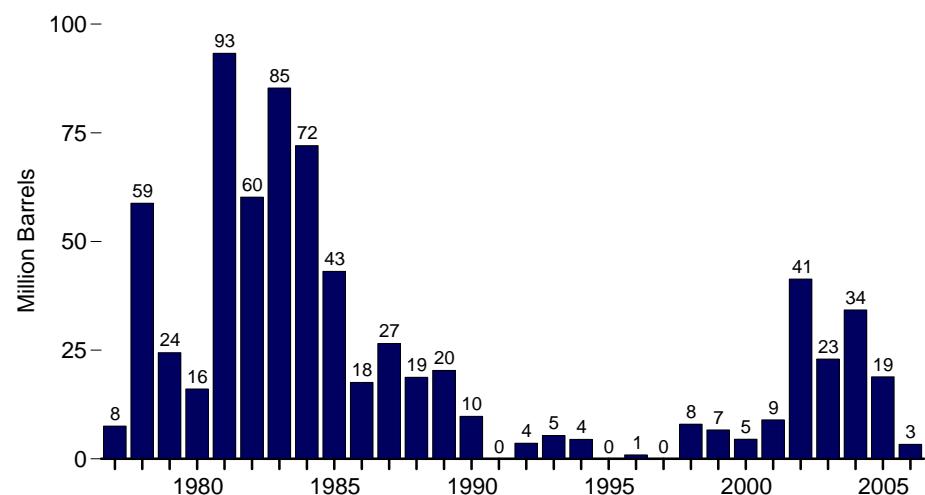
Sources: • 1949-1975—Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.17 Strategic Petroleum Reserve, 1977-2006**

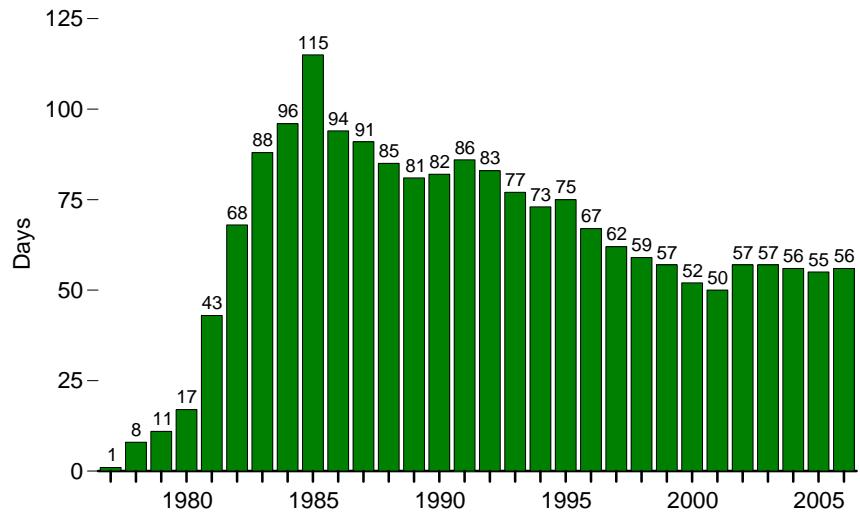
**End-of-Year Stocks in SPR**



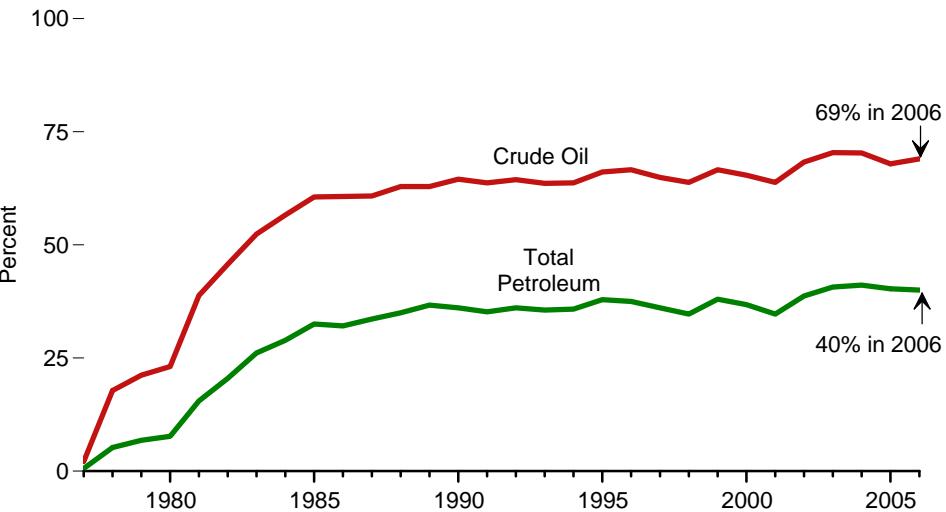
**Crude Oil Imports for SPR<sup>1</sup>**



**SPR Stocks as Days of Petroleum Net Imports<sup>2</sup>**



**SPR as Share of Domestic Stocks**



<sup>1</sup> Imported by SPR and imported by others for SPR.

<sup>2</sup> Derived by dividing end-of-year SPR stocks by annual average daily net imports of all petroleum.

Notes: • SPR=Strategic Petroleum Reserve. • Because vertical scales differ, graphs should not be compared.

Source: Table 5.17.

**Table 5.17 Strategic Petroleum Reserve, 1977-2006**  
 (Million Barrels, Except as Noted)

Year	Foreign Crude Oil Receipts		Domestic Crude Oil Receipts		Withdrawals		End-of-Year Stocks			Days of Petroleum Net Imports <sup>5</sup>
	Imported by SPR	Imported by Others <sup>1,2</sup>	Purchases	Exchanges <sup>2</sup>	Sales	Exchanges	Quantity <sup>3</sup>	Percent of Crude Oil <sup>4</sup> Stocks	Percent of Total Petroleum Stocks	
1977	7.54	0.00	.037	0.00	0.00	0.00	7.46	2.1	0.6	1
1978	58.80	.00	.00	.00	.00	.00	66.86	17.8	5.2	8
1979	24.43	.00	(s)	.00	.00	.00	91.19	21.2	6.8	11
1980	16.07	.00	1.30	.00	.00	.00	107.80	23.1	7.7	17
1981	93.30	.00	28.79	.00	.00	.00	230.34	38.8	15.5	43
1982	60.19	.00	3.79	.00	.00	.00	293.83	45.7	20.5	68
1983	85.29	.00	.42	.00	.00	.00	379.09	52.4	26.1	88
1984	72.04	.00	.05	.00	.00	.00	450.51	56.6	28.9	96
1985	43.12	.00	.17	.00	.00	.00	493.32	60.6	32.5	115
1986	17.56	.00	1.21	.00	.00	.00	511.57	60.7	32.1	94
1987	26.52	.00	2.69	.00	.00	.00	540.65	60.8	33.6	91
1988	18.76	.00	.01	.00	.00	.00	559.52	62.9	35.0	85
1989	20.35	.00	.00	.00	.00	.00	579.86	62.9	36.7	81
1990	9.77	.00	.00	.00	3.91	.00	585.69	64.5	36.1	82
1991	.00	.00	.00	.00	17.22	.00	568.51	63.7	35.2	86
1992	3.59	.00	2.60	.00	.00	.00	574.72	64.4	36.1	83
1993	5.37	.00	6.96	.00	.00	.00	587.08	63.6	35.6	77
1994	4.49	.00	.11	.00	.00	.00	591.67	63.7	35.8	73
1995	.00	.00	.00	.00	.00	.00	591.64	66.1	37.9	75
1996	.00	.90	.00	.00	25.82	.90	565.82	66.6	37.5	67
1997	.00	.00	.00	.00	2.33	.00	563.43	64.9	36.1	62
1998	.00	7.98	.00	.00	.00	.00	571.41	63.8	34.7	59
1999	3.04	3.60	.00	1.42	.00	10.75	567.24	66.6	38.0	57
2000	3.01	1.50	.00	2.29	.00	733.35	540.68	65.4	36.8	52
2001	3.91	5.07	.58	.00	.00	.00	550.24	63.8	34.7	50
2002	5.77	35.59	.00	7.64	.00	.00	599.09	68.3	38.7	57
2003	.00	22.94	.00	16.40	.00	.00	638.39	70.4	40.7	57
2004	.00	34.24	.00	8.47	.00	5.44	675.60	70.3	41.1	56
2005	.00	18.88	.00	8.41	11.03	9.82	684.54	67.9	R40.3	55
2006	.00	3.31	.00	2.44	.00	1.57	688.61	69.0	40.0	56

<sup>1</sup> Imported crude oil received represents volumes of imported crude oil received at SPR storage facilities for which the costs associated with the importation and delivery of crude oil are the responsibility of the commercial importer under contract to supply the SPR.

<sup>2</sup> The values shown for 1998 and 1999 represent an exchange agreement in which SPR received approximately 8.5 million barrels of high quality oil in exchange for approximately 11 million barrels of lower quality crude oil shipped from SPR during 1999 and 2000. Also, beginning in 1999, a portion of the crude oil in-kind royalties from Federal leases in the Gulf of Mexico was transferred to the Department of Energy and exchanged with commercial entities for crude oil to fill the SPR. Crude oil exchange barrels delivered to SPR could be either domestic or imported as long as the crude oil met the specification requirements of SPR. All exchange barrels of imported crude oil are included in "Foreign Crude Oil Receipts, Imported by Others," while exchange barrels of domestic crude oil are included in "Domestic Crude Oil Receipts, Exchanges."

<sup>3</sup> Stocks do not include imported quantities in transit to SPR terminals, pipeline fill, and above-ground storage.

<sup>4</sup> Includes lease condensate stocks.

<sup>5</sup> Derived by dividing end-of-year SPR stocks by annual average daily net imports of all petroleum.

Calculated prior to rounding.

<sup>6</sup> The quantity of domestic fuel oil which was in storage prior to injection of foreign crude oil.

<sup>7</sup> Includes 30 million barrels released to increase heating oil stocks in exchange for a like quantity plus a bonus percentage to be returned in 2001 and 2002, as well as additional barrels to create a Northeast Home Heating Oil Reserve.

R=Revised. (s)=Less than 0.005 million barrels.

Note: "SPR" is the Strategic Petroleum Reserve—petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

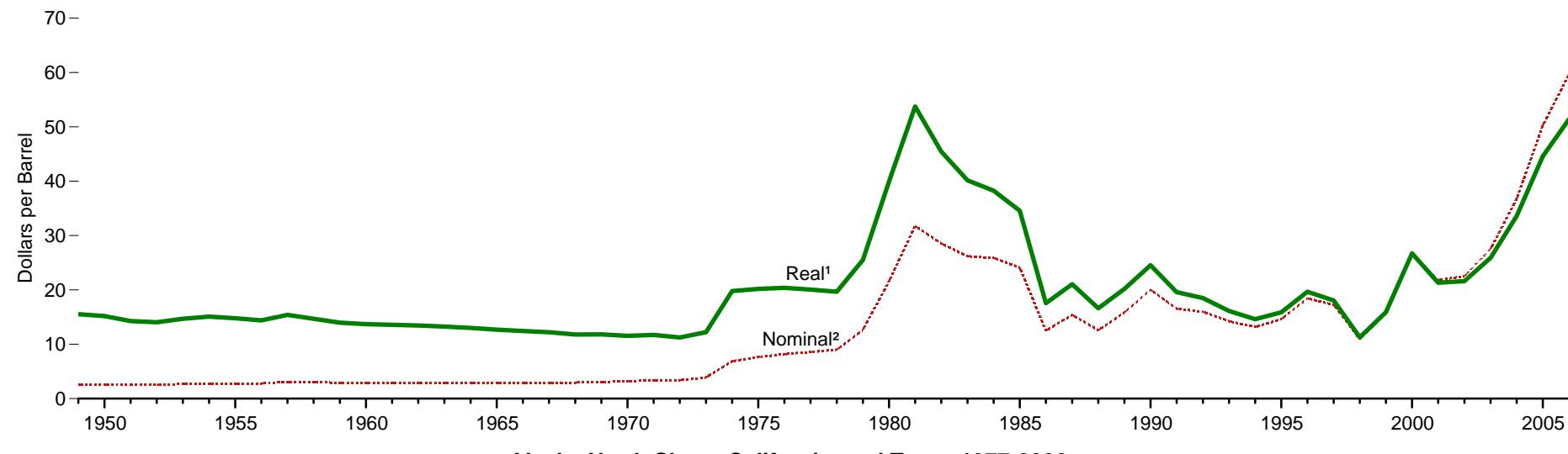
Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

Sources: **Imported by SPR and End-of-Year Stocks, Quantity:** • 1977-1980—Energy Information Administration (EIA), Energy Data Report, *Petroleum Statement, Annual*, annual reports.

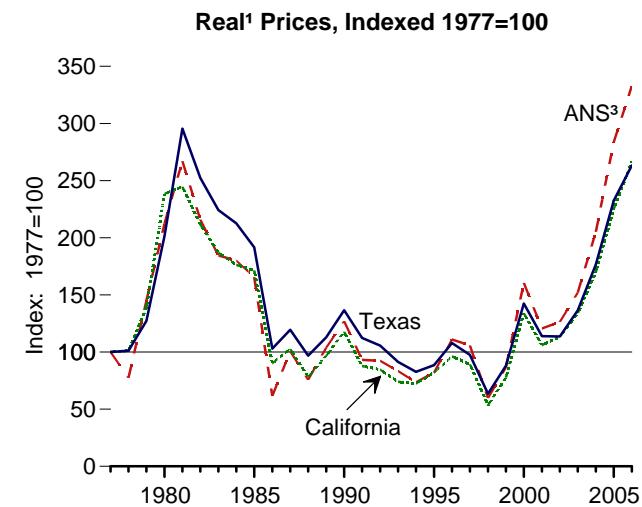
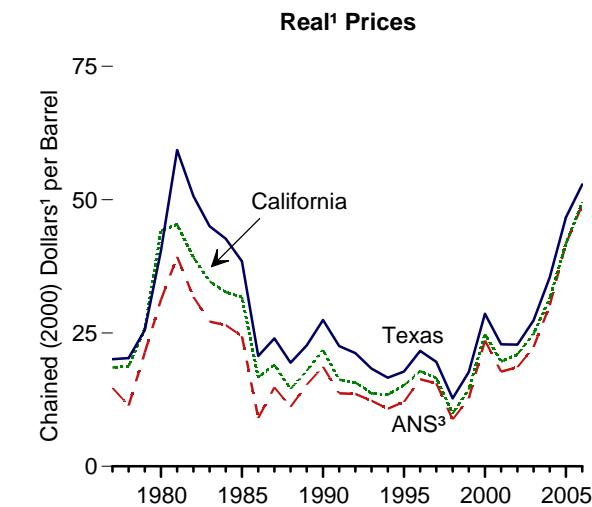
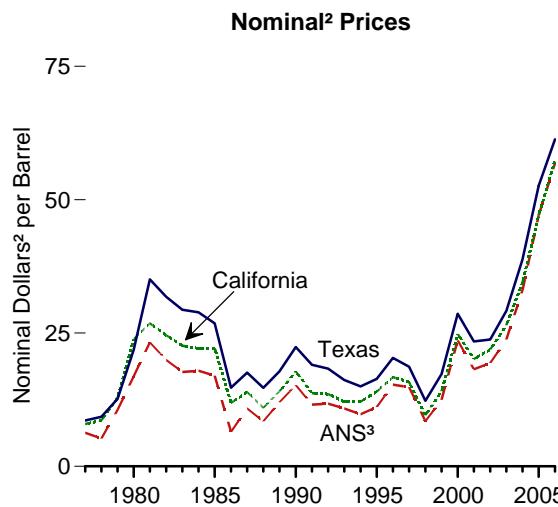
• 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007). **Imported by Others, Domestic Crude Oil Receipts, and Withdrawals:** U.S. Department of Energy, Assistant Secretary for Fossil Energy, unpublished data. **All Other Data:** Calculated.

**Figure 5.18 Crude Oil Domestic First Purchase Prices**

**U.S. Average Real<sup>1</sup> and Nominal<sup>2</sup> Prices, 1949-2006**



**Alaska North Slope, California, and Texas 1977-2006**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Alaska North Slope.  
Source: Table 5.18.

**Table 5.18 Crude Oil Domestic First Purchase Prices, Selected Years, 1949-2006**  
(Dollars per Barrel)

Year	Alaska North Slope		California		Texas		U.S. Average	
	Nominal <sup>1</sup>	Real <sup>2</sup>	Nominal <sup>1</sup>	Real <sup>2</sup>	Nominal <sup>1</sup>	Real <sup>2</sup>	Nominal <sup>1</sup>	Real <sup>2</sup>
1949	--	--	--	--	--	--	2.54	15.53
1950	--	--	--	--	--	--	2.51	15.18
1955	--	--	--	--	--	--	2.77	14.78
1960	--	--	--	--	--	--	2.88	13.69
1965	--	--	--	--	--	--	2.86	12.69
1970	--	--	--	--	--	--	3.18	11.55
1971	--	--	--	--	--	--	3.39	11.73
1972	--	--	--	--	--	--	3.39	11.24
1973	--	--	--	--	--	--	3.89	12.21
1974	--	--	--	--	--	--	6.87	19.78
1975	--	--	--	--	--	--	7.67	20.18
1976	--	--	--	--	--	--	8.19	20.38
1977	<sup>3</sup> 6.29	<sup>3</sup> 14.71	7.92	18.53	8.58	20.07	8.57	20.05
1978	5.21	11.39	8.58	18.75	9.29	20.30	9.00	19.67
1979	10.57	21.33	12.78	25.79	12.65	25.53	12.64	25.51
1980	16.87	31.22	23.87	44.17	21.84	40.41	21.59	39.95
1981	23.23	39.29	26.80	45.33	35.06	59.30	31.77	53.74
1982	19.92	31.76	24.58	39.19	31.77	50.65	28.52	45.47
1983	17.69	27.13	22.61	34.67	29.35	45.01	26.19	40.16
1984	17.91	26.47	22.09	32.65	28.87	42.67	25.88	38.25
1985	16.98	24.36	22.14	31.76	26.80	38.44	24.09	34.56
1986	6.45	9.05	11.90	16.70	14.73	20.67	12.51	17.56
1987	10.83	14.80	13.92	19.02	17.55	23.98	15.40	21.04
1988	8.43	11.14	10.97	14.49	14.71	19.43	12.58	16.62
1989	12.00	15.28	14.06	17.90	17.81	22.67	15.86	20.19
1990	15.23	18.67	17.81	21.83	22.37	27.42	20.03	24.55
1991	11.57	13.70	13.72	16.25	19.04	22.55	16.54	19.59
1992	11.73	13.58	13.55	15.69	18.32	21.21	15.99	18.51
1993	10.84	12.27	12.11	13.70	16.19	18.32	14.25	16.12
1994	9.77	10.82	12.12	13.43	14.98	16.60	13.19	14.61
1995	11.12	12.07	14.00	15.20	16.38	17.78	14.62	15.87
1996	15.32	16.32	16.72	17.82	20.31	21.64	18.46	19.67
1997	14.84	15.55	15.78	16.54	18.66	19.56	17.23	18.06
1998	8.47	8.78	9.55	9.90	12.28	12.73	10.87	11.27
1999	12.46	12.73	14.08	14.39	17.29	17.67	15.56	15.90
2000	23.62	23.62	24.82	24.82	28.60	28.60	26.72	26.72
2001	18.18	17.75	20.11	19.64	23.41	22.86	21.84	21.33
2002	19.37	18.59	21.87	20.99	23.77	22.81	22.51	21.61
2003	23.78	R22.35	26.43	R24.84	29.13	R27.38	27.56	R25.90
2004	33.03	R30.18	34.47	R31.50	38.79	R35.45	36.77	R33.60
2005	47.05	R41.73	47.08	R41.76	R52.61	R46.67	R50.28	R44.60
2006 <sup>P</sup>	56.82	48.97	57.34	49.41	61.31	52.83	59.68	51.43

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>3</sup> Average for July through December only.

R=Revised. P=Preliminary. -- = Not applicable.

Note: Prices are for the marketed first sales price of domestic crude oil. See Note 5, "Crude Oil Domestic First Purchase Prices," at end of section.

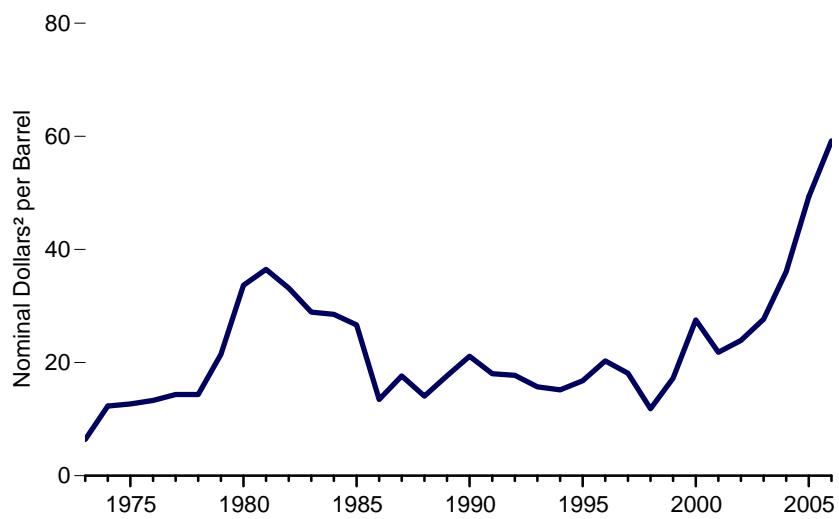
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)

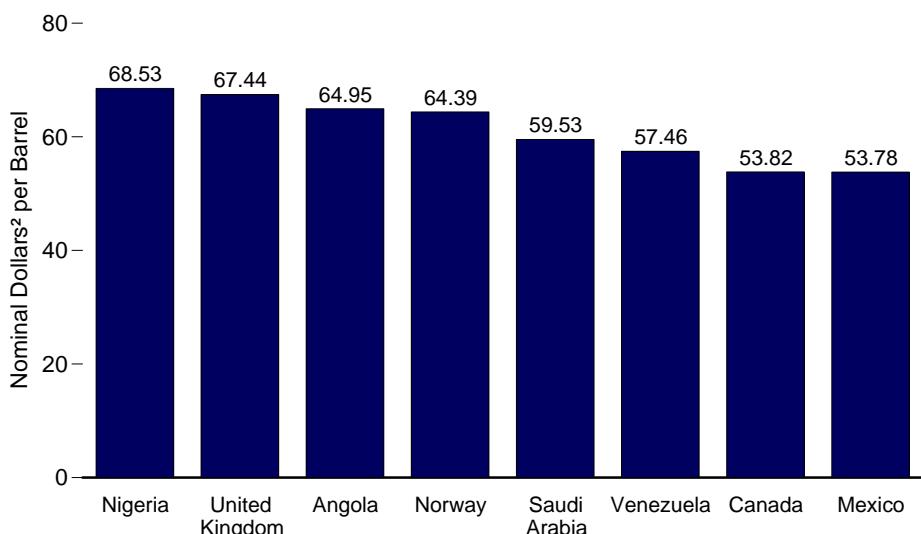
Sources: • 1949-1973—Bureau of Mines, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter. • 1974-January 1976—Federal Energy Administration (FEA), Form FEA-90, "Crude Petroleum Production Monthly Report." • February 1976-1977—FEA, Form FEA-P-124, "Domestic Crude Oil Purchaser's Monthly Report." • 1978 forward—Energy Information Administration, *Petroleum Marketing Monthly* (March 2007), Table 21.

**Figure 5.19 Landed Costs of Crude Oil Imports From Selected Countries**

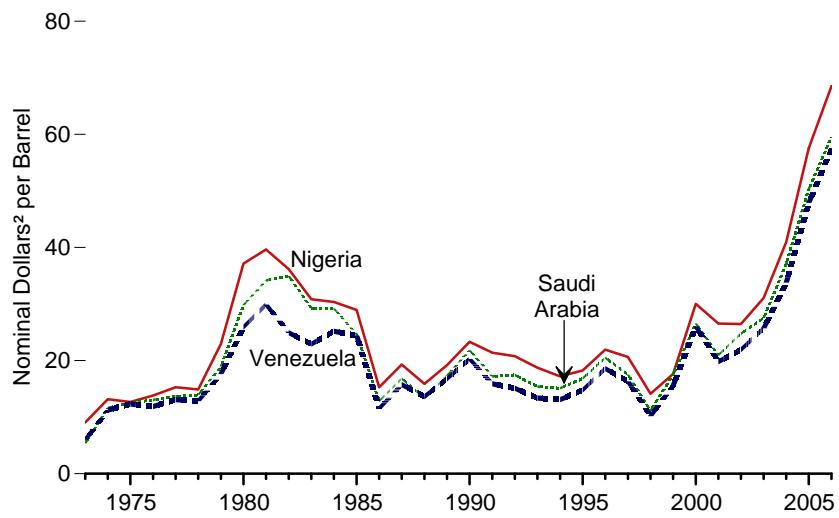
**Total, 1973<sup>1</sup>-2006**



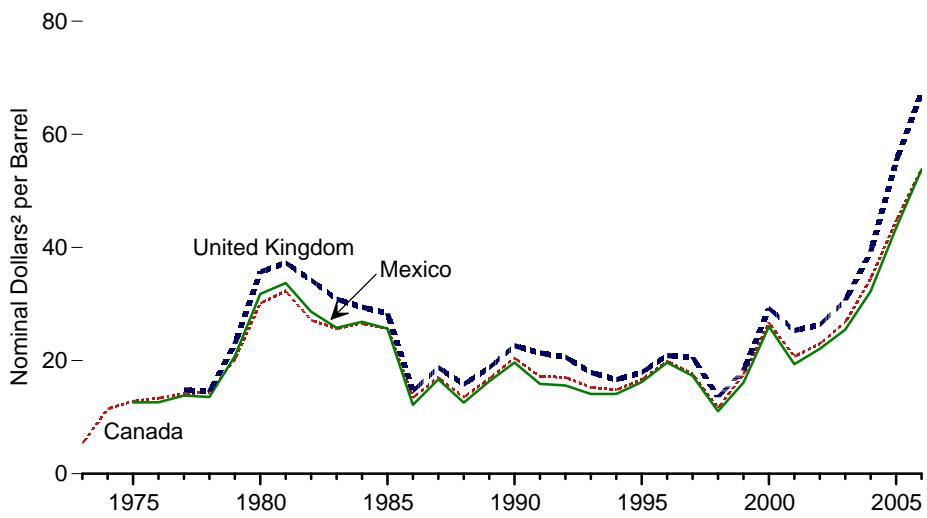
**By Selected Country, 2006**



**By Selected OPEC Country, 1973<sup>1</sup>-2006**



**By Selected Non-OPEC Country, 1973<sup>1</sup>-2006**



<sup>1</sup> 1973 cost is based on October, November, and December data only.

<sup>2</sup> See "Nominal Dollars" in Glossary.

Note: OPEC=Organization of the Petroleum Exporting Countries.

Source: Table 5.19

**Table 5.19 Landed Costs of Crude Oil Imports From Selected Countries, 1973-2006**

(Nominal Dollars<sup>1</sup> per Barrel)

Year	Persian Gulf <sup>3</sup>	Selected OPEC <sup>2</sup> Countries					Selected Non-OPEC Countries							Total
		Kuwait	Nigeria	Saudi Arabia	Venezuela	Total OPEC <sup>4</sup>	Angola	Canada	Colombia	Mexico	Norway	United Kingdom	Total Non-OPEC	
1973 <sup>5</sup>	5.91	W	9.08	5.37	5.99	6.85	W	5.33	W	—	—	—	5.64	6.41
1974	12.21	W	13.16	11.63	11.25	12.49	12.48	11.48	W	W	—	—	11.81	12.32
1975	12.64	W	12.70	12.50	12.36	12.70	11.81	12.84	—	12.61	12.80	—	12.70	12.70
1976	13.03	W	13.81	13.06	11.89	13.32	12.71	13.36	—	12.64	13.74	W	13.35	13.32
1977	13.85	W	15.29	13.69	13.11	14.35	14.04	14.13	—	13.82	14.93	14.83	14.42	14.36
1978	14.01	W	14.88	13.94	12.84	14.34	14.07	14.41	—	13.56	14.68	14.53	14.38	14.35
1979	20.42	W	22.97	18.95	17.65	21.29	21.06	20.22	—	20.77	22.55	22.97	22.10	21.45
1980	30.59	W	37.15	29.80	25.92	33.56	34.76	30.11	W	31.77	36.82	35.68	33.99	33.67
1981	34.61	—	39.66	34.20	29.91	36.60	36.84	32.32	—	33.70	38.70	37.29	36.14	36.47
1982	34.94	—	36.16	34.99	24.93	34.81	33.08	27.15	—	28.63	34.70	34.25	31.47	33.18
1983	29.37	—	30.85	29.27	22.94	29.84	29.31	25.63	—	25.78	30.72	30.87	28.08	28.93
1984	29.07	W	30.36	29.20	25.19	29.06	28.49	26.56	—	26.85	30.05	29.45	28.14	28.54
1985	25.50	—	28.96	24.72	24.43	26.86	27.39	25.71	—	25.63	28.32	28.36	26.53	26.67
1986	12.92	11.70	15.29	12.84	11.52	13.46	14.09	13.43	12.85	12.17	15.98	14.63	13.52	13.49
1987	17.47	18.14	19.32	16.81	15.76	17.64	18.20	17.04	18.43	16.69	19.10	18.78	17.66	17.65
1988	13.51	12.84	15.88	13.37	13.66	14.18	14.48	13.50	14.47	12.58	15.43	15.82	13.96	14.08
1989	17.37	16.90	19.19	17.34	16.78	17.78	18.36	16.81	18.10	16.35	19.06	18.74	17.54	17.68
1990	20.55	17.01	23.33	21.82	20.31	21.23	21.51	20.48	22.34	19.64	21.11	22.65	20.98	21.13
1991	17.34	18.48	21.39	17.22	15.92	18.08	19.90	17.16	19.55	15.89	21.44	21.37	17.93	18.02
1992	17.58	16.99	20.78	17.48	15.13	17.81	19.36	17.04	18.46	15.60	20.90	20.63	17.67	17.75
1993	15.26	14.23	18.73	15.40	13.39	15.68	17.40	15.27	16.54	14.11	18.99	17.92	15.78	15.72
1994	15.00	14.49	17.21	15.11	13.12	15.08	16.36	14.83	15.80	14.09	17.09	16.64	15.29	15.18
1995	16.78	16.47	18.25	16.84	14.81	16.61	17.66	16.65	17.45	16.19	18.06	17.91	16.95	16.78
1996	20.45	20.32	21.95	20.49	18.59	20.14	21.86	19.94	22.02	19.64	21.34	20.88	20.47	20.31
1997	17.44	17.03	20.64	17.52	16.35	17.73	20.24	17.63	19.71	17.30	20.26	20.64	18.45	18.11
1998	11.18	11.00	14.14	11.16	10.16	11.46	13.37	11.62	13.26	11.04	13.83	13.55	12.22	11.84
1999	17.37	16.77	17.63	17.48	15.58	16.94	18.37	17.54	18.09	16.12	19.06	18.26	17.51	17.23
2000	26.77	26.28	30.04	26.58	26.05	27.29	29.57	26.69	29.68	26.03	30.13	29.26	27.80	27.53
2001	20.73	19.66	26.55	20.98	19.81	21.52	25.13	20.72	25.88	19.37	25.77	25.32	22.17	21.82
2002	24.13	23.04	26.45	24.77	21.93	23.83	25.43	22.98	25.28	22.09	26.60	26.35	23.97	23.91
2003	27.54	26.82	31.07	27.50	25.70	27.70	30.14	26.76	30.55	25.48	30.51	30.62	27.68	27.69
2004	36.53	35.89	40.95	37.11	33.79	36.84	39.62	34.51	39.03	32.25	39.92	39.28	35.29	36.07
2005 <sup>R</sup>	49.68	48.36	57.55	50.31	47.87	51.36	54.31	44.73	53.42	43.47	56.23	55.28	47.31	49.29
2006 <sup>P</sup>	59.19	57.91	68.53	59.53	57.46	61.35	64.95	53.82	62.16	53.78	64.39	67.44	57.14	59.18

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Organization of the Petroleum Exporting Countries. See Glossary for current membership.

<sup>3</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>4</sup> Ecuador, which withdrew from OPEC on December 31, 1992, is included through 1992. In June 1996, OPEC retroactively ended Gabon's membership in OPEC effective December 31, 1994. However, data for Gabon are still included here for 1995.

<sup>5</sup> Based on October, November, and December data only.

R=Revised. P=Preliminary. — = No data reported. W=Value withheld to avoid disclosure of individual company data.

Notes: • This table reports landed costs of crude oil imports only; it does not account for refined

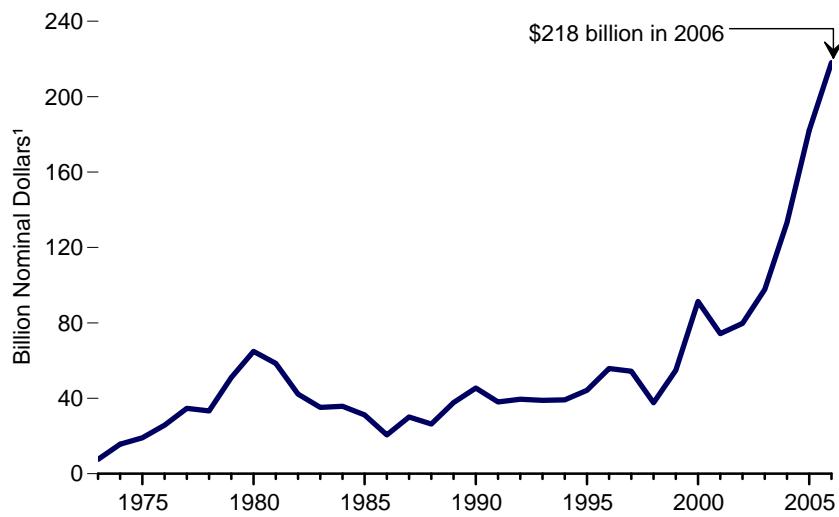
petroleum products imported into the United States. • See "Crude Oil Landed Cost" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

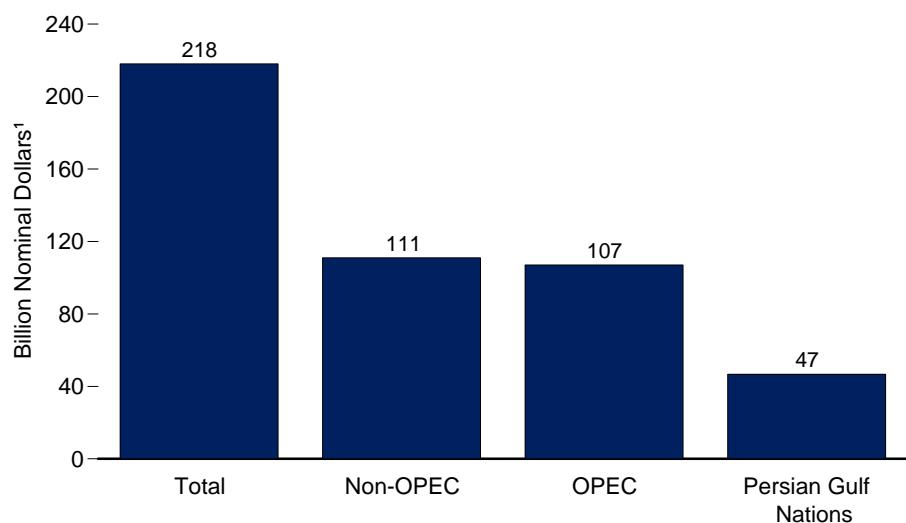
Sources: • 1973-September 1977—Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • October 1977-December 1978—Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • January 1979-September 1982—EIA, Form ERA-51, "Transfer Pricing Report." • October 1982-June 1984—EIA, Form EP-51, "Monthly Foreign Crude Oil Transaction Report." • July 1984 forward—EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report."

**Figure 5.20 Value of Crude Oil Imports**

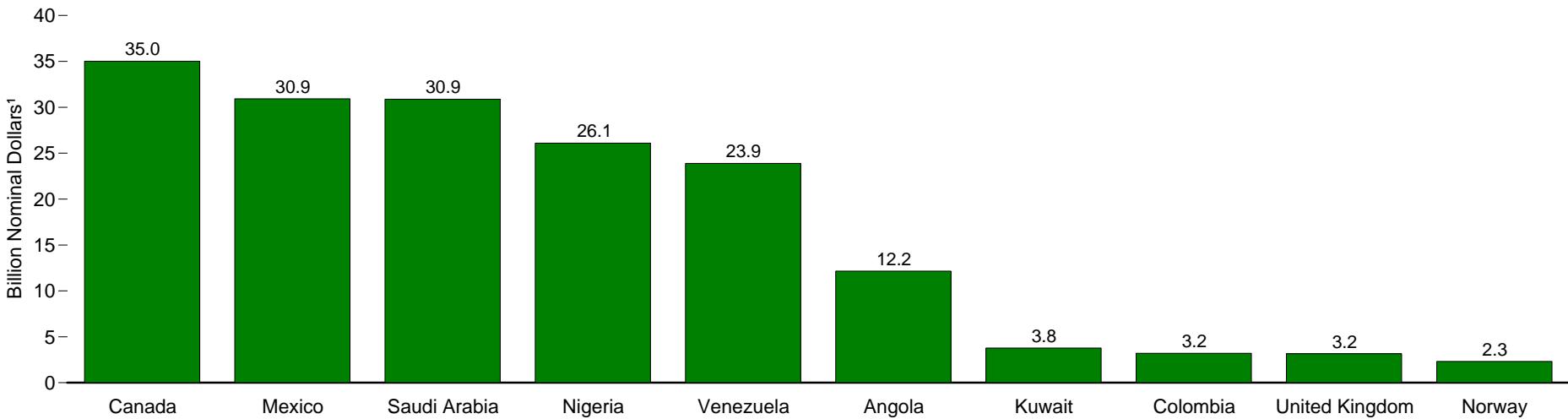
**Total, 1973-2006**



**Totals, 2006**



**By Selected Country, 2006**



<sup>1</sup> See "Nominal Dollars" in Glossary.

Source: Table 5.20.

Notes: • OPEC=Organization of the Petroleum Exporting Countries. • Because vertical scales differ, graphs should not be compared.

**Table 5.20 Value of Crude Oil Imports From Selected Countries, 1973-2006**  
 (Billion Nominal Dollars <sup>1</sup>)

Year	Persian Gulf <sup>3</sup>	Selected OPEC <sup>2</sup> Countries					Selected Non-OPEC Countries							Total <sup>5</sup>
		Kuwait	Nigeria	Saudi Arabia	Venezuela	Total OPEC <sup>4</sup>	Angola	Canada	Colombia	Mexico	Norway	United Kingdom	Total Non-OPEC	
1973	1.7	W	1.5	0.9	0.8	5.2	W	1.9	W	—	0.0	0.0	2.4	7.6
1974	4.4	W	3.3	1.9	1.3	11.6	.2	3.3	.0	W	—	.0	4.1	15.6
1975	5.2	W	3.5	3.2	1.8	14.9	.3	2.8	.0	.3	.1	—	4.1	19.0
1976	8.7	W	5.1	5.8	1.0	22.2	(s)	1.8	—	.4	.2	W	3.6	25.8
1977	12.2	W	6.3	6.9	1.2	29.6	.1	1.4	.0	.9	.3	.5	5.1	34.7
1978	11.3	W	4.9	5.8	.8	27.1	(s)	1.3	.0	1.6	.6	.9	6.2	33.3
1979	15.3	W	9.0	9.3	1.9	39.7	.3	2.0	.0	3.3	.6	1.7	11.3	51.0
1980	16.9	W	11.4	13.6	1.5	47.5	.5	2.2	.0	5.9	1.9	2.3	17.4	64.9
1981	15.1	.0	8.8	13.9	1.6	39.0	.6	1.9	.0	5.8	1.6	5.0	19.5	58.5
1982	8.4	—	6.7	6.8	1.4	22.0	.5	2.1	.0	6.7	1.3	5.5	20.2	42.2
1983	4.3	—	3.4	3.4	1.4	16.1	.8	2.6	.0	7.2	.7	4.1	19.1	35.2
1984	4.8	W	2.3	3.3	2.3	16.1	.9	3.3	.0	6.5	1.2	4.1	19.7	35.8
1985	2.3	—	3.0	1.2	2.7	12.9	1.0	4.4	.0	6.7	.3	2.9	18.3	31.2
1986	3.8	.1	2.4	2.9	1.8	10.4	.5	2.8	.3	2.8	.3	1.7	10.2	20.6
1987	6.0	.5	3.7	3.9	2.8	15.5	1.2	3.8	.8	3.7	.5	2.1	14.7	30.1
1988	6.7	.4	3.5	4.4	2.2	14.0	1.1	3.4	.6	3.1	.3	1.5	12.3	26.3
1989	11.0	1.0	5.6	7.1	3.0	21.9	1.9	3.9	.9	4.3	.9	1.1	15.8	37.7
1990	13.5	.5	6.7	9.5	4.9	27.2	1.9	4.8	1.1	4.9	.7	1.3	18.2	45.5
1991	11.0	(s)	5.3	10.7	3.9	22.3	1.8	4.7	.9	4.4	.6	.8	15.7	38.0
1992	10.5	.2	5.1	10.2	4.6	22.2	2.4	5.0	.7	4.5	.9	1.5	17.3	39.5
1993	9.1	1.8	4.9	7.2	4.9	20.7	2.1	5.0	.9	4.4	.9	2.0	18.3	38.9
1994	8.8	1.6	3.9	7.2	5.0	19.7	1.9	5.3	.8	4.8	1.2	2.4	19.4	39.1
1995	9.1	1.3	4.1	7.7	6.2	21.6	2.3	6.3	1.3	6.1	1.7	2.2	22.6	44.3
1996	11.1	1.8	4.8	9.4	8.9	25.3	2.8	7.8	1.8	8.7	2.3	1.6	30.5	55.8
1997	10.4	1.6	5.2	8.3	8.3	24.4	3.1	7.7	1.9	8.6	2.1	1.3	29.9	54.4
1998	8.3	1.2	3.6	5.7	5.1	17.4	2.3	5.4	1.7	5.3	1.1	.8	20.2	37.6
1999	15.0	1.5	4.0	8.8	6.5	26.1	2.4	7.5	3.0	7.4	1.8	1.9	28.8	54.9
2000	23.6	2.5	9.6	14.8	11.7	45.4	3.2	13.2	3.5	12.5	3.3	3.1	46.0	91.4
2001	20.2	1.7	8.2	12.3	9.3	38.1	2.9	10.3	2.5	9.9	2.6	2.3	36.2	74.3
2002	19.5	1.8	5.7	13.7	9.6	35.5	3.0	12.1	2.2	12.1	3.4	3.9	44.3	79.8
2003	24.4	2.0	9.4	17.3	11.1	46.3	4.0	15.1	1.8	14.6	2.0	4.0	51.4	97.7
2004	32.1	3.2	16.2	20.3	16.0	68.0	4.4	20.4	2.0	18.9	2.1	3.4	65.2	133.2
2005	R\$40.0	R\$4.0	R\$22.6	R\$26.5	R\$21.7	R\$90.3	R\$9.0	R\$26.7	3.0	R\$24.7	2.4	R\$4.5	R\$91.9	R\$182.2
2006 <sup>p</sup>	46.6	3.8	26.1	30.9	23.9	107.0	12.2	35.0	3.2	30.9	2.3	3.2	111.0	218.1

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Organization of the Petroleum Exporting Countries. See Glossary for current membership.

<sup>3</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>4</sup> Ecuador, which withdrew from OPEC on December 31, 1992, is included through 1992. In June 1996, OPEC retroactively ended Gabon's membership in OPEC effective December 31, 1994. However, data for Gabon are still included here for 1995.

<sup>5</sup> Data shown here represent landed value; they differ from data in Table 3.7, which are data from U.S. Customs that represent crude oil value at the port of loading.

R=Revised. P=Preliminary. — = No data reported. (s)=Less than \$0.05 billion. W=Value withheld to avoid disclosure of individual company data.

Notes: • Crude oil import volumes used to calculate values in this table are for the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

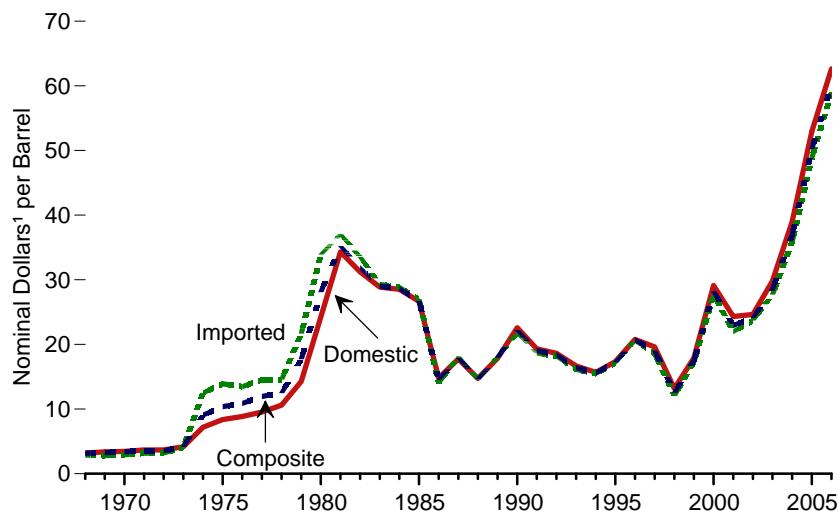
Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

Sources: Calculated by using prices on Table 5.19 and volume data from the following sources:

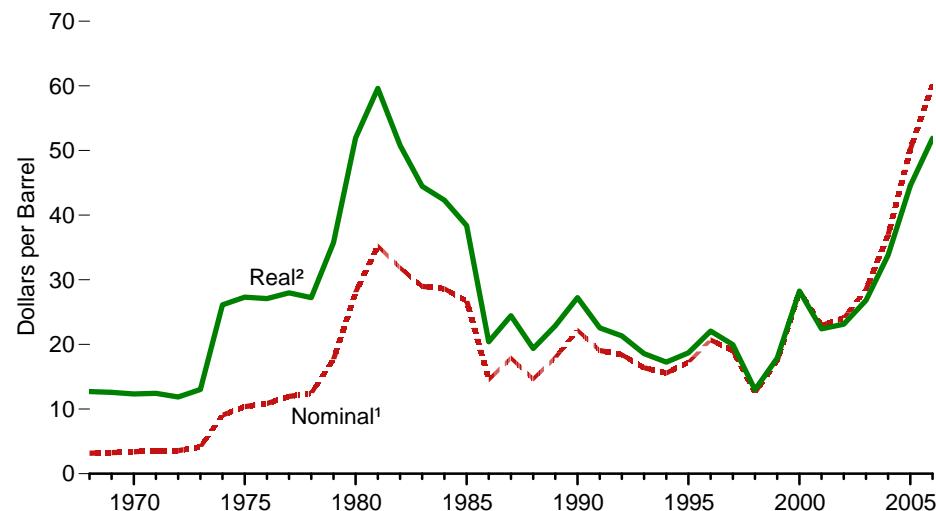
• 1973-1975—U.S. Department of the Interior, Bureau of Mines, *Petroleum Statement, Annual*, annual reports. • 1976-1980—Energy Information Administration (EIA), *Petroleum Statement, Annual*, annual reports. • 1981-2005—EIA, *Petroleum Supply Annual*, annual reports. • 2006—EIA, *Petroleum Supply Monthly* (February 2007).

**Figure 5.21 Crude Oil Refiner Acquisition Costs, 1968-2006**

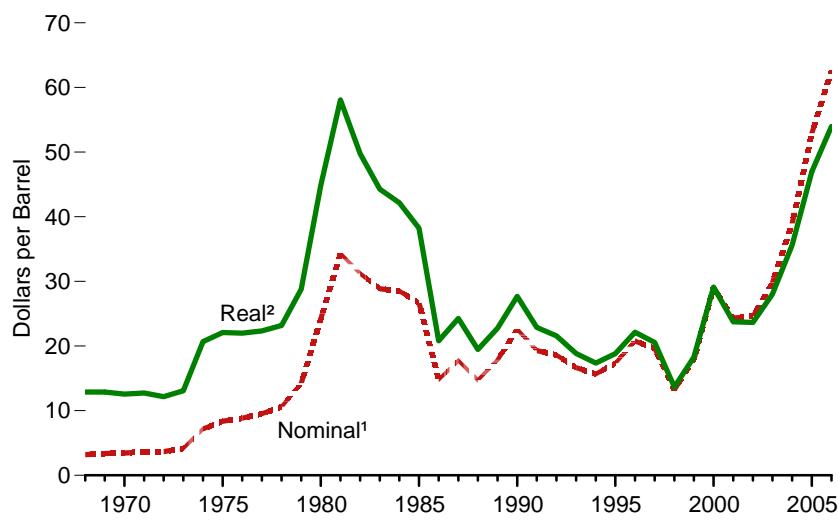
**Summary**



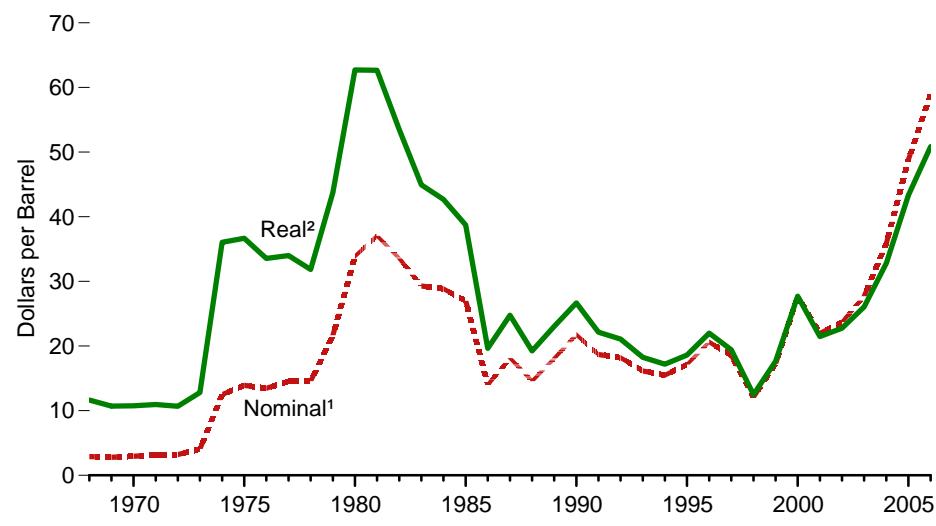
**Composite Costs**



**Domestic Costs**



**Imported Costs**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 5.21.

**Table 5.21 Crude Oil Refiner Acquisition Costs, 1968-2006**  
(Dollars per Barrel)

Year	Domestic		Imported		Composite	
	Nominal <sup>1</sup>	Real <sup>2</sup>	Nominal <sup>1</sup>	Real <sup>2</sup>	Nominal <sup>1</sup>	Real <sup>2</sup>
1968 <sup>E</sup>	3.21	12.88	2.90	11.64	3.17	12.72
1969 <sup>E</sup>	3.37	12.89	2.80	10.71	3.29	12.58
1970 <sup>E</sup>	3.46	12.57	2.96	10.75	3.40	12.35
1971 <sup>E</sup>	3.68	12.73	3.17	10.96	3.60	12.45
1972 <sup>E</sup>	3.67	12.17	3.22	10.67	3.58	11.87
1973 <sup>E</sup>	4.17	13.09	4.08	12.81	4.15	13.03
1974	7.18	20.68	12.52	36.05	9.07	26.12
1975	8.39	22.08	13.93	36.66	10.38	27.31
1976	8.84	21.99	13.48	33.54	10.89	27.09
1977	9.55	22.34	14.53	33.99	11.96	27.98
1978	10.61	23.19	14.57	31.84	12.46	27.23
1979	14.27	28.80	21.67	43.74	17.72	35.76
1980	24.23	44.83	33.89	62.71	28.07	51.94
1981	34.33	58.07	37.05	62.67	35.24	59.61
1982	31.22	49.77	33.55	53.49	31.87	50.81
1983	28.87	44.27	29.30	44.93	28.99	44.46
1984	28.53	42.17	28.88	42.69	28.63	42.32
1985	26.66	38.24	26.99	38.72	26.75	38.37
1986	14.82	20.80	14.00	19.65	14.55	20.42
1987	17.76	24.26	18.13	24.77	17.90	24.45
1988	14.74	19.47	14.56	19.24	14.67	19.38
1989	17.87	22.75	18.08	23.02	17.97	22.88
1990	22.59	27.69	21.76	26.67	22.22	27.23
1991	19.33	22.89	18.70	22.14	19.06	22.57
1992	18.63	21.57	18.20	21.07	18.43	21.33
1993	16.67	18.86	16.14	18.26	16.41	18.57
1994	15.67	17.36	15.51	17.18	15.59	17.27
1995	17.33	18.82	17.14	18.61	17.23	18.71
1996	20.77	22.13	20.64	21.99	20.71	22.07
1997	19.61	20.55	18.53	19.42	19.04	19.96
1998	13.18	13.66	12.04	12.48	12.52	12.98
1999	17.90	18.29	17.26	17.64	17.51	17.89
2000	29.11	29.11	27.70	27.70	28.26	28.26
2001	24.33	23.76	22.00	21.48	22.95	22.41
2002	24.65	23.66	23.71	22.76	24.10	23.13
2003	29.82	R28.03	27.71	R26.04	28.53	R26.81
2004	38.97	R35.61	35.90	R32.81	36.98	R33.79
2005	R52.94	R46.96	R48.86	R43.34	R50.24	R44.56
2006 <sup>P</sup>	62.63	53.97	59.01	50.85	60.23	51.90

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised. P=Preliminary. E=Estimate.

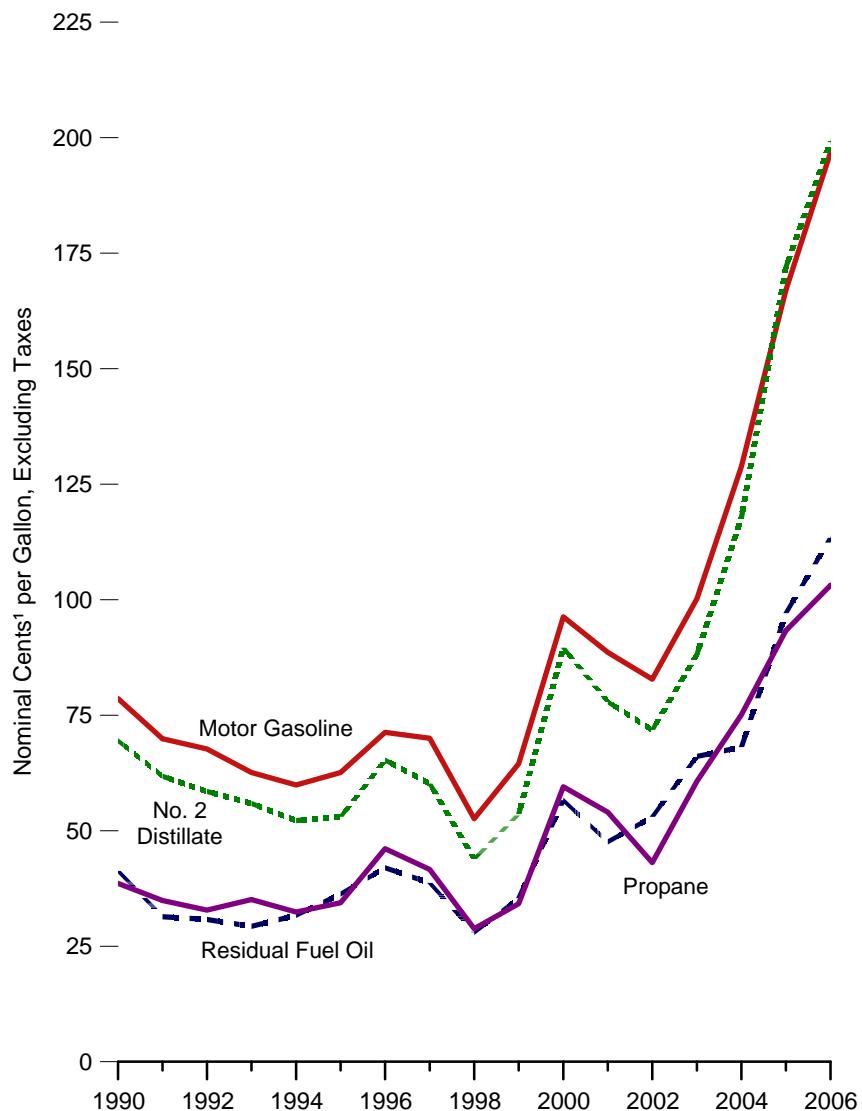
Note: Costs are for crude oil to refiners, including transportation and other fees; they do not include crude oil purchased for the Strategic Petroleum Reserve. The cost for each category and for the composite is derived by dividing the sum of the total purchasing (acquisition) costs of all refiners by the total volume of all refiners' purchases.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

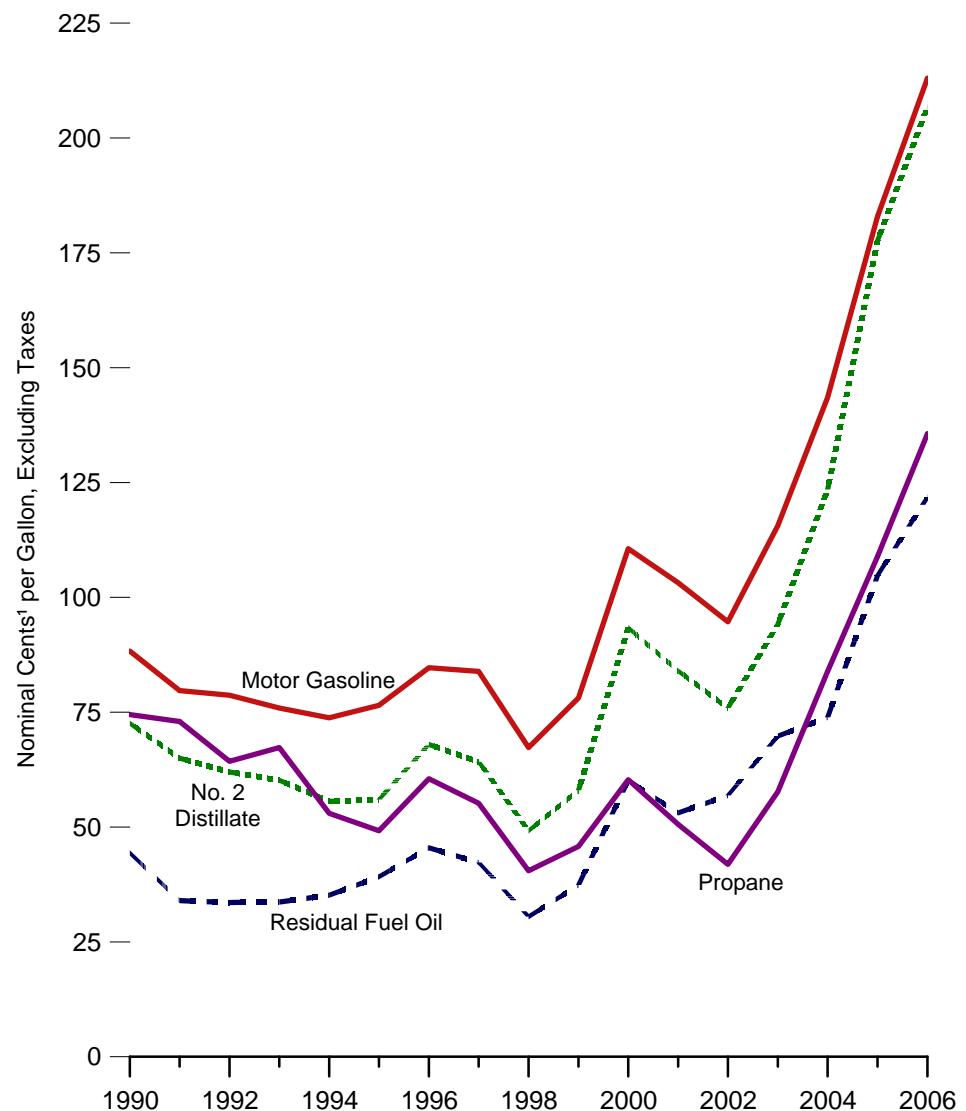
Sources: • 1968-1973—Energy Information Administration (EIA) estimates. The cost of domestic crude oil was derived by adding estimated transportation costs to the reported average domestic first purchase value. The cost of imported crude oil was derived by adding an estimated ocean transport cost based on the published "Average Freight Rate Assessment" to the average "Free Alongside Ship" value published by the U.S. Bureau of the Census. The composite cost was derived by weighting domestic costs and imported costs on the basis of quantities produced and imported. • 1974-January 1976—Federal Energy Administration (FEA), Form FEA-96, "Monthly Cost Allocation Report." • February 1976-December 1977—FEA, Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report." • 1978 forward—EIA, *Petroleum Marketing Monthly* (March 2007), Table 1.

**Figure 5.22 Refiner Sales Prices for Selected Petroleum Products, 1990-2006**

**To Resellers**



**To End Users**



<sup>1</sup> See "Nominal Price" in Glossary.

Source: Table 5.22.

**Table 5.22 Refiner Sales Prices and Refiner Margins for Selected Petroleum Products, 1990-2006**  
 (Nominal Cents<sup>1</sup> per Gallon, Excluding Taxes)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 <sup>P</sup>
<b>Sales Prices to Resellers:<sup>2</sup></b>																	
Aviation Gasoline .....	106.3	100.1	99.1	96.5	93.3	97.5	105.5	106.5	91.2	100.7	133.0	125.6	114.6	128.8	162.7	R207.6	249.0
Motor Gasoline .....	78.6	69.9	67.7	62.6	59.9	62.6	71.3	70.0	52.6	64.5	96.3	88.6	82.8	100.2	128.8	R167.0	196.8
Leaded Regular .....	75.4	65.7	69.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unleaded Regular .....	75.8	67.2	64.5	59.3	56.6	59.3	68.5	67.3	49.9	62.0	94.2	86.5	80.6	98.1	126.9	R165.4	195.0
Unleaded Midgrade .....	81.4	73.3	70.8	66.0	63.8	67.0	75.9	74.9	57.6	69.6	101.3	94.5	88.5	106.1	134.0	R170.8	201.6
Premium .....	87.4	79.2	77.4	72.2	69.5	72.2	80.3	79.2	61.7	72.6	105.5	98.0	92.8	111.3	140.8	R178.9	211.6
Kerosene .....	83.9	72.2	63.2	60.4	61.8	58.0	71.4	65.3	46.5	55.0	96.9	82.1	75.2	95.5	127.1	R175.7	200.8
Jet Fuel, Kerosene-Type .....	77.3	65.0	60.5	57.7	53.4	53.9	64.6	61.3	45.0	53.3	88.0	76.3	71.6	87.1	120.8	R172.3	196.4
No. 1 Distillate .....	83.8	73.0	65.2	64.6	61.5	62.5	75.1	72.3	51.3	63.4	101.9	88.3	80.5	103.3	128.9	R180.1	204.0
No. 2 Distillate .....	69.5	61.8	58.5	55.9	52.2	53.0	65.3	60.2	43.9	53.6	89.6	77.9	71.8	88.2	117.8	R172.0	199.2
No. 2 Fuel Oil .....	69.7	62.2	57.9	54.4	50.6	51.1	63.9	59.0	42.2	49.3	88.6	75.6	69.4	88.1	112.5	R162.3	183.5
No. 2 Diesel Fuel .....	69.4	61.5	59.1	57.0	52.9	53.8	65.9	60.6	44.4	54.6	89.8	77.5	72.4	88.3	118.7	R173.7	201.3
No. 4 Fuel <sup>3</sup> .....	59.0	55.6	49.5	48.8	46.2	46.3	60.3	55.1	38.3	43.0	77.8	69.7	66.3	79.3	103.3	137.7	151.5
Residual Fuel Oil .....	41.3	31.4	30.8	29.3	31.7	36.3	42.0	38.7	28.0	35.4	56.6	47.6	53.0	66.1	68.1	R97.1	113.4
1% or Less Sulfur Content .....	47.2	36.4	35.1	33.7	34.5	38.3	45.6	41.5	29.9	38.2	62.7	52.3	54.6	72.8	76.4	R111.5	120.2
Greater Than 1% Sulfur Content ..	37.2	29.2	28.6	25.6	28.7	33.8	38.9	36.6	26.9	32.9	51.2	42.8	50.8	58.8	60.1	R84.2	107.9
Propane (Consumer Grade) .....	38.6	34.9	32.8	35.1	32.4	34.4	46.1	41.6	28.8	34.2	59.5	54.0	43.1	60.7	75.1	R93.3	103.1
<b>Sales Prices to End Users:<sup>2</sup></b>																	
Aviation Gasoline .....	112.0	104.7	102.7	99.0	95.7	100.5	111.6	112.8	97.5	105.9	130.6	132.3	128.8	149.3	181.9	R223.1	268.2
Motor Gasoline .....	88.3	79.7	78.7	75.9	73.8	76.5	84.7	83.9	67.3	78.1	110.6	103.2	94.7	115.6	143.5	R182.9	213.0
Leaded Regular .....	83.1	71.5	78.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unleaded Regular .....	84.9	76.1	74.3	71.2	68.9	71.7	80.7	79.8	63.0	74.2	107.3	99.7	91.2	112.3	140.4	R180.2	210.1
Unleaded Midgrade .....	92.1	84.3	82.7	80.5	78.5	80.8	89.6	89.5	72.8	83.5	116.8	110.0	101.0	121.8	149.9	189.3	220.8
Premium .....	98.5	90.7	91.4	88.9	86.5	89.0	97.2	97.3	80.5	90.6	124.2	117.5	108.8	130.5	159.6	R199.2	232.1
Kerosene .....	92.3	83.8	78.8	75.4	66.0	58.9	74.0	74.5	50.1	60.5	112.3	104.5	99.0	122.4	116.0	R195.7	223.8
Jet Fuel, Kerosene-Type .....	76.6	65.2	61.0	58.0	53.4	54.0	65.1	61.3	45.2	54.3	89.9	77.5	72.1	87.2	120.7	R173.5	199.8
No. 1 Distillate .....	81.9	74.0	66.6	66.6	64.0	62.0	72.6	68.9	55.1	62.1	98.8	90.2	82.8	101.7	126.2	R183.2	214.0
No. 2 Distillate .....	72.6	65.0	62.0	60.2	55.6	56.0	68.0	64.2	49.2	58.0	93.4	84.0	75.9	94.2	123.5	R177.7	206.8
No. 2 Fuel Oil .....	73.4	66.5	62.7	60.2	57.2	56.2	67.3	63.6	48.2	55.8	92.7	82.9	73.7	93.3	117.3	170.5	197.2
No. 2 Diesel Fuel .....	72.5	64.8	61.9	60.2	55.4	56.0	68.1	64.2	49.4	58.4	93.5	84.2	76.2	94.4	124.3	R178.6	207.5
No. 4 Fuel <sup>3</sup> .....	62.2	58.0	52.6	50.1	50.1	50.5	60.3	56.5	42.8	47.4	76.9	67.9	65.7	85.6	101.7	W	W
Residual Fuel Oil .....	44.4	34.0	33.6	33.7	35.2	39.2	45.5	42.3	30.5	37.4	60.2	53.1	56.9	69.8	73.9	R104.8	121.8
1% or Less Sulfur Content .....	50.5	40.2	38.9	39.7	40.1	43.6	52.6	48.8	35.4	40.5	70.8	64.2	64.0	80.4	83.5	R116.8	134.2
Greater Than 1% Sulfur Content ..	40.0	30.6	31.2	30.3	33.0	37.7	43.3	40.3	28.7	36.2	56.6	49.2	54.4	65.1	69.2	R97.4	117.2
Propane (Consumer Grade) .....	74.5	73.0	64.3	67.3	53.0	49.2	60.5	55.2	40.5	45.8	60.3	50.6	41.9	57.7	83.9	R108.9	135.6
<b>Refiner Margins<sup>4</sup></b>																	
Motor Gasoline .....	25.7	24.5	23.8	23.5	22.8	21.6	22.0	24.7	22.8	22.8	29.0	34.0	25.4	32.3	40.8	R47.4	53.5
Jet Fuel, Kerosene-Type .....	24.4	19.6	16.5	18.6	16.3	12.9	15.3	16.0	15.2	11.6	20.7	21.7	14.2	19.2	32.8	R52.7	53.0
No. 2 Distillate .....	16.6	16.4	14.6	16.8	15.1	12.0	16.0	14.9	14.1	11.9	22.3	23.3	14.4	20.3	29.8	R52.4	55.7
Residual Fuel Oil .....	-11.6	-14.0	-13.2	-9.8	-5.4	-4.8	-7.2	-6.6	-1.8	-6.3	-10.7	-7.0	-4.4	-1.8	-19.9	R-22.5	-30.0
Composite <sup>5</sup> .....	22.1	20.7	19.8	19.0	19.8	18.1	19.4	20.0	19.5	18.9	26.1	29.7	21.6	28.1	36.7	R48.4	53.1

<sup>1</sup> See "Nominal Price" in Glossary.

<sup>2</sup> Sales for resale (wholesale sales) are those made to purchasers who are other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers, such as agriculture, industry, and utilities, as well as residential and commercial customers.

<sup>3</sup> Includes No. 4 fuel oil and No. 4 diesel fuel.

<sup>4</sup> In this table, refiner margin is the difference between the composite refiner acquisition price of crude oil and the price to resellers.

<sup>5</sup> A volume weighted average of the refiner prices to resellers for aviation gasoline, kerosene-type jet

fuel, kerosene, motor gasoline, distillate fuel nos. 1, 2, and 4, and residual fuel oil.

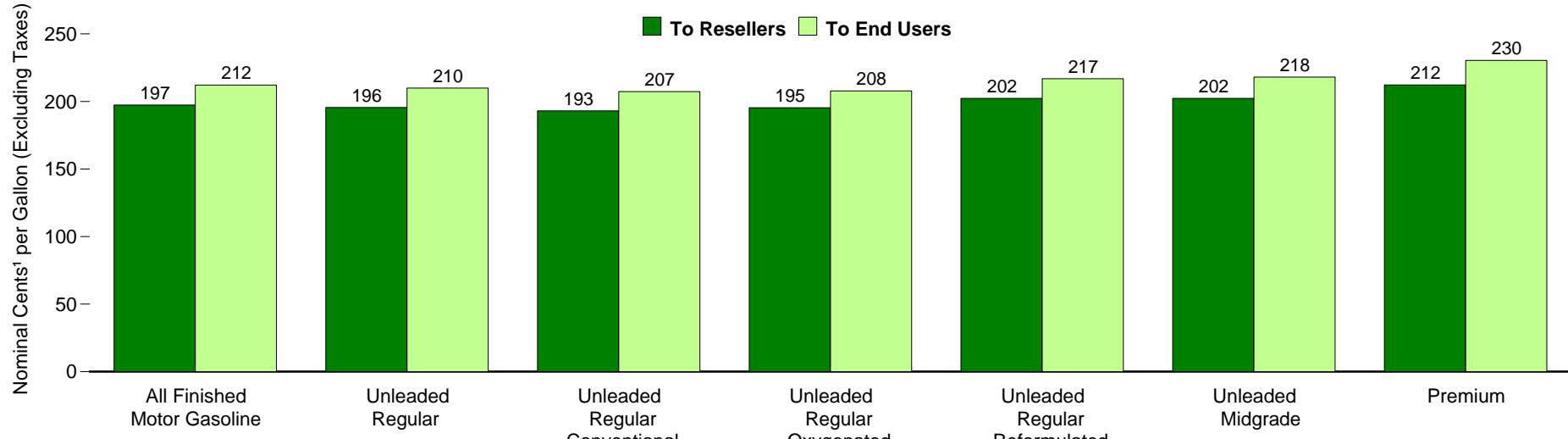
R=Revised. P=Preliminary. NA=Not available. W=Value withheld to avoid disclosure of individual company data.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

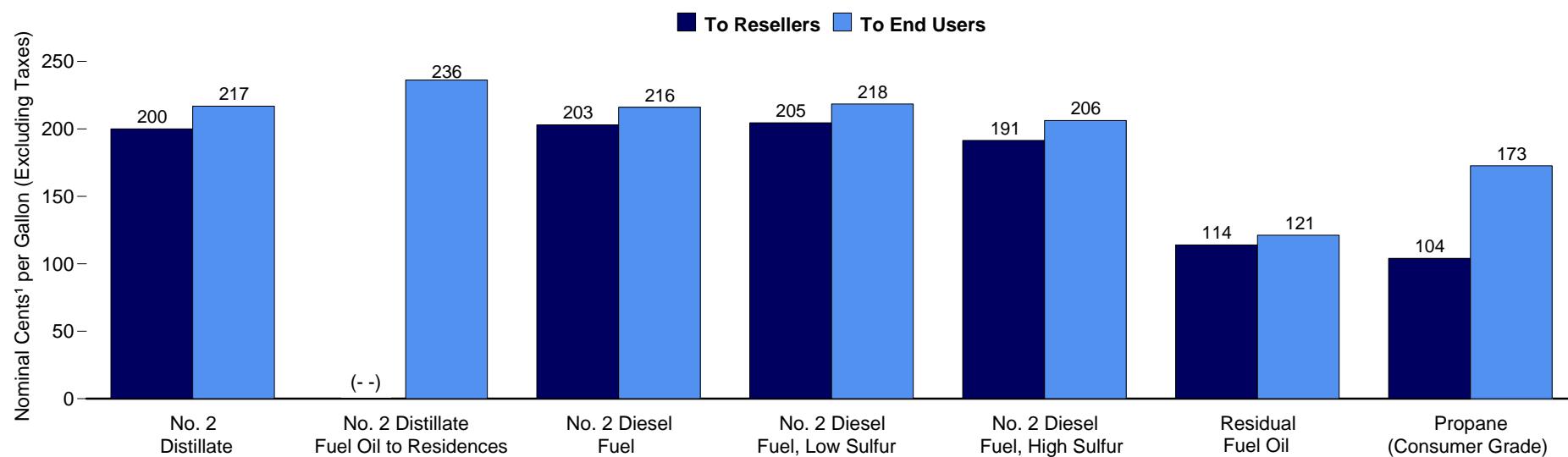
Sources: • 1990-2005—Energy Information Administration (EIA), *Petroleum Marketing Annual*, annual reports. • 2006—EIA, *Petroleum Marketing Monthly* (March 2007).

**Figure 5.23 All Sellers Sales Prices for Selected Petroleum Products, 2006**

**Motor Gasoline, Selected Grades**



**Distillate Fuel Oil, Residual Fuel Oil, and Propane**



<sup>1</sup> See "Nominal Price" in Glossary.

-- = Not applicable.

Notes: • Data are preliminary. • Because vertical scales differ, graphs should not be compared.

Source: Table 5.23.

**Table 5.23 All Sellers Sales Prices for Selected Petroleum Products, 1990-2006**

(Nominal Cents<sup>1</sup> per Gallon, Excluding Taxes)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 <sup>P</sup>
<b>Sales Prices to Resellers<sup>2</sup></b>																	
Motor Gasoline .....	78.9	70.8	68.0	62.8	60.2	63.0	71.5	70.3	53.0	64.5	96.6	88.8	83.2	100.1	128.8	R167.5	197.4
Unleaded Regular .....	76.2	68.2	64.9	59.7	57.1	59.9	68.9	67.7	50.4	62.1	94.6	86.8	81.3	98.2	127.1	R165.9	195.6
Conventional .....	NA	NA	NA	NA	56.5	58.3	67.2	65.8	48.4	59.6	91.8	83.8	79.4	95.0	124.1	R163.9	193.0
Oxygenated .....	NA	NA	NA	NA	62.7	66.2	74.5	75.4	57.5	69.0	101.6	94.7	85.8	103.1	128.9	R166.7	195.4
Reformulated .....	NA	NA	NA	NA	63.2	64.6	73.3	72.5	55.1	67.6	100.6	93.0	85.6	105.8	133.9	R170.8	202.3
Unleaded Midgrade .....	82.3	74.4	71.3	66.4	64.1	67.3	76.0	75.1	57.9	69.4	101.4	94.5	88.6	105.6	133.8	R171.9	202.3
Conventional .....	NA	NA	NA	NA	63.3	65.1	73.7	72.3	55.0	65.8	97.7	90.1	85.2	101.5	130.4	R169.7	199.1
Oxygenated .....	NA	NA	NA	NA	68.9	71.1	78.9	79.1	59.9	69.5	102.1	96.5	88.5	104.3	130.5	R168.2	199.9
Reformulated .....	NA	NA	NA	NA	72.2	71.9	80.2	80.1	63.2	75.8	108.0	102.2	95.2	115.0	141.0	R179.0	212.7
Premium .....	87.7	80.0	77.6	72.2	69.6	72.4	80.4	79.4	61.8	72.4	105.5	98.0	92.9	110.5	140.0	R179.2	212.2
Conventional .....	NA	NA	NA	NA	68.6	69.5	77.7	76.4	58.7	68.8	101.3	93.3	89.7	105.5	135.1	R175.6	208.2
Oxygenated .....	NA	NA	NA	NA	75.7	78.7	85.1	85.6	67.4	77.9	111.9	102.0	95.2	113.1	139.0	R176.1	204.9
Reformulated .....	NA	NA	NA	NA	76.9	77.9	85.1	84.5	67.1	78.7	111.7	105.4	98.6	118.9	146.7	R184.4	218.0
No. 2 Distillate .....	70.6	62.7	59.1	56.6	52.9	53.6	66.0	61.1	45.0	53.8	90.1	78.5	72.8	89.1	117.8	R172.7	200.0
No. 2 Diesel Fuel .....	NA	NA	NA	NA	53.8	54.6	66.7	61.6	45.4	55.2	90.4	79.1	73.5	89.1	119.1	R175.4	203.0
Low Sulfur .....	NA	NA	NA	NA	54.2	55.1	67.3	61.9	45.7	55.7	90.9	79.4	73.8	89.5	119.7	R176.1	204.5
High Sulfur .....	NA	NA	NA	NA	51.9	52.4	63.9	60.2	43.7	51.9	87.5	77.1	71.2	87.0	114.6	R170.4	191.4
Residual Fuel Oil .....	43.4	33.0	32.6	30.1	32.2	36.6	42.7	39.6	28.4	35.5	57.9	49.6	52.6	67.5	68.2	R100.6	114.0
1% or Less Sulfur Content .....	48.1	37.9	36.8	34.1	35.0	38.3	46.1	42.4	30.5	38.2	63.8	54.2	54.8	73.2	74.0	R110.7	120.5
Greater Than 1% Sulfur Content .....	38.8	29.7	30.0	27.2	29.8	34.4	39.7	37.5	27.1	33.3	52.3	43.8	50.2	62.1	63.8	R89.9	108.4
Propane (Consumer Grade) .....	NA	NA	NA	NA	33.6	35.4	47.1	42.6	29.7	35.4	60.3	55.6	44.0	61.5	76.1	R93.9	104.0
<b>Sales Prices to End Users<sup>2</sup></b>																	
Motor Gasoline .....	89.9	81.1	78.7	75.3	72.9	76.1	84.3	83.1	66.0	76.2	109.1	102.2	94.3	113.5	142.3	182.8	212.1
Unleaded Regular .....	87.0	78.0	75.0	71.4	69.0	72.1	80.9	79.7	62.3	72.8	106.3	99.3	91.5	110.8	139.9	180.7	209.9
Conventional .....	NA	NA	NA	NA	68.5	71.4	80.1	78.5	61.0	70.8	104.4	96.8	90.1	108.2	137.3	R178.9	207.3
Oxygenated .....	NA	NA	NA	NA	73.7	77.3	86.1	88.7	69.4	78.2	111.8	105.9	96.4	114.2	141.4	R176.8	207.8
Reformulated .....	NA	NA	NA	NA	74.3	74.1	83.3	82.2	65.1	77.7	110.9	105.1	94.9	118.3	147.8	186.1	216.8
Unleaded Midgrade .....	NA	NA	82.4	79.2	77.0	80.2	88.5	88.0	71.1	81.2	114.6	108.6	100.2	119.5	148.2	R187.7	218.0
Conventional .....	NA	NA	NA	NA	76.6	79.3	87.4	86.5	69.5	78.7	112.2	105.2	98.5	116.6	145.3	R185.5	215.0
Oxygenated .....	NA	NA	NA	NA	82.1	83.8	92.9	96.4	76.3	85.3	118.5	112.0	103.1	119.3	145.9	R182.4	213.6
Reformulated .....	NA	NA	NA	NA	85.1	82.9	91.6	91.5	74.8	86.9	119.7	115.6	104.2	127.7	156.9	R194.5	226.3
Premium .....	99.6	91.9	90.6	87.5	85.2	88.3	96.2	95.5	78.6	88.0	121.8	115.4	108.1	128.2	158.0	198.8	230.4
Conventional .....	NA	NA	NA	NA	84.6	87.1	95.0	93.9	76.9	85.6	119.2	111.9	106.3	124.5	153.8	195.8	226.5
Oxygenated .....	NA	NA	NA	NA	90.8	93.8	101.9	105.4	84.5	94.0	127.9	121.8	112.8	130.7	156.8	R191.5	223.5
Reformulated .....	NA	NA	NA	NA	93.7	91.4	99.1	98.8	82.2	93.1	126.7	121.7	111.6	135.5	166.0	204.3	237.2
No. 2 Distillate .....	84.1	76.0	72.6	71.0	67.5	67.3	79.3	75.3	59.9	67.8	104.4	94.8	87.4	105.8	133.9	R189.5	216.8
No. 2 Distillate to Residences <sup>3</sup> .....	106.3	101.9	93.4	91.1	88.4	86.7	98.9	98.4	85.2	87.6	131.1	125.0	112.9	135.5	154.8	R205.2	236.2
No. 2 Diesel Fuel .....	NA	NA	NA	NA	62.8	63.6	75.7	71.4	56.2	65.4	100.6	91.2	83.7	100.8	131.6	R188.6	216.0
Low Sulfur .....	NA	NA	NA	NA	64.2	64.5	76.7	71.9	56.5	66.3	101.4	91.7	84.1	101.4	132.5	189.9	218.4
High Sulfur .....	NA	NA	NA	NA	59.8	61.4	73.2	69.8	55.5	62.0	98.1	89.2	82.2	98.6	128.1	R183.3	206.2
Residual Fuel Oil .....	45.5	34.7	34.6	34.1	35.8	39.7	46.4	42.9	31.1	37.8	60.9	53.3	56.1	69.6	72.5	R104.1	121.2
1% or Less Sulfur Content .....	51.2	40.0	39.4	39.3	40.3	43.3	52.9	47.2	35.6	40.6	68.3	62.0	61.2	78.5	79.4	R114.8	132.2
Greater Than 1% Sulfur Content .....	40.5	31.1	31.9	31.2	32.7	37.6	43.0	40.7	29.2	36.6	57.6	49.8	54.0	65.1	68.7	R98.5	117.5
Propane (Consumer Grade) .....	NA	NA	NA	NA	77.6	76.6	88.6	87.8	77.4	78.1	104.8	109.4	95.8	115.0	130.7	R153.0	172.7

<sup>1</sup> See "Nominal Price" in Glossary.

<sup>2</sup> Sales for resale (wholesale sales) are those made to purchasers who are other than ultimate consumers. Sales to end users are those made directly to the ultimate consumer, including bulk customers, such as agriculture, industry, and utilities, as well as residential and commercial customers.

<sup>3</sup> See Note 6, "Historical Residential Heating Oil Prices," at end of section for historical data.

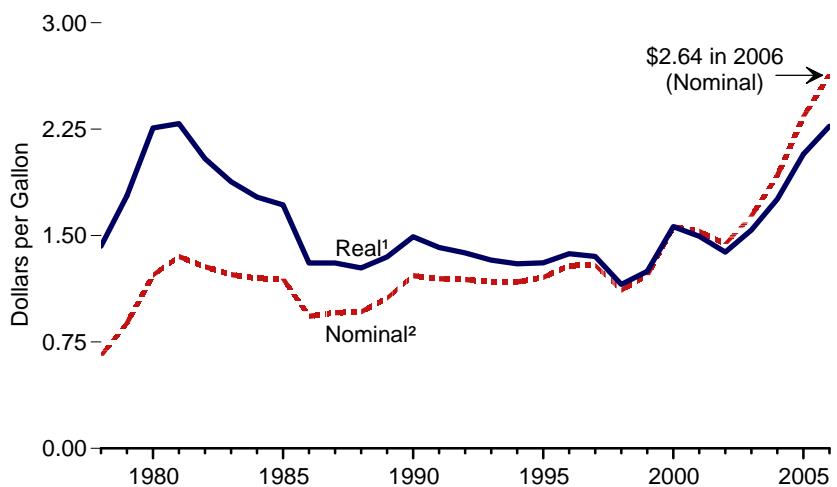
R=Revised. P=Revised. NA=Not available.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html) for related information.

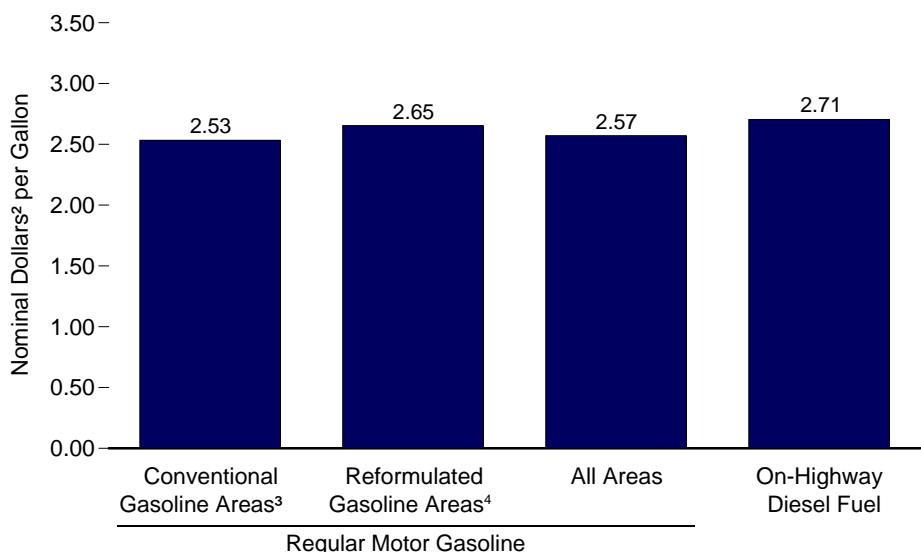
Sources: • 1990-2005—Energy Information Administration (EIA), *Petroleum Marketing Annual*, annual reports. • 2006—EIA, *Petroleum Marketing Monthly* (March 2007); EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report"; and EIA, Form EIA-782B, "Resellers'/Retailers' Monthly Petroleum Product Sales Report."

**Figure 5.24 Retail Motor Gasoline and On-Highway Diesel Fuel Prices**

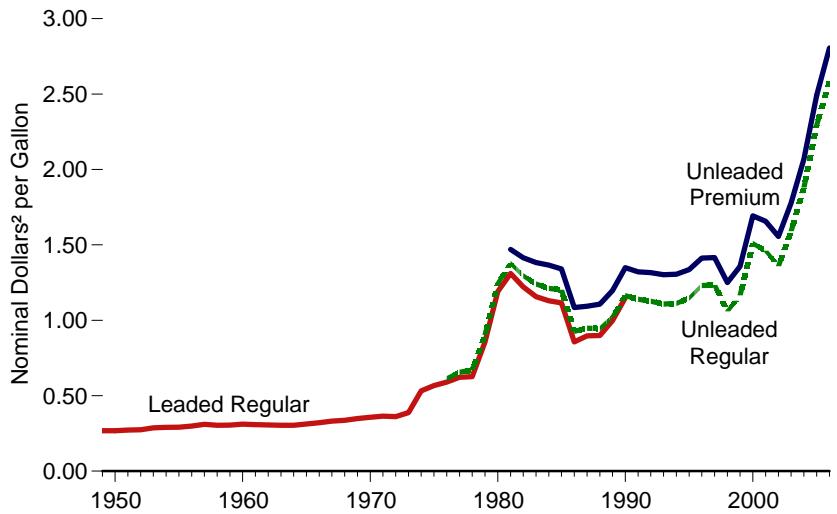
**Motor Gasoline, All Grades, 1978-2006**



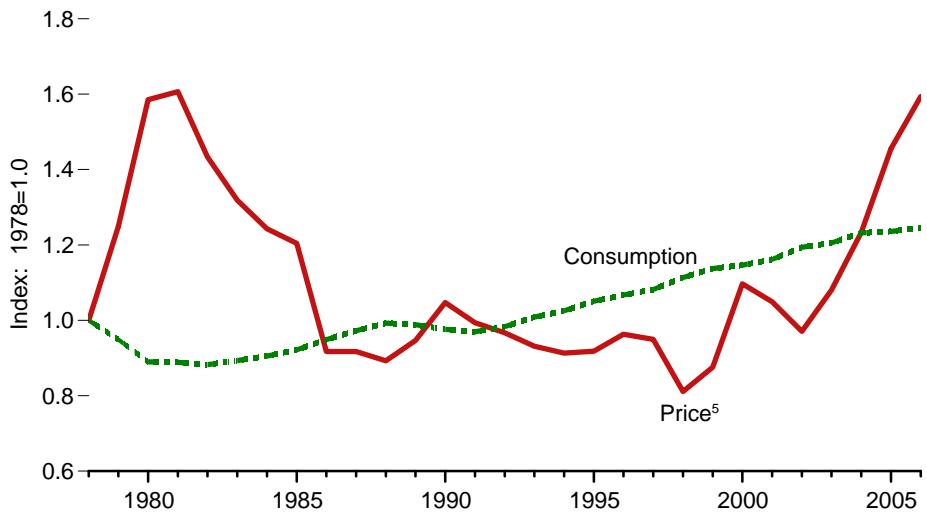
**Regular Motor Gasoline by Area Type and On-Highway Diesel Fuel, 2006**



**Motor Gasoline by Grade, 1949-2006**



**Motor Gasoline Price and Consumption, 1978-2006, Indexed to 1978**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Any area that does not require the sale of reformulated gasoline.

<sup>4</sup> "Reformulated Gasoline Areas" are ozone nonattainment areas designated by the Environmental Protection Agency that require the use of reformulated gasoline.

<sup>5</sup> All grades, in chained (2000) dollars.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 5.11 and 5.24.

**Table 5.24 Retail Motor Gasoline and On-Highway Diesel Fuel Prices, Selected Years, 1949-2006**  
(Dollars per Gallon)

Year	Motor Gasoline by Grade								Regular Motor Gasoline by Area Type			On-Highway Diesel Fuel
	Leaded Regular		Unleaded Regular		Unleaded Premium		All Grades		Conventional Gasoline Areas <sup>1,2</sup>	Reformulated Gasoline Areas <sup>3,4</sup>	All Areas	
	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Nominal <sup>5</sup>	Nominal <sup>5</sup>	
1949	0.27	1.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1950	.27	1.62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1955	.29	1.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1960	.31	1.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1965	.31	1.39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1970	.36	1.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1971	.36	1.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1972	.36	1.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1973	.39	1.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1974	.53	1.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1975	.57	1.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1976	.59	1.47	.61	1.53	NA	NA	NA	NA	NA	NA	NA	NA
1977	.62	1.46	.66	1.53	NA	NA	NA	NA	NA	NA	NA	NA
1978	.63	1.37	.67	1.46	NA	NA	.65	1.43	NA	NA	NA	NA
1979	.86	1.73	.90	1.82	NA	NA	.88	1.78	NA	NA	NA	NA
1980	1.19	2.20	1.25	2.30	NA	NA	1.22	2.26	NA	NA	NA	NA
1981	1.31	2.22	1.38	2.33	1.47	2.49	1.35	2.29	NA	NA	NA	NA
1982	1.22	1.95	1.30	2.07	1.42	2.26	1.28	2.04	NA	NA	NA	NA
1983	1.16	1.77	1.24	1.90	1.38	2.12	1.23	1.88	NA	NA	NA	NA
1984	1.13	1.67	1.21	1.79	1.37	2.02	1.20	1.77	NA	NA	NA	NA
1985	1.12	1.60	1.20	1.72	1.34	1.92	1.20	1.72	NA	NA	NA	NA
1986	.86	1.20	.93	1.30	1.09	1.52	.93	1.31	NA	NA	NA	NA
1987	.90	1.23	.95	1.30	1.09	1.49	.96	1.31	NA	NA	NA	NA
1988	.90	1.19	.95	1.25	1.11	1.46	.96	1.27	NA	NA	NA	NA
1989	1.00	1.27	1.02	1.30	1.20	1.52	1.06	1.35	NA	NA	NA	NA
1990	1.15	1.41	1.16	1.43	1.35	1.65	1.22	1.49	NA	NA	NA	NA
1991	NA	NA	1.14	1.35	1.32	1.56	1.20	1.42	1.10	NA	1.10	NA
1992	NA	NA	1.13	1.31	1.32	1.52	1.19	1.38	1.09	NA	1.09	NA
1993	NA	NA	1.11	1.25	1.30	1.47	1.17	1.33	21.07	NA	1.07	NA
1994	NA	NA	1.11	1.23	1.31	1.45	1.17	1.30	21.07	NA	1.08	NA
1995	NA	NA	1.15	1.25	1.34	1.45	1.21	1.31	21.10	41.16	1.11	1.11
1996	NA	NA	1.23	1.31	1.41	1.51	1.29	1.37	21.19	41.28	1.22	1.24
1997	NA	NA	1.23	1.29	1.42	1.48	1.29	1.35	21.19	41.25	1.20	1.20
1998	NA	NA	1.06	1.10	1.25	1.30	1.12	1.16	21.02	41.08	1.03	1.04
1999	NA	NA	1.17	1.19	1.36	1.39	1.22	1.25	21.12	41.20	1.14	1.12
2000	NA	NA	1.51	1.51	1.69	1.69	1.56	1.56	21.46	41.54	1.48	1.49
2001	NA	NA	1.46	1.43	1.66	1.62	1.53	1.50	1.38	1.50	1.42	1.40
2002	NA	NA	1.36	1.30	1.56	1.49	1.44	1.38	1.31	1.41	1.35	1.32
2003	NA	NA	1.59	1.50	1.78	1.67	1.64	1.54	1.52	1.66	1.56	1.51
2004	NA	NA	1.88	1.72	2.07	R1.89	1.92	1.76	1.81	1.94	1.85	1.81
2005	NA	NA	2.30	R2.04	2.49	R2.21	2.34	R2.07	2.24	2.34	2.27	2.40
2006	NA	NA	2.59	2.23	2.81	2.42	2.64	2.27	2.53	2.65	2.57	2.71

<sup>1</sup> Any area that does not require the sale of reformulated gasoline.

<sup>2</sup> For 1993-2000, data collected for oxygenated areas are included in "Conventional Gasoline Areas."

<sup>3</sup> "Reformulated Gasoline Areas" are ozone nonattainment areas designated by the Environmental Protection Agency that require the use of reformulated gasoline.

<sup>4</sup> For 1995-2000, data collected for combined oxygenated and reformulated areas are included in "Reformulated Gasoline Areas."

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised. NA=Not available.

Note: See "Motor Gasoline Grades," "Motor Gasoline, Conventional," "Motor Gasoline, Oxygenated," and "Motor Gasoline, Reformulated" in Glossary.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/petro.html>

• For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)

Sources: **Motor Gasoline by Grade:** • 1949-1973—*Platt's Oil Price Handbook and Oilmanac*, 1974, 51st Edition. • 1974 forward—Energy Information Administration (EIA), annual averages of monthly data from the U.S. Department of Labor, Bureau of Labor Statistics, *U.S. City Average Gasoline Prices*.

**Regular Motor Gasoline by Area Type:** EIA, weighted annual averages of data from "Weekly U.S. Retail Gasoline Prices, Regular Grade." **On-Highway Diesel Fuel:** EIA, weighted annual averages of data from "Weekly Retail On-Highway Diesel Prices."

## Petroleum

**Note 1. Petroleum Products Supplied and Petroleum Consumption.** Total petroleum products supplied is the sum of the products supplied for each petroleum product, crude oil, unfinished oils, and gasoline blending components. For each of these, except crude oil, product supplied is calculated by adding refinery production, natural gas plant liquids production, new supply of other liquids, imports, and stock withdrawals, and subtracting stock additions, refinery inputs, and exports. Crude oil product supplied is the sum of crude oil burned on leases and at pipeline pump stations as reported on Form EIA-813, "Monthly Crude Oil Report." Prior to 1983, crude oil burned on leases and at pipeline pump stations was reported as either distillate or residual fuel oil and was included as product supplied for these products. Petroleum product supplied (see Table 5.11) is an approximation of petroleum consumption and is synonymous with the term "Petroleum Consumption" in Tables 5.13a-d. The sector allocation of product supplied in Tables 5.13a-d for products used in more than one sector is derived from sales to ultimate consumers by refiners, marketers, distributors, and dealers (see Energy Information Administration (EIA) report *Fuel Oil and Kerosene Sales*) and from EIA electric power sector petroleum consumption data (see Tables 8.7b and 8.7c).

**Note 2. Adjustment to Total Petroleum Products Supplied.** Accurate calculation of the quantity of petroleum products supplied to the domestic market is complicated by the recycling of products at the refinery, the renaming of products involved in a transfer, and the receipt of products from outside the primary supply system. Beginning in 1981, a single adjustment (always a negative quantity) is made to total product supplied to correct this accounting problem. The calculation of this adjustment, called "reclassified," involves only unfinished oils and gasoline blending components. It is the sum of their net changes in primary stocks (net withdrawals is a plus quantity; net additions is a minus quantity) plus imports minus net input to refineries.

**Note 3. Changes Affecting Petroleum Production and Product Supplied Statistics.** Beginning in January 1981, several Energy Information Administration survey forms and calculation methodologies were changed to reflect new developments in refinery and blending plant practices and to improve data integrity. Those changes affect production and product supplied statistics for motor gasoline, distillate fuel oil, and residual fuel oil, and stocks of motor gasoline. On the basis of those

changes, motor gasoline production during the last half of 1980 would have averaged 289,000 barrels per day higher than that which was published on the old basis. Distillate and residual fuel oil production and product supplied for all of 1980 would have averaged, respectively, 105,000 and 54,000 barrels per day higher than the numbers that were published.

**Note 4. Gross Input to Distillation Units.** The methods of deriving Gross Input to Distillation Units (GIDU) in this report are as follows: for 1949-1966, GIDU is estimated by summing annual crude oil runs to stills, net unfinished oil reruns at refineries, and shipments of natural gasoline and plant condensate from natural gas processing plants to refineries; for 1967-1973, GIDU is estimated by summing annual crude oil runs to stills, net unfinished oil reruns, and refinery input of natural gasoline and plant condensate; for 1974-1980, GIDU is published annual data; and for 1981 forward, GIDU is the sum of reported monthly data.

**Note 5. Crude Oil Domestic First Purchase Prices.** Crude oil domestic first purchase prices were derived as follows: for 1949-1973, weighted average domestic first purchase values as reported by State agencies and calculated by the Bureau of Mines; for 1974 and 1975, weighted averages of a sample survey of major first purchasers' purchases; for 1976 forward, weighted averages of all first purchasers' purchases.

**Note 6. Historical Residential Heating Oil Prices.** Residential heating oil prices for 1956 through 1986 were formerly published in the *Annual Energy Review*. Those data, in cents per gallon, are: 1956—15.2; 1957—16.0; 1958—15.1; 1959—15.3; 1960—15.0; 1961—15.6; 1962—15.6; 1963—16.0; 1964—16.1; 1965—16.0; 1966—16.4; 1967—16.9; 1968—17.4; 1969—17.8; 1970—18.5; 1971—19.6; 1972—19.7; 1973—22.8; 1974—36.0; 1975—37.7; 1976—40.6; 1977—46.0; 1978—49.0; 1979—70.4; 1980—97.4; 1981—119.4; 1982—116.0; 1983—107.8; 1984—109.1; 1985—105.3; 1986—83.6; and 1987—80.3. The sources of these data are: 1956-1974—Bureau of Labor Statistics, "Retail Prices and Indexes of Fuels and Utilities for Residential Usage," monthly; January 1975-September 1977—Federal Energy Administration, Form FEA-P112-M-1, "No. 2 Heating Oil Supply/Price Monitoring Report"; October 1977-December 1977—Energy Information Administration (EIA), Form EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report"; 1978 forward—EIA, *Petroleum Marketing Annual*, Table 18.

# 6

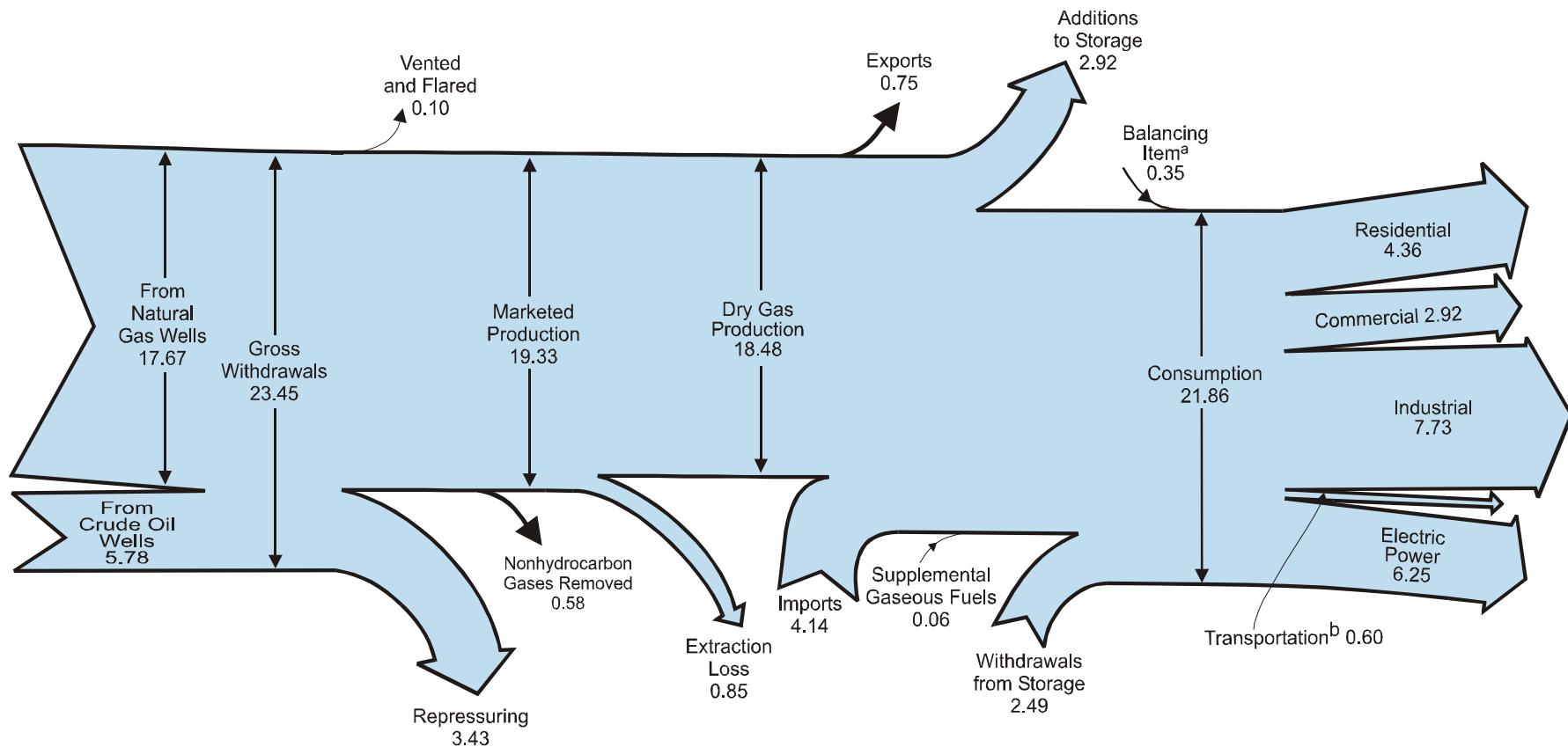
# Natural Gas



Natural gas pipeline, El Paso County, Texas. Source: U.S. Department of Energy.



**Diagram 3. Natural Gas Flow, 2006**  
 (Trillion Cubic Feet)



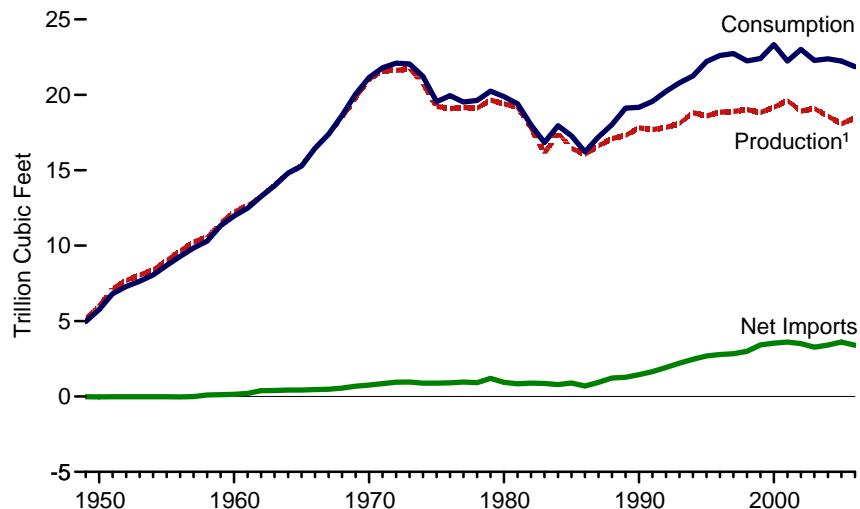
<sup>a</sup> Quantities lost and imbalances in data due to differences among data sources.

<sup>b</sup> Natural gas consumed in the operation of pipelines (primarily in compressors), and as fuel in the delivery of natural gas to consumers; plus a small quantity used as vehicle fuel.

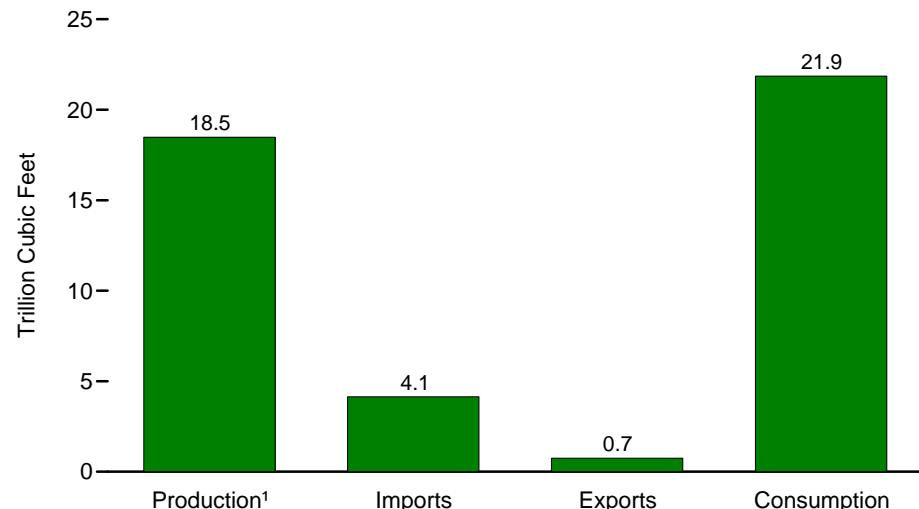
Notes: • Data are preliminary. • Values are derived from source data prior to rounding for publication. • Totals may not equal sum of components due to independent rounding.  
 Sources: Tables 6.1, 6.2, and 6.5.

**Figure 6.1 Natural Gas Overview**

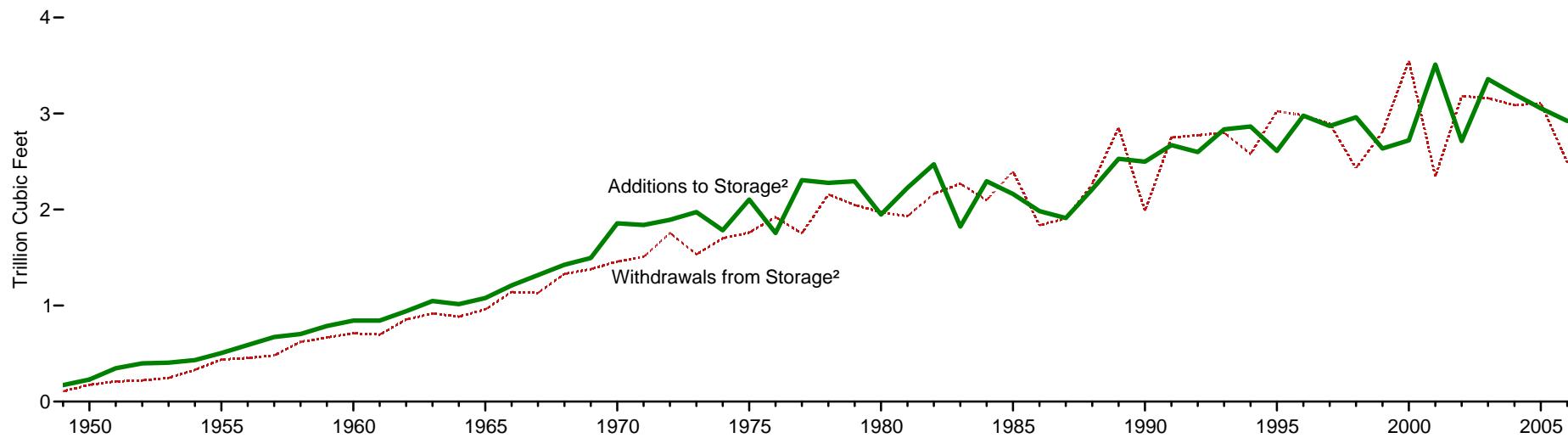
**Overview, 1949-2006**



**Overview, 2006**



**Storage Additions and Withdrawals, 1949-2006**



<sup>1</sup> Dry gas.

<sup>2</sup> Underground storage. For 1980-2005, also includes liquefied natural gas in above-ground tanks.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 6.1.

**Table 6.1 Natural Gas Overview, Selected Years, 1949-2006**

(Billion Cubic Feet)

Year	Dry Gas Production	Supplemental Gaseous Fuels	Trade			Storage <sup>1</sup> Activity			Balancing Item <sup>4</sup>	Consumption
			Imports	Exports	Net Imports <sup>2</sup>	Withdrawals	Additions	Net Withdrawals <sup>3</sup>		
1949	5,195	NA	0	20	-20	106	172	-66	-139	4,971
1950	6,022	NA	0	26	-26	175	230	-54	-175	5,767
1955	9,029	NA	11	31	-20	437	505	-68	-247	8,694
1960	12,228	NA	156	11	144	713	844	-132	-274	11,967
1965	15,286	NA	456	26	430	960	1,078	-118	-319	15,280
1970	21,014	NA	821	70	751	1,459	1,857	-398	-228	21,139
1971	21,610	NA	935	80	854	1,508	1,839	-332	-339	21,793
1972	21,624	NA	1,019	78	941	1,757	1,893	-136	-328	22,101
1973	21,731	NA	1,033	77	956	1,533	1,974	-442	-196	22,049
1974	20,713	NA	959	77	882	1,701	1,784	-84	-289	21,223
1975	19,236	NA	953	73	880	1,760	2,104	-344	-235	19,538
1976	19,098	NA	964	65	899	1,921	1,756	165	-216	19,946
1977	19,163	NA	1,011	56	955	1,750	2,307	-557	-41	19,521
1978	19,122	NA	966	53	913	2,158	2,278	-120	-287	19,627
1979	19,663	NA	1,253	56	1,198	2,047	2,295	-248	-372	20,241
1980	19,403	155	985	49	936	1,972	1,949	23	-640	19,877
1981	19,181	176	904	59	845	1,930	2,228	-297	-500	19,404
1982	17,820	145	933	52	882	2,164	2,472	-308	-537	18,001
1983	16,094	132	918	55	864	2,270	1,822	447	-703	16,835
1984	17,466	110	843	55	788	2,098	2,295	-197	-217	17,951
1985	16,454	126	950	55	894	2,397	2,163	235	-428	17,281
1986	16,059	113	750	61	689	1,837	1,984	-147	-493	16,221
1987	16,621	101	993	54	939	1,905	1,911	-6	-444	17,211
1988	17,103	101	1,294	74	1,220	2,270	2,211	59	-453	18,030
1989	17,311	107	1,382	107	1,275	2,854	2,528	326	101	<sup>5</sup> 19,119
1990	17,810	123	1,532	86	1,447	1,986	2,499	-513	307	<sup>5</sup> 19,174
1991	17,698	113	1,773	129	1,644	2,752	2,672	80	27	<sup>5</sup> 19,562
1992	17,840	118	2,138	216	1,921	2,772	2,599	173	176	<sup>5</sup> 20,228
1993	18,095	119	2,350	140	2,210	2,799	2,835	-36	401	20,790
1994	18,821	111	2,624	162	2,462	2,579	2,865	-286	139	21,247
1995	18,599	110	2,841	154	2,687	3,025	2,610	415	396	22,207
1996	18,854	109	2,937	153	2,784	2,981	2,979	2	860	22,609
1997	18,902	103	2,994	157	2,837	2,894	2,870	24	871	22,737
1998	19,024	102	3,152	159	2,993	2,432	2,961	-530	657	22,246
1999	18,832	98	3,586	163	3,422	2,808	2,636	172	-119	22,405
2000	19,182	90	3,782	244	3,538	3,550	2,721	829	-306	23,333
2001	19,616	86	3,977	373	3,604	2,344	3,510	-1,166	99	22,239
2002	18,928	68	4,015	516	3,499	3,180	2,713	467	45	23,007
2003	19,099	68	3,944	680	3,264	3,161	3,358	-197	44	22,277
2004	R18,591	R60	4,259	854	3,404	3,088	3,202	-114	R448	R22,389
2005	R18,074	R64	R4,341	R729	R3,612	R3,105	R3,054	R51	R440	R22,241
2006 <sup>P</sup>	18,484	62	4,145	749	3,396	2,492	2,922	-431	350	21,861

<sup>1</sup> Underground storage. For 1980-2005, also includes liquefied natural gas in above-ground tanks.

<sup>2</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>3</sup> Net withdrawals equal withdrawals minus additions. Minus sign indicates additions are greater than withdrawals.

<sup>4</sup> Quantities lost and imbalances in data due to differences among data sources. Since 1980, excludes intransit shipments that cross the U.S.-Canada border (i.e., natural gas delivered to its destination via the other country).

<sup>5</sup> For 1989-1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector" on Table 6.5. See Note 1, "Natural Gas Deliveries to Nonutilities, 1989-1992" at end of section.

R=Revised. P=Preliminary. NA=Not available.

Notes: • Beginning with 1965, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60° F. For prior years, the pressure base was 14.65 p.s.i.a. at 60° F. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/natgas.html>.

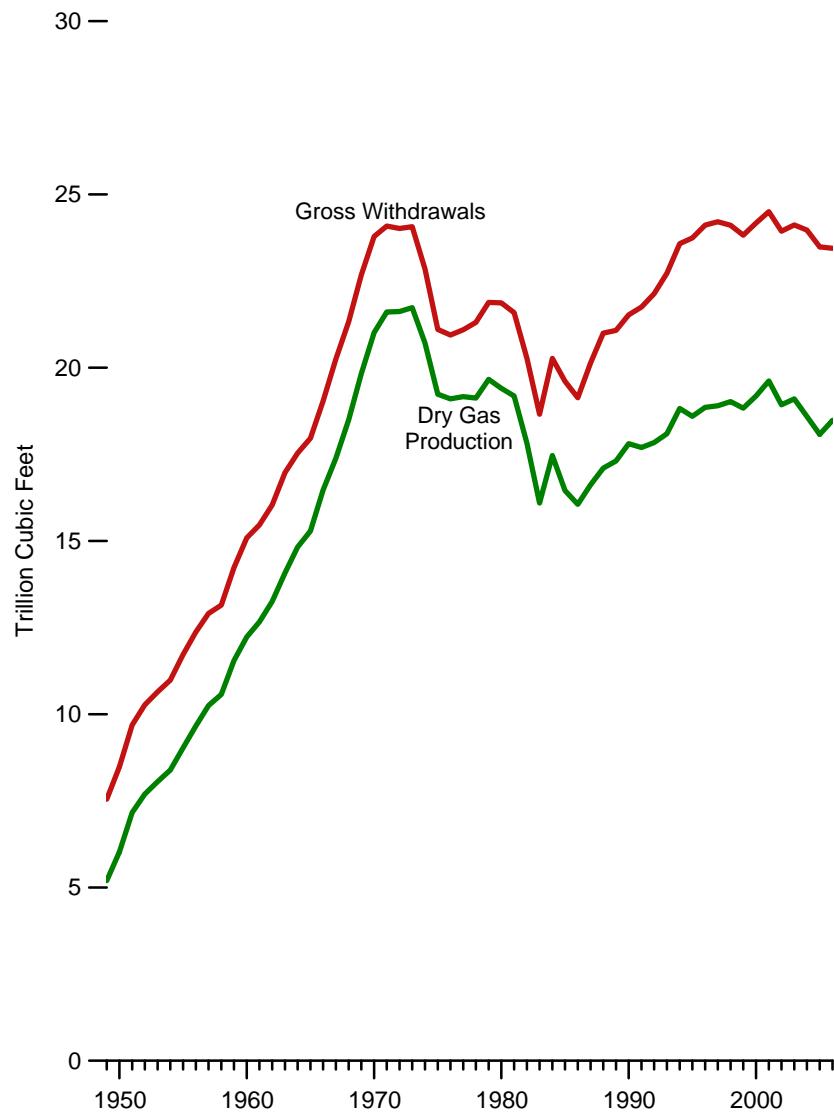
• For related information, see [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html).

Sources: **Dry Gas Production:** Table 6.2. **Supplemental Gaseous Fuels:** • 1980-2001—Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports. • 2002 forward—EIA, *Natural Gas Monthly (NGM)* (March 2007), Table 1. **Trade:** Table 6.3. **Storage Activity:** • 1949-2005—EIA, *NGA*, annual reports. • 2006—EIA, *NGM* (March 2007), Table 7. **Balancing Item:** Calculated as consumption minus dry gas production, supplemental gaseous fuels, net imports, and net withdrawals.

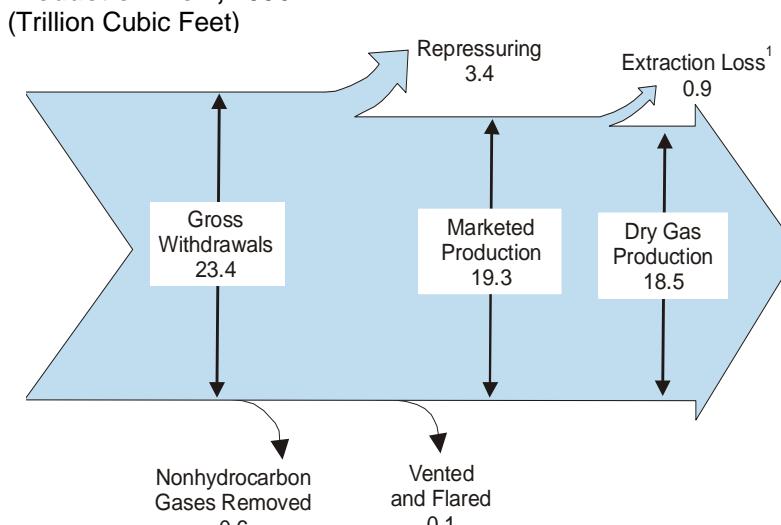
**Consumption:** Table 6.5.

**Figure 6.2 Natural Gas Production**

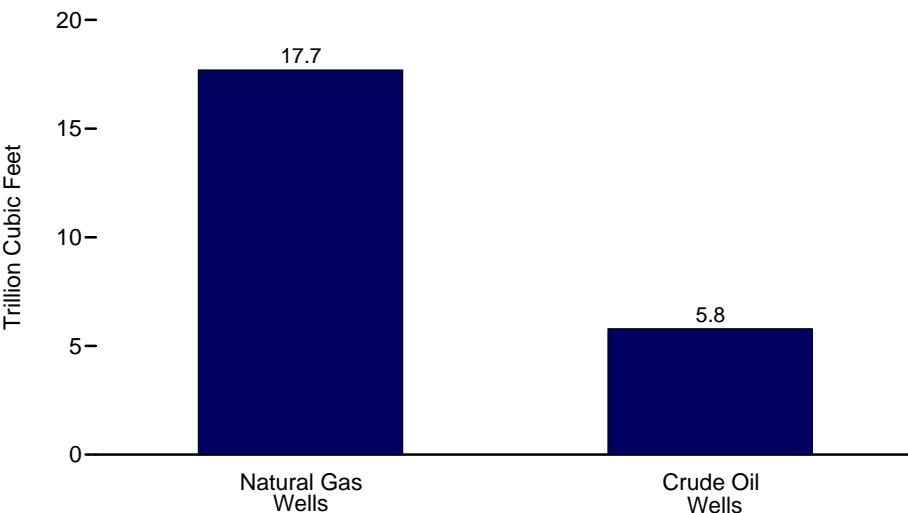
**Gross Withdrawals and Dry Gas Production, 1949-2006**



**Production Flow, 2006**



**Gross Withdrawals by Well Type, 2006**



<sup>1</sup> Volume reduction resulting from the removal of natural gas plant liquids, which are transferred to petroleum supply.

Note: Because vertical scales differ, graphs should not be compared.  
Source: Table 6.2.

**Table 6.2 Natural Gas Production, Selected Years, 1949-2006**  
(Billion Cubic Feet)

Year	Natural Gas Gross Withdrawals			Repressuring	Nonhydrocarbon Gases Removed	Vented and Flared	Marketed Production	Extraction Loss <sup>1</sup>	Dry Gas Production
	Natural Gas Wells	Crude Oil Wells	Total						
1949	4,986	2,561	7,547	1,273	NA	854	5,420	224	5,195
1950	5,603	2,876	8,480	1,397	NA	801	6,282	260	6,022
1955	7,842	3,878	11,720	1,541	NA	774	9,405	377	9,029
1960	10,853	4,234	15,088	1,754	NA	563	12,771	543	12,228
1965	13,524	4,440	17,963	1,604	NA	319	16,040	753	15,286
1970	18,595	5,192	23,786	1,376	NA	489	21,921	906	21,014
1971	18,925	5,163	24,088	1,310	NA	285	22,493	883	21,610
1972	19,043	4,974	24,016	1,236	NA	248	22,532	908	21,624
1973	19,372	4,696	24,067	1,171	NA	248	22,648	917	21,731
1974	18,669	4,181	22,850	1,080	NA	169	21,601	887	20,713
1975	17,380	3,723	21,104	861	NA	134	20,109	872	19,236
1976	17,191	3,753	20,944	859	NA	132	19,952	854	19,098
1977	17,416	3,681	21,097	935	NA	137	20,025	863	19,163
1978	17,394	3,915	21,309	1,181	NA	153	19,974	852	19,122
1979	18,034	3,849	21,883	1,245	NA	167	20,471	808	19,663
1980	17,573	4,297	21,870	1,365	199	125	20,180	777	19,403
1981	17,337	4,251	21,587	1,312	222	98	19,956	775	19,181
1982	15,809	4,463	20,272	1,388	208	93	18,582	762	17,820
1983	14,153	4,506	18,659	1,458	222	95	16,884	790	16,094
1984	15,513	4,754	20,267	1,630	224	108	18,304	838	17,466
1985	14,535	5,071	19,607	1,915	326	95	17,270	816	16,454
1986	14,154	4,977	19,131	1,838	337	98	16,859	800	16,059
1987	14,807	5,333	20,140	2,208	376	124	17,433	812	16,621
1988	15,467	5,532	20,999	2,478	460	143	17,918	816	17,103
1989	15,709	5,366	21,074	2,475	362	142	18,095	785	17,311
1990	16,054	5,469	21,523	2,489	289	150	18,594	784	17,810
1991	16,018	5,732	21,750	2,772	276	170	18,532	835	17,698
1992	16,165	5,967	22,132	2,973	280	168	18,712	872	17,840
1993	16,691	6,035	22,726	3,103	414	227	18,982	886	18,095
1994	17,351	6,230	23,581	3,231	412	228	19,710	889	18,821
1995	17,282	6,462	23,744	3,565	388	284	19,506	908	18,599
1996	17,737	6,376	24,114	3,511	518	272	19,812	958	18,854
1997	17,844	6,369	24,213	3,492	599	256	19,866	964	18,902
1998	17,729	6,380	24,108	3,427	617	103	19,961	938	19,024
1999	17,590	6,233	23,823	3,293	615	110	19,805	973	18,832
2000	17,726	6,448	24,174	3,380	505	91	20,198	1,016	19,182
2001	18,129	6,371	24,501	3,371	463	97	20,570	954	19,616
2002	17,795	6,146	23,941	3,455	502	99	19,885	957	18,928
2003	17,882	6,237	24,119	3,548	499	98	19,974	876	19,099
2004	R17,885	R6,084	R23,970	3,702	R654	R96	R19,517	927	R18,591
2005	R17,500	R5,988	R23,488	R3,707	R711	R119	R18,951	R876	R18,074
2006	E17,672	E5,776	P23,447	E3,431	E584	E98	P19,334	P851	P18,484

<sup>1</sup> Volume reduction resulting from the removal of natural gas plant liquids, which are transferred to petroleum supply (see Tables 5.1 and 5.10).

R=Revised. P=Preliminary. E=Estimate. NA=Not available.

Notes: • Beginning with 1965 data, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60° F. For prior years, the pressure base was 14.65 p.s.i.a. at 60° F. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/natgas.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html).

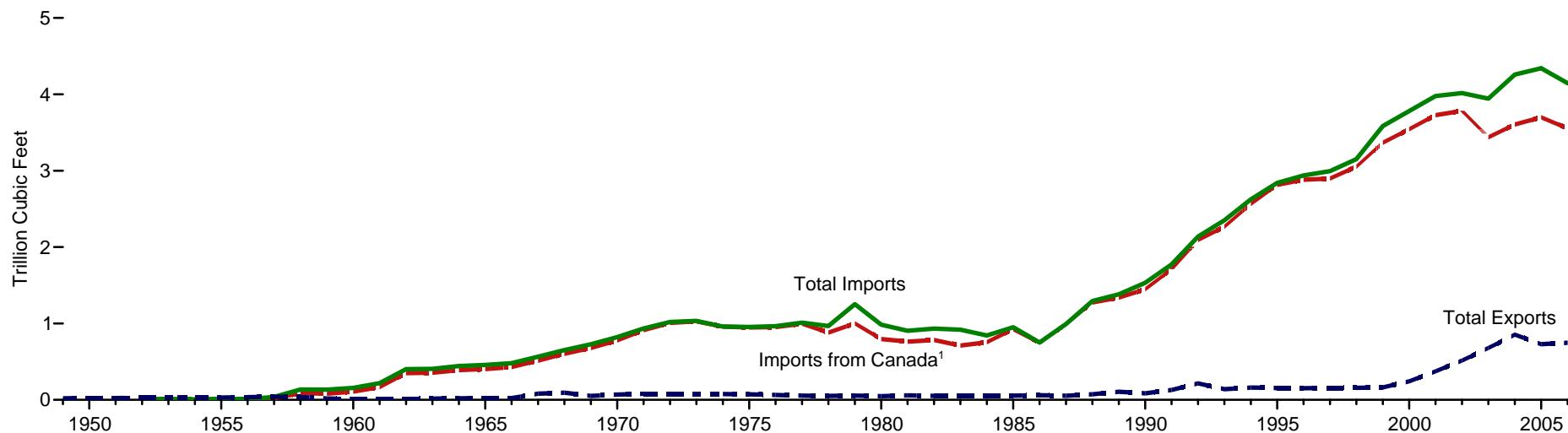
Sources: **Natural Gas Wells** and **Crude Oil Wells**: • 1949-1966—Bureau of Mines, *Minerals Yearbook*, "Natural Gas" chapter. • 1967-2005—Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports. • 2006—EIA estimates.

**Total Gross Withdrawals, Marketed Production, Extraction Loss, and Dry Gas Production:** • 1949-2001—EIA, *NGA*, annual reports. • 2002 forward—EIA, *Natural Gas Monthly* (March 2007), Table 1.

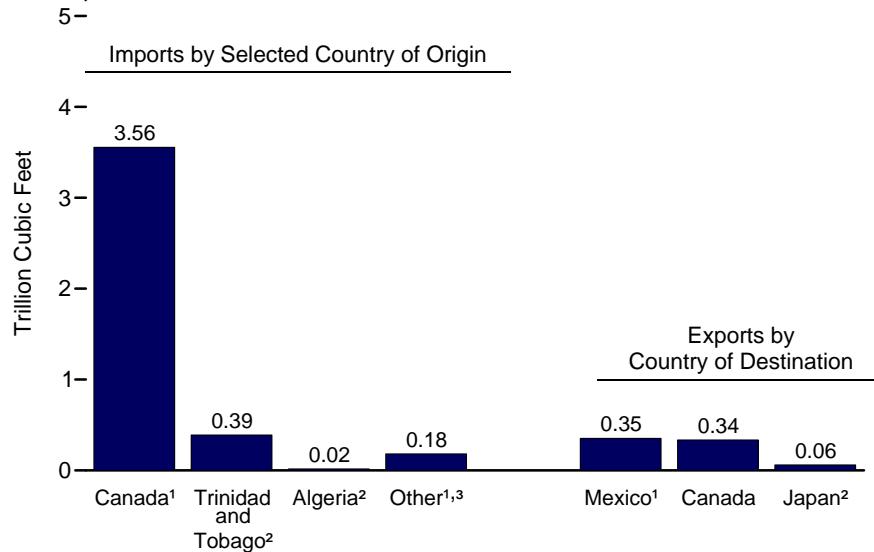
**All Other Data:** • 1949-2005—EIA, *NGA*, annual reports. • 2006—EIA estimates.

**Figure 6.3 Natural Gas Imports, Exports, and Net Imports**

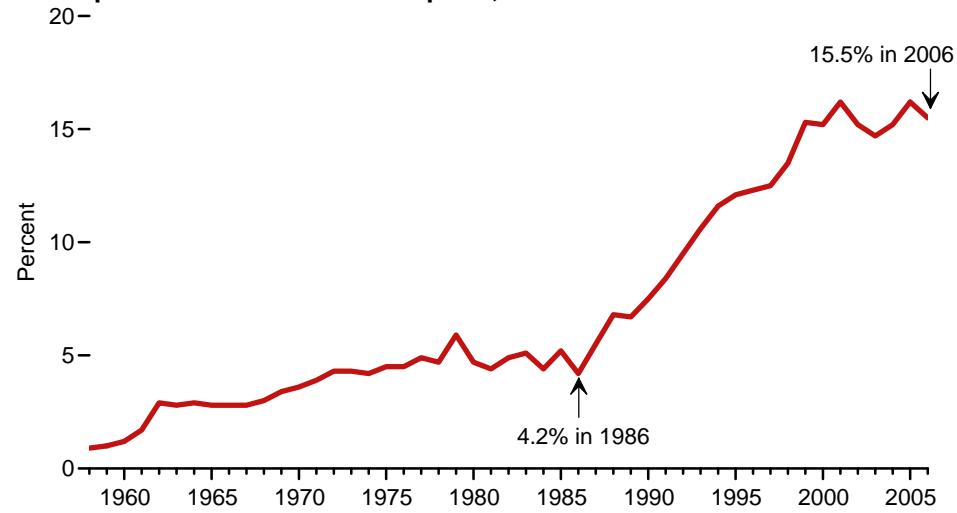
**Trade Overview, 1949-2006**



**Trade, 2006**



**Net Imports as Share of Consumption, 1958-2006**



<sup>1</sup> Pipeline and liquefied natural gas.

<sup>2</sup> As liquefied natural gas.

<sup>3</sup> Egypt, Nigeria, and Mexico.

Source: Table 6.3.

**Table 6.3 Natural Gas Imports, Exports, and Net Imports, Selected Years, 1949-2006**

(Billion Cubic Feet, Except as Noted)

Year	Imports by Country of Origin									Exports by Country of Destination				Net Imports <sup>1</sup>	
	Algeria <sup>2</sup>	Australia <sup>2</sup>	Canada <sup>3</sup>	Mexico <sup>3</sup>	Nigeria <sup>2</sup>	Oman <sup>2</sup>	Qatar <sup>2</sup>	Trinidad and Tobago <sup>2</sup>	Total <sup>4</sup>	Canada <sup>3</sup>	Japan <sup>2</sup>	Mexico <sup>3</sup>	Total	Total	Percent of U.S. Consumption
1949	0	0	0	0	0	0	0	0	0	(s)	0	20	20	-20	(5)
1950	0	0	0	0	0	0	0	0	0	3	0	23	26	-26	(5)
1955	0	0	11	(s)	0	0	0	0	11	11	0	20	31	-20	(5)
1960	0	0	109	47	0	0	0	0	156	6	0	6	11	144	1.2
1965	0	0	405	52	0	0	0	0	456	18	0	8	26	430	2.8
1970	1	0	779	41	0	0	0	0	821	11	44	15	70	751	3.6
1971	1	0	912	21	0	0	0	0	935	14	50	16	80	854	3.9
1972	2	0	1,009	8	0	0	0	0	1,019	16	48	15	78	941	4.3
1973	3	0	1,028	2	0	0	0	0	1,033	15	48	14	77	956	4.3
1974	0	0	959	(s)	0	0	0	0	959	13	50	13	77	882	4.2
1975	5	0	948	0	0	0	0	0	953	10	53	9	73	880	4.5
1976	10	0	954	0	0	0	0	0	964	8	50	7	65	899	4.5
1977	11	0	997	2	0	0	0	0	1,011	(s)	52	4	56	955	4.9
1978	84	0	881	0	0	0	0	0	966	(s)	48	4	53	913	4.7
1979	253	0	1,001	0	0	0	0	0	1,253	(s)	51	4	56	1,198	5.9
1980	86	0	797	102	0	0	0	0	985	(s)	45	4	49	936	4.7
1981	37	0	762	105	0	0	0	0	904	(s)	56	3	59	845	4.4
1982	55	0	783	95	0	0	0	0	933	(s)	50	2	52	882	4.9
1983	131	0	712	75	0	0	0	0	918	(s)	53	2	55	864	5.1
1984	36	0	755	52	0	0	0	0	843	(s)	53	2	55	788	4.4
1985	24	0	926	0	0	0	0	0	950	(s)	53	2	55	894	5.2
1986	0	0	749	0	0	0	0	0	750	9	50	2	61	689	4.2
1987	0	0	993	0	0	0	0	0	993	3	49	2	54	939	5.5
1988	17	0	1,276	0	0	0	0	0	1,294	20	52	2	74	1,220	6.8
1989	42	0	1,339	0	0	0	0	0	1,382	38	51	17	107	1,275	6.7
1990	84	0	1,448	0	0	0	0	0	1,532	17	53	16	86	1,447	7.5
1991	64	0	1,710	0	0	0	0	0	1,773	15	54	60	129	1,644	8.4
1992	43	0	2,094	0	0	0	0	0	2,138	68	53	96	216	1,921	9.5
1993	82	0	2,267	2	0	0	0	0	2,350	45	56	40	140	2,210	10.6
1994	51	0	2,566	7	0	0	0	0	2,624	53	63	47	162	2,462	11.6
1995	18	0	2,816	7	0	0	0	0	2,841	28	65	61	154	2,687	12.1
1996	35	0	2,883	14	0	0	0	0	2,937	52	68	34	153	2,784	12.3
1997	66	10	2,899	17	0	0	0	0	2,994	56	62	38	157	2,837	12.5
1998	69	12	3,052	15	0	0	0	0	3,152	40	66	53	159	2,993	13.5
1999	76	12	3,368	55	0	0	20	51	3,586	39	64	61	163	3,422	15.3
2000	47	6	3,544	12	13	10	46	99	3,782	73	66	106	244	3,538	15.2
2001	65	2	3,729	10	38	12	23	98	3,977	167	66	141	373	3,604	16.2
2002	27	0	3,785	2	8	3	35	151	4,015	189	63	263	516	3,499	15.2
2003	53	0	3,437	0	50	9	14	378	3,944	271	66	343	680	3,264	14.7
2004	120	15	3,607	0	12	9	12	462	4,259	395	62	397	854	3,404	15.2
2005	97	0	R\$3,700	R9	8	2	3	439	R4,341	R358	65	R305	R729	R3,612	R16.2
2006 <sup>p</sup>	17	0	3,555	6	57	0	0	389	4,145	335	61	353	749	3,396	15.5

<sup>1</sup> Net imports equal imports minus exports.

<sup>2</sup> As liquefied natural gas.

<sup>3</sup> By pipeline, except for very small amounts of liquefied natural gas imported from Canada in 1973, 1977, and 1981 and exported to Mexico beginning in 1998.

<sup>4</sup> Included in the total but not shown separately are liquefied natural gas imports from Brunei in 2002; Egypt in 2005 and 2006; Indonesia in 1986 and 2000; Malaysia in 1999 and 2002-2005; and United Arab Emirates in 1996-2000.

<sup>5</sup> Not meaningful because there were net exports during this year.

R=Revised. P=Preliminary. (s)=Less than 0.5 billion cubic feet.

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

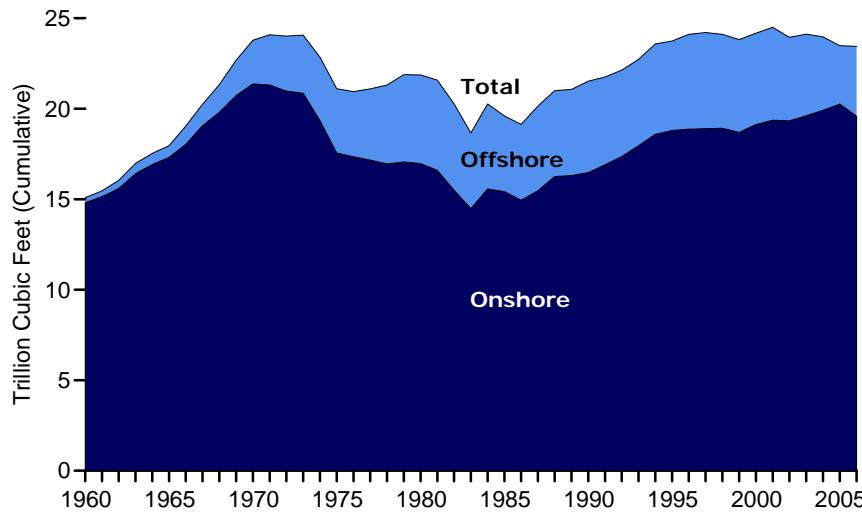
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/natgas.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html).

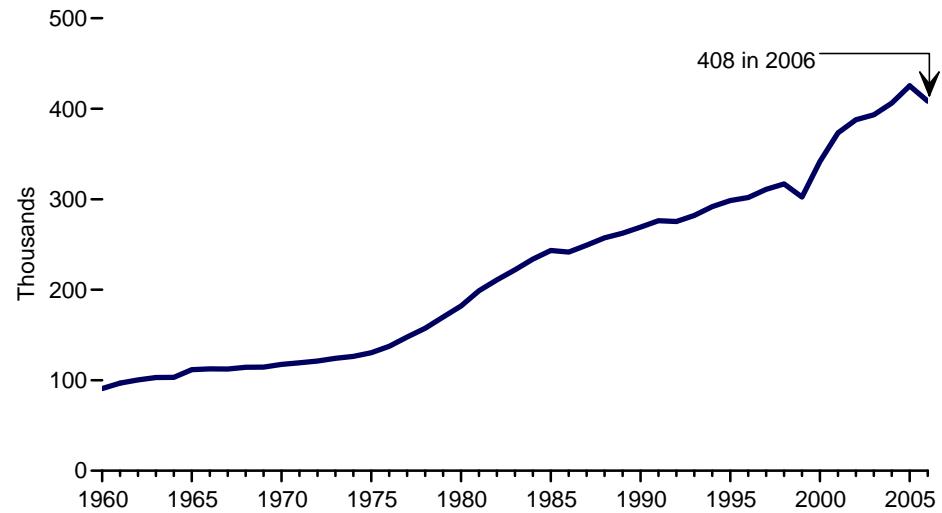
Sources: **Percent of U.S. Consumption:** Calculated. **All Other Data:** • 1949-1954—Energy Information Administration (EIA), Office of Oil and Gas, Reserves and Natural Gas Division, unpublished data. • 1955-1971—EIA, Federal Power Commission, by telephone. • 1972-1987—EIA, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." • 1988-2001—EIA, *Natural Gas Annual*, annual reports. • 2002 forward—EIA, *Natural Gas Monthly* (March 2007), Table 5.

**Figure 6.4 Natural Gas Gross Withdrawals and Natural Gas Well Productivity, 1960-2006**

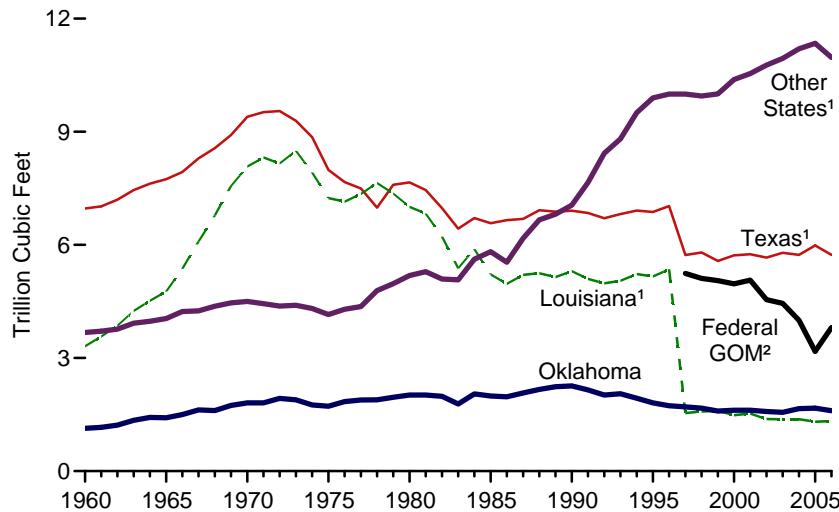
**Gross Withdrawals by Location**



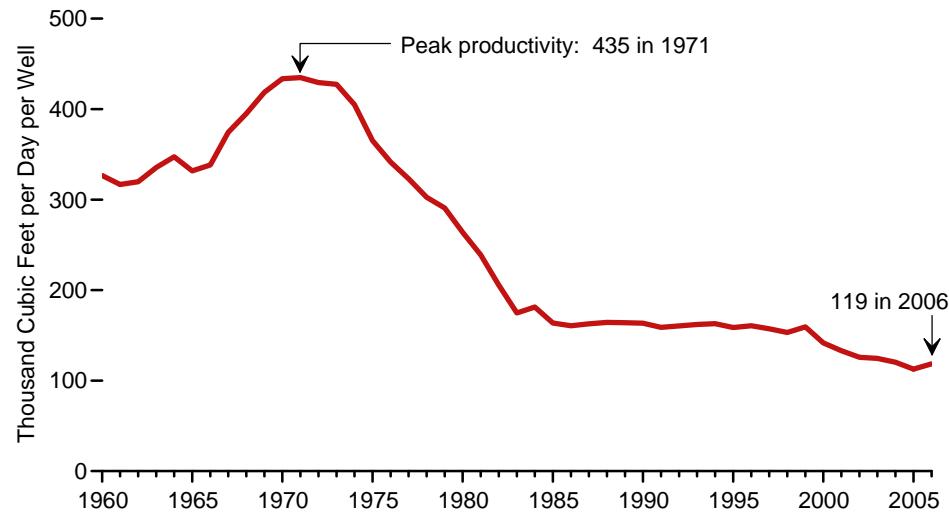
**Number of Producing Wells**



**Gross Withdrawals by State and Federal Gulf of Mexico**



**Natural Gas Well Average Productivity**



<sup>1</sup> Through 1996, includes gross withdrawals in Federal offshore areas of the Gulf of Mexico; beginning in 1997, these are included in "Federal Gulf of Mexico."

<sup>2</sup> Gulf of Mexico.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 6.4.

**Table 6.4 Natural Gas Gross Withdrawals and Natural Gas Well Productivity, 1960-2006**

(Billion Cubic Feet, Except as Noted)

Year	Natural Gas Gross Withdrawals From Crude Oil and Natural Gas Wells								Natural Gas Well Productivity		
	State				Location		Total	Gross Withdrawals From Natural Gas Wells	Producing Wells <sup>5</sup> (thousands)	Average Productivity (thousand cubic feet per day)	
	Texas <sup>1</sup>	Louisiana <sup>1</sup>	Oklahoma	Other States <sup>1</sup>	Federal Gulf of Mexico <sup>2</sup>	Onshore <sup>3</sup>	Offshore <sup>4</sup>				
1960	6,965	3,313	1,133	3,677	(2)	14,815	273	15,088	10,853	91	326.7
1961	7,020	3,571	1,160	3,710	(2)	15,142	318	15,460	11,195	97	316.8
1962	7,199	3,854	1,222	3,764	(2)	15,587	452	16,039	11,702	100	319.8
1963	7,452	4,250	1,347	3,924	(2)	16,409	564	16,973	12,606	103	335.4
1964	7,622	4,515	1,423	3,975	(2)	16,914	622	17,536	13,106	103	347.4
1965	7,741	4,764	1,414	4,044	(2)	17,318	646	17,963	13,524	112	331.8
1966	7,935	5,365	1,502	4,232	(2)	18,026	1,007	19,034	13,894	112	338.4
1967	8,292	6,087	1,621	4,252	(2)	19,065	1,187	20,252	15,345	112	374.3
1968	8,566	6,778	1,607	4,375	(2)	19,801	1,524	21,325	16,540	114	395.1
1969	8,915	7,561	1,742	4,462	(2)	20,725	1,954	22,679	17,489	114	418.6
1970	9,399	8,076	1,811	4,501	(2)	21,368	2,419	23,786	18,595	117	433.6
1971	9,519	8,319	1,809	4,442	(2)	21,311	2,777	24,088	18,925	119	434.8
1972	9,550	8,160	1,928	4,378	(2)	20,978	3,039	24,016	19,043	121	429.4
1973	9,290	8,491	1,890	4,396	(2)	20,856	3,212	24,067	19,372	124	427.4
1974	8,859	7,920	1,757	4,314	(2)	19,335	3,515	22,850	18,669	126	404.9
1975	7,989	7,242	1,721	4,152	(2)	17,555	3,549	21,104	17,380	130	365.3
1976	7,666	7,143	1,842	4,293	(2)	17,348	3,596	20,944	17,191	138	341.5
1977	7,496	7,351	1,888	4,362	(2)	17,165	3,932	21,097	17,416	148	323.1
1978	6,988	7,639	1,892	4,790	(2)	16,953	4,356	21,309	17,394	157	302.7
1979	7,594	7,359	1,958	4,973	(2)	17,061	4,822	21,883	18,034	170	290.8
1980	7,656	7,008	2,019	5,187	(2)	16,967	4,902	21,870	17,573	182	263.8
1981	7,452	6,830	2,019	5,287	(2)	16,597	4,991	21,587	17,337	199	238.9
1982	6,976	6,217	1,985	5,094	(2)	15,499	4,773	20,272	15,809	211	205.5
1983	6,429	5,379	1,780	5,071	(2)	14,477	4,182	18,659	14,153	222	174.7
1984	6,712	5,888	2,046	5,620	(2)	15,560	4,707	20,267	15,513	234	181.2
1985	6,577	5,218	1,993	5,818	(2)	15,421	4,186	19,607	14,535	243	163.6
1986	6,656	4,965	1,972	5,538	(2)	14,945	4,186	19,131	14,154	242	160.6
1987	6,688	5,205	2,073	6,174	(2)	15,468	4,672	20,140	14,807	249	162.8
1988	6,919	5,248	2,167	6,665	(2)	16,253	4,747	20,999	15,467	257	164.3
1989	6,881	5,143	2,237	6,813	(2)	16,303	4,771	21,074	15,709	262	164.0
1990	6,907	5,303	2,258	7,054	(2)	16,476	5,047	21,523	16,054	269	163.4
1991	6,846	5,100	2,154	7,651	(2)	16,900	4,850	21,750	16,018	276	158.8
1992	6,708	4,977	2,017	8,429	(2)	17,361	4,772	22,132	16,165	275	160.4
1993	6,817	5,047	2,050	8,812	(2)	17,960	4,766	22,726	16,691	282	162.1
1994	6,912	5,226	1,935	9,508	(2)	18,585	4,996	23,581	17,351	292	162.9
1995	6,873	5,163	1,812	9,896	(2)	18,802	4,942	23,744	17,282	299	158.6
1996	7,028	5,351	1,735	9,999	(2)	18,867	5,246	24,114	17,737	302	160.6
1997	15,730	11,538	1,704	19,999	5,242	18,897	5,316	24,213	17,844	311	157.2
1998	5,799	1,579	1,669	9,950	5,110	18,923	5,185	24,108	17,729	317	153.3
1999	5,575	1,599	1,594	10,002	5,053	18,692	5,131	23,823	17,590	302	159.4
2000	5,723	1,485	1,613	10,386	4,968	19,130	5,044	24,174	17,726	342	141.7
2001	5,752	1,525	1,615	10,542	5,066	19,364	5,137	24,501	18,129	373	133.1
2002	5,661	1,382	1,582	10,769	4,548	19,326	4,615	23,941	17,795	388	125.7
2003	5,791	1,378	1,558	10,944	4,447	19,614	4,505	24,119	17,882	393	124.6
2004	5,734	R1,377	R1,656	R11,202	R4,001	R19,914	R4,055	R23,970	R17,885	R406	R120.3
2005	R5,985	R1,310	R1,670	R11,346	R3,177	R20,257	R3,231	R23,488	R17,500	R425	R112.7
2006	E5,736	E1,332	E1,600	E10,971	E3,808	E19,585	E3,863	E23,447	E17,672	E408	E118.6

<sup>1</sup> Through 1996, includes gross withdrawals in Federal offshore areas of the Gulf of Mexico; beginning in 1997, these are included in "Federal Gulf of Mexico."

<sup>2</sup> Gross withdrawals from Federal offshore areas of the Gulf of Mexico. Through 1996, these gross withdrawals are included in "Texas," "Louisiana," and "Other States."

<sup>3</sup> Includes State offshore gross withdrawals.

<sup>4</sup> Excludes State offshore gross withdrawals; includes Federal offshore (Outer Continental Shelf) gross withdrawals.

<sup>5</sup> As of December 31 each year.

R=Revised. P=Preliminary. E=Estimate.

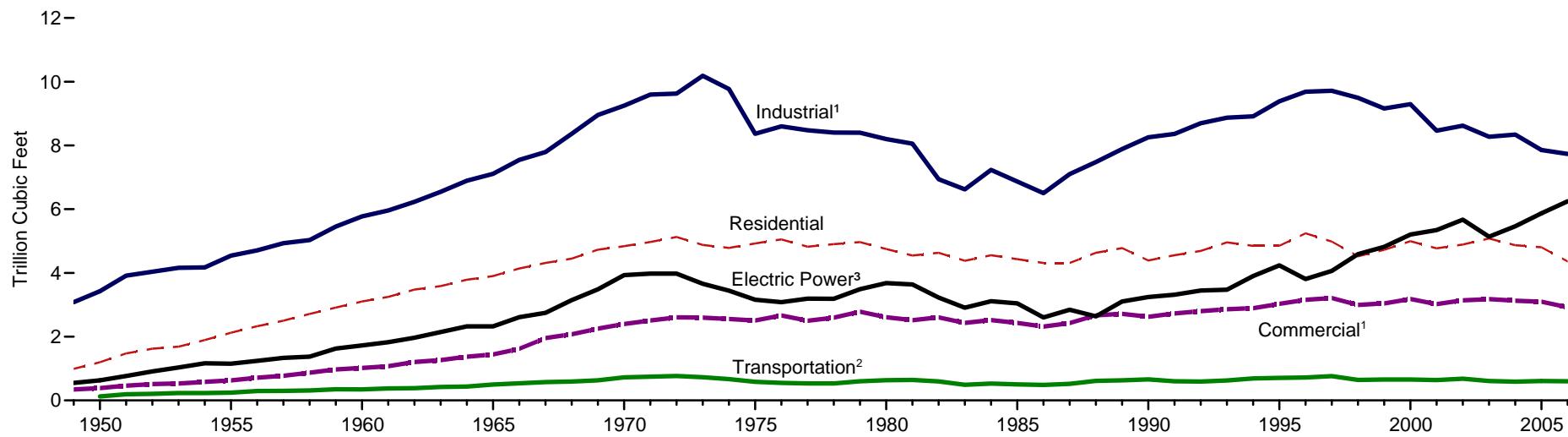
Web Page: See [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html) for related

information.

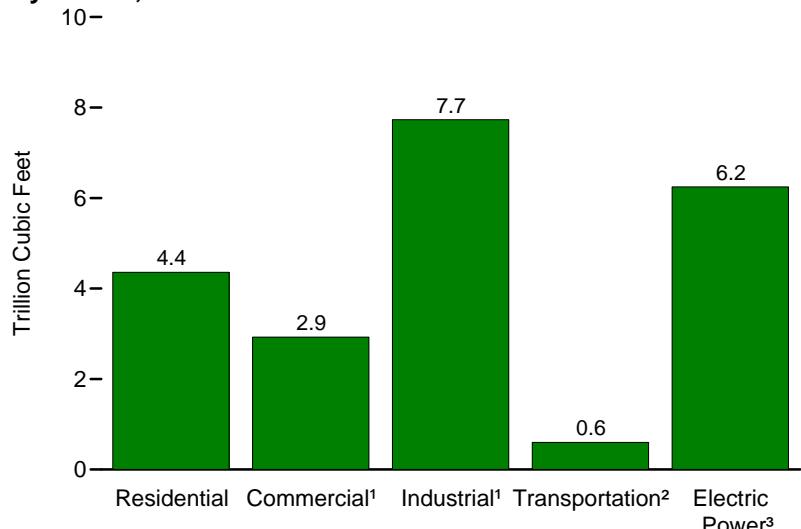
Sources: **Offshore:** • 1960-1981—U.S. Geological Survey. • 1982-1985—U.S. Minerals Management Service, *Mineral Revenues—The 1989 Report on Receipts from Federal and Indian Leases*, and predecessor annual reports. • 1986-2005—Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports. • 2006—EIA estimate. **Total (Gross Withdrawals):** • 1960-2001—EIA, NGA, annual reports. • 2002 forward—EIA, *Natural Gas Monthly* (March 2007), Table 1. **Average Productivity:** Calculated as gross withdrawals from natural gas wells divided by the number of producing wells, and then divided by the number of days in the year. **All Other Data:** • 1960-1966—Bureau of Mines, *Natural Gas Production and Consumption*. • 1967-2005—EIA, NGA, annual reports and unpublished revisions. • 2006—EIA estimates.

**Figure 6.5 Natural Gas Consumption by Sector**

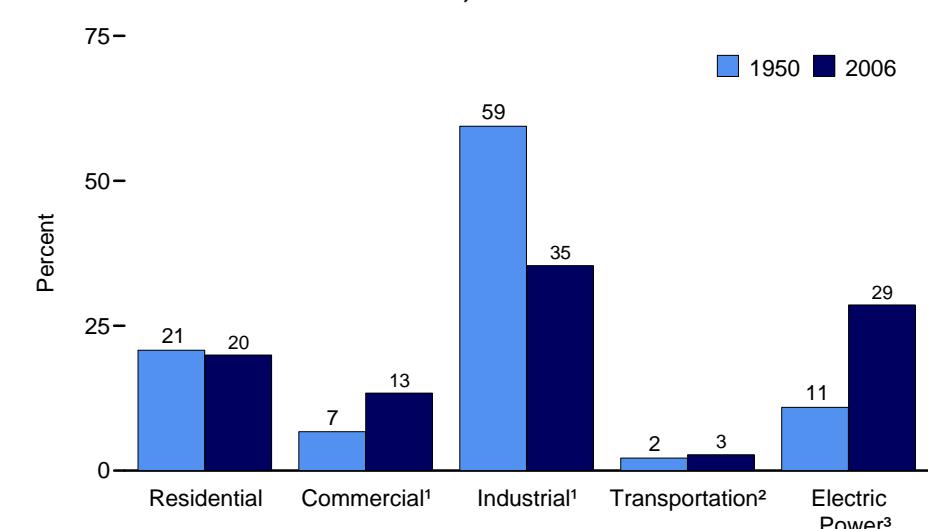
**By Sector, 1949-2006**



**By Sector, 2006**



**End Use and Electric Power Shares, 1950 and 2006**



<sup>1</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

<sup>2</sup> Natural gas consumed in the operation of pipelines (primarily in compressors), and as fuel in the delivery of natural gas to consumers; plus a small quantity used as vehicle fuel.

<sup>3</sup> Electricity-only and combined-heat-and-power plants whose primary business is to sell electricity, or electricity and heat, to the public.

Source: Table 6.5.

**Table 6.5 Natural Gas Consumption by Sector, Selected Years, 1949-2006**  
 (Billion Cubic Feet)

Year	Residential Sector	Commercial Sector			Industrial Sector				Transportation Sector			Electric Power Sector <sup>1</sup>			Total	
		CHP <sup>2</sup>	Other <sup>3</sup>	Total	Lease and Plant Fuel	CHP <sup>4</sup>	Non-CHP <sup>5</sup>	Total	Total	Pipelines <sup>6</sup> and Distribution <sup>7</sup>	Vehicle Fuel <sup>8</sup>	Total	Electricity Only	CHP	Total	
1949	993	( 9 )	348	348	835	( 10 )	2,245	2,245	3,081	NA	NA	NA	550	NA	550	4,971
1950	1,198	( 9 )	388	388	928	( 10 )	2,498	2,498	3,426	126	NA	126	629	NA	629	5,767
1955	2,124	( 9 )	629	629	1,131	( 10 )	3,411	3,411	4,542	245	NA	245	1,153	NA	1,153	8,694
1960	3,103	( 9 )	1,020	1,020	1,237	( 10 )	4,535	4,535	5,771	347	NA	347	1,725	NA	1,725	11,967
1965	3,903	( 9 )	1,444	1,444	1,156	( 10 )	5,955	5,955	7,112	501	NA	501	2,321	NA	2,321	15,280
1970	4,837	( 9 )	2,399	2,399	1,399	( 10 )	7,851	7,851	9,249	722	NA	722	3,932	NA	3,932	21,139
1971	4,972	( 9 )	2,509	2,509	1,414	( 10 )	8,181	8,181	9,594	743	NA	743	3,976	NA	3,976	21,793
1972	5,126	( 9 )	2,608	2,608	1,456	( 10 )	8,169	8,169	9,624	766	NA	766	3,977	NA	3,977	22,101
1973	4,879	( 9 )	2,597	2,597	1,496	( 10 )	8,689	8,689	10,185	728	NA	728	3,660	NA	3,660	22,049
1974	4,786	( 9 )	2,556	2,556	1,477	( 10 )	8,292	8,292	9,769	669	NA	669	3,443	NA	3,443	21,223
1975	4,924	( 9 )	2,508	2,508	1,396	( 10 )	6,968	6,968	8,365	583	NA	583	3,158	NA	3,158	19,538
1976	5,051	( 9 )	2,668	2,668	1,634	( 10 )	6,964	6,964	8,598	548	NA	548	3,081	NA	3,081	19,946
1977	4,821	( 9 )	2,501	2,501	1,659	( 10 )	6,815	6,815	8,474	533	NA	533	3,191	NA	3,191	19,521
1978	4,903	( 9 )	2,601	2,601	1,648	( 10 )	6,757	6,757	8,405	530	NA	530	3,188	NA	3,188	19,627
1979	4,965	( 9 )	2,786	2,786	1,499	( 10 )	6,899	6,899	8,398	601	NA	601	3,491	NA	3,491	20,241
1980	4,752	( 9 )	2,611	2,611	1,026	( 10 )	7,172	7,172	8,198	635	NA	635	3,682	NA	3,682	19,877
1981	4,546	( 9 )	2,520	2,520	928	( 10 )	7,128	7,128	8,055	642	NA	642	3,640	NA	3,640	19,404
1982	4,633	( 9 )	2,606	2,606	1,109	( 10 )	5,831	5,831	6,941	596	NA	596	3,226	NA	3,226	18,001
1983	4,381	( 9 )	2,433	2,433	978	( 10 )	5,643	5,643	6,621	490	NA	490	2,911	NA	2,911	16,835
1984	4,555	( 9 )	2,524	2,524	1,077	( 10 )	6,154	6,154	7,231	529	NA	529	3,111	NA	3,111	17,951
1985	4,433	( 9 )	2,432	2,432	966	( 10 )	5,901	5,901	6,867	504	NA	504	3,044	NA	3,044	17,281
1986	4,314	( 9 )	2,318	2,318	923	( 10 )	5,579	5,579	6,502	485	NA	485	2,602	NA	2,602	16,221
1987	4,315	( 9 )	2,430	2,430	1,149	( 10 )	5,953	5,953	7,103	519	NA	519	2,844	NA	2,844	17,211
1988	4,630	( 9 )	2,670	2,670	1,096	( 10 )	6,383	6,383	7,479	614	NA	614	2,636	NA	2,636	18,030
1989	4,781	30	2,688	2,718	1,070	914	115,903	116,816	7,886	629	NA	629	112,791	113,135	113,105	119,119
1990	4,391	46	2,576	2,623	1,236	1,055	115,963	117,018	8,255	660	(s)	660	112,794	114,51	113,245	119,174
1991	4,556	52	2,676	2,729	1,129	1,061	116,170	117,231	8,360	601	(s)	602	112,822	114,94	113,316	119,562
1992	4,690	62	2,740	2,803	1,171	1,107	116,420	117,527	8,698	588	2	590	112,829	116,19	113,448	120,228
1993	4,956	65	2,796	2,862	1,172	1,124	6,576	7,700	8,872	624	3	627	2,755	718	3,473	20,790
1994	4,848	72	2,823	2,895	1,124	1,176	6,613	7,790	8,913	685	3	689	3,065	838	3,903	21,247
1995	4,850	78	2,953	3,031	1,220	1,258	6,906	8,164	9,384	700	5	705	3,288	949	4,237	22,207
1996	5,241	82	3,076	3,158	1,250	1,289	7,146	8,435	9,685	711	6	718	2,824	983	3,807	22,609
1997	4,984	87	3,128	3,215	1,203	1,282	7,229	8,511	9,714	751	8	760	3,039	1,026	4,065	22,737
1998	4,520	87	2,912	2,999	1,173	1,355	6,965	8,320	9,493	635	9	645	3,544	1,044	4,588	22,246
1999	4,726	84	2,961	3,045	1,079	1,401	6,678	8,079	9,158	645	12	657	3,729	1,090	4,820	22,405
2000	4,996	85	3,098	3,182	1,151	1,386	6,757	8,142	9,293	642	13	655	4,093	1,114	5,206	23,333
2001	4,771	79	2,944	3,023	1,119	1,310	6,035	7,344	8,463	625	15	640	4,164	1,178	5,342	22,239
2002	4,889	74	3,070	3,144	1,113	1,240	6,267	7,507	8,620	667	15	682	4,258	1,413	5,672	23,007
2003	5,079	58	3,121	3,179	1,122	1,144	6,007	7,150	8,273	591	18	610	3,780	1,355	5,135	22,277
2004	R4,869	72	R3,057	R3,129	1,098	1,191	R6,052	R7,243	R8,341	R566	21	R587	R4,142	R1,322	R5,464	R22,389
2005	R4,806	R75	R3,026	R3,102	R1,112	R1,084	R5,662	R6,746	R7,857	R585	22	R607	R4,592	R1,277	R5,869	R22,241
2006 <sup>p</sup>	4,359	81	2,844	2,925	1,134	1,087	5,511	6,598	7,732	575	24	599	5,033	1,214	6,247	21,861

<sup>1</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers. Electric utility CHP plants are included in "Electricity Only."

<sup>2</sup> Commercial combined-heat-and-power (CHP) and a small number of commercial electricity-only plants.

<sup>3</sup> All commercial sector fuel use other than that in "Commercial CHP."

<sup>4</sup> Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.

<sup>5</sup> All industrial sector fuel use other than that in "Lease and Plant Fuel" and "Industrial CHP."

<sup>6</sup> Natural gas consumed in the operation of pipelines, primarily in compressors.

<sup>7</sup> Natural gas used as fuel in the delivery of natural gas to consumers.

<sup>8</sup> Vehicle fuel data do not reflect revised data shown in Table 10.4. See Note 2, "Natural Gas Vehicle Fuel," at end of section.

<sup>9</sup> Included in "Commercial Other."

<sup>10</sup> Included in "Industrial Non-CHP."

<sup>11</sup> For 1989-1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector." See Note 1, "Natural Gas Deliveries to Nonutilities, 1989-1992" at end of section.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 billion cubic feet.

Notes: • Data are for natural gas, plus a small amount of supplemental gaseous fuels. • See Tables

8.5a-8.5d for the amount of natural gas used to produce electricity and Tables 8.6a-8.6c for the amount of natural gas used to produce useful thermal output. • See Note 3, "Natural Gas Consumption," at end of section. • Beginning with 1965, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60° F. For prior years, the pressure base was 14.65 p.s.i.a. at 60° F. • Totals may not equal sum of components due to independent rounding.

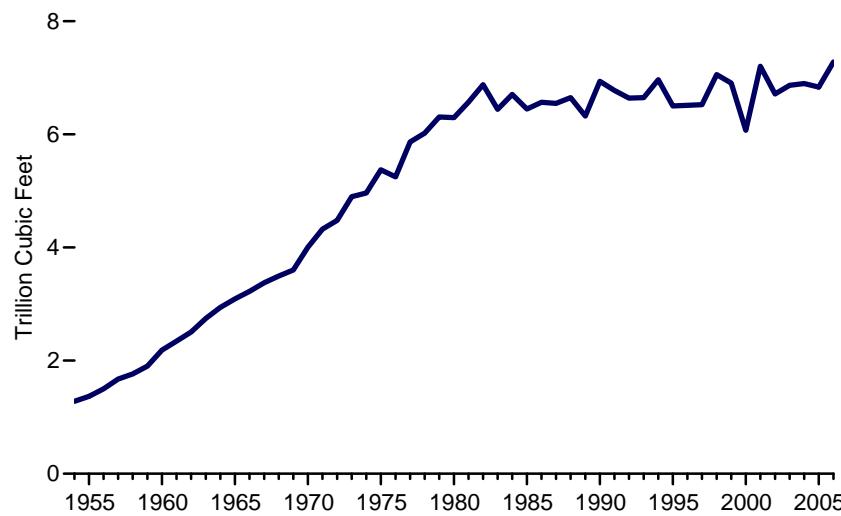
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/natgas.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html).

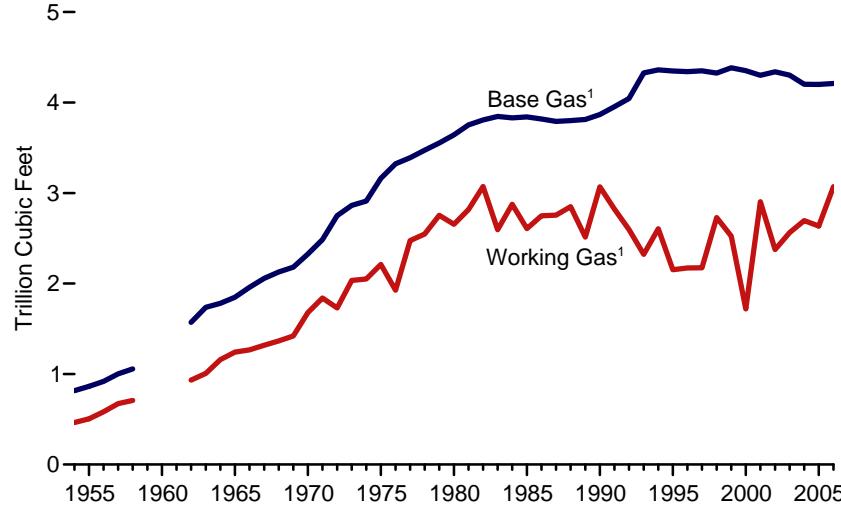
Sources: Residential, Commercial Total, Lease and Plant Fuel, Other Industrial Total, and Pipelines and Distribution: • 1949-2001—Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports and unpublished revisions. • 2002 forward—EIA, *Natural Gas Monthly (NGM)* (March 2007), Table 2, **Commercial CHP and Industrial CHP:** Table 8.7c, **Vehicle Fuel:** • 1990 and 1991—EIA, *NGA 2000* (November 2001), Table 95. • 1992-1998—EIA, "Alternatives to Traditional Transportation Fuels 1999" (October 1999), Table 10, and "Alternatives to Traditional Transportation Fuels 2003" (February 2004), Table 10. Data for compressed natural gas and liquefied natural gas in gasoline-equivalent gallons were converted to cubic feet by multiplying by the motor gasoline conversion factor (see Table A3) and dividing by the natural gas end-use sectors conversion factor (see Table A4). • 1999-2001—EIA, *NGA*, annual reports. • 2002 forward—EIA, *NGM* (March 2007), Table 2. **Electric Power Sector:** Tables 8.5b, 8.5c, 8.6b, and 8.7b. **All Other Data:** Calculated.

**Figure 6.6 Natural Gas Underground Storage**

**Underground Storage, 1954-2006**



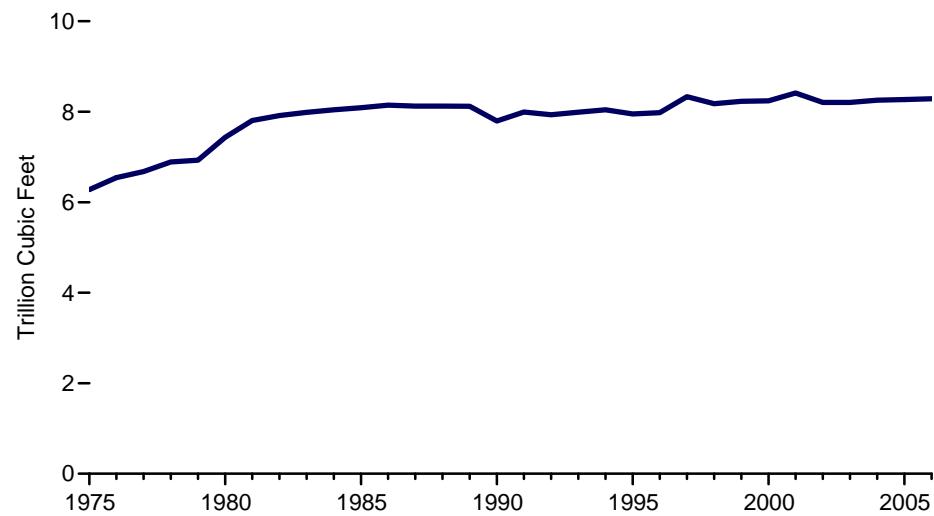
**Base Gas and Working Gas in Underground Storage, 1954-2006**



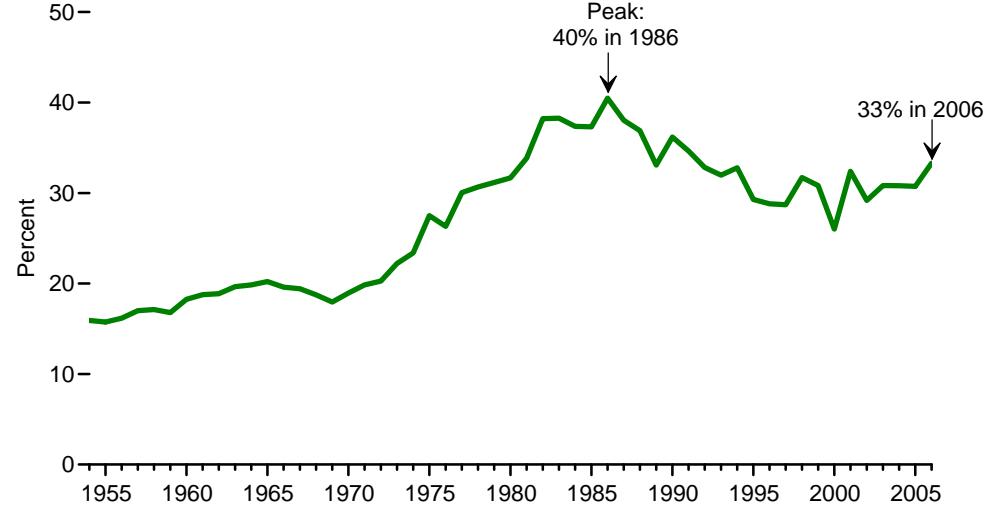
<sup>1</sup> Working-gas and base-gas data were not collected in 1959, 1960, and 1961.

Notes: • Storage is at end of year. • Because vertical scales differ, graphs should not be compared.

**Underground Storage Capacity, 1975-2006**



**End-of-Year Storage as a Share of Total Consumption, 1954-2006**



Sources: Tables 6.5 and 6.6.

**Table 6.6 Natural Gas Underground Storage, 1954-2006**

(Billion Cubic Feet)

Year	Natural Gas in Underground Storage										Natural Gas Underground Storage Capacity
	Base Gas <sup>1</sup>			Working Gas			Total				
	Traditional Storage	Salt Caverns	Total	Traditional Storage	Salt Caverns	Total	Traditional Storage	Salt Caverns	Total		
1954	NA	NA	817	NA	NA	465	NA	NA	1,281	NA	
1955	NA	NA	863	NA	NA	505	NA	NA	1,368	NA	
1956	NA	NA	919	NA	NA	583	NA	NA	1,502	NA	
1957	NA	NA	1,001	NA	NA	673	NA	NA	1,674	NA	
1958	NA	NA	1,056	NA	NA	708	NA	NA	1,764	NA	
1959	NA	NA	NA	NA	NA	NA	NA	NA	1,901	NA	
1960	NA	NA	NA	NA	NA	NA	NA	NA	2,184	NA	
1961	NA	NA	NA	NA	NA	NA	NA	NA	2,344	NA	
1962	NA	NA	1,571	NA	NA	933	NA	NA	2,504	NA	
1963	NA	NA	1,738	NA	NA	1,007	NA	NA	2,745	NA	
1964	NA	NA	1,781	NA	NA	1,159	NA	NA	2,940	NA	
1965	NA	NA	1,848	NA	NA	1,242	NA	NA	3,090	NA	
1966	NA	NA	1,958	NA	NA	1,267	NA	NA	3,225	NA	
1967	NA	NA	2,058	NA	NA	1,318	NA	NA	3,376	NA	
1968	NA	NA	2,128	NA	NA	1,366	NA	NA	3,495	NA	
1969	NA	NA	2,181	NA	NA	1,421	NA	NA	3,602	NA	
1970	NA	NA	2,326	NA	NA	1,678	NA	NA	4,004	NA	
1971	NA	NA	2,485	NA	NA	1,840	NA	NA	4,325	NA	
1972	NA	NA	2,751	NA	NA	1,729	NA	NA	4,480	NA	
1973	NA	NA	2,864	NA	NA	2,034	NA	NA	4,898	NA	
1974	NA	NA	2,912	NA	NA	2,050	NA	NA	4,962	NA	
1975	NA	NA	3,162	NA	NA	2,212	NA	NA	5,374	6,280	
1976	NA	NA	3,323	NA	NA	1,926	NA	NA	5,250	6,544	
1977	NA	NA	3,391	NA	NA	2,475	NA	NA	5,866	6,678	
1978	NA	NA	3,473	NA	NA	2,547	NA	NA	6,020	6,890	
1979	NA	NA	3,553	NA	NA	2,753	NA	NA	6,306	6,929	
1980	NA	NA	3,642	NA	NA	2,655	NA	NA	6,297	7,434	
1981	NA	NA	3,752	NA	NA	2,817	NA	NA	6,569	7,805	
1982	NA	NA	3,808	NA	NA	3,071	NA	NA	6,879	7,915	
1983	NA	NA	3,847	NA	NA	2,595	NA	NA	6,442	7,985	
1984	NA	NA	3,830	NA	NA	2,876	NA	NA	6,706	8,043	
1985	NA	NA	3,842	NA	NA	2,607	NA	NA	6,448	8,087	
1986	NA	NA	3,819	NA	NA	2,749	NA	NA	6,567	8,145	
1987	NA	NA	3,792	NA	NA	2,756	NA	NA	6,548	8,124	
1988	NA	NA	3,800	NA	NA	2,850	NA	NA	6,650	8,124	
1989	NA	NA	3,812	NA	NA	2,513	NA	NA	6,325	8,120	
1990	NA	NA	3,868	NA	NA	3,068	NA	NA	6,936	7,794	
1991	NA	NA	3,954	NA	NA	2,824	NA	NA	6,778	7,993	
1992	NA	NA	4,044	NA	NA	2,597	NA	NA	6,641	7,932	
1993	NA	NA	4,327	NA	NA	2,322	NA	NA	6,649	7,989	
1994	4,317	44	4,360	2,536	70	2,606	6,853	113	6,966	8,043	
1995	4,290	60	4,349	2,082	72	2,153	6,371	131	6,503	7,953	
1996	4,277	64	4,341	2,087	85	2,173	6,364	149	6,513	7,980	
1997	4,283	67	4,350	2,092	83	2,175	6,375	150	6,525	8,332	
1998	4,259	67	4,326	2,626	104	2,730	6,884	171	7,056	8,179	
1999	4,314	69	4,383	2,423	100	2,523	6,738	169	6,906	8,229	
2000	4,282	70	4,352	1,647	72	1,719	5,929	142	6,071	8,241	
2001	4,224	77	4,301	2,789	115	2,904	7,013	191	7,204	8,415	
2002	4,265	75	4,340	2,273	102	2,375	6,539	177	6,715	8,207	
2003	4,227	76	4,303	2,438	125	2,563	6,665	201	6,866	8,206	
2004	4,129	72	4,201	2,598	98	2,696	6,727	170	6,897	8,255	
2005	4,122	78	4,200	2,513	123	2,635	6,635	201	6,835	R8,268	
2006 <sup>P</sup>	4,134	77	4,211	2,926	144	3,070	7,059	222	7,281	8,287	

<sup>1</sup> Includes native gas.

R=Revised. P=Preliminary. NA=Not available.

Notes: • Storage and capacity are at end of year. • Beginning with 1965, all volumes are shown on a pressure base of 14.73 p.s.i.a. at 60° F. For prior years, the pressure base was 14.65 p.s.i.a. at 60° F.

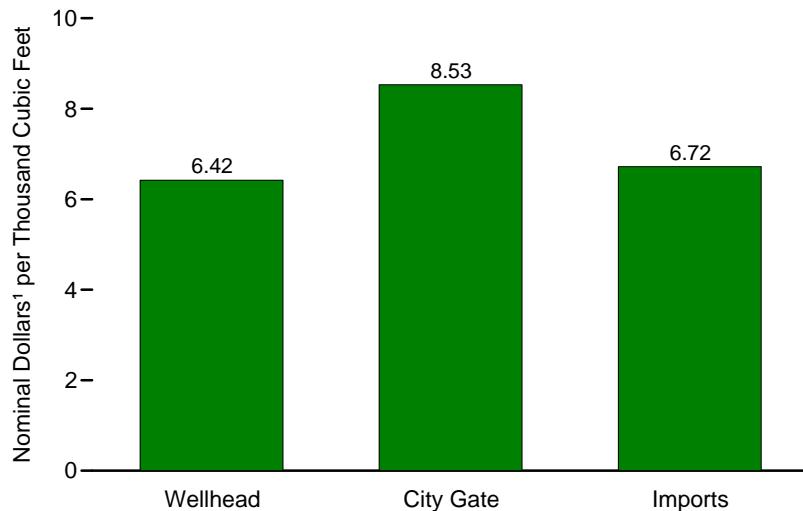
• Totals may not equal sum of components due to independent rounding.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html) for related information.

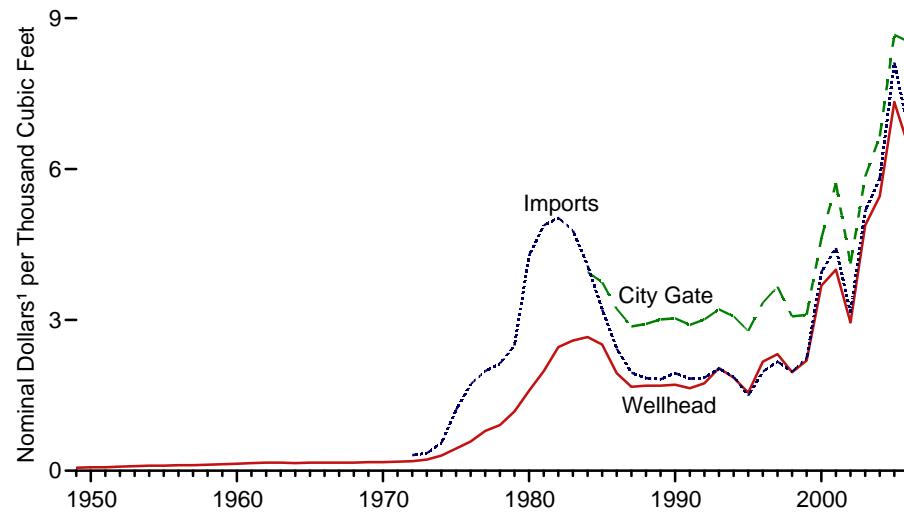
Sources: • 1954-1974—American Gas Association, *Gas Facts*. • 1975-1978—Federal Energy Administration, Form FEA-G318-M-O, "Underground Gas Storage Report," and Federal Power Commission, Form FPC-8, "Underground Gas Storage Report." • 1979-1984—Energy Information Administration (EIA), Form EIA-191, "Underground Gas Storage Report," and Federal Energy Regulatory Commission, Form FERC-8, "Underground Gas Storage Report." • 1985-2005—EIA, *Natural Gas Monthly (NGM)*, monthly reports, and *Natural Gas Annual*, annual reports. • 2006—EIA, *NGM* (March 2007), Tables 7, 9, and 10, and Form EIA-191M, "Monthly Underground Gas Storage Report."

**Figure 6.7 Natural Gas Wellhead, City Gate, and Imports Prices**

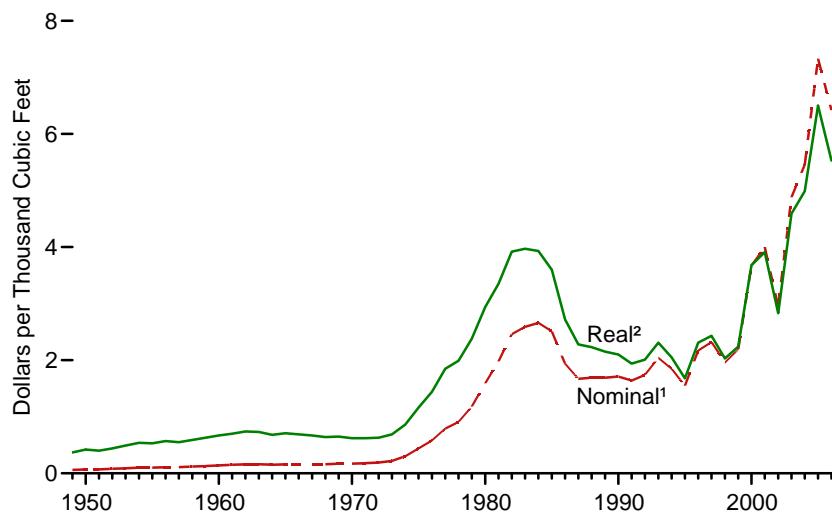
**Wellhead, City Gate, and Imports, 2006**



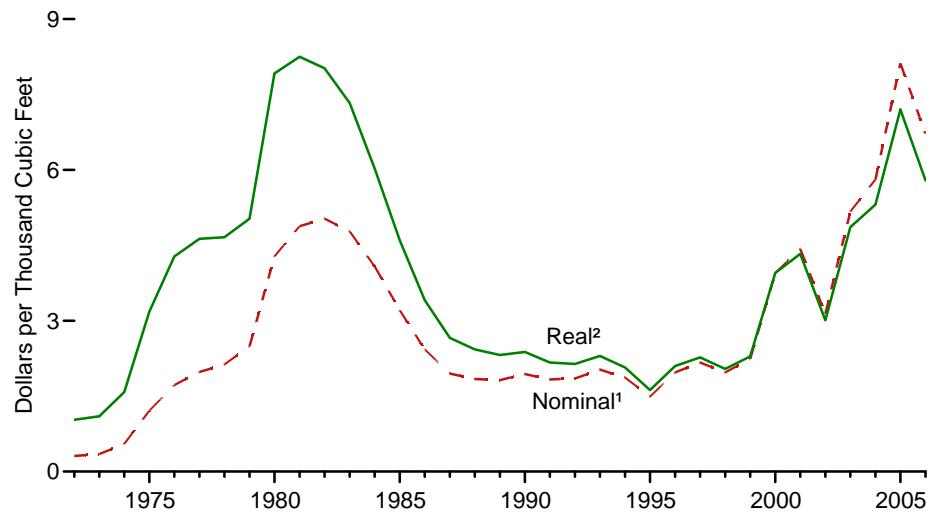
**Wellhead, City Gate, and Imports, 1949-2006**



**Wellhead, 1949-2006**



**Imports, 1972-2006**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 6.7.

**Table 6.7 Natural Gas Wellhead, City Gate, and Imports Prices, Selected Years, 1949-2006**  
(Dollars per Thousand Cubic Feet)

Year	Wellhead <sup>1</sup>		City Gate <sup>2</sup>		Imports	
	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>	Nominal <sup>3</sup>	Real <sup>4</sup>
1949	0.06	0.37	NA	NA	NA	NA
1950	.07	.42	NA	NA	NA	NA
1955	.10	.53	NA	NA	NA	NA
1960	.14	.67	NA	NA	NA	NA
1965	.16	.71	NA	NA	NA	NA
1970	.17	.62	NA	NA	NA	NA
1971	.18	.62	NA	NA	NA	NA
1972	.19	.63	NA	NA	.31	1.03
1973	.22	.69	NA	NA	.35	1.10
1974	.30	.86	NA	NA	.55	1.58
1975	.44	1.16	NA	NA	1.21	3.18
1976	.58	1.44	NA	NA	1.72	4.28
1977	.79	1.85	NA	NA	1.98	4.63
1978	.91	1.99	NA	NA	2.13	4.66
1979	1.18	2.38	NA	NA	2.49	5.03
1980	1.59	2.94	NA	NA	4.28	7.92
1981	1.98	3.35	NA	NA	4.88	8.25
1982	2.46	3.92	NA	NA	5.03	8.02
1983	2.59	3.97	NA	NA	4.78	7.33
1984	2.66	3.93	3.95	5.84	4.08	6.03
1985	2.51	3.60	3.75	5.38	3.21	4.60
1986	1.94	2.72	3.22	4.52	2.43	3.41
1987	1.67	2.28	2.87	3.92	1.95	2.66
1988	1.69	2.23	2.92	3.86	1.84	2.43
1989	1.69	2.15	3.01	3.83	1.82	2.32
1990	1.71	2.10	3.03	3.71	1.94	2.38
1991	1.64	1.94	2.90	3.43	1.83	2.17
1992	1.74	2.01	3.01	3.48	1.85	2.14
1993	2.04	2.31	3.21	3.63	2.03	2.30
1994	1.85	2.05	3.07	3.40	1.87	2.07
1995	1.55	1.68	2.78	3.02	1.49	1.62
1996	2.17	2.31	3.34	3.56	1.97	2.10
1997	2.32	2.43	3.66	3.84	2.17	2.27
1998	1.96	2.03	3.07	3.18	1.97	2.04
1999	2.19	2.24	3.10	3.17	2.24	2.29
2000	3.68	3.68	4.62	4.62	3.95	3.95
2001	4.00	3.91	5.72	5.59	4.43	4.33
2002	2.95	2.83	4.12	3.95	3.15	3.02
2003	4.88	4.59	5.85	5.50	5.17	4.86
2004	5.46	R4.99	6.65	R6.08	5.81	R5.31
2005	R7.33	R6.50	R8.67	R7.69	R8.12	R7.20
2006	P6.42	P5.53	P8.53	P7.35	E6.72	E5.79

<sup>1</sup> See "Natural Gas Wellhead Price" in Glossary.

<sup>2</sup> See "City Gate" in Glossary.

<sup>3</sup> See "Nominal Dollars" in Glossary.

<sup>4</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised. P=Preliminary. NA=Not available.

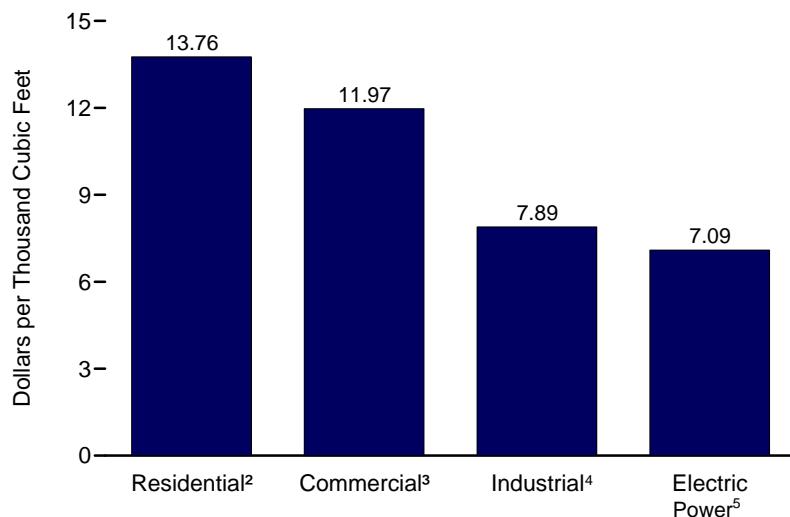
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/natgas.html>.

• For related information, see [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html).

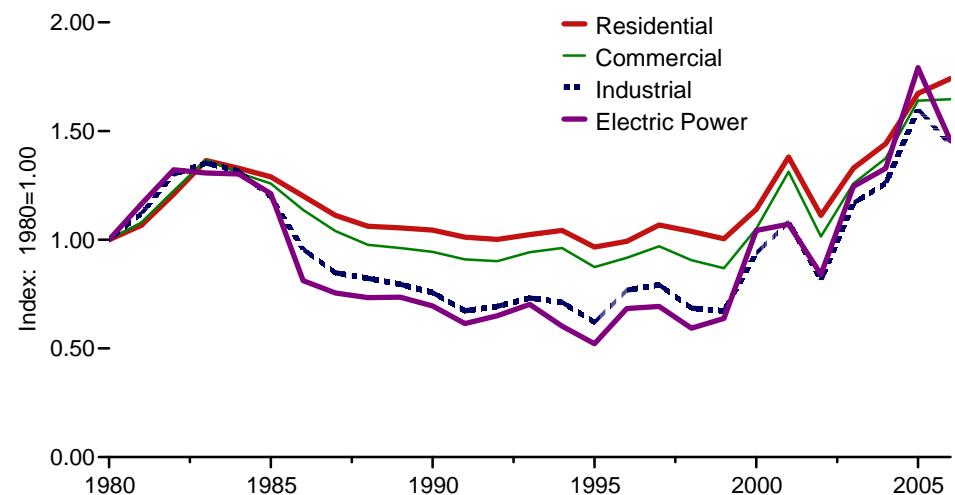
Sources: **Wellhead** and **City Gate**: • 1949-2001—Energy Information Administration (EIA), *Natural Gas Annual* (NGA), annual reports. • 2002 forward—EIA, *Natural Gas Monthly* (NGM) (March 2007), Table 3. **Imports**: • 1972 and 1973—Federal Power Commission (FPC), *Pipeline Imports and Exports of Natural Gas—Imports and Exports of LNG*. • 1974-1976—FPC, *United States Imports and Exports of Natural Gas*, annual reports. • 1977-2001—EIA, NGA, annual reports. • 2002-2005—EIA, NGM (March 2007), Table 5. • 2006—EIA estimates.

**Figure 6.8 Natural Gas Prices by Sector**

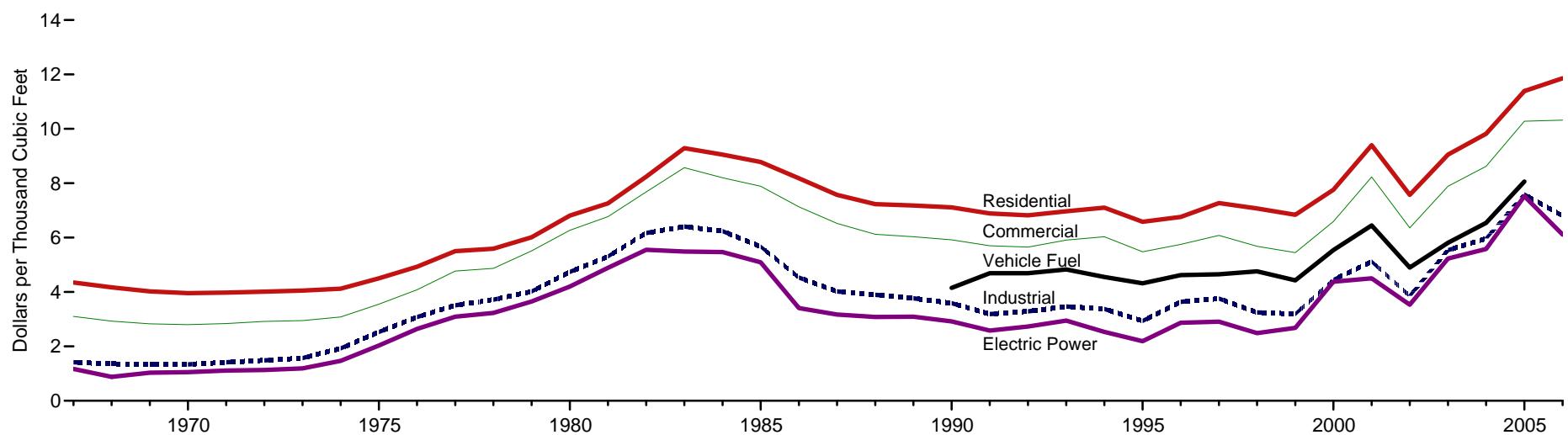
**Nominal<sup>1</sup> Prices, 2006**



**Real<sup>6</sup> Prices, Indexed, 1980-2006**



**Real<sup>6</sup> Prices, 1967-2006**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Based on 97.8 percent of volume delivered.

<sup>3</sup> Based on 78.5 percent of volume delivered.

<sup>4</sup> Based on 21.9 percent of volume delivered.

<sup>5</sup> Based on 93.8 percent of volume delivered.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators.

See Table D1.

Source: Table 6.8.

**Table 6.8 Natural Gas Prices by Sector, 1967-2006**  
(Dollars per Thousand Cubic Feet)

Year	Residential Sector			Commercial Sector <sup>1</sup>			Industrial Sector <sup>2</sup>			Transportation Sector		Electric Power Sector <sup>3</sup>		
	Prices		Percentage of Sector <sup>7</sup>	Prices		Percentage of Sector <sup>7</sup>	Prices		Percentage of Sector <sup>7</sup>	Vehicle Fuel <sup>4</sup> Prices		Prices		Percentage of Sector <sup>7</sup>
	Nominal <sup>5</sup>	Real <sup>6</sup>		Nominal <sup>5</sup>	Real <sup>6</sup>		Nominal <sup>5</sup>	Real <sup>6</sup>		Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	
1967	1.04	4.35	NA	0.74	3.10	NA	0.34	1.42	NA	NA	NA	0.28	1.17	NA
1968	1.04	4.17	NA	.73	2.93	NA	.34	1.36	NA	NA	NA	.22	.88	NA
1969	1.05	4.02	NA	.74	2.83	NA	.35	1.34	NA	NA	NA	.27	1.03	NA
1970	1.09	3.96	NA	.77	2.80	NA	.37	1.34	NA	NA	NA	.29	1.05	NA
1971	1.15	3.98	NA	.82	2.84	NA	.41	1.42	NA	NA	NA	.32	1.11	NA
1972	1.21	4.01	NA	.88	2.92	NA	.45	1.49	NA	NA	NA	.34	1.13	NA
1973	1.29	4.05	NA	.94	2.95	NA	.50	1.57	NA	NA	NA	.38	1.19	92.1
1974	1.43	4.12	NA	1.07	3.08	NA	.67	1.93	NA	NA	NA	.51	1.47	92.7
1975	1.71	4.50	NA	1.35	3.55	NA	.96	2.53	NA	NA	NA	.77	2.03	96.1
1976	1.98	4.93	NA	1.64	4.08	NA	1.24	3.08	NA	NA	NA	1.06	2.64	96.2
1977	2.35	5.50	NA	2.04	4.77	NA	1.50	3.51	NA	NA	NA	1.32	3.09	97.1
1978	2.56	5.59	NA	2.23	4.87	NA	1.70	3.72	NA	NA	NA	1.48	3.23	98.0
1979	2.98	6.01	NA	2.73	5.51	NA	1.99	4.02	NA	NA	NA	1.81	3.65	96.1
1980	3.68	6.81	NA	3.39	6.27	NA	2.56	4.74	NA	NA	NA	2.27	4.20	96.9
1981	4.29	7.26	NA	4.00	6.77	NA	3.14	5.31	NA	NA	NA	2.89	4.89	97.6
1982	5.17	8.24	NA	4.82	7.68	NA	3.87	6.17	85.1	NA	NA	3.48	5.55	92.6
1983	6.06	9.29	NA	5.59	8.57	NA	4.18	6.41	80.7	NA	NA	3.58	5.49	93.9
1984	6.12	9.05	NA	5.55	8.20	NA	4.22	6.24	74.7	NA	NA	3.70	5.47	94.4
1985	6.12	8.78	NA	5.50	7.89	NA	3.95	5.67	68.8	NA	NA	3.55	5.09	94.0
1986	5.83	8.18	NA	5.08	7.13	NA	3.23	4.53	59.8	NA	NA	2.43	3.41	91.7
1987	5.54	7.57	NA	4.77	6.52	93.1	2.94	4.02	47.4	NA	NA	2.32	3.17	91.6
1988	5.47	7.23	NA	4.63	6.12	90.7	2.95	3.90	42.6	NA	NA	2.33	3.08	89.6
1989	5.64	7.18	99.9	4.74	6.03	89.1	2.96	3.77	36.9	NA	NA	2.43	3.09	79.6
1990	5.80	7.11	R99.2	4.83	5.92	86.6	2.93	3.59	35.2	3.39	4.15	2.38	2.92	76.8
1991	5.82	6.89	99.2	4.81	5.70	85.1	2.69	3.19	32.7	3.96	4.69	2.18	2.58	79.3
1992	5.89	6.82	99.1	4.88	5.65	83.2	2.84	3.29	30.3	4.05	4.69	2.36	2.73	76.5
1993	6.16	6.97	99.1	5.22	5.91	83.9	3.07	3.47	29.7	4.27	4.83	2.61	2.95	74.1
1994	6.41	7.10	99.1	5.44	6.03	79.3	3.05	3.38	25.5	4.11	4.55	2.28	2.53	73.4
1995	6.06	6.58	R99.0	5.05	5.48	76.7	2.71	2.94	24.5	3.98	4.32	2.02	2.19	71.4
1996	6.34	6.76	R99.0	5.40	5.75	77.6	3.42	3.64	19.4	4.34	4.62	2.69	2.87	68.4
1997	6.94	7.27	98.8	5.80	6.08	70.8	3.59	3.76	18.1	4.44	4.65	2.78	2.91	68.0
1998	6.82	7.07	97.7	5.48	5.68	67.0	3.14	3.25	16.1	4.59	4.76	2.40	2.49	63.7
1999	6.69	6.84	95.2	5.33	5.45	66.1	3.12	3.19	18.8	4.34	4.43	2.62	2.68	58.3
2000	7.76	7.76	92.6	6.59	6.59	63.9	4.45	4.45	19.8	5.54	5.54	4.38	4.38	50.5
2001	9.63	9.40	92.4	8.43	8.23	66.0	5.24	5.12	20.8	6.60	6.45	4.61	4.50	40.2
2002	7.89	7.57	97.9	6.63	6.36	77.4	4.02	3.86	22.7	5.10	4.90	3.68	3.53	383.9
2003	9.63	R9.05	R97.5	8.40	R7.89	78.2	5.89	5.54	22.1	6.19	5.82	5.57	R5.23	91.2
2004	10.75	R9.82	R97.7	R9.43	R8.62	78.0	R6.53	R5.97	R23.7	R7.16	R6.54	6.11	R5.58	89.8
2005	R12.84	R11.39	R98.2	R11.59	R10.28	R82.7	R8.56	R7.59	R23.8	R9.09	R8.06	R8.48	R7.52	R91.5
2006	P13.76	P11.86	E97.8	P11.97	P10.32	P78.5	P7.89	P6.80	P21.9	NA	NA	P7.09	P6.11	P93.8

<sup>1</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>2</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>3</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 2001, data are for electric utilities only; beginning in 2002, data are for electric utilities and independent power producers. See Note 4, "Coverage of Electric Power Sector Natural Gas Prices," at end of section.

<sup>4</sup> Much of the natural gas delivered for vehicle fuel represents deliveries to fueling stations that are used primarily or exclusively by fleet vehicles. Thus, the prices are often those associated with the cost of gas in the operation of fleet vehicles.

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>7</sup> The percentage of the sector's consumption in Table 6.5 for which price data are available.

R=Revised. P=Preliminary. E=Estimate. NA=Not available.

Notes: • Prices are for natural gas, plus a small amount of supplemental gaseous fuels. • The average for each end-use sector is calculated by dividing the total value of the natural gas consumed by each sector by the total quantity consumed. • Prices are intended to include all taxes. • See Note 2, "Classification of

Power Plants Into Energy-Use Sectors," at end of Section 8.

Web Page: See [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/info\\_glance/natural\\_gas.html](http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html) for related information.

Sources: **Residential Percentage of Sector:** • 1989-2005—Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." • 2006—EIA estimate. **Vehicle Fuel:** EIA, NGA, annual reports. **Electric Power Price:** • 1967-2001—EIA, NGA, annual reports. • 2002-2005—EIA, *Natural Gas Monthly (NGM)* (March 2007), Table 3. • 2006—Federal Energy Regulatory Commission, Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA, Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report."

**Electric Power Percentage of Sector:** • 1973-2001—Calculated by EIA as the quantity of natural gas receipts by electric utilities reported on Form FERC-423, "Monthly Report of Cost and Quantity of Fuels for Electric Utility Plants" (and predecessor forms), divided by the quantity of natural gas consumed by the same respondents in the electric power sector (for 1973-1988, see Table 8.5b; for 1989-2001, see Table 8.7b). • 2002 forward—Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Forms FERC-423, "Monthly Report of Cost and Quantity of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report," divided by the quantity of natural gas consumed by the same respondents in the electric power sector (see Table 8.7b). **All Other Data:** • 1967-2001—EIA, NGA, annual reports. • 2002 forward—EIA, *NGM* (March 2007), Table 3.

## Natural Gas

**Note 1. Natural Gas Deliveries to Nonutilities, 1989-1992.** Prior to 1993, deliveries to nonutility generators were not separately collected from natural gas companies on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." As a result, for 1989-1992, those volumes are probably included in both the industrial and electric power sectors and double-counted in total consumption. In 1993, 0.28 trillion cubic feet was reported as delivered to nonutility generators.

**Note 2. Natural Gas Vehicle Fuel.** In Table 6.5, for 1992 forward, natural gas vehicle fuel data do not reflect revised data shown in Table 10.4. These revisions, in million cubic feet, are: 1992-2,149; 1993-2,911; 1994-3,280; 1995-4,701; 1996-6,219; 1997-8,542; 1998-9,583; 1999-10,583; 2000-11,665; 2001-14,033; 2002-16,091; 2003-17,726; 2004-21,848; and 2005-22,957.

**Note 3. Natural Gas Consumption.** Natural gas consumption statistics are compiled from surveys of natural gas production, transmission, and distribution companies and from surveys of electric power generation. Consumption by sector from these surveys is compiled on a national and individual State basis and then balanced with national and individual State supply data. Included in the data are the following: **Residential Sector**—Consumption by private households for space heating, cooking, and other household uses; **Commercial Sector**—Consumption by nonmanufacturing establishments; municipalities for institutional heating and lighting; and, through 1995, those engaged in agriculture, forestry, and fishing. The commercial sector includes generators that produce electricity and/or useful thermal

output primarily to support the activities of the above-mentioned commercial establishments; **Industrial Sector**—Consumption by establishments engaged primarily in processing unfinished materials into another form of product (including mining; petroleum refining; manufacturing; and, beginning in 1996, agriculture, forestry, and fishing), and natural gas industry use for lease and plant fuel. The industrial sector includes generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities; **Transportation Sector**—Natural gas transmission (pipeline) fuel, and natural gas delivered for use as vehicle fuel; and **Electric Power Sector (electric utilities and independent power producers)**—Consumption for electricity generation and useful thermal output at electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

**Note 4. Coverage of Electric Power Sector Natural Gas Prices.** For 1973-1982, data for electric power sector natural gas prices include all electric utility plants at which the generator nameplate capacity of all steam-electric units combined totaled 25 megawatts or greater. For 1974-1982, peaking units are also included and counted toward the 25-megawatt-or-greater total. For 1983-1990, data include all electric utility plants at which the generator nameplate capacity of all steam-electric units combined totaled 50 megawatts or greater. For 1991-2001, data include all electric utility plants at which the generator nameplate capacity of all steam-electric units and combined-cycle units together totaled 50 megawatts or greater. For 2002 forward, data include electric utility and independent power producer plants at which the total facility fossil-fueled nameplate generating capacity is 50 or more megawatts, regardless of unit type.

# 7

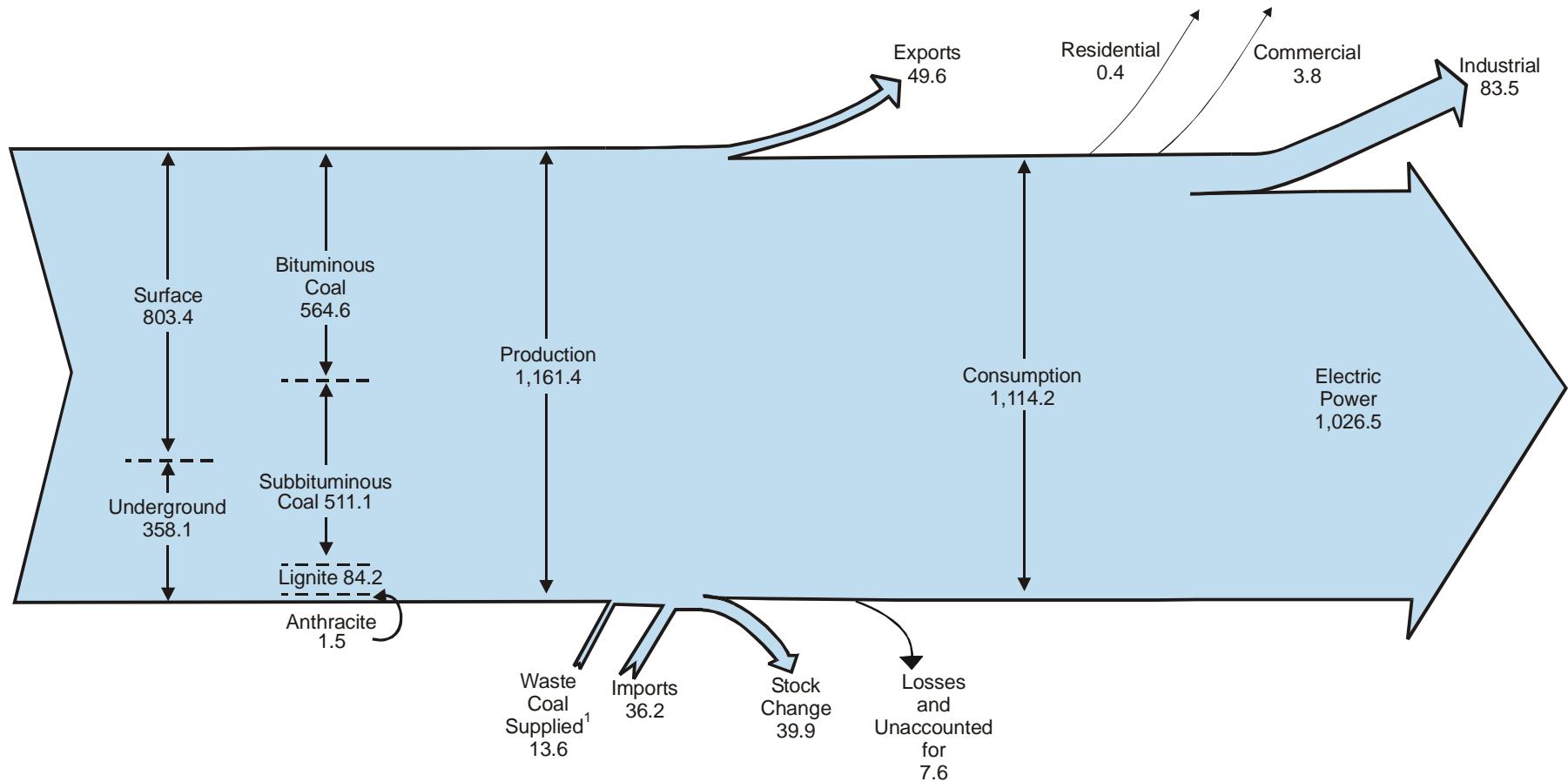
# Coal



Coal yard, Curtis Bay, Maryland. Source: U.S. Department of Energy.



**Diagram 4. Coal Flow, 2006**  
 (Million Short Tons)



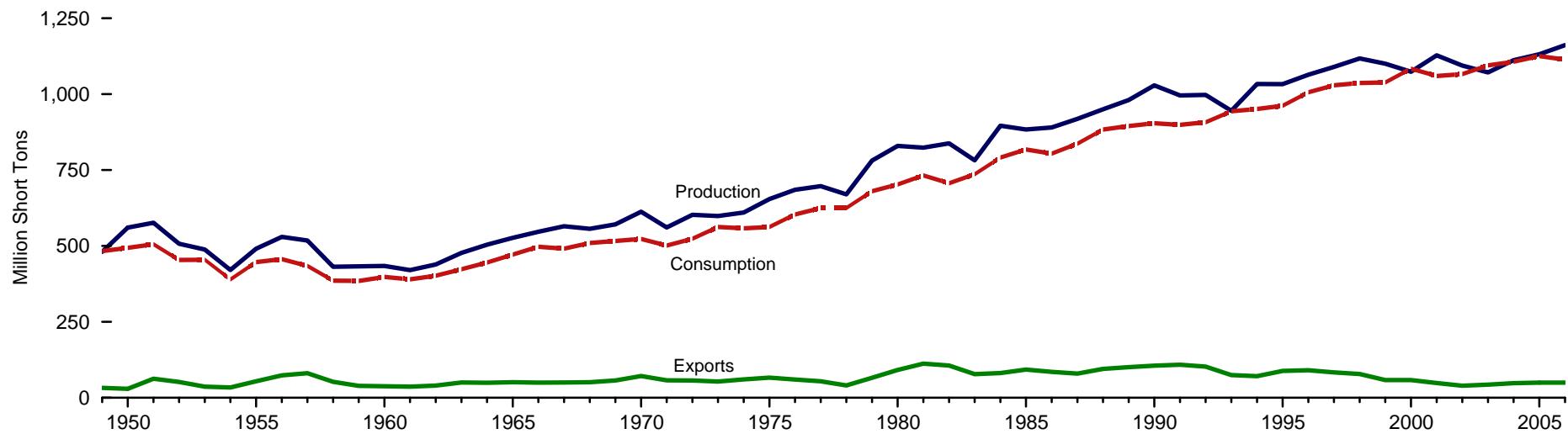
<sup>1</sup> Includes fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste that are consumed by the electric power industrial sectors.

Notes: • Production categories are estimated; other data are preliminary. • Values are derived from source data prior to rounding for publication. • Totals may not equal sum of components due to independent rounding.

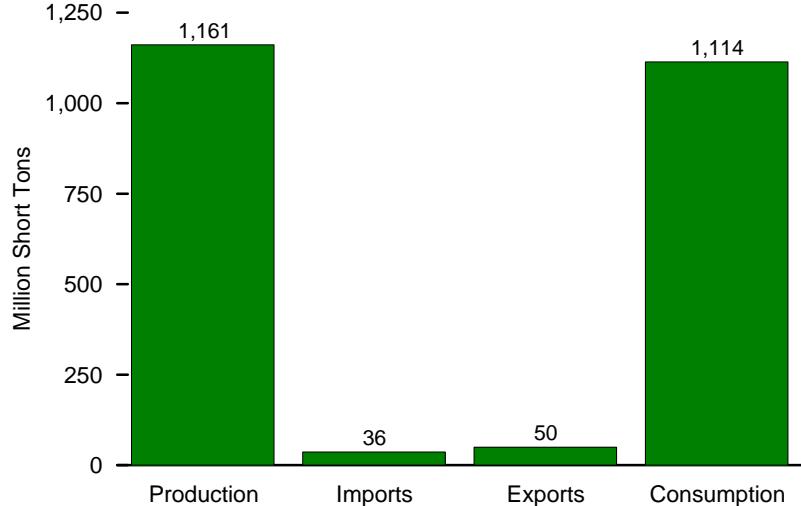
Sources: Tables 7.1, 7.2, and 7.3.

**Figure 7.1 Coal Overview**

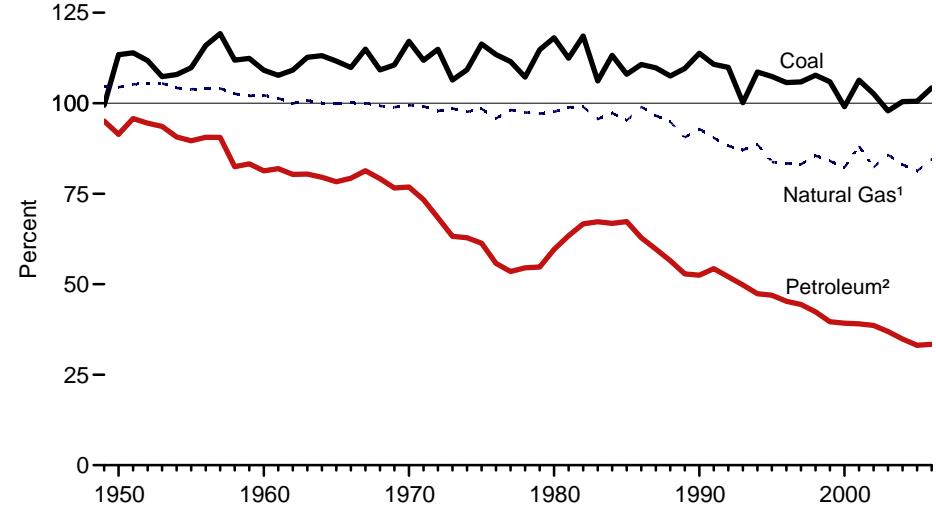
**Overview, 1949-2006**



**Overview, 2006**



**Production as Share of Consumption by Type of Fossil Fuel, 1949-2006**



<sup>1</sup> Dry natural gas production as share of natural gas consumption.

<sup>2</sup> Crude oil and natural gas plant liquids production as share of petroleum products supplied.

Sources: Tables 5.1, 6.1, and 7.1.

**Table 7.1 Coal Overview, Selected Years, 1949-2006**  
 (Million Short Tons)

Year	Production <sup>1</sup>	Waste Coal Supplied <sup>2</sup>	Trade			Stock Change <sup>4</sup>	Losses and Unaccounted for <sup>5</sup>	Consumption
			Imports	Exports	Net Imports <sup>3</sup>			
1949	480.6	NA	0.3	32.8	-32.5	( 6 )	<sup>6</sup> -84.6	483.2
1950	560.4	NA	.4	29.4	-29.0	( 6 )	<sup>6</sup> 9.5	494.1
1955	490.8	NA	.3	54.4	-54.1	( 6 )	<sup>6</sup> 6.3	447.0
1960	434.3	NA	.3	38.0	-37.7	( 6 )	<sup>6</sup> 1.7	398.1
1965	527.0	NA	.2	51.0	-50.8	( 6 )	<sup>6</sup> 2.2	472.0
1970	612.7	NA	(s)	71.7	-71.7	( 6 )	<sup>6</sup> 6.6	523.2
1971	560.9	NA	.1	57.3	-57.2	( 6 )	<sup>6</sup> 4.2	501.6
1972	602.5	NA	(s)	56.7	-56.7	( 6 )	<sup>6</sup> 4.3	524.3
1973	598.6	NA	.1	53.6	-53.5	( 6 )	<sup>6</sup> -17.9	562.6
1974	610.0	NA	2.1	60.7	-58.6	-8.9	2.0	558.4
1975	654.6	NA	.9	66.3	-65.4	32.2	-5.5	562.6
1976	684.9	NA	1.2	60.0	-58.8	8.5	13.8	603.8
1977	697.2	NA	1.6	54.3	-52.7	22.6	-3.4	625.3
1978	670.2	NA	3.0	40.7	-37.8	-4.9	12.1	625.2
1979	781.1	NA	2.1	66.0	-64.0	36.2	.4	680.5
1980	829.7	NA	1.2	91.7	-90.5	25.6	10.8	702.7
1981	823.8	NA	1.0	112.5	-111.5	-19.0	-1.4	732.6
1982	838.1	NA	.7	106.3	-105.5	22.6	3.1	706.9
1983	782.1	NA	1.3	77.8	-76.5	-29.5	-1.6	736.7
1984	895.9	NA	1.3	81.5	-80.2	28.7	-4.3	791.3
1985	883.6	NA	2.0	92.7	-90.7	-27.9	2.8	818.0
1986	890.3	NA	2.2	85.5	-83.3	4.0	-1.2	804.2
1987	918.8	NA	1.7	79.6	-77.9	6.5	-2.5	836.9
1988	950.3	NA	2.1	95.0	-92.9	-24.9	-1.3	883.6
1989	980.7	1.4	2.9	100.8	-98.0	-13.7	2.9	895.0
1990	1,029.1	3.3	2.7	105.8	-103.1	26.5	-1.7	904.5
1991	996.0	4.0	3.4	109.0	-105.6	-.9	-3.9	899.2
1992	997.5	6.3	3.8	102.5	-98.7	-3.0	.5	907.7
1993	945.4	8.1	8.2	74.5	-66.3	-51.9	-4.9	944.1
1994	1,033.5	8.2	8.9	71.4	-62.5	23.6	4.3	951.3
1995	1,033.0	8.6	9.5	88.5	-79.1	-.3	.6	962.1
1996	1,063.9	8.8	8.1	90.5	-82.4	-17.5	1.4	1,006.3
1997	1,089.9	8.1	7.5	83.5	-76.1	-11.3	3.7	1,029.5
1998	1,117.5	8.7	8.7	78.0	-69.3	24.2	-4.4	1,037.1
1999	1,100.4	8.7	9.1	58.5	-49.4	24.0	-2.9	1,038.6
2000	1,073.6	9.1	12.5	58.5	-46.0	-48.3	.9	1,084.1
2001	<sup>R</sup> 1,127.7	<sup>R</sup> 10.1	19.8	48.7	-28.9	41.6	<sup>R</sup> 7.1	1,060.1
2002	1,094.3	<sup>R</sup> 9.1	16.9	39.6	-22.7	10.2	<sup>R</sup> 4.0	1,066.4
2003	1,071.8	<sup>R</sup> 10.0	25.0	43.0	-18.0	-26.7	<sup>R</sup> 4.4	1,094.9
2004	1,112.1	<sup>R</sup> 11.3	27.3	48.0	-20.7	-11.5	<sup>R</sup> 6.9	1,107.3
2005	<sup>R</sup> 1,131.5	<sup>R</sup> 13.4	30.5	49.9	-19.5	<sup>R</sup> -9.7	<sup>R</sup> 9.6	<sup>R</sup> 1,125.5
2006 <sup>P</sup>	1,161.4	13.6	36.2	49.6	-13.4	39.9	7.6	1,114.2

<sup>1</sup> Beginning in 2001, includes a small amount of refuse recovery (coal recaptured from a refuse mine, and cleaned to reduce the concentration of noncombustible materials).

<sup>2</sup> Waste coal (including fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste) consumed by the electric power and industrial sectors. Beginning in 1989, waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in "Consumption."

<sup>3</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>4</sup> A negative value indicates a decrease in stocks; a positive value indicates an increase.

<sup>5</sup> "Losses and Unaccounted for" is calculated as the sum of production, imports, and waste coal supplied, minus exports, stock change, and consumption.

<sup>6</sup> Through 1973, stock change is included in "Losses and Unaccounted for."

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05 million short tons.

Notes: • See Note 1, "Coal Consumption," at end of section. • Totals may not equal sum of

components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

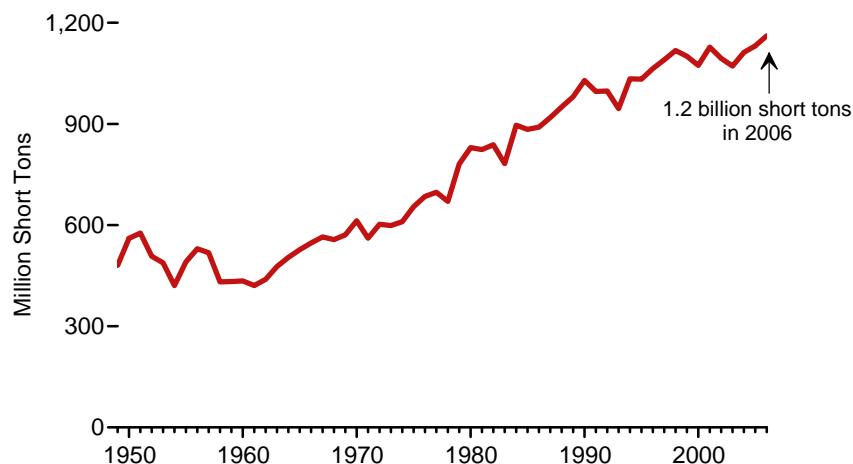
• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

Sources: **Production:** Table 7.2. **Waste Coal Supplied:** • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report," and Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants."

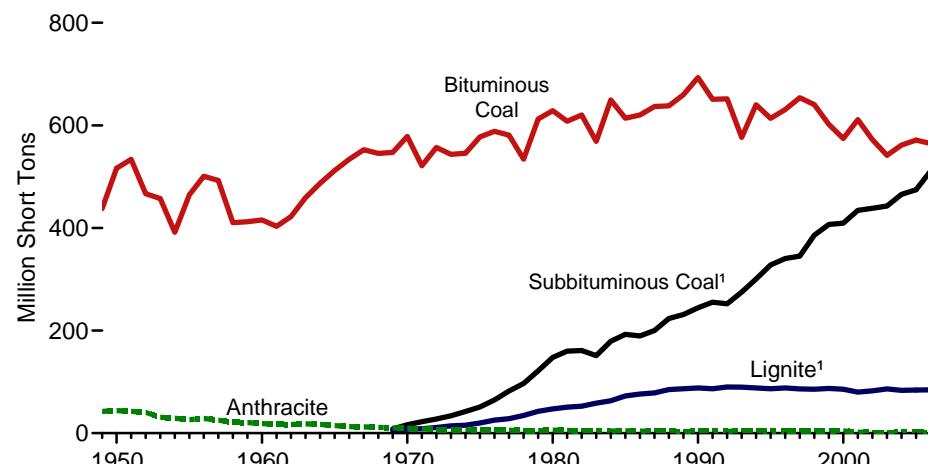
**Imports:** • 1949-1999—U.S. Department of Commerce, Bureau of the Census, "Monthly Report IM145." • 2000 forward—EIA, *Quarterly Coal Report October-December 2006* (March 2007), Table 1. **Exports:** Table 7.4. **Stock Change:** Table 7.5. **Losses and Unaccounted for:** Calculated. **Consumption:** Table 7.3.

**Figure 7.2 Coal Production, 1949-2006**

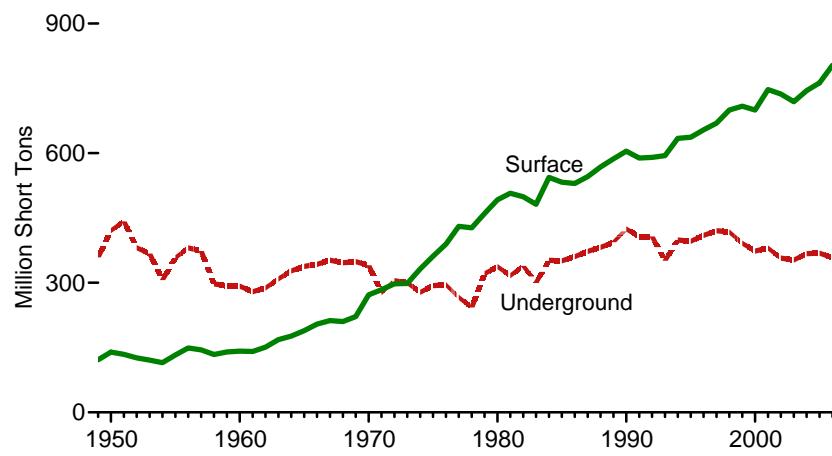
**Total**



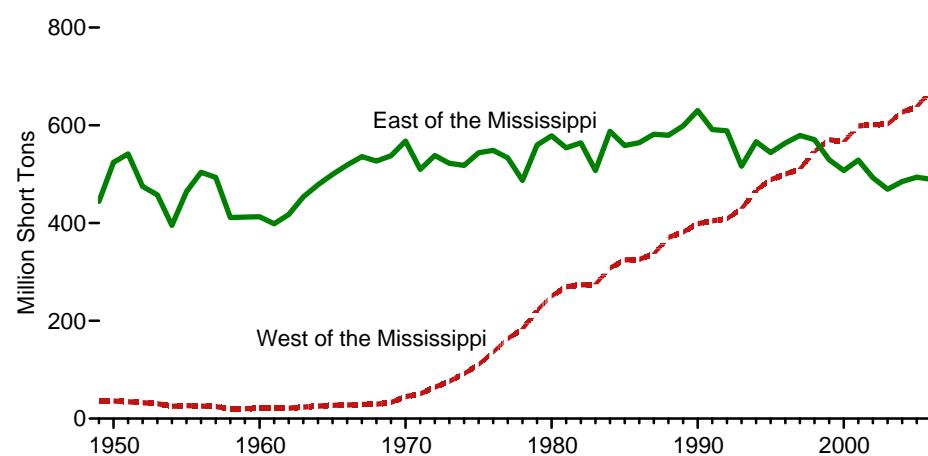
**By Rank**



**By Mining Method**



**By Location**



<sup>1</sup> Included in bituminous coal prior to 1969.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 7.2.

**Table 7.2 Coal Production, Selected Years, 1949-2006**

(Million Short Tons)

Year	Rank				Mining Method		Location		Total <sup>1</sup>
	Bituminous Coal <sup>1</sup>	Subbituminous Coal	Lignite	Anthracite <sup>1</sup>	Underground	Surface <sup>1</sup>	East of the Mississippi <sup>1</sup>	West of the Mississippi <sup>1</sup>	
1949	437.9	( <sup>2</sup> )	( <sup>2</sup> )	42.7	358.9	121.7	444.2	36.4	480.6
1950	516.3	( <sup>2</sup> )	( <sup>2</sup> )	44.1	421.0	139.4	524.4	36.0	560.4
1955	464.6	( <sup>2</sup> )	( <sup>2</sup> )	26.2	358.0	132.9	464.2	26.6	490.8
1960	415.5	( <sup>2</sup> )	( <sup>2</sup> )	18.8	292.6	141.7	413.0	21.3	434.3
1965	512.1	( <sup>2</sup> )	( <sup>2</sup> )	14.9	338.0	189.0	499.5	27.4	527.0
1970	578.5	16.4	8.0	9.7	340.5	272.1	567.8	44.9	612.7
1971	521.3	22.2	8.7	8.7	277.2	283.7	509.9	51.0	560.9
1972	556.8	27.5	11.0	7.1	305.0	297.4	538.2	64.3	602.5
1973	543.5	33.9	14.3	6.8	300.1	298.5	522.1	76.4	598.6
1974	545.7	42.2	15.5	6.6	278.0	332.1	518.1	91.9	610.0
1975	577.5	51.1	19.8	6.2	293.5	361.2	543.7	110.9	654.6
1976	588.4	64.8	25.5	6.2	295.5	389.4	548.8	136.1	684.9
1977	581.0	82.1	28.2	5.9	266.6	430.6	533.3	163.9	697.2
1978	534.0	96.8	34.4	5.0	242.8	427.4	487.2	183.0	670.2
1979	612.3	121.5	42.5	4.8	320.9	460.2	559.7	221.4	781.1
1980	628.8	147.7	47.2	6.1	337.5	492.2	578.7	251.0	829.7
1981	608.0	159.7	50.7	5.4	316.5	507.3	553.9	269.9	823.8
1982	620.2	160.9	52.4	4.6	339.2	499.0	564.3	273.9	838.1
1983	568.6	151.0	58.3	4.1	300.4	481.7	507.4	274.7	782.1
1984	649.5	179.2	63.1	4.2	352.1	543.9	587.6	308.3	895.9
1985	613.9	192.7	72.4	4.7	350.8	532.8	558.7	324.9	883.6
1986	620.1	189.6	76.4	4.3	360.4	529.9	564.4	325.9	890.3
1987	636.6	200.2	78.4	3.6	372.9	545.9	581.9	336.8	918.8
1988	638.1	223.5	85.1	3.6	382.2	568.1	579.6	370.7	950.3
1989	659.8	231.2	86.4	3.3	393.8	586.9	599.0	381.7	980.7
1990	693.2	244.3	88.1	3.5	424.5	604.5	630.2	398.9	1,029.1
1991	650.7	255.3	86.5	3.4	407.2	588.8	591.3	404.7	996.0
1992	651.8	252.2	90.1	3.5	407.2	590.3	588.6	409.0	997.5
1993	576.7	274.9	89.5	4.3	351.1	594.4	516.2	429.2	945.4
1994	640.3	300.5	88.1	4.6	399.1	634.4	566.3	467.2	1,033.5
1995	613.8	328.0	86.5	4.7	396.2	636.7	544.2	488.7	1,033.0
1996	630.7	340.3	88.1	4.8	409.8	654.0	563.7	500.2	1,063.9
1997	653.8	345.1	86.3	4.7	420.7	669.3	579.4	510.6	1,089.9
1998	640.6	385.9	85.8	5.3	417.7	699.8	570.6	547.0	1,117.5
1999	601.7	406.7	87.2	4.8	391.8	708.6	529.6	570.8	1,100.4
2000	574.3	409.2	85.6	4.6	373.7	700.0	507.5	566.1	1,073.6
2001	1 <sup>6</sup> 111.3	434.4	80.0	1 <sup>1</sup> .9	380.6	1 <sup>7</sup> 474.1	1 <sup>5</sup> 28.8	1 <sup>5</sup> 98.9	1 <sup>1</sup> ,127.7
2002	572.1	438.4	82.5	1.4	357.4	736.9	492.9	601.4	1,094.3
2003	541.5	442.6	86.4	1.3	352.8	719.0	469.2	602.5	1,071.8
2004	561.5	465.4	83.5	1.7	367.6	744.5	484.8	627.3	1,112.1
2005	R571.2	R474.7	83.9	1.7	368.6	R762.9	R493.8	R637.7	R1,131.5
2006	E564.6	E511.1	E84.2	E1.5	E358.1	E803.4	E489.5	E672.0	P1,161.4

<sup>1</sup> Beginning in 2001, includes a small amount of refuse recovery.

<sup>2</sup> Included in "Bituminous Coal."

R=Revised. P=Preliminary. E=Estimate.

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

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

Sources: • 1949-1975—Bureau of Mines, *Minerals Yearbook*, "Coal—Bituminous and Lignite" and "Coal—Pennsylvania Anthracite" chapters. • 1976—Energy Information Administration (EIA), Energy Data Reports, *Coal—Bituminous and Lignite* in 1976 and *Coal—Pennsylvania Anthracite* 1976. • 1977 and

1978—EIA, Energy Data Reports, *Bituminous Coal and Lignite Production and Mine Operations*—1977; *1978, Coal—Pennsylvania Anthracite* 1977; 1978, and *Coal Production*, annual reports. • 1979 and

1980—EIA, Energy Data Reports, *Weekly Coal Report* and *Coal Production*, annual reports.

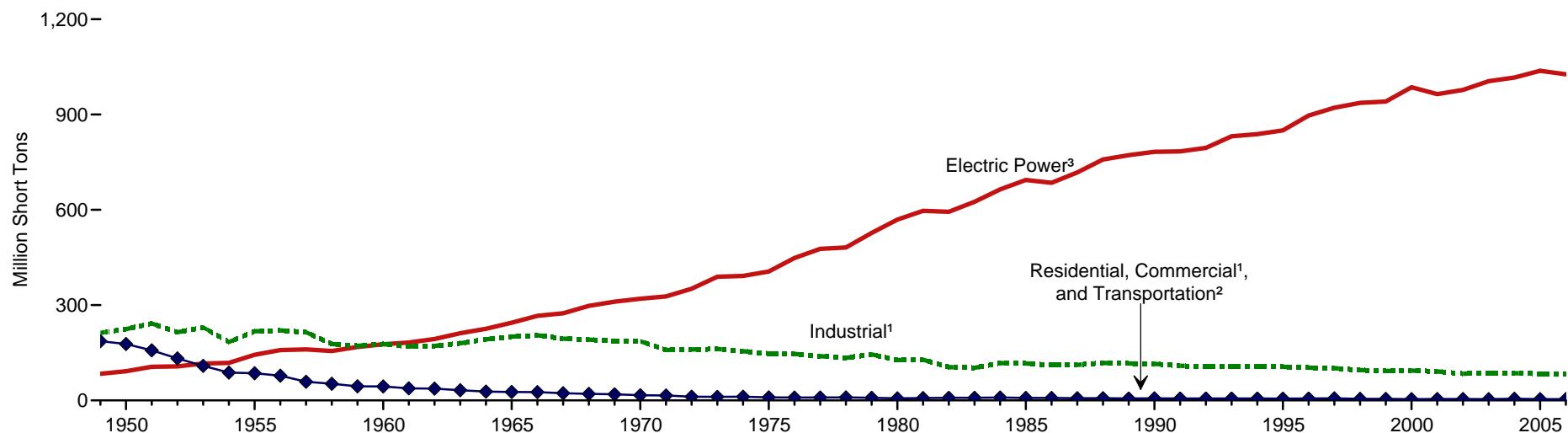
• 1981-1988—EIA, *Weekly Coal Production* and *Coal Production*, annual reports. • 1989-2000—EIA, *Coal Industry Annual*, annual reports.

• 2001-2005—EIA, *Annual Coal Report*, annual reports.

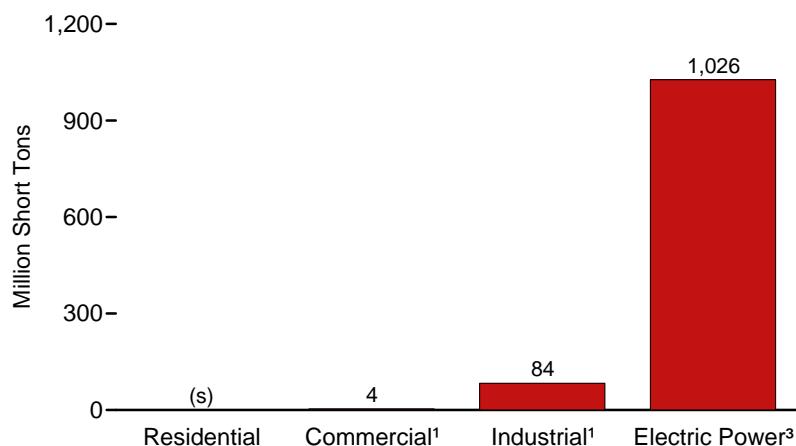
• 2006—EIA, *Quarterly Coal Report October-December 2006* (March 2007), Table 4; EIA, Form EIA-7A, "Coal Production Report"; and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

## Figure 7.3 Coal Consumption by Sector

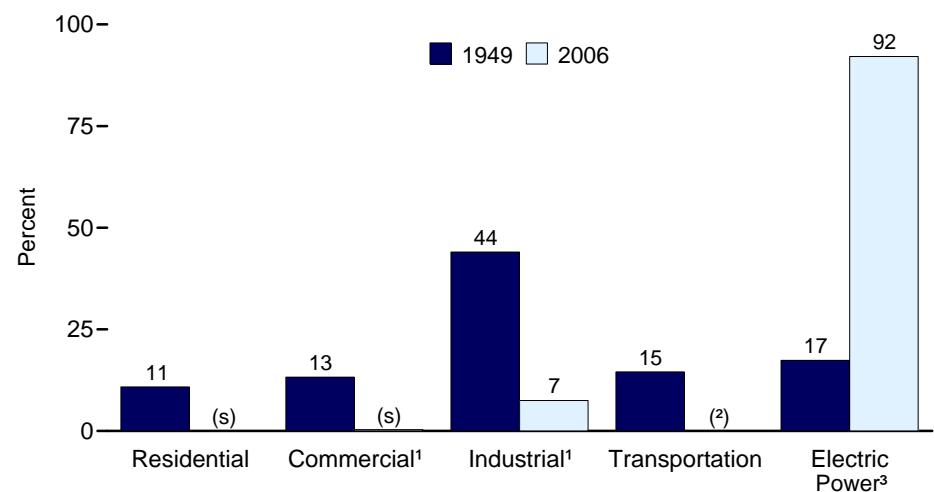
### By Sector, 1949-2006



### By Sector, 2006



### Sector Shares, 1949 and 2006



<sup>1</sup> Includes combined-heat-and-power (CHP) plants and a small number of electricity-only plants.

<sup>2</sup> For 1978 forward, small amounts of transportation sector use are included in "Industrial."

<sup>3</sup> Electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public.

(s)=Less than 0.5.

Source: Table 7.3.

**Table 7.3 Coal Consumption by Sector, Selected Years, 1949-2006**  
 (Million Short Tons)

Year	Residential Sector <sup>1</sup>	Commercial Sector <sup>1</sup>			Industrial Sector					Transportation Sector	Electric Power Sector <sup>2</sup>			Total		
		CHP <sup>3</sup>	Other <sup>4</sup>	Total	Coke Plants	Other Industrial			Total		Electricity Only	CHP	Total			
						CHP <sup>5</sup>	Non-CHP <sup>6</sup>	Total								
1949	52.4	( <sup>7</sup> )	64.1	64.1	91.4	( <sup>8</sup> )	121.2	121.2	212.6	70.2	84.0	NA	84.0	483.2		
1950	51.6	( <sup>7</sup> )	63.0	63.0	104.0	( <sup>8</sup> )	120.6	120.6	224.6	63.0	91.9	NA	91.9	494.1		
1955	35.6	( <sup>7</sup> )	32.9	32.9	107.7	( <sup>8</sup> )	110.1	110.1	217.8	17.0	143.8	NA	143.8	447.0		
1960	24.2	( <sup>7</sup> )	16.8	16.8	81.4	( <sup>8</sup> )	96.0	96.0	177.4	3.0	176.7	NA	176.7	398.1		
1965	14.6	( <sup>7</sup> )	11.0	11.0	95.3	( <sup>8</sup> )	105.6	105.6	200.8	.7	244.8	NA	244.8	472.0		
1970	9.0	( <sup>7</sup> )	7.1	7.1	96.5	( <sup>8</sup> )	90.2	90.2	186.6	.3	320.2	NA	320.2	523.2		
1971	7.4	( <sup>7</sup> )	7.8	7.8	83.2	( <sup>8</sup> )	75.6	75.6	158.9	.2	327.3	NA	327.3	501.6		
1972	5.0	( <sup>7</sup> )	6.7	6.7	87.7	( <sup>8</sup> )	72.9	72.9	160.6	.2	351.8	NA	351.8	524.3		
1973	4.1	( <sup>7</sup> )	7.0	7.0	94.1	( <sup>8</sup> )	68.0	68.0	162.1	.1	389.2	NA	389.2	562.6		
1974	3.7	( <sup>7</sup> )	7.8	7.8	90.2	( <sup>8</sup> )	64.9	64.9	155.1	.1	391.8	NA	391.8	558.4		
1975	2.8	( <sup>7</sup> )	6.6	6.6	83.6	( <sup>8</sup> )	63.6	63.6	147.2	(s)	406.0	NA	406.0	562.6		
1976	2.6	( <sup>7</sup> )	6.3	6.3	84.7	( <sup>8</sup> )	61.8	61.8	146.5	(s)	448.4	NA	448.4	603.8		
1977	2.5	( <sup>7</sup> )	6.4	6.4	77.7	( <sup>8</sup> )	61.5	61.5	139.2	(s)	477.1	NA	477.1	625.3		
1978	2.2	( <sup>7</sup> )	7.3	7.3	71.4	( <sup>8</sup> )	63.1	63.1	134.5	( <sup>8</sup> )	481.2	NA	481.2	625.2		
1979	1.7	( <sup>7</sup> )	6.7	6.7	77.4	( <sup>8</sup> )	67.7	67.7	145.1	( <sup>8</sup> )	527.1	NA	527.1	680.5		
1980	1.4	( <sup>7</sup> )	5.1	5.1	66.7	( <sup>8</sup> )	60.3	60.3	127.0	( <sup>8</sup> )	569.3	NA	569.3	702.7		
1981	1.3	( <sup>7</sup> )	6.1	6.1	61.0	( <sup>8</sup> )	67.4	67.4	128.4	( <sup>8</sup> )	596.8	NA	596.8	732.6		
1982	1.4	( <sup>7</sup> )	6.8	6.8	40.9	( <sup>8</sup> )	64.1	64.1	105.0	( <sup>8</sup> )	593.7	NA	593.7	706.9		
1983	1.4	( <sup>7</sup> )	7.1	7.1	37.0	( <sup>8</sup> )	66.0	66.0	103.0	( <sup>8</sup> )	625.2	NA	625.2	736.7		
1984	1.7	( <sup>7</sup> )	7.4	7.4	44.0	( <sup>8</sup> )	73.7	73.7	117.8	( <sup>8</sup> )	664.4	NA	664.4	791.3		
1985	1.7	( <sup>7</sup> )	6.1	6.1	41.1	( <sup>8</sup> )	75.4	75.4	116.4	( <sup>8</sup> )	693.8	NA	693.8	818.0		
1986	1.8	( <sup>7</sup> )	5.9	5.9	35.9	( <sup>8</sup> )	75.6	75.6	111.5	( <sup>8</sup> )	685.1	NA	685.1	804.2		
1987	1.6	( <sup>7</sup> )	5.3	5.3	37.0	( <sup>8</sup> )	75.2	75.2	112.1	( <sup>8</sup> )	717.9	NA	717.9	836.9		
1988	1.6	( <sup>7</sup> )	5.6	5.6	41.9	( <sup>8</sup> )	76.3	76.3	118.1	( <sup>8</sup> )	758.4	NA	758.4	883.6		
1989	1.3	1.1	3.7	4.9	40.5	24.9	51.3	76.1	116.6	( <sup>8</sup> )	767.4	4.8	772.2	895.0		
1990	1.3	1.2	4.2	5.4	38.9	27.8	48.5	76.3	115.2	( <sup>8</sup> )	774.2	8.4	782.6	904.5		
1991	1.1	1.2	3.8	5.0	33.9	27.0	48.4	75.4	109.3	( <sup>8</sup> )	773.2	10.7	783.9	899.2		
1992	1.1	1.2	3.9	5.0	32.4	28.2	45.8	74.0	106.4	( <sup>8</sup> )	781.2	13.9	795.1	907.7		
1993	1.1	1.4	3.7	5.1	31.3	28.9	46.0	74.9	106.2	( <sup>8</sup> )	816.6	15.1	831.6	944.1		
1994	.9	1.3	3.8	5.1	31.7	29.7	45.5	75.2	106.9	( <sup>8</sup> )	821.2	17.1	838.4	951.3		
1995	.8	1.4	3.6	5.1	33.0	29.4	43.7	73.1	106.1	( <sup>8</sup> )	832.9	17.3	850.2	962.1		
1996	.7	1.7	3.6	5.3	31.7	29.4	42.3	71.7	103.4	( <sup>8</sup> )	878.8	18.1	896.9	1,006.3		
1997	.7	1.7	4.0	5.8	30.2	29.9	41.7	71.5	101.7	( <sup>8</sup> )	904.2	17.1	921.4	1,029.5		
1998	.5	1.4	2.9	4.3	28.2	28.6	38.9	67.4	95.6	( <sup>8</sup> )	920.4	16.3	936.6	1,037.1		
1999	.6	1.5	2.8	4.3	28.1	27.8	37.0	64.7	92.8	( <sup>8</sup> )	924.7	16.2	940.9	1,038.6		
2000	.5	1.5	2.1	3.7	28.9	28.0	37.2	65.2	94.1	( <sup>8</sup> )	967.1	18.7	985.8	1,084.1		
2001	.5	1.4	2.4	3.9	26.1	25.8	39.5	65.3	91.3	( <sup>8</sup> )	946.1	18.4	964.4	1,060.1		
2002	.5	1.4	2.5	3.9	23.7	26.2	34.5	60.7	84.4	( <sup>8</sup> )	960.1	17.4	977.5	1,066.4		
2003	.6	1.8	1.9	3.7	24.2	24.8	36.4	61.3	85.5	( <sup>8</sup> )	983.5	21.6	1,005.1	1,094.9		
2004	.6	1.9	2.6	R4.6	23.7	26.6	35.6	62.2	85.9	( <sup>8</sup> )	994.8	21.5	1,016.3	1,107.3		
2005	R4.4	R1.9	R4.9	R3.8	23.4	R25.9	R34.5	R60.3	R83.8	( <sup>8</sup> )	R1,015.6	21.8	R1,037.5	R1,125.5		
2006 <sup>P</sup>	.4	1.9	1.9	3.8	23.0	25.8	34.8	60.5	83.5	( <sup>8</sup> )	1,005.1	21.4	1,026.5	1,114.2		

<sup>1</sup> See Note 2, "Residential and Commercial Coal Consumption Estimates," at end of section.

<sup>2</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers. Electric utility CHP plants are included in "Electricity Only."

<sup>3</sup> Commercial combined-heat-and-power (CHP) and a small number of commercial electricity-only plants, such as those at hospitals and universities.

<sup>4</sup> All commercial sector fuel use other than that in "Commercial CHP."

<sup>5</sup> Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.

<sup>6</sup> All industrial sector fuel use other than that in "Coke Plants" and "Industrial CHP."

<sup>7</sup> Included in "Commercial Other."

<sup>8</sup> Included in "Industrial Non-CHP."

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05 million short tons.

Notes: • See Tables 8.5a-8.5d for the amount of coal used to produce electricity and Tables 8.6a-8.6c

for the amount of coal used to produce useful thermal output. • See Note 1, "Coal Consumption," at end of section.

• See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section 8.

• Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

Sources: **Commercial CHP and Industrial CHP:** Table 8.7c. **Electric Power Sector:** Tables 8.5b,

8.5c, 8.6b, and 8.7b. **All Other Data:** • 1949-1975—Bureau of Mines (BOM), *Minerals Yearbook*,

"Coal—Bituminous and Lignite" and "Coal—Pennsylvania Anthracite" chapters. • 1976—Energy

Information Administration (EIA), *Energy Data Reports*, *Coal—Bituminous and Lignite in 1976* and

*Coal—Pennsylvania Anthracite 1976*. • 1977 and 1978—EIA, *Energy Data Reports*, *Coal—Pennsylvania*

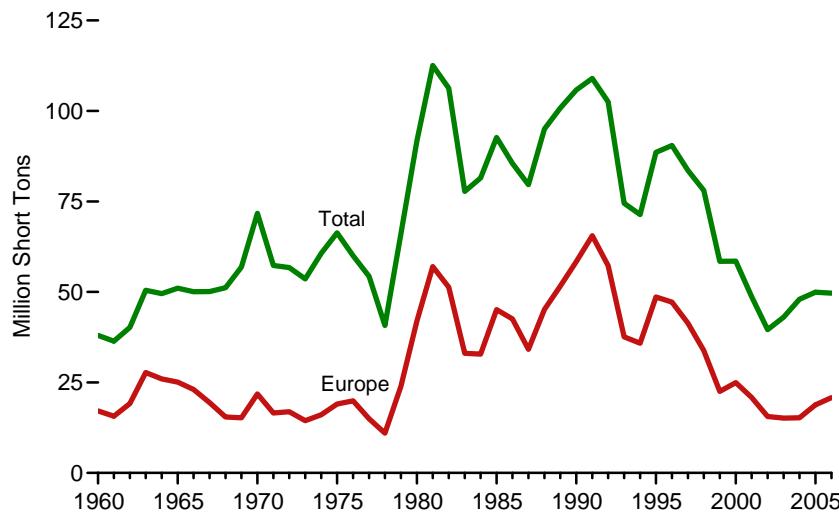
*Anthracite 1977; 1978*, and *Weekly Coal Report*. • 1979 and 1980—EIA, *Energy Data Report*, *Weekly*

*Coal Report*. • 1981-1999—EIA, *Quarterly Coal Report (QCR) October-December*, quarterly reports.

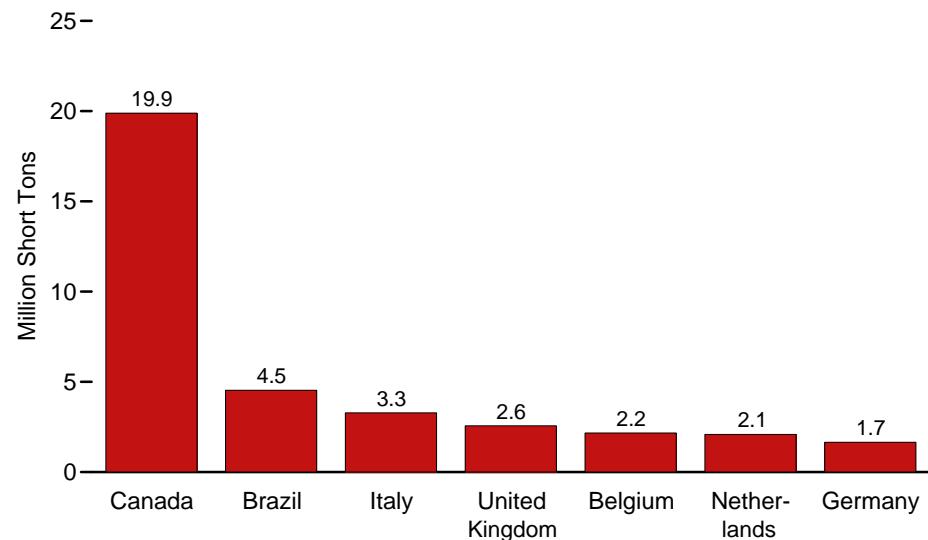
2000 forward—EIA, *QCR October-December 2006* (March 2007), Table 28.

**Figure 7.4 Coal Exports by Country of Destination**

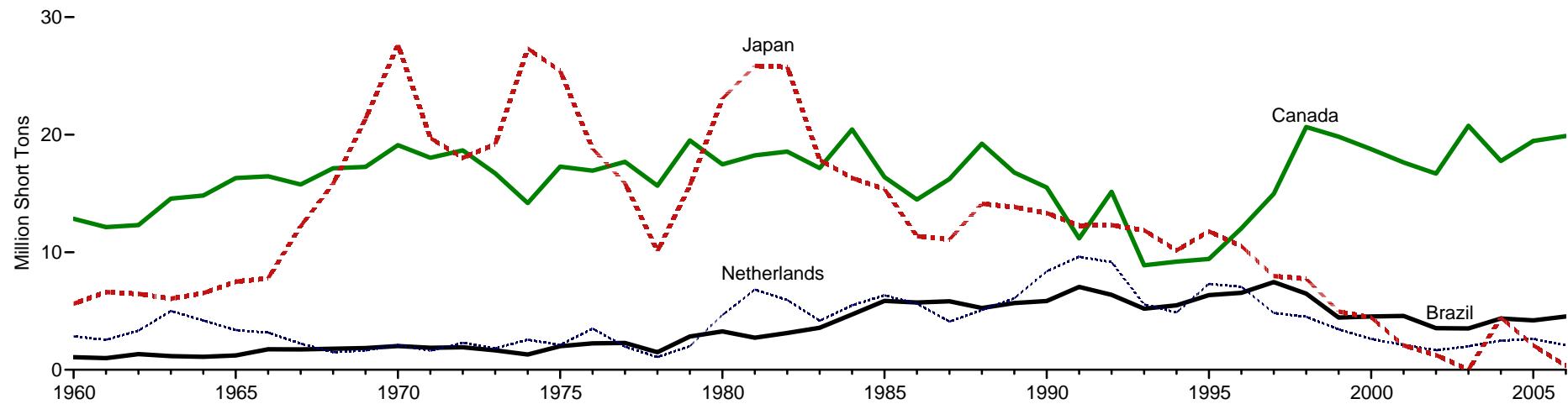
**Total and Europe, 1960-2006**



**By Selected Country, 2006**



**By Selected Country, 1960-2006**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 7.4.

**Table 7.4 Coal Exports by Country of Destination, 1960-2006**

(Million Short Tons)

Year	Canada	Brazil	Europe										Japan	Other	Total	
			Belgium <sup>1</sup>	Denmark	France	Germany <sup>2</sup>	Italy	Nether-lands	Spain	Turkey	United Kingdom	Other				
1960	12.8	1.1	1.1	0.1	0.8	4.6	4.9	2.8	0.3	NA	—	2.4	17.1	5.6	1.3	38.0
1961	12.1	1.0	1.0	.1	.7	4.3	4.8	2.6	.2	NA	—	2.0	15.7	6.6	1.0	36.4
1962	12.3	1.3	1.3	(s)	.9	5.1	6.0	3.3	.8	NA	(s)	1.8	19.1	6.5	1.0	40.2
1963	14.6	1.2	2.7	(s)	2.7	5.6	7.9	5.0	1.5	NA	—	2.4	27.7	6.1	.9	50.4
1964	14.8	1.1	2.3	(s)	2.2	5.2	8.1	4.2	1.4	NA	—	2.6	26.0	6.5	1.1	49.5
1965	16.3	1.2	2.2	(s)	2.1	4.7	9.0	3.4	1.4	NA	(s)	2.3	25.1	7.5	.9	51.0
1966	16.5	1.7	1.8	(s)	1.6	4.9	7.8	3.2	1.2	NA	(s)	2.5	23.1	7.8	1.0	50.1
1967	15.8	1.7	1.4	—	2.1	4.7	5.9	2.2	1.0	NA	—	2.1	19.4	12.2	1.0	50.1
1968	17.1	1.8	1.1	—	1.5	3.8	4.3	1.5	1.5	NA	—	1.9	15.5	15.8	.9	51.2
1969	17.3	1.8	.9	—	2.3	3.5	3.7	1.6	1.8	NA	—	1.3	15.2	21.4	1.2	56.9
1970	19.1	2.0	1.9	—	3.6	5.0	4.3	2.1	3.2	NA	(s)	1.8	21.8	27.6	1.2	71.7
1971	18.0	1.9	.8	—	3.2	2.9	2.7	1.6	2.6	NA	1.7	1.1	16.6	19.7	1.1	57.3
1972	18.7	1.9	1.1	—	1.7	2.4	3.7	2.3	2.1	NA	2.4	1.1	16.9	18.0	1.2	56.7
1973	16.7	1.6	1.2	—	2.0	1.6	3.3	1.8	2.2	NA	.9	1.3	14.4	19.2	1.6	53.6
1974	14.2	1.3	1.1	—	2.7	1.5	3.9	2.6	2.0	NA	1.4	.9	16.1	27.3	1.8	60.7
1975	17.3	2.0	.6	—	3.6	2.0	4.5	2.1	2.7	NA	1.9	1.6	19.0	25.4	2.6	66.3
1976	16.9	2.2	2.2	(s)	3.5	1.0	4.2	3.5	2.5	NA	.8	2.1	19.9	18.8	2.1	60.0
1977	17.7	2.3	1.5	.1	2.1	.9	4.1	2.0	1.6	NA	.6	2.1	15.0	15.9	3.5	54.3
1978	15.7	1.5	1.1	—	1.7	.6	3.2	1.1	.8	NA	.4	2.2	11.0	10.1	2.5	40.7
1979	19.5	2.8	3.2	.2	3.9	2.6	5.0	2.0	1.4	NA	1.4	4.4	23.9	15.7	4.1	66.0
1980	17.5	3.3	4.6	1.7	7.8	2.5	7.1	4.7	3.4	NA	4.1	6.0	41.9	23.1	6.0	91.7
1981	18.2	2.7	4.3	3.9	9.7	4.3	10.5	6.8	6.4	.6	2.3	R <sup>a</sup> 8.2	57.0	25.9	8.7	112.5
1982	18.6	3.1	4.8	2.8	9.0	2.3	11.3	5.9	5.6	1.6	2.0	R <sup>a</sup> 6.0	51.3	25.8	7.5	106.3
1983	17.2	3.6	2.5	1.7	4.2	1.5	8.1	4.2	3.3	1.6	1.2	R <sup>a</sup> 4.7	33.1	17.9	6.1	77.8
1984	20.4	4.7	3.9	.6	3.8	.9	7.6	5.5	2.3	1.5	2.9	R <sup>a</sup> 3.9	32.8	16.3	7.2	81.5
1985	16.4	5.9	4.4	2.2	4.5	1.1	10.3	6.3	3.5	2.2	2.7	R <sup>a</sup> 8.1	45.1	15.4	9.9	92.7
1986	14.5	5.7	4.4	2.1	5.4	.8	10.4	5.6	2.6	2.4	2.9	R <sup>a</sup> 5.9	42.6	11.4	11.4	85.5
1987	16.2	5.8	4.6	.9	2.9	.5	9.5	4.1	2.5	.8	2.6	R <sup>a</sup> 5.8	34.2	11.1	12.3	79.6
1988	19.2	5.3	6.5	2.8	4.3	.7	11.1	5.1	2.5	2.0	3.7	R <sup>a</sup> 6.4	45.1	14.1	11.3	95.0
1989	16.8	5.7	7.1	3.2	6.5	.7	11.2	6.1	3.3	1.7	4.5	R <sup>a</sup> 7.2	51.6	13.8	12.9	100.8
1990	15.5	5.8	8.5	3.2	6.9	1.1	11.9	8.4	3.8	2.1	5.2	R <sup>a</sup> 7.4	58.4	13.3	12.7	105.8
1991	11.2	7.1	7.5	4.7	9.5	1.7	11.3	9.6	4.7	2.2	6.2	R <sup>a</sup> 8.2	65.5	12.3	13.0	109.0
1992	15.1	6.4	7.2	3.8	8.1	1.0	9.3	9.1	4.5	2.0	5.6	R <sup>a</sup> 6.6	57.3	12.3	11.4	102.5
1993	8.9	5.2	5.2	.3	4.0	.5	6.9	5.6	4.1	1.6	4.1	R <sup>a</sup> 5.3	37.6	11.9	11.0	74.5
1994	9.2	5.5	4.9	.5	2.9	.3	7.5	4.9	4.1	1.3	3.4	R <sup>a</sup> 6.0	35.8	10.2	10.7	71.4
1995	9.4	6.4	4.5	2.1	3.7	2.0	9.1	7.3	4.7	2.0	4.7	R <sup>a</sup> 8.7	48.6	11.8	12.4	88.5
1996	12.0	6.5	4.6	1.3	3.9	1.1	9.2	7.1	4.1	2.2	6.2	R <sup>a</sup> 7.7	47.2	10.5	14.2	90.5
1997	15.0	7.5	4.3	.4	3.4	.9	7.0	4.8	4.1	2.1	7.2	R <sup>a</sup> 7.1	41.3	8.0	11.8	83.5
1998	20.7	6.5	3.2	.3	3.2	1.2	5.3	4.5	3.2	1.6	5.9	R <sup>a</sup> 5.3	33.8	7.7	9.4	78.0
1999	19.8	4.4	2.1	—	2.5	.6	4.0	3.4	2.5	.8	3.2	R <sup>a</sup> 3.5	22.5	5.0	6.7	58.5
2000	18.8	4.5	2.9	.1	3.0	1.0	3.7	2.6	2.7	1.8	3.3	R <sup>a</sup> 3.9	25.0	4.4	5.8	58.5
2001	17.6	4.6	2.8	—	2.2	.9	5.4	2.1	1.6	.9	2.5	R <sup>a</sup> 2.4	20.8	2.1	3.6	48.7
2002	16.7	3.5	2.4	—	1.3	1.0	3.1	1.7	1.9	.6	1.9	R <sup>a</sup> 1.8	15.6	1.3	2.6	39.6
2003	20.8	3.5	1.8	.3	1.3	.5	2.8	2.0	1.8	1.1	1.5	R <sup>a</sup> 2.1	15.1	(s)	3.6	43.0
2004	17.8	4.4	1.7	.1	1.1	.6	2.1	2.5	1.5	1.3	2.0	R <sup>a</sup> 2.3	15.2	4.4	6.2	48.0
2005	19.5	4.2	2.1	.1	1.3	.7	2.5	2.6	1.9	1.9	1.8	R <sup>a</sup> 4.1	18.8	2.1	5.4	49.9
2006 <sup>p</sup>	19.9	4.5	2.2	.4	1.6	1.7	3.3	2.1	1.6	1.2	2.6	4.2	20.8	.3	4.1	49.6

<sup>1</sup> Through 1999, includes Luxembourg.

<sup>2</sup> Through 1990, data for Germany are for the former West Germany only. Beginning in 1991, data for Germany are for the unified Germany, i.e., the former East Germany and West Germany.

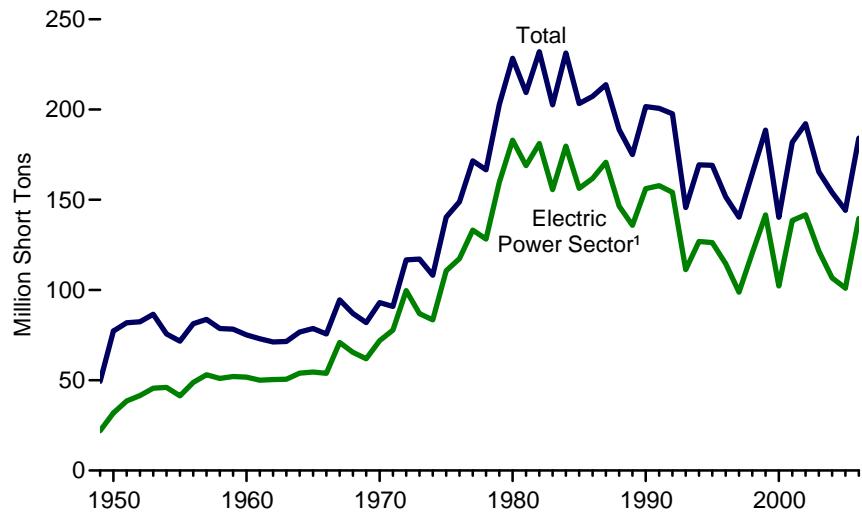
P=Preliminary. NA = Not Available. — = No data reported. (s)=Less than 0.05 million short tons.

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

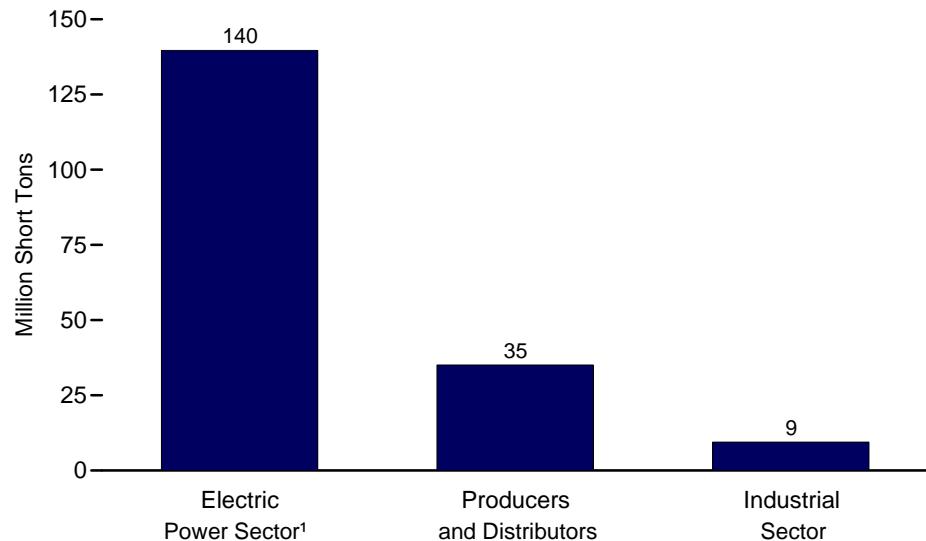
Sources: • 1960-1988—U.S. Department of Commerce, Bureau of the Census. *U.S. Exports by Schedule B Commodities, EM 522*. • 1989-2000—Energy Information Administration (EIA), *Coal Industry Annual*, annual reports. • 2001 forward—EIA, *Quarterly Coal Report October-December*, quarterly reports.

**Figure 7.5 Coal Stocks**

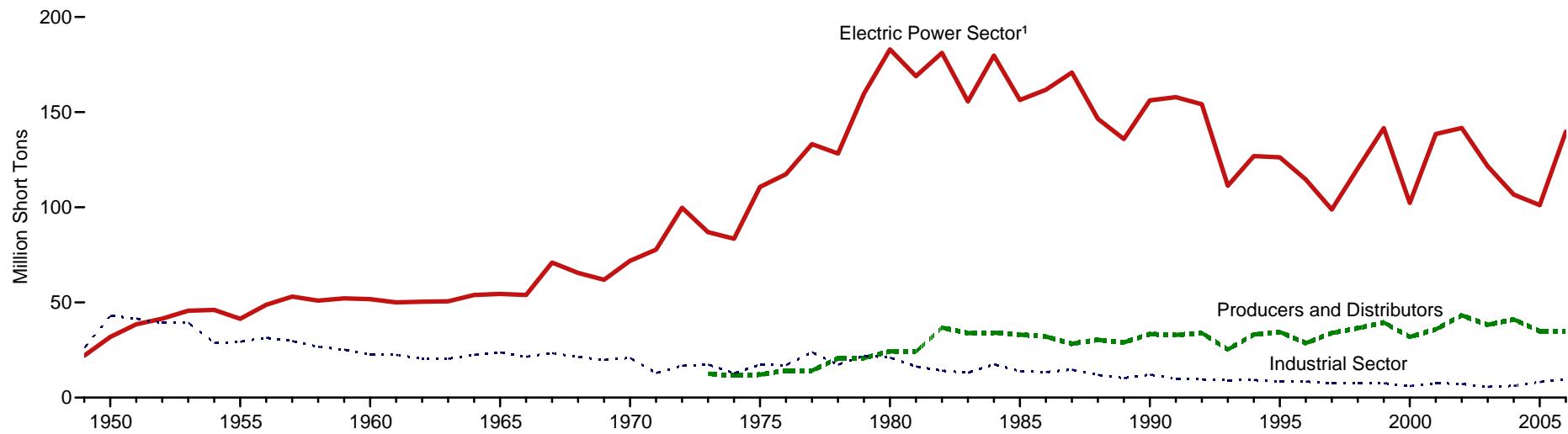
**Total and Electric Power Sector Stocks, 1949-2006**



**By Holding Entity, 2006**



**By Holding Entity, 1949-2006**



<sup>1</sup> Electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public.

Notes: • Stocks are at end of year. • Because vertical scales differ, graphs should not be compared.

Source: Table 7.5.

**Table 7.5 Coal Stocks by Sector, Selected Years, 1949-2006**  
 (Million Short Tons)

Year	Producers and Distributors	Consumers							Total	
		Residential and Commercial Sectors	Industrial Sector			Transportation Sector	Electric Power Sector <sup>2</sup>	Total		
			Coke Plants	Other <sup>1</sup>	Total					
1949	NA	1.4	10.0	16.1	26.0	( <sup>3</sup> )	22.1	49.5	49.5	
1950	NA	2.5	16.8	26.2	43.0	( <sup>3</sup> )	31.8	77.3	77.3	
1955	NA	1.0	13.4	15.9	29.3	( <sup>3</sup> )	41.4	71.7	71.7	
1960	NA	.7	11.1	11.6	22.8	( <sup>3</sup> )	51.7	75.2	75.2	
1965	NA	.4	10.6	13.1	23.8	( <sup>3</sup> )	54.5	78.6	78.6	
1970	NA	.3	9.0	11.8	20.8	( <sup>3</sup> )	71.9	93.0	93.0	
1971	NA	.3	7.3	5.6	12.9	( <sup>3</sup> )	77.8	91.0	91.0	
1972	NA	.3	9.1	7.6	16.7	( <sup>3</sup> )	99.7	116.8	116.8	
1973	12.5	.3	7.0	10.4	17.4	( <sup>3</sup> )	87.0	104.6	117.2	
1974	11.6	.3	6.2	6.6	12.8	( <sup>3</sup> )	83.5	96.6	108.2	
1975	12.1	.2	8.8	8.5	17.3	( <sup>3</sup> )	110.7	128.3	140.4	
1976	14.2	.2	9.9	7.1	17.0	( <sup>3</sup> )	117.4	134.7	148.9	
1977	14.2	.2	12.8	11.1	23.9	( <sup>3</sup> )	133.2	157.3	171.5	
1978	20.7	.4	8.3	9.0	17.3	NA	128.2	145.9	166.6	
1979	20.8	.3	10.2	11.8	21.9	NA	159.7	182.0	202.8	
1980	24.4	NA	9.1	12.0	21.0	NA	183.0	204.0	228.4	
1981	24.1	NA	6.5	9.9	16.4	NA	168.9	185.3	209.4	
1982	36.8	NA	4.6	9.5	14.1	NA	181.1	195.3	232.0	
1983	33.9	NA	4.3	8.7	13.1	NA	155.6	168.7	202.6	
1984	34.1	NA	6.2	11.3	17.5	NA	179.7	197.2	231.3	
1985	33.1	NA	3.4	10.4	13.9	NA	156.4	170.2	203.4	
1986	32.1	NA	3.0	10.4	13.4	NA	161.8	175.2	207.3	
1987	28.3	NA	3.9	10.8	14.7	NA	170.8	185.5	213.8	
1988	30.4	NA	3.1	8.8	11.9	NA	146.5	158.4	188.8	
1989	29.0	NA	2.9	7.4	10.2	NA	135.9	146.1	175.1	
1990	33.4	NA	3.3	8.7	12.0	NA	156.2	168.2	201.6	
1991	33.0	NA	2.8	7.1	9.8	NA	157.9	167.7	200.7	
1992	34.0	NA	2.6	7.0	9.6	NA	154.1	163.7	197.7	
1993	25.3	NA	2.4	6.7	9.1	NA	111.3	120.5	145.7	
1994	33.2	NA	2.7	6.6	9.2	NA	126.9	136.1	169.4	
1995	34.4	NA	2.6	5.7	8.3	NA	126.3	134.6	169.1	
1996	28.6	NA	2.7	5.7	8.4	NA	114.6	123.0	151.6	
1997	34.0	NA	2.0	5.6	7.6	NA	98.8	106.4	140.4	
1998	36.5	NA	2.0	5.5	7.6	NA	120.5	128.1	164.6	
1999	39.5	NA	1.9	5.6	7.5	NA	141.6	149.1	188.6	
2000	31.9	NA	1.5	4.6	6.1	NA	102.3	108.4	140.3	
2001	35.9	NA	1.5	6.0	7.5	NA	138.5	146.0	181.9	
2002	43.3	NA	1.4	5.8	7.2	NA	141.7	148.9	192.1	
2003	38.3	NA	.9	4.7	5.6	NA	121.6	127.2	165.5	
2004	41.2	NA	1.3	4.8	6.2	NA	106.7	112.9	154.0	
2005	R35.0	NA	2.6	5.6	8.2	NA	R101.1	R109.3	R144.3	
2006 <sup>P</sup>	E35.1	NA	2.9	6.5	9.4	NA	139.7	149.1	184.2	

<sup>1</sup> Through 1977, data are for stocks held by the manufacturing and transportation sectors. Beginning in 1978, data are for stocks held at manufacturing plants only.

<sup>2</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1998, data are for electric utilities only; beginning in 1999, data are for electric utilities and independent power producers.

<sup>3</sup> Included in "Industrial Sector Other."

R=Revised. P=Preliminary. E=Estimate. NA=Not available.

Notes: • Stocks are at end of year. • Totals may not equal sum of components due to independent rounding.

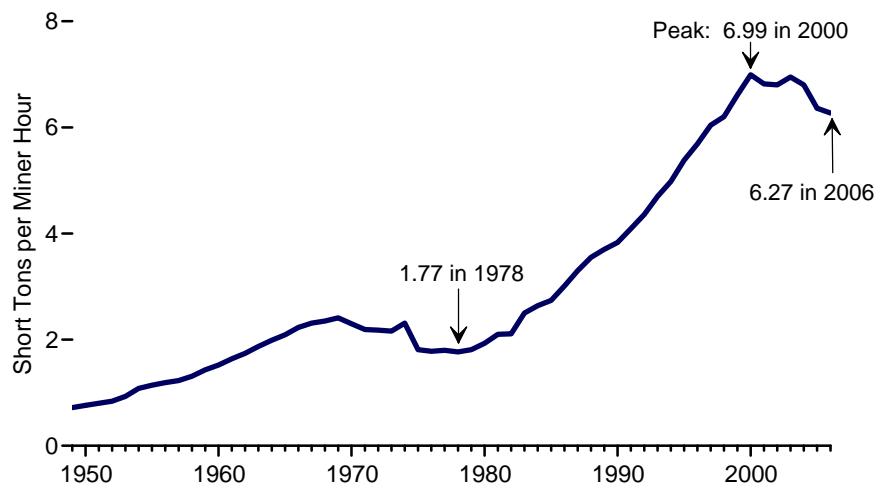
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

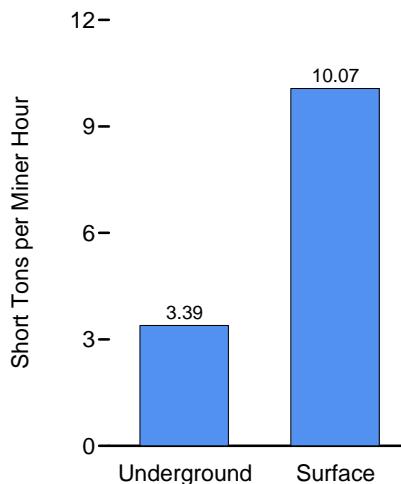
Sources: **Electric Power Sector:** Table 8.8. **All Other Data:** • 1949-1975—Bureau of Mines, *Minerals Yearbook*, "Coal—Bituminous and Lignite" and "Coal—Pennsylvania Anthracite" chapters. • 1976—Energy Information Administration (EIA), Energy Data Reports, *Coal—Bituminous and Lignite in 1976* and *Coal—Pennsylvania Anthracite 1976*. • 1977 and 1978—EIA, Energy Data Reports, *Coal—Pennsylvania Anthracite 1977*; 1978, and *Weekly Coal Report*. • 1979—EIA, Energy Data Report, *Weekly Coal Report*. • 1980-1999—EIA, *Quarterly Coal Report (QCR) October-December*, quarterly reports. • 2000 forward—EIA, *QCR October-December 2006* (March 2007), Table 32.

**Figure 7.6 Coal Mining Productivity**

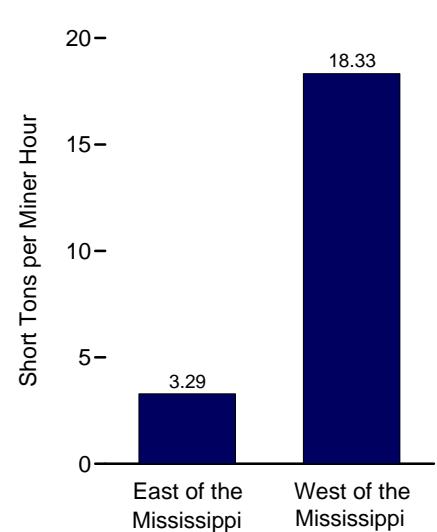
**Total, 1949-2006**



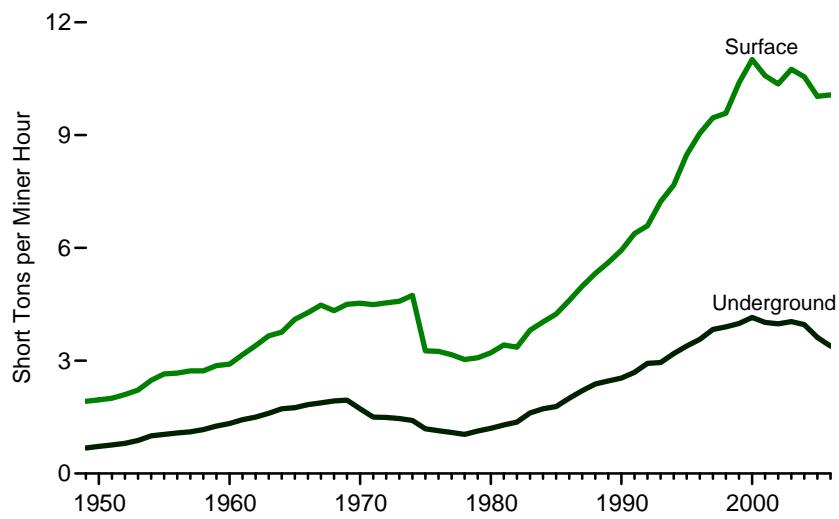
**Mining Methods, 2006**



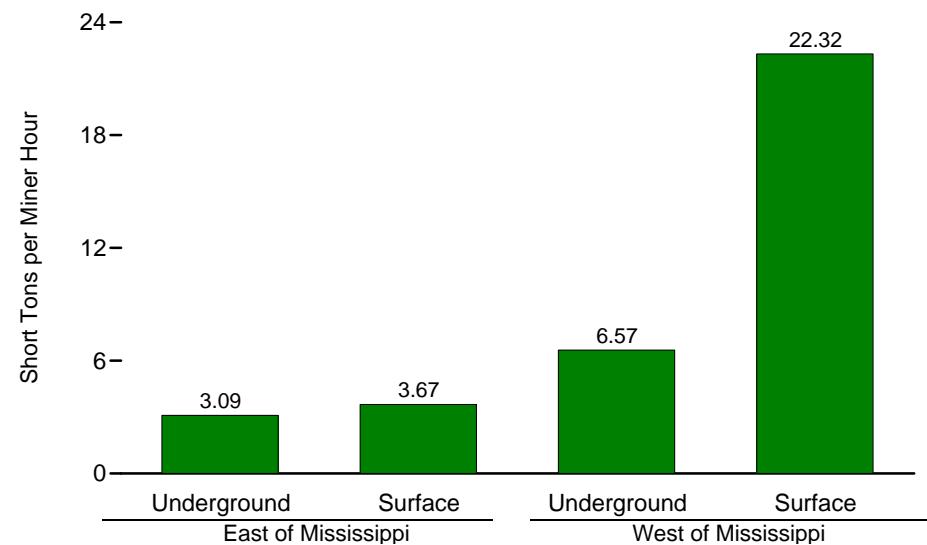
**Location, 2006**



**Mining Method,<sup>1</sup> 1949-2006**



**By Region and Mining Method, 2006**



<sup>1</sup> For 1979 forward, includes all coal; prior to 1979, excludes anthracite.

Notes: • Beginning in 2001, surface mining includes a small amount of refuse recovery.

• Because vertical scales differ, graphs should not be compared.

Source: Table 7.6.

**Table 7.6 Coal Mining Productivity, Selected Years, 1949-2006**

(Short Tons per Miner Hour<sup>1</sup>)

Year	Mining Method		Location						Total <sup>2</sup>	
	Underground	Surface <sup>2</sup>	East of the Mississippi			West of the Mississippi				
			Underground	Surface <sup>2</sup>	Total <sup>2</sup>	Underground	Surface <sup>2</sup>	Total <sup>2</sup>		
1949	30.68	31.92	NA	NA	NA	NA	NA	NA	0.72	
1950	3.72	31.96	NA	NA	NA	NA	NA	NA	.76	
1955	31.04	32.65	NA	NA	NA	NA	NA	NA	1.14	
1960	31.33	32.91	NA	NA	NA	NA	NA	NA	1.52	
1965	31.75	34.10	NA	NA	NA	NA	NA	NA	2.09	
1970	31.72	34.53	NA	NA	NA	NA	NA	NA	2.30	
1971	31.50	34.49	NA	NA	NA	NA	NA	NA	2.19	
1972	31.49	34.54	NA	NA	NA	NA	NA	NA	2.18	
1973	31.46	34.58	NA	NA	NA	NA	NA	NA	2.16	
1974	31.41	34.74	NA	NA	NA	NA	NA	NA	2.31	
1975	31.19	33.26	NA	NA	NA	NA	NA	NA	1.81	
1976	31.14	33.25	NA	NA	NA	NA	NA	NA	1.78	
1977	31.09	33.16	NA	NA	NA	NA	NA	NA	1.80	
1978	31.04	33.03	NA	NA	NA	NA	NA	NA	1.77	
1979	1.13	3.08	NA	NA	NA	NA	NA	NA	1.81	
1980	1.20	3.21	NA	NA	NA	NA	NA	NA	1.93	
1981	1.29	3.42	NA	NA	NA	NA	NA	NA	2.10	
1982	1.37	3.36	NA	NA	NA	NA	NA	NA	2.11	
1983	1.61	3.81	NA	NA	NA	NA	NA	NA	2.50	
1984	1.72	4.03	1.69	2.56	1.98	2.49	8.15	7.07	2.64	
1985	1.78	4.24	1.75	2.52	2.00	2.45	8.61	7.40	2.74	
1986	2.00	4.60	1.96	2.75	2.21	2.80	9.02	7.90	3.01	
1987	2.20	4.98	2.16	2.97	2.42	3.39	9.86	8.73	3.30	
1988	2.38	5.32	2.32	2.99	2.54	3.55	10.73	9.38	3.55	
1989	2.46	5.61	2.39	3.13	2.63	3.92	11.86	10.21	3.70	
1990	2.54	5.94	2.46	3.32	2.73	4.01	12.26	10.41	3.83	
1991	2.69	6.38	2.59	3.49	2.86	4.53	12.36	10.79	4.09	
1992	2.93	6.59	2.82	3.61	3.07	4.85	12.49	11.03	4.36	
1993	2.95	7.23	2.81	3.74	3.11	5.18	13.94	12.14	4.70	
1994	3.19	7.67	3.02	3.85	3.28	5.93	15.19	13.22	4.98	
1995	3.39	8.48	3.19	4.03	3.45	6.32	16.23	14.18	5.38	
1996	3.57	9.05	3.36	4.25	3.63	7.03	17.89	15.66	5.69	
1997	3.83	9.46	3.63	4.49	3.89	6.82	18.63	16.04	6.04	
1998	3.90	9.58	3.69	4.31	3.89	6.76	18.82	16.27	6.20	
1999	3.99	10.39	3.74	4.48	3.97	7.45	19.57	17.18	6.61	
2000	4.15	11.01	3.89	4.82	4.18	7.66	20.04	17.62	6.99	
2001	4.02	<sup>2</sup> 10.58	3.71	<sup>2</sup> 4.53	<sup>2</sup> 3.98	8.39	<sup>2</sup> 20.63	<sup>2</sup> 18.32	<sup>2</sup> 6.82	
2002	3.98	10.36	3.67	4.22	3.86	7.80	20.67	18.06	6.80	
2003	4.04	10.75	3.68	4.18	3.85	8.33	21.42	18.67	6.95	
2004	3.96	10.55	3.59	3.95	3.72	8.22	22.04	19.00	6.80	
2005	3.62	10.03	3.28	R3.75	3.44	R7.48	21.98	R18.50	R6.36	
2006 <sup>P</sup>	3.39	10.07	3.09	3.67	3.29	6.57	22.32	18.33	6.27	

<sup>1</sup> Data through 1973 for bituminous coal, subbituminous coal, and lignite mines, and data through 1978 for anthracite mines, were originally reported in short tons per miner day. The data were converted to short tons per miner hour by assuming an eight-hour day. All remaining data were calculated by dividing total production by total labor hours worked by all mine employees except office workers.

<sup>2</sup> Beginning in 2001, includes a small amount of refuse recovery.

<sup>3</sup> Anthracite mining productivity is unavailable by underground and surface but is included in "Total."

R=Revised. P=Preliminary. NA=Not available.

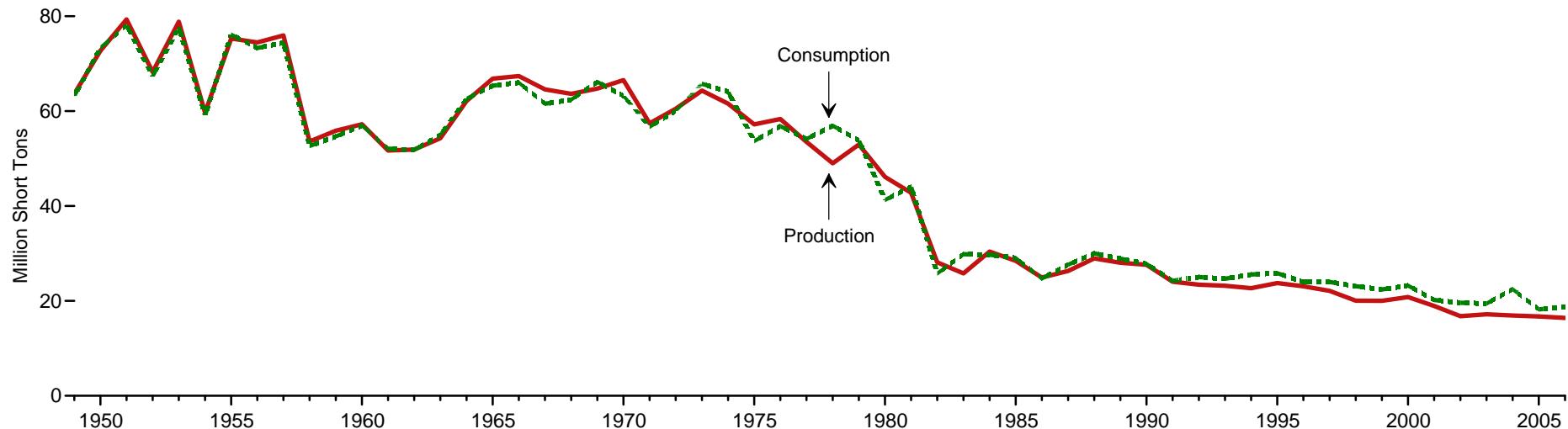
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

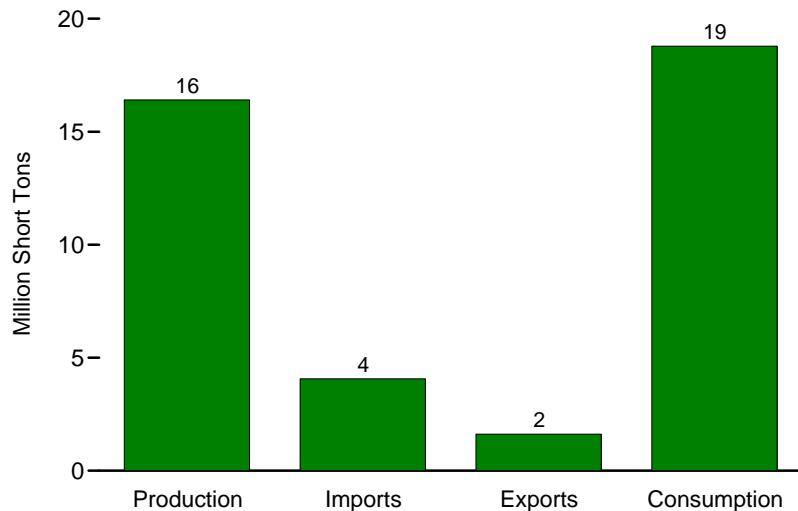
Sources: • 1949-1975—Bureau of Mines, *Minerals Yearbook*, "Coal—Bituminous and Lignite" and "Coal—Pennsylvania Anthracite" chapters. • 1976—Energy Information Administration (EIA), Energy Data Reports, *Coal—Bituminous and Lignite* in 1976 and *Coal—Pennsylvania Anthracite* 1976. • 1977 and 1978—EIA, Energy Data Reports, *Bituminous Coal and Lignite Production and Mine Operations*—1977; 1978 and *Coal—Pennsylvania Anthracite* 1977; 1978. • 1979—EIA, Energy Data Report, *Coal Production*—1979. • 1980-1988—EIA, *Coal Production*, annual reports. • 1989-2000—EIA, *Coal Industry Annual*, annual reports. • 2001-2005—EIA, *Annual Coal Report*, annual reports. • 2006—EIA, Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

**Figure 7.7 Coke Overview**

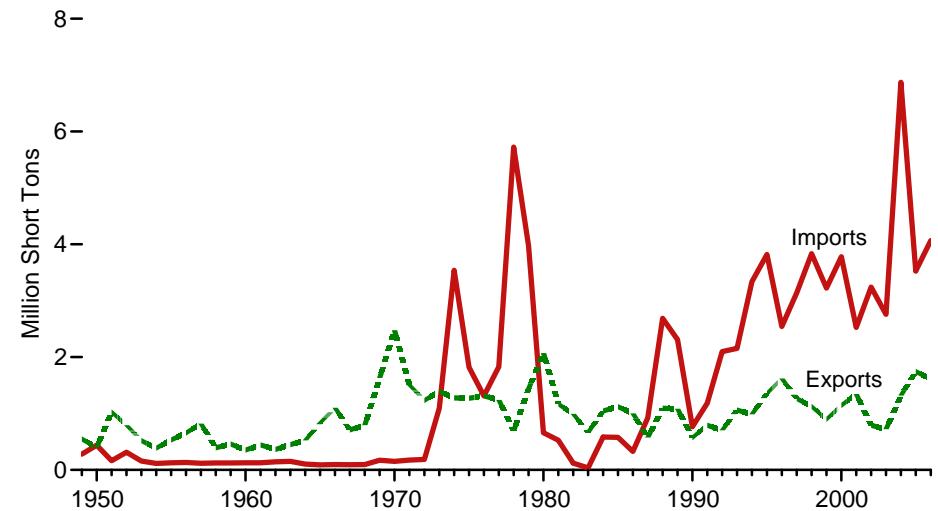
**Production and Consumption, 1949-2006**



**Overview, 2006**



**Trade, 1949-2006**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 7.7.

**Table 7.7 Coke Overview, Selected Years, 1949-2006**  
 (Million Short Tons)

Year	Production	Trade			Stock Change <sup>2</sup>	Consumption <sup>3</sup>
		Imports	Exports	Net Imports <sup>1</sup>		
1949	63.6	0.3	0.5	-0.3	0.2	63.2
1950	72.7	.4	.4	(s)	-.7	73.4
1955	75.3	.1	.5	-.4	-1.2	76.1
1960	57.2	.1	.4	-.2	.1	56.9
1965	66.9	.1	.8	-.7	.7	65.4
1970	66.5	.2	2.5	-2.3	1.0	63.2
1971	57.4	.2	1.5	-1.3	-.6	56.7
1972	60.5	.2	1.2	-1.0	-.6	60.0
1973	64.3	1.1	1.4	-.3	-1.7	65.8
1974	61.6	3.5	1.3	2.3	-.2	64.1
1975	57.2	1.8	1.3	.5	4.1	53.7
1976	58.3	1.3	1.3	(s)	1.5	56.8
1977	53.5	1.8	1.2	.6	(s)	54.1
1978	49.0	5.7	.7	5.0	-2.9	56.9
1979	52.9	4.0	1.4	2.5	1.7	53.8
1980	46.1	.7	2.1	-1.4	3.4	41.3
1981	42.8	.5	1.2	-.6	-1.9	44.0
1982	28.1	.1	1.0	-.9	1.5	25.8
1983	25.8	(s)	.7	-.6	-4.7	29.9
1984	30.4	.6	1.0	-.5	.2	29.7
1985	28.4	.6	1.1	-.5	-1.2	29.1
1986	24.9	.3	1.0	-.7	-.5	24.7
1987	26.3	.9	.6	.3	-1.0	27.7
1988	28.9	2.7	1.1	1.6	.5	30.0
1989	28.0	2.3	1.1	1.2	.3	28.9
1990	27.6	.8	.6	.2	(s)	27.8
1991	24.0	1.2	.8	.4	.2	24.2
1992	23.4	2.1	.7	1.4	-.2	25.0
1993	23.2	2.2	1.1	1.1	-.4	24.7
1994	22.7	3.3	1.0	2.4	-.5	25.6
1995	23.7	3.8	1.4	2.5	.4	25.8
1996	23.1	2.5	1.6	.9	(s)	24.0
1997	22.1	3.1	1.3	1.9	(s)	24.0
1998	20.0	3.8	1.1	2.7	-.4	23.1
1999	20.0	3.2	.9	2.3	-.1	22.4
2000	20.8	3.8	1.1	2.6	.2	23.2
2001	18.9	2.5	1.3	1.2	-.1	20.2
2002	16.8	3.2	.8	2.5	-.4	19.6
2003	17.2	2.8	.7	2.0	-.2	19.4
2004	16.9	6.9	1.3	5.6	(s)	22.5
2005	16.7	3.5	1.7	1.8	.3	18.2
2006 <sup>P</sup>	16.4	4.1	1.6	2.5	.1	18.8

<sup>1</sup> Net imports equal imports minus exports. Minus sign indicates exports are greater than imports.

<sup>2</sup> Producer and distributor stocks at end of year. A negative value indicates a decrease in stocks; a positive value indicates an increase.

<sup>3</sup> "Consumption" is calculated as the sum of production and imports minus exports and stock change.

P=Preliminary. (s)=Less than 0.05 million short tons.

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

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

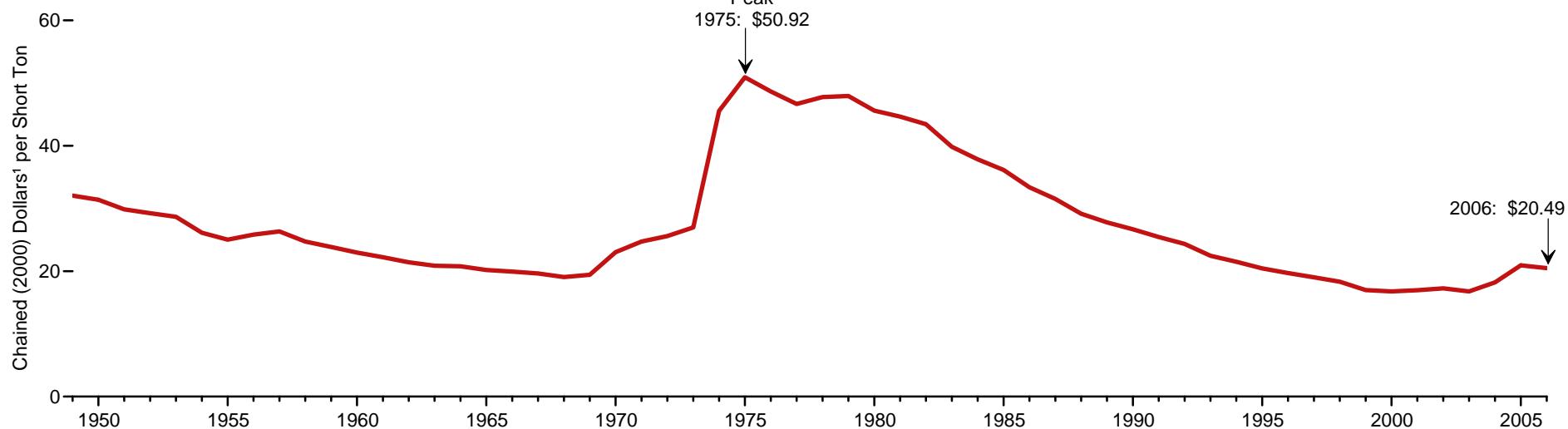
Sources: • 1949-1975—Bureau of Mines, *Minerals Yearbook*, "Coke and Coal Chemicals" chapter.

• 1976-1980—Energy Information Administration (EIA), Energy Data Report, *Coke and Coal Chemicals*, annual reports. • 1981-1999—EIA, *Quarterly Coal Report (QCR) October-December*, quarterly reports.

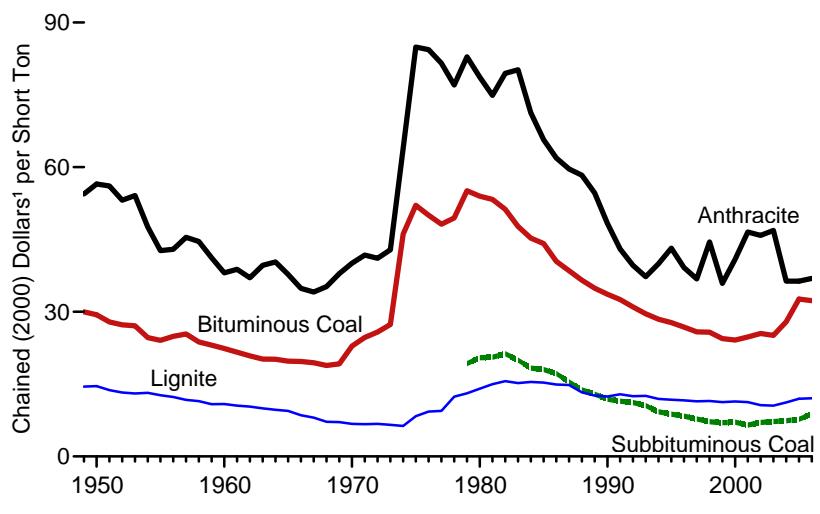
• 2000 forward—EIA, *QCR October-December 2006* (March 2007), Table 2.

**Figure 7.8 Coal Prices**

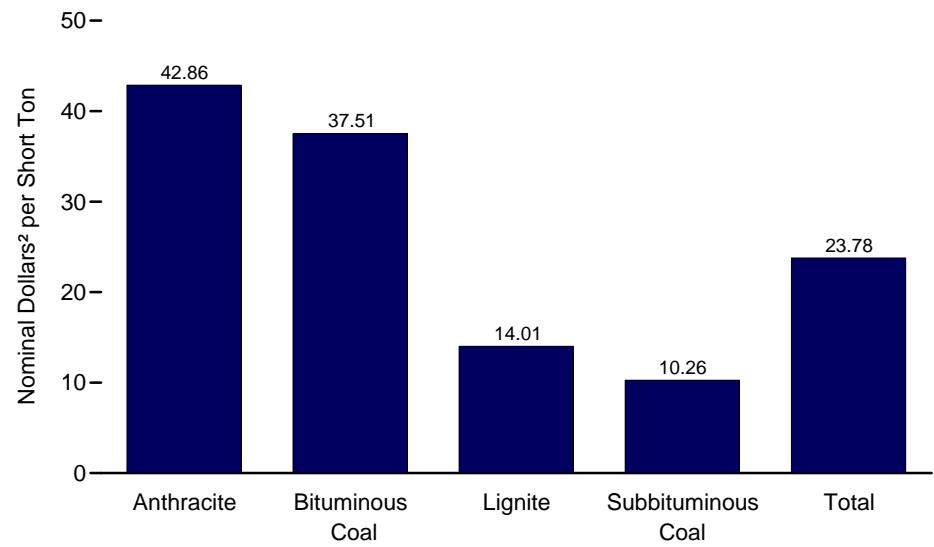
**Total, 1949-2006**



**By Type, 1949-2006**



**By Type, 2006**



<sup>1</sup> Calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 7.8.

**Table 7.8 Coal Prices, Selected Years, 1949-2006**

(Dollars per Short Ton)

Year	Bituminous Coal		Subbituminous Coal		Lignite <sup>1</sup>		Anthracite		Total	
	Nominal <sup>2</sup>	Real <sup>3</sup>								
1949	4.90	29.97	( <sup>4</sup> )	( <sup>4</sup> )	2.37	14.49	8.90	54.43	5.24	32.05
1950	4.86	29.40	( <sup>4</sup> )	( <sup>4</sup> )	2.41	14.58	9.34	56.50	5.19	31.40
1955	4.51	24.06	( <sup>4</sup> )	( <sup>4</sup> )	2.38	12.70	8.00	42.68	4.69	25.02
1960	4.71	22.38	( <sup>4</sup> )	( <sup>4</sup> )	2.29	10.88	8.01	38.07	4.83	22.96
1965	4.45	19.75	( <sup>4</sup> )	( <sup>4</sup> )	2.13	9.45	8.51	37.76	4.55	20.19
1970	6.30	22.88	( <sup>4</sup> )	( <sup>4</sup> )	1.86	6.76	11.03	40.06	6.34	23.03
1971	7.13	24.66	( <sup>4</sup> )	( <sup>4</sup> )	1.93	6.68	12.08	41.78	7.15	24.73
1972	7.78	25.79	( <sup>4</sup> )	( <sup>4</sup> )	2.04	6.76	12.40	41.11	7.72	25.59
1973	8.71	27.35	( <sup>4</sup> )	( <sup>4</sup> )	2.09	6.56	13.65	42.86	8.59	26.97
1974	16.01	46.11	( <sup>4</sup> )	( <sup>4</sup> )	2.19	6.31	22.19	63.90	15.82	45.56
1975	19.79	52.08	( <sup>4</sup> )	( <sup>4</sup> )	3.17	8.34	32.26	84.89	19.35	50.92
1976	20.11	50.03	( <sup>4</sup> )	( <sup>4</sup> )	3.74	9.30	33.92	84.39	19.56	48.66
1977	20.59	48.16	( <sup>4</sup> )	( <sup>4</sup> )	4.03	9.43	34.86	81.54	19.95	46.66
1978	22.64	49.48	( <sup>4</sup> )	( <sup>4</sup> )	5.68	12.41	35.25	77.04	21.86	47.77
1979	27.31	55.12	9.55	19.27	6.48	13.08	41.06	82.87	23.75	47.93
1980	29.17	53.98	11.08	20.50	7.60	14.06	42.51	78.66	24.65	45.61
1981	31.51	53.30	12.18	20.60	8.85	14.97	44.28	74.90	26.40	44.66
1982	32.15	51.25	13.37	21.31	9.79	15.61	49.85	79.47	27.25	43.44
1983	31.11	47.71	13.03	19.98	9.91	15.20	52.29	80.19	25.98	39.84
1984	30.63	45.27	12.41	18.34	10.45	15.45	48.22	71.27	25.61	37.85
1985	30.78	44.15	12.57	18.03	10.68	15.32	45.80	65.70	25.20	36.15
1986	28.84	40.48	12.26	17.21	10.64	14.93	44.12	61.92	23.79	33.39
1987	28.19	38.51	11.32	15.47	10.85	14.82	43.65	59.63	23.07	31.52
1988	27.66	36.54	10.45	13.81	10.06	13.29	44.16	58.34	22.07	29.16
1989	27.40	34.88	10.16	12.93	9.91	12.62	42.93	54.65	21.82	27.78
1990	27.43	33.62	9.70	11.89	10.13	12.42	39.40	48.29	21.76	26.67
1991	27.49	32.55	9.68	11.46	10.89	12.90	36.34	43.03	21.49	25.45
1992	26.78	31.00	9.68	11.21	10.81	12.51	34.24	39.64	21.03	24.34
1993	26.15	29.59	9.33	10.56	11.11	12.57	32.94	37.27	19.85	22.46
1994	25.68	28.45	8.37	9.27	10.77	11.93	36.07	39.96	19.41	21.50
1995	25.56	27.75	8.10	8.79	10.83	11.76	39.78	43.19	18.83	20.44
1996	25.17	26.82	7.87	8.39	10.92	11.64	36.78	39.19	18.50	19.71
1997	24.64	25.82	7.42	7.78	10.91	11.43	35.12	36.81	18.14	19.01
1998	24.87	25.78	6.96	7.21	11.08	11.49	42.91	44.48	17.67	18.32
1999	23.92	24.44	6.87	7.02	11.04	11.28	35.13	35.90	16.63	16.99
2000	24.15	24.15	7.12	7.12	11.41	11.41	40.90	40.90	16.78	16.78
2001	25.36	24.77	6.67	6.51	11.52	11.25	47.67	46.55	17.38	16.97
2002	26.57	25.50	7.34	7.05	11.07	10.63	47.78	45.86	17.98	17.26
2003	26.73	R25.12	7.73	R7.26	11.20	R10.53	49.87	R46.87	17.85	R16.78
2004	30.56	R27.93	8.12	R7.42	12.27	R11.21	39.77	R36.34	19.93	R18.21
2005	R36.80	R32.64	R8.68	R7.70	13.49	R11.97	R41.00	R36.37	R23.59	R20.92
2006 <sup>E</sup>	37.51	32.32	10.26	8.84	14.01	12.07	42.86	36.93	23.78	20.49

<sup>1</sup> Because of withholding to protect company confidentiality, lignite prices exclude Texas for 1955-1977 and Montana for 1974-1978. As a result, lignite prices for 1974-1977 are for North Dakota only.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

<sup>4</sup> Through 1978, subbituminous coal is included in "Bituminous Coal."

R=Revised. E=Estimate.

Note: Prices are free-on-board (F.O.B.) rail/barge prices, which are the F.O.B. prices of coal at the point of first sale, excluding freight or shipping and insurance costs. See "Free on Board (F.O.B.)" in Glossary.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/coal.html>.

• For related information, see <http://www.eia.doe.gov/fuelcoal.html>.

Sources: • 1949-1975—Bureau of Mines (BOM), *Minerals Yearbook*. • 1976—Energy Information Administration (EIA), Energy Data Report, *Coal—Bituminous and Lignite in 1976*, and BOM, *Minerals Yearbook*. • 1977 and 1978—EIA, Energy Data Reports, *Bituminous Coal and Lignite Production and Mine Operations*, and *Coal—Pennsylvania Anthracite*. • 1979—EIA, *Coal Production*, and Energy Data Report, *Coal—Pennsylvania Anthracite*. • 1980-1992—EIA, *Coal Production*, annual reports. • 1993-2000—EIA, *Coal Industry Annual*, annual reports and unpublished revisions. • 2001-2005—EIA, *Annual Coal Report*, annual reports. • 2006—EIA, Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

## Coal

**Note 1. Coal Consumption.** Data in this report on the consumption of bituminous coal, subbituminous coal, lignite, anthracite, and waste coal are developed primarily from consumption data reported in surveys. Included are data reported by all electric power companies and coke plant companies. Data on coal consumption by all industrial and manufacturing establishments are based on consumption data obtained quarterly from coal users. Data on coal consumption by the residential and commercial sectors are based on distribution data obtained annually from coal distributors. Included in each sector's data are the following: Residential and Commercial Sectors—retail dealer sales to households and small commercial establishments; Industrial Sector—consumption at manufacturing plants, large commercial establishments, coking plants, and by agriculture, mining (other than coal mining), and construction industries; Transportation Sector—sales to railroads and for vessel bunkering; Electric Power Sector (electric utilities and independent power producers)—consumption for electricity generation and useful thermal output at electricity-only and CHP plants within the North American Industry Classification System (NAICS) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

**Note 2. Residential and Commercial Coal Consumption Estimates.** Coal consumption by the residential and commercial sectors is reported to the Energy Information Administration (EIA) for the two sectors combined; EIA estimates the amount consumed by the sectors individually. Previously, the breakdown was 40 percent residential and 60 percent commercial for each year. The current method results in variation over time. Beginning in 1949, a larger portion of the coal, 45 percent, is assigned to the residential sector; the share falls gradually over time and has been 11 percent since 2000. To create the estimate, it is first assumed that an occupied coal-heated housing unit consumes fuel at the same Btu rate as an oil-heated housing unit. Then, for the years in which data are available on the number of occupied housing units by heating source (1950, 1960, 1970, 1973–1981, and subsequent odd-numbered years (Table 2.7)), residential use of coal is estimated by the following steps: a ratio is created of the number of occupied housing units heated by coal to the number of housing units heated by oil; the ratio is multiplied by the Btu quantity of oil used by the residential sector to estimate the Btu quantity of coal used by the residential sector; and the residential sector's share of residential and commercial use is calculated. The 1950 share is applied to 1949, and the other missing years' shares are interpolated.

# 8

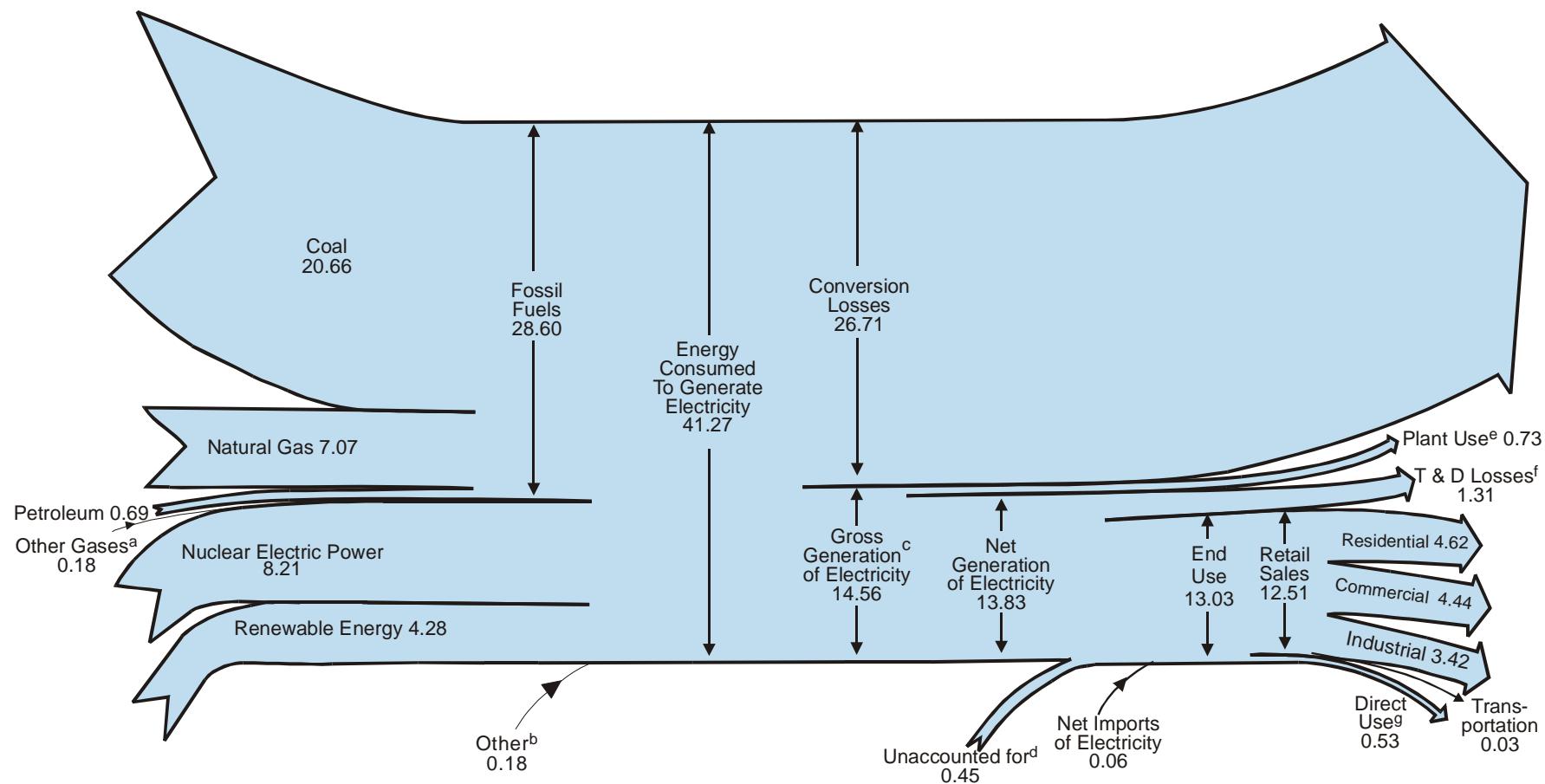
# Electricity



High-tension power lines and towers. Source: U.S. Department of Energy.



**Diagram 5. Electricity Flow, 2006**  
 (Quadrillion Btu)



<sup>a</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>b</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>c</sup> Estimated as net generation divided by 0.95.

<sup>d</sup> Data collection frame differences and nonsampling error.

<sup>e</sup> Electric energy used in the operation of power plants, estimated as 5 percent of gross generation.

<sup>f</sup> Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer) are estimated as 9 percent of gross generation.

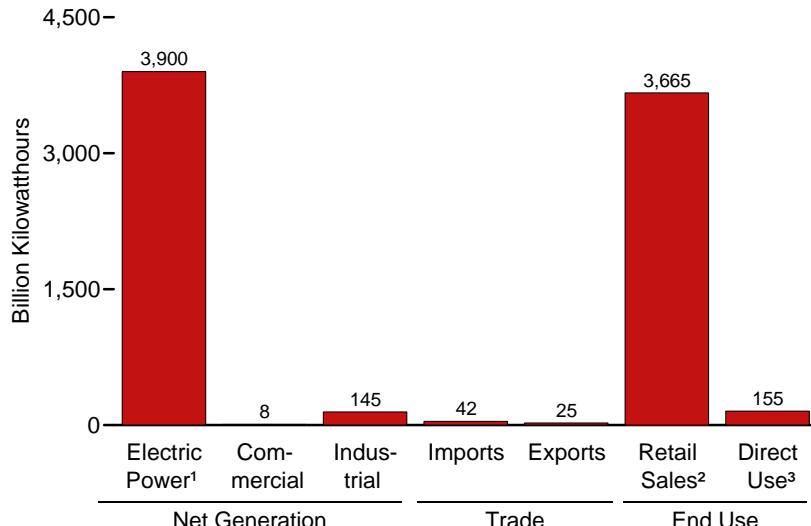
<sup>g</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

Notes: • Data are preliminary. • See Note, "Electrical System Energy Losses," at the end of Section 2. • Values are derived from source data prior to rounding for publication. • Totals may not equal sum of components due to independent rounding.

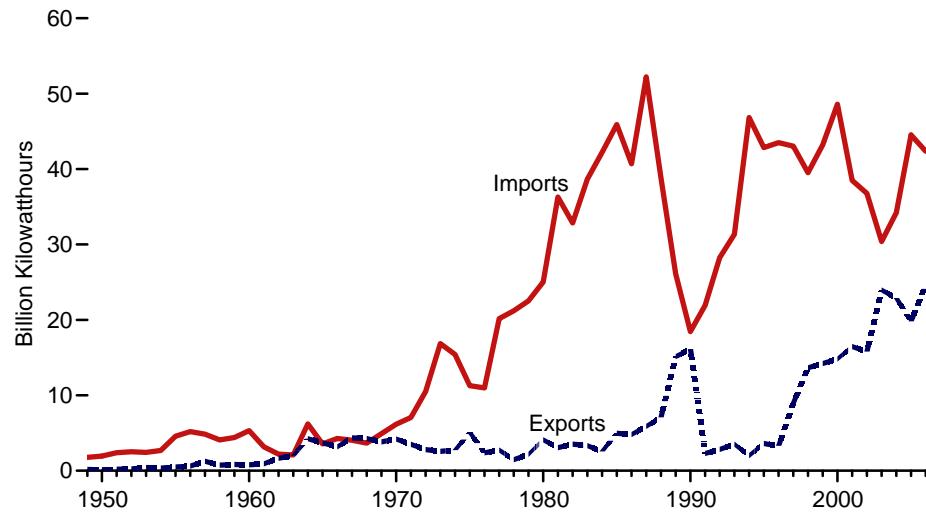
Sources: Tables 8.1, 8.4a, 8.9, and A6 (column 4).

**Figure 8.1 Electricity Overview**

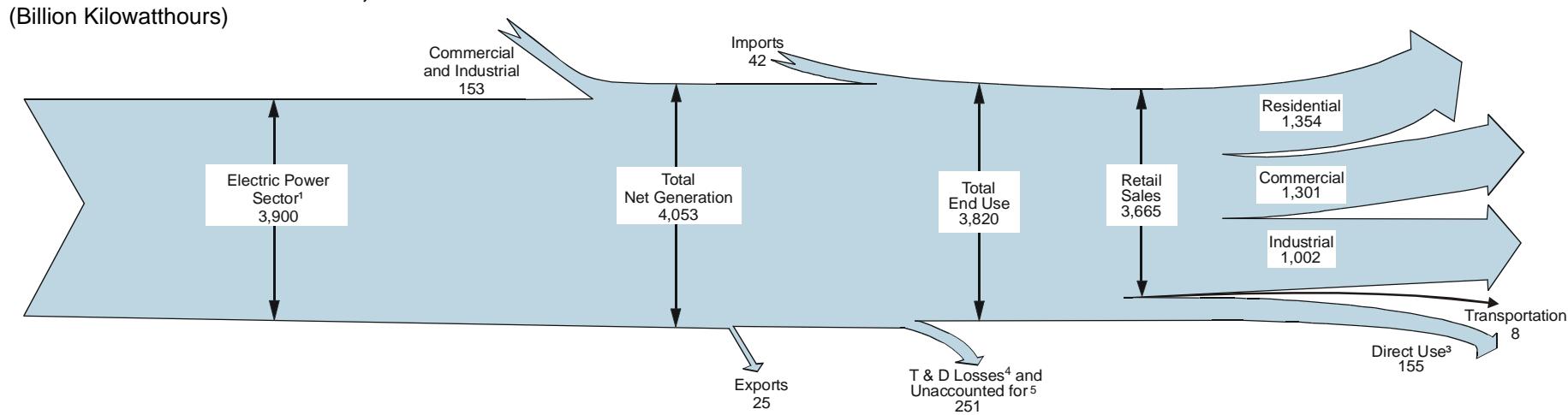
**Overview, 2006**



**Electricity Trade, 1949-2006**



**Net-Generation-to-End-Use Flow, 2006**



<sup>1</sup> Electricity-only and combined-heat-and-power plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>2</sup> Electricity retail sales to ultimate customers reported by electric utilities and other energy service providers.

<sup>3</sup> Commercial and industrial facility use of onsite net electricity generation; and electricity sales among adjacent or co-located facilities for which revenue information is not available.

<sup>4</sup> Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note, "Electrical System Energy Losses," at the end of Section 2.

<sup>5</sup> Data collection frame differences and nonsampling error.

Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 8.1 and 8.9.

**Table 8.1 Electricity Overview, Selected Years, 1949-2006**  
(Billion Kilowatthours)

Year	Net Generation				Trade						T & D Losses <sup>5</sup> and Unaccounted for <sup>6</sup>	End Use		
	Electric Power Sector <sup>2</sup>	Commercial Sector <sup>3</sup>	Industrial Sector <sup>4</sup>	Total	Imports <sup>1</sup>		Exports <sup>1</sup>		Net Imports <sup>1</sup>	Retail Sales <sup>7</sup>	Direct Use <sup>8</sup>	Total		
					From Canada	Total	To Canada	Total						
1949	291	NA	5	296	NA	2	NA	(s)	2	43	255	NA	255	
1950	329	NA	5	334	NA	2	NA	(s)	2	44	291	NA	291	
1955	547	NA	3	550	NA	5	NA	(s)	4	58	497	NA	497	
1960	756	NA	4	759	NA	5	NA	1	5	76	688	NA	688	
1965	1,055	NA	3	1,058	NA	4	NA	4	(s)	104	954	NA	954	
1970	1,532	NA	3	1,535	NA	6	NA	4	2	145	1,392	NA	1,392	
1971	1,613	NA	3	1,616	NA	7	NA	4	4	150	1,470	NA	1,470	
1972	1,750	NA	3	1,753	NA	10	NA	3	8	166	1,595	NA	1,595	
1973	1,861	NA	3	1,864	NA	17	NA	3	14	165	1,713	NA	1,713	
1974	1,867	NA	3	1,870	NA	15	NA	3	13	177	1,706	NA	1,706	
1975	1,918	NA	3	1,921	NA	11	NA	5	6	180	1,747	NA	1,747	
1976	2,038	NA	3	2,041	NA	11	NA	2	9	194	1,855	NA	1,855	
1977	2,124	NA	3	2,127	NA	20	NA	3	17	197	1,948	NA	1,948	
1978	2,206	NA	3	2,209	NA	21	NA	1	20	211	2,018	NA	2,018	
1979	2,247	NA	3	2,251	NA	23	NA	2	20	200	2,071	NA	2,071	
1980	2,286	NA	3	2,290	NA	25	NA	4	21	216	2,094	NA	2,094	
1981	2,295	NA	3	2,298	NA	36	NA	3	33	184	2,147	NA	2,147	
1982	2,241	NA	3	2,244	NA	33	NA	4	29	187	2,086	NA	2,086	
1983	2,310	NA	3	2,313	NA	39	NA	3	35	198	2,151	NA	2,151	
1984	2,416	NA	3	2,419	NA	42	NA	3	40	173	2,286	NA	2,286	
1985	2,470	NA	3	2,473	NA	46	NA	5	41	190	2,324	NA	2,324	
1986	2,487	NA	3	2,490	NA	41	NA	5	36	158	2,369	NA	2,369	
1987	2,572	NA	3	2,575	NA	52	NA	6	46	164	2,457	NA	2,457	
1988	2,704	NA	3	2,707	NA	39	NA	7	32	161	2,578	NA	2,578	
1989	22,848	4	4115	2,967	NA	26	NA	15	11	223	2,647	109	2,756	
1990	2,901	6	131	3,038	16	18	16	16	2	203	2,713	125	2,837	
1991	2,936	6	133	3,074	20	22	2	2	20	207	2,762	124	2,886	
1992	2,934	6	143	3,084	26	28	2	3	25	212	2,763	134	2,897	
1993	3,044	7	146	3,197	29	31	3	4	28	224	2,861	139	3,001	
1994	3,089	8	151	3,248	45	47	1	2	45	211	2,935	146	3,081	
1995	3,194	8	151	3,353	41	43	2	4	39	229	3,013	151	3,164	
1996	3,284	9	151	3,444	42	43	2	3	40	231	3,101	153	3,254	
1997	3,329	9	154	3,492	43	43	7	9	34	224	3,146	156	3,302	
1998	3,457	9	154	3,620	40	40	12	14	26	221	3,264	161	3,425	
1999	3,530	9	156	3,695	43	43	13	14	29	240	3,312	172	3,484	
2000	3,638	8	157	3,802	49	49	13	15	34	244	3,421	171	3,592	
2001	3,580	7	149	3,737	38	39	16	16	22	R202	R3,394	163	R3,557	
2002	3,698	7	153	3,858	37	37	15	16	21	R248	R3,465	166	3,632	
2003	3,721	7	155	3,883	29	30	24	24	6	R228	R3,494	168	R3,662	
2004	3,808	8	154	3,971	33	34	22	23	11	R266	R3,547	168	R3,716	
2005	R3,902	8	R145	R4,055	43	45	19	20	25	R264	R3,661	R155	R3,816	
2006 <sup>p</sup>	3,900	8	145	4,053	41	42	24	25	18	251	3,665	E155	3,820	

<sup>1</sup> Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

<sup>2</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>3</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>4</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. Through 1988, data are for industrial hydroelectric power only.

<sup>5</sup> Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note, "Electrical System Energy Losses," at end of Section 2.

<sup>6</sup> Data collection frame differences and nonsampling error.

<sup>7</sup> Electricity retail sales to ultimate customers by electric utilities and, beginning in 1996, other energy service providers.

<sup>8</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

R=Revised. P=Preliminary. E=Estimate. NA=Not available. (s)=Less than 0.5 billion kilowatthours.

Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Net Generation, Electric Power Sector: Table 8.2b. Net Generation, Commercial Sector: Table 8.2d. Net Generation, Industrial Sector: • 1949-September 1977—Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FPC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.

• October 1977-1978—Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FERC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants. • 1979—FERC, Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and EIA estimates for all other plants. • 1980-1988—Estimated by EIA as the average generation over the 6-year period of 1974-1979.

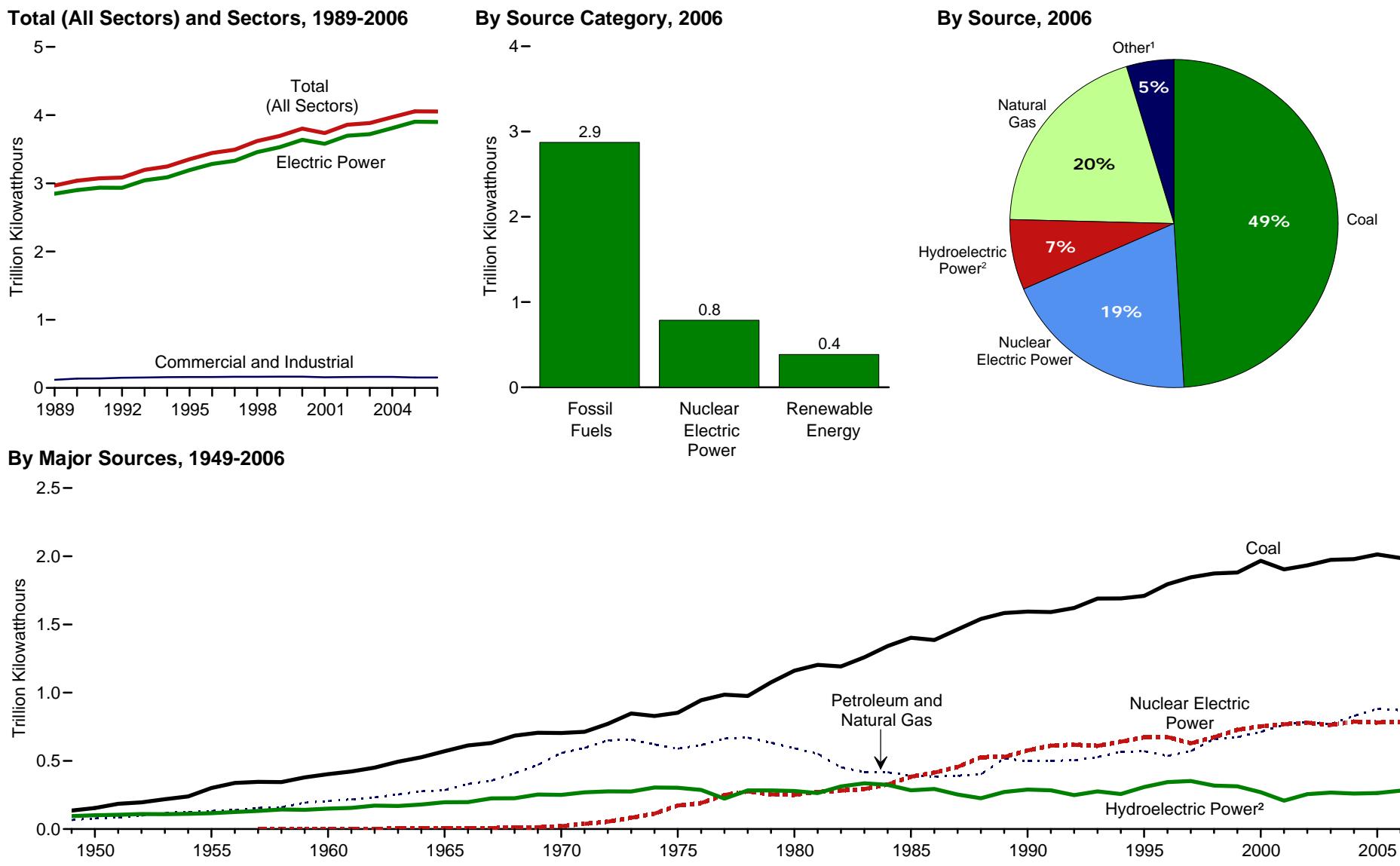
• 1989 forward—Table 8.2d. Net Generation, Total: Table 8.2a. Imports and Exports:

• 1949-September 1977—Unpublished FPC data. • October 1977-1980—Unpublished Economic Regulatory Administration (ERA) data. • 1981—Department of Energy (DOE), Office of Energy Emergency Operations, "Report on Electric Energy Exchanges with Canada and Mexico for Calendar Year 1981." April 1982 (revised June 1982). • 1982 and 1983—DOE, ERA, Electricity Exchanges Across International Borders.

• 1984-1988—DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data." • 1989-DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data."

• 1990 forward—National Energy Board of Canada, and DOE, Fossil Energy, Office of Fuels Programs, Form FE-781R, "Export/Import Data." For 2001 forward, data from the California Independent System Operator are used in combination with the Form FE-781R values to estimate electricity trade with Mexico. T & D Losses and Unaccounted for: Calculated as the sum of total net generation and imports minus total end use and exports. End Use: Table 8.9.

**Figure 8.2a Electricity Net Generation, Total (All Sectors)**

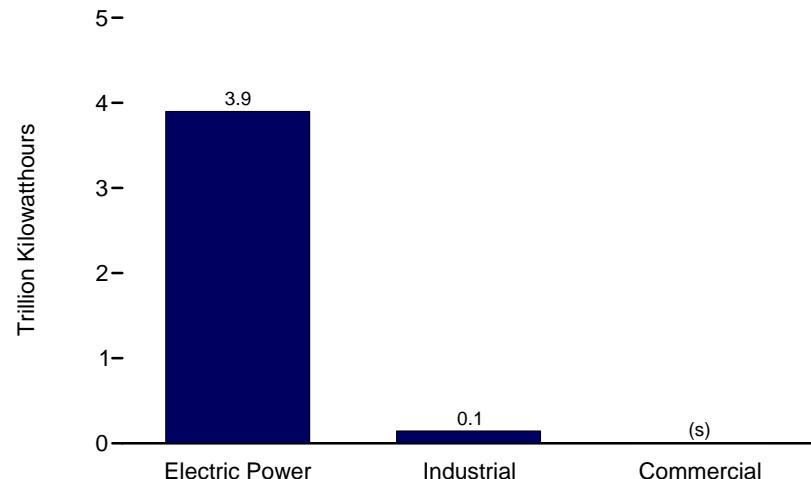


<sup>1</sup> Petroleum, wood, wind, waste, other gases, geothermal, solar, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

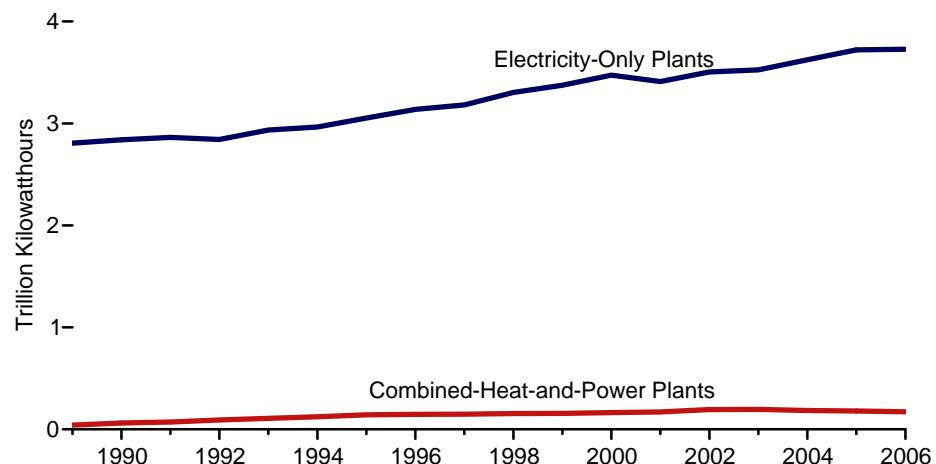
<sup>2</sup> Conventional hydroelectric power and pumped storage.  
Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 8.2a, 8.2b, and 8.2d.

**Figure 8.2b Electricity Net Generation by Sector**

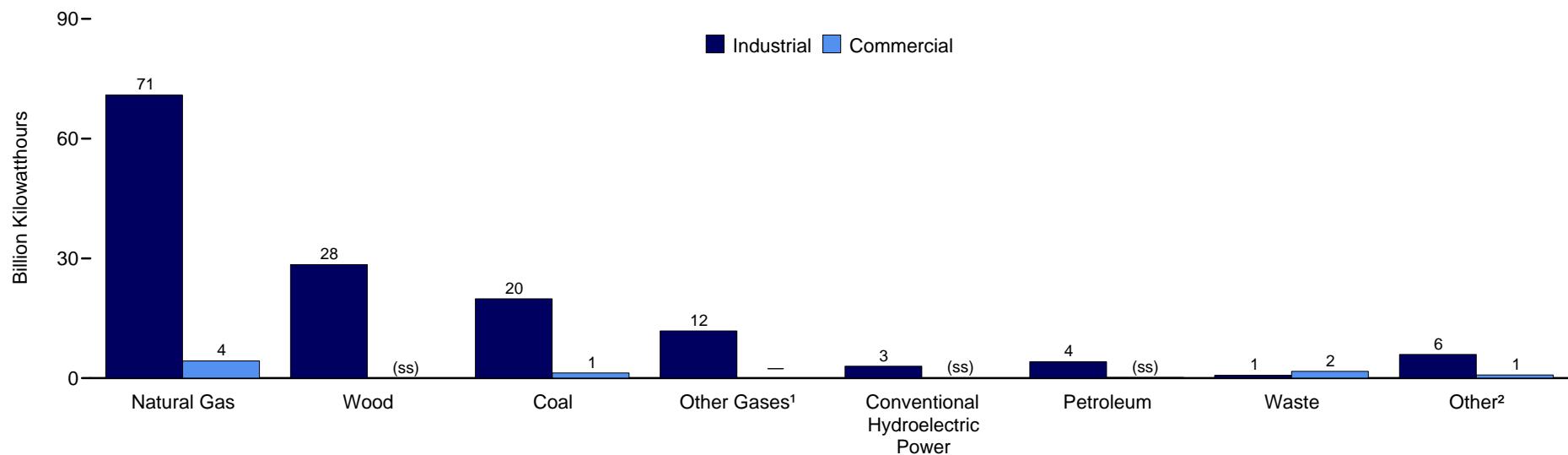
**By Sector, 2006**



**Electric Power Sector by Plant Type, 1989-2006**



**Industrial and Commercial Sectors, 2006**



<sup>1</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>2</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

— = No data reported.

(s) = Less than 0.05 trillion kilowatthours.

(ss) = Less than 0.5 billion kilowatthours.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 8.2b-8.2d.

**Table 8.2a Electricity Net Generation: Total (All Sectors), Selected Years, 1949-2006**

(Sum of Tables 8.2b and 8.2d; Billion Kilowatthours)

Year	Fossil Fuels					Nuclear Electric Power	Hydro-electric Pumped Storage <sup>5</sup>	Renewable Energy							Other <sup>9</sup>	Total				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power		Biomass		Geo-thermal	Solar/PV <sup>8</sup>	Wind	Total					
								Wood <sup>6</sup>	Waste <sup>7</sup>	Wood <sup>6</sup>	Waste <sup>7</sup>									
1949	135.5	28.5	37.0	NA	201.0	0.0	( <sup>10</sup> )	94.8	0.4	NA	NA	NA	NA	NA	95.2	NA	296.1			
1950	154.5	33.7	44.6	NA	232.8	.0	( <sup>10</sup> )	100.9	.4	NA	NA	NA	NA	NA	101.3	NA	334.1			
1955	301.4	37.1	95.3	NA	433.8	.0	( <sup>10</sup> )	116.2	.3	NA	NA	NA	NA	NA	116.5	NA	550.3			
1960	403.1	48.0	158.0	NA	609.0	.5	( <sup>10</sup> )	149.4	.1	NA	(s)	NA	NA	NA	149.6	NA	759.2			
1965	570.9	64.8	221.6	NA	857.3	3.7	( <sup>10</sup> )	197.0	.3	NA	.2	NA	NA	NA	197.4	NA	1,058.4			
1970	704.4	184.2	372.9	NA	1,261.5	21.8	( <sup>10</sup> )	251.0	.1	.2	.5	NA	NA	NA	251.8	NA	1,535.1			
1971	713.1	220.2	374.0	NA	1,307.4	38.1	( <sup>10</sup> )	269.5	.1	.2	.5	NA	NA	NA	270.4	NA	1,615.9			
1972	771.1	274.3	375.7	NA	1,421.2	54.1	( <sup>10</sup> )	275.9	.1	.2	1.5	NA	NA	NA	277.7	NA	1,753.0			
1973	847.7	314.3	340.9	NA	1,502.9	83.5	( <sup>10</sup> )	275.4	.1	.2	2.0	NA	NA	NA	277.7	NA	1,864.1			
1974	828.4	300.9	320.1	NA	1,449.4	114.0	( <sup>10</sup> )	304.2	.1	.2	2.5	NA	NA	NA	306.9	NA	1,870.3			
1975	852.8	289.1	299.8	NA	1,441.7	172.5	( <sup>10</sup> )	303.2	(s)	.2	3.2	NA	NA	NA	306.6	NA	1,920.8			
1976	944.4	320.0	294.6	NA	1,559.0	191.1	( <sup>10</sup> )	286.9	.1	.2	3.6	NA	NA	NA	290.8	NA	2,040.9			
1977	985.2	358.2	305.5	NA	1,648.9	250.9	( <sup>10</sup> )	223.6	.3	.2	3.6	NA	NA	NA	227.7	NA	2,127.4			
1978	975.7	365.1	305.4	NA	1,646.2	276.4	( <sup>10</sup> )	283.5	.2	.1	3.0	NA	NA	NA	286.8	NA	2,209.4			
1979	1,075.0	303.5	329.5	NA	1,708.0	255.2	( <sup>10</sup> )	283.1	.3	.2	3.9	NA	NA	NA	287.5	NA	2,250.7			
1980	1,161.6	246.0	346.2	NA	1,753.8	251.1	( <sup>10</sup> )	279.2	.3	.2	5.1	NA	NA	NA	284.7	NA	2,289.6			
1981	1,203.2	206.4	345.8	NA	1,755.4	272.7	( <sup>10</sup> )	263.8	.2	.1	5.7	NA	NA	NA	269.9	NA	2,298.0			
1982	1,192.0	146.8	305.3	NA	1,644.1	282.8	( <sup>10</sup> )	312.4	.2	.1	4.8	NA	NA	NA	317.5	NA	2,244.4			
1983	1,259.4	144.5	274.1	NA	1,678.0	293.7	( <sup>10</sup> )	335.3	.2	.2	6.1	NA	(s)	NA	341.7	NA	2,313.4			
1984	1,341.7	119.8	297.4	NA	1,758.9	327.6	( <sup>10</sup> )	324.3	.5	.4	7.7	(s)	(s)	NA	332.9	NA	2,419.5			
1985	1,402.1	100.2	291.9	NA	1,794.3	383.7	( <sup>10</sup> )	284.3	.7	.6	9.3	(s)	(s)	NA	295.0	NA	2,473.0			
1986	1,385.8	136.6	248.5	NA	1,770.9	414.0	( <sup>10</sup> )	294.0	.5	.7	10.3	(s)	(s)	NA	305.5	NA	2,490.5			
1987	1,463.8	118.5	272.6	NA	1,854.9	455.3	( <sup>10</sup> )	252.9	.8	.7	10.8	(s)	(s)	NA	265.1	NA	2,575.3			
1988	1,540.7	148.9	252.8	NA	1,942.4	527.0	( <sup>10</sup> )	226.1	.9	.7	10.3	(s)	(s)	NA	238.1	NA	2,707.4			
1989 <sup>11</sup>	1,583.8	164.5	352.6	7.9	2,108.8	529.4	( <sup>10</sup> )	272.0	27.2	9.2	14.6	.3	2.1	325.3	3.8	2,967.3				
1990	1,594.0	126.6	372.8	10.4	2,103.8	576.9	-3.5	292.9	32.5	13.3	15.4	.4	2.8	357.2	3.6	3,038.0				
1991	1,590.6	119.8	381.6	11.3	2,103.3	612.6	-4.5	289.0	33.7	15.7	16.0	.5	3.0	357.8	4.7	3,073.8				
1992	1,621.2	100.2	404.1	13.3	2,138.7	618.8	-4.2	253.1	36.5	17.8	16.1	.4	2.9	326.9	3.7	3,083.9				
1993	1,690.1	112.8	414.9	13.0	2,230.7	610.3	-4.0	280.5	37.6	18.3	16.8	.5	3.0	356.7	3.5	3,197.2				
1994	1,690.7	105.9	460.2	13.3	2,270.1	640.4	-3.4	260.1	37.9	19.1	15.5	.5	3.4	336.7	3.7	3,247.5				
1995	1,709.4	74.6	496.1	13.9	2,293.9	673.4	-2.7	310.8	36.5	20.4	13.4	.5	3.2	384.8	4.1	3,353.5				
1996	1,795.2	81.4	455.1	14.4	2,346.0	674.7	-3.1	347.2	36.8	20.9	14.3	.5	3.2	423.0	3.6	3,444.2				
1997	1,845.0	92.6	479.4	13.4	2,430.3	628.6	-4.0	356.5	36.9	21.7	14.7	.5	3.3	433.6	3.6	3,492.2				
1998	1,873.5	128.8	531.3	13.5	2,547.1	673.7	-4.5	323.3	36.3	22.4	14.8	.5	3.0	400.4	3.6	3,620.3				
1999	1,881.1	118.1	556.4	14.1	2,569.7	728.3	-6.1	319.5	37.0	22.6	14.8	.5	4.5	399.0	4.0	3,694.8				
2000	1,966.3	111.2	601.0	14.0	2,692.5	753.9	-5.5	275.6	37.6	23.1	14.1	.5	5.6	356.5	4.8	3,802.1				
2001	1,904.0	124.9	639.1	9.0	2,677.0	768.8	-8.8	217.0	35.2	R14.5	13.7	.5	6.7	R287.7	R11.9	3,736.6				
2002	1,933.1	94.6	691.0	11.5	2,730.2	780.1	-8.7	264.3	38.7	R15.0	14.5	.6	10.4	R343.4	R13.5	3,858.5				
2003	1,973.7	119.4	649.9	15.6	2,758.6	763.7	-8.5	275.8	37.5	R15.8	14.4	.5	11.2	R355.3	R14.0	3,883.2				
2004	1,978.6	120.6	709.0	16.8	2,825.0	788.5	-8.5	268.4	37.6	R15.5	14.8	.6	14.1	R351.0	R14.5	3,970.6				
2005	R2,013.2	R122.5	R758.0	R16.3	R2,910.0	R782.0	-6.6	R270.3	R38.7	R15.5	R14.7	R.6	R17.8	R357.5	R12.5	R4,055.4				
2006 <sup>P</sup>	1,987.2	63.2	807.6	16.0	2,874.0	787.2	-6.9	288.3	39.4	16.2	14.8	.5	25.8	385.0	13.7	4,053.0				

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Pumped storage facility production minus energy used for pumping.

<sup>6</sup> Wood and wood-derived fuels.

<sup>7</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>8</sup> Solar thermal and photovoltaic energy.

<sup>9</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived

fuels).

<sup>10</sup> Included in "Conventional Hydroelectric Power."

<sup>11</sup> Through 1988, all data except hydroelectric are for electric utilities only; hydroelectric data through 1988 include industrial plants as well as electric utilities. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05 billion kilowatthours.

Notes: • See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1949-1988—Table 8.2b for electric power sector, and Table 8.1 for industrial sector. • 1989 forward—Tables 8.2b and 8.2d.

**Table 8.2b Electricity Net Generation: Electric Power Sector, Selected Years, 1949-2006**  
 (Subset of Table 8.2a; Billion Kilowatthours)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage <sup>5</sup>	Renewable Energy						Other <sup>9</sup>	Total	
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>8</sup>	Wind	Total		
								Wood <sup>6</sup>	Waste <sup>7</sup>							
1949	135.5	28.5	37.0	NA	201.0	0.0	( 10 )	89.7	0.4	NA	NA	NA	NA	90.1	NA	291.1
1950	154.5	33.7	44.6	NA	232.8	.0	( 10 )	95.9	.4	NA	NA	NA	NA	96.3	NA	329.1
1955	301.4	37.1	95.3	NA	433.8	.0	( 10 )	113.0	.3	NA	NA	NA	NA	113.3	NA	547.0
1960	403.1	48.0	158.0	NA	609.0	.5	( 10 )	145.8	.1	NA	(s)	NA	NA	146.0	NA	755.5
1965	570.9	64.8	221.6	NA	857.3	3.7	( 10 )	193.9	.3	NA	.2	NA	NA	194.3	NA	1,055.3
1970	704.4	184.2	372.9	NA	1,261.5	21.8	( 10 )	247.7	.1	.2	.5	NA	NA	248.6	NA	1,531.9
1971	713.1	220.2	374.0	NA	1,307.4	38.1	( 10 )	266.3	.1	.2	.5	NA	NA	267.2	NA	1,612.6
1972	771.1	274.3	375.7	NA	1,421.2	54.1	( 10 )	272.6	.1	.2	1.5	NA	NA	274.4	NA	1,749.7
1973	847.7	314.3	340.9	NA	1,502.9	83.5	( 10 )	272.1	.1	.2	2.0	NA	NA	274.4	NA	1,860.7
1974	828.4	300.9	320.1	NA	1,449.4	114.0	( 10 )	301.0	.1	.2	2.5	NA	NA	303.7	NA	1,867.1
1975	852.8	289.1	299.8	NA	1,441.7	172.5	( 10 )	300.0	(s)	.2	3.2	NA	NA	303.5	NA	1,917.6
1976	944.4	320.0	294.6	NA	1,559.0	191.1	( 10 )	283.7	.1	.2	3.6	NA	NA	287.6	NA	2,037.7
1977	985.2	358.2	305.5	NA	1,648.9	250.9	( 10 )	220.5	.3	.2	3.6	NA	NA	224.5	NA	2,124.3
1978	975.7	365.1	305.4	NA	1,646.2	276.4	( 10 )	280.4	.2	.1	3.0	NA	NA	283.7	NA	2,206.3
1979	1,075.0	303.5	329.5	NA	1,708.0	255.2	( 10 )	279.8	.3	.2	3.9	NA	NA	284.2	NA	2,247.4
1980	1,161.6	246.0	346.2	NA	1,753.8	251.1	( 10 )	276.0	.3	.2	5.1	NA	NA	281.5	NA	2,286.4
1981	1,203.2	206.4	345.8	NA	1,755.4	272.7	( 10 )	260.7	.2	.1	5.7	NA	NA	266.7	NA	2,294.8
1982	1,192.0	146.8	305.3	NA	1,644.1	282.8	( 10 )	309.2	.2	.1	4.8	NA	NA	314.4	NA	2,241.2
1983	1,259.4	144.5	274.1	NA	1,678.0	293.7	( 10 )	332.1	.2	.2	6.1	NA	(s)	338.6	NA	2,310.3
1984	1,341.7	119.8	297.4	NA	1,758.9	327.6	( 10 )	321.2	.5	.4	7.7	(s)	(s)	329.8	NA	2,416.3
1985	1,402.1	100.2	291.9	NA	1,794.3	383.7	( 10 )	281.1	.7	.6	9.3	(s)	(s)	291.9	NA	2,469.8
1986	1,385.8	136.6	248.5	NA	1,770.9	414.0	( 10 )	290.8	.5	.7	10.3	(s)	(s)	302.3	NA	2,487.3
1987	1,463.8	118.5	272.6	NA	1,854.9	455.3	( 10 )	249.7	.8	.7	10.8	(s)	(s)	262.0	NA	2,572.1
1988	1,540.7	148.9	252.8	NA	1,942.4	527.0	( 10 )	222.9	.9	.7	10.3	(s)	(s)	234.9	NA	2,704.3
1989 <sup>11</sup>	1,562.4	159.0	297.3	.5	2,019.1	529.4	( 10 )	269.2	5.6	7.7	14.6	.3	2.1	299.5	.3	2,848.2
1990	1,572.1	118.9	309.5	.6	2,001.1	576.9	3.5	289.8	7.0	11.5	15.4	.4	2.8	326.9	(s)	2,901.3
1991	1,568.8	112.8	317.8	.7	2,000.1	612.6	-4.5	286.0	7.7	13.9	16.0	.5	3.0	327.0	.4	2,935.6
1992	1,597.7	92.2	334.3	1.2	2,025.4	618.8	-4.2	250.0	8.5	15.9	16.1	.4	2.9	293.9	.5	2,934.4
1993	1,665.5	105.4	342.2	1.0	2,114.1	610.3	-4.0	277.5	9.2	16.2	16.8	.5	3.0	323.2	.4	3,043.9
1994	1,666.3	98.7	385.7	1.1	2,151.7	640.4	-3.4	254.0	9.2	17.0	15.5	.5	3.4	299.7	.2	3,088.7
1995	1,686.1	68.1	419.2	1.9	2,175.3	673.4	-2.7	305.4	7.6	18.0	13.4	.5	3.2	348.0	.2	3,194.2
1996	1,772.0	74.8	378.8	1.3	2,226.9	674.7	-3.1	341.2	8.4	17.8	14.3	.5	3.2	385.4	.2	3,284.1
1997	1,820.8	86.5	399.6	1.5	2,308.4	628.6	-4.0	350.6	8.7	18.5	14.7	.5	3.3	396.3	.1	3,329.4
1998	1,850.2	122.2	449.3	2.3	2,424.0	673.7	-4.5	317.9	8.6	19.2	14.8	.5	3.0	364.0	.2	3,457.4
1999	1,858.6	111.5	473.0	1.6	2,444.8	728.3	-6.1	314.7	9.0	19.5	14.8	.5	4.5	362.9	.1	3,530.0
2000	1,943.1	105.2	518.0	2.0	2,568.3	753.9	-5.5	271.3	8.9	20.3	14.1	.5	5.6	320.7	.1	3,637.5
2001	1,882.8	119.1	554.9	.6	2,557.5	768.8	-8.8	213.7	8.3	R12.9	13.7	.5	6.7	R256.0	R6.5	3,580.1
2002	1,910.6	89.7	607.7	2.0	2,610.0	780.1	-8.7	260.5	9.0	R13.1	14.5	.6	10.4	R308.0	R9.1	3,698.5
2003	1,952.7	113.7	567.3	2.6	2,636.4	763.7	-8.5	271.5	9.5	R13.8	14.4	.5	11.2	R321.0	R8.6	3,721.2
2004	1,957.2	114.6	627.5	3.0	2,702.3	788.5	-8.5	265.1	9.7	R13.1	14.8	.6	14.1	R317.5	R8.6	3,808.4
2005	R1,992.1	R116.8	R683.3	R4.0	R2,796.1	R782.0	-6.6	R267.0	R10.6	R13.0	R14.7	R6	R17.8	R323.7	R7.0	R3,902.2
2006 <sup>P</sup>	1,966.0	58.9	732.4	4.2	2,761.5	787.2	-6.9	285.2	11.0	13.8	14.8	.5	25.8	351.1	6.9	3,899.8

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Pumped storage facility production minus energy used for pumping.

<sup>6</sup> Wood and wood-derived fuels.

<sup>7</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>8</sup> Solar thermal and photovoltaic energy.

<sup>9</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Included in "Conventional Hydroelectric Power."

<sup>11</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05 billion kilowatthours.

Notes: • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 8.2d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1949-September 1977—Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • October 1977-1981—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • 1982-1988—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • 1989-1997—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.2c Electricity Net Generation: Electric Power Sector by Plant Type, 1989-2006**

(Breakout of Table 8.2b; Billion Kilowatthours)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage <sup>5</sup>	Renewable Energy							Other <sup>9</sup>	Total				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power		Biomass		Geo- thermal	Solar/PV <sup>8</sup>	Wind	Total					
								Wood <sup>6</sup>	Waste <sup>7</sup>	Wood <sup>6</sup>	Waste <sup>7</sup>									
Electricity-Only Plants <sup>10</sup>																				
1989	1,554.0	158.3	266.9	—	1,979.3	529.4	( <sup>11</sup> )	269.2	4.2	6.9	14.6	0.3	2.1	297.3	—	2,805.9				
1990	1,560.2	117.6	264.7	(s)	1,942.4	576.9	-3.5	289.8	5.6	10.4	15.4	.4	2.8	324.3	—	2,840.0				
1991	1,551.9	112.2	267.8	(s)	1,931.9	612.6	-4.5	286.0	6.0	12.2	16.0	.5	3.0	323.7	—	2,863.6				
1992	1,577.1	90.1	270.9	(s)	1,938.0	618.8	-4.2	250.0	6.6	14.4	16.1	.4	2.9	290.4	—	2,843.1				
1993	1,642.1	100.6	267.2	(s)	2,009.9	610.3	-4.0	277.5	7.2	14.9	16.8	.5	3.0	319.8	—	2,935.9				
1994	1,639.9	92.1	299.7	(s)	2,031.7	640.4	-3.4	254.0	7.6	15.4	15.5	.5	3.4	296.5	—	2,965.2				
1995	1,658.0	62.0	317.4	(s)	2,037.4	673.4	-2.7	305.4	5.9	16.3	13.4	.5	3.2	344.7	—	3,052.8				
1996	1,742.8	68.5	272.8	(s)	2,084.1	674.7	-3.1	341.2	6.5	16.1	14.3	.5	3.2	381.8	—	3,137.6				
1997	1,793.2	80.3	291.1	(s)	2,164.6	628.6	-4.0	350.6	6.5	16.4	14.7	.5	3.3	392.0	—	3,181.3				
1998	1,823.0	115.7	335.9	.1	2,274.6	673.7	-4.5	317.9	6.6	17.0	14.8	.5	3.0	359.8	—	3,303.6				
1999	1,832.1	104.8	356.6	(s)	2,293.6	728.3	-6.1	314.7	7.3	17.1	14.8	.5	4.5	358.8	—	3,374.6				
2000	1,910.6	98.0	399.4	.2	2,408.2	753.9	-5.5	271.3	7.3	17.6	14.1	.5	5.6	316.4	—	3,472.9				
2001	1,851.8	113.2	427.0	(s)	2,392.0	768.8	-8.8	213.7	6.6	R11.3	13.7	.5	6.7	R252.6	R5.9	3,410.5				
2002	1,881.2	83.3	456.8	.2	2,421.5	780.1	-8.7	260.5	7.3	R11.2	14.5	.6	10.4	R304.3	R7.6	3,504.8				
2003	1,915.8	108.5	421.2	.3	2,445.7	763.7	-8.5	271.5	7.4	R11.9	14.4	.5	11.2	R317.0	R7.6	3,525.5				
2004	1,921.1	109.4	491.2	.4	2,522.0	788.5	-8.5	265.1	8.1	R11.8	14.8	.6	14.1	R314.5	R7.6	3,624.1				
2005	R1,955.5	R111.2	R553.2	R(s)	R2,619.9	R782.0	-6.6	R267.0	R8.5	R11.7	R14.7	R.6	R17.8	R320.3	R6.2	R3,721.8				
2006 <sup>P</sup>	1,930.1	54.7	608.6	(s)	2,593.4	787.2	-6.9	285.2	8.9	12.3	14.8	.5	25.8	347.6	6.1	3,727.4				
Combined-Heat-and-Power Plants <sup>12</sup>																				
1989	8.4	0.7	30.4	0.5	39.9	—	—	1.3	0.9	—	—	—	—	2.2	0.3	42.3				
1990	11.9	1.3	44.8	.6	58.7	—	—	1.4	1.1	—	—	—	—	2.6	(s)	61.3				
1991	16.9	.6	50.0	.7	68.2	—	—	1.7	1.6	—	—	—	—	3.3	.4	71.9				
1992	20.7	2.2	63.4	1.2	87.4	—	—	1.9	1.5	—	—	—	—	3.4	.5	91.3				
1993	23.4	4.8	75.0	1.0	104.2	—	—	2.0	1.4	—	—	—	—	3.4	.4	108.0				
1994	26.4	6.6	86.0	1.1	120.1	—	—	1.6	1.6	—	—	—	—	3.2	.2	123.5				
1995	28.1	6.1	101.7	1.9	137.9	—	—	1.7	1.7	—	—	—	—	3.4	.2	141.5				
1996	29.2	6.3	105.9	1.3	142.7	—	—	1.9	1.7	—	—	—	—	3.6	.2	146.6				
1997	27.6	6.2	108.5	1.5	143.7	—	—	2.2	2.1	—	—	—	—	4.3	.1	148.1				
1998	27.2	6.6	113.4	2.3	149.4	—	—	2.0	2.3	—	—	—	—	4.2	.2	153.8				
1999	26.6	6.7	116.4	1.6	151.2	—	—	1.7	2.4	—	—	—	—	4.1	.1	155.4				
2000	32.5	7.2	118.6	1.8	160.2	—	—	1.6	2.7	—	—	—	—	4.3	.1	164.6				
2001	31.0	6.0	128.0	.6	165.5	—	—	1.7	R1.7	—	—	—	—	R3.4	R6	169.5				
2002	29.4	6.5	150.9	1.7	188.5	—	—	1.7	R2.0	—	—	—	—	R3.7	R1.4	193.7				
2003	36.9	5.2	146.1	2.4	190.6	—	—	2.1	R1.9	—	—	—	—	R4.0	R1.1	195.7				
2004	36.1	5.2	136.3	2.6	180.3	—	—	1.6	R1.4	—	—	—	—	R3.0	R1.0	184.3				
2005	R36.5	R5.6	R130.1	R3.9	R176.2	—	—	R(s)	R2.1	R1.3	—	—	—	R3.4	R.7	R180.4				
2006 <sup>P</sup>	36.0	4.3	123.7	4.1	168.1	—	—	(s)	2.1	1.4	—	—	—	3.5	.8	172.4				

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Pumped storage facility production minus energy used for pumping.

<sup>6</sup> Wood and wood-derived fuels.

<sup>7</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>8</sup> Solar thermal and photovoltaic energy.

<sup>9</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Electricity-only plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity to the public. Data also include a small number of electric utility

combined-heat-and-power (CHP) plants.

<sup>11</sup> Included in "Conventional Hydroelectric Power."

<sup>12</sup> Combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity and heat to the public. Data do not include electric utility CHP plants—these are included under "Electricity-Only Plants."

R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.05 billion kilowatthours.

Notes: • See Table 8.2d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

• 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.2d Electricity Net Generation: Commercial and Industrial Sectors, 1989-2006**

(Subset of Table 8.2a; Billion Kilowatthours)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage <sup>5</sup>	Renewable Energy						Other <sup>9</sup>	Total	
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>8</sup>	Wind	Total		
	Commercial Sector <sup>10</sup>															
1989	0.7	0.6	2.2	0.1	3.6	—	—	0.1	0.1	0.5	—	—	—	0.7	—	4.3
1990	.8	.6	3.3	.1	4.8	—	—	.1	.1	.8	—	—	—	1.1	—	5.8
1991	.8	.4	3.2	.1	4.5	—	—	.1	.1	.9	—	—	—	1.1	(s)	5.7
1992	.7	.3	3.9	.1	5.0	—	—	.1	.1	1.0	—	—	—	1.2	(s)	6.2
1993	.9	.3	4.5	.1	5.8	—	—	.1	.1	1.0	—	—	—	1.2	(s)	7.0
1994	.8	.4	4.9	.1	6.3	—	—	.1	.1	1.2	—	—	—	1.3	—	7.6
1995	1.0	.4	5.2	—	6.5	—	—	.1	.1	1.5	—	—	—	1.7	(s)	8.2
1996	1.1	.4	5.2	(s)	6.7	—	—	.1	.1	2.2	—	—	—	2.4	(s)	9.0
1997	1.0	.4	4.7	(s)	6.2	—	—	.1	(s)	2.3	—	—	—	2.5	(s)	8.7
1998	1.0	.4	4.9	(s)	6.3	—	—	.1	(s)	2.3	—	—	—	2.5	—	8.7
1999	1.0	.4	4.6	(s)	6.0	—	—	.1	(s)	2.4	—	—	—	2.5	(s)	8.6
2000	1.1	.4	4.3	(s)	5.8	—	—	.1	(s)	2.0	—	—	—	2.1	(s)	7.9
2001	1.0	.4	4.4	(s)	5.9	—	—	.1	(s)	R1.0	—	—	—	R1.1	R.5	7.4
2002	1.0	.4	4.3	(s)	5.7	—	—	(s)	(s)	R4.1	—	—	—	R1.1	R.6	7.4
2003	1.2	.4	3.9	—	5.5	—	—	.1	(s)	R1.3	—	—	—	R1.4	R.6	7.5
2004	1.3	.5	4.1	—	5.8	—	—	.1	(s)	R4.5	—	—	—	R1.6	R.8	8.3
2005	1.3	.4	R4.3	—	R6.0	—	—	.1	(s)	R1.7	—	—	—	R1.8	R.8	R8.5
2006 <sup>P</sup>	1.3	.2	4.3	—	5.8	—	—	.1	(s)	1.7	—	—	—	1.8	.8	8.4
Industrial Sector <sup>11</sup>																
1989	20.7	5.0	53.2	7.3	86.1	—	—	2.7	21.6	0.9	—	—	—	25.2	3.5	114.8
1990	21.1	7.2	60.0	9.6	97.9	—	—	3.0	25.4	.9	—	—	—	29.3	3.6	130.8
1991	21.0	6.5	60.6	10.5	98.6	—	—	2.8	25.9	.9	—	—	—	29.6	4.3	132.6
1992	22.7	7.6	65.9	12.0	108.2	—	—	2.9	27.9	.9	—	—	—	31.8	3.2	143.3
1993	23.7	7.0	68.2	11.9	110.9	—	—	2.9	28.4	1.1	—	—	—	32.3	3.1	146.3
1994	23.6	6.8	69.6	12.1	112.1	—	—	6.0	28.7	1.0	—	—	—	35.7	3.4	151.2
1995	22.4	6.0	71.7	11.9	112.1	—	—	5.3	28.9	.9	—	—	—	35.1	3.9	151.0
1996	22.2	6.3	71.0	13.0	112.5	—	—	5.9	28.4	.9	—	—	—	35.2	3.4	151.0
1997	23.2	5.6	75.1	11.8	115.8	—	—	5.7	28.2	.9	—	—	—	34.8	3.5	154.1
1998	22.3	6.2	77.1	11.2	116.8	—	—	5.3	27.7	.9	—	—	—	33.9	3.4	154.1
1999	21.5	6.1	78.8	12.5	118.9	—	—	4.8	28.1	.7	—	—	—	33.5	3.9	156.3
2000	22.1	5.6	78.8	11.9	118.4	—	—	4.1	28.7	.8	—	—	—	33.6	4.7	156.7
2001	20.1	5.3	79.8	8.5	113.6	—	—	3.1	26.9	R.6	—	—	—	R30.6	R4.9	149.2
2002	21.5	4.4	79.0	9.5	114.4	—	—	3.8	29.6	R.8	—	—	—	R34.3	R3.8	152.6
2003	19.8	5.3	78.7	13.0	116.8	—	—	4.2	28.0	R.7	—	—	—	R32.9	R4.8	154.5
2004	20.1	5.6	77.4	13.7	116.9	—	—	3.2	27.8	R.8	—	—	—	R31.9	R5.1	153.9
2005	R19.8	R5.4	R70.4	R12.4	R107.9	—	—	R3.2	R28.1	R.8	—	—	—	32.1	R4.8	R144.7
2006 <sup>P</sup>	19.9	4.1	70.9	11.8	106.7	—	—	3.0	28.4	.7	—	—	—	32.1	5.9	144.8

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Pumped storage facility production minus energy used for pumping.

<sup>6</sup> Wood and wood-derived fuels.

<sup>7</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>8</sup> Solar thermal and photovoltaic energy.

<sup>9</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived

fuels).

<sup>10</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>11</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.05 billion kilowatthours.

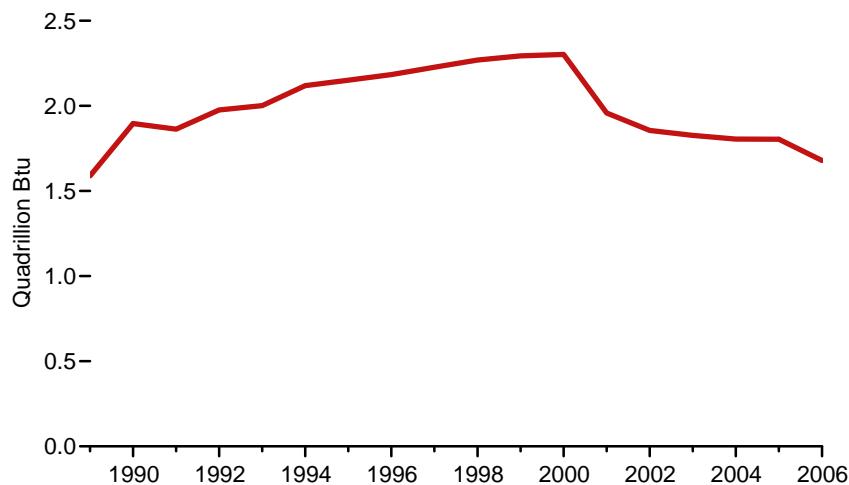
Notes: • See Tables 8.2b and 8.2c for electric power sector electricity-only and CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

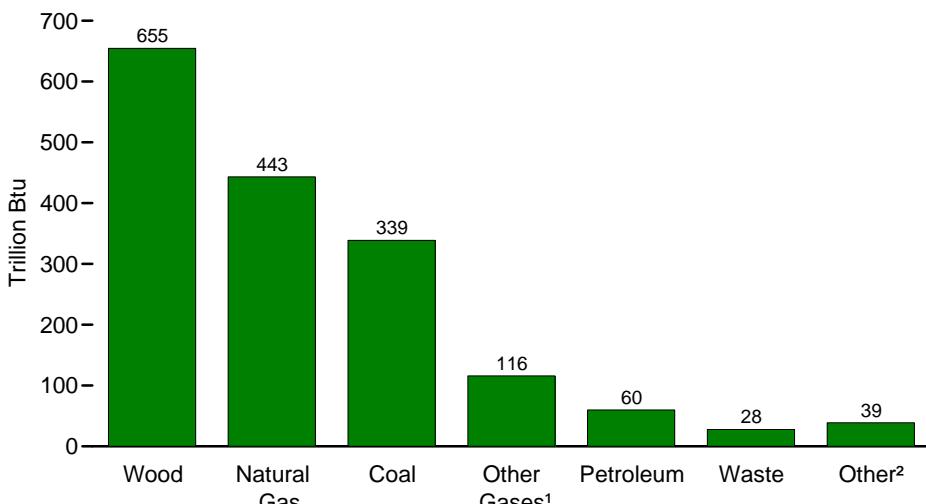
Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.3 Useful Thermal Output at Combined-Heat-and-Power Plants**

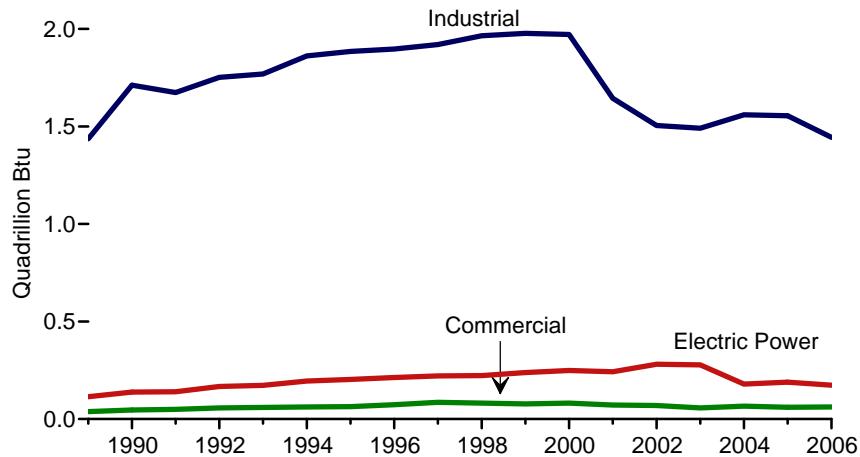
**Total (All Sectors), 1989-2006**



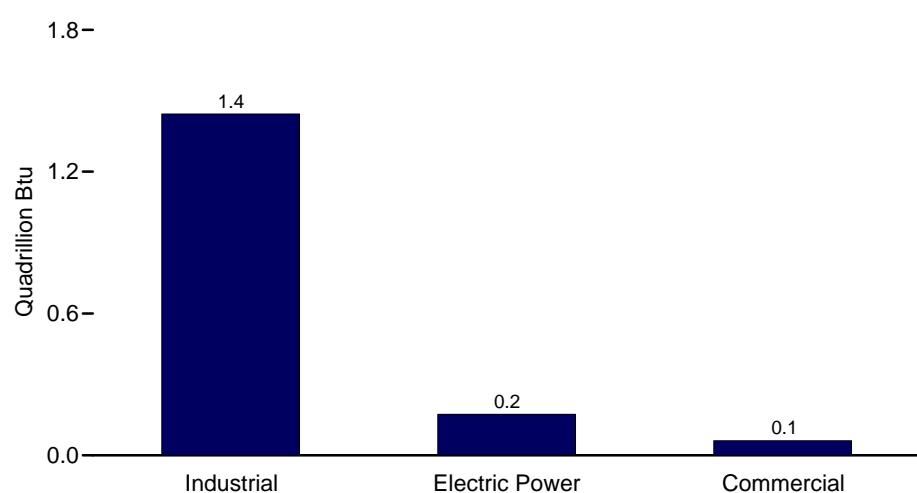
**Total (All Sectors) by Source, 2006**



**By Sector, 1989-2006**



**By Sector, 2006**



<sup>1</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>2</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 8.3a-8.3c.

**Table 8.3a Useful Thermal Output at Combined-Heat-and-Power Plants: Total (All Sectors), 1989-2006**

(Sum of Tables 8.3b and 8.3c; Trillion Btu)

Year	Fossil Fuels					Renewable Energy			Other <sup>7</sup>	Total		
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total	Biomass		Total				
						Wood <sup>5</sup>	Waste <sup>6</sup>					
1989	323	96	462	93	973	546	30	577	39	1,589		
1990	363	127	538	141	1,169	651	36	687	40	1,896		
1991	352	112	547	148	1,159	623	37	660	44	1,863		
1992	367	117	592	160	1,236	658	40	698	42	1,976		
1993	373	129	604	142	1,248	668	45	713	41	2,002		
1994	388	133	646	144	1,309	722	45	767	42	2,119		
1995	386	121	686	145	1,338	721	47	768	44	2,151		
1996	392	133	711	150	1,385	701	55	756	43	2,184		
1997	389	137	713	150	1,389	731	55	785	53	2,227		
1998	382	136	782	167	1,466	700	57	757	46	2,269		
1999	386	125	811	179	1,501	690	55	744	48	2,294		
2000	384	108	812	184	1,488	707	56	764	50	2,302		
2001	354	90	741	133	1,318	556	R28	R585	R55	1,958		
2002	337	73	709	118	1,236	546	R26	R572	R48	1,856		
2003	333	85	610	110	1,139	597	R35	R632	R55	1,826		
2004	346	96	505	134	1,081	661	R22	R684	R40	R1,805		
2005	R357	R97	R445	R137	R1,036	R697	R30	R727	R41	R1,804		
2006 <sup>P</sup>	339	60	443	116	958	655	28	682	39	1,679		

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and,

beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary.

Notes: • Data do not include electric utility combined-heat-and-power (CHP) plants. • See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 8.3b and 8.3c.

**Table 8.3b Useful Thermal Output at Combined-Heat-and-Power Plants: Electric Power Sector, 1989-2006**  
 (Subset of Table 8.3a; Trillion Btu)

Year	Fossil Fuels					Renewable Energy			Other <sup>7</sup>	Total		
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total	Biomass		Total				
						Wood <sup>5</sup>	Waste <sup>6</sup>					
1989	13	8	67	2	90	19	5	24	1	114		
1990	21	9	80	4	114	18	6	25	(s)	138		
1991	21	6	82	4	113	17	9	26	1	140		
1992	28	6	102	5	140	17	8	25	2	167		
1993	30	8	107	3	147	16	8	24	1	173		
1994	37	9	119	5	170	15	10	24	1	195		
1995	40	13	118	4	176	15	12	27	(s)	203		
1996	43	12	121	4	180	16	16	33	(s)	213		
1997	39	12	132	8	191	16	14	30	(s)	221		
1998	43	6	142	5	196	10	16	26	(s)	222		
1999	52	7	146	4	208	10	20	30	(s)	238		
2000	53	7	158	5	223	6	19	26	(s)	249		
2001	52	6	164	5	226	8	R4	R13	R3	243		
2002	40	4	214	6	264	8	R5	R13	R5	281		
2003	38	7	200	9	255	9	R11	R20	R3	278		
2004	22	1	130	16	169	6	R2	R8	R1	179		
2005	R25	1	R118	R32	R177	7	3	10	R3	R189		
2006 <sup>p</sup>	25	(s)	112	22	159	8	3	11	3	173		

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity and heat to the public. Data do not include electric utility CHP plants. • See Table 8.3c for commercial and industrial CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.3c Useful Thermal Output at Combined-Heat-and-Power Plants: Commercial and Industrial Sectors, 1989-2006**  
 (Subset of Table 8.3a; Trillion Btu)

Year	Fossil Fuels					Renewable Energy			Other <sup>7</sup>	Total		
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total	Biomass						
						Wood <sup>5</sup>	Waste <sup>6</sup>					
Commercial Sector <sup>8</sup>												
1989	14	4	10	(s)	27	(s)	10	10	—	38		
1990	15	5	16	(s)	36	(s)	10	11	—	46		
1991	16	4	21	(s)	41	(s)	9	9	(s)	50		
1992	15	4	24	(s)	44	(s)	13	14	(s)	57		
1993	18	4	23	(s)	45	(s)	14	14	(s)	59		
1994	18	4	26	(s)	48	(s)	14	14	—	62		
1995	17	3	29	—	48	(s)	15	15	(s)	63		
1996	20	3	33	R (s)	55	1	17	18	—	73		
1997	22	4	40	(s)	66	1	19	20	—	86		
1998	20	5	39	(s)	64	1	18	18	—	82		
1999	20	3	37	R (s)	61	1	17	17	—	78		
2000	21	4	39	R (s)	64	1	17	18	—	82		
2001	18	4	35	—	58	1	R8	R8	R6	72		
2002	18	3	36	—	57	1	R6	R7	R5	69		
2003	23	3	17	—	42	1	R8	R8	R6	57		
2004	24	4	21	—	49	1	R10	R10	R7	66		
2005	R21	R3	R22	—	R47	R (s)	R8	R8	R5	R60		
2006 <sup>P</sup>	21	1	27	—	49	(s)	8	8	5	62		
Industrial Sector <sup>9</sup>												
1989	297	84	385	90	856	527	15	542	38	1,437		
1990	327	113	443	137	1,019	632	20	652	40	1,711		
1991	315	103	444	144	1,005	606	19	625	44	1,674		
1992	324	107	466	155	1,052	641	19	660	40	1,752		
1993	325	117	475	139	1,055	652	23	675	39	1,769		
1994	333	119	501	138	1,092	707	21	729	41	1,862		
1995	329	105	540	140	1,114	706	20	726	44	1,884		
1996	329	118	557	146	1,150	684	21	705	43	1,897		
1997	328	121	541	142	1,132	713	22	735	53	1,920		
1998	318	124	601	162	1,206	689	24	713	46	1,965		
1999	313	115	629	175	1,233	679	18	697	48	1,978		
2000	309	98	615	179	1,201	700	20	720	50	1,971		
2001	284	80	542	128	1,034	548	R16	R564	R46	1,644		
2002	278	66	458	112	914	537	R15	R552	R39	1,505		
2003	272	75	393	101	842	588	R16	R604	R46	1,491		
2004	300	91	353	118	862	654	R11	R665	R32	R1,560		
2005	R311	R92	R305	R105	R813	R689	R20	R709	R33	R1,555		
2006 <sup>P</sup>	293	58	305	94	750	646	18	663	31	1,444		

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>8</sup> Commercial combined-heat-and-power (CHP) plants.

<sup>9</sup> Industrial combined-heat-and-power (CHP) plants.

R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.5 trillion Btu.

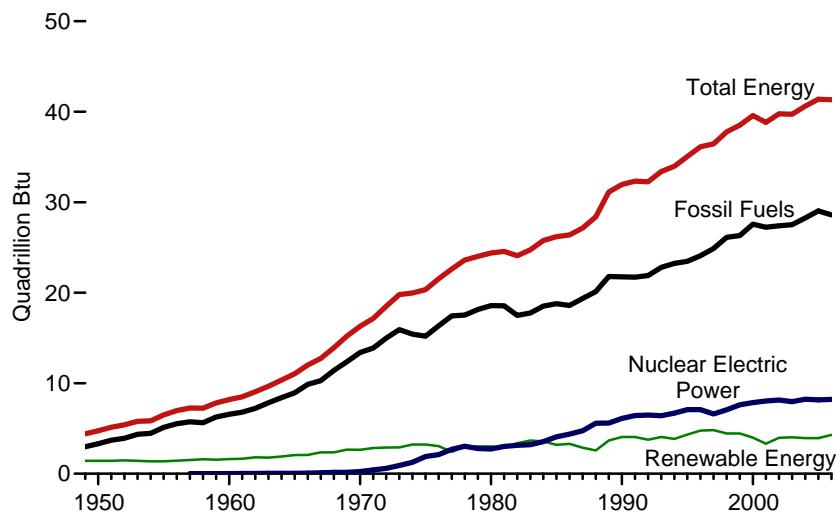
Notes: • See Table 8.3b for electric power sector CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

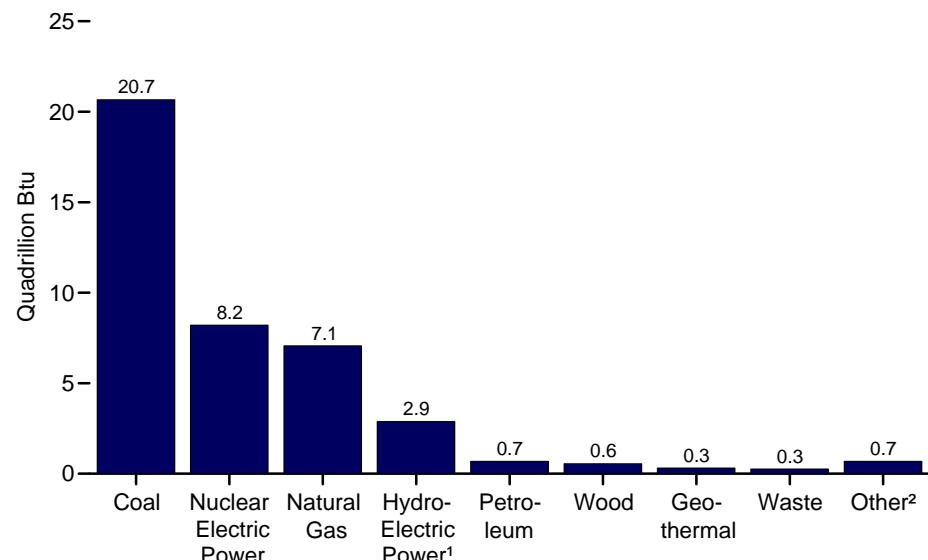
Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.4 Consumption for Electricity Generation**

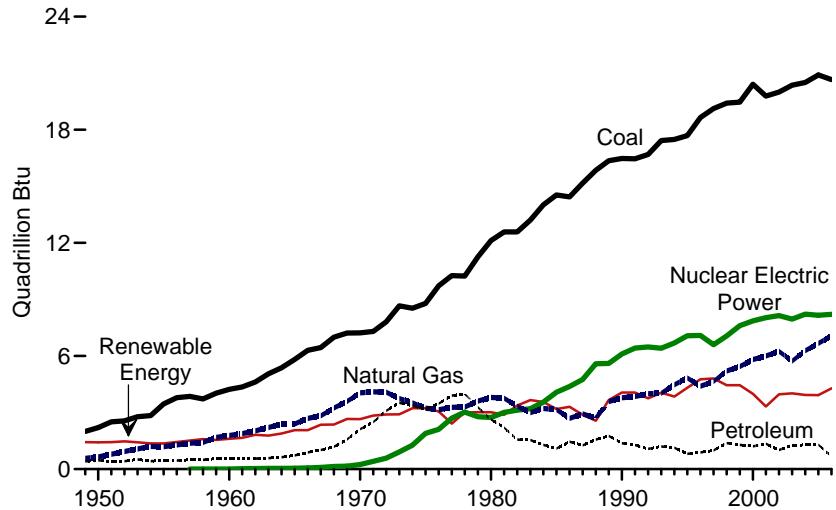
**Total and Major Fuel Categories, 1949-2006**



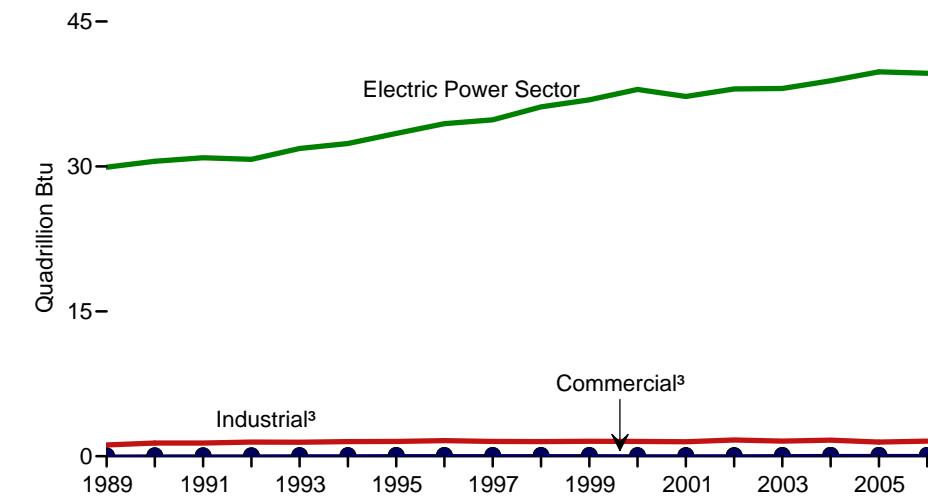
**By Major Fuel, 2006**



**By Major Fuel, 1949-2006**



**By Sector, 1989-2006**



<sup>1</sup> Conventional hydroelectric power.

<sup>2</sup> Wind, other gases, electricity net imports, solar, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>3</sup> Combined-heat-and-power plants and a small number of electricity-only plants.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 8.4a-8.4c.

**Table 8.4a Consumption for Electricity Generation by Energy Source: Total (All Sectors), Selected Years, 1949-2006**  
 (Sum of Tables 8.4b and 8.4c; Trillion Btu)

Year	Fossil Fuels					Nuclear Electric Power	Renewable Energy							Other <sup>8</sup>	Electricity Net Imports <sup>9</sup>	Total
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total		Conventional Hydroelectric Power	Biomass		Geo-thermal	Solar/PV <sup>7</sup>	Wind	Total			
							Wood <sup>5</sup>	Waste <sup>6</sup>								
1949	1,995	415	569	NA	2,979	0	1,425	6	NA	NA	NA	NA	1,431	NA	5	4,415
1950	2,199	472	651	NA	3,322	0	1,415	5	NA	NA	NA	NA	1,421	NA	6	4,749
1955	3,458	471	1,194	NA	5,123	0	1,360	3	NA	NA	NA	NA	1,363	NA	14	6,500
1960	4,228	553	1,785	NA	6,565	6	1,608	2	NA	1	NA	NA	1,610	NA	15	8,197
1965	5,821	722	2,395	NA	8,938	43	2,059	3	NA	4	NA	NA	2,066	NA	(s)	11,047
1970	7,227	2,117	4,054	NA	13,399	239	2,634	1	2	11	NA	NA	2,649	NA	7	16,293
1971	7,299	2,495	4,099	NA	13,893	413	2,824	1	2	12	NA	NA	2,839	NA	12	17,158
1972	7,811	3,097	4,084	NA	14,992	584	2,864	1	2	31	NA	NA	2,899	NA	26	18,501
1973	8,658	3,515	3,748	NA	15,921	910	2,861	1	2	43	NA	NA	2,907	NA	49	19,788
1974	8,534	3,365	3,519	NA	15,418	1,272	3,177	1	2	53	NA	NA	3,232	NA	43	19,966
1975	8,786	3,166	3,240	NA	15,191	1,900	3,155	(s)	2	70	NA	NA	3,227	NA	21	20,339
1976	9,720	3,477	3,152	NA	16,349	2,111	2,976	1	2	78	NA	NA	3,057	NA	29	21,547
1977	10,262	3,901	3,284	NA	17,446	2,702	2,333	3	2	77	NA	NA	2,416	NA	59	22,623
1978	10,238	3,987	3,297	NA	17,522	3,024	2,937	2	1	64	NA	NA	3,005	NA	67	23,618
1979	11,260	3,283	3,613	NA	18,156	2,776	2,931	3	2	84	NA	NA	3,020	NA	69	24,021
1980	12,123	2,634	3,810	NA	18,567	2,739	2,900	3	2	110	NA	NA	3,014	NA	71	24,392
1981	12,583	2,202	3,768	NA	18,553	3,008	2,758	3	1	123	NA	NA	2,885	NA	113	24,559
1982	12,582	1,568	3,342	NA	17,491	3,131	3,266	2	1	105	NA	NA	3,374	NA	100	24,096
1983	13,213	1,544	2,998	NA	17,754	3,203	3,527	2	2	129	NA	(s)	3,661	NA	121	24,738
1984	14,019	1,286	3,220	NA	18,526	3,553	3,386	5	4	165	(s)	(s)	3,560	NA	135	25,774
1985	14,542	1,090	3,160	NA	18,792	4,076	2,970	8	7	198	(s)	(s)	3,183	NA	140	26,191
1986	14,444	1,452	2,691	NA	18,586	4,380	3,071	5	7	219	(s)	(s)	3,303	NA	122	26,392
1987	15,173	1,257	2,935	NA	19,365	4,754	2,635	8	7	229	(s)	(s)	2,879	NA	158	27,157
1988	15,850	1,563	2,709	NA	20,123	5,587	2,334	10	8	217	(s)	(s)	2,569	NA	108	28,387
1989	<sup>10</sup> 16,359	<sup>10</sup> 1,757	<sup>10</sup> R3,582	90	<sup>10</sup> 21,789	<sup>10</sup> 5,602	<sup>11</sup> 2,837	<sup>10</sup> 345	<sup>10</sup> 151	<sup>10</sup> 308	<sup>10</sup> 3	<sup>10</sup> 22	<sup>10</sup> 3,665	39	37	<sup>R</sup> 31,133
1990	16,477	1,367	<sup>R</sup> 3,791	112	<sup>R</sup> 21,747	6,104	3,046	442	211	326	4	29	4,058	36	8	<sup>R</sup> 31,954
1991	16,460	1,276	3,861	125	21,723	6,422	3,016	425	247	335	5	31	4,058	59	67	32,329
1992	16,686	1,076	3,999	141	21,903	6,479	2,617	481	283	338	4	30	3,752	40	87	32,261
1993	17,424	1,203	4,027	136	22,790	6,410	2,892	485	288	351	5	31	4,052	34	95	33,381
1994	17,485	1,135	4,476	136	23,233	6,694	2,683	498	301	325	5	36	3,848	40	153	33,968
1995	17,687	813	4,840	133	23,473	7,075	3,205	480	316	280	5	33	4,318	42	134	35,043
1996	18,650	888	4,400	159	24,097	7,087	3,590	513	324	300	5	33	4,765	37	137	36,123
1997	19,128	985	4,658	119	24,890	6,597	3,640	484	339	309	5	34	4,811	36	116	36,451
1998	19,417	1,378	5,205	125	26,124	7,068	3,297	475	332	311	5	31	4,450	36	88	37,767
1999	19,467	1,285	5,441	126	26,320	7,610	3,268	490	332	312	5	46	4,452	41	99	38,522
2000	<sup>R</sup> 20,411	1,212	5,818	126	<sup>R</sup> 27,567	7,862	2,811	496	330	296	5	57	3,995	46	115	<sup>R</sup> 39,586
2001	<sup>R</sup> 19,789	<sup>R</sup> 1,347	<sup>R</sup> 6,001	97	<sup>R</sup> 27,235	8,033	2,242	486	<sup>R</sup> 228	289	6	70	<sup>R</sup> 3,320	<sup>R</sup> 160	75	<sup>R</sup> 38,823
2002	19,997	1,014	6,250	131	27,392	8,143	2,689	605	<sup>R</sup> 257	305	6	105	<sup>R</sup> 3,967	<sup>R</sup> 191	72	39,764
2003	20,367	1,266	5,736	156	27,525	7,959	2,825	519	<sup>R</sup> 249	303	5	115	<sup>R</sup> 4,016	<sup>R</sup> 193	22	39,715
2004	20,508	<sup>R</sup> 1,282	<sup>R</sup> 6,281	187	<sup>R</sup> 28,257	8,222	2,690	534	<sup>R</sup> 254	311	6	142	<sup>R</sup> 3,936	<sup>R</sup> 176	39	<sup>R</sup> 40,629
2005	<sup>R</sup> 20,904	<sup>R</sup> 1,296	<sup>R</sup> 6,671	<sup>R</sup> 177	<sup>R</sup> 29,048	<sup>R</sup> 8,160	<sup>R</sup> 2,703	<sup>R</sup> 482	<sup>R</sup> 252	<sup>R</sup> 309	6	<sup>R</sup> 178	<sup>R</sup> 3,929	<sup>R</sup> 161	84	<sup>R</sup> 41,383
2006 <sup>p</sup>	20,662	686	7,070	180	28,598	8,208	2,889	554	263	312	5	258	4,282	178	60	41,327

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>9</sup> Net imports equal imports minus exports. See Note 3, "Electricity Imports and Exports," at end of section.

<sup>10</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

<sup>11</sup> Through 1988, data are for electric utilities and industrial plants. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for energy consumed to produce electricity. Data also include energy consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants.

• This table no longer shows energy consumption by hydroelectric pumped storage plants. The change was made because most of the electricity used to pump water into elevated storage reservoirs is generated by plants other than pumped-storage plants; thus, the associated energy is already accounted for in other data columns in this table (such as "Conventional Hydroelectric Power," "Coal," "Natural Gas," and so on).

• See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuel/electric.html>.

Sources: • 1949-1988—Tables 8.4b for electric power sector, and Tables 8.1 and A6 for industrial sector.

• 1989 forward—Tables 8.4b and 8.4c.

**Table 8.4b Consumption for Electricity Generation by Energy Source: Electric Power Sector, Selected Years, 1949-2006** (Subset of Table 8.4a; Trillion Btu)

Year	Fossil Fuels					Nuclear Electric Power	Renewable Energy							Other <sup>8</sup>	Electricity Net Imports <sup>9</sup>	Total				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total		Conventional Hydroelectric Power		Biomass		Geo-thermal	Solar/PV <sup>7</sup>	Wind	Total						
							Wood <sup>5</sup>	Waste <sup>6</sup>	Wood	Waste										
1949	1,995	415	569	NA	2,979	0	1,349	6	NA	NA	NA	NA	NA	1,355	NA	5	4,339			
1950	2,199	472	651	NA	3,322	0	1,346	5	NA	NA	NA	NA	NA	1,351	NA	6	4,679			
1955	3,458	471	1,194	NA	5,123	0	1,322	3	NA	NA	NA	NA	NA	1,325	NA	14	6,461			
1960	4,228	553	1,785	NA	6,565	6	1,569	2	NA	1	NA	NA	NA	1,571	NA	15	8,158			
1965	5,821	722	2,395	NA	8,938	43	2,026	3	NA	4	NA	NA	NA	2,033	NA	(s)	11,014			
1970	7,227	2,117	4,054	NA	13,399	239	2,600	1	2	11	NA	NA	NA	2,615	NA	7	16,259			
1971	7,299	2,495	4,099	NA	13,893	413	2,790	1	2	12	NA	NA	NA	2,806	NA	12	17,124			
1972	7,811	3,097	4,084	NA	14,992	584	2,829	1	2	31	NA	NA	NA	2,864	NA	26	18,466			
1973	8,658	3,515	3,748	NA	15,921	910	2,827	1	2	43	NA	NA	NA	2,873	NA	49	19,753			
1974	8,534	3,365	3,519	NA	15,418	1,272	3,143	1	2	53	NA	NA	NA	3,199	NA	43	19,933			
1975	8,786	3,166	3,240	NA	15,191	1,900	3,122	(s)	2	70	NA	NA	NA	3,194	NA	21	20,307			
1976	9,720	3,477	3,152	NA	16,349	2,111	2,943	1	2	78	NA	NA	NA	3,024	NA	29	21,513			
1977	10,262	3,901	3,284	NA	17,446	2,702	2,301	3	2	77	NA	NA	NA	2,383	NA	59	22,591			
1978	10,238	3,987	3,297	NA	17,522	3,024	2,905	2	1	64	NA	NA	NA	2,973	NA	67	23,587			
1979	11,260	3,283	3,613	NA	18,156	2,776	2,897	3	2	84	NA	NA	NA	2,986	NA	69	23,987			
1980	12,123	2,634	3,810	NA	18,567	2,739	2,867	3	2	110	NA	NA	NA	2,982	NA	71	24,359			
1981	12,583	2,202	3,768	NA	18,553	3,008	2,725	3	1	123	NA	NA	NA	2,852	NA	113	24,525			
1982	12,582	1,568	3,342	NA	17,491	3,131	3,233	2	1	105	NA	NA	NA	3,341	NA	100	24,063			
1983	13,213	1,544	2,998	NA	17,754	3,203	3,494	2	2	129	NA	(s)	NA	3,627	NA	121	24,705			
1984	14,019	1,286	3,220	NA	18,526	3,553	3,353	5	4	165	(s)	(s)	NA	3,527	NA	135	25,741			
1985	14,542	1,090	3,160	NA	18,792	4,076	2,937	8	7	198	(s)	(s)	NA	3,150	NA	140	26,158			
1986	14,444	1,452	2,691	NA	18,586	4,380	3,038	5	7	219	(s)	(s)	NA	3,270	NA	122	26,359			
1987	15,173	1,257	2,935	NA	19,365	4,754	2,602	8	7	229	(s)	(s)	NA	2,846	NA	158	27,124			
1988	15,850	1,563	2,709	NA	20,123	5,587	2,302	10	8	217	(s)	(s)	NA	2,536	NA	108	28,354			
1989	<sup>10</sup> 16,121	<sup>10</sup> 1,697	<sup>10</sup> 3,107	7	<sup>10</sup> 20,932	<sup>10</sup> 5,602	<sup>10</sup> 2,808	<sup>10</sup> 75	<sup>10</sup> 126	<sup>10</sup> 308	<sup>10</sup> 3	<sup>10</sup> 22	<sup>10</sup> 3,342	2	37	29,916				
1990	16,235	1,281	R3,233	6	R20,755	6,104	3,014	106	180	326	4	29	3,658	(s)	8	R30,526				
1991	16,223	1,199	3,296	6	20,725	6,422	2,985	104	217	335	5	31	3,677	4	67	30,895				
1992	16,431	990	3,407	12	20,840	6,479	2,586	120	252	338	4	30	3,329	3	87	30,738				
1993	17,159	1,122	3,426	12	21,719	6,410	2,861	129	255	351	5	31	3,632	3	95	31,859				
1994	17,215	1,056	3,851	12	22,134	6,694	2,620	134	269	325	5	36	3,389	2	153	32,372				
1995	17,416	743	4,179	18	22,356	7,075	3,149	106	282	280	5	33	3,855	2	134	33,423				
1996	18,375	810	3,730	16	22,930	7,087	3,528	117	280	300	5	33	4,264	2	137	34,420				
1997	18,855	917	3,981	14	23,768	6,597	3,581	117	292	309	5	34	4,337	1	116	34,819				
1998	19,162	1,306	4,520	23	25,011	7,068	3,241	125	287	311	5	31	4,000	2	88	36,168				
1999	19,214	1,211	4,742	14	25,181	7,610	3,218	125	290	312	5	46	3,996	1	99	36,888				
2000	R20,153	1,145	5,120	19	R26,438	7,862	2,768	126	294	296	5	57	3,547	1	115	R37,963				
2001	R19,549	R1,280	R5,290	9	R26,128	8,033	2,209	116	R205	289	6	70	R2,894	R109	75	R37,239				
2002	19,733	955	5,522	25	26,235	8,143	2,650	141	R224	305	6	105	R3,430	R137	72	38,016				
2003	20,137	1,199	5,009	30	26,374	7,959	2,781	156	R216	303	5	115	R3,576	R136	22	38,068				
2004	20,277	1,216	R5,443	38	R26,975	8,222	2,656	157	R220	311	6	142	R3,493	R136	39	R38,865				
2005	R20,705	R1,240	R5,888	R44	R27,877	R8,160	R2,670	R176	R217	R309	6	R178	R3,555	R120	84	R39,797				
2006 <sup>p</sup>	20,449	642	6,279	45	27,415	8,208	2,858	180	230	312	5	258	3,843	122	60	39,649				

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>9</sup> Net imports equal imports minus exports. See Note 3, "Electricity Imports and Exports," at end of section.

<sup>10</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for energy consumed to produce electricity. Data also include energy consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants.

• The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 8.4c for commercial and industrial CHP and electricity-only data. • This table no longer shows energy consumption by hydroelectric pumped storage plants. The change was made because most of the electricity used to pump water into elevated storage reservoirs is generated by plants other than pumped-storage plants; thus, the associated energy is already accounted for in other data columns in this table (such as "Conventional Hydroelectric Power," "Coal," "Natural Gas," and so on). • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

Sources: **Electricity Net Imports:** Tables 8.1 and A6. **All Other Data:** • 1949-1988—Tables 8.2b, 8.5b, A1, A4, A5, and A6. • 1989-1997—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.4c Consumption for Electricity Generation by Energy Source: Commercial and Industrial Sectors, 1989-2006**  
 (Subset of Table 8.4a; Trillion Btu)

Year	Fossil Fuels					Nuclear Electric Power	Renewable Energy							Electricity Net Imports	Total			
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total		Conventional Hydroelectric Power		Biomass		Geo- thermal	Solar/PV <sup>7</sup>	Wind	Total				
							Wood <sup>5</sup>	Waste <sup>6</sup>										
<b>Commercial Sector <sup>9</sup></b>																		
1989	9	7	18	1	36	—	1	2	9	—	—	—	12	—	—	47		
1990	9	6	R28	1	R45	—	1	2	15	—	—	—	18	—	—	R63		
1991	9	3	28	1	41	—	1	2	15	—	—	—	18	(s)	—	59		
1992	8	3	33	1	45	—	1	1	16	—	—	—	19	(s)	—	64		
1993	9	4	38	1	53	—	1	1	16	—	—	—	18	R (s)	—	71		
1994	9	4	42	1	56	—	1	1	17	—	—	—	19	—	—	75		
1995	12	4	44	—	60	—	1	1	21	—	—	—	23	(s)	—	83		
1996	14	4	44	R (s)	62	—	1	1	31	—	—	—	33	(s)	—	95		
1997	14	5	40	(s)	59	—	1	1	34	—	—	—	35	R (s)	—	94		
1998	11	5	42	(s)	57	—	1	1	32	—	—	—	34	—	—	91		
1999	12	6	40	R (s)	57	—	1	(s)	33	—	—	—	35	R (s)	—	92		
2000	12	5	38	R (s)	55	—	1	(s)	26	—	—	—	28	(s)	—	82		
2001	13	6	37	R (s)	56	—	1	(s)	R15	—	—	—	R16	R7	—	79		
2002	9	4	31	R (s)	44	—	(s)	(s)	R18	—	—	—	R19	R11	—	73		
2003	13	5	39	—	58	—	1	(s)	R19	—	—	—	R21	R11	—	89		
2004	13	7	47	—	67	—	1	1	R22	—	—	—	R24	R13	—	104		
2005	R17	6	R49	—	R71	—	1	1	R25	—	—	—	R26	R13	—	R111		
2006 <sup>P</sup>	16	2	49	—	68	—	1	1	26	—	—	—	27	14	—	110		
<b>Industrial Sector <sup>10</sup></b>																		
1989	229	53	456	83	821	—	28	267	15	—	—	—	311	37	—	1,169		
1990	233	80	R530	104	R947	—	31	335	16	—	—	—	382	36	—	R1,365		
1991	228	74	537	118	957	—	30	318	14	—	—	—	362	55	—	1,374		
1992	246	84	559	128	1,017	—	31	359	15	—	—	—	405	37	—	1,459		
1993	256	77	562	123	1,019	—	30	355	17	—	—	—	401	31	—	1,451		
1994	261	75	584	123	1,043	—	62	364	14	—	—	—	440	38	—	1,521		
1995	259	66	617	114	1,057	—	55	373	13	—	—	—	440	40	—	1,537		
1996	261	74	626	143	1,104	—	61	394	13	—	—	—	468	35	—	1,607		
1997	260	63	637	105	1,064	—	58	367	14	—	—	—	439	36	—	1,538		
1998	245	67	643	102	1,056	—	55	349	13	—	—	—	417	35	—	1,508		
1999	242	68	660	112	1,081	—	49	364	8	—	—	—	422	39	—	1,542		
2000	245	61	660	107	1,074	—	42	369	10	—	—	—	421	45	—	1,540		
2001	227	62	674	88	1,051	—	33	370	R7	—	—	—	R410	R44	—	1,504		
2002	255	55	697	106	1,113	—	39	464	R15	—	—	—	R518	R43	—	1,675		
2003	217	61	687	127	1,093	—	43	362	R13	—	—	—	R419	R46	—	1,558		
2004	217	59	R790	R148	R1,215	—	33	376	R11	—	—	—	R419	R27	—	R1,660		
2005	R182	R51	R734	R133	R1,100	—	32	R306	R9	—	—	—	R347	R28	—	R1,475		
2006 <sup>P</sup>	197	42	742	134	1,115	—	30	373	8	—	—	—	411	42	—	1,568		

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>9</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>10</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

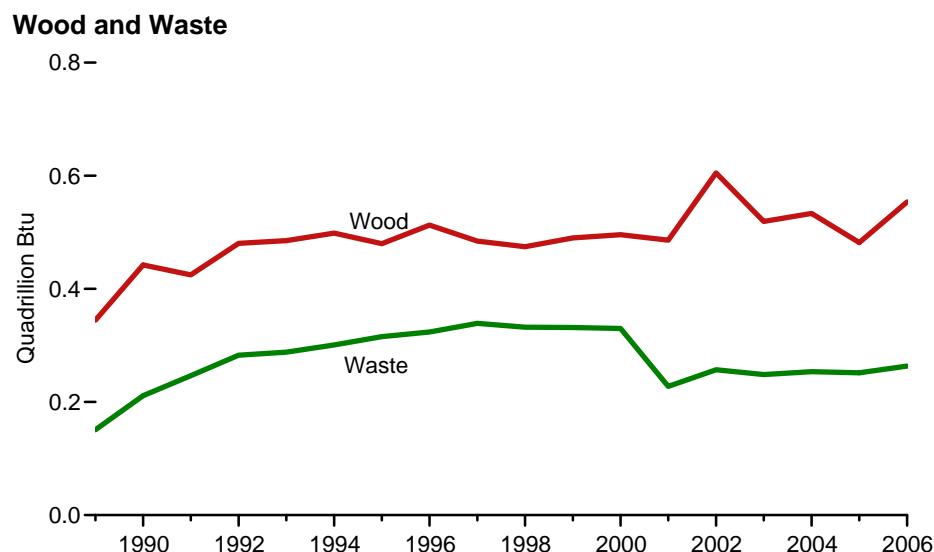
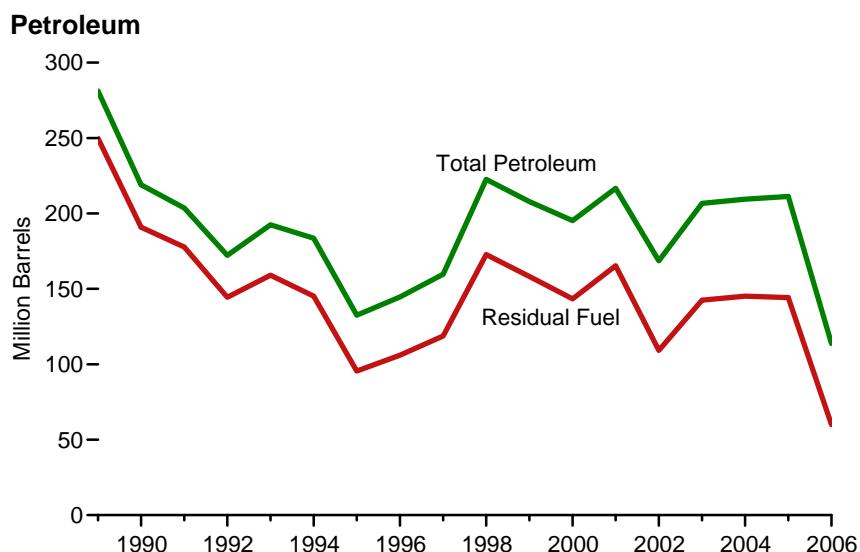
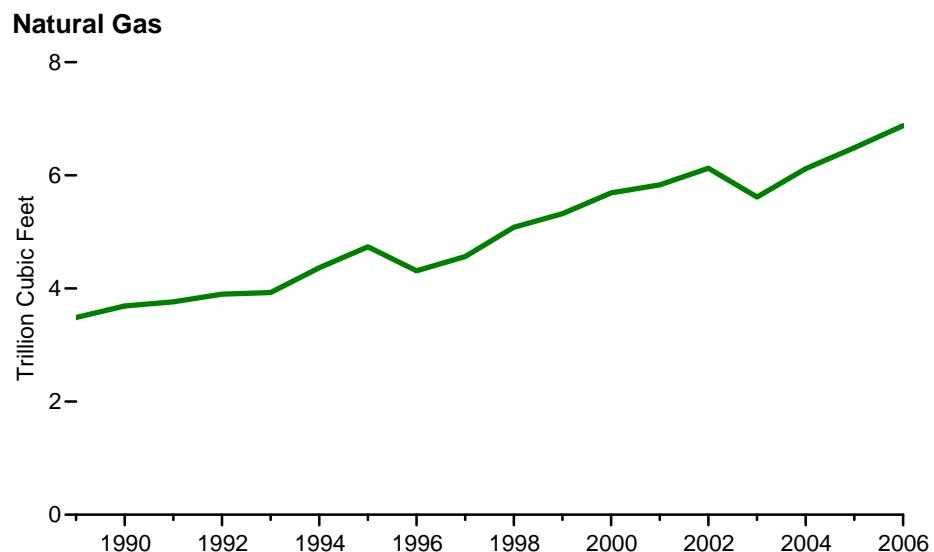
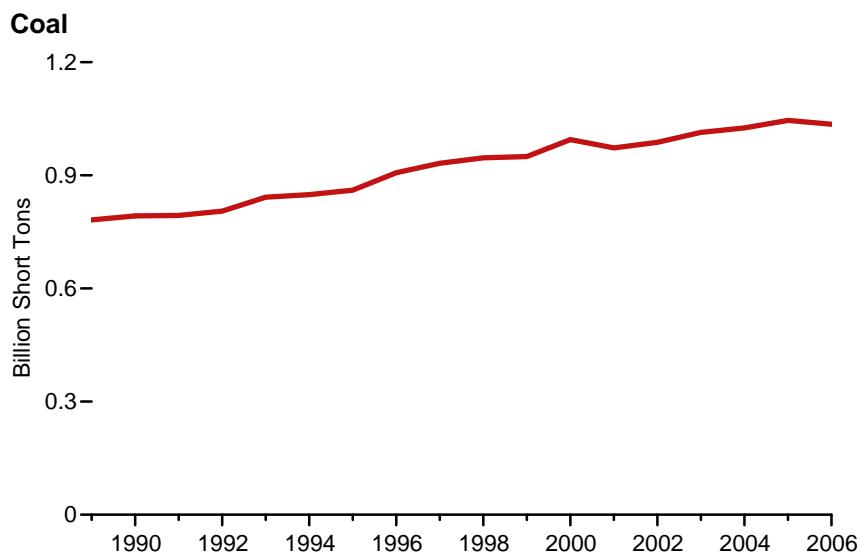
R=Revised. P=Preliminary. — = Not applicable. — = No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for energy consumed to produce electricity. • See Table 8.4b for electric power sector electricity-only and CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

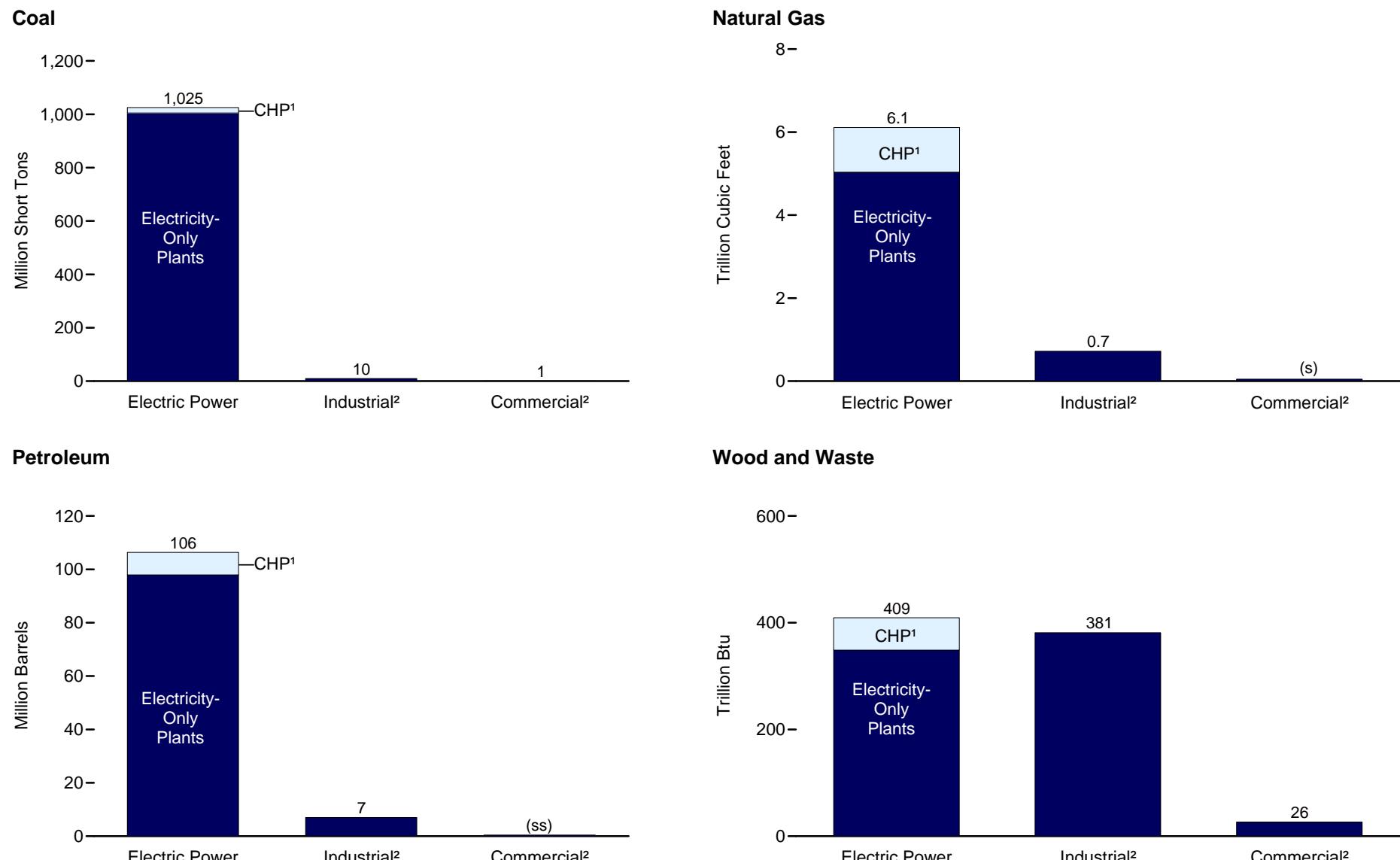
Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.5a Consumption of Combustible Fuels for Electricity Generation, 1989-2006**



Source: Table 8.5a.

**Figure 8.5b Consumption of Combustible Fuels for Electricity Generation by Sector, 2006**



<sup>1</sup> Combined-heat-and-power plants.

<sup>2</sup> Combined-heat-and-power and electricity-only plants.

(s)=Less than 0.05 trillion cubic feet.

(ss)=Less than 0.5 million barrels.

Sources: Tables 8.5b-8.5d.

**Table 8.5a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors), Selected Years, 1949-2006**  
 (Sum of Tables 8.5b and 8.5d)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
		Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu
1949	83,963	4,767	61,534	NA	NA	66,301	550,121	NA	6	NA	NA
1950	91,871	5,423	69,998	NA	NA	75,421	628,919	NA	5	NA	NA
1955	143,759	5,412	69,862	NA	NA	75,274	1,153,280	NA	3	NA	NA
1960	176,685	3,824	84,371	NA	NA	88,195	1,724,762	NA	2	NA	NA
1965	244,788	4,928	110,274	NA	NA	115,203	2,321,101	NA	3	NA	NA
1970	320,182	24,123	311,381	NA	636	338,686	3,931,860	NA	1	2	NA
1971	327,301	34,283	362,187	NA	605	399,496	3,976,018	NA	1	2	NA
1972	351,768	53,465	440,294	NA	627	496,895	3,976,913	NA	1	2	NA
1973	389,212	47,058	513,190	NA	507	562,781	3,660,172	NA	1	2	NA
1974	391,811	53,128	483,146	NA	625	539,399	3,443,428	NA	1	2	NA
1975	405,962	38,907	467,221	NA	70	506,479	3,157,669	NA	(s)	2	NA
1976	448,371	41,843	514,077	NA	68	556,261	3,080,868	NA	1	2	NA
1977	477,126	48,837	574,869	NA	98	624,193	3,191,200	NA	3	2	NA
1978	481,235	47,520	588,319	NA	398	637,830	3,188,363	NA	2	1	NA
1979	527,051	30,691	492,606	NA	268	524,636	3,490,523	NA	3	2	NA
1980	569,274	29,051	391,163	NA	179	421,110	3,681,595	NA	3	2	NA
1981	596,797	21,313	329,798	NA	139	351,806	3,640,154	NA	3	1	NA
1982	593,666	15,337	234,434	NA	149	250,517	3,225,518	NA	2	1	NA
1983	625,211	16,512	228,984	NA	261	246,804	2,910,767	NA	2	2	NA
1984	664,399	15,190	189,289	NA	252	205,736	3,111,342	NA	5	4	NA
1985	693,841	14,635	158,779	NA	231	174,571	3,044,083	NA	8	7	NA
1986	685,056	14,326	216,156	NA	313	232,046	2,602,370	NA	5	7	NA
1987	717,894	15,367	184,011	NA	348	201,116	2,844,051	NA	8	7	NA
1988	758,372	18,769	229,327	NA	409	250,141	2,635,613	NA	10	8	NA
1989 <sup>11</sup>	781,672	27,733	249,820	303	667	281,192	3,485,429	90	345	151	39
1990	792,457	18,143	190,849	437	1,914	218,997	3,691,563	112	442	211	36
1991	793,666	16,564	177,780	380	1,789	203,669	3,764,778	125	425	247	59
1992	805,140	14,493	144,467	759	2,504	172,241	3,899,718	141	481	283	40
1993	842,153	16,845	159,059	715	3,169	192,462	3,928,653	136	485	288	34
1994	848,796	22,365	145,225	929	3,020	183,618	4,367,148	136	498	301	40
1995	860,594	19,615	95,507	680	3,355	132,578	4,737,871	133	480	316	42
1996	907,209	20,252	106,055	1,712	3,322	144,626	4,312,458	159	513	324	37
1997	931,949	20,309	118,741	237	4,086	159,715	4,564,770	119	484	339	36
1998	946,295	25,062	172,728	549	4,860	222,640	5,081,384	125	475	332	36
1999	949,802	25,951	158,187	974	4,552	207,871	5,321,984	126	490	332	41
2000	994,933	31,675	143,381	1,450	3,744	195,228	5,691,481	126	496	330	46
2001	972,691	31,150	165,312	855	3,871	216,672	5,832,305	97	486	R <sup>228</sup>	R <sup>160</sup>
2002	987,583	23,286	109,235	1,894	6,836	168,597	6,126,062	131	605	R <sup>257</sup>	R <sup>191</sup>
2003	1,014,058	29,672	142,518	2,947	6,303	206,653	5,616,135	156	519	R <sup>249</sup>	R <sup>193</sup>
2004	R <sup>1,026,018</sup>	R <sup>20,669</sup>	R <sup>145,171</sup>	3,959	7,942	R <sup>209,508</sup>	R <sup>6,116,574</sup>	187	534	R <sup>254</sup>	R <sup>176</sup>
2005	R <sup>1,045,878</sup>	R <sup>21,163</sup>	R <sup>144,234</sup>	R <sup>3,303</sup>	R <sup>8,511</sup>	R <sup>211,256</sup>	R <sup>6,486,761</sup>	R <sup>177</sup>	R <sup>482</sup>	R <sup>252</sup>	R <sup>161</sup>
2006 <sup>P</sup>	1,035,469	13,543	60,028	2,063	7,634	113,806	6,878,086	180	554	263	178

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. For 1949-1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980-2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. For 1949-1979, data are for steam plant use of petroleum. For 1980-2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for fuels consumed to produce electricity. Data also include fuels consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants.

• See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 8.5b and 8.5d.

**Table 8.5b Consumption of Combustible Fuels for Electricity Generation: Electric Power Sector, Selected Years, 1949-2006** (Subset of Table 8.5a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu		Trillion Btu
1949	83,963	4,767	61,534	NA	NA	66,301	550,121	NA	6	NA	NA
1950	91,871	5,423	69,998	NA	NA	75,421	628,919	NA	5	NA	NA
1955	143,759	5,412	69,862	NA	NA	75,274	1,153,280	NA	3	NA	NA
1960	176,685	3,824	84,371	NA	NA	88,195	1,724,762	NA	2	NA	NA
1965	244,788	4,928	110,274	NA	NA	115,203	2,321,101	NA	3	NA	NA
1970	320,182	24,123	311,381	NA	636	338,686	3,931,860	NA	1	2	NA
1971	327,301	34,283	362,187	NA	605	399,496	3,976,018	NA	1	2	NA
1972	351,768	53,465	440,294	NA	627	496,895	3,976,913	NA	1	2	NA
1973	389,212	47,058	513,190	NA	507	562,781	3,660,172	NA	1	2	NA
1974	391,811	53,128	483,146	NA	625	539,399	3,443,428	NA	1	2	NA
1975	405,962	38,907	467,221	NA	70	506,479	3,157,669	NA	(s)	2	NA
1976	448,371	41,843	514,077	NA	68	556,261	3,080,868	NA	1	2	NA
1977	477,126	48,837	574,869	NA	98	624,193	3,191,200	NA	3	2	NA
1978	481,235	47,520	588,319	NA	398	637,830	3,188,363	NA	2	1	NA
1979	527,051	30,691	492,606	NA	268	524,636	3,490,523	NA	3	2	NA
1980	569,274	29,051	391,163	NA	179	421,110	3,681,595	NA	3	2	NA
1981	596,797	21,313	329,798	NA	139	351,806	3,640,154	NA	3	1	NA
1982	593,666	15,337	234,434	NA	149	250,517	3,225,518	NA	2	1	NA
1983	625,211	16,512	228,984	NA	261	246,804	2,910,767	NA	2	2	NA
1984	664,399	15,190	189,289	NA	252	205,736	3,111,342	NA	5	4	NA
1985	693,841	14,635	158,779	NA	231	174,571	3,044,083	NA	8	7	NA
1986	685,056	14,326	216,156	NA	313	232,046	2,602,370	NA	5	7	NA
1987	717,894	15,367	184,011	NA	348	201,116	2,844,051	NA	8	7	NA
1988	758,372	18,769	229,327	NA	409	250,141	2,635,613	NA	10	8	NA
1989 <sup>11</sup>	771,551	26,036	242,708	9	517	271,340	3,023,513	7	75	126	2
1990	781,301	16,394	183,285	25	1,008	204,745	3,147,289	6	106	180	(s)
1991	782,653	14,255	171,629	58	974	190,810	3,216,056	6	104	217	4
1992	793,390	12,469	137,681	118	1,490	157,719	3,324,963	12	120	252	3
1993	829,851	14,559	151,407	213	2,571	179,034	3,344,239	12	129	255	3
1994	836,113	20,241	137,198	667	2,256	169,387	3,758,484	12	134	269	2
1995	847,854	18,066	88,895	441	2,452	119,663	4,093,773	18	106	282	2
1996	894,400	18,472	98,795	567	2,467	130,168	3,659,810	16	117	280	2
1997	919,009	18,646	112,423	130	3,201	147,202	3,903,195	14	117	292	1
1998	934,126	23,166	165,875	411	3,999	209,447	4,415,813	23	125	287	2
1999	937,888	23,875	151,921	514	3,607	194,345	4,643,775	14	125	290	1
2000	982,713	29,722	138,047	403	3,155	183,946	5,014,071	19	126	294	1
2001	961,523	29,056	159,150	374	3,308	205,119	5,142,493	9	116	R205	R109
2002	975,251	21,810	104,577	1,243	5,705	156,154	5,408,279	25	141	R224	R137
2003	1,003,036	27,441	137,361	1,937	5,719	195,336	4,909,248	30	156	R216	R136
2004	R1,015,079	R18,927	R139,806	2,702	7,357	R198,220	R5,305,863	38	157	R220	R136
2005	R1,036,140	R19,587	R139,376	R2,634	R8,066	R201,926	R5,724,912	R44	R176	R217	R120
2006 <sup>p</sup>	1,025,119	12,773	56,596	1,265	7,147	106,369	6,110,235	45	180	230	122

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. For 1949-1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980-2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. For 1949-1979, data are for steam plant use of petroleum. For 1980-2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for fuels consumed to produce electricity. Data also include fuels consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants.

• The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 8.5d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1949-September 1977—Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • October 1977-1981—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • 1982-1988—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • 1989-1997—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.5c Consumption of Combustible Fuels for Electricity Generation: Electric Power Sector by Plant Type, 1989-2006** (Breakout of Table 8.5b)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
Year	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu	
<b>Electricity-Only Plants <sup>11</sup></b>											
1989	767,378	25,574	241,960	3	517	270,125	2,790,567	—	59	111	—
1990	774,213	14,956	181,231	17	1,008	201,246	2,794,110	(s)	87	162	—
1991	773,183	13,822	171,157	51	974	189,898	2,822,159	(s)	85	195	—
1992	781,186	11,998	135,779	48	1,320	154,428	2,828,996	(s)	94	232	—
1993	816,558	13,460	149,287	11	1,553	170,521	2,755,093	(s)	101	237	—
1994	821,209	16,693	134,666	52	1,193	157,375	3,064,561	(s)	112	248	—
1995	832,928	16,169	86,584	133	1,082	108,297	3,287,571	(s)	84	262	—
1996	878,825	17,361	96,386	50	1,010	118,848	2,823,724	(s)	94	258	—
1997	904,245	17,702	109,989	30	1,687	136,156	3,039,227	1	91	266	—
1998	920,353	22,293	163,541	295	2,202	197,137	3,543,931	1	95	263	—
1999	924,692	22,877	149,193	380	1,891	181,905	3,729,175	1	105	264	—
2000	967,080	28,001	135,419	94	1,457	170,799	4,092,729	2	105	267	—
2001	946,068	27,695	157,090	26	1,827	193,945	4,163,930	(s)	96	R179	R98
2002	960,077	21,521	102,622	444	3,925	144,212	4,258,467	6	118	R193	R117
2003	983,538	25,951	136,050	936	4,794	186,904	3,780,314	6	127	R185	R120
2004	R994,774	R17,944	R137,736	1,441	6,096	R187,601	R4,141,535	5	134	R190	R122
2005	R1,015,640	R18,689	R137,082	R1,676	R6,876	R191,827	R4,592,271	R (s)	R143	R189	R108
2006 <sup>P</sup>	1,005,099	12,442	54,439	841	6,043	97,937	5,032,774	(s)	148	200	109
<b>Combined-Heat-and-Power Plants <sup>12</sup></b>											
1989	4,173	462	747	6	—	1,215	232,946	7	16	16	2
1990	7,088	1,438	2,054	7	—	3,499	353,179	6	18	18	(s)
1991	9,470	433	473	7	—	912	393,898	6	20	22	4
1992	12,204	471	1,902	69	170	3,291	495,967	12	25	20	3
1993	13,293	1,098	2,120	202	1,018	8,513	589,147	12	28	18	3
1994	14,904	3,548	2,531	615	1,063	12,011	693,923	12	22	22	2
1995	14,926	1,898	2,311	307	1,370	11,366	806,202	18	22	20	2
1996	15,575	1,111	2,410	517	1,456	11,320	836,086	15	24	22	2
1997	14,764	944	2,434	100	1,514	11,046	863,968	14	26	26	1
1998	13,773	872	2,334	117	1,797	12,310	871,881	21	30	24	2
1999	13,197	998	2,728	134	1,716	12,440	914,600	14	20	26	1
2000	15,634	1,721	2,627	310	1,698	13,147	921,341	17	21	28	1
2001	15,455	1,360	2,059	347	1,482	11,175	978,563	9	20	R26	R11
2002	15,174	289	1,955	800	1,780	11,942	1,149,812	20	23	R30	R20
2003	19,498	1,491	1,311	1,002	926	8,431	1,128,935	23	29	R31	R16
2004	R20,306	983	2,070	1,261	1,261	R10,620	R1,164,328	33	23	R30	R14
2005	R20,500	R898	R2,293	R958	R1,190	R10,099	R1,132,641	R44	R32	R28	R12
2006 <sup>P</sup>	20,020	330	2,157	423	1,104	8,432	1,077,461	45	31	29	13

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. Through 2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Electricity-only plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity to the public. Data also include a small number of electric utility

combined-heat-and-power (CHP) plants.

<sup>12</sup> Combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity and heat to the public. Data do not include electric utility CHP plants—these are included under "Electricity-Only Plants."

R=Revised. P=Preliminary. —=No data reported. (s)=Less than 0.5.

Notes: • Data are for fuels consumed to produce electricity. Data also include fuels consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants.

• See Table 8.5d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.5d Consumption of Combustible Fuels for Electricity Generation: Commercial and Industrial Sectors, 1989-2006** (Subset of Table 8.5a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu	
<b>Commercial Sector <sup>11</sup></b>											
1989	414	882	282	—	—	1,165	17,987	1	2	9	—
1990	417	580	372	(s)	—	953	27,544	1	2	15	—
1991	403	430	146	(s)	—	576	26,806	1	2	15	(s)
1992	371	289	137	(s)	1	429	32,674	1	1	16	(s)
1993	404	384	279	4	1	672	37,435	1	1	16	R (s)
1994	404	481	209	—	1	694	40,828	1	1	17	—
1995	569	493	152	(s)	1	649	42,700	—	1	21	(s)
1996	656	422	218	(s)	1	645	42,380	R (s)	1	31	(s)
1997	630	583	200	—	1	790	38,975	(s)	1	34	R (s)
1998	440	436	359	—	1	802	40,693	(s)	1	32	—
1999	481	506	421	—	1	931	39,045	R (s)	(s)	33	R (s)
2000	514	505	310	1	1	823	37,029	R (s)	(s)	26	(s)
2001	532	520	469	2	6	1,023	36,248	R (s)	(s)	R15	R7
2002	477	524	292	10	2	834	32,545	R (s)	(s)	R18	R11
2003	582	553	326	3	2	894	38,480	—	(s)	R19	R11
2004	602	821	350	1	3	1,188	R45,883	—	1	R22	R13
2005	R770	R588	R333	1	3	R939	R47,851	—	1	R25	R13
2006 <sup>p</sup>	765	290	106	(s)	4	415	47,926	—	1	26	14
<b>Industrial Sector <sup>12</sup></b>											
1989	9,707	815	6,830	294	150	8,688	443,928	83	267	15	37
1990	10,740	1,169	7,192	412	905	13,299	516,729	104	335	16	36
1991	10,610	1,879	6,004	322	815	12,283	521,916	118	318	14	55
1992	11,379	1,735	6,650	642	1,013	14,093	542,081	128	359	15	37
1993	11,898	1,902	7,373	498	597	12,755	546,978	123	355	17	31
1994	12,279	1,644	7,818	263	762	13,537	567,836	123	364	14	38
1995	12,171	1,056	6,460	239	902	12,265	601,397	114	373	13	40
1996	12,153	1,359	7,042	1,145	853	13,813	610,268	143	394	13	35
1997	12,311	1,079	6,118	107	884	11,723	622,599	105	367	14	36
1998	11,728	1,461	6,494	137	860	12,392	624,878	102	349	13	35
1999	11,432	1,571	5,845	460	944	12,595	639,165	112	364	8	39
2000	11,706	1,448	5,024	1,046	588	10,459	640,381	107	369	10	45
2001	10,636	1,574	5,693	479	557	10,530	653,565	88	370	R7	R44
2002	11,855	952	4,366	640	1,130	11,608	685,239	106	464	R15	R43
2003	10,440	1,678	4,831	1,006	582	10,424	668,407	127	362	R13	R46
2004	10,337	921	5,015	1,256	581	R10,100	R764,828	R148	376	R11	R27
2005	R8,969	R988	R4,525	R668	R442	R8,392	R713,999	R133	R306	R9	R28
2006 <sup>p</sup>	9,585	480	3,326	798	483	7,022	719,926	134	373	8	42

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Fuel oil nos. 5 and 6.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived

fuels).

<sup>11</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>12</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

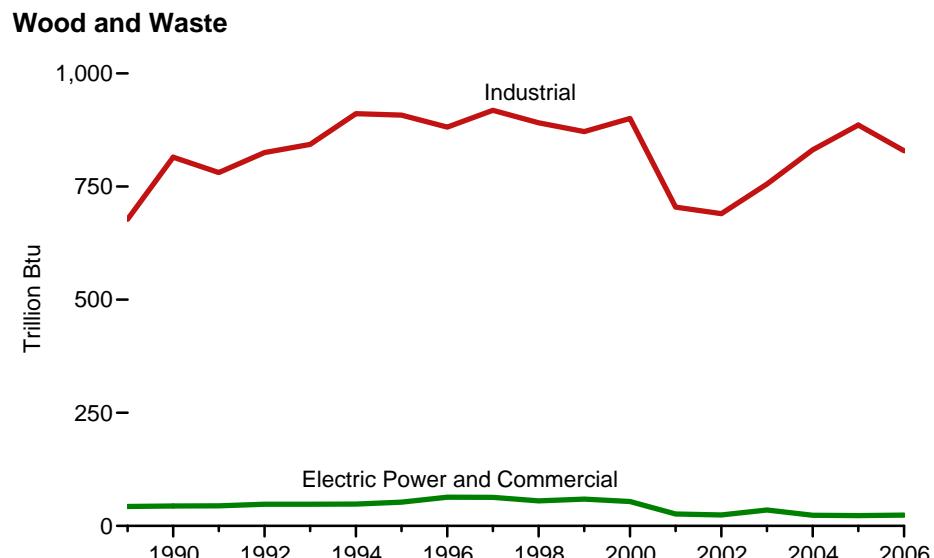
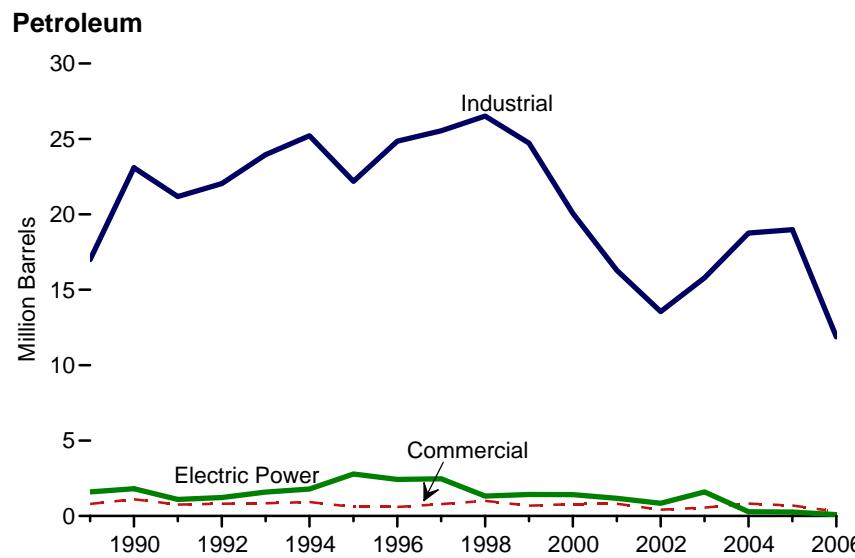
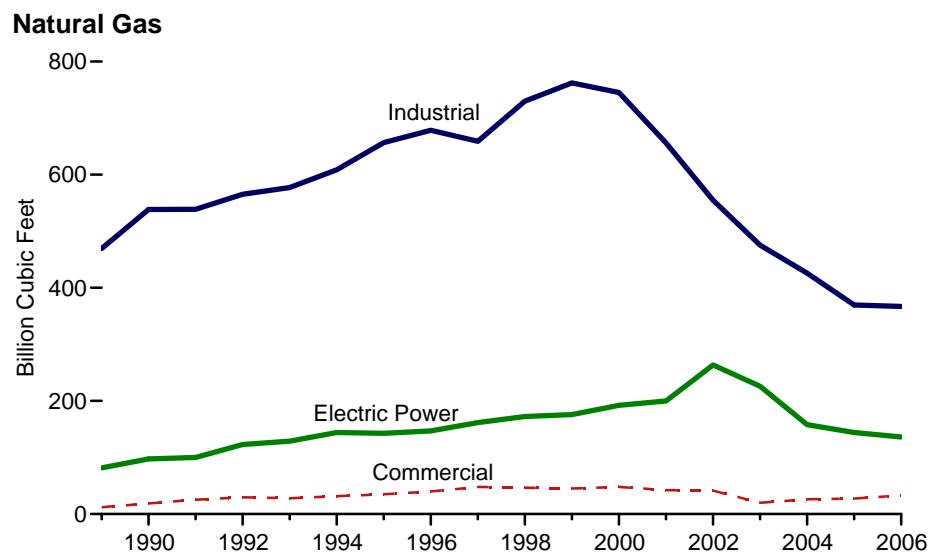
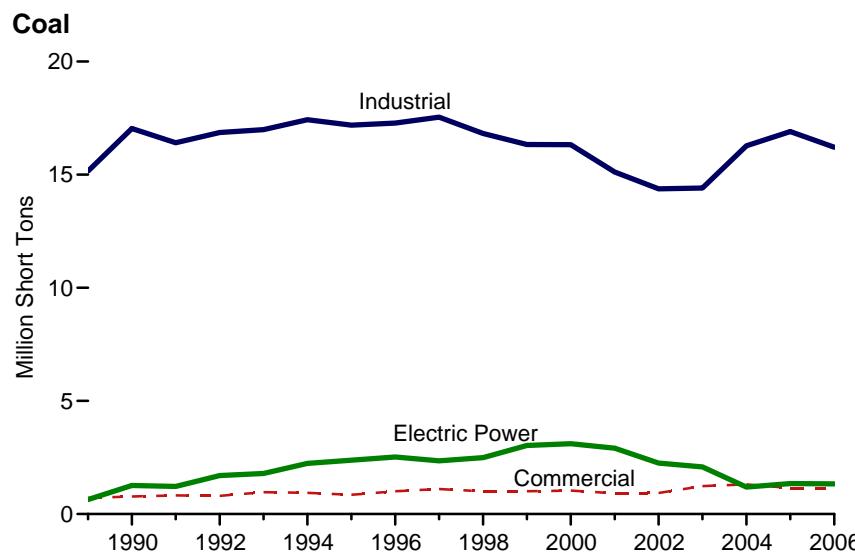
R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.5.

Notes: • Data are for fuels consumed to produce electricity. • See Tables 8.5b and 8.5c for electric power sector electricity-only and CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.6 Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants by Sector, 1989-2006**



Sources: Table 8.6b and 8.6c.

**Table 8.6a Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Total (All Sectors), 1989-2006** (Sum of Tables 8.6b and 8.6c)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
		Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu
1989	16,510	1,410	16,391	353	247	19,391	563,307	116	683	38	49
1990	19,081	2,050	18,465	895	918	26,002	654,749	176	813	46	50
1991	18,458	3,027	15,293	835	777	23,039	663,963	185	779	46	55
1992	19,372	2,358	16,474	935	862	24,077	717,860	200	822	51	52
1993	19,750	2,449	17,933	857	1,031	26,394	733,584	178	836	56	51
1994	20,609	2,811	18,822	609	1,137	27,929	784,015	180	903	57	53
1995	20,418	2,082	16,661	642	1,235	25,562	834,382	181	902	59	55
1996	20,806	2,192	18,552	756	1,275	27,873	865,774	187	876	69	54
1997	21,005	2,584	15,882	289	2,009	28,802	868,569	188	913	68	67
1998	20,320	4,944	16,539	681	1,336	28,845	949,106	209	875	72	58
1999	20,373	4,665	14,133	838	1,437	26,822	982,958	224	862	68	60
2000	20,466	2,897	13,292	1,455	924	22,266	985,263	230	884	71	63
2001	18,944	2,574	11,826	563	661	18,268	898,286	166	696	R <sub>35</sub>	R <sub>69</sub>
2002	17,561	1,462	9,402	1,363	517	14,811	860,019	147	682	R <sub>32</sub>	R <sub>60</sub>
2003	17,720	2,153	10,341	1,629	763	17,939	721,267	138	746	R <sub>44</sub>	R <sub>69</sub>
2004	R <sub>18,779</sub>	2,851	R <sub>12,307</sub>	805	779	R <sub>19,856</sub>	R <sub>610,105</sub>	167	827	R <sub>28</sub>	R <sub>50</sub>
2005	R <sub>19,402</sub>	R <sub>3,283</sub>	R <sub>12,681</sub>	R <sub>966</sub>	R <sub>601</sub>	R <sub>19,937</sub>	R <sub>541,206</sub>	R <sub>171</sub>	R <sub>871</sub>	R <sub>38</sub>	R <sub>51</sub>
2006 <sup>P</sup>	18,699	879	7,843	583	591	12,260	536,267	145	818	35	49

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Fuel oil nos. 5 and 6.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary.

Notes: • Estimates are for fuels consumed to produce useful thermal output; they exclude fuels consumed to produce electricity. • Data do not include electric utility combined-heat-and-power (CHP) plants. • See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 8.6b and 8.6c.

**Table 8.6b Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Electric Power Sector, 1989-2006** (Subset of Table 8.6a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
		Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu
1989	639	120	1,471	1	—	1,591	81,670	3	24	6	1
1990	1,266	173	1,630	2	—	1,805	97,330	5	23	8	(s)
1991	1,221	104	995	1	—	1,101	99,868	5	21	11	1
1992	1,704	154	1,045	10	4	1,229	122,908	6	21	10	2
1993	1,794	290	1,074	27	40	1,591	128,743	4	21	10	2
1994	2,241	371	1,024	104	58	1,791	144,062	6	18	12	1
1995	2,376	486	1,127	58	222	2,784	142,753	5	19	15	(s)
1996	2,520	308	1,155	86	175	2,424	147,091	5	20	21	(s)
1997	2,355	343	1,246	23	171	2,466	161,608	10	20	17	(s)
1998	2,493	134	653	19	103	1,322	172,471	6	12	20	(s)
1999	3,033	183	572	30	128	1,423	175,757	4	13	25	(s)
2000	3,107	294	467	51	120	1,412	192,253	7	8	24	(s)
2001	2,910	219	355	3	119	1,171	199,808	6	10	R <sub>5</sub>	R <sub>4</sub>
2002	2,255	66	197	23	111	841	263,619	7	10	R <sub>6</sub>	R <sub>6</sub>
2003	2,080	190	919	88	80	1,596	225,967	12	11	R <sub>14</sub>	R <sub>4</sub>
2004	R <sub>1,189</sub>	R <sub>180</sub>	R <sub>10</sub>	11	15	R <sub>277</sub>	R <sub>157,900</sub>	20	8	R <sub>3</sub>	R <sub>2</sub>
2005	R <sub>1,345</sub>	R <sub>88</sub>	R <sub>33</sub>	R <sub>51</sub>	17	R <sub>258</sub>	R <sub>144,233</sub>	R <sub>40</sub>	R <sub>9</sub>	R <sub>3</sub>	R <sub>3</sub>
2006 <sup>P</sup>	1,335	32	29	23	2	93	136,294	27	10	3	4

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Fuel oil nos. 5 and 6.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.5.

Notes: • Estimates are for fuels consumed to produce useful thermal output; they exclude fuels consumed to produce electricity. • Data are for combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity and heat to the public. Data do not include electric utility CHP plants. • See Table 8.6c for commercial and industrial CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.6c Estimated Consumption of Combustible Fuels for Useful Thermal Output at Combined-Heat-and-Power Plants: Commercial and Industrial Sectors, 1989-2006** (Subset of Table 8.6a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu	
<b>Commercial Sector <sup>11</sup></b>											
1989	711	202	601	—	—	803	12,049	(s)	(s)	13	—
1990	773	389	715	(s)	—	1,104	18,913	(s)	(s)	13	—
1991	826	356	405	(s)	—	761	25,295	(s)	(s)	11	(s)
1992	804	259	538	(s)	2	807	29,672	(s)	1	16	(s)
1993	968	272	548	2	4	843	27,738	(s)	(s)	17	(s)
1994	940	534	379	—	4	931	31,457	(s)	(s)	17	—
1995	850	319	261	(s)	3	596	34,964	—	(s)	19	(s)
1996	1,005	260	328	(s)	3	601	40,075	R (s)	1	22	(s)
1997	1,108	470	309	—	3	794	47,941	(s)	1	24	—
1998	1,002	418	573	—	3	1,006	46,527	(s)	1	22	—
1999	1,009	254	412	—	3	682	44,991	R (s)	1	21	—
2000	1,034	403	366	2	4	792	47,844	R (s)	1	21	—
2001	916	505	304	—	—	809	42,407	—	1	R <sup>10</sup>	R <sup>7</sup>
2002	929	248	108	28	6	416	41,430	—	1	R <sup>8</sup>	R <sup>6</sup>
2003	1,234	119	381	12	9	555	19,973	—	1	R <sup>10</sup>	R <sup>8</sup>
2004	1,315	294	477	20	6	821	R <sup>26,189</sup>	—	1	R <sup>12</sup>	R <sup>8</sup>
2005	R <sup>1,151</sup>	R <sup>206</sup>	R <sup>456</sup>	R (s)	6	R <sup>691</sup>	R <sup>27,364</sup>	—	1	R <sup>9</sup>	R <sup>7</sup>
2006 <sup>P</sup>	1,152	88	175	—	6	294	32,990	—	1	9	7
<b>Industrial Sector <sup>12</sup></b>											
1989	15,160	1,088	14,320	352	247	16,997	469,588	113	659	19	48
1990	17,041	1,488	16,120	893	918	23,093	538,506	171	790	25	50
1991	16,412	2,567	13,893	834	777	21,177	538,800	180	758	23	55
1992	16,864	1,945	14,891	925	856	22,041	565,279	194	801	24	50
1993	16,988	1,887	16,311	829	987	23,960	577,103	174	815	29	49
1994	17,428	1,906	17,419	505	1,075	25,207	608,496	173	884	27	52
1995	17,192	1,277	15,272	584	1,010	22,182	656,665	175	882	25	55
1996	17,281	1,624	17,069	670	1,097	24,848	678,608	182	855	26	53
1997	17,542	1,772	14,328	267	1,835	25,541	659,021	178	892	27	67
1998	16,824	4,391	15,313	662	1,230	26,518	730,108	202	862	29	58
1999	16,330	4,228	13,148	808	1,307	24,718	762,210	219	849	23	60
2000	16,325	2,200	12,459	1,402	800	20,062	745,165	223	875	25	63
2001	15,119	1,850	11,167	560	542	16,287	656,071	160	685	R <sup>20</sup>	R <sup>58</sup>
2002	14,377	1,149	9,097	1,312	399	13,555	554,970	139	672	R <sup>18</sup>	R <sup>48</sup>
2003	14,406	1,844	9,041	1,529	675	15,788	475,327	126	735	R <sup>21</sup>	R <sup>57</sup>
2004	16,276	2,376	11,819	774	758	18,758	R <sup>426,016</sup>	147	818	R <sup>13</sup>	R <sup>40</sup>
2005	R <sup>16,906</sup>	R <sup>2,989</sup>	R <sup>12,192</sup>	R <sup>915</sup>	R <sup>578</sup>	R <sup>18,987</sup>	R <sup>369,609</sup>	R <sup>131</sup>	R <sup>861</sup>	R <sup>25</sup>	R <sup>41</sup>
2006 <sup>P</sup>	16,211	758	7,640	561	583	11,874	366,983	118	807	22	38

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Fuel oil nos. 5 and 6.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Commercial combined-heat-and-power (CHP) plants.

<sup>12</sup> Industrial combined-heat-and-power (CHP) plants.

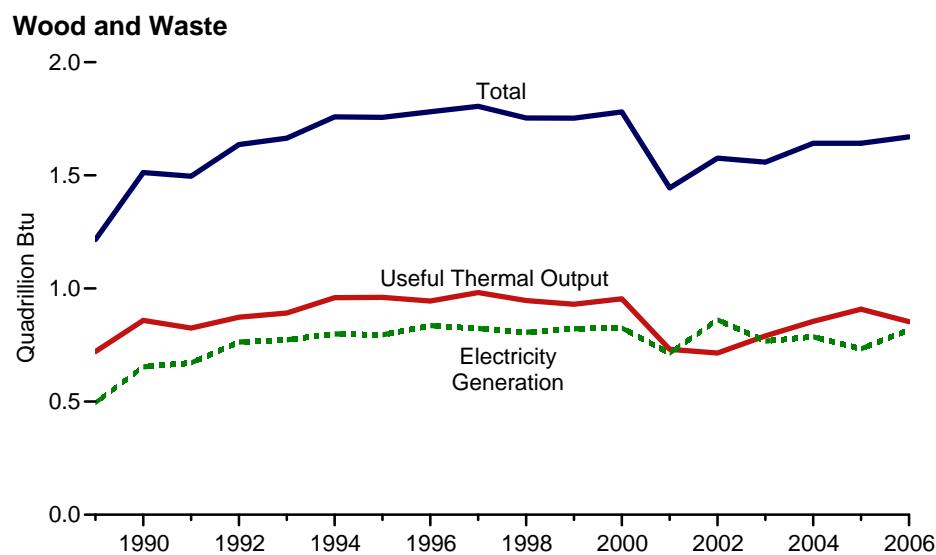
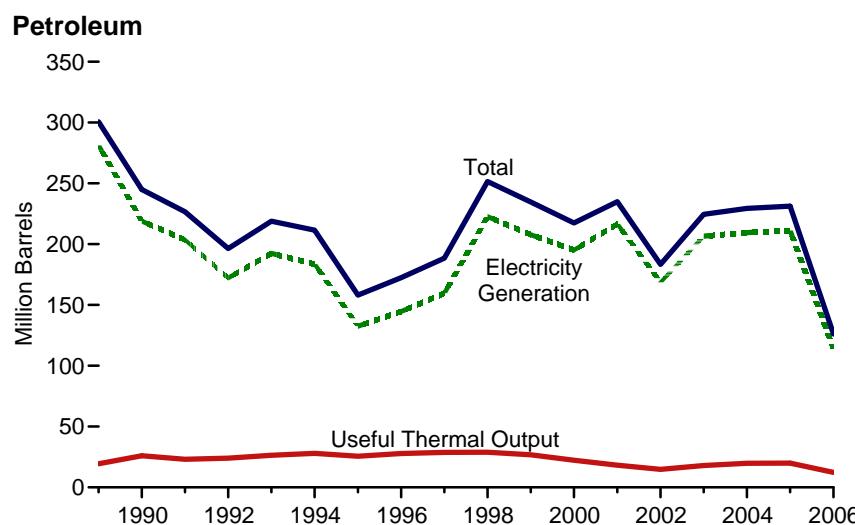
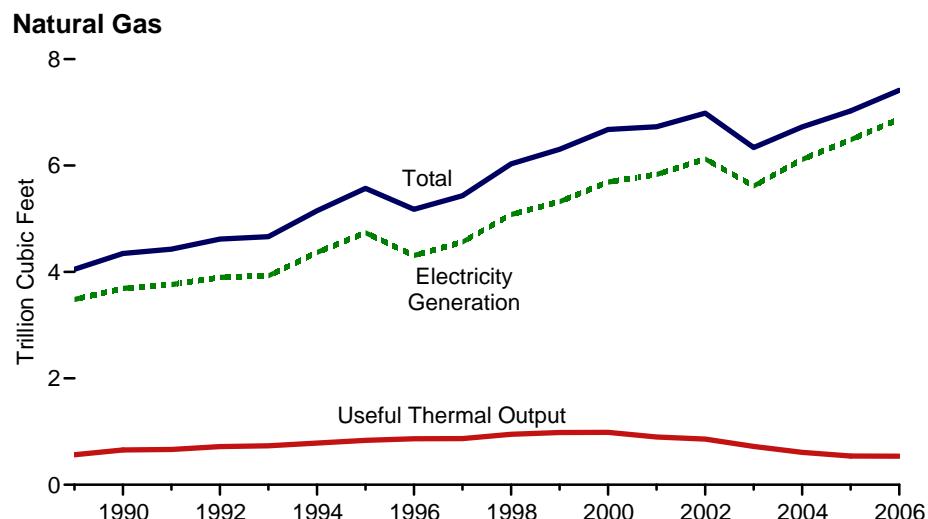
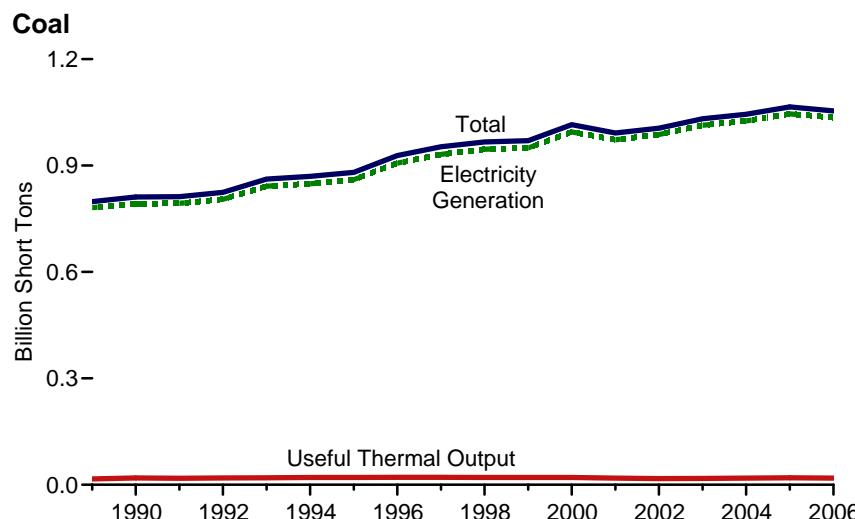
R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.5.

Notes: • Estimates are for fuels consumed to produce useful thermal output; they exclude fuels consumed to produce electricity. • See Table 8.6b for electric power sector CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.7 Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output, 1989-2006**



Sources: Tables 8.5a, 8.6a, and 8.7a.

**Table 8.7a Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output:  
Total (All Sectors), 1989-2006** (Sum of Tables 8.7b and 8.7c)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu		Trillion Btu
1989	798,181	29,143	266,211	656	915	300,583	4,048,736	206	1,028	189	88
1990	811,538	20,194	209,314	1,332	2,832	244,998	4,346,311	288	1,256	257	86
1991	812,124	19,590	193,073	1,215	2,566	226,708	4,428,742	311	1,204	292	114
1992	824,512	16,852	160,941	1,695	3,366	196,318	4,617,578	341	1,303	333	92
1993	861,904	19,293	176,992	1,571	4,200	218,855	4,662,236	314	1,321	344	85
1994	869,405	25,177	164,047	1,539	4,157	211,547	5,151,163	316	1,401	357	92
1995	881,012	21,697	112,168	1,322	4,590	158,140	5,572,253	313	1,382	374	97
1996	928,015	22,444	124,607	2,468	4,596	172,499	5,178,232	346	1,389	392	91
1997	952,955	22,893	134,623	526	6,095	188,517	5,433,338	307	1,397	407	103
1998	966,615	30,006	189,267	1,230	6,196	251,486	6,030,490	334	1,349	404	95
1999	970,175	30,616	172,319	1,812	5,989	234,694	6,304,942	350	1,352	400	101
2000	1,015,398	34,572	156,673	2,904	4,669	217,494	6,676,744	356	1,380	401	109
2001	991,635	33,724	177,137	1,418	4,532	234,940	6,730,591	263	1,182	R <sup>263</sup>	R <sup>229</sup>
2002	1,005,144	24,748	118,637	3,257	7,353	183,408	6,986,081	278	1,287	R <sup>289</sup>	R <sup>252</sup>
2003	1,031,778	31,825	152,859	4,576	7,067	224,593	6,337,402	294	1,266	R <sup>293</sup>	R <sup>262</sup>
2004	1,044,798	R <sup>23,520</sup>	157,478	4,764	8,721	R <sup>229,364</sup>	R <sup>6,726,679</sup>	354	1,360	R <sup>281</sup>	R <sup>226</sup>
2005	R <sup>1,065,281</sup>	R <sup>24,446</sup>	R <sup>156,915</sup>	R <sup>4,270</sup>	R <sup>9,113</sup>	R <sup>231,193</sup>	R <sup>7,027,967</sup>	R <sup>348</sup>	R <sup>1,353</sup>	R <sup>289</sup>	R <sup>213</sup>
2006 <sup>P</sup>	1,054,168	14,421	67,871	2,646	8,225	126,066	7,414,353	325	1,372	298	226

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. Through 2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from

non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary.

Notes: • Data are for fuels consumed to produce electricity and useful thermal output. • See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 8.7b and 8.7c.

**Table 8.7b Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output:  
Electric Power Sector, 1989-2006** (Subset of Table 8.7a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu		Trillion Btu
1989	772,190	26,156	244,179	10	517	272,931	3,105,183	9	100	132	3
1990	782,567	16,567	184,915	26	1,008	206,550	3,244,619	11	129	188	(s)
1991	783,874	14,359	172,625	59	974	191,911	3,315,925	11	126	229	4
1992	795,094	12,623	138,726	128	1,494	158,948	3,447,871	18	140	262	5
1993	831,645	14,849	152,481	239	2,611	180,625	3,472,982	16	150	265	5
1994	838,354	20,612	138,222	771	2,315	171,178	3,902,546	19	152	282	3
1995	850,230	18,553	90,023	499	2,674	122,447	4,236,526	24	125	296	2
1996	896,921	18,780	99,951	653	2,642	132,593	3,806,901	20	138	300	2
1997	921,364	18,989	113,669	152	3,372	149,668	4,064,803	24	137	309	1
1998	936,619	23,300	166,528	431	4,102	210,769	4,588,284	29	137	308	2
1999	940,922	24,058	152,493	544	3,735	195,769	4,819,531	19	138	315	1
2000	985,821	30,016	138,513	454	3,275	185,358	5,206,324	25	134	318	1
2001	964,433	29,274	159,504	377	3,427	206,291	5,342,301	15	126	R211	R113
2002	977,507	21,876	104,773	1,267	5,816	156,995	5,671,897	33	150	R230	R143
2003	1,005,116	27,632	138,279	2,026	5,799	196,932	5,135,215	41	167	R230	R140
2004	1,016,268	R19,107	139,816	2,713	7,372	R198,498	R5,463,763	59	165	R223	R138
2005	R1,037,485	R19,675	R139,409	R2,685	R8,083	R202,184	R5,869,145	R84	R185	R221	R123
2006 <sup>P</sup>	1,026,454	12,805	56,624	1,287	7,149	106,462	6,246,529	73	190	233	126

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. Through 2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

R=Revised. P=Preliminary. (s)=Less than 0.5.

Notes: • Data are for fuels consumed to produce electricity and useful thermal output. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 8.7c for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Table 8.7c Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output:  
Commercial and Industrial Sectors, 1989-2006** (Subset of Table 8.7a)

Year	Coal <sup>1</sup>	Petroleum					Natural Gas <sup>6</sup>	Other Gases <sup>7</sup>	Biomass		Other <sup>10</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>	Total <sup>5</sup>			Wood <sup>8</sup>	Waste <sup>9</sup>	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Million Cubic Feet	Trillion Btu	Trillion Btu	Trillion Btu	
<b>Commercial Sector <sup>11</sup></b>											
1989	1,125	1,085	883	—	—	1,967	30,037	1	2	22	—
1990	1,191	969	1,087	(s)	—	2,056	46,458	1	2	28	—
1991	1,228	786	551	(s)	—	1,337	52,101	1	2	26	(s)
1992	1,175	548	675	(s)	2	1,235	62,346	1	2	32	(s)
1993	1,373	656	828	6	5	1,515	65,173	1	2	33	(s)
1994	1,344	1,015	588	—	4	1,625	72,285	1	1	35	—
1995	1,419	812	413	(s)	4	1,245	77,664	—	1	40	(s)
1996	1,660	682	545	(s)	4	1,246	82,455	R (s)	2	53	(s)
1997	1,738	1,053	509	—	4	1,584	86,915	(s)	2	58	R (s)
1998	1,443	854	932	—	4	1,807	87,220	(s)	2	54	—
1999	1,490	759	834	—	4	1,613	84,037	R (s)	1	54	R (s)
2000	1,547	908	676	3	6	1,615	84,874	R (s)	1	47	(s)
2001	1,448	1,026	773	2	6	1,832	78,655	R (s)	1	R25	R15
2002	1,405	771	400	38	8	1,250	73,975	R (s)	1	R26	R17
2003	1,816	671	708	16	11	1,449	58,453	—	1	R29	R18
2004	1,917	1,115	827	21	9	2,009	72,072	—	2	R34	R21
2005	R1,922	R794	R789	R1	9	R1,630	R75,215	—	R1	R34	R20
2006 <sup>P</sup>	1,917	378	281	(s)	10	708	80,916	—	1	35	20
<b>Industrial Sector <sup>12</sup></b>											
1989	24,867	1,903	21,150	646	397	25,685	913,516	195	926	35	85
1990	27,781	2,657	23,312	1,305	1,824	36,392	1,055,235	275	1,125	41	86
1991	27,021	4,446	19,897	1,156	1,592	33,460	1,060,716	298	1,076	37	110
1992	28,244	3,680	21,540	1,567	1,870	36,135	1,107,361	322	1,161	39	87
1993	28,886	3,788	23,684	1,326	1,583	36,715	1,124,081	297	1,169	46	80
1994	29,707	3,550	25,238	768	1,838	38,744	1,176,332	296	1,248	41	89
1995	29,363	2,333	21,732	823	1,912	34,448	1,258,063	290	1,255	38	95
1996	29,434	2,983	24,111	1,815	1,950	38,661	1,288,876	325	1,249	39	89
1997	29,853	2,851	20,445	374	2,719	37,265	1,281,620	283	1,259	41	102
1998	28,553	5,852	21,807	800	2,090	38,910	1,354,986	305	1,211	42	93
1999	27,763	5,799	18,993	1,268	2,251	37,312	1,401,374	331	1,213	31	99
2000	28,031	3,648	17,483	2,448	1,388	30,520	1,385,546	331	1,244	35	108
2001	25,755	3,424	16,860	1,039	1,099	26,817	1,309,636	248	1,054	R27	R101
2002	26,232	2,101	13,463	1,953	1,529	25,163	1,240,209	245	1,136	R34	R92
2003	24,846	3,522	13,872	2,535	1,257	26,212	1,143,734	253	1,097	R34	R103
2004	26,613	3,298	16,835	2,030	1,339	28,857	R1,190,844	296	1,193	R24	R67
2005	R25,875	R3,977	R16,718	R1,583	R1,020	R27,380	R1,083,607	R264	R1,166	R34	R70
2006 <sup>P</sup>	25,796	1,238	10,966	1,359	1,067	18,896	1,086,909	252	1,181	30	80

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Fuel oil nos. 5 and 6.

<sup>4</sup> Jet fuel, kerosene, other petroleum liquids, and waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>7</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>8</sup> Wood and wood-derived fuels.

<sup>9</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>10</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>12</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

R=Revised. P=Preliminary. —=No data reported. (s)=Less than 0.5.

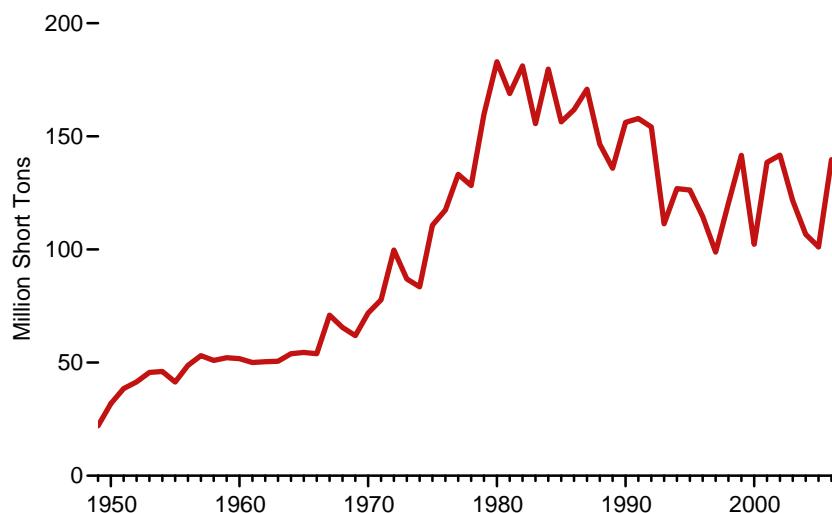
Notes: • Data are for fuels consumed to produce electricity and useful thermal output. • See Table 8.7b for electric power sector electricity-only and CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

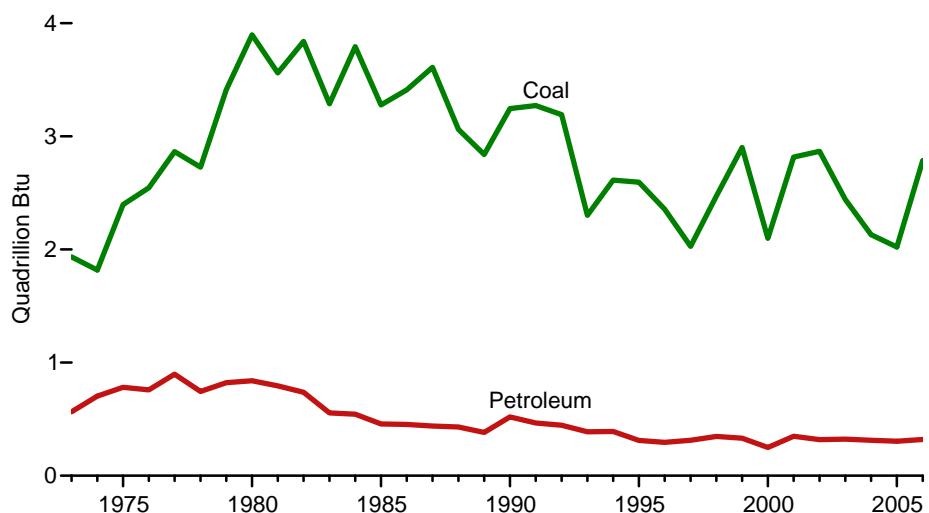
Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.8 Stocks of Coal and Petroleum: Electric Power Sector**

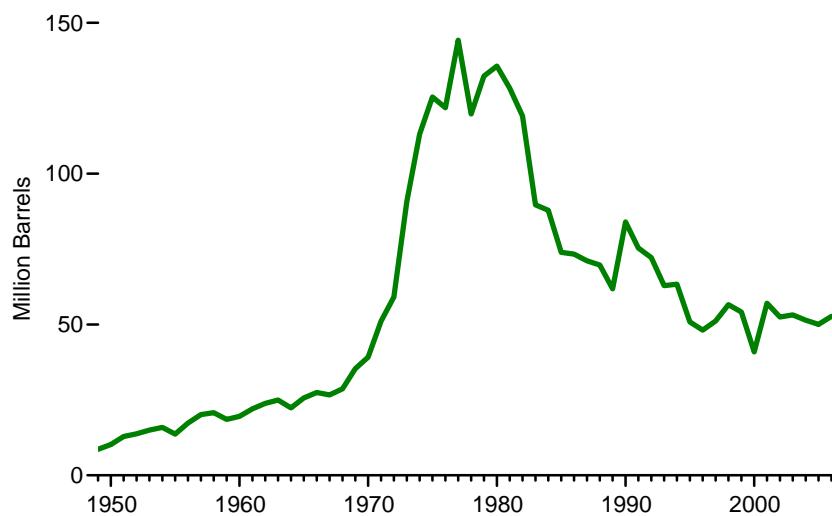
**Coal, 1949-2006**



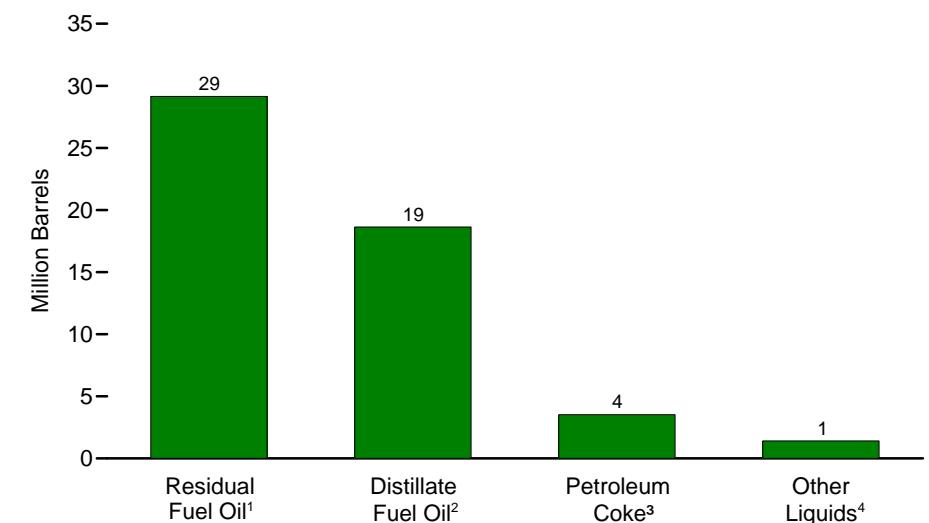
**Coal and Petroleum, 1973-2006**



**Petroleum, 1949-2006**



**Petroleum Products, 2006**



<sup>1</sup> Fuel oil nos. 5 and 6.

<sup>2</sup> Fuel oil nos. 1, 2, and 4.

<sup>3</sup> Petroleum coke, which is reported in short tons, is converted at a rate of 5 barrels per short ton.

<sup>4</sup> Jet fuel and kerosene.

Notes: • Stocks are at end of year. • Because vertical scales differ, graphs should not be compared.

Sources: Tables 8.8, A3, and A5.

**Table 8.8 Stocks of Coal and Petroleum: Electric Power Sector, Selected Years, 1949-2006**

Year	Coal <sup>1</sup>	Petroleum					Total <sup>5,6</sup>
		Distillate Fuel Oil <sup>2</sup>	Residual Fuel Oil <sup>3</sup>	Other Liquids <sup>4</sup>	Petroleum Coke <sup>5</sup>		
Year	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	
1949	22,054	NA	NA	NA	NA	NA	8,604
1950	31,842	NA	NA	NA	NA	NA	10,201
1955	41,391	NA	NA	NA	NA	NA	13,671
1960	51,735	NA	NA	NA	NA	NA	19,572
1965	54,525	NA	NA	NA	NA	NA	25,647
1970	71,908	NA	NA	NA	239	NA	39,151
1971	77,778	NA	NA	NA	291	NA	51,101
1972	99,722	NA	NA	NA	287	NA	59,090
1973	86,967	10,095	79,121	NA	312	NA	90,776
1974	83,509	15,199	97,718	NA	35	NA	113,091
1975	110,724	16,432	108,825	NA	31	NA	125,413
1976	117,436	14,703	106,993	NA	32	NA	121,857
1977	133,219	19,281	124,750	NA	44	NA	144,252
1978	128,225	16,386	102,402	NA	198	NA	119,778
1979	159,714	20,301	111,121	NA	183	NA	132,338
1980	183,010	30,023	105,351	NA	52	NA	135,635
1981	168,893	26,094	102,042	NA	42	NA	128,345
1982	181,132	23,369	95,515	NA	41	NA	119,090
1983	155,598	18,801	70,573	NA	55	NA	89,652
1984	179,727	19,116	68,503	NA	50	NA	87,870
1985	156,376	16,386	57,304	NA	49	NA	73,933
1986	161,806	16,269	56,841	NA	40	NA	73,313
1987	170,797	15,759	55,069	NA	51	NA	71,084
1988	146,507	15,099	54,187	NA	86	NA	69,714
1989	135,860	13,824	47,446	NA	105	NA	61,795
1990	156,166	16,471	67,030	NA	94	NA	83,970
1991	157,876	16,357	58,636	NA	70	NA	75,343
1992	154,130	15,714	56,135	NA	67	NA	72,183
1993	111,341	15,674	46,770	NA	89	NA	62,890
1994	126,897	16,644	46,344	NA	69	NA	63,333
1995	126,304	15,392	35,102	NA	65	NA	50,821
1996	114,623	15,216	32,473	NA	91	NA	48,146
1997	98,826	15,456	33,336	NA	469	NA	51,138
1998	120,501	16,343	37,451	NA	559	NA	56,591
1999 <sup>7</sup>	141,604	17,995	34,256	NA	372	NA	54,109
2000	102,296	15,127	24,748	NA	211	NA	40,932
2001	138,496	20,486	34,594	NA	390	NA	57,031
2002	141,714	17,413	25,723	800	1,711	NA	52,490
2003	121,567	19,153	25,820	779	1,484	NA	53,170
2004	106,669	19,275	26,596	879	937	NA	51,434
2005	R101,137	R18,778	R27,624	R1,012	R530	NA	R50,062
2006 <sup>P</sup>	139,679	18,636	29,145	1,408	704	NA	52,707

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, and lignite.

<sup>2</sup> Fuel oil nos. 1, 2, and 4. For 1973-1979, data are for gas turbine and internal combustion plant stocks of petroleum. For 1980-2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>3</sup> Fuel oil nos. 5 and 6. For 1973-1979, data are for steam plant stocks of petroleum. For 1980-2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>4</sup> Jet fuel and kerosene. Through 2003, data also include a small amount of waste oil.

<sup>5</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>6</sup> Distillate fuel oil and residual fuel oil; beginning in 1970, also includes petroleum coke; and beginning in 2002, also includes other liquids.

<sup>7</sup> Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available.

Notes: • Stocks are at end of year. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System)

22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding.

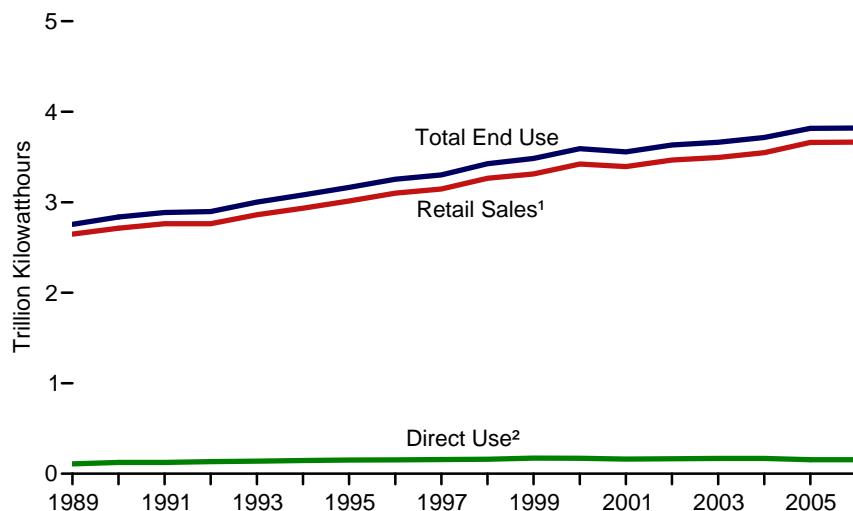
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

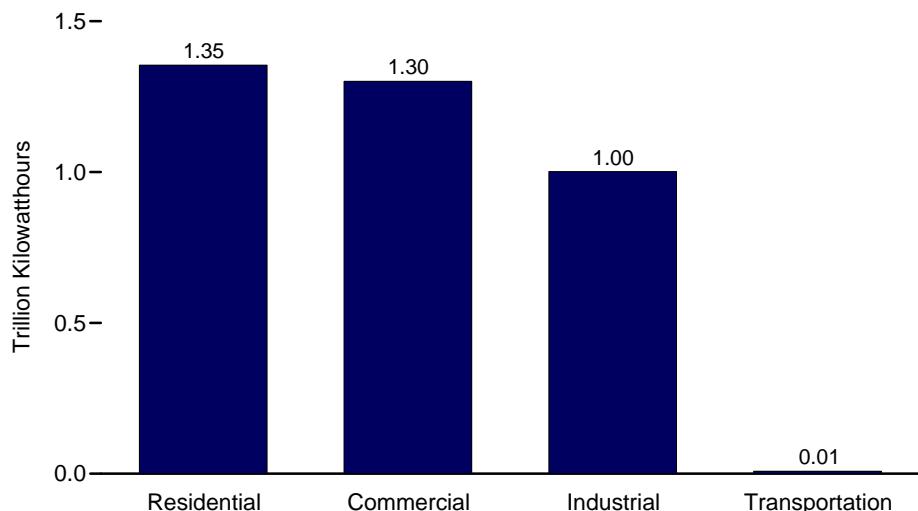
Sources: • 1949-September 1977—Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • October 1977-1981—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • 1982-1988—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • 1989-1997—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

**Figure 8.9 Electricity End Use**

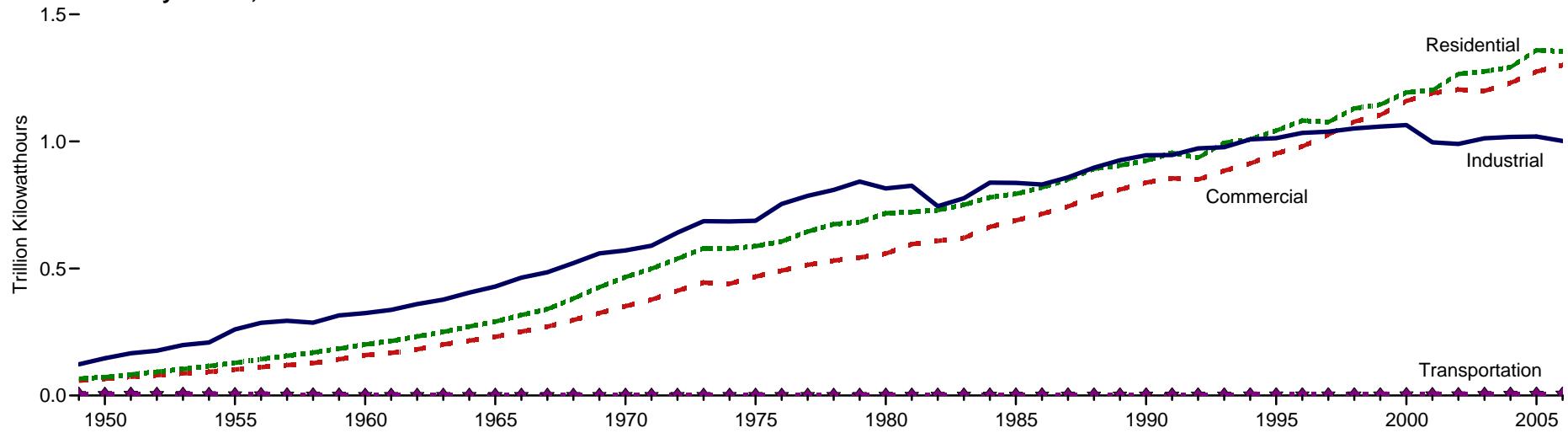
**Overview, 1989-2006**



**Retail Sales<sup>1</sup> by Sector, 2006**



**Retail Sales<sup>1</sup> by Sector, 1949-2006**



<sup>1</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>2</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial

process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 8.9.

**Table 8.9 Electricity End Use, Selected Years, 1949-2006**  
(Billion Kilowatthours)

Year	Retail Sales <sup>1</sup>					Direct Use <sup>6</sup>	Total End Use <sup>7</sup>	Discontinued Retail Sales Series	
	Residential	Commercial <sup>2</sup>	Industrial <sup>3</sup>	Transportation <sup>4</sup>	Total Retail Sales <sup>5</sup>			Commercial (Old) <sup>8</sup>	Other (Old) <sup>9</sup>
1949	67	E59	123	E6	255	NA	255	45	20
1950	72	E66	146	E7	291	NA	291	51	22
1955	128	E103	260	E6	497	NA	497	79	29
1960	201	E159	324	E3	688	NA	688	131	32
1965	291	E231	429	E3	954	NA	954	200	34
1970	466	E352	571	E3	1,392	NA	1,392	307	48
1971	500	E377	589	E3	1,470	NA	1,470	329	51
1972	539	E413	641	E3	1,595	NA	1,595	359	56
1973	579	E445	686	E3	1,713	NA	1,713	388	59
1974	578	E440	685	E3	1,706	NA	1,706	385	58
1975	588	E468	688	E3	1,747	NA	1,747	403	68
1976	606	E492	754	E3	1,855	NA	1,855	425	70
1977	645	E514	786	E3	1,948	NA	1,948	447	71
1978	674	E531	809	E3	2,018	NA	2,018	461	73
1979	683	543	842	3	2,071	NA	2,071	473	73
1980	717	559	815	3	2,094	NA	2,094	488	74
1981	722	596	826	3	2,147	NA	2,147	514	85
1982	730	609	745	3	2,086	NA	2,086	526	86
1983	751	620	776	4	2,151	NA	2,151	544	80
1984	780	664	838	4	2,286	NA	2,286	583	85
1985	794	689	837	4	2,324	NA	2,324	606	87
1986	819	715	831	4	2,369	NA	2,369	631	89
1987	850	744	858	5	2,457	NA	2,457	660	88
1988	893	784	896	5	2,578	NA	2,578	699	90
1989	906	811	926	5	2,647	109	2,756	726	90
1990	924	838	946	5	2,713	125	2,837	751	92
1991	955	855	947	5	2,762	124	2,886	766	94
1992	936	850	973	5	2,763	134	2,897	761	93
1993	995	885	977	5	2,861	139	3,001	795	95
1994	1,008	913	1,008	5	2,935	146	3,081	820	98
1995	1,043	953	1,013	5	3,013	151	3,164	863	95
1996	1,083	980	1,034	5	3,101	153	3,254	887	98
1997	1,076	1,027	1,038	5	3,146	156	3,302	929	103
1998	1,130	1,078	1,051	5	3,264	161	3,425	979	104
1999	1,145	1,104	1,058	5	3,312	172	3,484	1,002	107
2000	1,192	1,159	1,064	5	3,421	171	3,592	1,055	109
2001	R1,202	1,191	R997	R6	R3,394	163	R3,557	R1,083	R113
2002	1,265	1,205	990	R6	R3,465	166	3,632	R1,104	106
2003	R1,276	R1,199	1,012	7	R3,494	168	R3,662	--	--
2004	R1,292	R1,230	R1,018	7	R3,547	168	R3,716	--	--
2005	R1,359	R1,275	R1,019	8	R3,661	R155	R3,816	--	--
2006 <sup>p</sup>	1,354	1,301	1,002	8	3,665	E155	3,820	--	--

<sup>1</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

<sup>2</sup> Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>3</sup> Industrial sector. Through 2002, excludes agriculture and irrigation; beginning in 2003, includes agriculture and irrigation.

<sup>4</sup> Transportation sector, including sales to railroads and railways.

<sup>5</sup> The sum of "Residential," "Commercial," "Industrial," and "Transportation."

<sup>6</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

<sup>7</sup> The sum of "Total Retail Sales" and "Direct Use."

<sup>8</sup> "Commercial (Old)" is a discontinued series—data are for the commercial sector, excluding public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>9</sup> "Other (Old)" is a discontinued series—data are for public street and highway lighting, interdepartmental sales, other sales to public authorities, agriculture and irrigation, and transportation including railroads and railways.

R=Revised. P=Preliminary. E=Estimate. NA=Not available. -- = Not applicable.

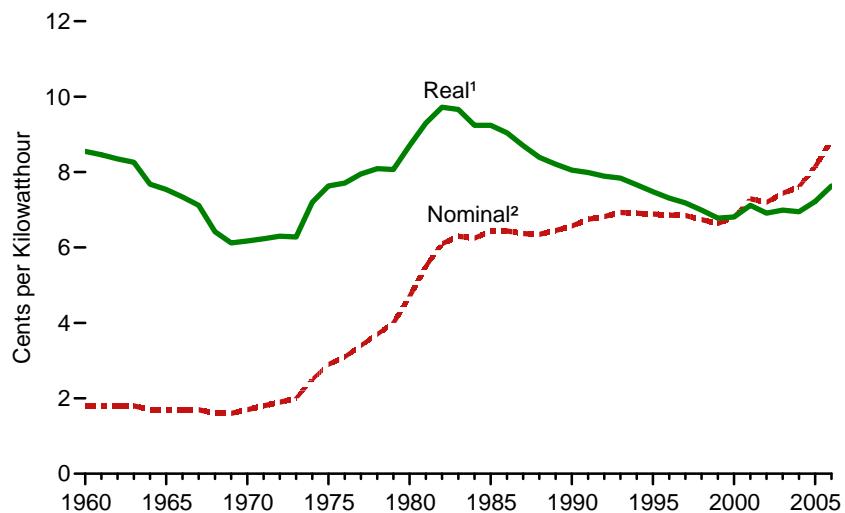
Note: Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>. • For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

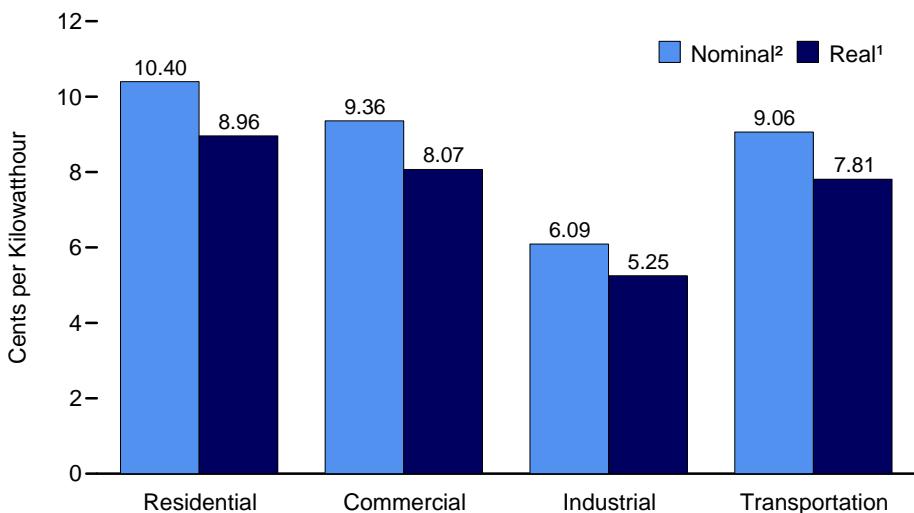
Sources: **Residential** and **Industrial**: • 1949-September 1977—Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." • October 1977-February 1980—Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income." • March 1980-1982—FERC, Form FPC-5, "Electric Utility Company Monthly Statement." • 1983—Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement." • 1984-1991—EIA, Form EIA-861, "Annual Electric Utility Report." • 1992 forward—EIA, *Electric Power Monthly* (March 2007), Table 5.1. **Commercial**: • 1949-2002—Estimated by EIA as the sum of "Commercial (Old)" and the non-transportation portion of "Other (Old)." See estimation methodology at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_elec.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_elec.pdf). • 2003 forward—EIA, *Electric Power Monthly* (March 2007), Table 5.1. **Transportation**: • 1949-2002—Estimated by EIA as the transportation portion of "Other (Old)." See estimation methodology at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_elec.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_elec.pdf). • 2003 forward—EIA, *Electric Power Monthly* (March 2007), Table 5.1. **Direct Use**: • 1989-1991—EIA, Form EIA-867, "Annual Nonutility Power Producer Report." • 1992-2005—EIA, *Electric Power Annual 2005* (November 2006), Table 7.2. • 2006—Estimate based on the 2005 value adjusted by the percentage increase in commercial and industrial net generation on Table 8.1. **Commercial (Old)** and **Other (Old)**: • 1949-2002—See sources for "Residential" and "Industrial."

**Figure 8.10 Average Retail Prices of Electricity**

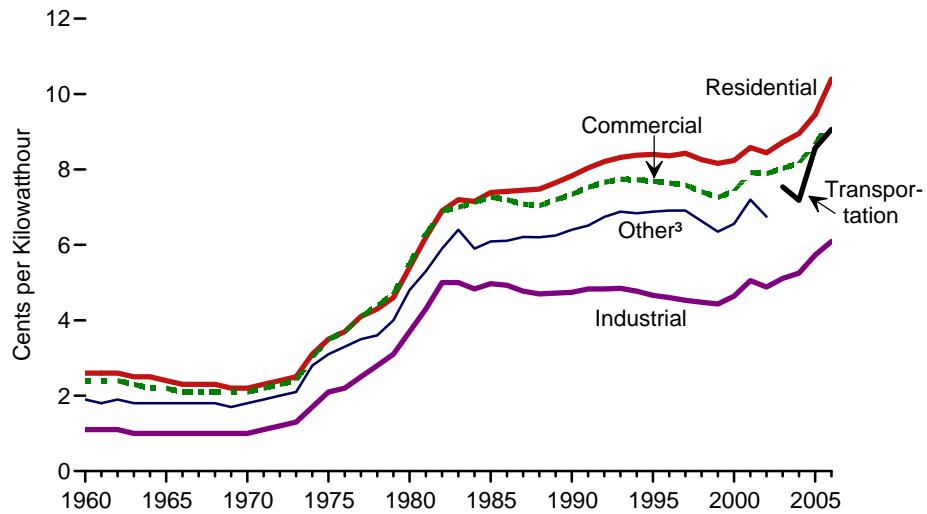
**Total, 1960-2006**



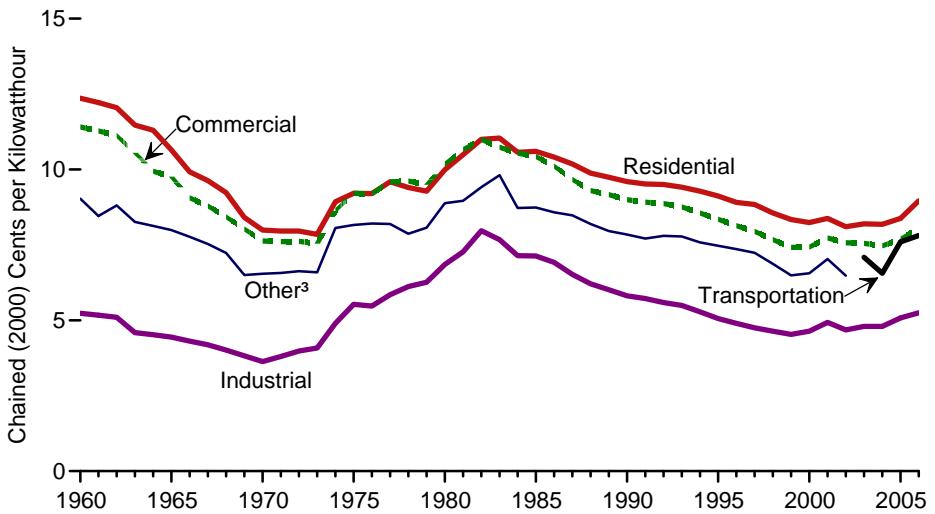
**By Sector, 2006**



**By Sector, Nominal<sup>2</sup> Prices, 1960-2006**



**By Sector, Real<sup>1</sup> Prices, 1960-2006**



<sup>1</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators. See Table D1.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> Public street and highway lighting, interdepartmental sales, other sales to public

authorities, agriculture and irrigation, and transportation including railroads and railways.

Notes: • Taxes are included. • Because vertical scales differ, graphs should not be compared.

Source: Table 8.10.

**Table 8.10 Average Retail Prices of Electricity, 1960-2006**

(Cents per Kilowatthour, Including Taxes)

Year	Residential		Commercial <sup>1</sup>		Industrial <sup>2</sup>		Transportation <sup>3</sup>		Other <sup>4</sup>		Total	
	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>	Nominal <sup>5</sup>	Real <sup>6</sup>
1960	2.6	12.4	2.4	11.4	1.1	5.2	NA	NA	1.9	9.0	1.8	8.6
1961	2.6	12.2	2.4	11.3	1.1	5.2	NA	NA	1.8	8.5	1.8	8.5
1962	2.6	12.1	2.4	11.1	1.1	5.1	NA	NA	1.9	8.8	1.8	8.4
1963	2.5	11.5	2.3	10.6	1.0	4.6	NA	NA	1.8	8.3	1.8	8.3
1964	2.5	11.3	2.2	9.9	1.0	4.5	NA	NA	1.8	8.1	1.7	7.7
1965	2.4	10.7	2.2	9.8	1.0	4.4	NA	NA	1.8	8.0	1.7	7.5
1966	2.3	9.9	2.1	9.1	1.0	4.3	NA	NA	1.8	7.8	1.7	7.3
1967	2.3	9.6	2.1	8.8	1.0	4.2	NA	NA	1.8	7.5	1.7	7.1
1968	2.3	9.2	2.1	8.4	1.0	4.0	NA	NA	1.8	7.2	1.6	6.4
1969	2.2	8.4	2.1	8.0	1.0	3.8	NA	NA	1.7	6.5	1.6	6.1
1970	2.2	8.0	2.1	7.6	1.0	3.6	NA	NA	1.8	6.5	1.7	6.2
1971	2.3	8.0	2.2	7.6	1.1	3.8	NA	NA	1.9	6.6	1.8	6.2
1972	2.4	8.0	2.3	7.6	1.2	4.0	NA	NA	2.0	6.6	1.9	6.3
1973	2.5	7.9	2.4	7.5	1.3	4.1	NA	NA	2.1	6.6	2.0	6.3
1974	3.1	8.9	3.0	8.6	1.7	4.9	NA	NA	2.8	8.1	2.5	7.2
1975	3.5	9.2	3.5	9.2	2.1	5.5	NA	NA	3.1	8.2	2.9	7.6
1976	3.7	9.2	3.7	9.2	2.2	5.5	NA	NA	3.3	8.2	3.1	7.7
1977	4.1	9.6	4.1	9.6	2.5	5.9	NA	NA	3.5	8.2	3.4	8.0
1978	4.3	9.4	4.4	9.6	2.8	6.1	NA	NA	3.6	7.9	3.7	8.1
1979	4.6	9.3	4.7	9.5	3.1	6.3	NA	NA	4.0	8.1	4.0	8.1
1980	5.4	10.0	5.5	10.2	3.7	6.9	NA	NA	4.8	8.9	4.7	8.7
1981	6.2	10.5	6.3	10.7	4.3	7.3	NA	NA	5.3	9.0	5.5	9.3
1982	6.9	11.0	6.9	11.0	5.0	8.0	NA	NA	5.9	9.4	6.1	9.7
1983	7.2	11.0	7.0	10.7	5.0	7.7	NA	NA	6.4	9.8	6.3	9.7
1984	7.15	10.57	7.13	10.54	4.83	7.14	NA	NA	5.90	8.72	6.25	9.24
1985	7.39	10.60	7.27	10.43	4.97	7.13	NA	NA	6.09	8.74	6.44	9.24
1986	7.42	10.41	7.20	10.11	4.93	6.92	NA	NA	6.11	8.58	6.44	9.04
1987	7.45	10.18	7.08	9.67	4.77	6.52	NA	NA	6.21	8.48	6.37	8.70
1988	7.48	9.88	7.04	9.30	4.70	6.21	NA	NA	6.20	8.19	6.35	8.39
1989	7.65	9.74	7.20	9.17	4.72	6.01	NA	NA	6.25	7.96	6.45	8.21
1990	7.83	9.60	7.34	9.00	4.74	5.81	NA	NA	6.40	7.84	6.57	8.05
1991	8.04	9.52	7.53	8.92	4.83	5.72	NA	NA	6.51	7.71	6.75	7.99
1992	8.21	9.50	7.66	8.87	4.83	5.59	NA	NA	6.74	7.80	6.82	7.89
1993	8.32	9.41	7.74	8.76	4.85	5.49	NA	NA	6.88	7.78	6.93	7.84
1994	8.38	9.28	7.73	8.56	4.77	5.28	NA	NA	6.84	7.58	6.91	7.66
1995	8.40	9.12	7.69	8.35	4.66	5.06	NA	NA	6.88	7.47	6.89	7.48
1996	8.36	8.91	7.64	8.14	4.60	4.90	NA	NA	6.91	7.36	6.86	7.31
1997	8.43	8.84	7.59	7.95	4.53	4.75	NA	NA	6.91	7.24	6.85	7.18
1998	8.26	8.56	7.41	7.68	4.48	4.64	NA	NA	6.63	6.87	6.74	6.99
1999	8.16	8.34	7.26	7.42	4.43	4.53	NA	NA	6.35	6.49	6.64	6.78
2000	8.24	8.24	7.43	7.43	4.64	4.64	NA	NA	6.56	6.56	6.81	6.81
2001	R\$8.58	R\$8.38	R\$7.92	R\$7.73	R\$5.05	R\$4.93	NA	NA	R\$7.20	R\$7.03	R\$7.29	R\$7.12
2002	R\$8.44	R\$8.10	R\$7.89	R\$7.57	R\$4.88	R\$4.68	NA	NA	6.75	6.48	R\$7.20	R\$6.91
2003	R\$8.72	R\$8.20	R\$8.03	R\$7.55	R\$5.11	R\$4.80	R\$7.54	R\$7.09	--	--	R\$7.44	R\$6.99
2004	R\$8.95	R\$8.18	R\$8.17	R\$7.47	R\$5.25	R\$4.80	R\$7.18	R\$6.56	--	--	R\$7.61	R\$6.95
2005	R\$9.45	R\$8.38	R\$8.67	R\$7.69	R\$5.73	R\$5.08	R\$8.57	R\$7.60	--	--	R\$8.14	R\$7.22
2006 <sup>p</sup>	10.40	8.96	9.36	8.07	6.09	5.25	9.06	7.81	--	--	8.85	7.63

<sup>1</sup> Commercial sector. For 1960-2002, prices exclude public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>2</sup> Industrial sector. For 1960-2002, prices exclude agriculture and irrigation.

<sup>3</sup> Transportation sector, including railroads and railways.

<sup>4</sup> Public street and highway lighting, interdepartmental sales, other sales to public authorities, agriculture and irrigation, and transportation including railroads and railways.

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> In chained (2000) dollars, calculated by using gross domestic product implicit price deflators in Table D1. See "Chained Dollars" in Glossary.

R=Revised. P=Preliminary. NA=Not available, -- = Not applicable.

Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Data represent revenue from electricity retail sales divided by electricity retail sales. • Prices include State and local taxes, energy or demand charges, customer service charges, environmental surcharges, franchise fees, fuel adjustments, and other miscellaneous charges applied to end-use customers during normal billing operations. Prices do not include

deferred charges, credits, or other adjustments, such as fuel or revenue from purchased power, from previous reporting periods. • Through 1979, data are for Classes A and B privately owned electric utilities only. For 1980-1982, data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous year. For 1983, data are for a selected sample of electric utilities. Beginning in 1984, data are for a census of electric utilities. Beginning in 1996, data also include energy service providers selling to retail customers.

Web Page: For related information, see <http://www.eia.doe.gov/fuelectric.html>.

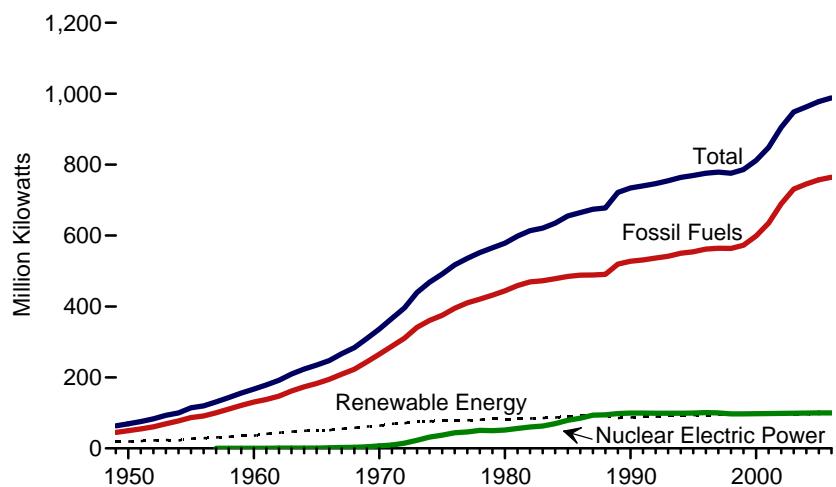
Sources: • 1960-September 1977—Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • October 1977-February 1980—Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income."

• March 1980-1982—FERC, Form FERC-5, "Electric Utility Company Monthly Statement."

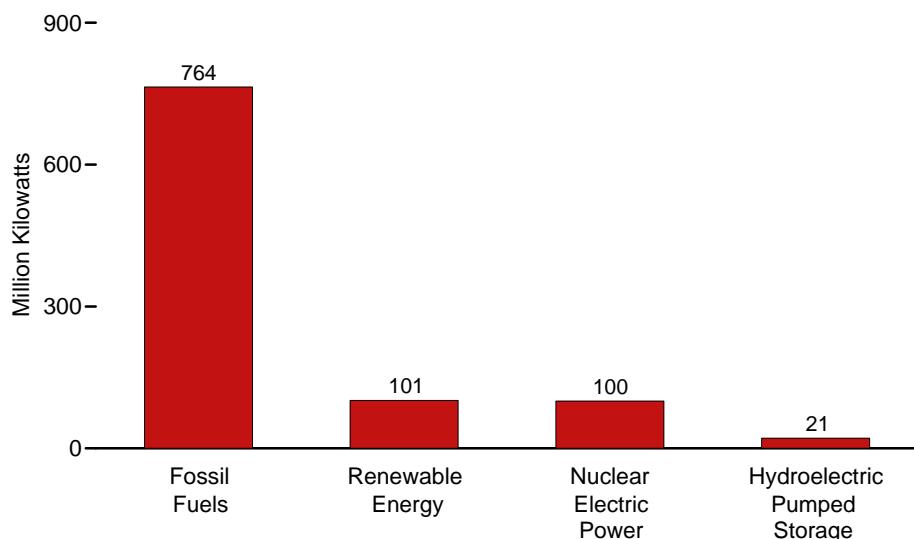
• 1983—Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement." • 1984-1991—EIA, Form EIA-861, "Annual Electric Utility Report." • 1992 forward—EIA, *Electric Power Monthly* (March 2007), Table 5.3.

**Figure 8.11a Electric Net Summer Capacity, Total (All Sectors)**

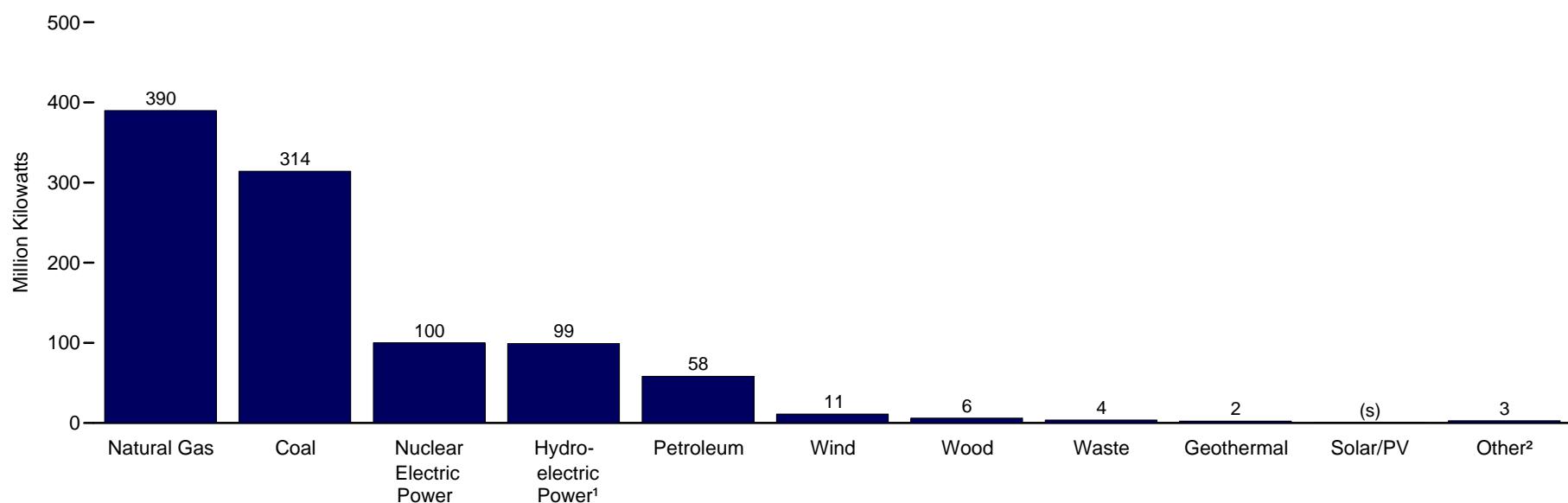
**Total, 1949-2006**



**By Major Category, 2006**



**By Source, 2006**



<sup>1</sup> Conventional and pumped storage.

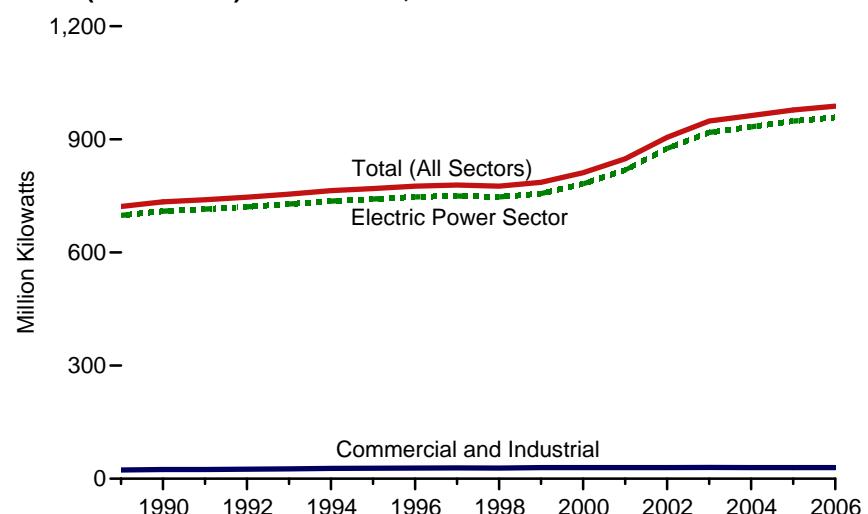
<sup>2</sup> Blast furnace gas, propane gas, other manufactured and waste gases derived from fossil fuels, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

(s)=Less than 0.5 million kilowatts.

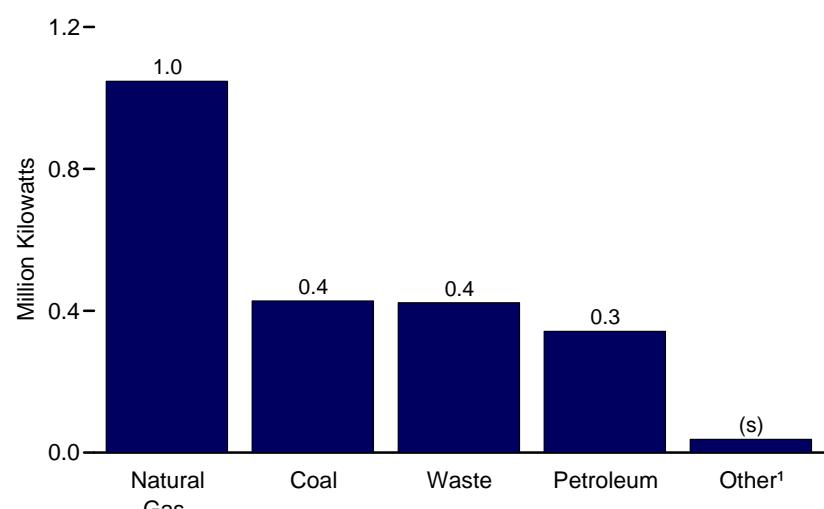
Note: Because vertical scales differ, graphs should not be compared.  
Source: Table 8.11a.

**Figure 8.11b Electric Net Summer Capacity by Sector**

**Total (All Sectors) and Sectors, 1989-2006**



**Commercial Sector, 2006**

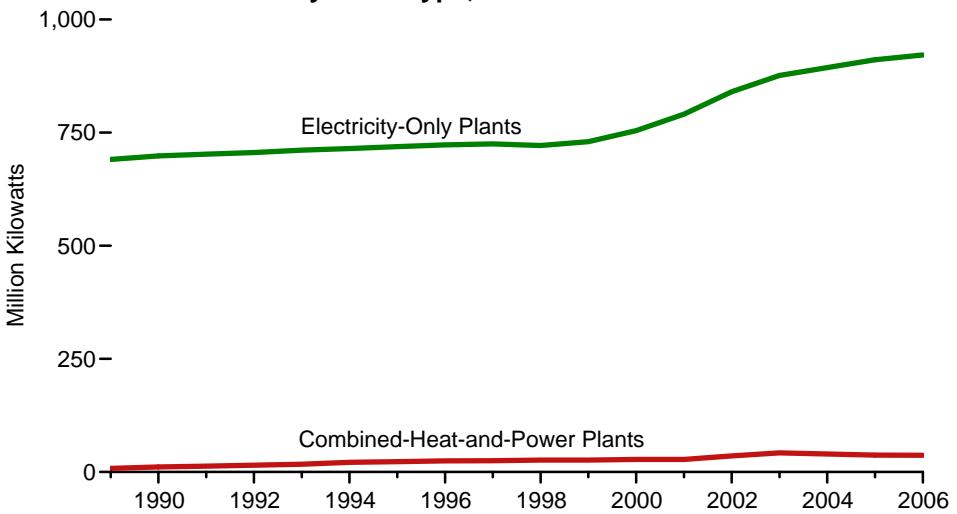


<sup>1</sup> Conventional hydroelectric power, wood, blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

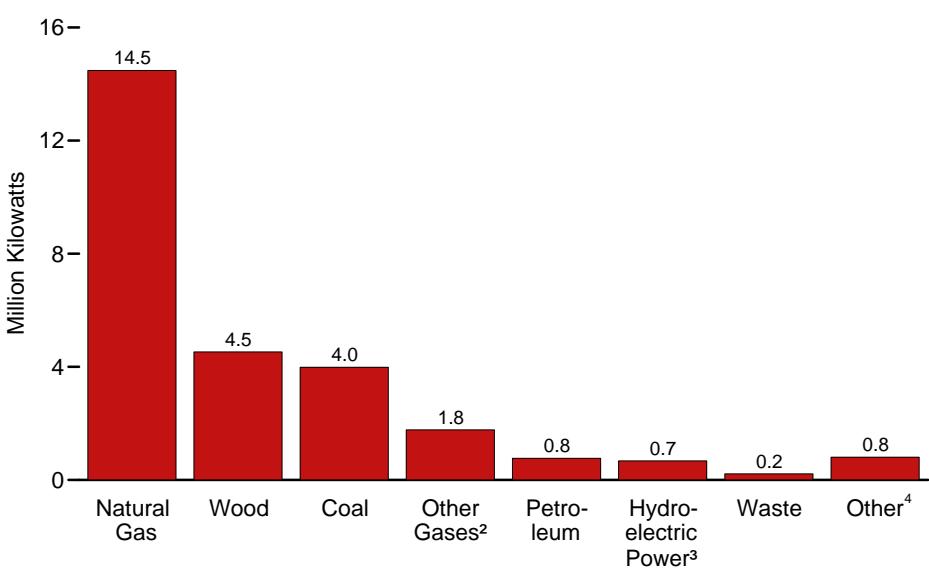
<sup>2</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels

<sup>3</sup> Conventional.

**Electric Power Sector by Plant Type, 1989-2006**



**Industrial Sector, 2006**



<sup>4</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>5</sup> (s)=Less than 0.05 million kilowatts.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 8.11a-8.11d.

**Table 8.11a Electric Net Summer Capacity: Total (All Sectors), Selected Years, 1949-2006**  
 (Sum of Tables 8.11b and 8.11d; Million Kilowatts)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage	Renewable Energy						Other <sup>8</sup>	Total	
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>7</sup>	Wind	Total		
								Wood <sup>5</sup>	Waste <sup>6</sup>							
1949	NA	NA	NA	NA	44.9	0.0	( <sup>9</sup> )	18.5	(s)	( <sup>10</sup> )	NA	NA	NA	18.5	NA	63.4
1950	NA	NA	NA	NA	50.0	.0	( <sup>9</sup> )	19.2	(s)	( <sup>10</sup> )	NA	NA	NA	19.2	NA	69.2
1955	NA	NA	NA	NA	86.8	.0	( <sup>9</sup> )	27.4	(s)	( <sup>10</sup> )	NA	NA	NA	27.4	NA	114.2
1960	NA	NA	NA	NA	130.8	.4	( <sup>9</sup> )	35.8	.1	( <sup>10</sup> )	(s)	NA	NA	35.9	NA	167.1
1965	NA	NA	NA	NA	182.9	.8	( <sup>9</sup> )	51.0	.1	( <sup>10</sup> )	(s)	NA	NA	51.1	NA	234.8
1970	NA	NA	NA	NA	265.4	7.0	( <sup>9</sup> )	63.8	.1	( <sup>10</sup> )	.1	NA	NA	63.9	NA	336.4
1971	NA	NA	NA	NA	288.0	9.0	( <sup>9</sup> )	69.1	.1	( <sup>10</sup> )	.2	NA	NA	69.4	NA	366.4
1972	NA	NA	NA	NA	310.7	14.5	( <sup>9</sup> )	70.5	.1	( <sup>10</sup> )	.3	NA	NA	70.9	NA	396.0
1973	NA	NA	NA	NA	341.2	22.7	( <sup>9</sup> )	75.4	.1	( <sup>10</sup> )	.4	NA	NA	75.9	NA	439.8
1974	NA	NA	NA	NA	360.7	31.9	( <sup>9</sup> )	75.5	.1	( <sup>10</sup> )	.4	NA	NA	76.0	NA	468.5
1975	NA	NA	NA	NA	375.1	37.3	( <sup>9</sup> )	78.4	.1	( <sup>10</sup> )	.5	NA	NA	79.0	NA	491.3
1976	NA	NA	NA	NA	394.8	43.8	( <sup>9</sup> )	78.0	.1	( <sup>10</sup> )	.5	NA	NA	78.6	NA	517.2
1977	NA	NA	NA	NA	410.4	46.3	( <sup>9</sup> )	78.6	.1	( <sup>10</sup> )	.5	NA	NA	79.2	NA	535.9
1978	NA	NA	NA	NA	420.8	50.8	( <sup>9</sup> )	79.9	.1	( <sup>10</sup> )	.5	NA	NA	80.5	NA	552.1
1979	NA	NA	NA	NA	432.1	49.7	( <sup>9</sup> )	82.9	.1	( <sup>10</sup> )	.7	NA	NA	83.6	NA	565.5
1980	NA	NA	NA	NA	444.1	51.8	( <sup>9</sup> )	81.7	.1	( <sup>10</sup> )	.9	NA	NA	82.7	NA	578.6
1981	NA	NA	NA	NA	458.9	56.0	( <sup>9</sup> )	82.4	.1	( <sup>10</sup> )	.9	NA	(s)	83.4	NA	598.3
1982	NA	NA	NA	NA	469.6	60.0	( <sup>9</sup> )	83.0	.1	( <sup>10</sup> )	1.0	NA	(s)	84.1	NA	613.7
1983	NA	NA	NA	NA	472.8	63.0	( <sup>9</sup> )	83.9	.2	( <sup>10</sup> )	1.2	NA	(s)	85.3	NA	621.1
1984	NA	NA	NA	NA	478.6	69.7	( <sup>9</sup> )	85.3	.3	( <sup>10</sup> )	1.2	(11)	(s)	86.9	NA	635.1
1985	NA	NA	NA	NA	485.0	79.4	( <sup>9</sup> )	88.9	.2	.2	1.6	(11)	(s)	90.8	NA	655.2
1986	NA	NA	NA	NA	488.3	85.2	( <sup>9</sup> )	89.3	.2	.2	1.6	(11)	(s)	91.2	NA	664.8
1987	NA	NA	NA	NA	488.8	93.6	( <sup>9</sup> )	89.7	.2	.2	1.5	(11)	(s)	91.7	NA	674.1
1988	NA	NA	NA	NA	490.6	94.7	( <sup>9</sup> )	90.3	.2	.2	1.7	(11)	(s)	92.4	NA	677.7
1989 <sup>12</sup>	303.1	R49.0	R165.7	1.5	519.4	98.2	18.1	74.1	5.2	2.1	2.6	.2	1.5	85.7	.5	721.8
1990	307.4	R49.4	R169.3	1.6	527.8	99.6	19.5	73.9	5.5	2.5	2.7	.3	1.8	86.8	.5	734.1
1991	307.4	R48.0	R173.9	2.1	531.4	99.6	18.4	76.0	6.1	2.9	2.6	.3	1.9	89.9	.5	739.9
1992	309.4	R46.6	R178.7	2.1	536.7	99.0	21.2	74.8	6.2	3.0	2.9	.3	1.8	89.1	.5	746.5
1993	310.1	R45.1	R184.6	1.9	541.8	99.0	21.1	77.4	6.5	3.1	2.9	.3	1.8	92.1	.5	754.6
1994	311.4	R44.0	R192.5	2.1	550.0	99.1	21.2	78.0	6.7	3.3	3.0	.3	1.7	93.1	.5	764.0
1995	311.4	R44.7	R196.4	1.7	554.2	99.5	21.4	78.6	6.7	3.5	3.0	.3	1.7	93.9	.5	769.5
1996	313.4	R45.3	R201.4	1.7	561.7	100.8	21.1	76.4	6.8	3.6	2.9	.3	1.7	91.7	.5	775.9
1997	313.6	R45.7	R203.2	1.5	564.1	99.7	19.3	79.4	6.9	3.6	2.9	.3	1.6	94.8	.8	778.6
1998	315.8	R43.0	R203.6	1.5	563.9	97.1	19.5	79.2	6.8	3.7	2.9	.3	1.7	94.6	.8	775.9
1999	315.5	R43.3	R211.9	1.9	572.6	97.4	19.6	79.4	6.8	3.7	2.8	.4	2.3	95.3	1.0	785.9
2000	315.1	R61.8	R219.6	2.3	598.9	97.9	19.5	79.4	6.1	3.9	2.8	.4	2.4	94.9	.5	811.7
2001	314.2	R66.2	R252.8	1.7	634.9	98.2	19.7	78.9	5.9	3.8	2.2	.4	3.9	95.1	.4	848.3
2002	315.4	R59.7	R312.5	2.0	689.5	98.7	20.4	79.4	5.8	3.8	2.3	.4	4.4	96.1	.6	905.3
2003	313.0	R60.7	R355.4	2.0	731.2	99.2	20.5	78.7	5.9	3.8	2.1	.4	6.0	96.9	.6	948.4
2004	313.0	R59.1	R371.0	2.3	745.4	99.6	20.8	77.6	6.2	3.6	2.2	.4	6.5	96.4	.7	962.9
2005	R313.4	R58.5	R383.1	R2.1	R757.1	R100.0	R21.3	R77.5	6.2	R3.7	R2.3	.4	R8.7	R98.8	R.8	R978.0
2006 <sup>p</sup>	314.1	58.3	389.8	2.1	764.3	100.1	21.4	77.6	6.2	3.8	2.3	.4	11.1	101.4	.8	988.1

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. For all years, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>9</sup> Included in "Conventional Hydroelectric Power."

<sup>10</sup> Included in "Wood."

<sup>11</sup> Included in "Wind."

<sup>12</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of year. • For plants that use multiple sources of energy, capacity is assigned to the predominant energy source. • See Note 1, "Coverage of Electricity Statistics," at end of section.

• See "Generator Net Summer Capacity" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 8.11b and 8.11d.

**Table 8.11b Electric Net Summer Capacity: Electric Power Sector, Selected Years, 1949-2006**  
 (Subset of Table 8.11a; Million Kilowatts)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage	Renewable Energy							Other <sup>8</sup>	Total
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>7</sup>	Wind	Total		
								Wood <sup>5</sup>	Waste <sup>6</sup>							
1949	NA	NA	NA	NA	44.9	0.0	( 9 )	18.5	(s)	( 10 )	NA	NA	NA	18.5	NA	63.4
1950	NA	NA	NA	NA	50.0	.0	( 9 )	19.2	(s)	( 10 )	NA	NA	NA	19.2	NA	69.2
1955	NA	NA	NA	NA	86.8	.0	( 9 )	27.4	(s)	( 10 )	NA	NA	NA	27.4	NA	114.2
1960	NA	NA	NA	NA	130.8	.4	( 9 )	35.8	.1	( 10 )	(s)	NA	NA	35.9	NA	167.1
1965	NA	NA	NA	NA	182.9	.8	( 9 )	51.0	.1	( 10 )	(s)	NA	NA	51.1	NA	234.8
1970	NA	NA	NA	NA	265.4	7.0	( 9 )	63.8	.1	( 10 )	.1	NA	NA	63.9	NA	336.4
1971	NA	NA	NA	NA	288.0	9.0	( 9 )	69.1	.1	( 10 )	.2	NA	NA	69.4	NA	366.4
1972	NA	NA	NA	NA	310.7	14.5	( 9 )	70.5	.1	( 10 )	.3	NA	NA	70.9	NA	396.0
1973	NA	NA	NA	NA	341.2	22.7	( 9 )	75.4	.1	( 10 )	.4	NA	NA	75.9	NA	439.8
1974	NA	NA	NA	NA	360.7	31.9	( 9 )	75.5	.1	( 10 )	.4	NA	NA	76.0	NA	468.5
1975	NA	NA	NA	NA	375.1	37.3	( 9 )	78.4	.1	( 10 )	.5	NA	NA	79.0	NA	491.3
1976	NA	NA	NA	NA	394.8	43.8	( 9 )	78.0	.1	( 10 )	.5	NA	NA	78.6	NA	517.2
1977	NA	NA	NA	NA	410.4	46.3	( 9 )	78.6	.1	( 10 )	.5	NA	NA	79.2	NA	535.9
1978	NA	NA	NA	NA	420.8	50.8	( 9 )	79.9	.1	( 10 )	.5	NA	NA	80.5	NA	552.1
1979	NA	NA	NA	NA	432.1	49.7	( 9 )	82.9	.1	( 10 )	.7	NA	NA	83.6	NA	565.5
1980	NA	NA	NA	NA	444.1	51.8	( 9 )	81.7	.1	( 10 )	.9	NA	NA	82.7	NA	578.6
1981	NA	NA	NA	NA	458.9	56.0	( 9 )	82.4	.1	( 10 )	.9	NA	(s)	83.4	NA	598.3
1982	NA	NA	NA	NA	469.6	60.0	( 9 )	83.0	.1	( 10 )	1.0	NA	(s)	84.1	NA	613.7
1983	NA	NA	NA	NA	472.8	63.0	( 9 )	83.9	.2	( 10 )	1.2	NA	(s)	85.3	NA	621.1
1984	NA	NA	NA	NA	478.6	69.7	( 9 )	85.3	.3	( 10 )	1.2	( 11 )	(s)	86.9	NA	635.1
1985	NA	NA	NA	NA	485.0	79.4	( 9 )	88.9	.2	( 10 )	1.6	( 11 )	(s)	90.8	NA	655.2
1986	NA	NA	NA	NA	488.3	85.2	( 9 )	89.3	.2	( 10 )	1.6	( 11 )	(s)	91.2	NA	664.8
1987	NA	NA	NA	NA	488.8	93.6	( 9 )	89.7	.2	( 10 )	1.5	( 11 )	(s)	91.7	NA	674.1
1988	NA	NA	NA	NA	490.6	94.7	( 9 )	90.3	.2	( 10 )	1.7	( 11 )	(s)	92.4	NA	677.7
1989 <sup>12</sup>	298.0	R48.1	R155.4	.4	501.9	98.2	18.1	73.6	1.1	1.7	2.6	.2	1.5	80.7	—	698.8
1990	302.3	R48.3	R158.4	.4	509.3	99.6	19.5	73.3	1.2	2.1	2.7	.3	1.8	81.4	(s)	709.9
1991	302.5	R46.7	R163.4	.7	513.3	99.6	18.4	75.4	1.3	2.5	2.6	.3	1.9	84.0	—	715.3
1992	304.3	R45.3	R167.6	.7	517.9	99.0	21.2	74.2	1.4	2.5	2.9	.3	1.8	83.1	—	721.2
1993	305.0	R44.0	R172.8	.7	522.5	99.0	21.1	76.8	1.5	2.6	2.9	.3	1.8	85.9	—	728.6
1994	306.1	R42.7	R180.2	.7	529.8	99.1	21.2	76.9	1.7	2.7	3.0	.3	1.7	86.4	—	736.5
1995	306.0	R43.5	R183.8	.3	533.7	99.5	21.4	77.4	1.8	3.0	3.0	.3	1.7	87.3	—	741.8
1996	308.1	R44.1	R188.6	.1	540.9	100.8	21.1	75.3	1.7	2.9	2.9	.3	1.7	84.9	—	747.7
1997	308.5	R44.3	R190.1	.2	543.1	99.7	19.3	78.3	1.8	2.9	2.9	.3	1.6	87.8	.2	750.1
1998	310.9	R41.7	R190.4	.1	543.0	97.1	19.5	78.0	1.8	3.0	2.9	.3	1.7	87.8	.2	747.6
1999	310.7	R41.9	R197.9	.2	550.7	97.4	19.6	78.3	1.8	3.0	2.8	.4	2.3	88.6	.2	756.5
2000	310.2	R60.7	R204.7	.3	575.9	97.9	19.5	78.2	1.7	3.3	2.8	.4	2.4	88.8	(s)	782.1
2001	309.8	R64.7	R236.8	.3	611.6	98.2	19.7	77.9	1.6	3.3	2.2	.4	3.9	89.3	(s)	818.8
2002	311.0	R58.6	R296.6	.3	666.5	98.7	20.4	78.3	1.6	3.4	2.3	.4	4.4	90.3	(s)	875.8
2003	308.5	R59.6	R339.1	.3	707.6	99.2	20.5	77.9	1.6	3.3	2.1	.4	6.0	91.3	(s)	918.6
2004	308.8	R58.0	R355.2	.4	722.4	99.6	20.8	77.0	1.6	3.0	2.2	.4	6.5	90.6	(s)	933.4
2005	R309.0	R57.5	R367.5	R.3	R734.3	R100.0	R21.3	R76.9	R1.7	R3.0	R2.3	.4	R8.7	R92.9	(s)	R948.6
2006 <sup>p</sup>	309.7	57.1	374.3	.3	741.4	100.1	21.4	76.9	1.7	3.1	2.3	.4	11.1	95.5	(s)	958.6

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. For all years, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>9</sup> Included in "Conventional Hydroelectric Power."

<sup>10</sup> Included in "Wood."

<sup>11</sup> Included in "Wind."

<sup>12</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. NA=Not available. — = No data reported. (s)=Less than 0.05 million

kilowatts.

Notes: • Data are at end of year. • For plants that use multiple sources of energy, capacity is assigned to the predominant energy source. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 8.11d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Generator Net Summer Capacity" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/elect.html>.

• For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1949-1984—Energy Information Administration (EIA) estimates. • 1985-1988—EIA, Form EIA-860, "Annual Electric Generator Report." • 1989-1997—EIA, Form EIA-860, "Annual Electric Generator Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860A, "Annual Electric Generator Report—Utility," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001 forward—EIA, Form EIA-860, "Annual Electric Generator Report."

**Table 8.11c Electric Net Summer Capacity: Electric Power Sector by Plant Type, 1989-2006**  
 (Breakout of Table 8.11b; Million Kilowatts)

Year	Fossil Fuels					Nuclear Electric Power	Hydro- electric Pumped Storage	Renewable Energy							Other <sup>8</sup>	Total
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>7</sup>	Wind	Total		
								Wood <sup>5</sup>	Waste <sup>6</sup>							
Electricity-Only Plants <sup>9</sup>																
1989	296.5	47.9	R149.3	0.4	494.2	98.2	18.1	73.6	0.9	1.5	2.6	0.2	1.5	80.3	—	690.7
1990	299.9	R48.1	R150.2	.4	498.6	99.6	19.5	73.3	1.0	1.9	2.7	.3	1.8	80.9	(s)	698.6
1991	299.6	R46.3	R154.2	.7	500.8	99.6	18.4	75.4	1.1	2.2	2.6	.3	1.9	83.6	—	702.4
1992	300.8	R45.0	R156.7	.7	503.1	99.0	21.2	74.2	1.2	2.3	2.9	.3	1.8	82.7	—	706.0
1993	301.2	R43.3	R160.5	.7	505.7	99.0	21.1	76.8	1.2	2.4	2.9	.3	1.8	85.5	—	711.3
1994	301.6	R42.0	R164.4	.7	508.7	99.1	21.2	76.9	1.5	2.5	3.0	.3	1.7	85.9	—	715.0
1995	301.3	R42.8	R167.2	.3	511.5	99.5	21.4	77.4	1.5	2.7	3.0	.3	1.7	86.6	—	719.1
1996	303.1	R43.4	R170.3	.1	516.9	100.8	21.1	75.3	1.4	2.6	2.9	.3	1.7	84.2	—	723.0
1997	303.6	R43.5	R171.4	.2	518.7	99.7	19.3	78.3	1.5	2.5	2.9	.3	1.6	87.1	.2	725.0
1998	305.9	R40.9	R170.7	.1	517.5	97.1	19.5	78.0	1.4	2.6	2.9	.3	1.7	87.0	.2	721.4
1999	305.5	R40.8	R178.5	.2	525.0	97.4	19.6	78.3	1.5	2.6	2.8	.4	2.3	87.8	.2	730.0
2000	305.2	R59.8	R184.0	.1	549.0	97.9	19.5	78.2	1.5	2.8	2.8	.4	2.4	88.1	(s)	754.5
2001	305.2	R63.8	R215.5	.1	584.5	98.2	19.7	R77.9	1.5	3.0	2.2	.4	3.6	88.5	(s)	R790.9
2002	305.8	R57.5	R268.1	.1	631.5	98.7	20.4	78.3	1.4	2.9	2.3	.4	4.4	89.7	(s)	840.3
2003	303.0	R58.6	R304.2	.1	665.9	99.2	20.5	77.9	1.4	2.8	2.1	.4	6.0	90.6	(s)	876.3
2004	303.2	R57.3	R322.6	.1	683.2	99.6	20.8	77.0	1.5	2.6	2.2	.4	6.5	90.0	(s)	893.7
2005	303.5	R56.7	R337.1	.1	697.4	R100.0	R21.3	R76.9	R1.4	2.6	R2.3	.4	R8.7	R92.3	(s)	R911.1
2006 <sup>P</sup>	304.2	56.4	344.5	.1	705.2	100.1	21.4	76.9	1.4	2.7	2.3	.4	11.1	94.9	(s)	921.7
Combined-Heat-and-Power Plants <sup>10</sup>																
1989	1.5	R0.2	R6.1	—	7.7	—	—	—	0.2	0.2	—	—	—	0.4	—	8.1
1990	2.4	R2	R8.1	—	10.7	—	—	—	.2	.2	—	—	—	.5	—	11.2
1991	2.9	R4	R9.2	—	12.5	—	—	—	.2	.2	—	—	—	.5	—	12.9
1992	3.5	.3	R10.9	(s)	14.7	—	—	—	.2	.2	—	—	—	.5	—	15.2
1993	3.8	R.7	R12.3	—	16.8	—	—	—	.2	.2	—	—	—	.5	—	17.3
1994	4.5	R.7	R15.9	—	21.0	—	—	—	.3	.2	—	—	—	.5	—	21.5
1995	4.8	R.8	R16.6	—	22.1	—	—	—	.4	.2	—	—	—	.6	—	22.7
1996	5.0	R.7	R18.4	—	24.0	—	—	—	.3	.3	—	—	—	.6	—	24.6
1997	4.9	R.8	R18.7	(s)	24.4	—	—	—	.3	.4	—	—	—	.7	—	25.1
1998	5.0	R.8	R19.6	—	25.5	—	—	—	.4	.4	—	—	—	.7	—	26.2
1999	5.2	R1.1	R19.4	—	25.7	—	—	—	.4	.4	—	—	—	.7	—	26.5
2000	5.0	R.9	R20.7	.3	26.9	—	—	—	.2	.5	—	—	—	.7	—	27.7
2001	4.6	R1.0	R21.2	.3	27.1	—	(s)	.1	.4	R	—	—	.3	.8	(s)	27.9
2002	5.2	R1.1	R28.5	.2	34.9	—	—	—	.1	.4	—	—	—	.6	—	35.5
2003	5.5	R1.1	R34.9	.2	41.7	—	(s)	.2	.5	—	—	—	—	.7	—	42.3
2004	5.6	R.7	R32.6	.3	39.2	—	(s)	.2	.4	—	—	—	—	.6	—	39.7
2005	R5.5	R.7	R30.4	R2	R36.9	—	(s)	.2	.4	—	—	—	—	.6	—	R37.5
2006 <sup>P</sup>	5.5	.7	29.8	.2	36.2	—	(s)	.2	.4	—	—	—	—	.6	—	36.9

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. For all years, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>9</sup> Electricity-only plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity to the public. Data also include a small number of electric utility combined-heat-and-power (CHP) plants.

<sup>10</sup> Combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to

sell electricity and heat to the public. Data do not include electric utility CHP plants—these are included under "Electricity-Only Plants."

R=Revised. P=Preliminary. —=No data reported. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of year. • For plants that use multiple sources of energy, capacity is assigned to the predominant energy source. • See Table 8.11d for commercial and industrial CHP and electricity-only data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Generator Net Summer Capacity" in Glossary.

• Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelectric.html>.

Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860A, "Annual Electric Generator Report—Utility," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001 forward—EIA, Form EIA-860, "Annual Electric Generator Report."

**Table 8.11d Electric Net Summer Capacity: Commercial and Industrial Sectors, 1989-2006**  
 (Subset of Table 8.11a; Million Kilowatts)

Year	Fossil Fuels					Nuclear Electric Power	Hydro electric Pumped Storage	Renewable Energy						Other <sup>8</sup>	Total				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other Gases <sup>4</sup>	Total			Conventional Hydroelectric Power	Biomass		Geo- thermal	Solar/PV <sup>7</sup>	Wind						
									Wood <sup>5</sup>	Waste <sup>6</sup>									
<b>Commercial Sector <sup>9</sup></b>																			
1989	0.3	R0.2	R0.6	—	1.0	—	—	(s)	(s)	0.2	—	—	—	0.2	—	1.2			
1990	.3	.2	R.7	—	1.2	—	—	(s)	(s)	.2	—	—	—	.2	—	1.4			
1991	.2	R.2	R.7	—	1.1	—	—	(s)	(s)	.2	—	—	—	.3	—	1.3			
1992	.2	R.2	R.8	—	1.2	—	—	(s)	(s)	.2	—	—	—	.3	—	1.5			
1993	.3	R.2	R.9	—	1.3	—	—	(s)	(s)	.3	—	—	—	.3	—	1.6			
1994	.3	.2	R1.2	—	1.7	—	—	(s)	(s)	.3	—	—	—	.3	—	2.1			
1995	.3	.2	R1.2	—	1.8	—	—	(s)	(s)	.3	—	—	—	.3	—	2.1			
1996	.3	R.3	R1.2	—	1.8	—	—	(s)	(s)	.4	—	—	—	.5	—	2.3			
1997	.3	R.4	R1.2	—	1.9	—	—	(s)	(s)	.4	—	—	—	.5	—	2.3			
1998	.3	R.3	R1.2	—	1.8	—	—	(s)	(s)	.5	—	—	—	.5	—	2.3			
1999	.3	R.4	R1.1	—	1.8	—	—	(s)	(s)	.5	—	—	—	.5	—	2.3			
2000	.3	.3	R1.2	—	1.8	—	—	(s)	(s)	.4	—	—	—	.4	—	2.2			
2001	.3	.3	R1.9	—	2.5	—	R	(s)	(s)	.3	—	—	—	.4	—	2.9			
2002	.3	.3	R1.2	—	1.8	—	R	(s)	(s)	.4	—	—	—	.4	—	2.2			
2003	.3	.3	R1.0	—	1.7	—	—	(s)	(s)	.4	—	—	—	.4	—	2.1			
2004	.4	.3	R1.1	(s)	1.8	—	—	(s)	(s)	.4	—	—	—	.4	—	2.2			
2005	.4	.3	R1.0	(s)	1.8	—	—	(s)	(s)	.4	—	—	—	R.5	—	2.2			
2006 <sup>P</sup>	.4	.3	1.0	(s)	1.8	—	—	(s)	(s)	.4	—	—	—	.5	—	2.3			
<b>Industrial Sector <sup>10</sup></b>																			
1989	4.8	0.7	R9.7	1.2	16.5	—	—	0.5	4.1	0.2	—	—	—	4.8	0.5	21.8			
1990	4.8	.9	R10.3	1.3	17.3	—	—	.6	4.3	.2	—	—	—	5.1	.5	22.9			
1991	4.7	R1.1	R9.8	1.4	17.1	—	—	.6	4.8	.2	—	—	—	5.6	.5	23.2			
1992	4.8	R1.1	R10.3	1.4	17.6	—	—	.6	4.8	.3	—	—	—	5.6	.5	23.8			
1993	4.9	R1.0	R10.9	1.2	18.0	—	—	.6	5.0	.3	—	—	—	5.8	.5	24.3			
1994	5.0	R1.0	R11.0	1.4	18.5	—	—	1.1	5.0	.3	—	—	—	6.3	.5	25.4			
1995	5.0	R1.0	R11.3	1.4	18.7	—	—	1.1	4.9	.2	—	—	—	6.3	.5	25.5			
1996	5.0	R.9	R11.5	1.6	19.0	—	—	1.1	5.1	.2	—	—	—	6.4	.5	25.9			
1997	4.8	R1.1	R11.9	1.3	19.2	—	—	1.1	5.1	.2	—	—	—	6.5	.6	26.2			
1998	4.6	1.0	R12.0	1.5	19.1	—	—	1.1	5.0	.2	—	—	—	6.3	.6	26.0			
1999	4.4	R1.1	R12.9	1.7	20.1	—	—	1.1	5.0	.2	—	—	—	6.2	.8	27.1			
2000	4.6	.8	R13.7	2.0	21.2	—	—	1.1	4.4	.2	—	—	—	5.7	.5	27.3			
2001	4.2	R1.1	R14.1	1.3	20.7	—	—	1.0	4.2	.1	—	—	—	5.4	.4	26.6			
2002	4.0	R.7	R14.7	1.8	21.2	—	—	1.0	4.3	.1	—	—	—	5.5	.6	27.3			
2003	4.1	.7	R15.3	1.7	21.9	—	—	.8	4.3	.1	—	—	—	5.2	.6	27.7			
2004	3.8	R.8	R14.8	1.9	21.3	—	—	.6	4.5	.2	—	—	—	5.4	.7	27.4			
2005	4.0	R.8	R14.5	R1.8	R21.0	—	—	.7	4.5	.2	—	—	—	5.4	.8	R27.2			
2006 <sup>P</sup>	4.0	.8	14.5	1.8	21.0	—	—	.7	4.5	.2	—	—	—	5.4	.8	27.2			

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels.

<sup>4</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. For all years, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Solar thermal and photovoltaic energy.

<sup>8</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>9</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>10</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

R=Revised. P=Preliminary. — = No data reported. (s)=Less than 0.05 million kilowatts.

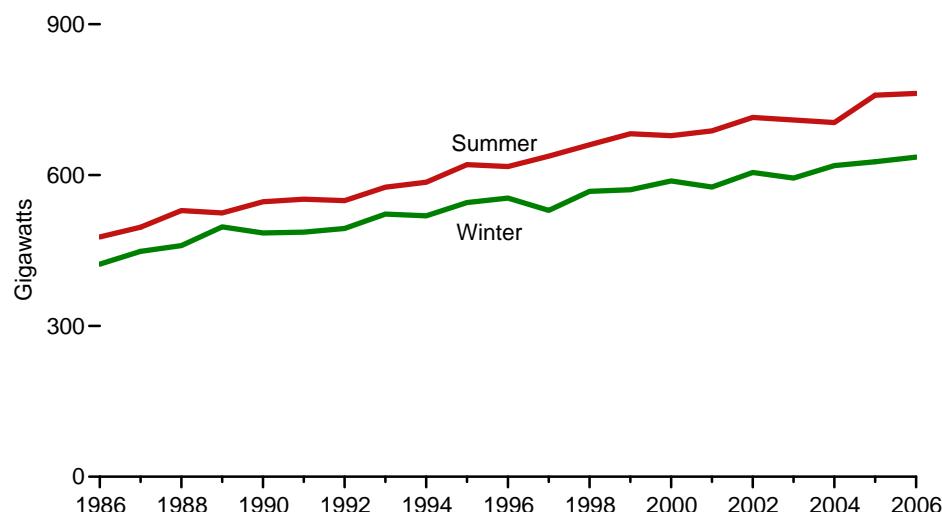
Notes: • Data are at end of year. • For plants that use multiple sources of energy, capacity is assigned to the predominant energy source. • See Tables 8.11b and 8.11c for electric power sector electricity-only and CHP data. • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • See "Generator Net Summer Capacity" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

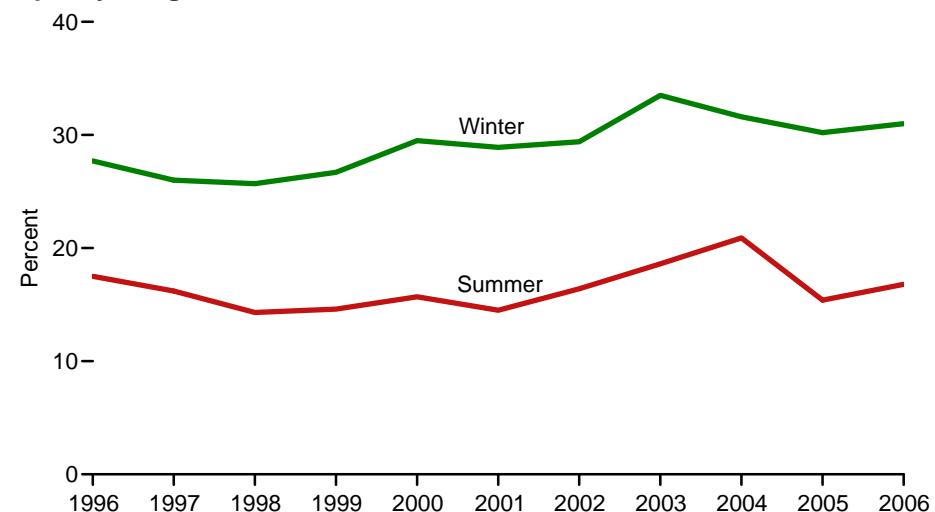
Sources: • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001 forward—EIA, Form EIA-860, "Annual Electric Generator Report."

**Figure 8.12 Electric Noncoincident Peak Load and Capacity Margin**

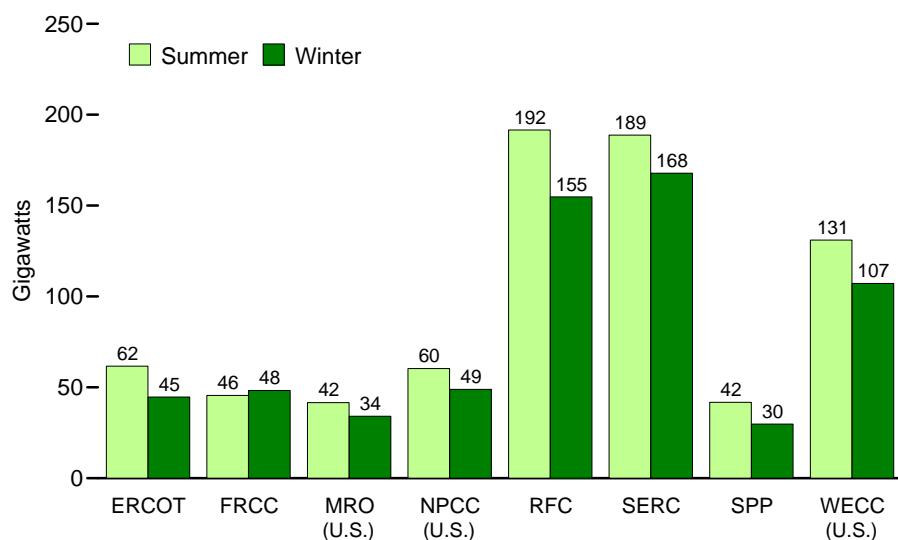
**U.S. Peak Load, 1986-2006**



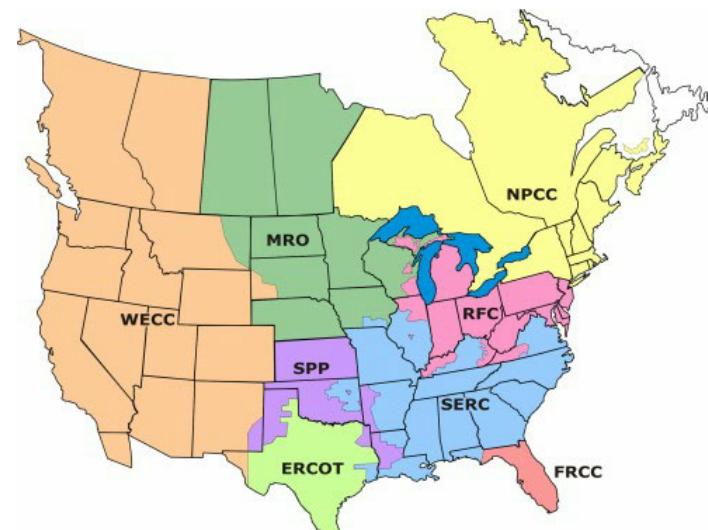
**Capacity Margin, 1996-2006**



**U.S. Peak Load by NERC Region, 2006**



**North American Electric Reliability Council Map for the United States**



Notes: • Values for 2006 are forecast. • Noncoincident peak load is the sum of two or more peak loads on individual systems that do not occur at the same time interval. See Glossary for information on North American Electric Reliability Council (NERC).

• Because vertical scales differ, graphs should not be compared.  
Source: Table 8.12.

**Table 8.12 Electric Noncoincident Peak Load and Capacity Margin, 1986-2006**  
 (Megawatts, Except as Noted)

Year	Noncoincident Peak Load												Capacity Margin <sup>6</sup> (percent)		
	North American Electric Reliability Council Regions <sup>1</sup>										Contiguous United States	ASCC (Alaska)	Hawaii	U.S. Total	
	ECAR <sup>2</sup>	ERCOT	FRCC	MAAC <sup>2</sup>	MAIN <sup>2</sup>	MRO <sup>3</sup> (U.S.)	NPCC (U.S.)	RFC <sup>4</sup>	SERC	SPP	WECC <sup>5</sup> (U.S.)				
<b>Summer</b>															
1986	69,606	39,335	--	37,564	35,943	21,029	39,026	--	105,570	47,123	81,787	476,983	--	476,983	NA
1987	72,561	39,339	--	40,526	37,446	23,162	42,651	--	109,798	47,723	82,967	496,173	--	496,173	NA
1988	79,149	40,843	--	43,110	41,139	24,899	45,245	--	115,168	49,356	90,551	529,460	--	529,460	NA
1989	75,442	40,402	--	41,614	39,460	24,336	45,031	--	117,729	49,439	90,657	524,110	456	524,566	NA
1990	79,258	42,737	--	42,613	40,740	24,994	44,116	--	121,943	52,541	97,389	546,331	463	546,794	21.6
1991	81,224	41,870	--	45,937	41,598	25,498	46,594	--	124,716	51,885	92,096	551,418	471	551,889	20.9
1992	78,550	42,619	--	43,658	38,819	22,638	43,658	--	128,236	51,324	99,205	548,707	504	549,211	20.5
1993	80,930	44,255	--	46,494	41,956	24,396	46,706	--	135,704	57,106	97,809	575,356	511	575,867	19.9
1994	87,165	44,162	--	46,019	42,562	27,000	47,581	--	132,584	56,035	102,212	585,320	524	585,844	18.7
1995	92,619	46,618	--	48,577	45,782	29,192	47,705	--	146,569	59,595	103,592	620,249	622	620,871	18.9
1996	90,798	47,480	--	44,302	46,402	28,253	45,094	--	145,650	60,072	108,739	616,790	--	616,790	17.5
1997	93,492	50,541	35,375	49,464	45,887	29,787	49,269	--	137,382	36,479	110,001	637,677	--	637,677	16.2
1998	93,784	54,666	38,730	48,445	47,509	30,722	49,566	--	143,226	37,724	115,921	660,293	--	660,293	14.3
1999	99,239	55,529	37,493	51,645	51,535	31,903	52,855	--	149,685	38,609	113,629	682,122	--	682,122	14.6
2000	92,033	57,606	37,194	49,477	52,552	28,605	50,057	--	156,088	40,199	114,602	678,413	--	678,413	15.7
2001	100,235	55,201	39,062	54,015	56,344	28,321	55,949	--	149,293	40,273	109,119	687,812	--	687,812	14.5
2002	102,996	56,248	40,696	55,569	56,396	29,119	56,012	--	158,767	39,688	119,074	714,565	--	714,565	16.4
2003	98,487	59,996	40,475	53,566	56,988	28,831	55,018	--	153,110	40,367	122,537	709,375	--	709,375	18.6
2004	95,300	58,531	42,383	52,049	53,439	29,351	52,549	--	157,615	40,106	123,136	704,459	--	704,459	20.9
2005	--	R60,210	R46,396	--	--	R39,918	R58,960	190,200	R190,705	R41,727	R130,760	R758,876	--	R758,876	R15.4
2006 <sup>F</sup>	--	61,656	45,520	--	--	41,623	60,320	191,600	188,763	41,747	130,999	762,228	--	762,228	16.8
<b>Winter</b>															
1986	64,561	28,730	--	32,807	28,036	18,850	37,976	--	101,849	33,877	76,171	422,857	--	422,857	NA
1987	68,118	31,399	--	35,775	30,606	19,335	41,902	--	105,476	34,472	81,182	448,265	--	448,265	NA
1988	67,771	34,621	--	36,363	30,631	20,162	42,951	--	108,649	35,649	82,937	459,734	--	459,734	NA
1989	73,080	38,388	--	38,161	33,770	21,360	42,588	--	121,995	42,268	84,768	496,378	626	497,004	NA
1990	67,097	35,815	--	36,551	32,461	21,113	40,545	--	117,448	38,949	94,252	484,231	613	484,844	NA
1991	71,181	35,448	--	37,983	33,420	21,432	41,866	--	119,575	38,759	86,097	485,761	622	486,383	NA
1992	72,885	35,055	--	37,915	31,289	21,866	41,125	--	121,250	39,912	91,686	492,983	635	493,618	NA
1993	81,846	35,407	--	41,406	34,966	21,955	42,063	--	133,635	41,644	88,811	521,733	632	522,365	NA
1994	75,638	36,180	--	40,653	33,999	23,033	42,547	--	132,661	42,505	91,037	518,253	641	518,894	NA
1995	83,465	36,965	--	40,790	35,734	23,429	42,755	--	142,032	44,624	94,890	544,684	676	545,360	NA
1996	84,534	38,868	--	40,468	37,162	24,251	41,208	--	143,060	49,095	95,435	554,081	--	554,081	27.7
1997	75,670	37,966	33,076	37,217	34,973	25,390	41,338	--	122,649	27,437	94,158	529,874	--	529,874	26.0
1998	84,401	41,876	39,975	36,532	37,410	26,080	44,199	--	127,416	27,847	101,822	567,558	--	567,558	25.7
1999	86,239	39,164	40,178	40,220	39,081	25,200	45,227	--	128,563	27,963	99,080	570,915	--	570,915	26.7
2000	84,546	44,641	38,606	43,256	41,943	24,536	43,852	--	139,146	30,576	97,324	588,426	--	588,426	29.5
2001	85,485	44,015	40,922	39,458	40,529	21,815	42,670	--	135,182	29,614	96,622	576,312	--	576,312	28.9
2002	87,300	45,414	45,635	46,551	42,412	23,645	46,009	--	141,882	30,187	95,951	604,986	--	604,986	29.4
2003	86,332	42,702	36,841	45,625	41,719	24,134	48,079	--	137,972	28,450	102,020	593,874	--	593,874	33.5
2004	91,800	44,010	44,839	45,905	42,929	24,526	48,176	--	144,337	29,490	102,689	618,701	--	618,701	31.6
2005	--	R48,141	R42,657	--	--	R33,748	R46,828	151,600	R164,638	R31,260	R107,493	R626,365	--	R626,365	R30.2
2006 <sup>F</sup>	--	44,715	48,296	--	--	34,113	48,861	154,800	167,811	29,788	107,213	635,597	--	635,597	31.0

<sup>1</sup> See "North American Electric Reliability Council (NERC)" in Glossary. Data include the U.S. portion of NERC only. See Figure 8.12 for an illustration of NERC regions.

<sup>2</sup> ECAR, MAAC, and MAIN dissolved at the end of 2005. Utility members joined other reliability regional councils.

<sup>3</sup> MRO was renamed from MAPP in 2004.

<sup>4</sup> Reliability First Corporation (RFC) came into existence on January 1, 2006. Many of the former utility members of ECAR, MAAC, and MAIN joined RFC.

<sup>5</sup> WECC was renamed from WSCC in 2002.

<sup>6</sup> The percent by which planned generating capacity resources are expected to be greater (or less) than estimated net internal demand at the time of expected peak summer (or winter) demand. Net internal

demand does not include estimated demand for direct control load management and customers with interruptible service agreements. Data are for the contiguous United States only.

R=Revised. F=Forecast. NA=Not available. -- = Not applicable. - = No data reported.

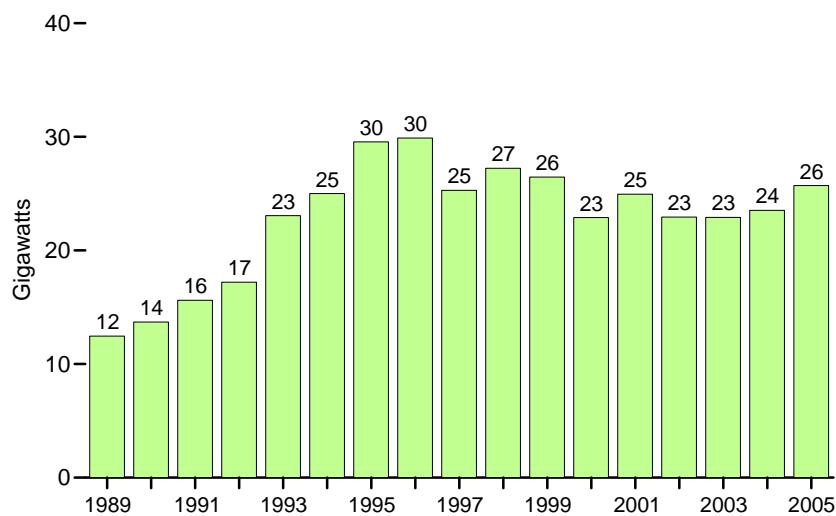
Note: Noncoincident peak load is the sum of two or more peak loads on individual systems that do not occur at the same time interval.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

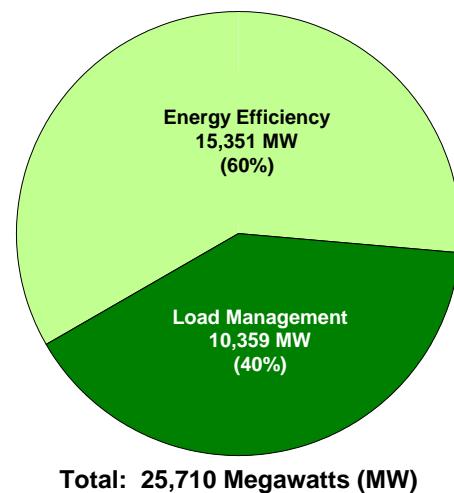
Sources: Energy Information Administration (EIA), *Electric Power Annual 2005* (October 2006), Tables 3.1-3.4; and EIA, Form EIA-411, "Coordinated Bulk Power Supply Program Report," and predecessor forms.

**Figure 8.13 Electric Utility Demand-Side Management Programs**

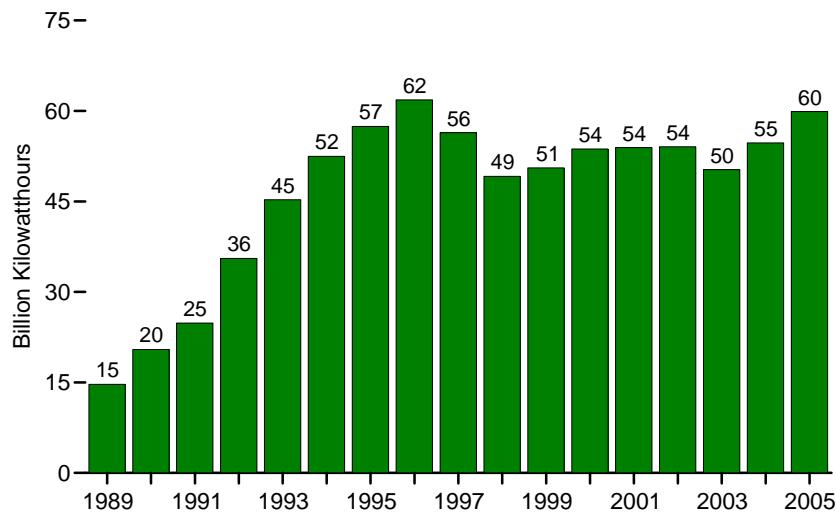
**Actual Peakload Reductions Total, 1989-2005**



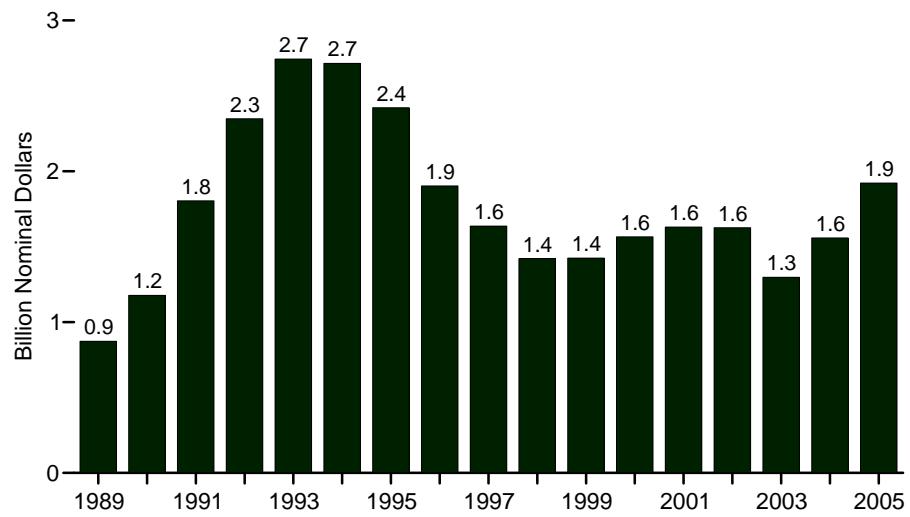
**Actual Peakload Reductions, 2005**



**Energy Savings, 1989-2005**



**Costs, 1989-2005**



Source: Table 8.13.

**Table 8.13 Electric Utility Demand-Side Management Programs, 1989-2005**

Year	Actual Peakload Reductions <sup>1</sup>			Energy Savings	Costs
	Energy Efficiency <sup>2</sup>	Load Management <sup>3</sup>	Total		
Year	Megawatts			Million Kilowatthours	Thousand Nominal Dollars <sup>4</sup>
1989	NA	NA	12,463	14,672	872,935
1990	NA	NA	13,704	20,458	1,177,457
1991	NA	NA	15,619	24,848	1,803,773
1992	7,890	9,314	17,204	35,563	2,348,094
1993	10,368	12,701	23,069	45,294	2,743,533
1994	11,662	13,340	25,001	52,483	2,715,657
1995	13,212	16,347	29,561	57,421	2,421,284
1996	14,243	15,650	29,893	61,842	1,902,197
1997	R13,327	11,958	25,284	56,406	1,636,020
1998	13,591	13,640	27,231	49,167	1,420,920
1999	13,452	13,003	26,455	50,563	1,423,644
2000	12,873	10,027	22,901	53,701	1,564,901
2001	13,027	11,928	24,955	53,936	1,630,286
2002	13,420	9,516	22,936	54,075	1,625,537
2003	13,581	9,323	22,904	50,265	1,297,210
2004	14,272	9,260	23,532	54,710	1,557,466
2005	15,351	10,359	25,710	59,897	1,921,352

<sup>1</sup> The actual reduction in peak load reflects the change in demand for electricity that results from a utility demand-side management (DSM) program that is in effect at the time that the utility experiences its actual peak load as opposed to the potential installed peakload reduction capacity. Differences between actual and potential peak reduction result from changes in weather, economic activity, and other variable conditions.

<sup>2</sup> "Energy Efficiency" refers to programs that are aimed at reducing the energy used by specific end-use devices and systems, typically without affecting the services provided. These programs reduce overall electricity consumption, often without explicit consideration for the timing of program-induced savings. Such savings are generally achieved by substituting technically more advanced equipment to produce the same level of end-use services (e.g., lighting, heating, motor drive) with less electricity. Examples include high-efficiency appliances, efficient lighting programs, high-efficiency heating, ventilating, and air conditioning systems or control modifications, efficient building design, advanced electric motor drives, and heat recovery systems.

<sup>3</sup> "Load Management" includes programs such as "Direct Load Control," "Interruptible Load Control," and, "Other Types" of DSM programs. "Direct Load Control" refers to program activities that can interrupt consumer load at the time of annual peak load by direct control of the utility system operator by interrupting power supply to individual appliances or equipment on consumer premises. This type of control usually involves residential consumers. "Interruptible Load Control" refers to program activities that, in accordance

with contractual arrangements, can interrupt consumer load at times of seasonal peak load by direct control of the utility system operator or by action of the consumer at the direct request of the system operator. It usually involves commercial and industrial consumers. In some instances, the load reduction may be affected by direct action of the system operator (remote tripping) after notice to the consumer in accordance with contractual provisions. "Other Types" are programs that limit or shift peak loads from on-peak to off-peak time periods, such as space heating and water heating storage systems.

<sup>4</sup> See "Nominal Dollars" in Glossary.

R=Revised. NA=Not available.

Note: This table reports on the results of DSM programs operated by electric utilities. The decrease since 1998 in peakload reductions from DSM programs can be attributed in part to utilities cutting back or terminating these programs due to industry deregulation. Some State governments have created new programs to promote DSM. Examples include the "Energy \$mart Loan Fund" administered by the New York Energy Research and Development Authority and the "Efficiency Vermont" program of the Vermont Public Service Board. Data on energy savings attributable to these non-utility programs are not collected by the Energy Information Administration.

Web Page: For related information, see <http://www.eia.doe.gov/fuelectric.html>.

Sources: • 1989-1993—Energy Information Administration (EIA), Form EIA-861, "Annual Electric Utility Report." • 1994 forward—EIA, *Electric Power Annual 2005* (October 2006), Tables 9.1, 9.6, and 9.7.

## **Electricity**

**Note 1. Coverage of Electricity Statistics.** Through 1984, data for electric utilities also include institutions (such as universities) and military facilities that generated electricity primarily for their own use; beginning in 1985, data for electric utilities exclude institutions and military facilities. Data for independent power producers, commercial plants, and industrial plants include plants with a generator nameplate capacity of 1 megawatt or greater; they exclude plants with a generator nameplate capacity less than 1 megawatt. Also excluded from the electricity statistics in Section 8 are data for residential and commercial self-generation from solar energy, except for the small amount sold to the grid and included in data for the electric power sector.

**Note 2. Classification of Power Plants Into Energy-Use Sectors.** The Energy Information Administration (EIA) classifies power plants (both electricity-only and combined-heat-and-power plants) into energy-use sectors based on the North American Industry Classification System (NAICS), which replaced the Standard Industrial Classification (SIC) system in 1997. Plants with a NAICS code of 22 are assigned to the Electric Power Sector. Those with NAICS codes beginning with 11 (agriculture, forestry, fishing, and hunting); 21 (mining, including oil and gas extraction); 23

(construction); 31-33 (manufacturing); 2212 (natural gas distribution); and 22131 (water supply and irrigation systems) are assigned to the Industrial Sector. Those with all other codes are assigned to the Commercial Sector. Form EIA-860, "Annual Electric Generator Report," asks respondents to indicate the primary purpose of the facility by assigning a NAICS code from the list at: <http://www.eia.doe.gov/cneaf/electricity/forms/eia860/eia860.doc>.

**Note 3. Electricity Imports and Exports.** Through the *Annual Energy Review (AER)* 2001, EIA estimated the proportions of traded electricity from fossil fuels and hydropower (and applied the fossil-fuel steam-electric-plant heat rate to convert from kilowatthours to Btu) and from geothermal (and applied the heat rate for geothermal energy plants). Beginning with the *AER* 2002, because of inadequate data, EIA is applying an overall rate of 3,412 Btu per kilowatthour to all traded electricity. In addition, electricity net imports derived from hydroelectric power and geothermal energy are no longer included in renewable energy consumption data. They continue to be included in total U.S. energy consumption as components of electricity net imports, with energy sources unspecified (see Tables 1.3 and 2.1f). This change between *AER* 2001 and *AER* 2002 resulted in a 0.0-to-0.5 quadrillion Btu drop in total renewable energy consumption from 1949 forward.

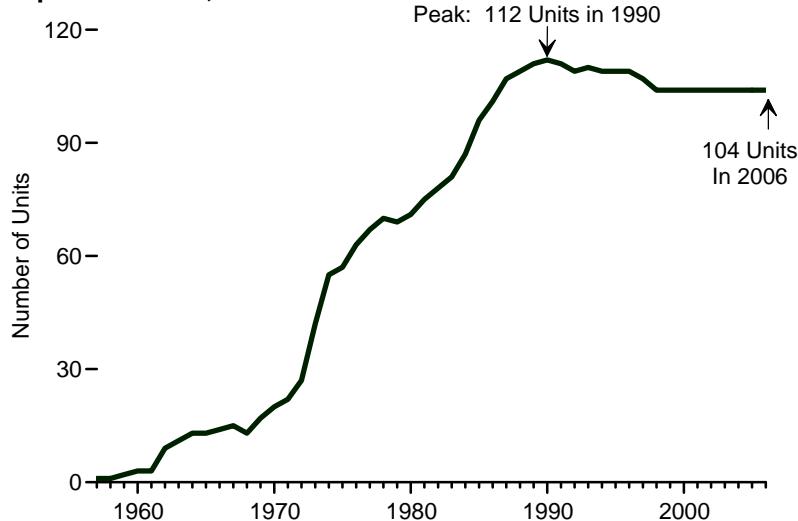
# Nuclear Energy



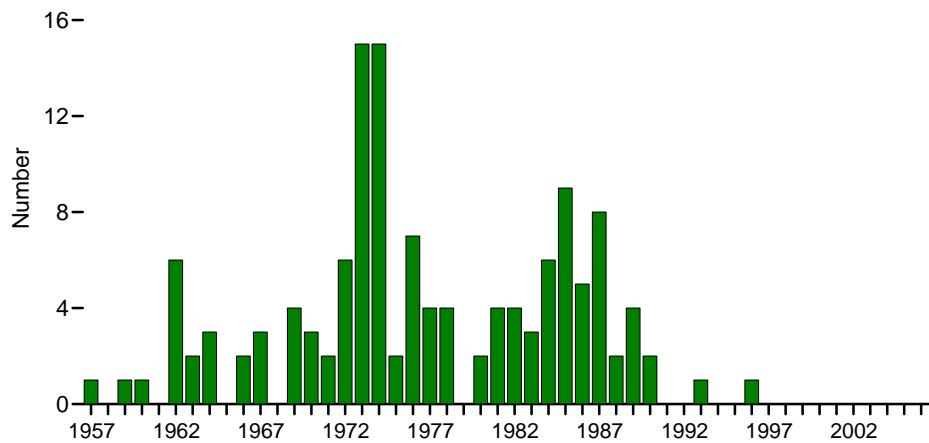
Site of Shippingport atomic power station, the first commercial nuclear power plant in the United States (rectangular reactor building and foreground); background, Beaver Valley 1 and 2 nuclear power plants and Bruce Mansfield coal-fired power plant (southwestern Pennsylvania). Source: U.S. Department of Energy.

**Figure 9.1 Nuclear Generating Units**

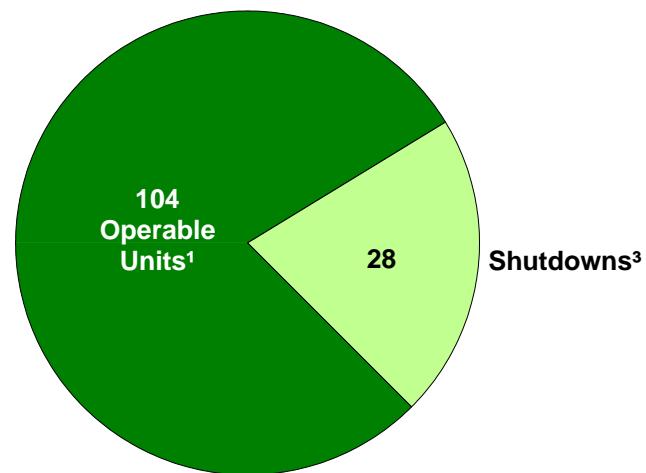
**Operable Units,<sup>1</sup> 1957-2006**



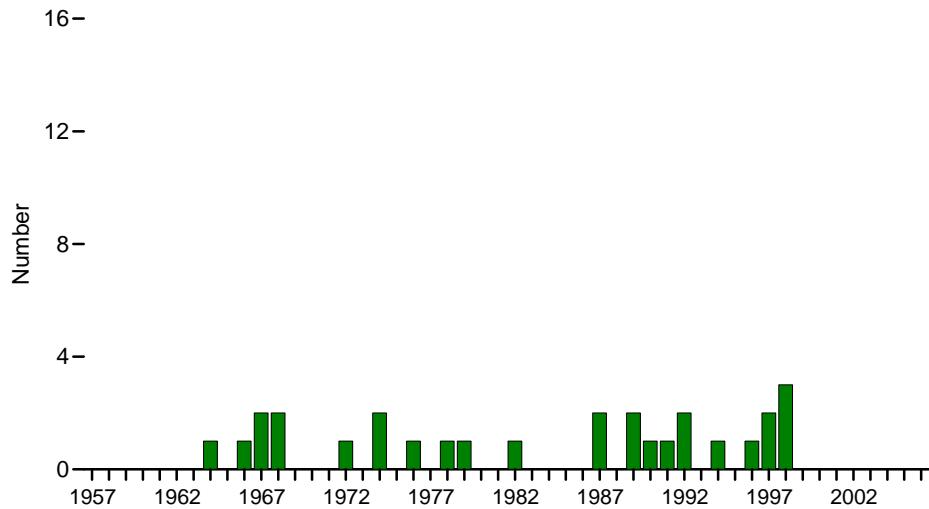
**Full-Power Operating Licenses Issued,<sup>2</sup> 1957-2006**



**Status in 2006 of the 132 Full-Power Operating Licenses Issued from 1957-2006**



**Shutdowns<sup>3</sup> by Year, 1957-2006**



<sup>1</sup> Units holding full-power operating licenses, or equivalent permission to operate, at the end of the year.

<sup>2</sup> Issuance by regulatory authority of full-power operating license, or equivalent permission.

<sup>3</sup> Ceased operation permanently.

Notes: • Data are at end of year. • Because vertical scales differ, graphs should not be compared.

Source: Table 9.1.

**Table 9.1 Nuclear Generating Units, 1955-2006**

Year	10 CFR Part 50 <sup>1</sup>			10 CFR Part 52 <sup>1</sup>			Shutdowns <sup>5</sup>	Operable Units <sup>6</sup>
	Construction Permits <sup>2</sup>	Low-Power Operating Licenses <sup>3</sup>	Full-Power Operating Licenses <sup>4</sup>	Early Site Permits Issued	Combined License Applications	Combined Licenses Issued		
1955	1	0	0	—	—	—	0	0
1956	3	0	0	—	—	—	0	0
1957	1	1	1	—	—	—	0	1
1958	0	0	0	—	—	—	0	1
1959	3	1	1	—	—	—	0	2
1960	7	1	1	—	—	—	0	3
1961	0	0	0	—	—	—	0	3
1962	1	7	6	—	—	—	0	9
1963	1	3	2	—	—	—	0	11
1964	3	2	3	—	—	—	1	13
1965	1	0	0	—	—	—	0	13
1966	5	1	2	—	—	—	1	14
1967	14	3	3	—	—	—	2	15
1968	23	0	0	—	—	—	2	13
1969	7	4	4	—	—	—	0	17
1970	10	4	3	—	—	—	0	20
1971	4	5	2	—	—	—	0	22
1972	8	6	6	—	—	—	1	27
1973	14	12	15	—	—	—	0	42
1974	23	14	15	—	—	—	2	55
1975	9	3	2	—	—	—	0	57
1976	9	7	7	—	—	—	1	63
1977	15	4	4	—	—	—	0	67
1978	13	3	4	—	—	—	1	70
1979	2	0	0	—	—	—	1	69
1980	0	5	2	—	—	—	0	71
1981	0	3	4	—	—	—	0	75
1982	0	6	4	—	—	—	1	78
1983	0	3	3	—	—	—	0	81
1984	0	7	6	—	—	—	0	87
1985	0	7	9	—	—	—	0	96
1986	0	7	5	—	—	—	0	101
1987	0	6	8	—	—	—	2	107
1988	0	1	2	—	—	—	0	109
1989	0	3	4	—	—	—	2	111
1990	0	1	2	—	—	—	1	112
1991	0	0	0	—	—	—	1	111
1992	0	0	0	—	—	—	2	109
1993	0	1	1	—	—	—	0	110
1994	0	0	0	—	—	—	1	109
1995	0	1	0	—	—	—	0	109
1996	0	0	1	—	—	—	1	109
1997	0	0	0	0	0	0	2	107
1998	0	0	0	0	0	0	3	104
1999	0	0	0	0	0	0	0	104
2000	0	0	0	0	0	0	0	104
2001	0	0	0	0	0	0	0	104
2002	0	0	0	0	0	0	0	104
2003	0	0	0	0	0	0	0	104
2004	0	0	0	0	0	0	0	104
2005	0	0	0	0	0	0	0	104
2006	0	0	0	0	0	0	0	104
Total	177	132	132	0	0	0	28	--

<sup>1</sup> Data in columns 1-3 are based on the U.S. Nuclear Regulatory Commission (NRC) regulation 10 CFR Part 50. Data in columns 4-6 are based on the NRC regulation 10 CFR Part 52. See Note 1, "Pending Actions on Nuclear Generating Units," at end of section.

<sup>2</sup> Issuance by regulatory authority of a permit, or equivalent permission, to begin construction. Numbers reflect permits issued in a given year, not extant permits.

<sup>3</sup> Issuance by regulatory authority of license, or equivalent permission, to conduct testing but not to operate at full power.

<sup>4</sup> Issuance by regulatory authority of full-power operating license, or equivalent permission. Units generally did not begin immediate operation.

<sup>5</sup> Ceased operation permanently.

<sup>6</sup> Total of nuclear generating units holding full-power licenses, or equivalent permission to operate, at the end of the year. Although Browns Ferry 1 was shut down in 1985, the unit has remained fully licensed and thus has continued to be counted as operable during the shutdown; in May 2007, the reactor was restarted.

— = Not applicable.

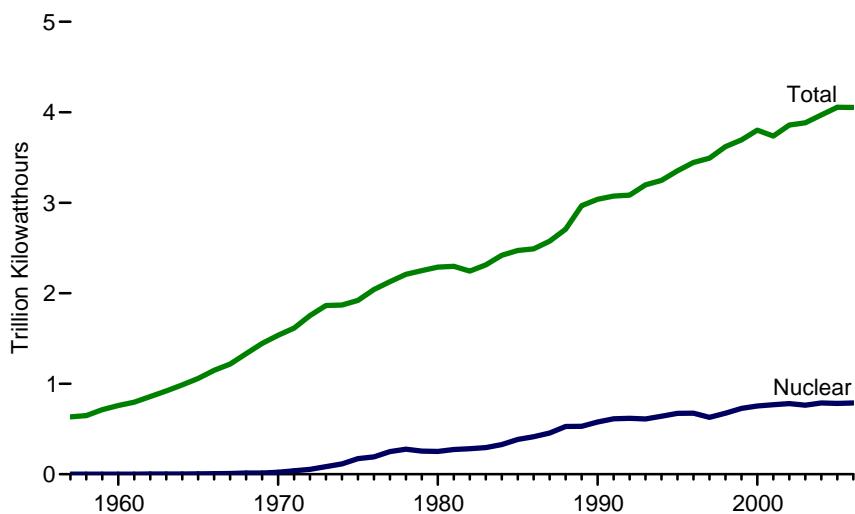
Note: See Note 2, "Coverage of Nuclear Energy Statistics," at end of section.

Web Page: For related information, see <http://www.eia.doe.gov/fuelnuclear.html>.

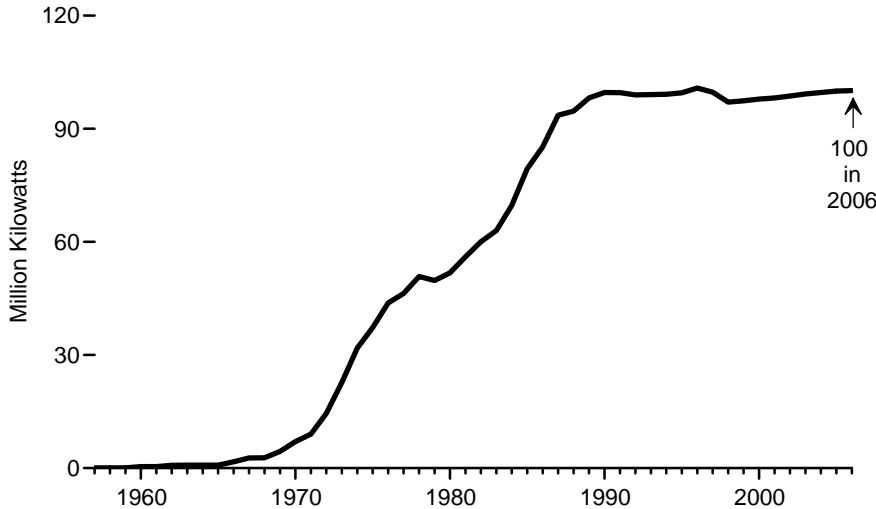
Sources: See end of section.

**Figure 9.2 Nuclear Power Plant Operations**

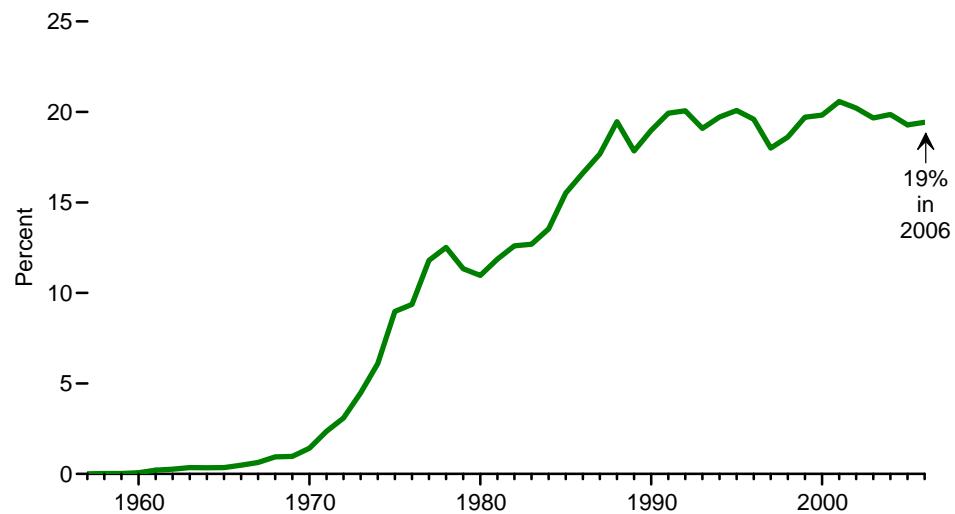
**Total Electricity and Nuclear Electricity Net Generation, 1957-2006**



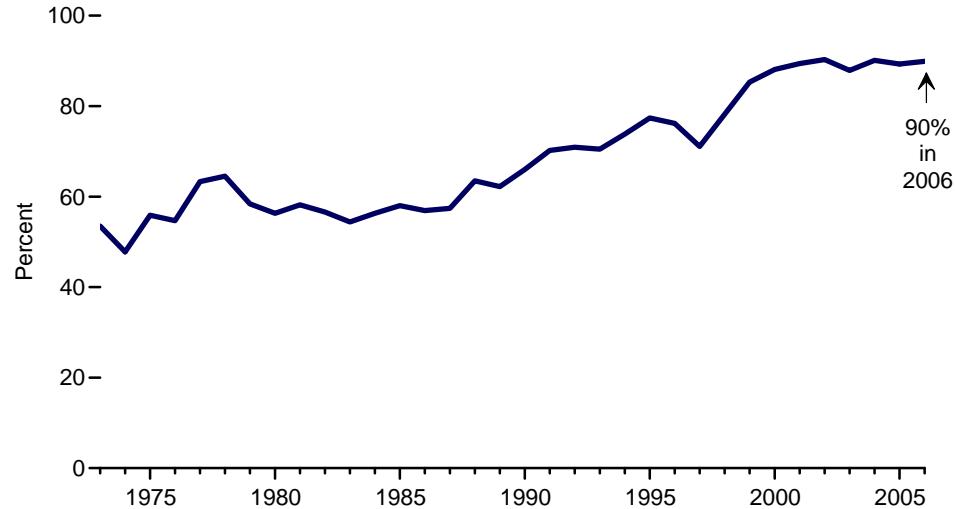
**Net Summer Capacity of Operable Units, 1957-2006**



**Nuclear Share of Electricity Net Generation, 1957-2006**



**Capacity Factor, 1973-2006**



Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 8.1 and 9.2.

**Table 9.2 Nuclear Power Plant Operations, 1957-2006**

Year	Nuclear Electricity Net Generation	Nuclear Share of Electricity Net Generation	Net Summer Capacity of Operable Units <sup>1</sup>	Capacity Factor <sup>2</sup>
	Billion Kilowatthours	Percent	Million Kilowatts	Percent
1957	(s)	(s)	0.1	NA
1958	.2	(s)	.1	NA
1959	.2	(s)	.1	NA
1960	.5	.1	.4	NA
1961	1.7	.2	.4	NA
1962	2.3	.3	.7	NA
1963	3.2	.3	.8	NA
1964	3.3	.3	.8	NA
1965	3.7	.3	.8	NA
1966	5.5	.5	1.7	NA
1967	7.7	.6	2.7	NA
1968	12.5	.9	2.7	NA
1969	13.9	1.0	4.4	NA
1970	21.8	1.4	7.0	NA
1971	38.1	2.4	9.0	NA
1972	54.1	3.1	14.5	NA
1973	83.5	4.5	22.7	53.5
1974	114.0	6.1	31.9	47.8
1975	172.5	9.0	37.3	55.9
1976	191.1	9.4	43.8	54.7
1977	250.9	11.8	46.3	63.3
1978	276.4	12.5	50.8	64.5
1979	255.2	11.3	49.7	58.4
1980	251.1	11.0	51.8	56.3
1981	272.7	11.9	56.0	58.2
1982	282.8	12.6	60.0	56.6
1983	293.7	12.7	63.0	54.4
1984	327.6	13.5	69.7	56.3
1985	383.7	15.5	79.4	58.0
1986	414.0	16.6	85.2	56.9
1987	455.3	17.7	93.6	57.4
1988	527.0	19.5	94.7	63.5
1989	529.4	17.8	98.2	62.2
1990	576.9	19.0	99.6	66.0
1991	612.6	19.9	99.6	70.2
1992	618.8	20.1	99.0	70.9
1993	610.3	19.1	99.0	70.5
1994	640.4	19.7	99.1	73.8
1995	673.4	20.1	99.5	77.4
1996	674.7	19.6	100.8	76.2
1997	628.6	18.0	99.7	71.1
1998	673.7	18.6	97.1	78.2
1999	728.3	19.7	97.4	85.3
2000	753.9	19.8	97.9	88.1
2001	768.8	20.6	98.2	89.4
2002	780.1	20.2	98.7	90.3
2003	763.7	19.7	99.2	87.9
2004	788.5	19.9	99.6	90.1
2005	R782.0	19.3	R100.0	R89.3
2006 <sup>p</sup>	787.2	19.4	100.1	89.9

<sup>1</sup> At end of year. See "Generator Net Summer Capacity" in Glossary.

<sup>2</sup> See "Generator Capacity Factor" in Glossary.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.05.

Note: See Note 2, "Coverage of Nuclear Energy Statistics," at end of section.

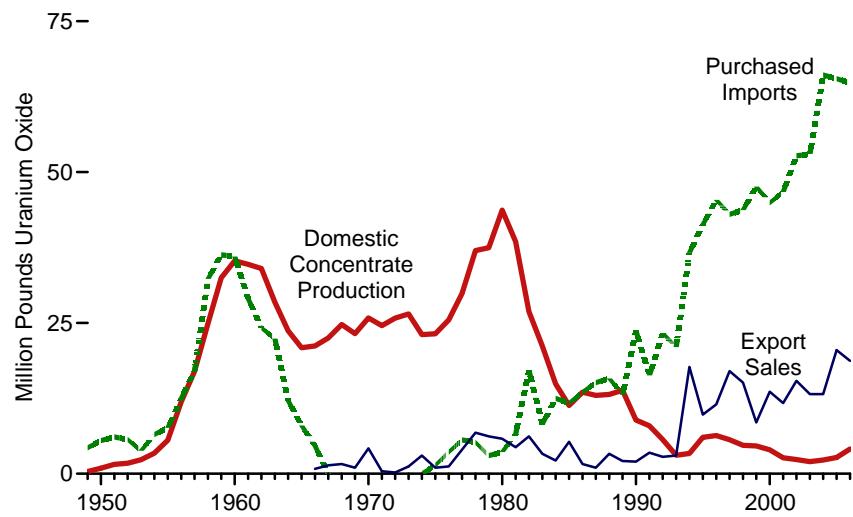
Web Page: For related information, see <http://www.eia.doe.gov/fuelnuclear.html>.

Sources: **Nuclear Electricity Net Generation** and **Nuclear Share of Electricity Net Generation**:

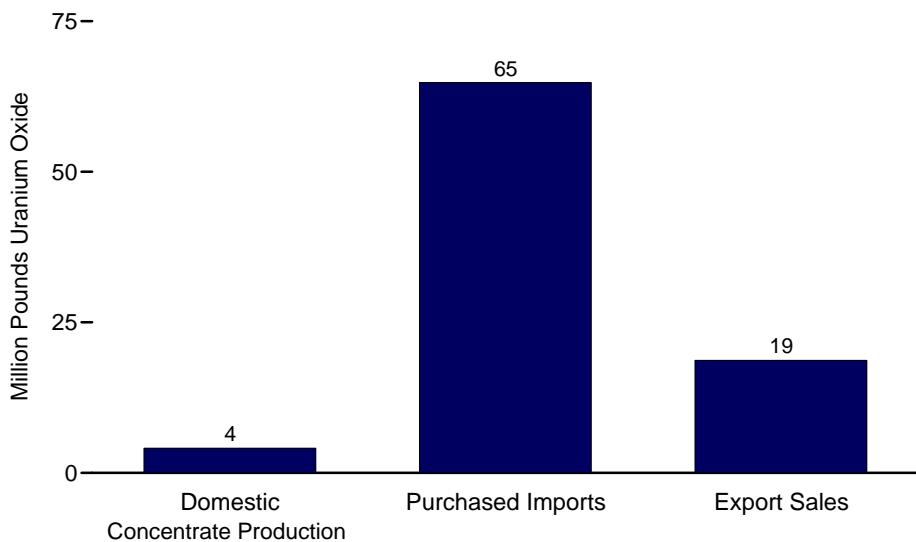
**Table 8.2a. Net Summer Capacity of Operable Units:** Table 8.11a. **Capacity Factor:** Computed as a weighted average of monthly values for the year. Monthly factors are computed as the actual monthly generation divided by the maximum possible generation for that month. The maximum possible generation is the number of hours in the month multiplied by the net summer capacity at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Monthly generation and capacity data are from the *Monthly Energy Review* (March 2007), Table 8.1.

**Figure 9.3 Uranium Overview**

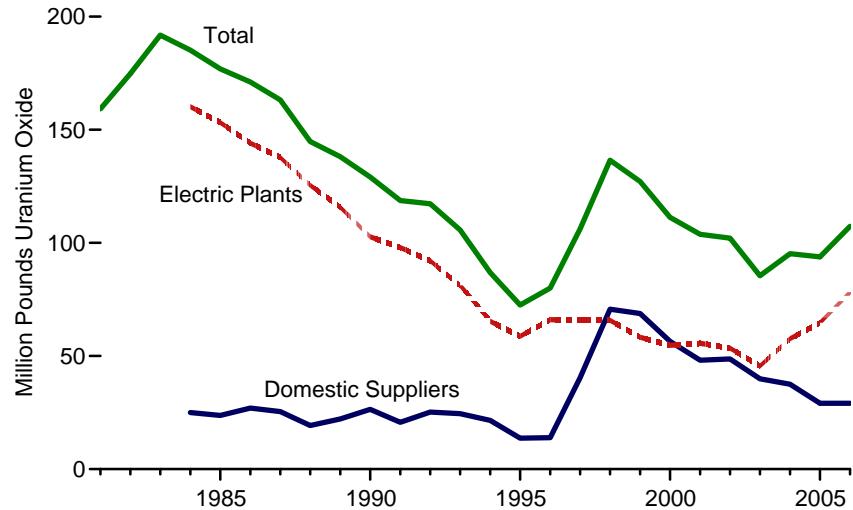
**Production and Trade, 1949-2006**



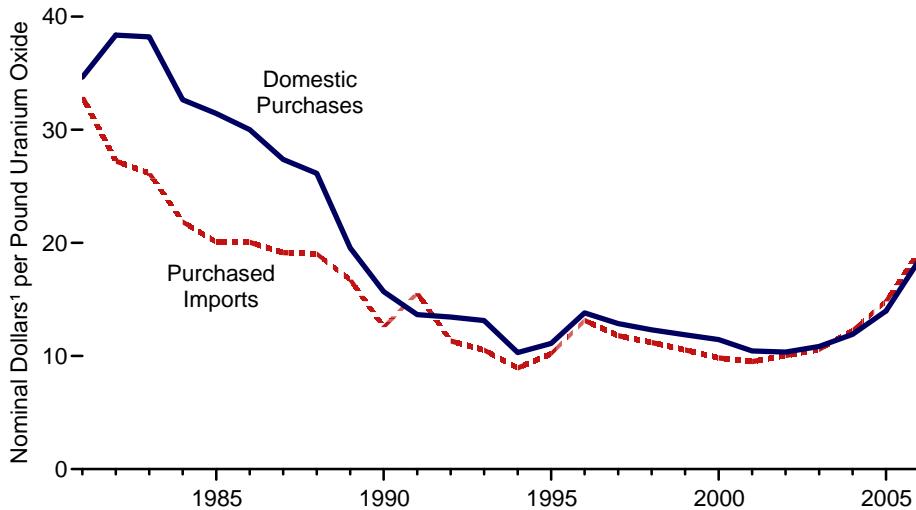
**Production and Trade, 2006**



**Inventories, End of Year 1981-2006**



**Average Prices, 1981-2006**



<sup>1</sup> See "Nominal Dollars" in Glossary.

Notes: • See "Uranium Oxide" in Glossary. • Because vertical scales differ, graphs should not be compared.

Source: Table 9.3.

**Table 9.3 Uranium Overview, Selected Years, 1949-2006**

Year	Domestic Concentrate Production <sup>1</sup>	Purchased Imports <sup>2</sup>	Export <sup>2</sup> Sales	Electric Plant Purchases From Domestic Suppliers	Loaded Into U.S. Nuclear Reactors <sup>3</sup>	Inventories			Average Price	
	Domestic Suppliers	Electric Plants	Total	Purchased Imports	Domestic Purchases					
Million Pounds U <sub>3</sub> O <sub>8</sub>										
1949	0.36	4.3	0.0	NA	NA	NA	NA	NA	NA	NA
1950	.92	5.5	.0	NA	NA	NA	NA	NA	NA	NA
1955	5.56	7.6	.0	NA	NA	NA	NA	NA	NA	NA
1960	35.28	36.0	.0	NA	NA	NA	NA	NA	NA	NA
1965	20.88	8.0	.0	NA	NA	NA	NA	NA	NA	NA
1970	25.81	.0	4.2	NA	NA	NA	NA	NA	--	NA
1971	24.55	.0	.4	NA	NA	NA	NA	NA	--	NA
1972	25.80	.0	.2	NA	NA	NA	NA	NA	--	NA
1973	26.47	.0	1.2	NA	NA	NA	NA	NA	--	NA
1974	23.06	.0	3.0	NA	NA	NA	NA	NA	--	NA
1975	23.20	1.4	1.0	NA	NA	NA	NA	NA	NA	NA
1976	25.49	3.6	1.2	NA	NA	NA	NA	NA	NA	NA
1977	29.88	5.6	4.0	NA	NA	NA	NA	NA	NA	NA
1978	36.97	5.2	6.8	NA	NA	NA	NA	NA	NA	NA
1979	37.47	3.0	6.2	NA	NA	NA	NA	NA	NA	NA
1980	43.70	3.6	5.8	NA	NA	NA	NA	NA	NA	NA
1981	38.47	6.6	4.4	32.6	NA	NA	159.2	32.90	34.65	
1982	26.87	17.1	6.2	27.1	NA	NA	174.8	27.23	38.37	
1983	21.16	8.2	3.3	24.2	NA	NA	191.8	26.16	38.21	
1984	14.88	12.5	2.2	22.5	NA	25.0	160.2	185.2	21.86	32.65
1985	11.31	11.7	5.3	21.7	NA	23.7	153.2	176.9	20.08	31.43
1986	13.51	13.5	1.6	18.9	NA	27.0	144.1	171.1	20.07	30.01
1987	12.99	15.1	1.0	20.8	NA	25.4	137.8	163.2	19.14	27.37
1988	13.13	15.8	3.3	17.6	NA	19.3	125.5	144.8	19.03	26.15
1989	13.84	13.1	2.1	18.4	NA	22.2	115.8	138.1	16.75	19.56
1990	8.89	23.7	2.0	20.5	NA	26.4	102.7	129.1	12.55	15.70
1991	7.95	16.3	3.5	26.8	34.6	20.7	98.0	118.7	15.55	13.66
1992	5.65	23.3	2.8	23.4	43.0	25.2	92.1	117.3	11.34	13.45
1993	3.06	21.0	3.0	15.5	45.1	24.5	81.2	105.7	10.53	13.14
1994	3.35	36.6	17.7	22.7	40.4	21.5	65.4	86.9	8.95	10.30
1995	6.04	41.3	9.8	22.3	51.1	13.7	58.7	72.5	10.20	11.11
1996	6.32	45.4	11.5	23.7	46.2	13.9	66.1	80.0	13.15	13.81
1997	5.64	43.0	17.0	19.4	48.2	40.4	65.9	106.2	11.81	12.87
1998	4.71	43.7	15.1	21.6	38.2	70.7	65.8	136.5	11.19	12.31
1999	4.61	47.6	8.5	21.4	58.8	68.8	58.3	127.1	10.55	11.88
2000	3.96	44.9	13.6	24.3	51.5	56.5	54.8	111.3	9.84	11.45
2001	2.64	46.7	11.7	27.5	52.7	48.1	55.6	103.8	9.51	10.45
2002	2.34	52.7	15.4	22.7	57.2	48.7	53.5	102.1	10.05	10.35
2003	<sup>5,E</sup> 2.00	53.0	13.2	21.7	62.3	39.9	45.6	85.5	10.59	10.84
2004	2.28	66.1	13.2	28.2	50.1	37.5	57.7	95.2	12.25	11.91
2005	2.69	65.5	20.5	27.3	58.3	R 29.1	R 64.7	93.8	14.83	13.98
2006	4.11	64.8	18.7	27.9	P 51.5	P 29.1	P 78.2	P 107.3	19.31	18.54

<sup>1</sup> See "Uranium Concentrate" in Glossary.

<sup>2</sup> Import quantities through 1970 are reported for fiscal years. Prior to 1968, the Atomic Energy Commission was the sole purchaser of all imported U<sub>3</sub>O<sub>8</sub>. Trade data prior to 1982 were for transactions conducted by uranium suppliers only. For 1982 forward, transactions by uranium buyers (consumers) have been included. Buyer imports and exports prior to 1982 are believed to be small.

<sup>3</sup> Does not include any fuel rods removed from reactors and later reloaded.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> Value has been rounded to avoid disclosure of individual company data.

R=Revised. P=Preliminary. E=Estimate. NA=Not available. --=Not applicable.

Note: U<sub>3</sub>O<sub>8</sub> is uranium oxide. See "Uranium Oxide" in Glossary.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/nuclear.html>.

• For related information, see <http://www.eia.doe.gov/fuelnuclear.html>.

Sources: • 1949-1966—U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry*, Report No. GJO-100, annual reports. • 1967-2002—Energy Information Administration (EIA), *Uranium Industry Annual*, annual reports. • 2003 forward—EIA, "Domestic Uranium Production Report" (May 2007), and "Uranium Marketing Annual Report" (May 2007), Tables 5, 18, 19, 21, and 22.

## Nuclear Energy

**Note 1. Pending Actions on Nuclear Generating Units.** Much of Table 9.1 is based on the U.S Nuclear Regulatory Commission (NRC) regulation 10 CFR Part 50, which has in most instances been supplanted by 10 CFR Part 52 following the passage of the Energy Policy Act of 1992 and procedural reforms initiated in 1989 by the NRC. (This statement applies to permit and license procedures only.) There is still a possibility that Watts Bar 2 might be built under the old law and for a while during 2006 this seemed likely. Firms might also still opt for 10 CFR Part 50 for new projects, but this seems unlikely in all but special cases.

Early Site Permits (ESPs) issued under 10 CFR Part 52 were applied for in 2003 and are likely to begin being issued in 2007. Southern Company filed an ESP in 2006 and additional ESP applications are anticipated (possibly including Duke and Toshiba's proposed reactor in Galena, Alaska). Several potential applicants anticipate filing combined license applications (COLs) in 2007 for building and conditionally operating new nuclear reactors. Actual COLs are targeted for issuance as early as 2010, although this assumes on-schedule regulation. The NRC anticipates nineteen or more potential applications for COLs amounting to as many as twenty-eight reactors by the end of 2009. These applications would all be filed under 10 CFR Part 52.

The Tennessee Valley Authority informed the NRC in the spring of 2006 that it wanted its 10 CFR Part 50 Bellefonte applications withdrawn in favor of a new pair of reactors covered by 10 CFR Part 52. The Watts Bar 2 license remains valid and, for a while, it appeared on NRC work schedules.

**Note 2. Coverage of Nuclear Energy Statistics.** In 1997, the Energy Information Administration undertook a major revision of Table 9.1 to more fully describe the history of the U.S. commercial nuclear power industry. The time frame was extended back to the birth of the industry in 1953 and the data categories were revised for greater relevance to current industry conditions and trends. To acquire the data for the revised categories, it was necessary to develop a reactor unit database employing different sources than those used previously for Table 9.1 and still used for Table 9.2.

The data in Table 9.1 apply to commercial nuclear power units, which means that the units contributed power to the commercial electricity grid. A total of 259 units ever ordered was identified. Although most orders were placed by electric utilities, several units are or were ordered, owned, and operated wholly or in part by the Federal Government, including BONUS (Boiling Nuclear Superheater Power

Station), Elk River, Experimental Breeder Reactor 2, Hallam, Hanford N, Piqua, and Shippingport.

A reactor is generally defined as operable in Table 9.1 while it possessed a full-power license from the Nuclear Regulatory Commission or its predecessor the Atomic Energy Commission, or equivalent permission to operate, at the end of the year. The definition is liberal in that it does not exclude units retaining full-power licenses during long, non-routine shutdowns. For example:

- In 1985, the five Tennessee Valley Authority units (Browns Ferry 1, 2, and 3 and Sequoyah 1 and 2) were shut down under a regulatory forced outage. Browns Ferry 1 was authorized by the NRC to restart in 2007, while the other units restarted in 1991, 1995, 1988, and 1988, respectively. All five units were counted as operable during the shutdowns.
- Shippingport was shut down from 1974 through 1976 for conversion to a light-water breeder reactor, but is counted as operable until its retirement in 1982.
- Calvert Cliffs 2 were shut down in 1989 and 1990 for replacement of pressurizer heater sleeves but is counted as operable during those years.

Exceptions to the rule are Shoreham and Three Mile Island 2. Shoreham was granted a full-power license in April 1989, but was shut down two months later and never restarted. In 1991, the license was changed to Possession Only. Although not operable at the end of the year, Shoreham is treated as operable during 1989 and shut down in 1990, because counting it as operable and shut down in the same year would introduce a statistical discrepancy in the tallies. A major accident closed Three Mile Island 2 in 1979, and although the unit retained its full-power license for several years, it is considered permanently shut down since that year.

**Table 9.1 Sources: Operable Units:** • 1955-1982—Compiled from various sources, primarily U.S. Department of Energy (DOE), Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones." • 1983 forward—Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report," and predecessor forms. **All Other Data:** • 1955-1997—U.S. Atomic Energy Commission, *1973 Annual Report to Congress, Volume 2, Regulatory Activities*; Nuclear Energy Institute, *Historical Profile of U.S. Nuclear Power Development* (1988); EIA, *Commercial Nuclear Power 1991* (September 1991); DOE, *Nuclear Reactors Built, Being Built, and Planned: 1995*; U.S. Nuclear Regulatory Commission (NRC), *Information Digest* (1997 and 1998) and "Plant Status Report"; and various utility, Federal, and contractor officials. • 1998 forward—NRC, *Information Digest*, annual reports.

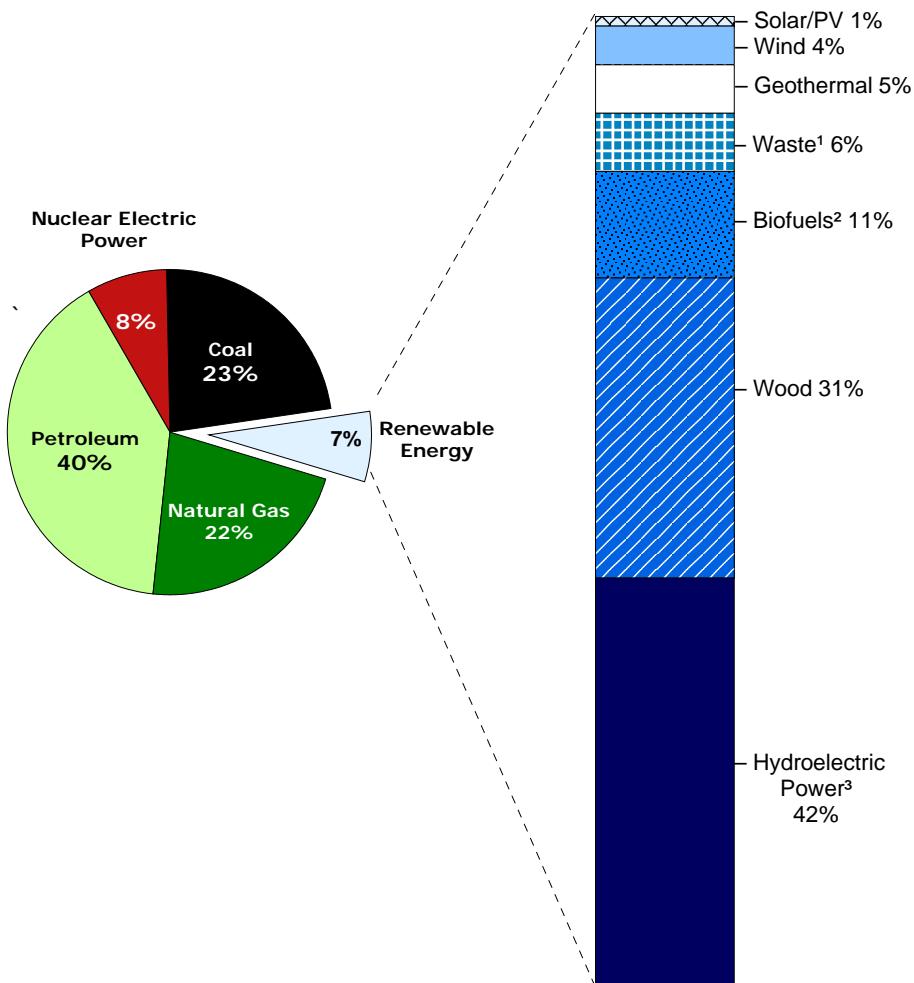
# Renewable Energy



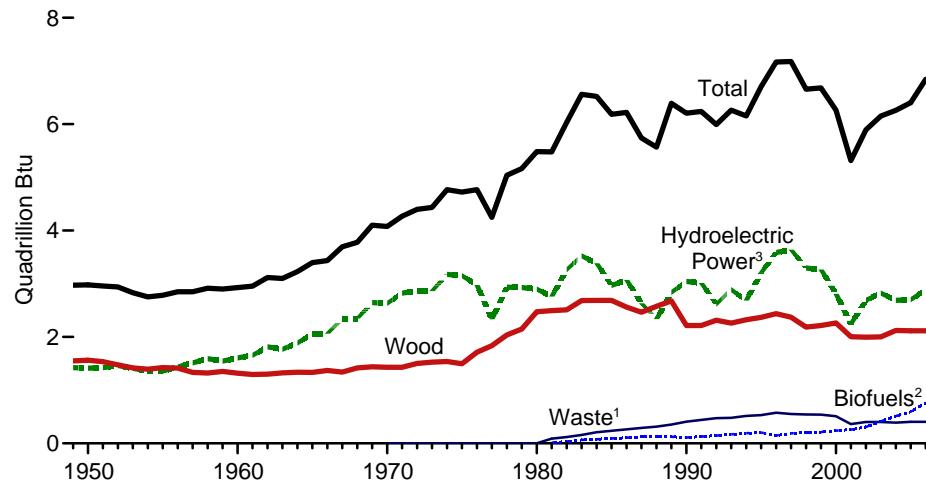
Grand Coulee Dam, Washington State. Source: U.S. Bureau of Reclamation.

**Figure 10.1 Renewable Energy Consumption by Major Sources**

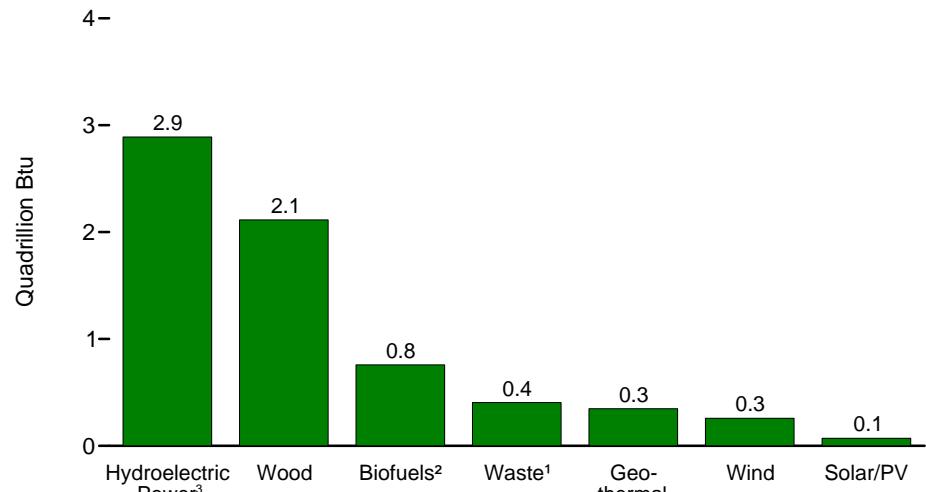
**Renewable Energy as Share of Total Energy, 2006**



**Renewable Energy Total Consumption and Major Sources, 1949-2006**



**Renewable Energy Consumption by Source, 2006**



<sup>1</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>2</sup> Fuel ethanol and biodiesel consumption, plus losses and co-products from the production of fuel ethanol and biodiesel.

<sup>3</sup> Conventional hydroelectric power.  
Note: Because vertical scales differ, graphs should not be compared.  
Sources: Tables 1.3 and 10.1.

**Table 10.1 Renewable Energy Production and Consumption by Primary Energy Source, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Production <sup>1</sup>			Consumption									Total Renewable Energy	
	Biomass		Total Renewable Energy <sup>4</sup>	Hydro-electric Power <sup>5</sup>	Geo-thermal <sup>6</sup>	Solar/PV <sup>7</sup>	Wind <sup>8</sup>	Biomass			Wood <sup>9</sup>	Waste <sup>10</sup>	Biofuels <sup>11</sup>	
	Biofuels <sup>2</sup>	Total <sup>3</sup>						Wood <sup>9</sup>	Waste <sup>10</sup>	Biofuels <sup>11</sup>			Total	
1949	NA	1,549	2,974	1,425	NA	NA	NA	1,549	NA	NA	1,549	2,974		
1950	NA	1,562	2,978	1,415	NA	NA	NA	1,562	NA	NA	1,562	2,978		
1955	NA	1,424	2,784	1,360	NA	NA	NA	1,424	NA	NA	1,424	2,784		
1960	NA	1,320	2,929	1,608	1	NA	NA	1,320	NA	NA	1,320	2,929		
1965	NA	1,335	3,398	2,059	4	NA	NA	1,335	NA	NA	1,335	3,398		
1970	NA	1,431	4,076	2,634	11	NA	NA	1,429	2	NA	1,431	4,076		
1971	NA	1,432	4,268	2,824	12	NA	NA	1,430	2	NA	1,432	4,268		
1972	NA	1,503	4,398	2,864	31	NA	NA	1,501	2	NA	1,503	4,398		
1973	NA	1,529	4,433	2,861	43	NA	NA	1,527	2	NA	1,529	4,433		
1974	NA	1,540	4,769	3,177	53	NA	NA	1,538	2	NA	1,540	4,769		
1975	NA	1,499	4,723	3,155	70	NA	NA	1,497	2	NA	1,499	4,723		
1976	NA	1,713	4,768	2,976	78	NA	NA	1,711	2	NA	1,713	4,768		
1977	NA	1,838	4,249	2,333	77	NA	NA	1,837	2	NA	1,838	4,249		
1978	NA	2,038	5,039	2,937	64	NA	NA	2,036	1	NA	2,038	5,039		
1979	NA	2,152	5,166	2,931	84	NA	NA	2,150	2	NA	2,152	5,166		
1980	NA	2,476	5,485	2,900	110	NA	NA	2,474	2	NA	2,476	5,485		
1981	R <sup>13</sup>	R <sup>2,596</sup>	R <sup>5,477</sup>	2,758	123	NA	NA	2,496	88	R <sup>13</sup>	R <sup>2,596</sup>	R <sup>5,477</sup>		
1982	R <sup>35</sup>	R <sup>2,664</sup>	R <sup>6,034</sup>	3,266	105	NA	NA	2,510	119	R <sup>35</sup>	R <sup>2,664</sup>	R <sup>6,034</sup>		
1983	R <sup>63</sup>	R <sup>2,904</sup>	R <sup>6,561</sup>	3,527	129	NA	(s)	2,684	157	R <sup>63</sup>	R <sup>2,904</sup>	R <sup>6,561</sup>		
1984	R <sup>77</sup>	R <sup>2,971</sup>	R <sup>6,522</sup>	3,386	165	(s)	(s)	2,686	208	R <sup>77</sup>	R <sup>2,971</sup>	R <sup>6,522</sup>		
1985	R <sup>93</sup>	R <sup>3,016</sup>	R <sup>6,185</sup>	2,970	198	(s)	(s)	2,687	236	R <sup>93</sup>	R <sup>3,016</sup>	R <sup>6,185</sup>		
1986	R <sup>107</sup>	R <sup>2,932</sup>	R <sup>6,223</sup>	3,071	219	(s)	(s)	2,562	263	R <sup>107</sup>	R <sup>2,932</sup>	R <sup>6,223</sup>		
1987	R <sup>123</sup>	R <sup>2,875</sup>	R <sup>5,739</sup>	2,635	229	(s)	(s)	2,463	289	R <sup>123</sup>	R <sup>2,875</sup>	R <sup>5,739</sup>		
1988	R <sup>124</sup>	R <sup>3,016</sup>	R <sup>5,568</sup>	2,334	217	(s)	(s)	2,577	315	R <sup>124</sup>	R <sup>3,016</sup>	R <sup>5,568</sup>		
1989	R <sup>126</sup>	R <sup>3,160</sup>	R <sup>6,391</sup>	2,837	317	55	22	2,680	354	R <sup>126</sup>	R <sup>3,160</sup>	R <sup>6,391</sup>		
1990	R <sup>111</sup>	R <sup>2,735</sup>	R <sup>6,206</sup>	3,046	336	60	29	2,216	408	R <sup>111</sup>	R <sup>2,735</sup>	R <sup>6,206</sup>		
1991	R <sup>129</sup>	R <sup>2,782</sup>	R <sup>6,238</sup>	3,016	346	63	31	2,214	440	R <sup>129</sup>	R <sup>2,782</sup>	R <sup>6,238</sup>		
1992	R <sup>146</sup>	R <sup>2,933</sup>	R <sup>5,993</sup>	2,617	349	64	30	2,313	473	R <sup>146</sup>	R <sup>2,933</sup>	R <sup>5,993</sup>		
1993	R <sup>171</sup>	R <sup>2,910</sup>	R <sup>6,263</sup>	2,892	364	66	31	2,260	479	R <sup>171</sup>	R <sup>2,910</sup>	R <sup>6,262</sup>		
1994	R <sup>190</sup>	R <sup>3,030</sup>	R <sup>6,155</sup>	2,683	338	69	36	2,324	515	R <sup>190</sup>	R <sup>3,030</sup>	R <sup>6,155</sup>		
1995	R <sup>200</sup>	R <sup>3,102</sup>	R <sup>6,703</sup>	3,205	294	70	33	2,370	531	R <sup>202</sup>	R <sup>3,104</sup>	R <sup>6,705</sup>		
1996	R <sup>143</sup>	R <sup>3,157</sup>	R <sup>7,167</sup>	3,590	316	71	33	2,437	577	R <sup>145</sup>	R <sup>3,159</sup>	R <sup>7,168</sup>		
1997	R <sup>190</sup>	R <sup>3,111</sup>	R <sup>7,180</sup>	3,640	325	70	34	R <sup>2,371</sup>	551	R <sup>187</sup>	R <sup>3,108</sup>	R <sup>7,178</sup>		
1998	R <sup>206</sup>	R <sup>2,933</sup>	R <sup>6,659</sup>	3,297	328	70	31	2,184	542	R <sup>205</sup>	R <sup>2,931</sup>	R <sup>6,657</sup>		
1999	R <sup>215</sup>	R <sup>2,969</sup>	R <sup>6,683</sup>	3,268	331	69	46	R <sup>2,214</sup>	540	R <sup>213</sup>	R <sup>2,967</sup>	R <sup>6,681</sup>		
2000	R <sup>238</sup>	R <sup>3,010</sup>	R <sup>6,262</sup>	2,811	317	66	57	R <sup>2,262</sup>	511	R <sup>241</sup>	R <sup>3,013</sup>	R <sup>6,264</sup>		
2001	R <sup>260</sup>	R <sup>2,629</sup>	R <sup>5,318</sup>	2,242	311	65	70	2,006	R <sup>364</sup>	R <sup>258</sup>	R <sup>2,627</sup>	R <sup>5,315</sup>		
2002	R <sup>314</sup>	R <sup>2,712</sup>	R <sup>5,899</sup>	2,689	328	64	105	1,995	R <sup>402</sup>	R <sup>309</sup>	R <sup>2,706</sup>	R <sup>5,893</sup>		
2003	R <sup>412</sup>	R <sup>2,816</sup>	R <sup>6,149</sup>	2,825	331	64	115	2,002	R <sup>401</sup>	R <sup>414</sup>	R <sup>2,817</sup>	R <sup>6,151</sup>		
2004	R <sup>501</sup>	R <sup>3,011</sup>	R <sup>6,248</sup>	2,690	341	65	142	2,121	R <sup>389</sup>	R <sup>513</sup>	R <sup>3,023</sup>	R <sup>6,261</sup>		
2005	R <sup>581</sup>	R <sup>3,101</sup>	R <sup>6,391</sup>	R <sup>2,703</sup>	R <sup>343</sup>	R <sup>66</sup>	R <sup>178</sup>	R <sup>2,116</sup>	R <sup>403</sup>	R <sup>594</sup>	R <sup>3,114</sup>	R <sup>6,404</sup>		
2006 <sup>P</sup>	708	3,227	6,794	2,889	349	70	258	2,114	404	758	3,277	6,844		

<sup>1</sup> Production equals consumption for all renewable energy sources except biofuels.

<sup>2</sup> Total biomass inputs to the production of fuel ethanol and biodiesel.

<sup>3</sup> Wood, waste, ethanol, and biodiesel.

<sup>4</sup> Hydroelectric power, geothermal, solar/PV, wind, and biomass.

<sup>5</sup> Conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>6</sup> Geothermal electricity net generation (converted to Btu using the geothermal energy plants heat rate), and geothermal heat pump and direct use energy.

<sup>7</sup> Solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and solar thermal direct use energy.

<sup>8</sup> Wind electricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>9</sup> Wood and wood-derived fuels.

<sup>10</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and

other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>11</sup> Fuel ethanol and biodiesel consumption, plus losses and co-products from the production of fuel ethanol and biodiesel.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • See Note, "Renewable Energy Production and Consumption," at end of section. • See Table E1 for estimated renewable energy consumption for 1635-1945. • Totals may not equal sum of components due to independent rounding.

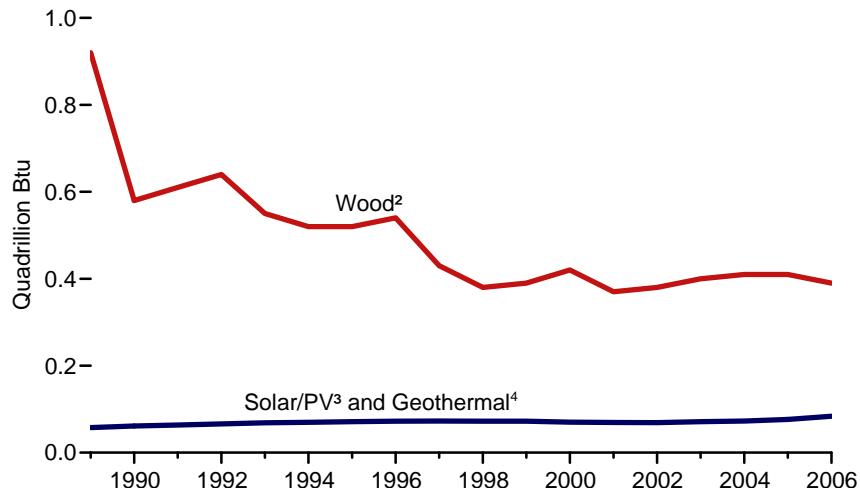
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/renew.html>.

• For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

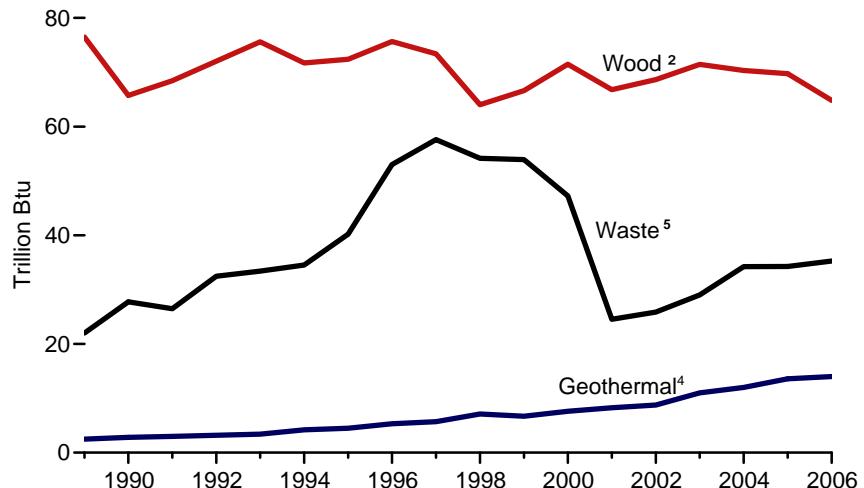
Sources: **Biofuels:** Table 10.3. **All Other Data:** Tables 10.2a-c.

**Figure 10.2a Renewable Energy Consumption: End-Use Sectors, 1989-2006**

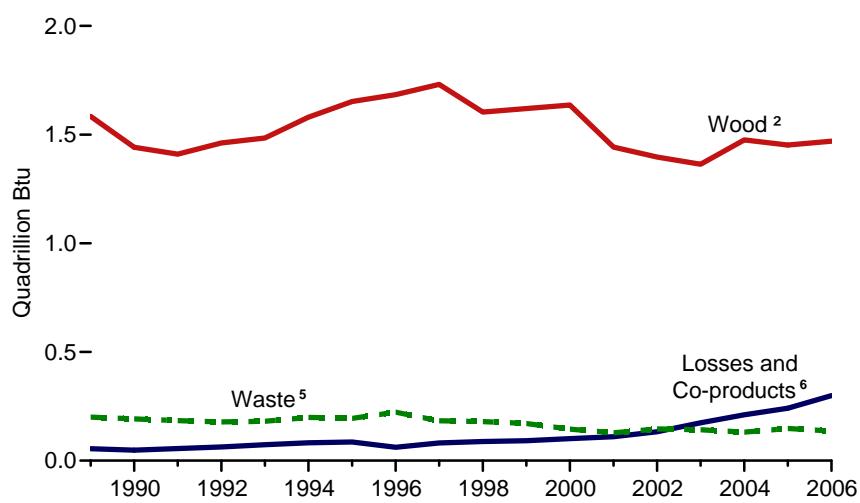
**Residential Sector**



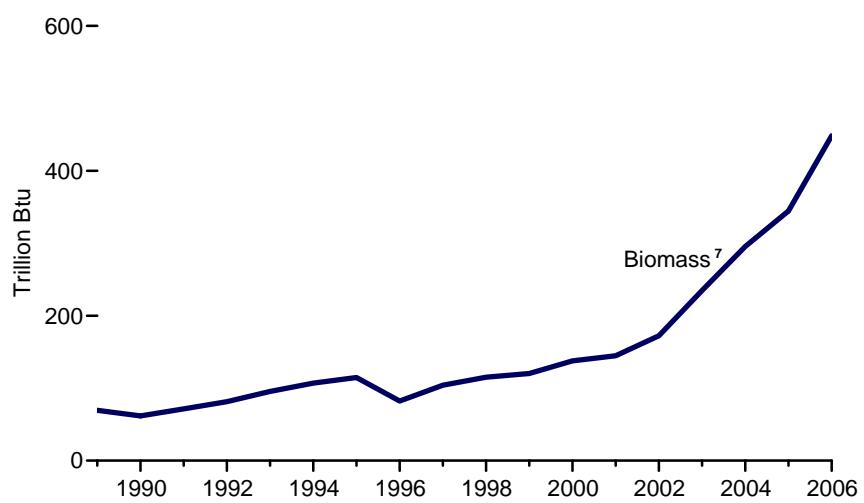
**Commercial<sup>1</sup> Sector, Major Sources**



**Industrial<sup>1</sup> Sector**



**Transportation Sector**



<sup>1</sup> Includes fuel used at combined-heat-and-power (CHP) plants and a small number of electricity-only plants.

<sup>2</sup> Wood and wood-derived fuels.

<sup>3</sup> Solar thermal direct use energy, and photovoltaic electricity generation. Includes small amounts of commercial sector use.

<sup>4</sup> Geothermal heat pump and direct use energy.

<sup>5</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal

solid waste from non-biogenic sources, and tire-derived fuels).

<sup>6</sup> From the production of fuel ethanol and biodiesel.

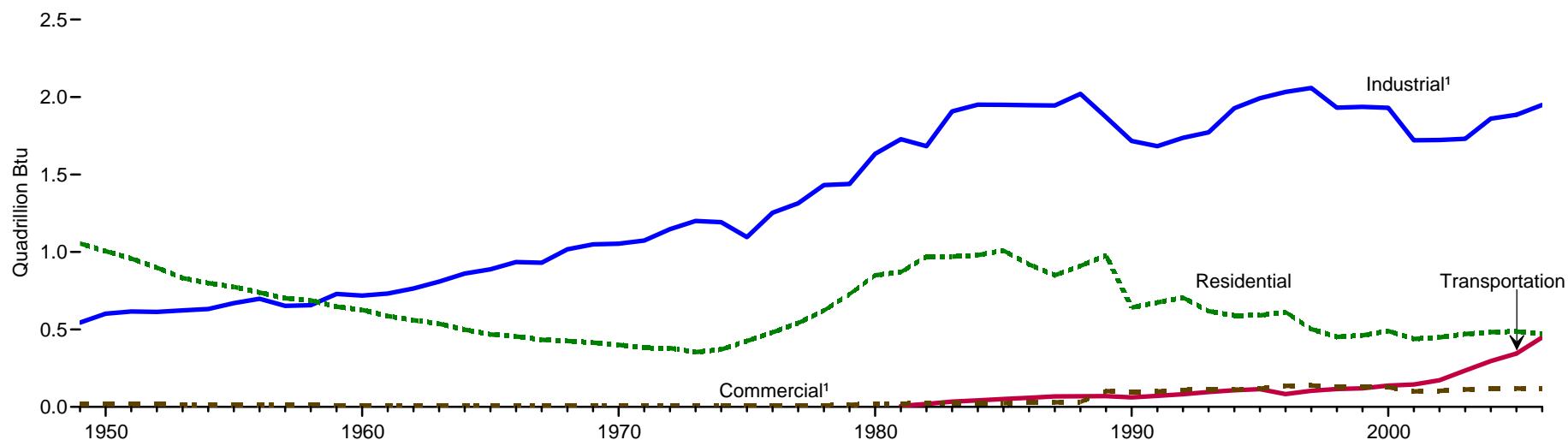
<sup>7</sup> The ethanol portion of motor fuels (such as E10 and E85), and biofuels used as diesel fuel substitutes or additives.

Notes: • See related Figures 10.2b and 10.2c. • Because vertical scales differ, graphs should not be compared.

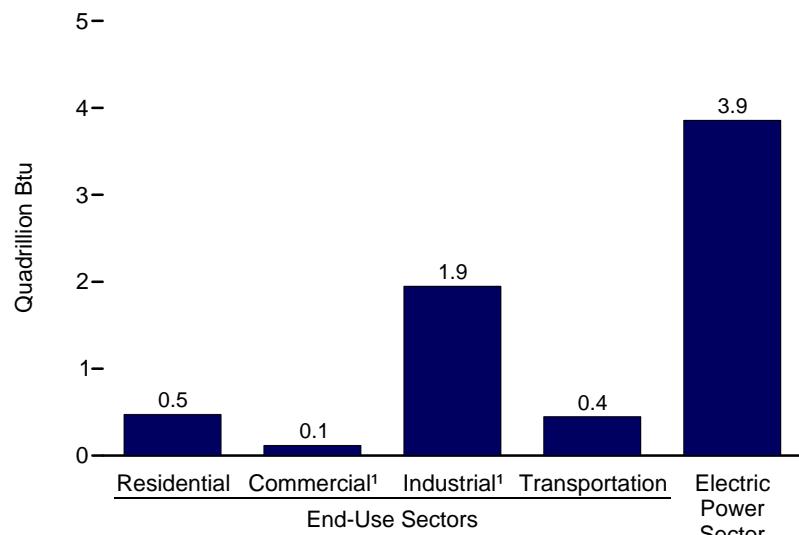
Sources: Tables 10.2a and 10.2b.

**Figure 10.2b Renewable Energy Consumption: End-Use Sectors and Electric Power Sector**

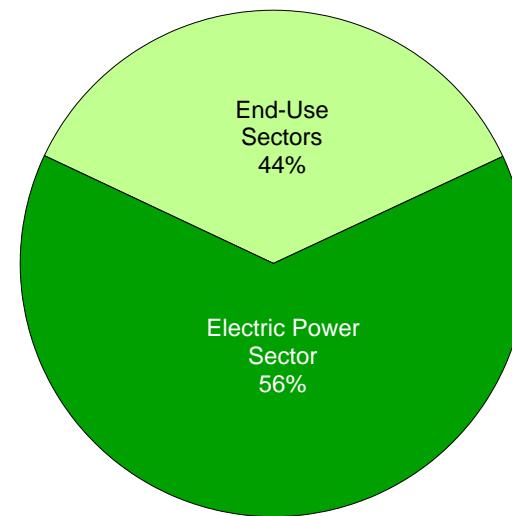
**End-Use Sectors, 1949-2006**



**End-Use Sectors and Electric Power Sector, 2006**



**End-Use Sectors and Electric Power Sector Shares of Total Renewable Energy Consumption, 2006**



<sup>1</sup>Includes fuel use at combined-heat-and-power (CHP) plants and a small number of electricity-only plants.

Notes: • See related Figures 10.2a and 10.2c. • Because vertical scales differ, graphs should not be compared.

Sources: Tables 10.2a-10.2c.

**Table 10.2a Renewable Energy Consumption: Residential and Commercial Sectors, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Residential Sector				Commercial Sector <sup>1</sup>								Total	
	Geo-thermal <sup>2</sup>	Solar/PV <sup>3</sup>	Biomass	Wood <sup>4</sup>	Hydro-electric Power <sup>5</sup>	Geo-thermal <sup>2</sup>	Biomass				Total			
			Total				Wood <sup>4</sup>	Waste <sup>6</sup>	Ethanol <sup>7</sup>	Total				
1949	NA	NA	1,055	1,055	NA	NA	20	NA	NA	20	20			
1950	NA	NA	1,006	1,006	NA	NA	19	NA	NA	19	19			
1955	NA	NA	775	775	NA	NA	15	NA	NA	15	15			
1960	NA	NA	627	627	NA	NA	12	NA	NA	12	12			
1965	NA	NA	468	468	NA	NA	9	NA	NA	9	9			
1970	NA	NA	401	401	NA	NA	8	NA	NA	8	8			
1971	NA	NA	382	382	NA	NA	7	NA	NA	7	7			
1972	NA	NA	380	380	NA	NA	7	NA	NA	7	7			
1973	NA	NA	354	354	NA	NA	7	NA	NA	7	7			
1974	NA	NA	371	371	NA	NA	7	NA	NA	7	7			
1975	NA	NA	425	425	NA	NA	8	NA	NA	8	8			
1976	NA	NA	482	482	NA	NA	9	NA	NA	9	9			
1977	NA	NA	542	542	NA	NA	10	NA	NA	10	10			
1978	NA	NA	622	622	NA	NA	12	NA	NA	12	12			
1979	NA	NA	728	728	NA	NA	14	NA	NA	14	14			
1980	NA	NA	850	850	NA	NA	21	NA	NA	21	21			
1981	NA	NA	870	870	NA	NA	21	NA	(s)	21	21			
1982	NA	NA	970	970	NA	NA	22	NA	(s)	22	22			
1983	NA	NA	970	970	NA	NA	22	NA	(s)	22	22			
1984	NA	NA	980	980	NA	NA	22	NA	(s)	22	22			
1985	NA	NA	1,010	1,010	NA	NA	24	NA	(s)	24	24			
1986	NA	NA	920	920	NA	NA	27	NA	(s)	27	27			
1987	NA	NA	850	850	NA	NA	29	NA	1	R30	R30			
1988	NA	NA	910	910	NA	NA	32	NA	1	R33	R33			
1989	5	53	920	978	1	3	76	22	1	R99	102			
1990	6	56	580	641	1	3	66	28	1	94	98			
1991	6	58	610	674	1	3	68	26	(s)	95	R100			
1992	6	60	640	706	1	3	72	32	(s)	R105	109			
1993	7	62	550	618	1	3	76	33	(s)	109	R114			
1994	6	64	520	590	1	4	72	35	(s)	106	R112			
1995	7	65	520	591	1	5	72	40	(s)	113	118			
1996	7	65	540	612	1	5	76	53	(s)	129	135			
1997	8	65	R430	R503	1	6	73	58	(s)	131	138			
1998	8	65	380	452	1	7	64	54	(s)	118	127			
1999	9	64	R390	R462	1	7	67	54	(s)	121	R129			
2000	9	61	R420	R490	1	8	71	47	(s)	119	R128			
2001	9	60	370	439	1	8	67	R25	(s)	R92	R101			
2002	10	59	380	449	(s)	9	69	R26	(s)	R95	R104			
2003	13	58	400	471	1	11	71	R29	1	R101	R113			
2004	14	59	410	483	1	12	70	R34	1	R105	R118			
2005	16	R61	R410	R487	1	14	70	R34	1	R105	R119			
2006 <sup>P</sup>	18	65	390	474	1	14	65	35	1	101	116			

<sup>1</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

<sup>2</sup> Geothermal heat pump and direct use energy.

<sup>3</sup> Solar thermal direct use energy, and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate). Includes a small amount of commercial sector use.

<sup>4</sup> Wood and wood-derived fuels.

<sup>5</sup> Conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and

other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> The ethanol portion of motor fuels (such as E10) consumed by the commercial sector.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • All values are estimated, except for commercial sector hydroelectric power and waste.

• Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/renew.html>.

• For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

Sources: See end of section.

**Table 10.2b Renewable Energy Consumption: Industrial and Transportation Sectors, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Industrial Sector <sup>1</sup>							Transportation Sector		
	Hydro-electric Power <sup>2</sup>	Geo-thermal <sup>3</sup>	Biomass					Total	Biomass	
			Wood <sup>4</sup>	Waste <sup>5</sup>	Ethanol <sup>6</sup>	Losses and Co-products <sup>7</sup>	Total		Ethanol <sup>8</sup>	Biodiesel <sup>9</sup>
1949	76	NA	468	NA	NA	NA	468	544	NA	NA
1950	69	NA	532	NA	NA	NA	532	602	NA	NA
1955	38	NA	631	NA	NA	NA	631	669	NA	NA
1960	39	NA	680	NA	NA	NA	680	719	NA	NA
1965	33	NA	855	NA	NA	NA	855	888	NA	NA
1970	34	NA	1,019	NA	NA	NA	1,019	1,053	NA	NA
1971	34	NA	1,040	NA	NA	NA	1,040	1,074	NA	NA
1972	34	NA	1,113	NA	NA	NA	1,113	1,147	NA	NA
1973	35	NA	1,165	NA	NA	NA	1,165	1,200	NA	NA
1974	33	NA	1,159	NA	NA	NA	1,159	1,192	NA	NA
1975	32	NA	1,063	NA	NA	NA	1,063	1,096	NA	NA
1976	33	NA	1,220	NA	NA	NA	1,220	1,253	NA	NA
1977	33	NA	1,281	NA	NA	NA	1,281	1,314	NA	NA
1978	32	NA	1,400	NA	NA	NA	1,400	1,432	NA	NA
1979	34	NA	1,405	NA	NA	NA	1,405	1,439	NA	NA
1980	33	NA	1,600	NA	NA	NA	1,600	1,633	NA	NA
1981	33	NA	1,602	87	(s)	6	R1,695	R1,728	7	NA
1982	33	NA	1,516	118	(s)	16	R1,649	R1,682	19	NA
1983	33	NA	1,690	155	(s)	28	R1,874	R1,907	R34	NA
1984	33	NA	1,679	204	1	34	R1,917	R1,950	R42	NA
1985	33	NA	1,645	230	1	41	R1,917	R1,950	R51	NA
1986	33	NA	1,610	256	1	47	R1,914	R1,947	R59	NA
1987	33	NA	1,576	282	1	54	R1,912	R1,945	R67	NA
1988	33	NA	1,625	308	1	54	R1,988	R2,020	R68	NA
1989	28	2	1,584	200	1	55	R1,840	R1,870	R69	NA
1990	31	2	1,442	192	1	48	R1,683	R1,716	R62	NA
1991	30	2	1,410	185	1	56	R1,651	R1,683	R72	NA
1992	31	2	1,461	179	1	63	R1,704	R1,737	R81	NA
1993	30	2	1,484	181	1	74	R1,740	R1,772	R96	NA
1994	62	3	1,580	199	1	82	R1,862	R1,927	R107	NA
1995	55	3	1,652	195	2	86	R1,935	R1,992	R115	NA
1996	61	3	1,683	224	1	61	R1,970	R2,033	R82	NA
1997	58	3	1,731	184	1	81	R1,997	R2,058	R104	NA
1998	55	3	1,603	180	1	88	R1,873	R1,931	R115	NA
1999	49	4	1,620	171	1	92	R1,883	R1,936	R120	NA
2000	42	4	1,636	145	1	101	R1,884	R1,930	R138	NA
2001	33	5	1,443	R129	3	110	R1,684	R1,721	R144	1
2002	39	5	1,396	R146	3	133	R1,679	R1,723	R171	1
2003	43	3	1,363	R142	4	174	R1,684	R1,731	R233	2
2004	33	4	1,476	R132	6	211	R1,824	R1,861	R292	3
2005	32	4	R1,452	R148	7	241	R1,849	R1,885	R334	11
2006 <sup>p</sup>	30	4	1,469	136	10	299	1,914	1,949	448	NA
										448

<sup>1</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

<sup>2</sup> Conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>3</sup> Geothermal heat pump and direct use energy.

<sup>4</sup> Wood and wood-derived fuels.

<sup>5</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>6</sup> The ethanol portion of motor fuels (such as E10) consumed by the industrial sector.

<sup>7</sup> Losses and co-products (or "heat and co-products") from the production of fuel ethanol and biodiesel. Does not include natural gas, electricity, and other non-biomass energy used in the production of fuel

ethanol and biodiesel—these are included in the industrial sector consumption statistics for the appropriate energy source.

<sup>8</sup> The ethanol portion of motor fuels (such as E10 and E85) consumed by the transportation sector.

<sup>9</sup> "Biodiesel" may be used as a diesel fuel substitute or diesel fuel additive or extender. See "Biodiesel" in Glossary.

R-Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • All values are estimated, except for industrial sector hydroelectric power in 1949-1978 and 1989 forward. • Totals may not equal sum of components due to independent rounding.

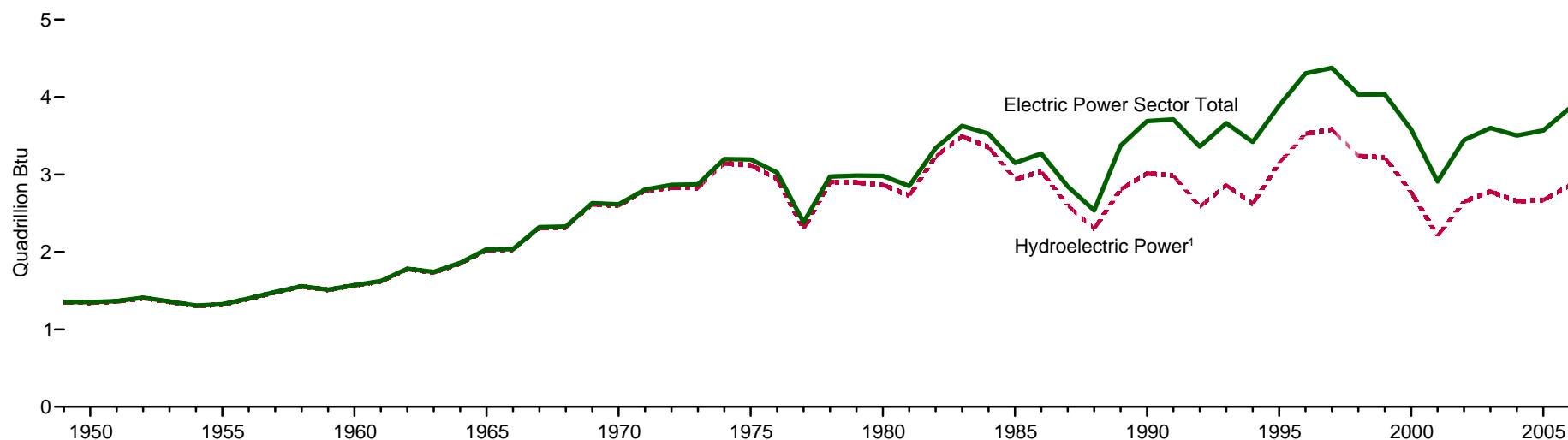
Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/renew.html>.

• For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

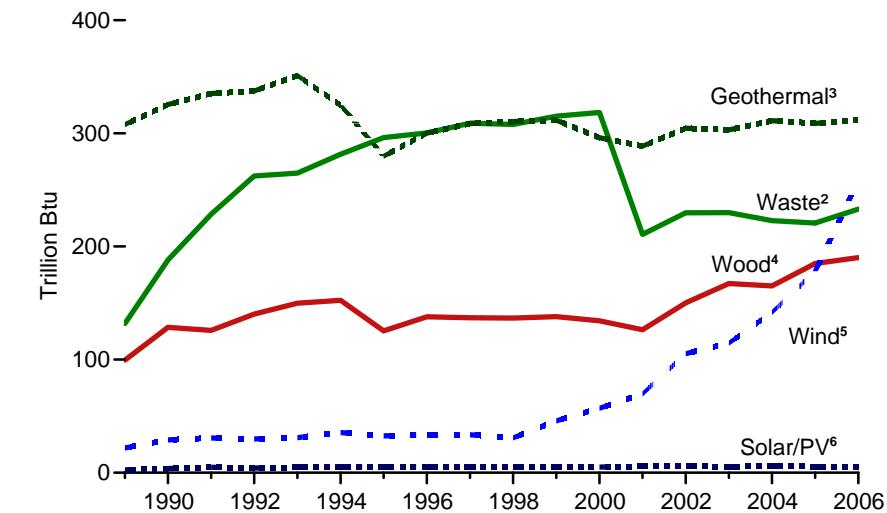
Sources: See end of section.

**Figure 10.2c Renewable Energy Consumption: Electric Power Sector**

**Electric Power Sector Total and Hydroelectric Power, 1949-2006**



**Non-Hydroelectric Power Sources, 1989-2006**



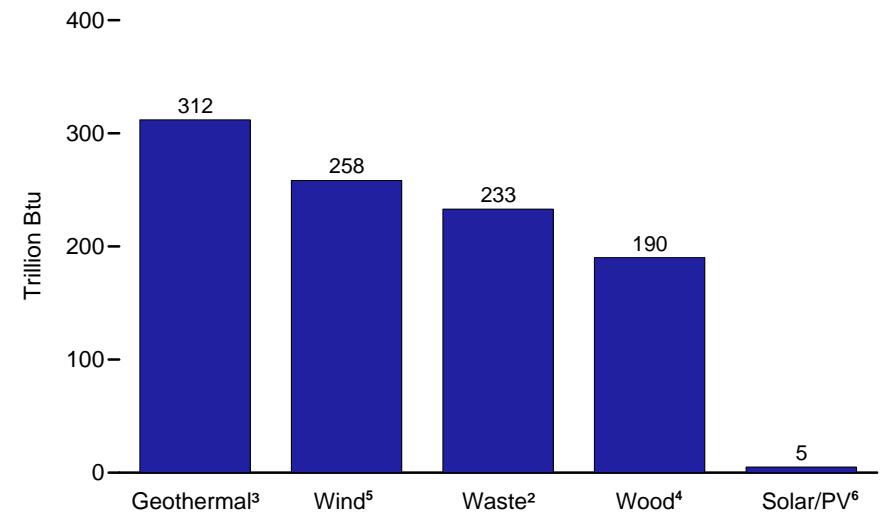
<sup>1</sup>Conventional hydroelectricity net generation.

<sup>2</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>3</sup> Geothermal electricity net generation.

<sup>4</sup> Wood and wood-driven fuels.

**Non-Hydroelectric Power Sources, 2006**



<sup>5</sup> Wind electricity net generation.

<sup>6</sup> Solar thermal and photovoltaic electricity net generation.

Notes: • See related Figures 10.2a on the end-use sectors. • Because vertical scales differ, graphs should not be compared.

Source: Table 10.2c.

**Table 10.2c Renewable Energy Consumption: Electric Power Sector, Selected Years, 1949-2006**  
 (Trillion Btu)

Year	Hydroelectric Power <sup>1</sup>	Geothermal <sup>2</sup>	Solar/PV <sup>3</sup>	Wind <sup>4</sup>	Biomass			Total
					Wood <sup>5</sup>	Waste <sup>6</sup>	Total	
1949	1,349	NA	NA	NA	6	NA	6	1,355
1950	1,346	NA	NA	NA	5	NA	5	1,351
1955	1,322	NA	NA	NA	3	NA	3	1,325
1960	1,569	1	NA	NA	2	NA	2	1,571
1965	2,026	4	NA	NA	3	NA	3	2,033
1970	2,600	11	NA	NA	1	2	4	2,615
1971	2,790	12	NA	NA	1	2	3	2,806
1972	2,829	31	NA	NA	1	2	3	2,864
1973	2,827	43	NA	NA	1	2	3	2,873
1974	3,143	53	NA	NA	1	2	3	3,199
1975	3,122	70	NA	NA	(s)	2	2	3,194
1976	2,943	78	NA	NA	1	2	3	3,024
1977	2,301	77	NA	NA	3	2	5	2,383
1978	2,905	64	NA	NA	2	1	3	2,973
1979	2,897	84	NA	NA	3	2	5	2,986
1980	2,867	110	NA	NA	3	2	5	2,982
1981	2,725	123	NA	NA	3	1	4	2,852
1982	3,233	105	NA	NA	2	1	3	3,341
1983	3,494	129	NA	(s)	2	2	4	3,627
1984	3,353	165	(s)	(s)	5	4	9	3,527
1985	2,937	198	(s)	(s)	8	7	14	3,150
1986	3,038	219	(s)	(s)	5	7	12	3,270
1987	2,602	229	(s)	(s)	8	7	15	2,846
1988	2,302	217	(s)	(s)	10	8	17	2,536
1989 <sup>7</sup>	2,808	308	3	22	100	132	232	3,372
1990	3,014	326	4	29	129	188	317	3,689
1991	2,985	335	5	31	126	229	354	3,710
1992	2,586	338	4	30	140	262	402	3,360
1993	2,861	351	5	31	150	265	415	3,662
1994	2,620	325	5	36	152	282	434	3,420
1995	3,149	280	5	33	125	296	422	3,889
1996	3,528	300	5	33	138	300	438	4,305
1997	3,581	309	5	34	137	309	446	4,375
1998	3,241	311	5	31	137	308	444	4,032
1999	3,218	312	5	46	138	315	453	4,034
2000	2,768	296	5	57	134	318	453	3,579
2001	2,209	289	6	70	126	R <sup>211</sup>	R <sup>337</sup>	R <sup>2,910</sup>
2002	2,650	305	6	105	150	R <sup>230</sup>	R <sup>380</sup>	R <sup>3,445</sup>
2003	2,781	303	5	115	167	R <sup>230</sup>	R <sup>397</sup>	R <sup>3,601</sup>
2004	2,656	311	6	142	165	R <sup>223</sup>	R <sup>388</sup>	R <sup>3,503</sup>
2005	R <sup>2,670</sup>	R <sup>309</sup>	6	R <sup>178</sup>	R <sup>185</sup>	R <sup>221</sup>	R <sup>406</sup>	R <sup>3,568</sup>
2006 <sup>P</sup>	2,858	312	5	258	190	233	423	3,857

<sup>1</sup> Conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>2</sup> Geothermal electricity net generation (converted to Btu using the geothermal energy plants heat rate).

<sup>3</sup> Solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>4</sup> Wind electricity net generation (converted to Btu using the fossil-fueled plants heat rate).

<sup>5</sup> Wood and wood-derived fuels.

<sup>6</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>7</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and

independent power producers.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

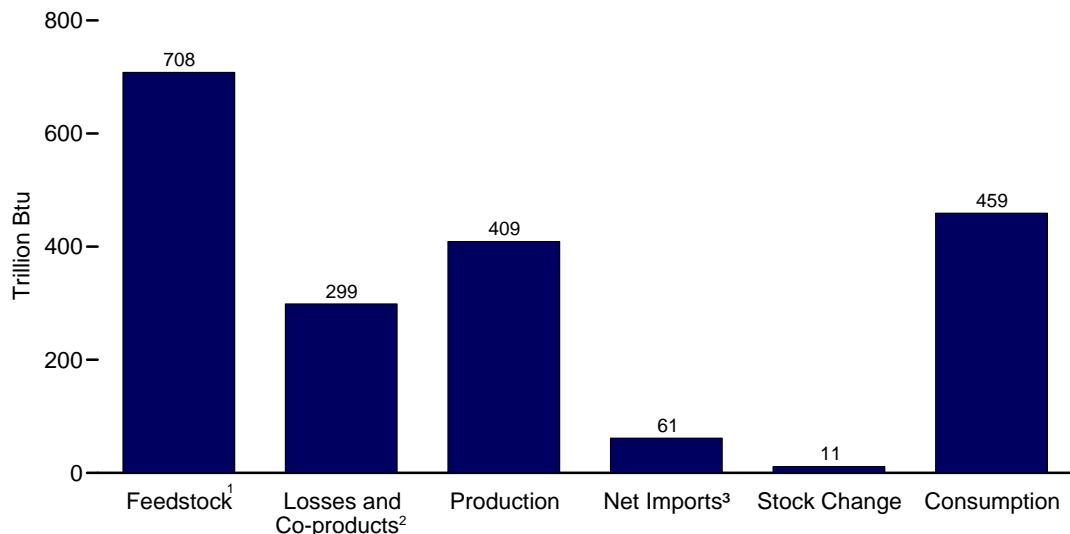
Notes: • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Note 3, "Electricity Imports and Exports," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Pages: • For all data beginning in 1949, see <http://www.eia.doe.gov/emeu/aer/renew.html>. • For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

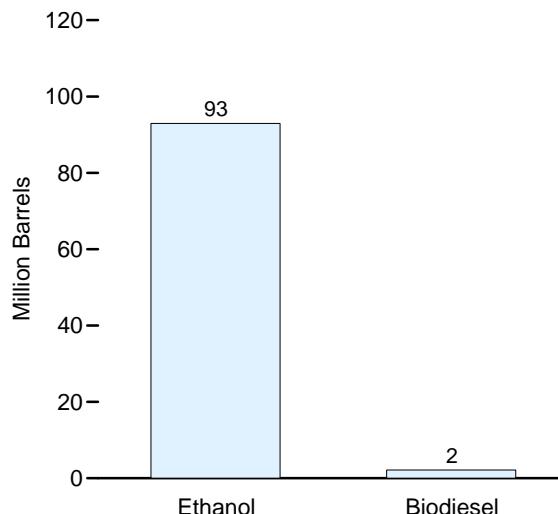
Sources: Tables 8.2b, 8.5b, 8.7b, and A6.

**Figure 10.3 Ethanol and Biodiesel Overview**

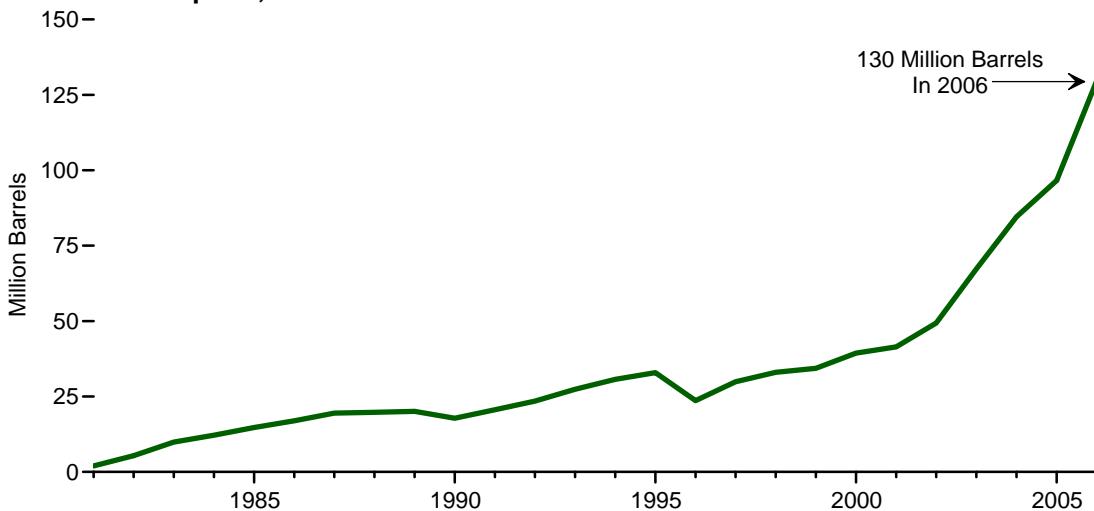
**Ethanol Overview, 2006**



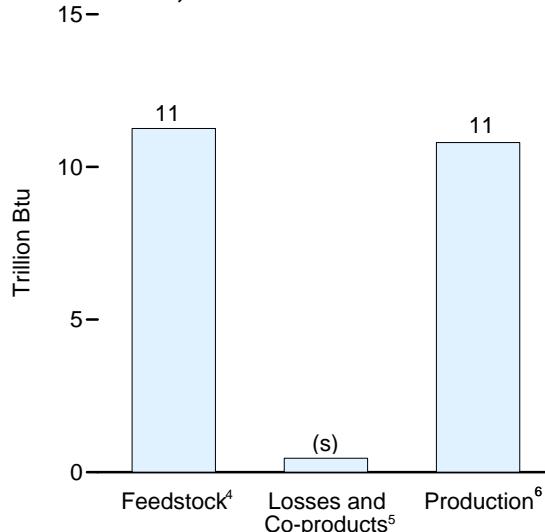
**Production, 2005**



**Ethanol Consumption, 1981-2006**



**Biodiesel, 2005**



<sup>1</sup> Total corn and other biomass inputs to the production of fuel ethanol.

<sup>2</sup> Losses and co-products (or "heat and co-products") from the production of fuel ethanol.

<sup>3</sup> Fuel ethanol imports. There are no exports.

<sup>4</sup> Total vegetable oil and other biomass inputs to the production of biodiesel.

<sup>5</sup> Losses and co-products (or "heat and co-products") from the production of biodiesel.

<sup>6</sup> Production of biodiesels for use as diesel fuel substitutes or additives.

(s)=Less than 0.5 trillion Btu.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 10.3.

**Table 10.3 Ethanol and Biodiesel Overview, 1981-2006**

	Ethanol										Biodiesel				
	Feed-stock <sup>1</sup>	Losses and Co-products <sup>2</sup>	Production <sup>3</sup>		Net Imports <sup>4</sup>		Stocks <sup>5</sup>	Stock Change <sup>6</sup>		Consumption <sup>7</sup>		Feed-stock <sup>8</sup>	Losses and Co-products <sup>9</sup>	Production <sup>10</sup>	
Year	TBtu	TBtu	Mbbl	TBtu	Mbbl	TBtu	Mbbl	TBtu	Mbbl	TBtu	TBtu	TBtu	Mbbl	TBtu	
1981	13	6	1,978	7	NA	NA	NA	NA	1,978	7	NA	NA	NA	NA	
1982	35	16	5,369	19	NA	NA	NA	NA	5,369	19	NA	NA	NA	NA	
1983	63	28	9,890	35	NA	NA	NA	NA	9,890	35	NA	NA	NA	NA	
1984	77	34	12,150	43	NA	NA	NA	NA	12,150	43	NA	NA	NA	NA	
1985	93	41	14,693	52	NA	NA	NA	NA	14,693	52	NA	NA	NA	NA	
1986	107	47	16,954	60	NA	NA	NA	NA	16,954	60	NA	NA	NA	NA	
1987	123	54	19,497	69	NA	NA	NA	NA	19,497	69	NA	NA	NA	NA	
1988	124	54	19,780	70	NA	NA	NA	NA	19,780	70	NA	NA	NA	NA	
1989	126	55	20,062	71	NA	NA	NA	NA	20,062	71	NA	NA	NA	NA	
1990	111	48	17,802	63	NA	NA	NA	NA	17,802	63	NA	NA	NA	NA	
1991	129	56	20,627	73	NA	NA	NA	NA	20,627	73	NA	NA	NA	NA	
1992	146	63	23,453	83	NA	NA	1,791	NA	NA	23,453	83	NA	NA	NA	NA
1993	171	74	27,484	97	244	1	2,114	323	1	27,405	97	NA	NA	NA	NA
1994	190	82	30,689	109	279	1	2,393	279	1	30,689	109	NA	NA	NA	NA
1995	200	86	32,325	114	387	1	2,186	-207	-1	32,919	117	NA	NA	NA	NA
1996	143	61	23,178	82	313	1	2,065	-121	(s)	23,612	84	NA	NA	NA	NA
1997	190	81	30,674	109	85	(s)	2,925	860	3	29,899	106	NA	NA	NA	NA
1998	206	88	33,453	118	66	(s)	3,406	481	2	33,038	117	NA	NA	NA	NA
1999	215	92	34,881	123	87	(s)	4,024	618	2	34,350	122	NA	NA	NA	NA
2000	238	101	38,627	137	116	(s)	3,400	-624	-2	39,367	139	NA	NA	NA	NA
2001	259	110	42,028	149	315	1	4,298	898	3	41,445	147	1	(s)	204	1
2002	313	133	50,956	180	306	1	6,200	1,902	7	49,360	175	1	(s)	250	1
2003	410	174	66,772	236	292	1	5,978	-222	-1	67,286	238	2	(s)	430	2
2004	497	210	81,058	287	3,542	13	6,002	24	(s)	84,576	299	3	(s)	666	3
2005	570	241	92,961	329	3,234	11	5,563	-439	-2	96,634	R342	11	(s)	2,162	11
2006 <sup>p</sup>	708	299	115,604	409	17,363	61	8,747	3,184	11	129,783	459	NA	NA	NA	NA

<sup>1</sup> Total corn and other biomass inputs to the production of fuel ethanol.

<sup>2</sup> Losses and co-products (or "heat and co-products") from the production of fuel ethanol. Does not include natural gas, electricity, and other non-biomass energy used in the production of fuel ethanol—these are included in the industrial sector consumption statistics for the appropriate energy source.

<sup>3</sup> Fuel ethanol production.

<sup>4</sup> Fuel ethanol imports. There are no exports.

<sup>5</sup> Fuel ethanol stocks at end of year.

<sup>6</sup> Fuel ethanol stock change. A negative number indicates a decrease in stocks and a positive number indicates an increase.

<sup>7</sup> Fuel ethanol consumption equals fuel ethanol production, plus fuel ethanol net imports, minus fuel ethanol stock change.

<sup>8</sup> Total vegetable oil and other biomass inputs to the production of biodiesel.

<sup>9</sup> Losses and co-products (or "heat and co-products") from the production of biodiesel. Does not include natural gas, electricity, and other non-biomass energy used in the production of biodiesel—these are included in the industrial sector consumption statistics for the appropriate energy source.

<sup>10</sup> Production of biofuels for use as diesel fuel substitutes or additives. Biodiesel consumption equals biodiesel production.

R=Revised. P=Preliminary. NA=Not available. (s)=Less than 0.5 trillion Btu.

Notes: • Mbbl = thousand barrels. TBtu = trillion Btu. • Totals may not equal sum of components due to independent rounding.

Web Pages: For related information, see [http://www.eia.doe.gov/oil\\_gas/petroleum/data\\_publications/monthly\\_oxygenate\\_telephone\\_report/motr.html](http://www.eia.doe.gov/oil_gas/petroleum/data_publications/monthly_oxygenate_telephone_report/motr.html), [http://www.eia.doe.gov/oil\\_gas/petroleum/data\\_publications/petroleum\\_supply\\_monthly/psm.html](http://www.eia.doe.gov/oil_gas/petroleum/data_publications/petroleum_supply_monthly/psm.html), and <http://www.fsa.usda.gov/FSA/webapp?area=home&subject>

=coop&topic=pai-be.

Sources: (Note: For ethanol and biodiesel heat contents, see Table A3.) **Ethanol Feedstock:** Calculated as fuel ethanol production multiplied by the approximate heat content of the corn and other biomass inputs to the production of fuel ethanol. **Ethanol Losses and Co-products:** Calculated as ethanol feedstock minus fuel ethanol production. **Ethanol Production:** • 1981-1992—Fuel ethanol production is equal to fuel ethanol consumption. See sources for "Ethanol Consumption." • 1993 forward—Energy Information Administration (EIA), Form EIA-819, "Monthly Oxygenate Report," and predecessor form. **Ethanol Net Imports, Stocks, and Stock Change:** • 1992-2005—EIA, *Petroleum Supply Annual (PSA)*, annual reports. • 2006—EIA, *Petroleum Supply Monthly (PSM)*, monthly reports.

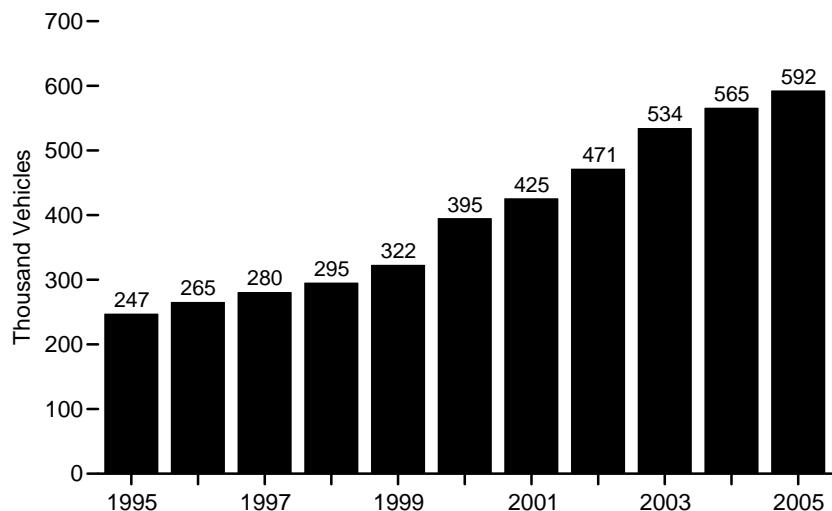
**Ethanol Consumption:** • 1981-1989—EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 10; and EIA, Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF), estimates. • 1990-1992—EIA, *Estimates of U.S. Biomass Energy Consumption 1992*, Table D2; and EIA, CNEAF, estimate.

• 1993-2004—EIA, *PSA*, annual reports, Tables 2 and 16. Calculated as ten percent of oxygenated finished motor gasoline field production (Table 2), plus fuel ethanol refinery input (Table 16).

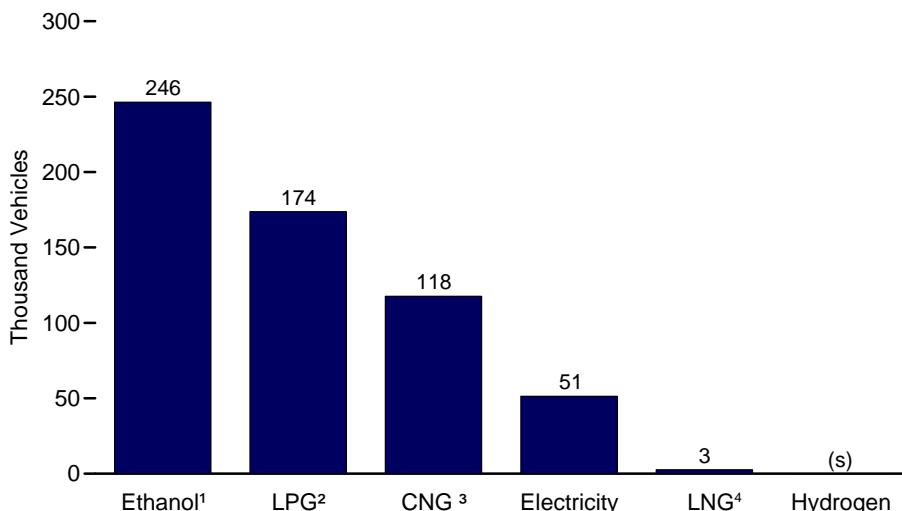
• 2005—EIA, *PSA 2005*, Tables 1 and 15. Calculated as motor gasoline blending components adjustments (Table 1), plus finished motor gasoline adjustments (Table 1), plus fuel ethanol refinery and blender net inputs (Table 15). • 2006—EIA, *PSM*, monthly reports, Tables 1 and 27. Calculated as motor gasoline blending components adjustments (Table 1), plus finished motor gasoline adjustments (Table 1), plus fuel ethanol refinery and blender net inputs (Table 27). **Biodiesel Feedstock:** Calculated as biodiesel production multiplied by the approximate heat content of the vegetable oil and other biomass inputs to the production of biodiesel. **Biodiesel Losses and Co-products:** Calculated as biodiesel feedstock minus biodiesel production. **Biodiesel Production:** U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program records.

**Figure 10.4 Estimated Number of Alternative-Fueled Vehicles in Use and Alternative Fuel Consumption**

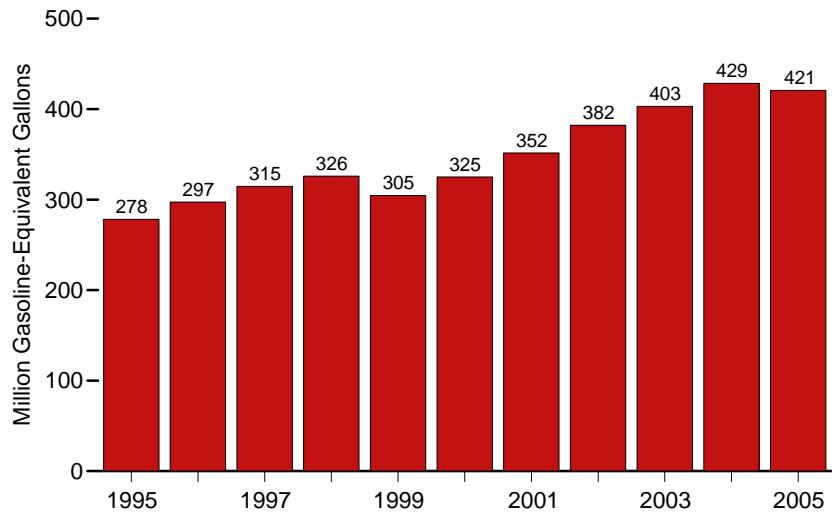
**Vehicles in Use, 1995-2005**



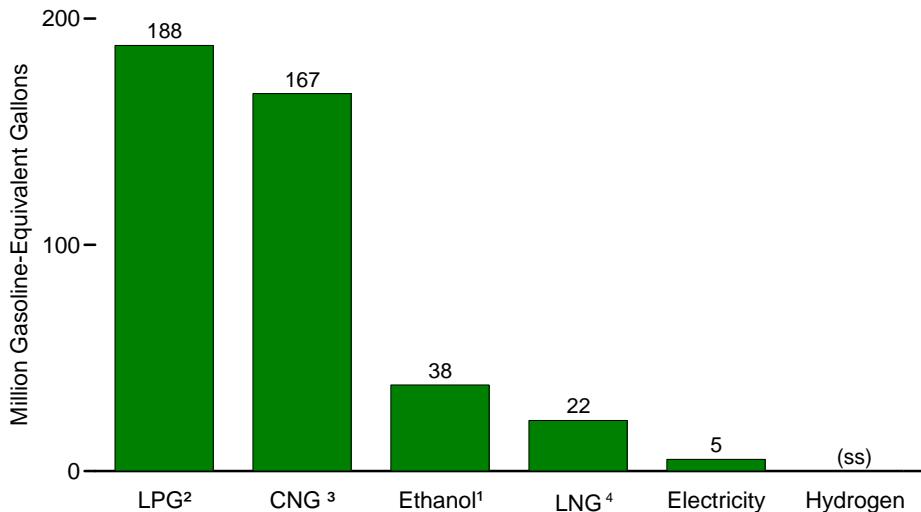
**Vehicles in Use by Fuel Type, 2005**



**Fuel Consumption, 1995-2005**



**Fuel Consumption by Type, 2005**



<sup>1</sup> Ethanol, 85 percent (E85). Includes only those E85 vehicles believed to be used as alternative-fueled vehicles, primarily fleet-operated vehicles; excludes other vehicles with E85-fueling capability.

<sup>2</sup> Liquified petroleum gases.

<sup>3</sup> Compressed natural gas.

<sup>4</sup> Liquified natural gas.

(s)=Fewer than 0.5 thousand vehicles.

(ss)=Less than 0.5 million gasoline-equivalent gallons.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 10.4.

**Table 10.4 Estimated Number of Alternative-Fueled Vehicles in Use and Replacement Fuel Consumption, 1992-2005**

Year	Replacement Fuels <sup>1</sup>													Bio-diesel <sup>11</sup>	Total	
	Alternative Fuels <sup>2</sup>										Oxygenates <sup>3</sup>					
	Liquefied Petroleum Gases	Compressed Natural Gas	Liquefied Natural Gas	Methanol, 85 Percent (M85) <sup>4</sup>	Methanol, Neat (M100) <sup>5</sup>	Ethanol, 85 Percent (E85) <sup>4,6</sup>	Ethanol, 95 Percent (E95) <sup>4</sup>	Electricity <sup>7</sup>	Hydrogen	Other Fuels <sup>8</sup>	Total	Methyl Tertiary Butyl Ether <sup>9</sup>	Ethanol in Gasohol <sup>10</sup>	Total		
Alternative-Fueled Vehicles <sup>12</sup> in Use (number)																
1992	NA	23,191	90	4,850	404	172	38	1,607	NA	NA	NA	NA	NA	NA	NA	
1993	NA	32,714	299	10,263	414	441	27	1,690	NA	NA	NA	NA	NA	NA	NA	
1994	NA	41,227	484	15,484	415	605	33	2,224	NA	NA	NA	NA	NA	NA	NA	
1995	172,806	50,218	603	18,319	386	1,527	136	2,860	0	0	246,855	NA	NA	NA	NA	
1996	175,585	60,144	663	20,265	172	4,536	361	3,280	0	0	265,006	NA	NA	NA	NA	
1997	175,679	68,571	813	21,040	172	9,130	347	4,453	0	0	280,205	NA	NA	NA	NA	
1998	177,183	78,782	1,172	19,648	200	12,788	14	5,243	0	0	295,030	NA	NA	NA	NA	
1999	178,610	91,267	1,681	18,964	198	24,604	14	6,964	0	0	322,302	NA	NA	NA	NA	
2000	181,994	100,750	2,090	10,426	0	87,570	4	11,830	0	0	394,664	NA	NA	NA	NA	
2001	185,053	111,851	2,576	7,827	0	100,303	0	17,847	0	0	425,457	NA	NA	NA	NA	
2002	187,680	120,839	2,708	5,873	0	120,951	0	33,047	0	0	471,098	NA	NA	NA	NA	
2003	R190,369	R114,406	R2,640	R0	0	R179,090	0	R47,485	9	0	R533,999	NA	NA	NA	NA	
2004	R182,864	R118,532	R2,717	R0	0	R211,800	0	R49,536	43	0	R565,492	NA	NA	NA	NA	
2005 <sup>P</sup>	173,795	117,699	2,748	0	0	246,363	0	51,398	119	3	592,125	NA	NA	NA	NA	
Fuel Consumption <sup>13</sup> (thousand gasoline-equivalent gallons)																
1992	NA	17,159	598	1,121	2,672	22	87	359	NA	NA	NA	1,175,964	719,408	1,895,372	NA	NA
1993	NA	22,035	1,944	1,671	3,321	49	82	288	NA	NA	NA	2,070,897	779,958	2,850,854	NA	NA
1994	NA	24,643	2,398	2,455	3,347	82	144	430	NA	NA	NA	2,020,455	868,113	2,888,569	NA	NA
1995	233,178	35,865	2,821	2,122	2,255	195	1,021	663	0	0	278,121	2,693,407	934,615	3,628,022	NA	3,906,142
1996	239,648	47,861	3,320	1,862	364	712	2,770	773	0	0	297,310	2,751,955	677,537	3,429,492	NA	3,726,802
1997	238,845	66,495	3,798	1,630	364	1,314	1,166	1,010	0	0	314,621	3,106,745	852,514	3,959,260	NA	4,273,880
1998	241,881	73,859	5,463	1,271	471	1,772	61	1,202	0	0	325,980	2,905,781	912,858	3,818,639	NA	4,144,620
1999	210,247	81,211	5,959	1,126	469	4,019	64	1,524	0	0	304,618	3,405,390	975,255	4,380,645	NA	4,685,263
2000	213,012	88,478	7,423	614	0	12,388	13	3,058	0	0	324,986	3,298,803	1,114,313	4,413,116	6,828	4,744,930
2001	216,319	106,584	9,122	461	0	15,007	0	4,066	0	0	351,558	3,354,949	1,173,323	4,528,272	7,089	4,886,919
2002	223,600	123,081	9,593	354	0	18,250	0	7,274	0	0	382,152	3,122,859	1,450,721	4,573,580	16,948	4,972,680
2003	R224,697	R133,222	R13,503	R0	0	R26,376	0	R5,141	2	0	R402,941	R2,368,400	R1,919,572	R4,287,972	R17,510	R4,708,423
2004	R211,883	R158,903	R20,888	R0	0	R31,581	0	R5,269	8	0	R428,532	R1,877,300	R2,414,167	R4,291,467	R27,143	R4,747,142
2005 <sup>P</sup>	188,171	166,878	22,409	0	0	38,074	0	5,219	25	2	420,778	1,654,500	2,756,663	4,411,163	88,075	4,920,016

<sup>1</sup> See "Replacement Fuel" in Glossary.

<sup>2</sup> See "Alternative Fuel" in Glossary.

<sup>3</sup> See "Oxygenates" in Glossary.

<sup>4</sup> Remaining portion is motor gasoline. Consumption data include the motor gasoline portion of the fuel.

<sup>5</sup> One hundred percent methanol.

<sup>6</sup> Includes only those E85 vehicles believed to be used as alternative-fuels vehicles (AFVs), primarily fleet-operated vehicles; excludes other vehicles with E85-fueling capability. In 1997, some vehicle manufacturers began including E85-fueling capability in certain model lines of vehicles. For 2005, the Energy Information Administration (EIA) estimates that the number of E85 vehicles that are capable of operating on E85, motor gasoline, or both, is about 5 million. Many of these AFVs are sold and used as traditional gasoline-powered vehicles.

<sup>7</sup> Excludes gasoline-electric hybrids.

<sup>8</sup> May include P-Series fuel or any other fuel designated by the Secretary of Energy as an alternative fuel in accordance with the Energy Policy Act of 1995.

<sup>9</sup> In addition to methyl tertiary butyl ether (MTBE), includes a very small amount of other ethers, primarily tertiary amyl methyl ether (TAME) and ethyl tertiary butyl ether (ETBE).

<sup>10</sup> Data do not include the motor gasoline portion of the fuel.

<sup>11</sup> "Biodiesel" may be used as a diesel fuel substitute or diesel fuel additive or extender. See "Biodiesel" in Glossary.

<sup>12</sup> See "Alternative-Fueled Vehicle" in Glossary. Vehicles in Use do not include concept and

demonstration vehicles that are not ready for delivery to end users. Vehicles in Use represent accumulated acquisitions, less retirements, as of the end of each calendar year.

<sup>13</sup> Fuel consumption quantities are expressed in a common base unit of gasoline-equivalent gallons to allow comparisons of different fuel types. Gasoline-equivalent gallons do not represent gasoline displacement. Gasoline equivalent is computed by dividing the gross heat content of the replacement fuel by the gross heat content of gasoline and multiplying the result by the replacement fuel consumption value. See "Heat Content" in Glossary.

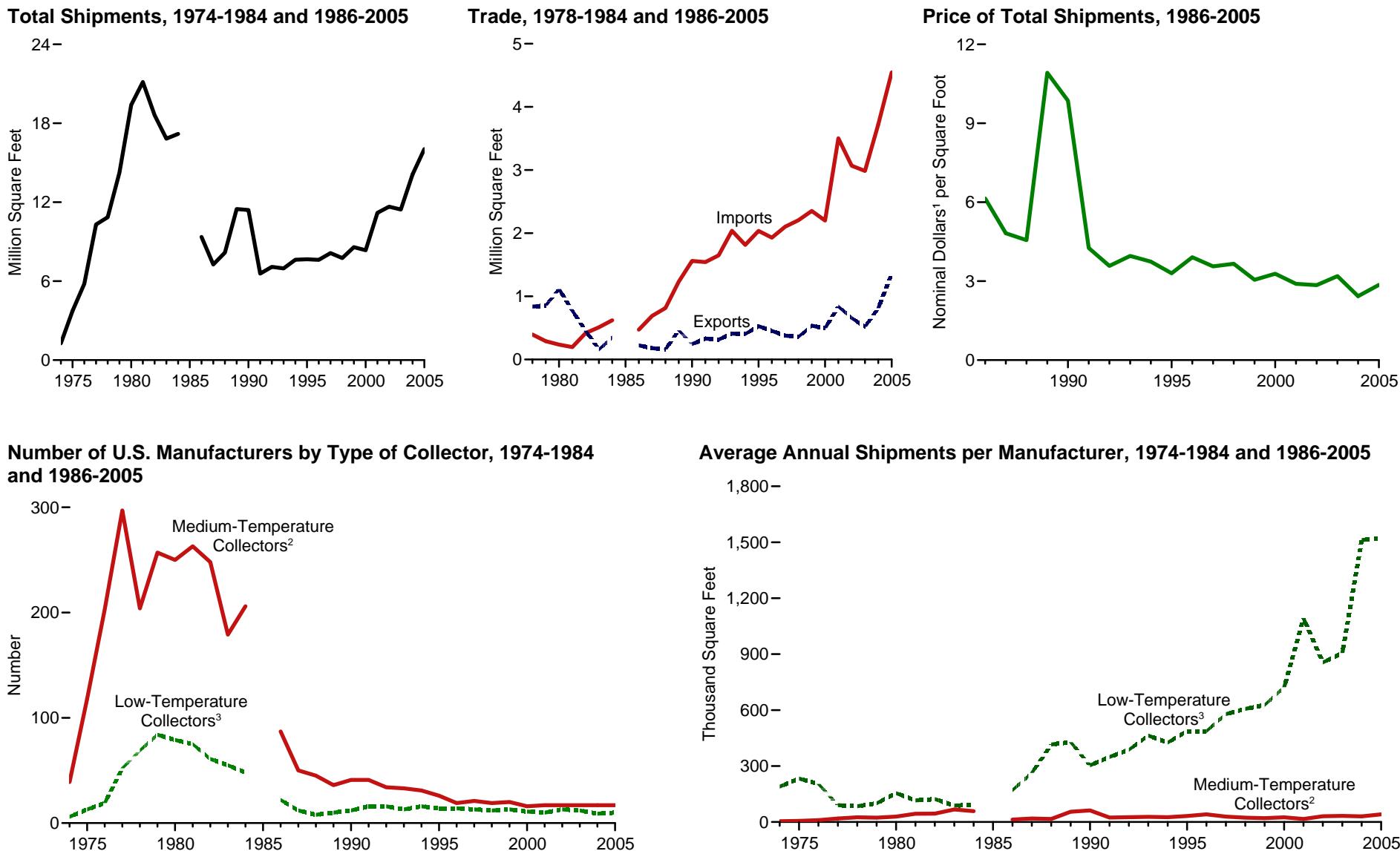
R=Revised. P=Preliminary. NA=Not available.

Notes: • Data for 2003 and 2004 have been revised due to incorporation of final survey data and to introduction of a new estimating methodology. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

Sources: • 1992-1994—Science Applications International Corporation, "Alternative Transportation Fuels and Vehicles Data Development," unpublished final report prepared for the EIA, (McLean, VA, July 1996), and U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. Data were revised by using gross instead of net heat contents. For a table of gross and net heat contents, see EIA, *Alternatives to Traditional Transportation Fuels: An Overview* (June 1994), Table 22. • 1995-2002—EIA, "Alternatives to Traditional Transportation Fuels 2003 Estimated Data" (February 2004), Tables 1 and 10. Data were revised by using gross instead of net heat contents. • 2003 forward—EIA, "Alternatives to Traditional Transportation Fuels 2005, Part 2" (June 2007), Tables V1 and C1.

**Figure 10.5 Solar Thermal Collector Shipments by Type, Price, and Trade**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Collectors that generally operate in the temperature range of 140 degrees Fahrenheit to 180 degrees Fahrenheit but can also operate at temperatures as low as 110 degrees Fahrenheit. Special collectors—evacuated tube collectors or concentrating (focusing) collectors—are included in the medium-temperature category.

<sup>3</sup> Collectors that generally operate at temperatures below 110 degrees Fahrenheit.

Notes: • Shipments are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers. • Data were not collected for 1985. • Because vertical scales differ, graphs should not be compared.

Source: Table 10.5.

**Table 10.5 Solar Thermal Collector Shipments by Type, Price, and Trade, 1974-2005**

(Thousand Square Feet, Except as Noted)

Year	Low-Temperature Collectors <sup>1</sup>				Medium-Temperature Collectors <sup>2</sup>				High-Temperature Collectors <sup>3</sup>		Total Shipments		Trade	
	Number of U.S. Manufacturers	Quantity Shipped	Shipments per Manufacturer	Price <sup>4</sup> (nominal dollars <sup>5</sup> per square foot)	Number of U.S. Manufacturers	Quantity Shipped	Shipments per Manufacturer	Price <sup>4</sup> (nominal dollars <sup>5</sup> per square foot)	Quantity Shipped	Price <sup>4</sup> (nominal dollars <sup>5</sup> per square foot)	Quantity Shipped	Price <sup>4</sup> (nominal dollars <sup>5</sup> per square foot)	Imports	Exports
1974	6	1,137	190	NA	39	137	4	NA	NA	NA	1,274	NA	NA	NA
1975	13	3,026	233	NA	118	717	6	NA	NA	NA	3,743	NA	NA	NA
1976	19	3,876	204	NA	203	1,925	10	NA	NA	NA	5,801	NA	NA	NA
1977	52	4,743	91	NA	297	5,569	19	NA	NA	NA	10,312	NA	NA	NA
1978	69	5,872	85	NA	204	4,988	25	NA	NA	NA	10,860	NA	396	840
1979	84	8,394	100	NA	257	5,856	23	NA	NA	NA	14,251	NA	290	855
1980	79	12,233	155	NA	250	7,165	29	NA	NA	NA	19,398	NA	235	1,115
1981	75	8,677	116	NA	263	11,456	44	NA	NA	NA	21,133	NA	196	771
1982	61	7,476	123	NA	248	11,145	45	NA	NA	NA	18,621	NA	418	455
1983	55	4,853	88	NA	179	11,975	67	NA	NA	NA	16,828	NA	511	159
1984	48	4,479	93	NA	206	11,939	58	NA	773	NA	17,191	NA	621	348
1985 <sup>p</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1986	22	3,751	171	2.30	87	1,111	13	18.30	4,498	NA	9,360	6.14	473	224
1987	12	3,157	263	2.18	50	957	19	13.50	3,155	NA	7,269	4.82	691	182
1988	8	3,326	416	2.24	45	732	16	14.88	4,116	NA	8,174	4.56	814	158
1989	10	4,283	428	2.60	36	1,989	55	11.74	5,209	17.76	11,482	10.92	1,233	461
1990	12	3,645	304	2.90	41	2,527	62	7.68	5,237	15.74	11,409	9.86	1,562	245
1991	16	5,585	349	2.90	41	989	24	11.94	1	31.94	6,574	4.26	1,543	332
1992	16	6,187	387	2.50	34	897	26	10.96	2	75.66	7,086	3.58	1,650	316
1993	13	6,025	464	2.80	33	931	28	11.74	12	22.12	6,968	3.96	2,039	411
1994	16	6,823	426	2.54	31	803	26	13.54	2	177.00	7,627	3.74	1,815	405
1995	14	6,813	487	2.32	26	840	32	10.48	13	53.26	7,666	3.30	2,037	530
1996	14	6,821	487	2.67	19	785	41	14.48	10	18.75	7,616	3.91	1,930	454
1997	13	7,524	579	2.60	21	606	29	15.17	7	25.00	8,138	3.56	2,102	379
1998	12	7,292	607	2.83	19	443	23	15.17	21	53.21	7,756	3.66	2,206	360
1999	13	8,152	627	2.08	20	427	21	19.12	4	286.49	8,583	3.05	2,352	537
2000	11	7,948	723	2.09	16	400	25	W	5	W	8,354	3.28	2,201	496
2001	10	10,919	1,092	2.15	17	268	16	W	2	W	11,189	2.90	3,502	840
2002	13	11,126	856	1.97	17	535	31	W	2	W	11,663	2.85	3,068	659
2003	12	10,877	906	2.08	17	560	33	W	7	W	11,444	3.19	2,986	518
2004	9	13,608	1,512	1.80	17	506	30	19.30	0	.00	14,114	2.43	3,723	813
2005 <sup>p</sup>	10	15,224	1,522	2.00	17	702	41	W	115	W	16,041	2.86	4,546	1,361

<sup>1</sup> Low-temperature collectors are solar thermal collectors that generally operate at temperatures below 110° F.

<sup>2</sup> Medium-temperature collectors are solar thermal collectors that generally operate in the temperature range of 140° F to 180° F but can also operate at temperatures as low as 110° F. Special collectors are included in this category. Special collectors are evacuated tube collectors or concentrating (focusing) collectors. They operate in the temperature range from just above ambient temperature (low concentration for pool heating) to several hundred degrees Fahrenheit (high concentration for air conditioning and specialized industrial processes).

<sup>3</sup> High-temperature collectors are solar thermal collectors that generally operate at temperatures above 180° F. High-temperature collector shipments are dominated by one manufacturer.

<sup>4</sup> Prices equal shipment value divided by quantity shipped. Value includes charges for advertising and warranties. Excluded are excise taxes and the cost of freight or transportation for the shipments.

<sup>5</sup> See "Nominal Dollars" in Glossary.

<sup>6</sup> No data are available for 1985.

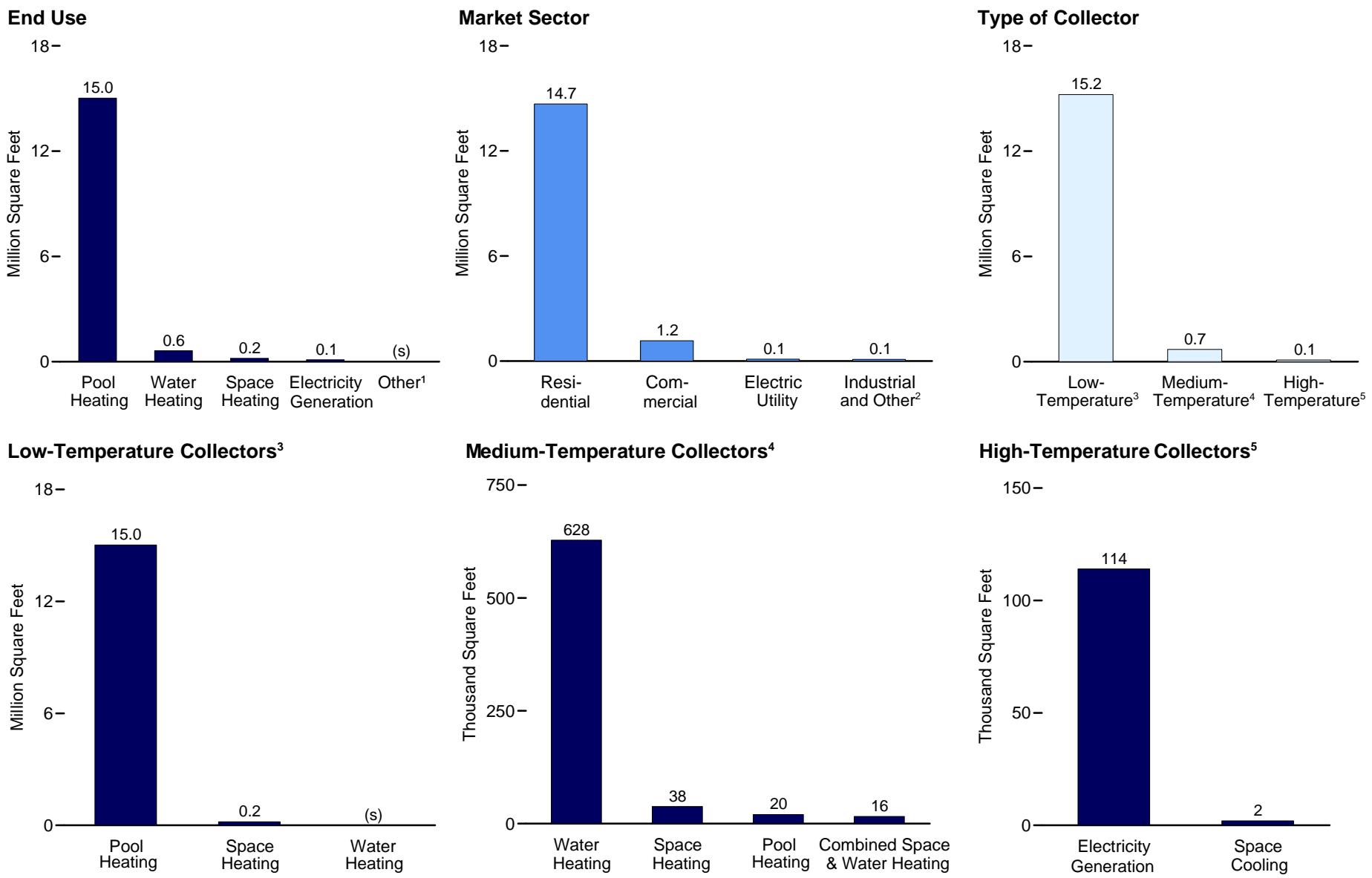
P=Preliminary. NA=Not available. W=Value withheld to avoid disclosure of proprietary company data.

Notes: • Shipments data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers. • Manufacturers producing more than one type of collector are accounted for in both groups.

Web Page: For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

Sources: • 1974-1992—Energy Information Administration (EIA), *Solar Collector Manufacturing Activity*, annual reports, and Form CE-63A, "Annual Solar Thermal Collector Manufacturers Survey," and predecessor forms. • 1993-2001—EIA, *Renewable Energy Annual*, annual reports, and Form EIA-63A, "Annual Solar Thermal Collector Manufacturers Survey," and predecessor form. • 2002 forward—EIA, *Solar Thermal and Photovoltaic Collector Manufacturing Activities*, annual reports, and Form EIA-63A, "Annual Solar Thermal Collector Manufacturers Survey."

**Figure 10.6 Solar Thermal Collector Shipments by End Use, Market Sector, and Type, 2005**



<sup>1</sup> Combined space and water heating, and space cooling.

<sup>2</sup> Other sectors, such as government, including the military but excluding space applications.

<sup>3</sup> Collectors that generally operate at temperatures below 110 degrees Fahrenheit.

<sup>4</sup> Collectors that generally operate in the temperature range of 140 degrees Fahrenheit to 180 degrees Fahrenheit but can also operate at temperatures as low as 110 degrees Fahrenheit.

<sup>5</sup> Collectors that generally operate at temperatures above 180 degrees Fahrenheit.

(s)=Less than 0.05 million square feet.

Notes: • Data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers. • Because vertical scales differ, graphs should not be compared.

Source: Table 10.6.

**Table 10.6 Solar Thermal Collector Shipments by End Use, Market Sector, and Type, 2005**  
 (Thousand Square Feet)

End Use	Low-Temperature Collectors <sup>1</sup>	Medium-Temperature Collectors <sup>2</sup>	High-Temperature Collectors <sup>3</sup>	Total
<b>End-Use Total .....</b>	<b>15,224</b>	<b>702</b>	<b>115</b>	<b>16,041</b>
Pool Heating .....	15,022	20	0	15,041
Water Heating .....	12	628	0	640
Space Heating .....	190	38	0	228
Space Cooling .....	0	0	2	2
Combined Space and Water Heating .....	0	16	0	16
Process Heating .....	0	0	0	0
Electricity Generation .....	0	0	114	114
Other <sup>4</sup> .....	0	0	0	0
<b>Market Sector Total .....</b>	<b>15,224</b>	<b>702</b>	<b>115</b>	<b>16,041</b>
Residential .....	14,045	636	0	14,681
Commercial .....	1,099	58	2	1,160
Industrial <sup>5</sup> .....	30	1	0	31
Electric Utility .....	0	0	114	114
Other <sup>6</sup> .....	50	6	0	56

<sup>1</sup> Low-temperature collectors are solar thermal collectors that generally operate at temperatures below 110° F.

<sup>2</sup> Medium-temperature collectors are solar thermal collectors that generally operate in the temperature range of 140° F to 180° F but can also operate at temperatures as low as 110° F. Special collectors are included in this category. Special collectors are evacuated tube collectors or concentrating (focusing) collectors. They operate in the temperature range from just above ambient temperature (low concentration for pool heating) to several hundred degrees Fahrenheit (high concentration for air conditioning and specialized industrial processes).

<sup>3</sup> High-temperature collectors are solar thermal collectors that generally operate at temperatures above 180° F. These are parabolic dish/trough collectors used primarily by independent power producers to

generate electricity for the electric grid.

<sup>4</sup> Cooking, water pumping, water purification, desalination, distillation, and other uses.

<sup>5</sup> Includes all independent power producers.

<sup>6</sup> Other sectors, such as government, including the military but excluding space applications.

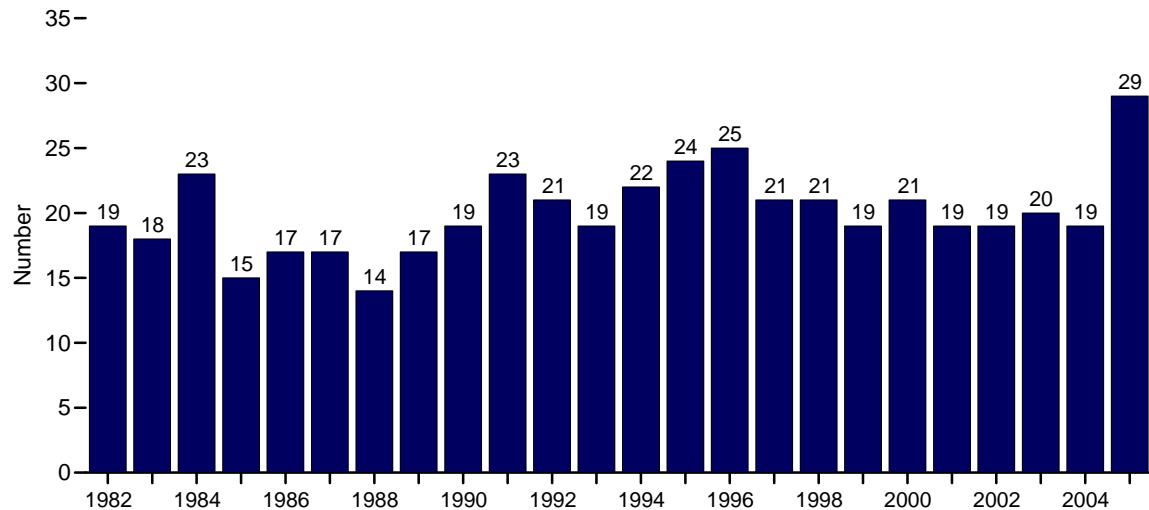
Notes: • Data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers. • Data are preliminary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

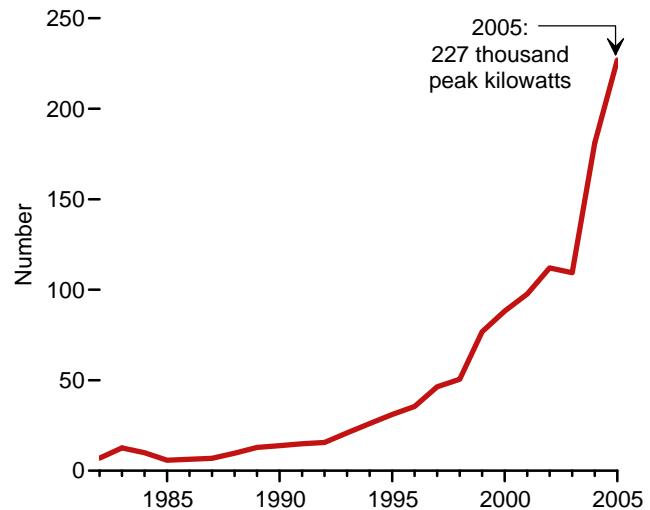
Source: Energy Information Administration, *Solar Thermal and Photovoltaic Collector Manufacturing Activities 2005* (August 2006), Table 38.

**Figure 10.7 Photovoltaic Cell and Module Shipments, Trade, and Prices**

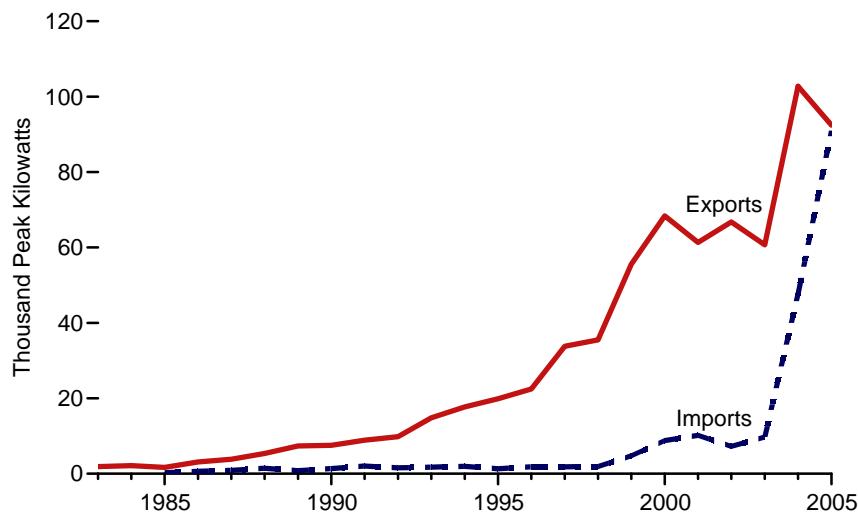
**Number of U.S. Companies Reporting Shipments, 1982-2005**



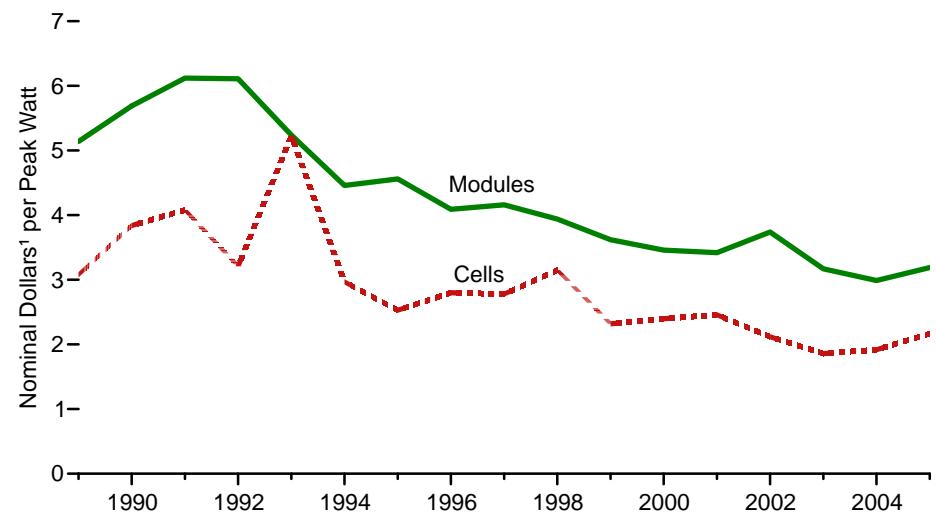
**Total Shipments, 1982-2005**



**Trade, 1983-2005**



**Prices, 1989-2005**



<sup>1</sup> See "Nominal Dollars" in Glossary.

Notes: • Shipments are for domestic and export shipments, and may include imports that subsequently were shipped to domestic and foreign customers. • Because vertical scales differ, graphs should not be compared.

Source: Table 10.7.

**Table 10.7 Photovoltaic Cell and Module Shipments by Type, Trade, and Prices, 1982-2005**

	U.S. Companies Reporting Shipments	Shipments			Trade		Prices <sup>1</sup>	
		Crystalline Silicon	Thin-Film Silicon	Total <sup>2</sup>	Imports	Exports	Modules	Cells
Year	Number	Peak Kilowatts <sup>3</sup>					Nominal Dollars <sup>4</sup> per Peak Watt <sup>3</sup>	
1982	19	NA	NA	6,897	NA	NA	NA	NA
1983	18	NA	NA	12,620	NA	1,903	NA	NA
1984	23	NA	NA	9,912	NA	2,153	NA	NA
1985	15	5,461	303	5,769	285	1,670	NA	NA
1986	17	5,806	516	6,333	678	3,109	NA	NA
1987	17	5,613	1,230	6,850	921	3,821	NA	NA
1988	14	7,364	1,895	9,676	1,453	5,358	NA	NA
1989	17	10,747	1,628	12,825	826	7,363	5.14	3.08
1990	<sup>5</sup> 19	12,492	1,321	<sup>5</sup> 13,837	1,398	7,544	5.69	3.84
1991	23	14,205	723	14,939	2,059	8,905	6.12	4.08
1992	21	14,457	1,075	15,583	1,602	9,823	6.11	3.21
1993	19	20,146	782	20,951	1,767	14,814	5.24	5.23
1994	22	24,785	1,061	26,077	1,960	17,714	4.46	2.97
1995	24	29,740	1,266	31,059	1,337	19,871	4.56	2.53
1996	25	33,996	1,445	35,464	1,864	22,448	4.09	2.80
1997	21	44,314	1,886	46,354	1,853	33,793	4.16	2.78
1998	21	47,186	3,318	50,562	1,931	35,493	3.94	3.15
1999	19	73,461	3,269	76,787	4,784	55,562	3.62	2.32
2000	21	85,155	2,736	88,221	8,821	68,382	3.46	2.40
2001	19	84,651	12,541	97,666	10,204	61,356	3.42	2.46
2002	19	104,123	7,396	112,090	7,297	66,778	3.74	2.12
2003	20	97,940	10,966	109,357	9,731	60,693	3.17	1.86
2004	19	159,138	21,978	181,116	47,703	102,770	R2.99	1.92
2005 <sup>P</sup>	29	172,965	53,826	226,916	90,981	92,451	3.19	2.17

<sup>1</sup> Prices equal shipment value divided by quantity shipped. Value includes charges for advertising and warranties. Excluded are excise taxes and the cost of freight or transportation for the shipments.

<sup>2</sup> Includes all types of photovoltaic cells and modules (single-crystal silicon, cast silicon, ribbon silicon, thin-film silicon, and concentrator silicon). Excludes cells and modules for space and satellite applications.

<sup>3</sup> See "Peak Kilowatt" and "Peak Watt" in Glossary.

<sup>4</sup> See "Nominal Dollars" in Glossary.

<sup>5</sup> Data were imputed for one nonrespondent who exited the industry during 1990.

R=Revised. P=Preliminary. NA=Not available.

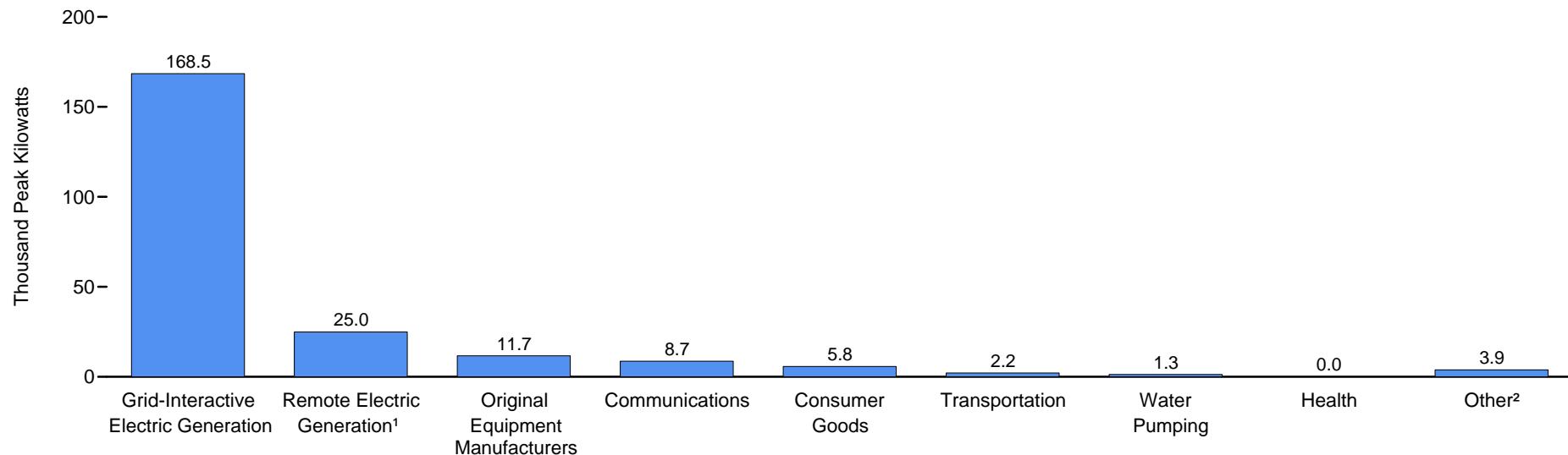
Note: Shipments data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers.

Web Page: For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

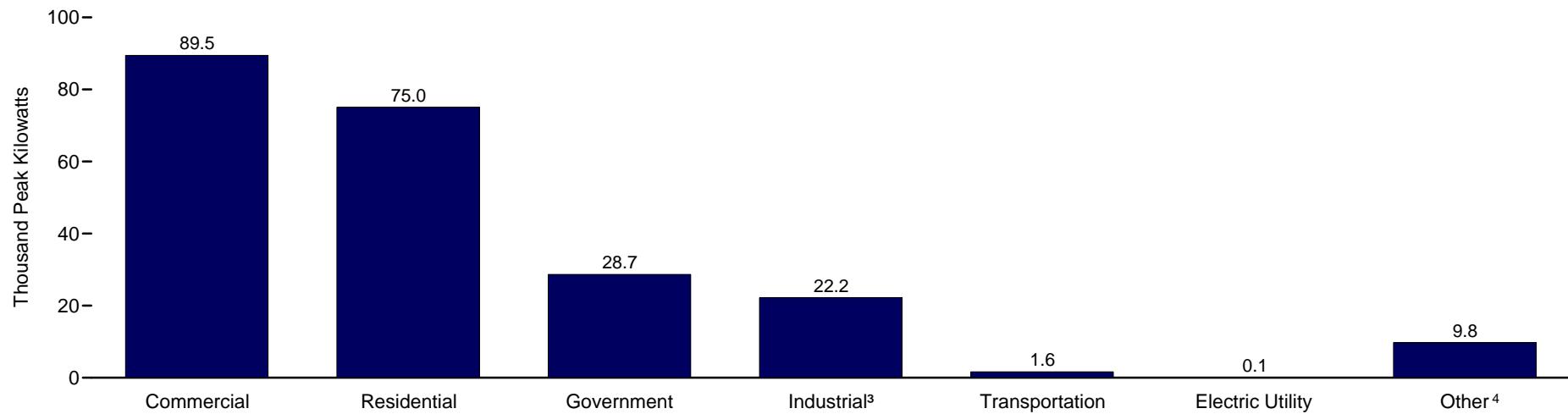
Sources: • 1982-1992—Energy Information Administration (EIA), *Solar Collector Manufacturing Activity*, annual reports. • 1993-2001—EIA, *Renewable Energy Annual*, annual reports. • 2002 forward—EIA, *Solar Thermal and Photovoltaic Collector Manufacturing Activities*, annual reports.

**Figure 10.8 Photovoltaic Cell and Module Shipments by End Use and Market Sector, 2005**

**By End Use**



**By Market Sector**



<sup>1</sup> Units designed for installations that do not interact with the electrical distribution system.

<sup>2</sup> Represents such applications as cooking food, desalination, and distilling.

<sup>3</sup> Includes all independent power producers.

<sup>4</sup> Shipments for specialty purposes such as research.

Note: Data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers.

Source: Table 10.8.

**Table 10.8 Photovoltaic Cell and Module Shipments by End Use and Market Sector, 1989-2005**

Year	End Use									Market Sector							Total	
	Communications	Consumer Goods	Electric Generation <sup>1</sup>		Health	Original Equipment Manufacturers <sup>2</sup>	Transportation	Water Pumping	Other <sup>3</sup>	Residential	Commercial	Government	Industrial <sup>4</sup>	Transportation	Electric Utility	Other <sup>5</sup>		
			Grid-Interactive	Remote														
Amount Shipped (peak kilowatts <sup>6</sup> )																		
1989	2,590	2,788	1,251	2,620	5	1,595	1,196	711	69	1,439	3,850	1,077	3,993	1,130	785	551	12,825	
1990	4,340	2,484	469	3,097	5	1,119	1,069	1,014	240	1,701	6,086	1,002	2,817	974	826	432	13,837	
1991	3,538	3,312	856	3,594	61	1,315	1,523	729	13	3,624	3,345	815	3,947	1,555	1,275	377	14,939	
1992	3,717	2,566	1,227	4,238	67	828	1,602	809	530	4,154	2,386	1,063	4,279	1,673	1,553	477	15,583	
1993	3,846	946	1,096	5,761	674	2,023	4,238	2,294	74	5,237	4,115	1,325	5,352	2,564	1,503	856	20,951	
1994	5,570	3,239	2,296	9,253	79	1,849	2,128	1,410	254	6,632	5,429	2,114	6,855	2,174	2,364	510	26,077	
1995	5,154	1,025	4,585	8,233	776	3,188	4,203	2,727	1,170	6,272	8,100	2,000	7,198	2,383	3,759	1,347	31,059	
1996	6,041	1,063	4,844	10,884	977	2,410	5,196	3,261	789	8,475	5,176	3,126	8,300	3,995	4,753	1,639	35,464	
1997	7,383	347	8,273	8,630	1,303	5,245	6,705	3,783	4,684	10,993	8,111	3,909	11,748	3,574	5,651	2,367	46,354	
1998	8,280	1,198	14,193	8,634	1,061	5,044	6,356	4,306	1,491	15,936	8,460	2,808	13,232	3,440	3,965	2,720	50,562	
1999	12,147	2,292	24,782	10,829	1,466	12,400	8,486	4,063	322	19,817	17,283	3,107	24,972	4,341	5,876	1,392	76,787	
2000	12,269	2,870	21,713	14,997	2,742	12,153	12,804	5,644	3,028	24,814	13,692	4,417	28,808	5,502	6,298	4,690	88,221	
2001	14,743	4,059	27,226	21,447	3,203	6,268	12,636	7,444	641	33,262	15,710	5,728	28,063	8,486	5,846	571	97,666	
2002	17,290	3,400	33,983	21,693	4,202	7,869	16,028	7,532	93	29,315	20,578	8,565	32,218	12,932	7,640	841	112,090	
2003	14,185	2,995	42,485	15,025	2,924	11,334	14,143	6,073	194	23,389	32,604	5,538	27,951	11,089	8,474	313	109,357	
2004	11,348	6,444	129,265	18,371	341	6,452	1,380	1,322	6,193	53,928	R74,509	3,257	30,493	1,380	R3,233	14,316	181,116	
2005 <sup>P</sup>	8,666	5,787	168,474	24,958	0	11,677	2,159	1,343	3,853	75,040	89,459	28,683	22,199	1,621	143	9,772	226,916	
Percent of Total																		
1989	20.2	21.7	9.8	20.4	(s)	12.4	9.3	5.5	0.5	11.2	30.0	8.4	31.1	8.8	6.1	4.3	100.0	
1990	31.4	18.0	3.4	22.4	(s)	8.1	7.7	7.3	1.7	12.3	44.0	7.2	20.4	7.0	6.0	3.1	100.0	
1991	23.7	22.2	5.7	24.1	.4	8.8	10.2	4.9	.1	24.3	22.4	5.5	26.4	10.4	8.5	2.5	100.0	
1992	23.9	16.5	7.9	27.2	.4	5.3	10.3	5.2	3.4	26.7	15.3	6.8	27.5	10.7	10.0	3.1	100.0	
1993	18.4	4.5	5.2	27.5	3.2	9.7	20.2	10.9	.4	25.0	19.6	6.3	25.5	12.2	7.2	4.1	100.0	
1994	21.4	12.4	8.8	35.5	.3	7.1	8.2	5.4	1.0	25.4	20.8	8.1	26.3	8.3	9.1	2.0	100.0	
1995	16.6	3.3	14.8	26.5	2.5	10.3	13.5	8.8	3.8	20.2	26.1	6.4	23.2	7.7	12.1	4.3	100.0	
1996	17.0	3.0	13.7	30.7	2.8	6.8	14.7	9.2	2.2	23.9	14.6	8.8	23.4	11.3	13.4	4.6	100.0	
1997	15.9	.7	17.8	18.6	2.8	11.3	14.5	8.2	10.1	23.7	17.5	8.4	25.3	7.7	12.2	5.1	100.0	
1998	16.4	2.4	28.1	17.1	2.1	10.0	12.6	8.5	2.9	31.5	16.7	5.6	26.2	6.8	7.8	5.4	100.0	
1999	15.8	3.0	32.3	14.1	1.9	16.1	11.1	5.3	.4	25.8	22.5	4.0	32.5	5.7	7.7	1.8	100.0	
2000	13.9	3.3	24.6	17.0	3.1	13.8	14.5	6.4	3.4	28.1	15.5	5.0	32.7	6.2	7.1	5.3	100.0	
2001	15.1	4.2	27.9	22.0	3.3	6.4	12.9	7.6	.7	34.1	16.1	5.9	28.7	8.7	6.0	.6	100.0	
2002	15.4	3.0	30.3	19.4	3.7	7.0	14.3	6.7	.1	26.2	18.4	7.6	28.7	11.5	6.8	.8	100.0	
2003	13.0	2.7	38.8	13.7	2.7	10.4	12.9	5.6	.2	21.4	29.8	5.1	25.6	10.1	7.7	.3	100.0	
2004	6.3	3.6	71.4	10.1	.2	3.6	.8	.7	3.4	29.8	R41.1	1.8	16.8	.8	R1.8	7.9	100.0	
2005 <sup>P</sup>	3.8	2.6	74.2	11.0	.0	5.1	1.0	.6	1.7	33.1	39.4	12.6	9.8	.7	.1	4.3	100.0	

<sup>1</sup> Grid-interactive means connection to the electrical distribution system; remote means electricity, for general use, that does not interact with the electrical distribution system, such as at an isolated residential site or mobile home. The other end uses in this table also include electricity generation but only for the specific use cited.

<sup>2</sup> "Original Equipment Manufacturers" are non-photovoltaic manufacturers that combine photovoltaic technology into existing or newly developed product lines.

<sup>3</sup> Represents such applications as cooking food, desalination, and distilling.

<sup>4</sup> Includes all independent power producers.

<sup>5</sup> Shipments for specialty purposes such as research.

<sup>6</sup> See "Peak Kilowatt" in Glossary.

R=Revised data. P=Preliminary. (s)=Less than 0.05 percent.

Notes: • Data are for domestic and export shipments, and may include imports that subsequently were shipped to domestic or foreign customers. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelrenewable.html>.

Sources: • 1989-1992—Energy Information Administration (EIA), *Solar Collector Manufacturing Activity*, annual reports. • 1993-2001—EIA, *Renewable Energy Annual*, annual reports. • 2002 forward—EIA, *Solar Thermal and Photovoltaic Collector Manufacturing Activities*, annual reports.

## Renewable Energy

**Note. Renewable Energy Production and Consumption.** In Table 10.1, renewable energy consumption consists of: conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate); geothermal electricity net generation (converted to Btu using the geothermal plants heat rate), and geothermal heat pump and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and solar thermal direct use energy; wind electricity net generation (converted to Btu using the fossil-fueled plants heat rate); wood and wood-derived fuels consumption; biomass waste (municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass) consumption; fuel ethanol and biodiesel consumption; and losses and co-products from the production of fuel ethanol and biodiesel. Production is assumed to equal consumption for all renewable energy sources except biofuels (biofuels production comprises biomass inputs to the production of fuel ethanol and biodiesel).

**Table 10.2a Sources**

**Residential Sector, Geothermal:** Oregon Institute of Technology, Geo-Heat Center.

**Residential Sector, Solar/PV:** Energy Information Administration (EIA), Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF), estimates based on Form EIA-63A, "Annual Solar Thermal Collector Manufacturers Survey," and Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey."

**Residential Sector, Wood:** • 1949–1979: EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2. • 1980 forward: EIA, Form EIA-457, "Residential Energy Consumption Survey"; and EIA, CNEAF, estimates based on Form EIA-457 and regional heating degree-day data.

**Commercial Sector, Hydroelectric Power:** EIA, *Annual Energy Review (AER) 2006*, Tables 8.2d and A6.

**Commercial Sector, Geothermal:** Oregon Institute of Technology, Geo-Heat Center.

**Commercial Sector, Wood:** • 1949–1979: EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2. • 1980–1983: EIA, *Estimates of U.S. Wood Energy Consumption 1980–1983*, Table ES1. • 1984: EIA, CNEAF, estimate. • 1985–1988: Values interpolated. • 1989 forward: EIA, *AER 2006*, Table 8.7c; and EIA, CNEAF, estimates based on Form EIA-871, "Commercial Buildings Energy Consumption Survey."

**Commercial Sector, Waste:** EIA, *AER 2006*, Table 8.7c.

**Commercial Sector, Ethanol:** EIA, *AER 2006*, Tables 5.11, 5.13a, and 10.3. Calculated as commercial sector motor gasoline consumption (Table 5.13a) divided

by total motor gasoline product supplied (Table 5.11), and then multiplied by fuel ethanol consumption (Table 10.3).

**Table 10.2b Sources**

**Industrial Sector, Hydroelectric Power:** • 1949–1988: EIA, *AER 2006*, Tables 8.1 and A6. • 1989 forward: EIA, *AER 2006*, Tables 8.2d and A6.

**Industrial Sector, Geothermal:** Oregon Institute of Technology, Geo-Heat Center.

**Industrial Sector, Wood:** • 1949–1979: EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2. • 1980–1983: EIA, *Estimates of U.S. Wood Energy Consumption 1980–1983*, Table ES1. • 1984: EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 1. • 1985 and 1986: Values interpolated. • 1987: EIA, *Estimates of Biofuels Consumption in the United States During 1987*, Table 2. • 1988: Value interpolated. • 1989 forward: EIA, *AER 2006*, Table 8.7c; and EIA, CNEAF, estimates based on Form EIA-846, "Manufacturing Energy Consumption Survey."

**Industrial Sector, Waste:** • 1981: EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 8, total waste consumption minus electric power sector waste consumption (see *AER 2006*, Table 10.2c). • 1982 and 1983: EIA, CNEAF, estimates for total waste consumption minus electric power sector waste consumption (see *AER 2006*, Table 10.2c). • 1984: EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 8, total waste consumption minus electric power sector waste consumption (see *AER 2006*, Table 10.2c). • 1985 and 1986: Values interpolated. • 1987: EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 8, total waste consumption minus electric power sector waste consumption (see *AER 2006*, Table 10.2c). • 1988: Value interpolated. • 1989 forward: EIA, *AER 2006*, Table 8.7c; and EIA, CNEAF, estimates based on information presented in Government Advisory Associates, *Resource Recovery Yearbook* and *Methane Recovery Yearbook*, and information provided by the U.S. Environmental Protection Agency, Landfill Methane Outreach Program.

**Industrial Sector, Ethanol:** EIA, *AER 2006*, Tables 5.11, 5.13b, and 10.3. Calculated as industrial sector motor gasoline consumption (Table 5.13b) divided by total motor gasoline product supplied (Table 5.11), and then multiplied by fuel ethanol consumption (Table 10.3).

**Industrial Sector, Losses and Co-products:** EIA, *AER 2006*, Table 10.3.

**Transportation Sector, Ethanol:** EIA, *AER 2006*, Tables 5.11, 5.13c, and 10.3. Calculated as transportation sector motor gasoline consumption (Table 5.13c) divided by total motor gasoline product supplied (Table 5.11), and then multiplied by fuel ethanol consumption (Table 10.3).

**Transportation Sector, Biodiesel:** EIA, *AER 2006*, Table 10.3.

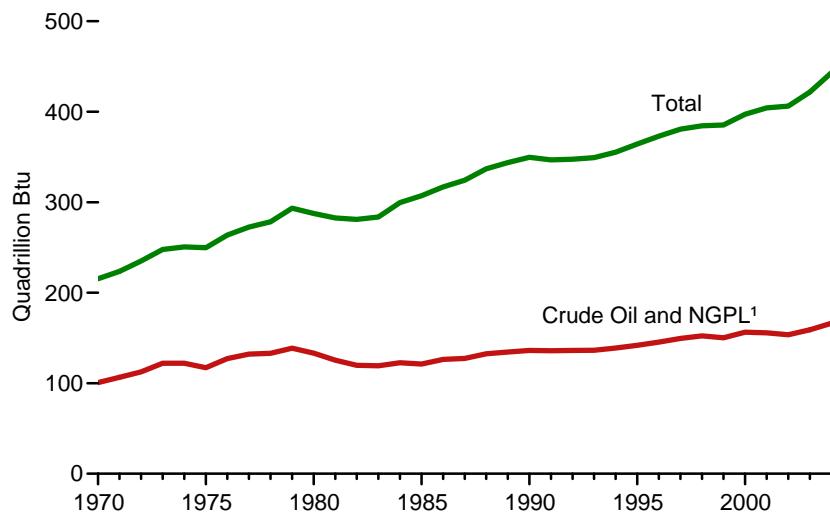
# International Energy



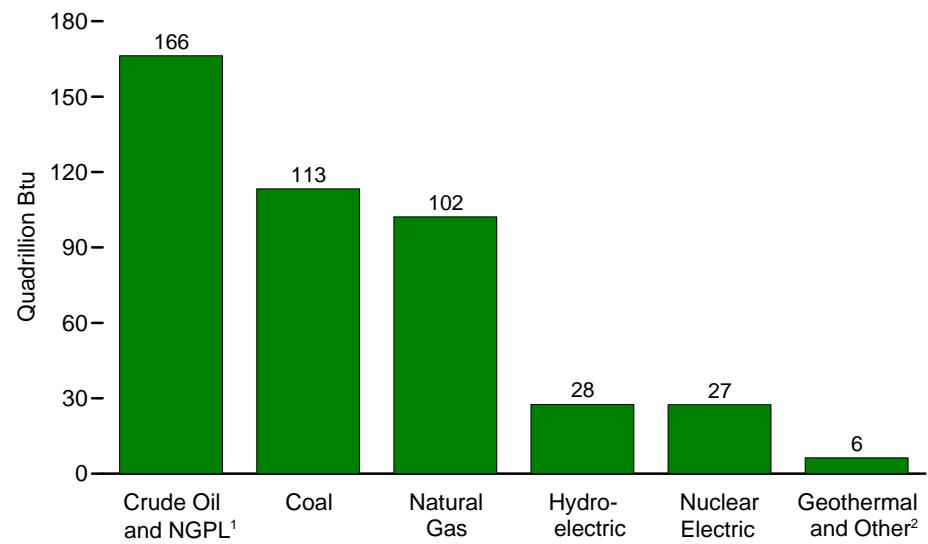
Drilling rig, Gansu Province, People's Republic of China. Source: U.S. Department of Energy.

**Figure 11.1 World Primary Energy Production by Source**

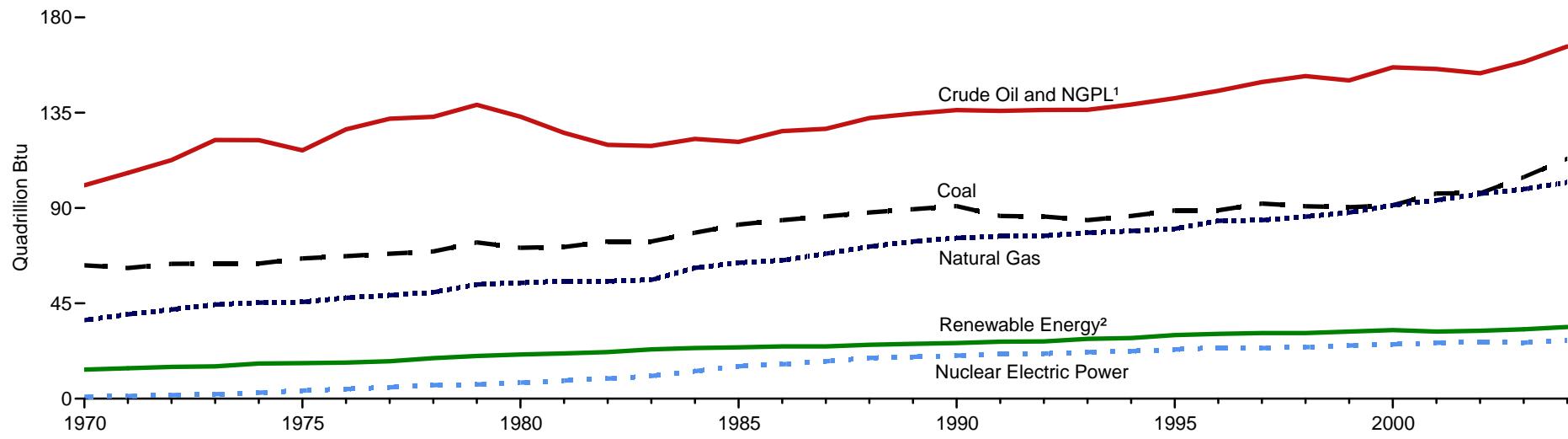
**Total and Crude Oil and NGPL<sup>1</sup>, 1970-2004**



**By Source, 2004**



**By Source, 1970-2004**



<sup>1</sup> Natural gas plant liquids.

<sup>2</sup> Net electricity generation from hydroelectric power, geothermal, wood, waste, solar, and wind. Data for the United States also include other renewable energy.

Notes: • Crude oil includes lease condensate. • Because vertical scales differ, graphs should not be compared.

Source: Table 11.1.

**Table 11.1 World Primary Energy Production by Source, 1970-2004**

(Quadrillion Btu)

Year	Coal	Natural Gas <sup>1</sup>	Crude Oil <sup>2</sup>	Natural Gas Plant Liquids	Nuclear Electric Power <sup>3</sup>	Hydroelectric Power <sup>3</sup>	Geothermal <sup>3</sup> and Other <sup>4</sup>	Total
1970	62.96	37.09	97.09	3.61	0.90	12.15	1.59	215.39
1971	61.72	39.80	102.70	3.85	1.23	12.74	1.61	223.64
1972	63.65	42.08	108.52	4.09	1.66	13.31	1.68	234.99
1973	63.87	44.44	117.88	4.23	2.15	13.52	1.73	247.83
1974	63.79	45.35	117.82	4.22	2.86	14.84	1.76	250.64
1975	66.20	45.67	113.08	4.12	3.85	15.03	1.74	249.69
1976	67.32	47.62	122.92	4.24	4.52	15.08	1.97	263.67
1977	68.46	48.85	127.75	4.40	5.41	15.56	2.11	272.54
1978	69.56	50.26	128.51	4.55	6.42	16.80	2.32	278.41
1979	73.83	53.93	133.87	4.87	6.69	17.69	2.48	293.36
1980	71.24	54.73	128.04	5.10	7.58	17.90	2.94	287.53
1981	71.63	55.56	120.11	5.37	8.53	18.26	3.10	282.56
1982	74.25	55.49	114.45	5.35	9.51	18.71	3.27	281.05
1983	74.25	56.12	113.97	5.36	10.72	19.69	3.56	283.68
1984	78.38	61.78	116.88	5.73	12.99	20.19	3.70	299.65
1985	82.20	64.22	115.37	5.83	15.30	20.42	3.78	307.13
1986	84.28	65.32	120.18	6.15	16.25	20.89	3.78	316.85
1987	86.08	68.48	121.07	6.35	17.64	20.90	3.79	324.33
1988	87.94	71.80	125.84	6.65	19.23	21.48	3.96	336.90
1989	89.43	74.24	127.83	6.69	19.74	21.53	4.34	343.80
1990	90.93	75.87	129.35	6.87	20.36	22.35	3.93	349.66
1991	86.29	76.69	128.73	7.12	21.18	22.83	4.03	346.86
1992	86.05	76.90	128.93	7.36	21.28	22.71	4.29	347.53
1993	84.28	78.41	128.72	7.66	22.01	23.94	4.31	349.32
1994	86.27	79.18	130.56	8.27	22.41	24.15	4.49	355.32
1995	88.87	80.24	133.32	8.55	23.26	25.34	4.64	364.23
1996	88.92	83.99	136.61	8.76	24.11	25.79	4.81	372.98
1997	92.15	84.29	140.52	8.94	23.88	26.07	4.91	380.75
1998	90.86	85.95	143.14	9.17	24.32	26.06	4.89	384.39
1999	90.43	87.89	140.79	9.47	25.09	26.56	5.09	385.32
2000	91.36	91.34	146.55	9.87	25.66	27.01	5.35	397.13
2001	96.89	93.74	145.32	10.32	26.39	26.39	5.25	404.30
2002	97.05	96.72	143.11	10.53	26.68	26.44	5.58	406.12
2003	104.61	98.93	147.97	11.02	26.45	26.83	5.90	421.71
2004 <sup>P</sup>	113.30	102.19	154.79	11.48	27.47	27.53	6.33	443.10

<sup>1</sup> Dry production.

<sup>2</sup> Includes lease condensate.

<sup>3</sup> Net generation, i.e., gross generation less plant use.

<sup>4</sup> Includes net electricity generation from wood, waste, solar, and wind. Data for the United States also include other renewable energy.

P=Preliminary.

Notes: • Data in this table do not include recent updates for the United States (see Table 1.2) or for

other countries (see the Energy Information Administration's "International Energy Annual 2005"). • See Note 1, "World Primary Energy Production," at end of section. • Totals may not equal sum of components due to independent rounding.

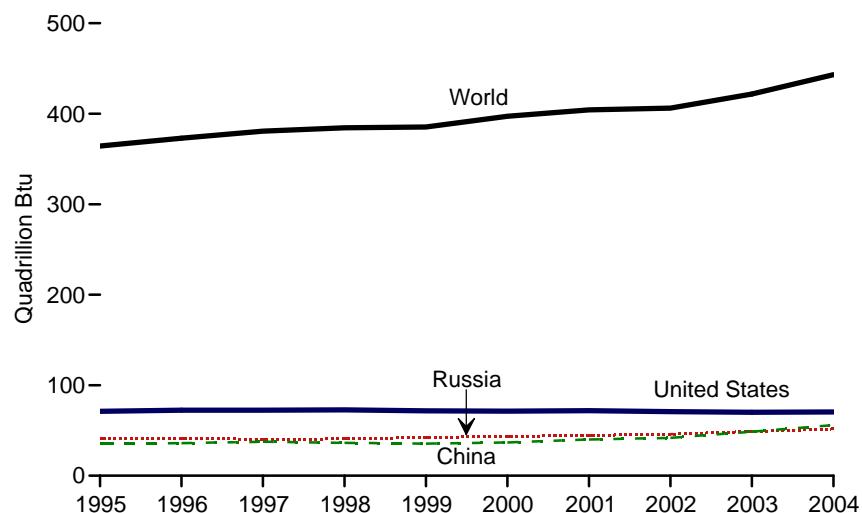
Web Page: For related information, see <http://www.eia.doe.gov/international>.

Sources: • 1970-1979—Energy Information Administration (EIA), International Energy Database.

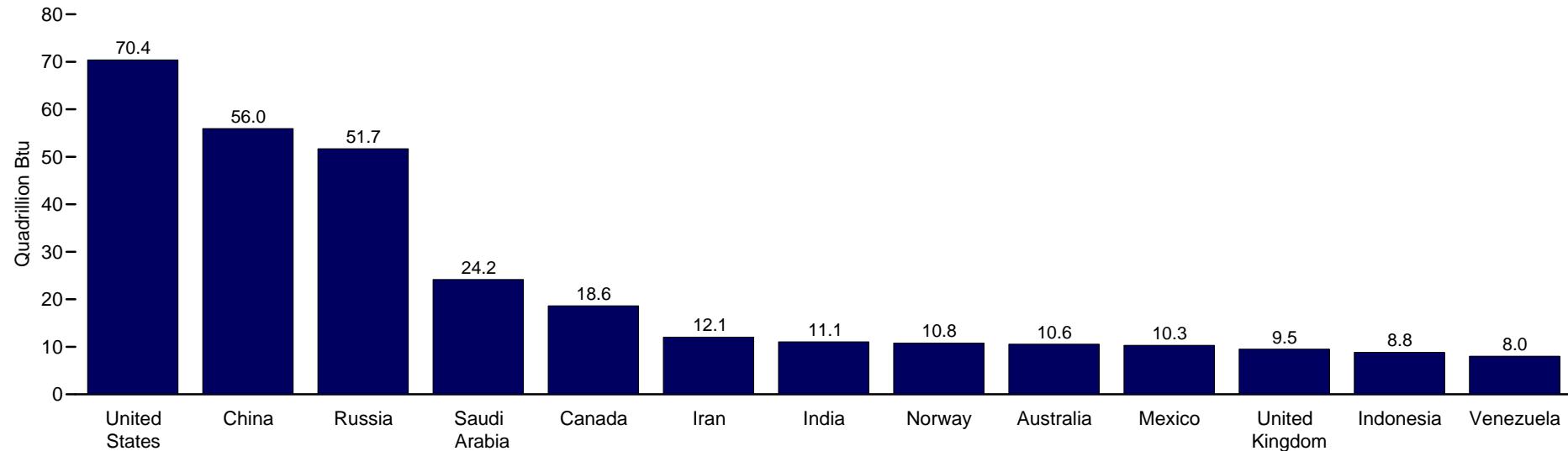
• 1980 forward—EIA, "International Energy Annual 2004" (May-July 2006), Tables F1-F8.

**Figure 11.2 World Primary Energy Production by Region and Country**

**World and Top Producing Countries, 1995-2004**



**Top Producing Countries, 2004**



<sup>1</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.2.

**Table 11.2 World Primary Energy Production by Region, 1995-2004**  
 (Quadrillion Btu)

Region and Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 P
<b>North, Central, and South America .....</b>	<b>117.13</b>	<b>120.95</b>	<b>123.14</b>	<b>124.37</b>	<b>122.95</b>	<b>124.80</b>	<b>125.46</b>	<b>125.34</b>	<b>124.26</b>	<b>126.48</b>
Brazil .....	4.51	4.87	5.10	5.52	5.93	6.42	6.21	6.76	7.11	7.21
Canada .....	16.83	17.22	17.48	17.43	17.68	18.12	18.02	18.35	18.31	18.62
Mexico .....	8.03	8.75	9.06	9.31	9.06	9.34	9.54	10.81	10.08	10.31
United States .....	71.13	72.47	72.46	72.84	71.71	71.29	71.91	70.86	70.14	70.39
Venezuela .....	8.08	8.62	9.48	9.45	8.54	9.37	9.23	8.16	7.32	8.03
Other .....	8.55	9.02	9.56	9.82	10.04	10.25	10.55	10.40	11.31	11.93
<b>Europe<sup>1</sup> .....</b>	<b>49.09</b>	<b>51.81</b>	<b>51.72</b>	<b>50.66</b>	<b>51.03</b>	<b>50.82</b>	<b>51.41</b>	<b>51.20</b>	<b>50.67</b>	<b>50.61</b>
France .....	4.98	5.04	4.94	4.79	4.94	5.04	5.15	5.14	5.16	5.18
Germany .....	5.59	5.49	5.57	5.26	5.31	5.32	5.28	5.30	5.27	5.36
Netherlands .....	2.91	3.25	2.88	2.77	2.56	2.47	2.63	2.61	2.53	2.94
Norway .....	8.35	9.26	9.59	9.33	9.53	10.27	10.28	10.69	10.64	10.78
Poland .....	3.60	3.83	3.84	3.36	3.51	3.06	3.08	3.09	3.09	3.04
United Kingdom .....	10.78	11.56	11.33	11.53	11.89	11.09	11.14	10.99	10.60	9.51
Other .....	12.89	13.37	13.58	13.62	13.30	13.57	13.85	13.38	13.38	13.79
<b>Eurasia<sup>2</sup> .....</b>	<b>52.20</b>	<b>51.91</b>	<b>50.51</b>	<b>50.80</b>	<b>53.18</b>	<b>55.69</b>	<b>57.70</b>	<b>59.46</b>	<b>63.21</b>	<b>66.71</b>
Kazakhstan .....	2.29	2.38	2.44	2.40	2.58	3.24	3.70	4.00	4.36	4.93
Russia .....	41.44	41.35	40.38	40.76	42.41	43.37	44.52	45.89	48.85	51.69
Ukraine .....	3.62	3.04	3.01	3.04	3.09	3.08	3.08	3.08	3.21	3.24
Other .....	4.85	5.14	4.68	4.61	5.10	6.01	6.41	6.49	6.80	6.85
<b>Middle East .....</b>	<b>48.33</b>	<b>49.43</b>	<b>51.72</b>	<b>54.88</b>	<b>53.80</b>	<b>57.48</b>	<b>56.16</b>	<b>54.25</b>	<b>57.61</b>	<b>62.08</b>
Iran .....	9.35	9.65	9.84	9.90	10.00	10.40	10.67	10.45	11.36	12.05
Iraq .....	1.35	1.39	2.60	4.71	5.47	5.62	5.22	4.42	2.84	4.38
Kuwait .....	4.81	4.94	4.85	5.02	4.60	5.04	4.81	4.58	5.14	5.71
Saudi Arabia .....	20.66	20.82	21.24	21.42	20.18	21.59	20.95	20.27	23.05	24.16
United Arab Emirates .....	6.14	6.34	6.50	6.61	6.25	6.77	6.59	6.50	7.13	7.42
Other .....	6.02	6.30	6.69	7.24	7.29	8.06	7.91	8.03	8.09	8.36
<b>Africa .....</b>	<b>24.15</b>	<b>24.72</b>	<b>26.15</b>	<b>26.34</b>	<b>26.66</b>	<b>27.84</b>	<b>28.10</b>	<b>28.00</b>	<b>30.10</b>	<b>32.04</b>
Algeria .....	5.13	5.28	5.63	5.75	6.03	6.29	6.26	6.30	7.00	7.14
Libya .....	3.23	3.28	3.39	3.26	3.07	3.30	3.21	3.11	3.30	3.61
Nigeria .....	4.53	4.56	4.85	4.90	4.89	5.18	5.45	5.16	5.71	5.90
South Africa .....	4.84	4.86	5.44	5.52	5.43	5.58	5.62	5.52	5.91	6.06
Other .....	6.43	6.74	6.85	6.90	7.24	7.50	7.56	7.91	8.18	9.32
<b>Asia and Oceania<sup>1</sup> .....</b>	<b>73.31</b>	<b>74.17</b>	<b>77.50</b>	<b>77.35</b>	<b>77.70</b>	<b>80.50</b>	<b>85.47</b>	<b>87.87</b>	<b>95.86</b>	<b>105.18</b>
Australia .....	7.42	7.57	8.31	8.66	8.87	9.68	10.27	10.51	10.35	10.56
China .....	35.46	36.06	37.65	36.37	35.42	36.68	39.97	41.88	48.65	55.95
India .....	9.48	8.75	9.17	9.37	9.58	9.83	10.29	10.10	10.65	11.06
Indonesia .....	6.97	7.42	7.41	7.56	8.02	7.87	8.09	8.32	8.55	8.84
Japan .....	4.12	4.23	4.48	4.58	4.36	4.41	4.38	4.06	3.67	4.03
Malaysia .....	2.59	2.84	3.01	3.14	3.16	3.21	3.31	3.44	3.84	4.10
Other .....	7.26	7.30	7.48	7.66	8.29	8.83	9.17	9.56	10.15	10.65
<b>World .....</b>	<b>364.23</b>	<b>372.98</b>	<b>380.75</b>	<b>384.39</b>	<b>385.32</b>	<b>397.13</b>	<b>404.30</b>	<b>406.12</b>	<b>421.71</b>	<b>443.10</b>

<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary.

Notes: • Data in this table do not include recent updates for the United States (see Table 1.2) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • See Note 1, "World Primary Energy Production," at end of section. • World primary energy production includes production of crude oil (including lease condensate), natural gas plant liquids, dry natural gas, and coal;

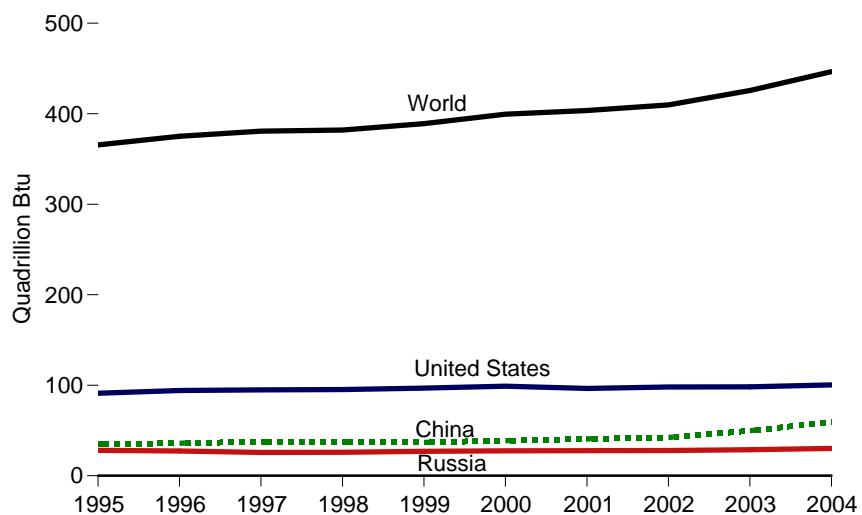
and net electricity generation from nuclear electric power, hydroelectric power, wood, waste, geothermal, solar, and wind. Data for the United States also include other renewable energy. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

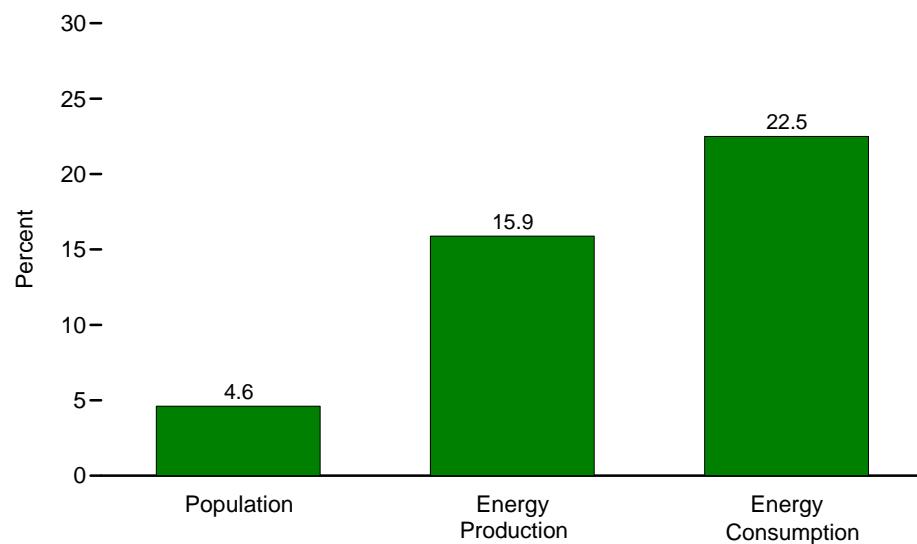
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table F1.

**Figure 11.3 World Primary Energy Consumption**

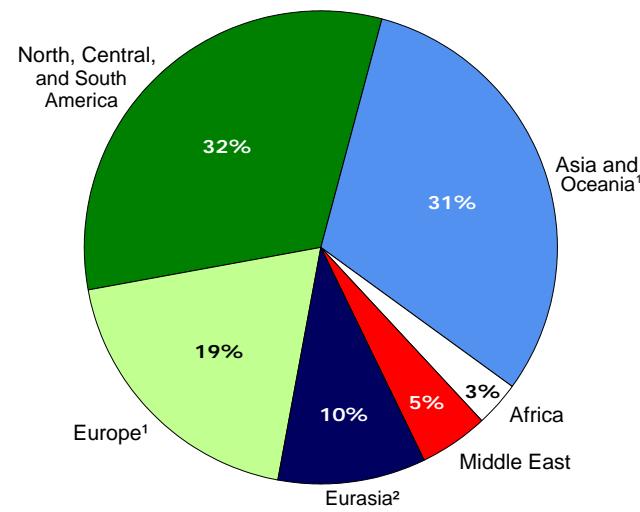
**World and Top Consuming Countries, 1995-2004**



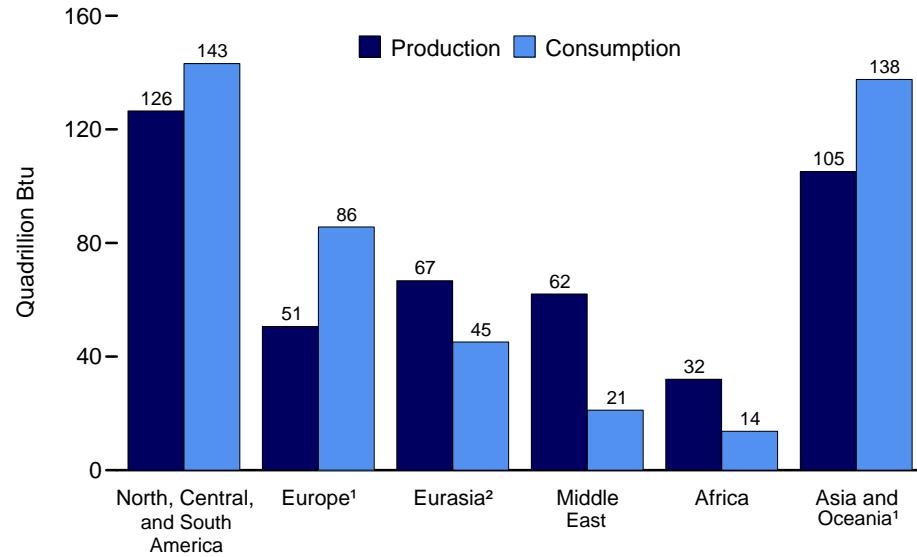
**U.S. Share of World, 2004**



**Regional Consumption Shares, 2004**



**Production and Consumption by Region, 2004**



<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 11.2, 11.3, and D1.

**Table 11.3 World Primary Energy Consumption by Region, 1995-2004**  
 (Quadrillion Btu)

Region and Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 P
<b>North, Central, and South America .....</b>	<b>126.46</b>	<b>130.84</b>	<b>132.59</b>	<b>133.64</b>	<b>136.09</b>	<b>139.26</b>	<b>136.83</b>	<b>138.58</b>	<b>140.00</b>	<b>143.16</b>
Argentina .....	2.31	2.39	2.46	2.57	2.60	2.66	2.61	2.47	2.66	2.79
Brazil .....	7.05	7.48	7.88	8.14	8.29	8.58	8.50	8.60	8.71	9.08
Canada .....	12.22	12.55	12.64	12.33	12.92	13.05	12.82	13.08	13.52	13.60
Mexico .....	5.43	5.53	5.68	5.96	6.04	6.32	6.26	6.33	6.51	6.61
United States .....	91.20	94.23	94.80	95.20	96.84	98.98	96.50	97.97	98.27	100.41
Venezuela .....	2.47	2.57	2.66	2.85	2.73	2.77	3.03	2.93	2.72	2.88
Other .....	5.79	6.09	6.46	6.59	6.68	6.90	7.11	7.20	7.60	7.79
<b>Europe<sup>1</sup> .....</b>	<b>76.58</b>	<b>79.31</b>	<b>79.55</b>	<b>80.18</b>	<b>80.17</b>	<b>81.28</b>	<b>82.46</b>	<b>82.20</b>	<b>84.01</b>	<b>85.65</b>
Belgium .....	2.33	2.53	2.60	2.65	2.60	2.69	2.67	2.64	2.72	2.78
France .....	10.09	10.43	10.38	10.60	10.73	10.87	11.09	11.01	11.12	11.25
Germany .....	14.31	14.40	14.31	14.33	14.11	14.26	14.62	14.34	14.59	14.69
Italy .....	7.08	7.11	7.22	7.42	7.56	7.63	7.68	7.70	7.98	8.27
Netherlands .....	3.58	3.73	3.70	3.69	3.68	3.79	3.93	3.94	4.00	4.10
Poland .....	3.72	4.15	4.09	3.86	3.99	3.63	3.46	3.45	3.62	3.67
Spain .....	4.31	4.42	4.69	4.93	5.16	5.53	5.79	5.87	6.18	6.40
Sweden .....	2.24	2.21	2.25	2.32	2.28	2.20	2.35	2.22	2.15	2.32
Turkey .....	2.49	2.75	2.93	3.00	2.91	3.16	2.89	3.15	3.31	3.53
United Kingdom .....	9.45	10.05	9.74	9.74	9.76	9.68	9.82	9.69	9.88	10.04
Other .....	17.00	17.54	17.64	17.64	17.38	17.82	18.17	18.20	18.47	18.60
<b>Eurasia<sup>2</sup> .....</b>	<b>42.43</b>	<b>41.19</b>	<b>38.97</b>	<b>38.75</b>	<b>39.82</b>	<b>40.60</b>	<b>41.04</b>	<b>41.71</b>	<b>43.42</b>	<b>45.18</b>
Russia .....	27.94	27.36	25.77	25.96	27.01	27.46	27.70	27.93	28.76	30.06
Ukraine .....	7.23	6.34	6.07	5.86	5.76	5.75	5.65	5.83	6.26	6.49
Uzbekistan .....	1.87	1.89	1.87	1.84	1.87	1.94	2.03	2.09	2.12	2.23
Other .....	5.40	5.60	5.26	5.10	5.18	5.45	5.66	5.86	6.28	6.40
<b>Middle East .....</b>	<b>13.87</b>	<b>14.62</b>	<b>15.67</b>	<b>16.36</b>	<b>16.76</b>	<b>17.32</b>	<b>18.06</b>	<b>19.08</b>	<b>19.86</b>	<b>21.14</b>
Iran .....	3.82	3.95	4.43	4.58	4.83	5.01	5.38	5.88	6.17	6.45
Saudi Arabia .....	3.82	4.10	4.36	4.54	4.59	4.84	5.13	5.37	5.75	6.10
Other .....	6.23	6.57	6.88	7.25	7.34	7.47	7.55	7.82	7.94	8.59
<b>Africa .....</b>	<b>10.64</b>	<b>10.92</b>	<b>11.39</b>	<b>11.27</b>	<b>11.53</b>	<b>11.98</b>	<b>12.59</b>	<b>12.68</b>	<b>13.32</b>	<b>13.71</b>
Egypt .....	1.58	1.72	1.79	1.85	1.89	2.01	2.25	2.27	2.45	2.52
South Africa .....	4.11	4.16	4.55	4.35	4.42	4.55	4.64	4.52	4.89	5.12
Other .....	4.94	5.03	5.05	5.08	5.22	5.42	5.70	5.89	5.98	6.06
<b>Asia and Oceania<sup>1</sup> .....</b>	<b>95.60</b>	<b>98.18</b>	<b>102.65</b>	<b>101.69</b>	<b>104.72</b>	<b>109.13</b>	<b>112.55</b>	<b>115.47</b>	<b>125.05</b>	<b>137.61</b>
Australia .....	4.05	4.22	4.56	4.60	4.82	4.83	4.99	5.10	5.09	5.27
China .....	35.15	35.92	37.56	37.00	36.91	38.80	40.83	42.38	49.73	59.57
India .....	11.49	11.14	11.76	12.22	12.80	13.55	13.97	13.96	14.44	15.42
Indonesia .....	3.26	3.52	3.65	3.56	3.92	4.10	4.46	4.63	4.70	4.69
Japan .....	20.71	21.26	21.94	21.52	22.02	22.45	22.18	21.99	22.20	22.62
Malaysia .....	1.47	1.64	1.67	1.69	1.74	1.87	2.11	2.24	2.46	2.52
South Korea .....	6.52	6.87	7.47	6.90	7.55	7.92	8.02	8.42	8.69	8.99
Taiwan .....	2.86	3.06	3.20	3.39	3.54	3.77	3.85	4.01	4.20	4.40
Thailand .....	2.24	2.44	2.59	2.43	2.50	2.58	2.70	2.94	3.23	3.42
Other .....	7.84	8.11	8.25	8.38	8.93	9.27	9.44	9.79	10.31	10.72
<b>World .....</b>	<b>365.58</b>	<b>375.06</b>	<b>380.82</b>	<b>381.90</b>	<b>389.09</b>	<b>399.57</b>	<b>403.53</b>	<b>409.73</b>	<b>425.66</b>	<b>446.44</b>

<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary.

Notes: • Data in this table do not include recent updates for the United States (see Table 1.3) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • World primary energy consumption includes consumption of petroleum products (including natural gas plant liquids, and crude oil burned as fuel), dry natural gas, and coal (including net imports of coal coke); and the

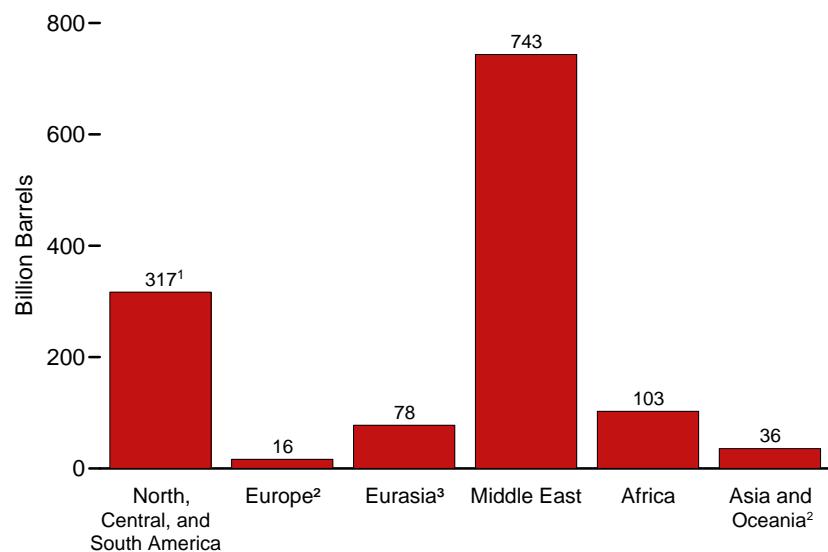
consumption of net electricity generated from nuclear electric power, hydroelectric power, wood, waste, geothermal, solar, and wind. It also includes, for the United States, the consumption of renewable energy by the end-use sectors. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

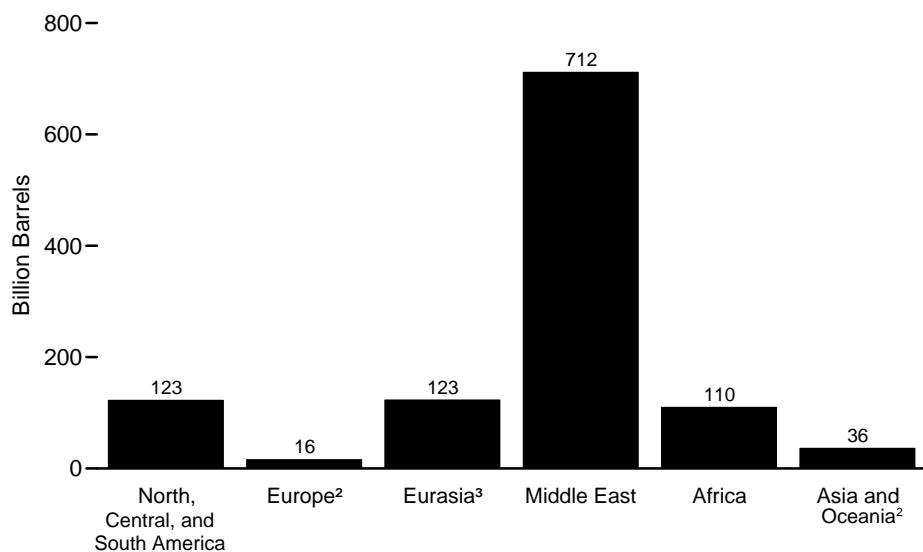
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table 1.8.

**Figure 11.4 World Crude Oil and Natural Gas Reserves, January 1, 2006**

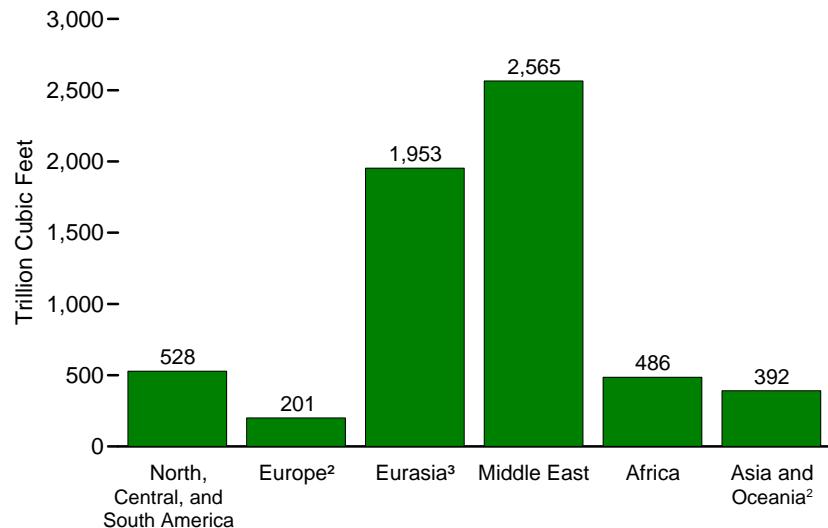
**Crude Oil Reserves: *Oil and Gas Journal***



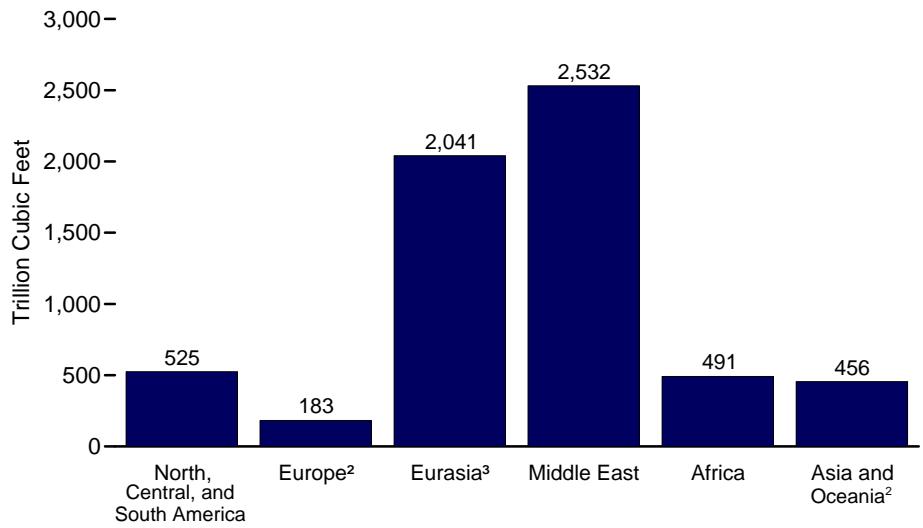
**Crude Oil Reserves: *World Oil***



**Natural Gas Reserves: *Oil and Gas Journal***



**Natural Gas Reserves: *World Oil***



<sup>1</sup> Includes 174.1 billion barrels of bitumen in oil sands in Alberta, Canada.

<sup>2</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>3</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Source: Table 11.4.

**Table 11.4 World Crude Oil and Natural Gas Reserves, January 1, 2006**

Region and Country	Crude Oil		Natural Gas		Region and Country	Crude Oil		Natural Gas					
	<i>Oil &amp; Gas Journal</i>	<i>World Oil</i>	<i>Oil &amp; Gas Journal</i>	<i>World Oil</i>		<i>Oil &amp; Gas Journal</i>	<i>World Oil</i>	<i>Oil &amp; Gas Journal</i>	<i>World Oil</i>				
	Billion Barrels	Trillion Cubic Feet	Billion Barrels	Trillion Cubic Feet		Billion Barrels	Trillion Cubic Feet	<i>Oil &amp; Gas Journal</i>	<i>World Oil</i>				
<b>North America .....</b>	<b>213.4</b>	<b>46.1</b>	<b>276.9</b>	<b>278.0</b>	<b>Middle East .....</b>	<b>743.4</b>	<b>711.6</b>	<b>2,565.4</b>	<b>2,531.6</b>				
Canada .....	178.8	12.0	56.6	53.7	Bahrain .....	.1	NR	3.3	NR				
Mexico .....	12.9	12.4	16.0	20.0	Iran .....	132.5	131.5	971.2	965.0				
United States .....	21.8	21.8	204.4	204.4	Iraq .....	115.0	115.0	112.0	84.0				
<b>Central and South America .....</b>	<b>103.4</b>	<b>76.5</b>	<b>250.8</b>	<b>246.9</b>	Kuwait <sup>5</sup> .....	104.0	100.9	56.0	57.0				
Argentina .....	2.3	2.4	18.9	21.4	Oman .....	5.5	4.8	29.3	27.1				
Bolivia .....	.4	.5	24.0	26.7	Qatar .....	15.2	20.3	910.5	906.0				
Brazil .....	11.2	11.9	11.5	11.9	Saudi Arabia <sup>5</sup> .....	266.8	262.2	241.8	243.5				
Chile .....	.2	(s)	3.5	.9	Syria .....	2.5	3.0	8.5	12.8				
Colombia .....	1.5	1.5	4.0	6.7	United Arab Emirates .....	97.8	70.3	214.4	205.6				
Cuba .....	.8	.6	2.5	.6	Yemen .....	4.0	3.0	16.9	17.0				
Ecuador .....	4.6	5.1	.3	.4	Other <sup>2</sup> .....	(s)	.7	1.6	13.7				
Peru .....	.9	1.0	8.7	8.7	<b>Africa .....</b>	<b>102.6</b>	<b>109.8</b>	<b>485.8</b>	<b>490.9</b>				
Trinidad and Tobago .....	1.0	.6	25.9	18.8	Algeria .....	11.4	11.4	160.5	160.7				
Venezuela .....	79.7	52.7	151.4	150.9	Angola .....	5.4	9.1	1.6	4.0				
Other <sup>2</sup> .....	.6	.2	.1	(s)	Cameroon .....	.4	NR	3.9	NR				
<b>Europe <sup>3</sup> .....</b>	<b>16.4</b>	<b>16.0</b>	<b>200.7</b>	<b>182.8</b>	Congo (Brazzaville) .....	1.5	1.9	3.2	4.2				
Austria .....	.1	.1	.5	.8	Egypt .....	3.7	3.7	58.5	66.8				
Croatia .....	.1	.1	1.0	1.1	Equatorial Guinea .....	(s)	1.8	1.3	3.4				
Denmark .....	1.3	1.3	2.8	2.5	Gabon .....	2.5	2.1	1.2	1.5				
Germany .....	.4	.2	9.1	6.6	Libya .....	39.1	34.1	52.7	51.5				
Hungary .....	.1	.1	1.2	2.3	Mozambique .....	.0	.0	4.5	.0				
Italy .....	.6	.8	8.0	6.0	Nigeria .....	35.9	37.2	184.7	182.0				
Netherlands .....	.1	.2	62.0	50.5	Sudan .....	.6	6.4	3.0	4.0				
Norway .....	7.7	8.0	84.3	83.3	Tunisia .....	.3	.7	2.8	3.9				
Poland .....	.1	.3	5.8	5.1	Other <sup>2</sup> .....	1.8	1.5	8.1	8.9				
Romania .....	1.0	.4	3.6	4.5	<b>Asia and Oceania <sup>3</sup> .....</b>	<b>35.9</b>	<b>36.4</b>	<b>391.6</b>	<b>455.7</b>				
Serbia and Montenegro .....	.1	NR	1.7	NR	Australia .....	1.4	4.0	27.6	119.5				
United Kingdom .....	4.0	3.8	18.8	17.8	Bangladesh .....	(s)	NR	5.0	NR				
Other <sup>2</sup> .....	.9	.7	2.1	2.3	Brunei .....	1.4	1.1	13.8	12.0				
<b>Eurasia <sup>4</sup> .....</b>	<b>77.8</b>	<b>123.2</b>	<b>1,952.6</b>	<b>2,040.7</b>	Burma .....	.1	.2	10.0	12.7				
Azerbaijan .....	7.0	NR	30.0	NR	China .....	18.3	16.2	53.3	55.6				
Kazakhstan .....	9.0	NR	65.0	NR	India .....	5.8	4.0	38.9	27.3				
Russia .....	60.0	74.4	1,680.0	1,688.7	Indonesia .....	4.3	5.0	97.8	91.5				
Turkmenistan .....	.5	NR	71.0	NR	Japan .....	.1	NR	1.4	NR				
Ukraine .....	.4	NR	39.6	NR	Malaysia .....	3.0	2.9	75.0	58.0				
Uzbekistan .....	.6	NR	66.2	NR	New Zealand .....	.1	.1	.9	2.0				
Other <sup>2</sup> .....	.3	48.8	.8	352.0	Pakistan .....	.3	.3	28.2	30.1				
NR=Not separately reported. (s)=Less than 0.05 billion barrels.													
<b>World .....</b>	<b>1,292.9</b>	<b>1,119.6</b>	<b>6,124.0</b>	<b>6,226.6</b>									

<sup>1</sup> Comprises 4.7 billion barrels of conventional crude oil and condensate and 174.1 billion barrels of bitumen in Alberta's oil sands.

<sup>2</sup> Includes data for those countries not separately reported.

<sup>3</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>4</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>5</sup> Data for Kuwait and Saudi Arabia include one-half of the reserves in the Neutral Zone between Kuwait and Saudi Arabia.

NR=Not separately reported. (s)=Less than 0.05 billion barrels.

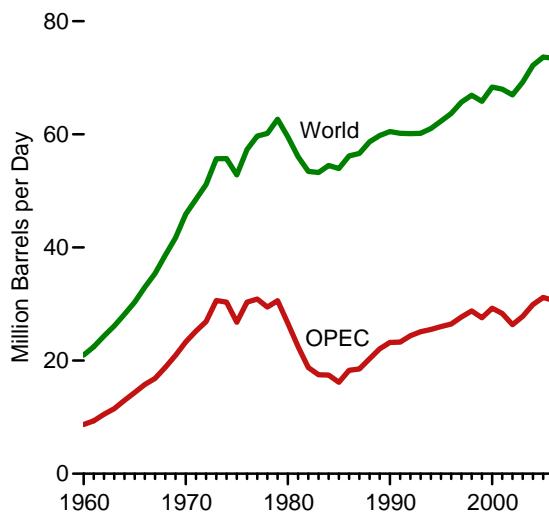
Notes: • All reserve figures except those for Eurasia and natural gas reserves in Canada are proved reserves recoverable with present technology and prices at the time of estimation. Eurasia and Canadian natural gas figures include proved and some probable reserves. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international/oilreserves.html>.

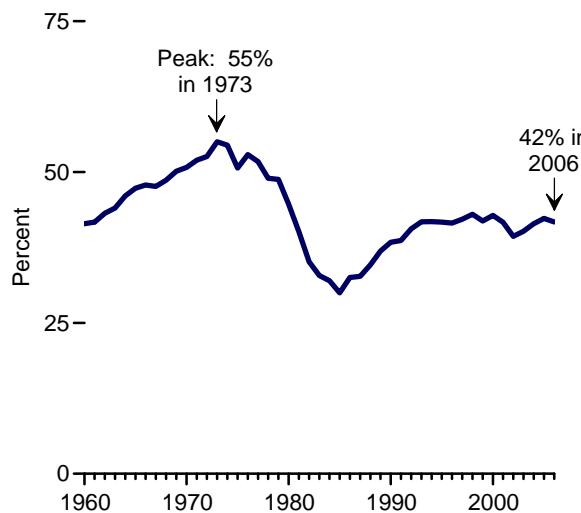
Source: Energy Information Administration, "International Energy Annual 2005" (June-July 2007), Table 8.1.

**Figure 11.5 World Crude Oil Production**

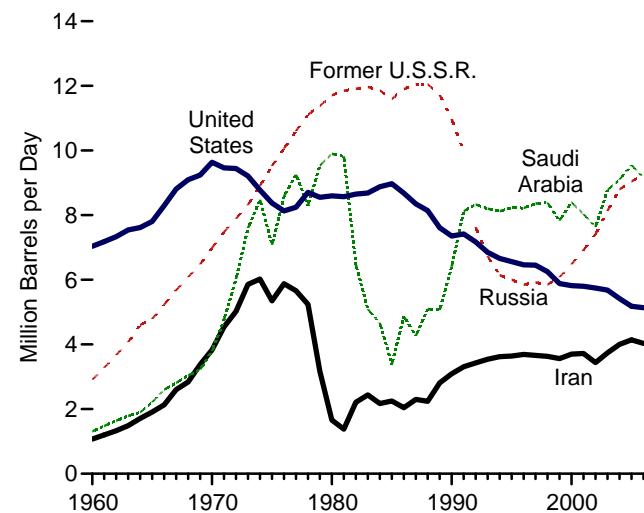
**World and OPEC, 1960-2006**



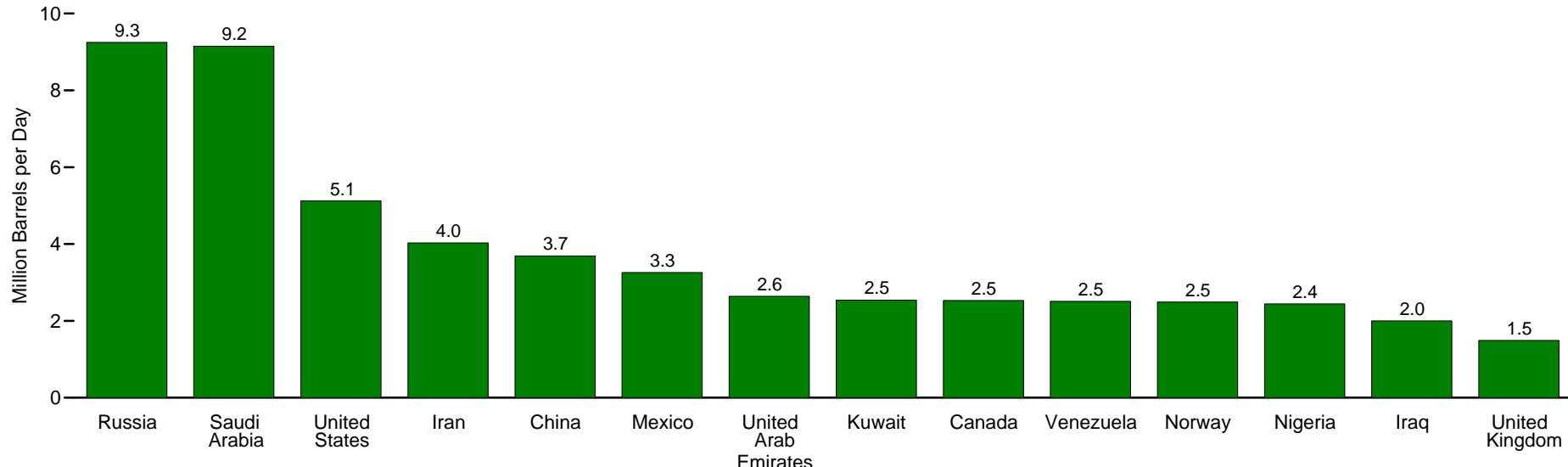
**OPEC's Share of World, 1960-2006**



**Top Producing Countries, 1960-2006**



**Top Producing Countries, 2006**



Notes: • OPEC=Organization of the Petroleum Exporting Countries. • Because vertical scales differ, graphs should not be compared.

Source: Table 11.5.

**Table 11.5 World Crude Oil Production, 1960-2006**  
 (Million Barrels per Day)

Year	Persian Gulf Nations <sup>1</sup>	Selected OPEC Producers								Selected Non-OPEC Producers								World	
		Iran	Iraq	Kuwait <sup>2</sup>	Nigeria	Saudi Arabia <sup>2</sup>	United Arab Emirates	Venezuela	Total OPEC <sup>3</sup>	Canada	China	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States	Total Non-OPEC <sup>3</sup>	
1960	5.27	1.07	0.97	1.69	0.02	1.31	0.00	2.85	8.70	0.52	0.10	0.27	0.00	2.91	--	(s)	7.04	12.29	20.99
1961	5.65	1.20	1.01	1.74	.05	1.48	.00	2.92	9.36	.61	.11	.29	.00	3.28	--	(s)	7.18	13.09	22.45
1962	6.19	1.33	1.01	1.96	.07	1.64	.01	3.20	10.51	.67	.12	.31	.00	3.67	--	(s)	7.33	13.84	24.35
1963	6.82	1.49	1.16	2.10	.08	1.79	.05	3.25	11.51	.71	.13	.31	.00	4.07	--	(s)	7.54	14.62	26.13
1964	7.61	1.71	1.26	2.30	.12	1.90	.19	3.39	12.98	.75	.18	.32	.00	4.60	--	(s)	7.61	15.20	28.18
1965	8.37	1.91	1.32	2.36	.27	2.21	.28	3.47	14.35	.81	.23	.32	.00	4.79	--	(s)	7.80	15.98	30.33
1966	9.32	2.13	1.39	2.48	.42	2.60	.36	3.37	15.77	.88	.29	.33	.00	5.23	--	(s)	8.30	17.19	32.96
1967	9.91	2.60	1.23	2.50	.32	2.81	.38	3.54	16.85	.96	.28	.36	.00	5.68	--	(s)	8.81	18.54	35.39
1968	10.91	2.84	1.50	2.61	.14	3.04	.50	3.60	18.79	1.19	.30	.39	.00	6.08	--	(s)	9.10	19.84	38.63
1969	11.95	3.38	1.52	2.77	.54	3.22	.63	3.59	20.91	1.13	.48	.46	.00	6.48	--	(s)	9.24	20.79	41.70
1970	13.39	3.83	1.55	2.99	1.08	3.80	.78	3.71	23.30	1.26	.60	.49	.00	6.99	--	(s)	9.64	22.59	45.89
1971	15.77	4.54	1.69	3.20	1.53	4.77	1.06	3.55	25.21	1.35	.78	.49	.01	7.48	--	(s)	9.46	23.31	48.52
1972	17.54	5.02	1.47	3.28	1.82	6.02	1.20	3.22	26.89	1.53	.90	.51	.03	7.89	--	(s)	9.44	24.25	51.14
1973	20.67	5.86	2.02	3.02	2.05	7.60	1.53	3.37	30.63	1.80	1.09	.47	.03	8.32	--	(s)	9.21	25.05	55.68
1974	21.28	6.02	1.97	2.55	2.26	8.48	1.68	2.98	30.35	1.55	1.32	.57	.04	8.91	--	(s)	8.77	25.37	55.72
1975	18.93	5.35	2.26	2.08	1.78	7.08	1.66	2.35	26.77	1.43	1.49	.71	.19	9.52	--	.01	8.37	26.06	52.83
1976	21.51	5.88	2.42	2.15	2.07	8.58	1.94	2.29	30.33	1.31	1.67	.83	.28	10.06	--	.25	8.13	27.01	57.34
1977	21.73	5.66	2.35	1.97	2.09	9.25	2.00	2.24	30.89	1.32	1.87	.98	.28	10.60	--	.77	8.24	28.82	59.71
1978	20.61	5.24	2.56	2.13	1.90	8.30	1.83	2.17	29.46	1.32	2.08	1.21	.36	11.11	--	1.08	8.71	30.70	60.16
1979	21.07	3.17	3.48	2.50	2.30	9.53	1.83	2.36	30.58	1.50	2.12	1.46	.40	11.38	--	1.57	8.55	32.09	62.67
1980	17.96	1.66	2.51	1.66	2.06	9.90	1.71	2.17	26.61	1.44	2.11	1.94	R.49	11.71	--	1.62	8.60	R32.95	R59.56
1981	15.25	1.38	1.00	1.13	1.43	9.82	1.47	2.10	22.48	1.29	2.01	2.31	R.47	11.85	--	1.81	8.57	R33.57	R56.05
1982	12.16	2.21	1.01	.82	1.30	6.48	1.25	1.90	18.78	1.27	2.05	2.75	R.49	11.91	--	2.07	8.65	R34.68	R53.45
1983	11.08	2.44	1.01	1.06	1.24	5.09	1.15	1.80	17.50	1.36	2.12	2.69	.61	11.97	--	2.29	8.69	35.76	53.26
1984	10.78	2.17	1.21	1.16	1.39	4.66	1.15	1.80	17.44	1.44	2.30	2.78	R.71	11.86	--	2.48	8.88	R37.06	R54.50
1985	9.63	2.25	1.43	1.02	1.50	3.39	1.19	1.68	16.18	1.47	2.51	2.75	R.77	11.59	--	2.53	8.97	R37.79	R53.97
1986	11.70	2.04	1.69	1.42	1.47	4.87	1.33	1.79	18.28	1.47	2.62	2.44	R.84	11.90	--	2.54	8.68	R37.92	R56.20
1987	12.10	2.30	2.08	1.59	1.34	4.27	1.54	1.75	18.52	1.54	2.69	2.55	R.98	12.05	--	2.41	8.35	R38.11	R56.63
1988	13.46	2.24	2.69	1.49	1.45	5.09	1.57	1.90	20.32	1.62	2.73	2.51	R.11	12.05	--	2.23	8.14	R38.37	R58.69
1989	14.84	2.81	2.90	1.78	1.72	5.06	1.86	1.91	22.07	1.56	2.76	2.52	R.48	11.72	--	1.80	7.61	37.72	R59.79
1990	15.28	3.09	2.04	1.18	1.81	6.41	2.12	2.14	23.20	1.55	2.77	2.55	R.63	10.98	--	1.82	7.36	37.30	R60.49
1991	14.74	3.31	.31	.19	1.89	8.12	2.39	2.38	23.27	1.55	2.84	2.68	R.87	9.99	--	1.80	7.42	36.91	R60.19
1992	15.97	3.43	.43	1.06	1.94	8.33	2.27	2.37	24.40	1.61	2.85	2.67	R.23	--	7.63	1.83	7.17	35.72	R60.12
1993	16.71	3.54	.51	1.85	1.96	8.20	2.16	2.45	25.12	1.68	2.89	2.67	R.28	--	6.73	1.92	6.85	35.05	R60.17
1994	16.96	3.62	.55	2.03	1.93	8.12	2.19	2.59	25.51	1.75	2.94	2.69	R.25	--	6.14	2.37	6.66	35.53	R61.04
1995	17.21	3.64	.56	2.06	1.99	8.23	2.23	2.75	26.00	1.81	2.99	2.62	2.77	--	6.00	2.49	6.56	36.33	62.33
1996	17.37	3.69	.58	2.06	2.00	8.22	2.28	2.94	26.46	1.84	3.13	2.86	3.09	--	5.85	2.57	6.46	37.24	63.70
1997	18.10	3.66	1.16	2.01	2.13	8.36	2.32	3.28	27.71	1.92	3.20	3.02	3.14	--	5.92	2.52	6.45	37.98	65.69
1998	19.34	3.63	2.15	2.09	2.15	8.39	2.35	3.17	28.77	1.98	3.20	3.07	3.01	--	5.85	2.62	6.25	38.14	66.92
1999	18.67	3.56	2.51	1.90	2.13	7.83	2.17	2.83	27.58	1.91	3.20	2.91	3.02	--	6.08	2.68	5.88	38.27	65.85
2000	19.89	3.70	2.57	2.08	2.17	8.40	2.37	3.16	29.27	1.98	3.25	3.01	3.22	--	6.48	2.28	5.82	39.10	68.37
2001	19.10	3.72	2.39	2.00	2.26	8.03	2.21	3.01	28.34	2.03	3.30	3.13	3.23	--	6.92	2.28	5.80	39.64	67.98
2002	17.79	3.44	2.02	1.89	2.12	7.63	2.08	2.60	26.35	2.17	3.39	3.18	3.13	--	7.41	2.29	5.75	40.61	66.97
2003	19.06	3.74	1.31	R2.14	2.28	8.78	2.35	2.34	27.82	2.31	3.41	3.37	3.04	--	8.13	2.09	5.68	41.41	69.23
2004	20.79	4.00	2.01	2.38	2.33	9.10	2.48	2.56	29.92	2.40	3.49	3.38	2.95	--	8.80	1.85	5.42	42.30	72.22
2005	21.50	4.14	1.88	2.53	2.63	9.55	2.54	R2.56	31.16	2.37	3.61	3.33	2.70	--	R9.04	1.65	R5.18	R42.50	R73.65
2006 <sup>p</sup>	21.23	4.03	2.00	2.54	2.44	9.15	2.64	2.51	30.66	2.53	3.69	3.26	2.49	--	9.25	1.49	5.14	42.80	73.47

<sup>1</sup> Persian Gulf Nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>2</sup> Includes about one-half of the production in the Neutral Zone between Kuwait and Saudi Arabia.

<sup>3</sup> Ecuador (which withdrew from OPEC on December 31, 1992), Gabon (which withdrew from OPEC on December 31, 1994), and Angola (which joined OPEC on January 1, 2007) are included in "Total Non-OPEC" for all years.

R=Revised. P=Preliminary. --=Not applicable. (s)=Less than 0.005 million barrels per day.

Notes: • OPEC = Organization of the Petroleum Exporting Countries. See Glossary for membership.

• Includes lease condensate, excludes natural gas plant liquids. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

Sources: Selected OPEC Producers: • 1960-1972—OPEC, *Annual Statistical Bulletin* 1979.

• 1973-1979—Energy Information Administration (EIA), *International Energy Annual* (IEA), annual reports, and the International Energy Database. • 1980-2005—EIA, "International Energy Annual 2005" (June-July

2007), Table 2.2. • 2006—EIA, *Monthly Energy Review* (MER) (April 2007), Table 11.1a. China:

• 1960-1972—Central Intelligence Agency, unpublished data. • 1973-1979—EIA, IEA, annual reports, and the International Energy Database.

• 1980-2005—EIA, "International Energy Annual 2005" (June-July 2007), Table 2.2.

Former U.S.S.R.: • 1960-1969—U.S.S.R. Central Statistical Office, *Narodnoye Khozyaystvo SSSR* (National Economy USSR).

• 1970-1979—EIA, *International Petroleum Monthly*, February 2001, Table 4c.

• 1980-1991—EIA, "International Energy Annual 2005" (June-July 2007), Table 2.2.

Russia: • 1992-2005—EIA, "International Energy Annual 2005" (June-July 2007), Table 2.2. • 2006—EIA, MER (April 2007), Table 11.1b.

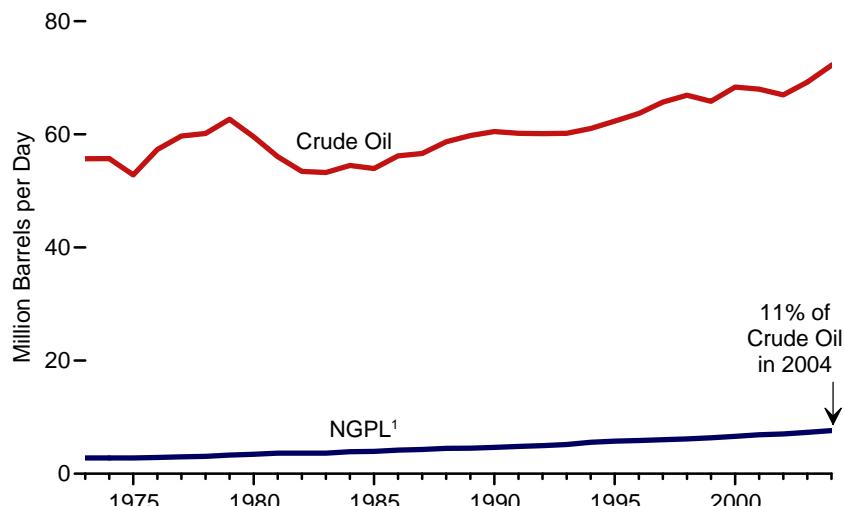
United States: Table 5.1. All Other Data: • 1960-1969—Bureau of Mines, *International Petroleum Annual*, 1969.

• 1970-1972—EIA, *International Petroleum Annual*, 1978.

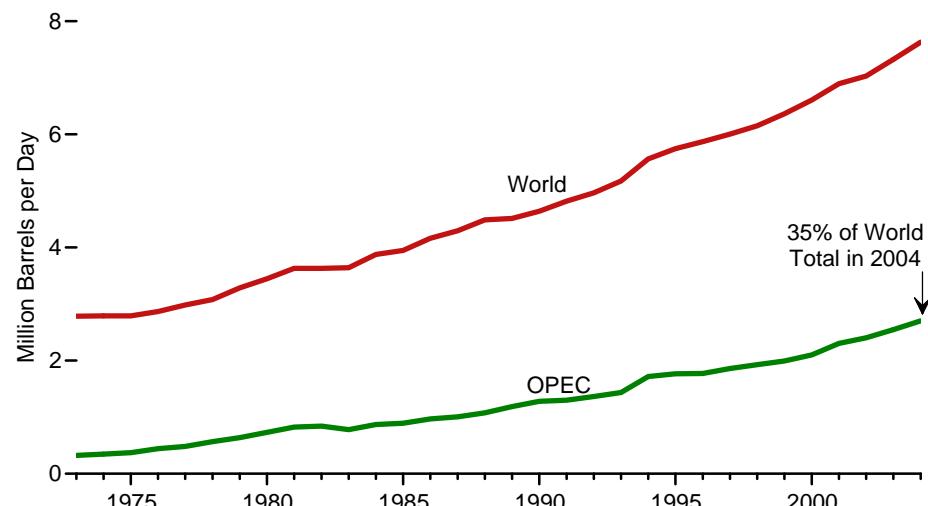
• 1973-1979—EIA, IEA, annual reports, and the International Energy Database. • 1980-2005—EIA, "International Energy Annual 2005" (June-July 2007), Table 2.2. • 2006—EIA, MER (April 2007), Tables 11.1a and 11.1b.

**Figure 11.6 World Natural Gas Plant Liquids Production**

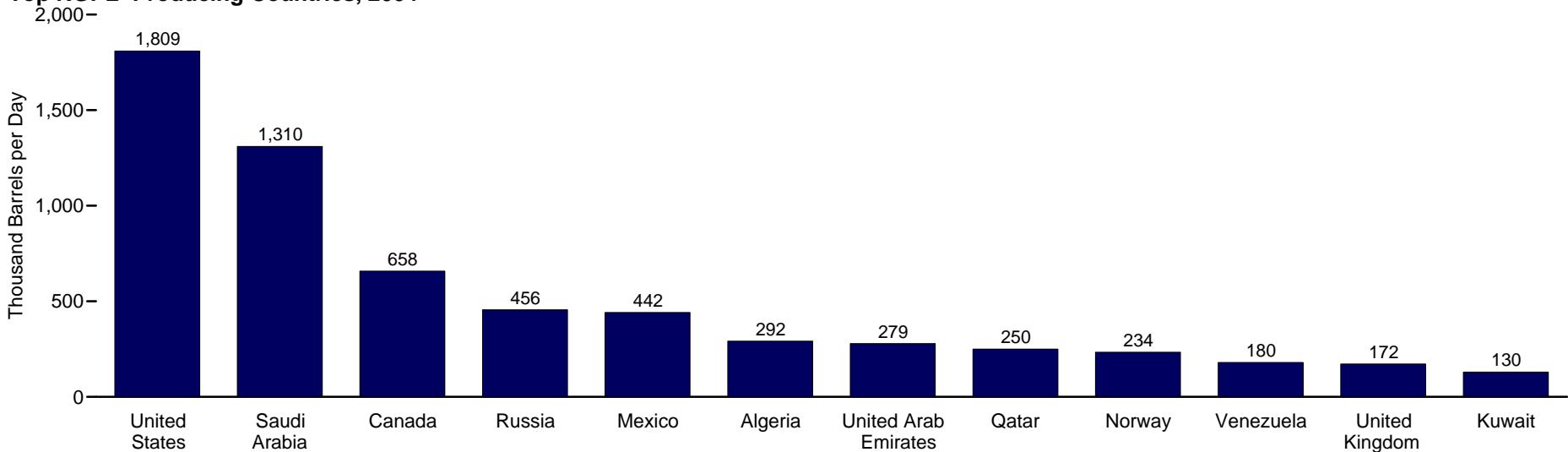
**Crude Oil and NGPL<sup>1</sup> Production, 1973-2004**



**World and OPEC NGPL<sup>1</sup> Production, 1973-2004**



**Top NGPL<sup>1</sup> Producing Countries, 2004**



<sup>1</sup> Natural gas plant liquids.

Notes: • Crude oil includes lease condensate. • OPEC=Organization of the Petroleum Exporting Countries. • Because vertical scales differ, graphs should not be compared.

Sources: Tables 11.5 and 11.6.

**Table 11.6 World Natural Gas Plant Liquids Production, 1973-2004**

(Thousand Barrels per Day)

Year	Selected OPEC Producers									Selected Non-OPEC Producers									World
	Algeria	Indonesia	Kuwait <sup>1</sup>	Qatar	Saudi Arabia <sup>1</sup>	United Arab Emirates	Venezuela	Total OPEC	Australia	Canada	Malaysia	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States	Total Non-OPEC <sup>2</sup>	
1973	9	(s)	60	(s)	90	(s)	89	324	50	314	0	75	(s)	170	--	5	1,738	2,462	2,786
1974	12	(s)	50	5	130	(s)	84	347	50	314	0	80	(s)	190	--	5	1,688	2,443	2,790
1975	20	(s)	50	10	140	(s)	76	372	50	309	0	80	5	205	--	15	1,633	2,419	2,791
1976	24	10	50	10	185	(s)	77	442	50	289	0	95	20	220	--	15	1,604	2,425	2,867
1977	19	10	55	5	215	15	78	482	55	290	0	105	20	235	--	30	1,618	2,502	2,984
1978	25	30	75	5	250	30	61	566	60	281	0	115	35	255	--	40	1,567	2,514	3,080
1979	30	40	95	10	303	30	69	637	60	331	0	150	40	270	--	45	1,584	2,650	3,287
1980	36	70	95	10	369	35	60	732	60	331	0	193	42	285	--	45	1,573	2,714	3,446
1981	49	95	60	24	433	60	55	825	60	330	0	241	37	300	--	50	1,609	2,806	3,631
1982	58	80	40	30	430	90	60	842	52	318	0	255	39	315	--	78	1,550	2,790	3,632
1983	56	94	55	25	330	120	57	780	52	309	0	265	46	330	--	111	1,559	2,863	3,643
1984	105	75	67	28	355	130	57	869	54	336	10	257	45	340	--	136	1,630	3,009	3,878
1985	120	44	54	30	375	160	63	892	65	337	10	271	51	350	--	145	1,609	3,056	3,948
1986	120	30	75	22	385	185	97	969	60	328	9	352	66	440	--	152	1,551	3,194	4,163
1987	140	30	95	24	418	145	94	1,006	65	367	11	338	71	430	--	162	1,595	3,289	4,295
1988	120	30	100	30	499	130	98	1,077	67	381	11	370	83	450	--	159	1,625	3,412	4,489
1989	130	72	105	24	503	130	108	1,188	65	410	11	384	84	425	--	140	1,546	3,325	4,513
1990	130	77	65	40	620	135	114	1,281	63	426	12	428	86	425	--	108	1,559	3,359	4,640
1991	140	76	0	50	680	146	117	1,299	61	431	12	457	84	420	--	141	1,659	3,519	4,818
1992	140	75	34	55	713	144	113	1,364	56	460	13	454	85	--	230	160	1,697	3,600	4,965
1993	145	78	53	55	704	146	143	1,435	55	506	17	459	95	--	220	169	1,736	3,741	5,176
1994	140	80	85	50	951	150	146	1,718	56	529	17	461	123	--	200	218	1,727	3,847	5,565
1995	145	76	95	55	961	160	149	1,766	52	581	20	447	137	--	180	267	1,762	3,981	5,747
1996	150	80	85	50	968	160	150	1,772	62	596	20	423	141	--	185	259	1,830	4,100	5,872
1997	160	85	109	70	982	160	143	1,859	71	636	50	388	139	--	195	233	1,817	4,146	6,005
1998	155	87	115	85	1,020	170	145	1,927	70	651	90	424	127	--	220	241	1,759	4,225	6,151
1999	190	87	115	111	1,010	160	170	1,993	72	653	85	439	120	--	231	238	1,850	4,370	6,363
2000	230	90	115	133	1,008	200	175	2,101	70	699	65	438	124	--	232	233	1,911	4,507	6,608
2001	250	82	120	150	1,051	290	200	2,304	74	709	70	433	188	--	237	258	1,868	4,591	6,895
2002	270	80	125	160	1,095	300	202	2,403	80	698	75	408	203	--	246	211	1,880	4,627	7,030
2003	280	78	124	201	1,220	310	163	2,548	79	724	80	418	222	--	390	241	1,719	4,777	7,325
2004 <sup>P</sup>	292	73	130	250	1,310	279	180	2,702	83	658	80	442	234	--	456	172	1,809	4,929	7,631

<sup>1</sup> Includes about one-half of the production in the Neutral Zone between Kuwait and Saudi Arabia.

<sup>2</sup> Ecuador, which withdrew from OPEC on December 31, 1992, and Gabon, which withdrew on December 31, 1994, are included in "Non-OPEC" for all years.

P=Preliminary. -- = Not applicable. (s)=Less than 500 barrels per day.

Notes: • Data in this table do not include recent updates for the United States (see Table 5.1) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • OPEC

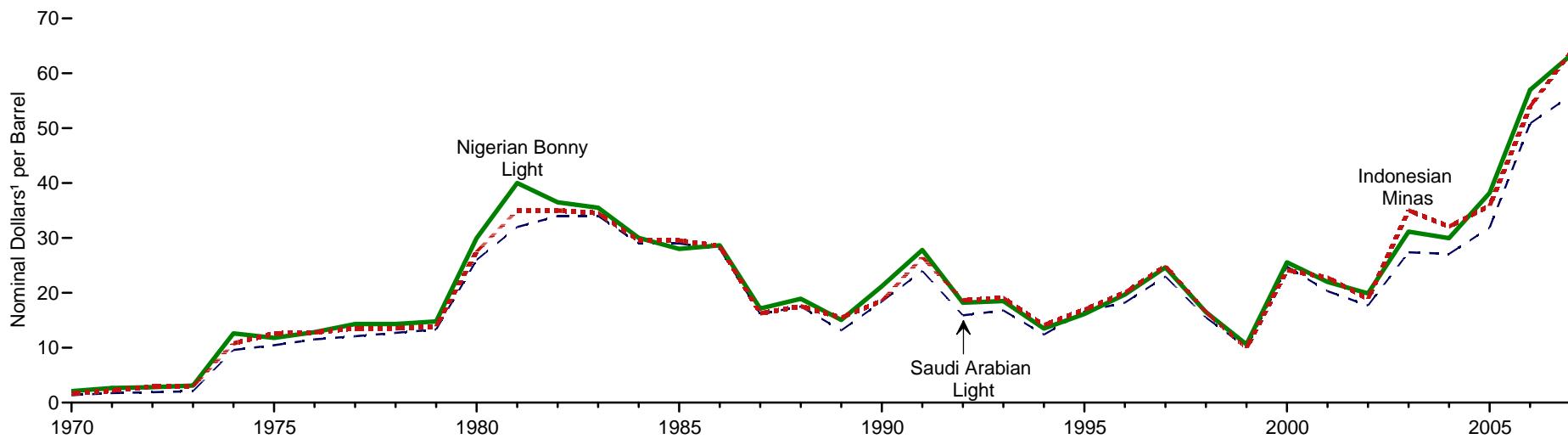
= Organization of the Petroleum Exporting Countries. See Glossary for membership. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

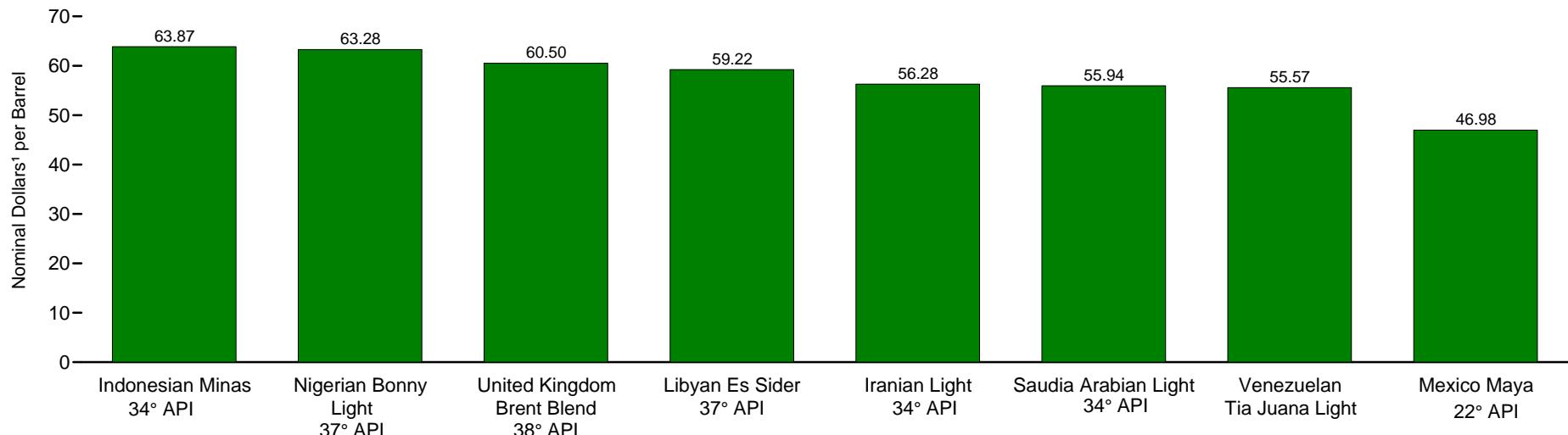
Sources: • 1973-1979—Energy Information Administration (EIA), *International Energy Annual*, annual reports, and the International Energy Database. • 1980 forward—EIA, "International Energy Annual 2004" (May-July 2006), Table 2.3.

**Figure 11.7 Crude Oil Prices by Selected Type**

**Selected Types, 1970-2007**



**Selected Types, 2007**



<sup>1</sup> See "Nominal Dollars" in Glossary.

Notes: • Prices are as of the Friday that is closest to January 1, except in 1987, when prices

are as of the first Friday in February. See "API" and "API Gravity" in Glossary.

Source: Table 11.7.

**Table 11.7 Crude Oil Prices by Selected Type, 1970-2007**

(Nominal Dollars<sup>1</sup> per Barrel)

Year	Saudi Arabian Light-34° API	Iranian Light-34° API	Libyan <sup>2</sup> Es Sider-37° API	Nigerian <sup>3</sup> Bonny Light-37° API	Indonesian Minas-34° API	Venezuelan Tia Juana Light <sup>4</sup>	Mexico Maya-22° API	United Kingdom Brent Blend-38° API
1970	1.35	1.36	2.09	2.10	1.67	2.05	NA	NA
1971	1.75	1.76	2.80	2.65	2.18	2.45	NA	NA
1972	1.90	1.91	2.80	2.80	2.96	2.45	NA	NA
1973	2.10	2.11	3.10	3.10	2.96	2.60	NA	NA
1974	9.60	10.63	14.30	12.60	10.80	9.30	NA	NA
1975	10.46	10.67	11.98	11.80	12.60	11.00	NA	NA
1976	11.51	11.62	12.21	12.84	12.80	11.12	NA	NA
1977	12.09	12.81	13.74	14.33	13.55	12.72	NA	NA
1978	12.70	12.81	13.80	14.33	13.55	12.82	NA	NA
1979	13.34	13.45	14.52	14.80	13.90	13.36	15.45	15.70
1980	26.00	<sup>5</sup> 30.37	34.50	29.97	27.50	25.20	28.00	26.02
1981	32.00	37.00	40.78	40.00	35.00	32.88	34.50	39.25
1982	34.00	34.20	36.50	36.50	35.00	32.88	26.50	36.60
1983	34.00	31.20	35.10	35.50	34.53	32.88	25.50	33.50
1984	29.00	28.00	30.15	30.00	29.53	27.88	25.00	30.00
1985	29.00	28.00	30.15	28.00	29.53	27.88	25.50	28.65
1986	28.00	28.05	30.15	28.65	28.53	28.05	21.93	26.00
1987	16.15	16.14	16.95	17.13	16.28	15.10	14.00	18.25
1988	17.52	15.55	18.52	18.92	17.56	17.62	11.10	18.00
1989	13.15	12.75	15.40	15.05	15.50	12.27	10.63	15.80
1990	18.40	18.20	20.40	21.20	18.55	24.69	17.05	21.00
1991	24.00	23.65	26.90	27.80	26.50	28.62	20.00	27.20
1992	15.90	15.50	17.20	18.20	18.65	19.67	10.75	17.75
1993	16.80	16.70	17.55	18.50	19.10	17.97	12.50	17.90
1994	12.40	12.40	12.55	13.50	14.15	12.97	9.01	13.15
1995	16.63	16.18	16.05	16.15	16.95	16.57	13.77	16.15
1996	18.20	17.73	19.20	19.70	20.05	18.52	15.79	19.37
1997	22.98	22.63	24.10	24.65	24.95	26.62	19.33	24.05
1998	15.50	14.93	16.72	16.50	16.50	15.93	10.81	15.89
1999	10.03	9.83	10.65	10.60	9.95	9.45	6.38	10.44
2000	24.78	24.63	25.85	25.55	24.15	24.85	20.20	25.10
2001	20.30	20.20	22.40	22.00	22.80	22.13	15.82	22.50
2002	17.68	18.90	19.63	19.88	18.89	17.78	14.30	21.20
2003	27.39	27.85	30.40	31.16	35.03	30.25	26.29	31.36
2004	27.08	28.67	29.47	29.97	32.10	30.10	24.37	29.73
2005	31.86	33.84	38.00	38.21	35.86	35.98	26.16	39.43
2006	50.86	52.56	55.89	56.97	53.95	52.52	42.93	57.25
2007	55.94	56.28	59.22	63.28	63.87	55.57	46.98	60.50

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> For 1974 and 1975, prices are for crude oil with 40° API. For 1980, prices include \$4.72 in retroactive charges and market premiums.

<sup>3</sup> Beginning in 1977, prices include 2 cents per barrel harbor dues.

<sup>4</sup> For 1970-1985, prices are for crude oil with 26° API. Beginning in 1986, prices are for crude oil with 31° API.

<sup>5</sup> For 1980, price includes \$1.87 market premiums and credit charges.

NA=Not available.

Notes: • Prices are as of the Friday that is closest to January 1, except in 1987, when prices are as of

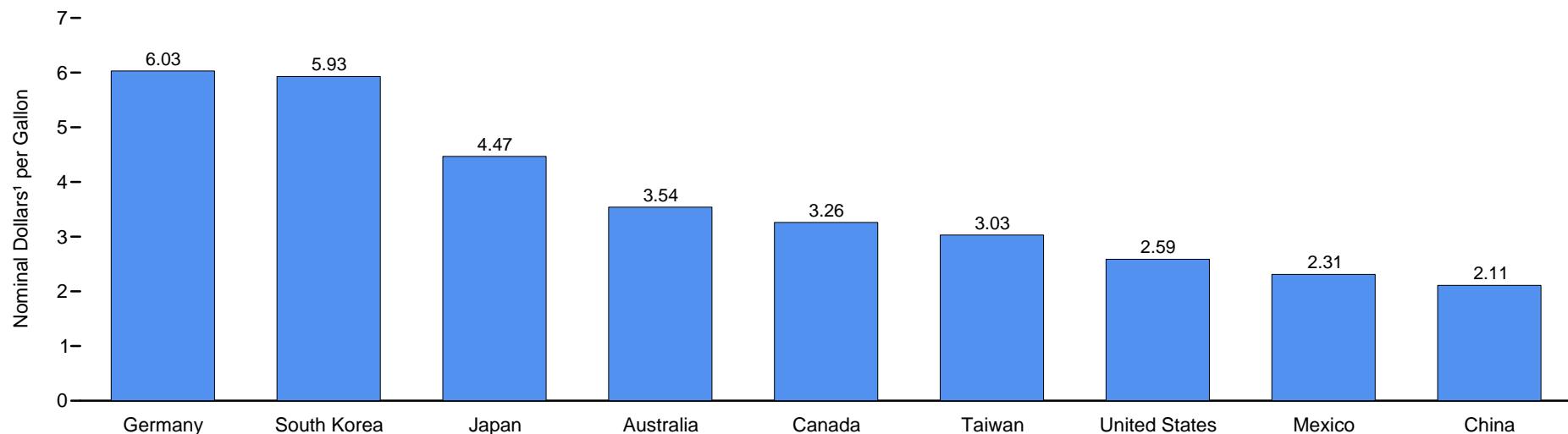
the first Friday in February. • Prices are based on official government-selling prices, netback values, or spot market quotations. • Prices are usually free on board (f.o.b.) at the foreign port of lading. • See Tables 5.18, 5.19, and 5.21 for other types of crude oil prices for the United States, such as domestic first purchase prices, landed costs of crude oil imports, and refiner acquisition costs. • See "API" and "API Gravity" in Glossary.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

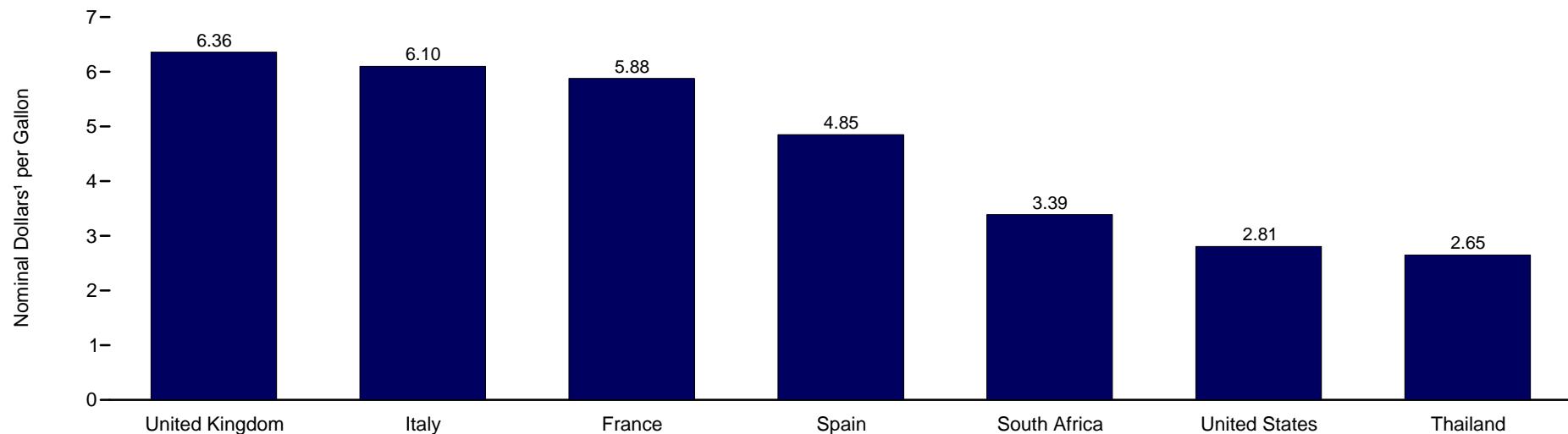
Sources: • 1970-1978—Petroleum and Energy Intelligence Weekly, Inc., *Petroleum Intelligence Weekly*. • 1979 forward—Energy Information Administration, *Weekly Petroleum Status Report*.

**Figure 11.8 Retail Motor Gasoline Prices in Selected Countries, 2006**

**Regular Unleaded**



**Premium Unleaded<sup>2</sup>**



<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Research Octane Number (RON) of 95, except RON of 98 for the United States.

Source: Table 11.8.

**Table 11.8 Retail Motor Gasoline Prices in Selected Countries, 1990-2006**

(Nominal Dollars<sup>1</sup> per Gallon)

Year	Regular Unleaded									Premium Unleaded <sup>2</sup>						
	Australia	Canada	China	Germany	Japan	Mexico	South Korea	Taiwan	United States	France	Italy	South Africa	Spain	Thailand	United Kingdom	United States
1990	NA	1.87	NA	2.65	3.16	1.00	2.05	2.49	1.16	3.63	4.59	NA	NA	NA	2.82	1.35
1991	1.96	1.92	NA	2.90	3.46	1.30	2.49	2.39	1.14	3.45	4.50	NA	NA	NA	3.01	1.32
1992	1.89	1.73	NA	3.27	3.59	1.50	2.65	2.42	1.13	3.57	4.53	NA	3.50	1.35	3.06	1.32
1993	1.73	1.57	NA	3.07	4.02	1.56	2.88	2.27	1.11	3.41	3.68	NA	3.01	1.26	2.84	1.30
1994	1.84	1.45	RNA	3.52	4.39	1.48	2.87	2.14	1.11	3.59	3.70	NA	2.99	1.21	2.99	1.31
1995	1.95	1.53	RNA	3.96	4.43	1.11	2.94	2.23	1.15	4.26	4.00	NA	3.24	R1.25	3.21	1.34
1996	2.12	1.61	RNA	3.94	3.65	1.25	3.18	2.15	1.23	4.41	4.39	NA	3.32	1.49	3.34	1.41
1997	2.05	1.62	RNA	3.53	3.27	1.47	3.34	2.23	1.23	4.00	4.07	1.72	3.01	1.27	3.83	1.42
1998	1.63	1.38	RNA	3.34	2.83	1.49	3.04	1.86	1.06	3.87	3.84	1.51	2.80	1.09	4.06	1.25
1999	1.72	1.52	RNA	3.42	3.27	1.79	3.80	1.86	1.17	3.85	3.87	1.55	2.82	1.22	4.29	1.36
2000	1.94	1.86	RNA	3.45	3.65	2.01	4.18	2.15	1.51	3.80	3.77	1.78	2.86	1.38	4.58	1.69
2001	1.71	1.72	R1.22	3.40	3.27	2.20	3.76	2.02	1.46	3.51	3.57	1.59	R2.73	1.33	R4.13	1.66
2002	1.76	1.70	R1.21	3.67	3.15	2.24	3.84	1.93	1.36	3.62	3.74	1.41	2.90	1.35	4.16	1.56
2003	R2.19	1.99	R1.33	4.59	3.47	2.04	4.12	2.16	1.59	4.35	4.53	1.91	R3.49	1.52	4.70	1.78
2004	2.72	2.37	R1.48	5.24	3.93	2.03	4.51	2.46	1.88	4.99	5.30	2.58	4.09	1.76	5.56	2.07
2005	3.23	2.87	R1.70	R5.66	4.28	2.22	5.28	2.79	2.30	5.46	5.74	R3.05	4.49	R2.25	5.97	2.49
2006	3.54	3.26	2.11	6.03	4.47	2.31	5.93	3.03	2.59	5.88	6.10	3.39	4.85	2.65	6.36	2.81

<sup>1</sup> See "Nominal Dollars" in Glossary.

<sup>2</sup> Research Octane Number (RON) of 95, except RON of 98 for the United States.

R=Revised. NA=Not available.

Notes: • Prices are those actually paid, i.e., net of rebates, and include transport costs and taxes which are not refundable. Prices in national currencies are converted to U.S. dollars using exchange rates published by the International Monetary Fund. • Prices for all countries, except the United States, have been converted from dollars per liter to dollars per gallon at 3.785412 liters per gallon. Comparisons between prices and price trends in different countries require care. They are of limited validity because of

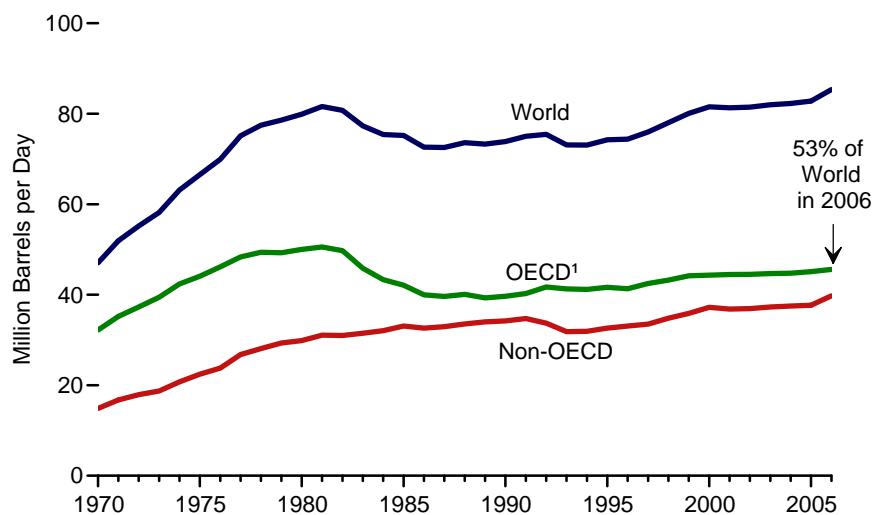
fluctuations in exchange rates, differences in product quality, marketing practices, market structures, and the extent to which the standard categories of sales are representative of total national sales for a given period.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

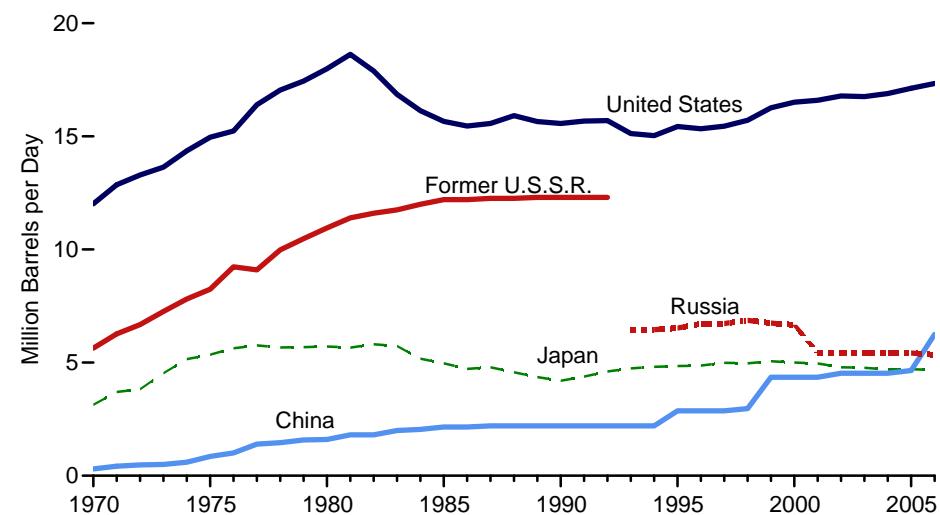
Sources: • **United States:** Table 5.24. • **All Other Data:** International Energy Agency, Organization for Economic Cooperation and Development, *Energy Prices & Taxes, Quarterly Statistics, First Quarter 2007, Part II, Section D, and Part III, Section B*.

**Figure 11.9 World Crude Oil Refining Capacity**

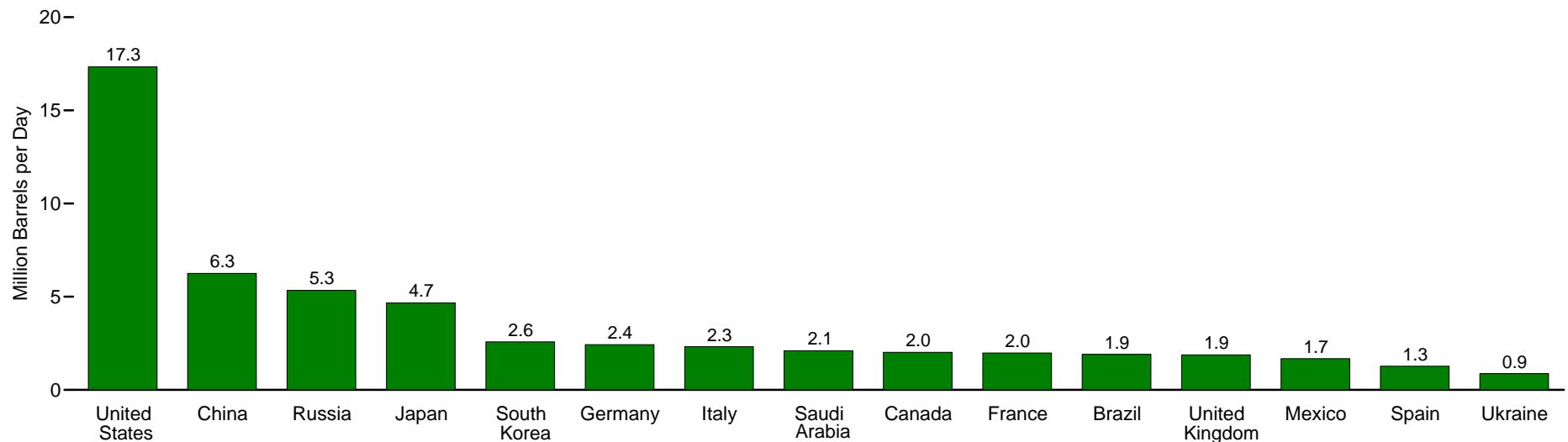
**World, OECD, and Non-OECD, 1970-2006**



**Top Refining Countries, 1970-2006**



**Top Refining Countries, 2006**



<sup>1</sup> Organization for Economic Cooperation and Development. See Glossary for membership.

Notes: • Capacity as of January 1. • Because vertical scales differ, graphs should not be compared.

Source: Table 11.9.

**Table 11.9 World Crude Oil Refining Capacity, 1970-2006**  
 (Million Barrels per Day)

Year	Selected OECD Countries										Selected Non-OECD Countries							World	
	Canada	France	Germany <sup>1</sup>	Italy	Japan	Mexico <sup>2</sup>	South Korea <sup>2</sup>	Spain	United Kingdom	United States	Total OECD <sup>3</sup>	Brazil	China	Former U.S.S.R.	Russia	Saudi Arabia	Ukraine	Total Non-OECD	
1970	1.40	2.32	2.36	2.96	3.14	0.50	0.18	0.69	2.30	12.02	32.18	0.50	0.30	5.64	--	0.38	--	14.87	47.05
1971	1.45	2.53	2.54	3.24	3.70	.57	.25	.85	2.39	12.86	35.19	.51	.42	6.27	--	.91	--	16.73	51.92
1972	1.45	2.69	2.56	3.68	3.82	.59	.22	.87	2.59	13.29	37.29	.56	.48	6.68	--	.51	--	17.90	55.19
1973	1.73	2.95	2.70	3.59	4.53	.63	.43	1.03	2.47	13.64	39.45	.72	.50	7.26	--	.43	--	18.72	58.17
1974	1.79	3.14	2.83	3.88	5.15	.63	.42	1.16	2.76	14.36	42.39	.79	.60	7.81	--	.43	--	20.74	63.13
1975	1.88	3.34	2.99	3.95	5.35	.76	.43	1.17	2.78	14.96	44.07	.96	.85	8.24	--	.61	--	22.45	66.52
1976	2.02	3.31	3.10	4.08	5.63	.76	.44	1.32	2.89	15.24	46.16	.99	1.01	9.23	--	.54	--	23.77	69.93
1977	2.10	3.52	3.08	4.26	5.76	.94	.42	1.28	3.01	16.40	48.34	1.12	1.40	9.10	--	.60	--	26.77	75.11
1978	2.17	3.46	3.08	4.23	5.67	1.38	.48	1.27	2.91	17.05	49.37	1.16	1.46	9.98	--	.59	--	28.09	77.46
1979	2.23	3.47	3.10	4.20	5.68	1.24	.54	1.43	2.53	17.44	49.26	1.21	1.58	10.48	--	.49	--	29.34	78.60
1980	2.22	3.40	2.99	4.13	5.71	1.39	.60	1.46	2.53	17.99	50.03	1.21	1.60	10.95	--	.49	--	29.85	79.88
1981	2.17	3.34	3.02	4.09	5.66	1.39	.61	1.46	2.63	18.62	50.54	1.40	1.81	11.40	--	.49	--	31.06	81.60
1982	2.20	3.29	2.94	4.00	5.81	1.47	.76	1.52	2.48	17.89	49.74	1.41	1.81	11.60	--	.49	--	31.00	80.73
1983	2.02	2.87	2.47	3.28	5.73	1.29	.76	1.52	2.26	16.86	45.83	1.22	2.00	11.75	--	.71	--	31.48	77.30
1984	1.81	2.67	2.39	3.05	5.17	1.27	.78	1.49	2.09	16.14	43.33	1.30	2.05	12.00	--	.86	--	32.06	75.39
1985	1.87	2.39	2.17	3.10	4.97	1.27	.78	1.49	2.01	15.66	42.10	1.31	2.15	12.20	--	.84	--	33.08	75.18
1986	1.86	1.95	1.93	2.74	4.72	1.27	.78	1.37	1.79	15.46	39.99	1.31	2.15	12.20	--	1.12	--	32.62	72.61
1987	1.76	1.83	1.72	2.68	4.79	1.35	.86	1.31	1.78	15.57	39.63	1.32	2.20	12.26	--	1.13	--	32.93	72.56
1988	1.87	1.94	1.65	2.56	4.57	1.35	.82	1.31	1.80	15.92	40.07	1.41	2.20	12.26	--	1.38	--	33.54	73.61
1989	1.86	1.88	1.52	2.45	4.36	1.35	.88	1.29	1.80	15.66	39.31	1.41	2.20	12.30	--	1.38	--	33.99	73.30
1990	1.85	1.82	1.51	2.80	4.20	1.51	.87	1.29	1.83	15.57	39.66	1.40	2.20	12.30	--	1.48	--	34.21	73.86
1991	1.88	1.82	2.07	2.39	4.38	1.68	.87	1.32	1.87	15.68	40.25	1.41	2.20	12.30	--	1.86	--	34.75	75.00
1992	1.91	1.82	2.06	2.39	4.61	1.57	1.16	1.32	1.86	15.70	41.72	1.41	2.20	12.30	--	1.86	--	33.72	75.43
1993	1.87	1.85	2.23	2.42	4.74	1.52	1.15	1.30	1.84	15.12	41.28	1.40	2.20	--	6.46	1.86	1.24	31.83	73.11
1994	1.88	1.86	2.27	2.26	4.81	1.52	1.15	1.28	1.87	15.03	41.18	1.25	2.20	--	6.46	1.61	1.24	31.90	73.07
1995	1.91	1.77	2.32	2.26	4.85	1.52	1.17	1.28	1.87	15.43	41.62	1.25	2.87	--	6.53	1.66	1.26	32.63	74.25
1996	1.85	1.78	2.13	2.28	4.87	1.52	1.24	1.33	1.89	15.33	41.31	1.26	2.87	--	6.72	1.66	1.26	33.09	74.39
1997	1.85	1.79	2.11	2.26	4.99	1.52	2.21	1.30	1.94	15.45	42.47	1.26	2.87	--	6.73	1.66	1.25	33.51	75.99
1998	1.85	1.87	2.18	2.45	4.97	1.52	2.54	1.29	1.83	15.71	43.23	1.66	2.97	--	6.87	1.65	1.25	34.80	78.03
1999	1.87	1.95	2.25	2.45	5.06	1.53	2.54	1.32	1.85	16.26	44.19	1.77	4.35	--	6.75	1.69	1.09	35.89	80.08
2000	1.91	1.90	2.28	2.34	5.00	1.53	2.54	1.32	1.79	16.51	44.33	1.78	4.35	--	6.67	1.71	1.15	37.20	81.53
2001	1.91	1.90	2.26	2.36	4.96	1.53	2.56	1.29	1.77	16.60	44.48	1.92	4.35	--	5.44	1.75	1.03	36.84	81.32
2002	1.94	1.90	2.26	2.28	4.79	1.53	2.56	1.29	1.78	16.79	44.50	1.79	4.53	--	5.44	1.75	1.03	36.95	81.44
2003	1.98	1.90	2.27	2.30	4.77	1.68	2.56	1.32	1.79	16.76	44.69	1.87	4.53	--	5.44	1.75	1.03	37.30	82.00
2004	1.99	1.95	2.29	2.31	4.70	1.68	2.54	1.27	1.82	16.89	44.75	1.91	4.53	--	5.44	1.75	1.03	37.51	82.26
2005	2.02	1.95	2.32	2.32	4.71	1.68	2.58	1.27	1.83	17.13	45.12	1.92	4.65	--	5.43	1.75	.88	37.67	82.80
2006	2.02	1.98	2.43	2.32	4.67	1.68	2.58	1.27	1.88	17.34	45.58	1.91	6.25	--	5.34	2.10	.88	39.76	85.34

<sup>1</sup> Through 1990, this is East and West Germany. Beginning in 1991, this is unified Germany.

<sup>2</sup> Mexico, which joined the OECD on May 18, 1994, and South Korea, which joined the OECD on December 12, 1996, are included in the OECD for all years shown in this table.

<sup>3</sup> Hungary and Poland, which joined the OECD on May 7, 1996, and November 22, 1996, respectively, are included in Total OECD beginning in 1992, the first year that data for these countries were available. The Czech Republic and Slovakia (or Slovak Republic), which joined the OECD on December 21, 1995 and December 14, 2000, respectively, are included in Total OECD beginning in 1992, the first year that data for these countries were available.

-- = Not applicable.

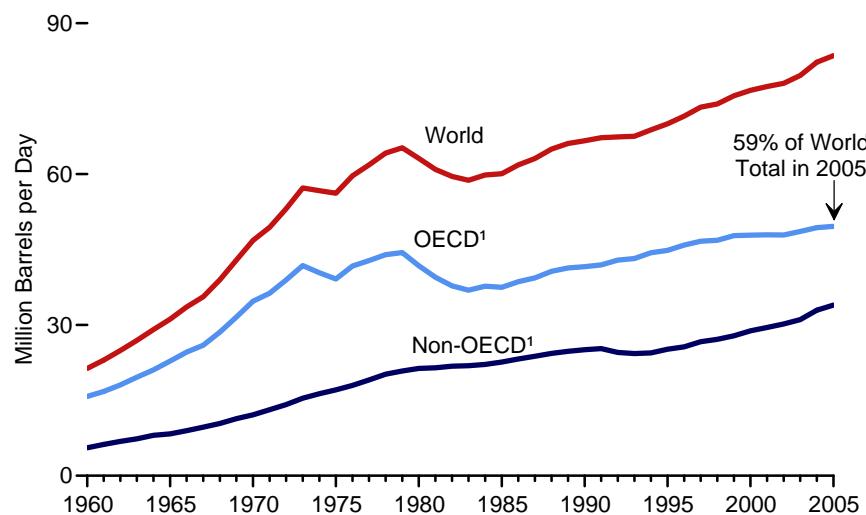
Notes: • OECD = Organization for Economic Cooperation and Development. See Glossary for membership. • Capacity data represent distillation capacity. • Capacity for all years is as of January 1. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

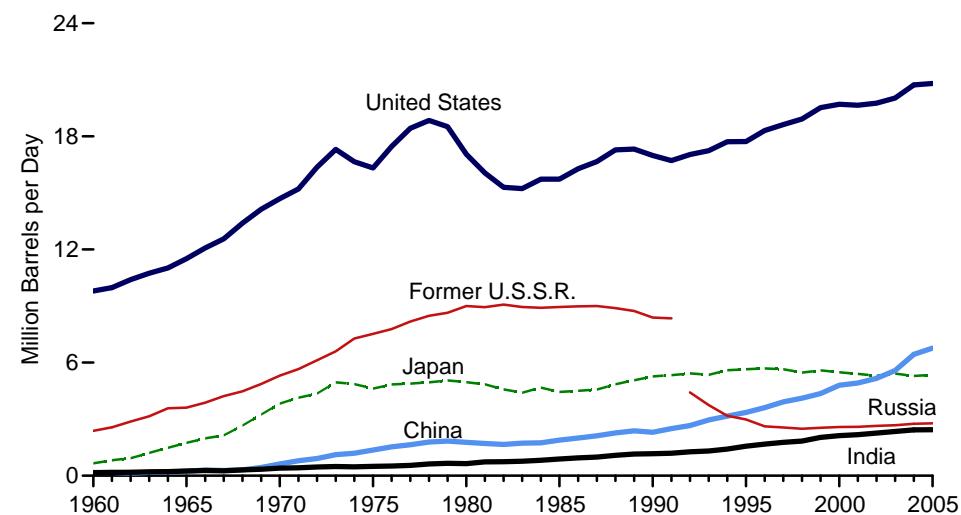
Sources: **United States:** Table 5.9. **China and Former U.S.S.R.:** • 1970-1976—Ballinger Publishing Company, *The Energy Decade, 1970-1980, A Statistical and Graphic Chronicle*. • 1977 forward—PennWell Publishing Company, *Oil & Gas Journal*. **All Other Data:** PennWell Publishing Company, *Oil & Gas Journal*.

**Figure 11.10 World Petroleum Consumption**

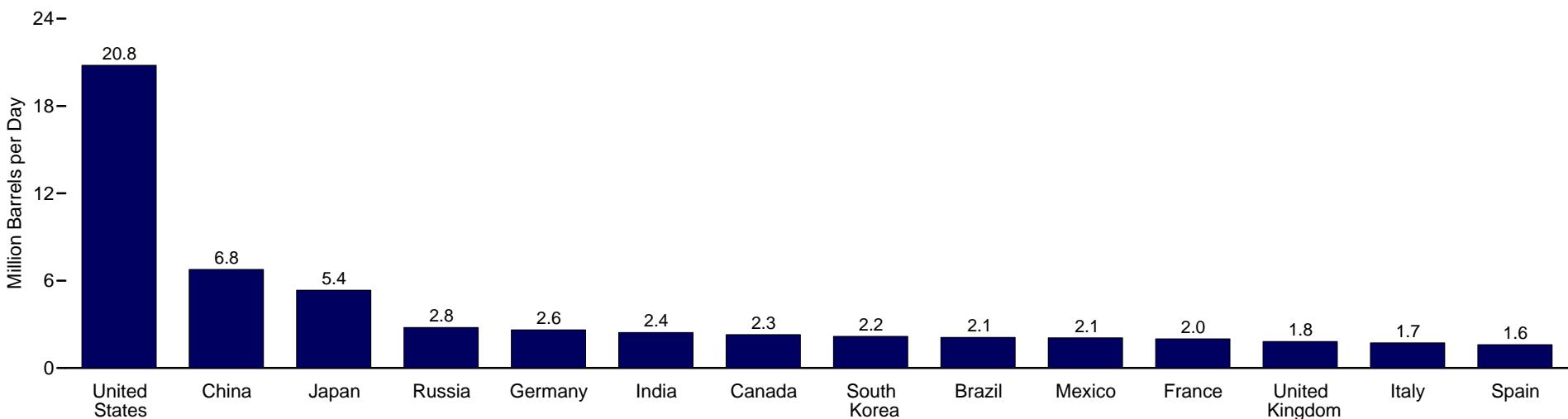
**World, 1960-2005**



**Top Consuming Countries, 1960-2005**



**Selected Consumers, 2005**



<sup>1</sup> Organization for Economic Cooperation and Development. See Glossary for membership.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.10.

**Table 11.10 World Petroleum Consumption, 1960-2005**  
 (Million Barrels per Day)

Year	Selected OECD Consumers										Selected Non-OECD Consumers						World	
	Canada	France	Germany <sup>1</sup>	Italy	Japan	Mexico <sup>2</sup>	South Korea <sup>2</sup>	Spain	United Kingdom	United States	Total OECD <sup>3</sup>	Brazil	China	India	Former U.S.S.R.	Russia	Total Non-OECD	
1960	0.84	0.56	0.63	0.44	0.66	0.30	0.01	0.10	0.94	9.80	15.78	0.27	0.17	0.16	2.38	--	5.56	21.34
1961	.87	.63	.79	.54	.82	.29	.02	.12	1.04	9.98	16.77	.28	.17	.17	2.57	--	6.23	23.00
1962	.92	.73	1.00	.67	.93	.30	.02	.12	1.12	10.40	18.06	.31	.14	.18	2.87	--	6.83	24.89
1963	.99	.86	1.17	.77	1.21	.31	.03	.12	1.27	10.74	19.60	.34	.17	.21	3.15	--	7.32	26.92
1964	1.05	.98	1.36	.90	1.48	.33	.02	.20	1.36	11.02	21.05	.35	.20	.22	3.58	--	8.03	29.08
1965	1.14	1.09	1.61	.98	1.74	.34	.03	.23	1.49	11.51	22.81	.33	.23	.25	3.61	--	8.33	31.14
1966	1.21	1.19	1.80	1.08	1.98	.36	.04	.31	1.58	12.08	24.60	.38	.30	.28	3.87	--	8.96	33.56
1967	1.25	1.34	1.86	1.19	2.14	.39	.07	.36	1.64	12.56	25.94	.38	.28	.26	4.22	--	9.65	35.59
1968	1.34	1.46	1.99	1.40	2.66	.41	.10	.46	1.82	13.39	28.56	.46	.31	.31	4.48	--	10.40	38.96
1969	1.42	1.66	2.33	1.69	3.25	.45	.15	.49	1.98	14.14	31.54	.48	.44	.34	4.87	--	11.35	42.89
1970	1.52	1.94	2.83	1.71	3.82	.50	.20	.58	2.10	14.70	34.69	.53	.62	.40	5.31	--	12.12	46.81
1971	1.56	2.12	2.94	1.84	4.14	.52	.23	.64	2.14	15.21	36.30	.58	.79	.42	5.66	--	13.12	49.42
1972	1.66	2.32	3.10	1.95	4.36	.59	.24	.68	2.28	16.37	38.95	.66	.91	.46	6.12	--	14.15	53.09
1973	1.73	2.60	3.32	2.07	4.95	.67	.28	.78	2.34	17.31	41.80	.78	1.12	.49	6.60	--	15.43	57.24
1974	1.78	2.45	3.03	2.00	4.86	.71	.29	.86	2.21	16.65	40.38	.86	1.19	.47	7.28	--	16.30	56.68
1975	1.78	2.25	2.96	1.86	4.62	.75	.31	.87	1.91	16.32	39.14	.92	1.36	.50	7.52	--	17.06	56.20
1976	1.82	2.42	3.21	1.97	4.84	.83	.36	.97	1.89	17.46	41.72	1.00	1.53	.51	7.78	--	17.96	59.67
1977	1.85	2.29	3.21	1.90	4.88	.88	.42	.94	1.91	18.43	42.78	1.02	1.64	.55	8.18	--	19.05	61.83
1978	1.90	2.41	3.29	1.95	4.95	.99	.48	.98	1.94	18.85	43.98	1.11	1.79	.62	8.48	--	20.18	64.16
1979	1.97	2.46	3.37	2.04	5.05	1.10	.53	1.02	1.97	18.51	44.39	1.18	1.84	.66	8.64	--	20.84	65.22
1980	1.87	2.26	3.08	1.93	4.96	1.27	.54	.99	1.73	17.06	41.76	1.15	1.77	.64	9.00	--	21.35	63.11
1981	1.77	2.02	2.80	1.87	4.85	1.40	.54	.94	1.59	16.06	39.49	1.09	1.71	.73	8.94	--	21.45	60.94
1982	1.58	1.88	2.74	1.78	4.58	1.48	.53	1.00	1.59	15.30	37.77	1.06	1.66	.74	9.08	--	21.78	59.54
1983	1.45	1.84	2.66	1.75	4.40	1.35	.56	1.01	1.53	15.23	36.91	.98	1.73	.77	8.95	--	21.87	58.78
1984	R1.52	1.77	2.56	1.72	4.67	R1.39	.55	R.85	1.83	15.73	37.69	1.03	1.74	.82	8.91	--	R22.12	59.82
1985	R1.53	1.75	2.65	R1.70	4.44	R1.48	.55	R.86	1.62	15.73	37.48	1.08	1.89	R.89	8.95	--	22.60	R60.08
1986	R1.53	1.76	2.79	1.73	4.50	R1.52	.59	R.87	1.64	16.28	38.60	1.24	2.00	.95	8.98	--	23.21	61.81
1987	R1.61	1.79	2.72	1.82	4.57	R1.58	.63	.90	1.61	16.67	39.34	1.26	2.12	.99	9.00	--	23.75	63.10
1988	R1.68	1.80	2.72	1.83	4.85	R1.60	.75	.98	1.69	17.28	40.65	1.30	R2.27	1.08	8.89	--	24.32	64.97
1989	R1.75	1.84	2.58	1.90	5.06	R1.71	.86	R.98	1.73	17.33	41.33	1.32	2.38	1.15	8.74	--	24.75	66.08
1990	R1.73	1.83	2.68	1.87	5.27	1.75	1.05	1.01	1.78	16.99	R41.57	1.47	2.30	1.17	8.39	--	25.07	R66.63
1991	R1.67	1.94	2.83	1.86	R5.33	1.83	1.26	1.07	1.80	16.71	R41.94	1.48	2.50	1.19	8.35	--	25.28	R67.22
1992	1.72	1.93	2.84	1.89	R5.43	1.86	1.53	1.10	1.81	17.03	R42.88	1.52	2.66	1.27	--	4.42	24.51	R67.39
1993	1.75	1.88	2.91	1.89	R5.35	1.84	1.68	1.05	1.83	17.24	R43.21	1.58	2.96	1.31	--	3.75	24.30	R67.51
1994	1.77	1.86	2.88	1.87	R5.60	1.93	1.84	1.12	1.83	17.72	R44.36	1.67	3.16	1.41	--	3.18	24.43	R68.78
1995	R1.81	1.92	2.88	1.94	R5.65	1.82	2.01	1.19	R1.82	17.72	R44.82	1.79	3.36	1.57	--	2.98	25.16	R69.99
1996	R1.86	1.95	2.92	1.92	R5.69	1.79	2.10	1.20	1.85	18.31	R45.89	1.90	3.61	1.68	--	2.62	R25.65	R71.54
1997	R1.95	1.97	2.92	1.93	R5.65	1.85	2.25	1.27	1.80	18.62	R46.64	2.03	3.92	1.77	--	2.56	R26.66	R73.30
1998	1.94	2.04	2.92	1.94	R5.47	1.95	1.92	1.36	1.79	18.92	R46.82	2.10	4.11	1.84	--	2.49	R27.14	R73.96
1999	2.03	2.03	2.84	1.89	R5.59	1.96	2.08	1.40	R1.80	19.52	R47.74	2.13	4.36	2.03	--	2.54	R27.84	R75.58
2000	2.03	2.00	2.77	1.85	R5.49	2.04	2.14	1.43	1.76	19.70	R47.84	2.17	4.80	2.13	--	2.58	R28.81	R76.65
2001	R2.06	2.05	2.81	1.84	R5.40	2.01	2.13	1.49	R1.73	19.65	R47.92	2.21	4.92	2.18	--	2.59	29.49	R77.41
2002	2.08	1.98	2.72	1.87	R5.30	1.95	2.15	1.50	1.72	19.76	R47.87	2.13	5.16	2.26	--	2.64	R30.17	R78.05
2003	2.21	2.00	2.68	1.87	R5.42	1.95	2.18	1.54	R1.74	20.03	R48.59	2.06	5.58	2.35	--	2.68	R31.03	R79.61
2004	R2.30	R2.01	R2.67	R1.79	R5.29	R2.00	R2.16	1.57	R1.78	20.73	R49.34	R2.06	R6.44	R2.43	--	R2.75	R32.91	R82.24
2005 <sup>p</sup>	2.29	2.00	2.62	1.73	5.35	2.08	2.18	1.60	1.82	20.80	49.61	2.10	6.77	2.44	--	2.78	33.95	83.56

<sup>1</sup> Through 1969, the data for Germany are for the former West Germany only. For 1970 through 1990, this is East and West Germany. Beginning in 1991, this is unified Germany.

<sup>2</sup> Mexico, which joined the OECD on May 18, 1994, and South Korea, which joined the OECD on December 12, 1996, are included in the OECD for all years shown in this table.

<sup>3</sup> Hungary and Poland, which joined the OECD on May 7, 1996, and November 22, 1996, respectively, are included in Total OECD beginning in 1970, the first year that data for these countries were available. Total OECD includes Czechoslovakia from 1970-1992, and Czech Republic and Slovakia from 1993 forward.

R=Revised. P=Preliminary. --=Not applicable.

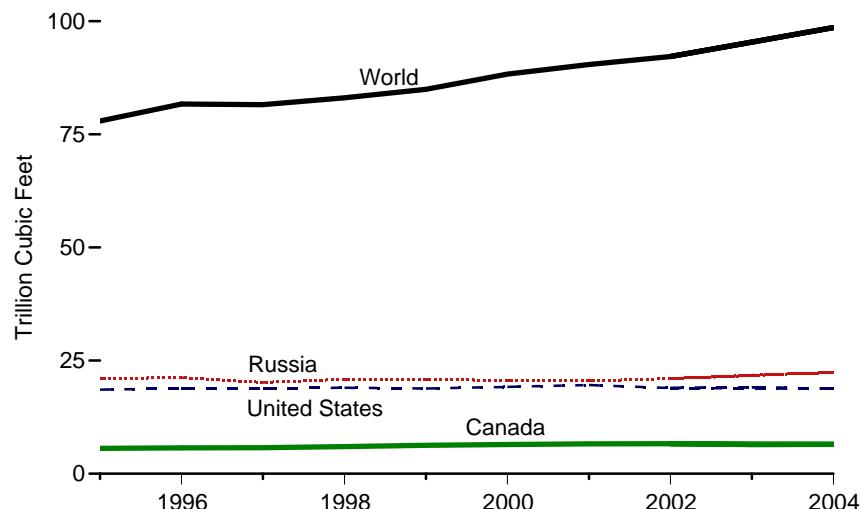
Notes: • OECD = Organization for Economic Cooperation and Development. See Glossary for membership. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

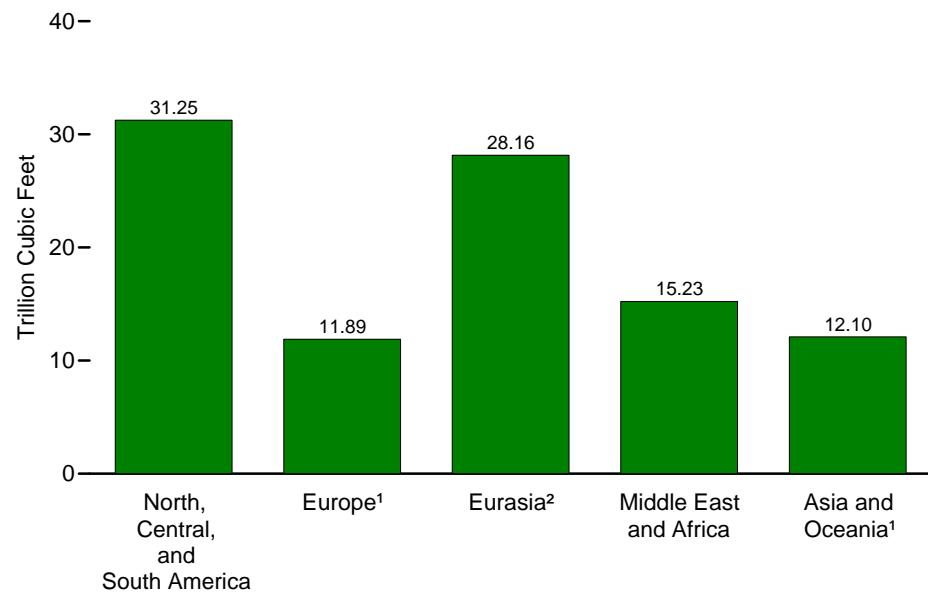
Sources: **United States:** Table 5.1, "Petroleum Products Supplied." **All Other Data:** • 1960-1979—Energy Information Administration (EIA), International Energy Database. • 1980 forward—EIA, "International Energy Annual 2005" (June-July 2007), Table 1.2.

**Figure 11.11 World Dry Natural Gas Production**

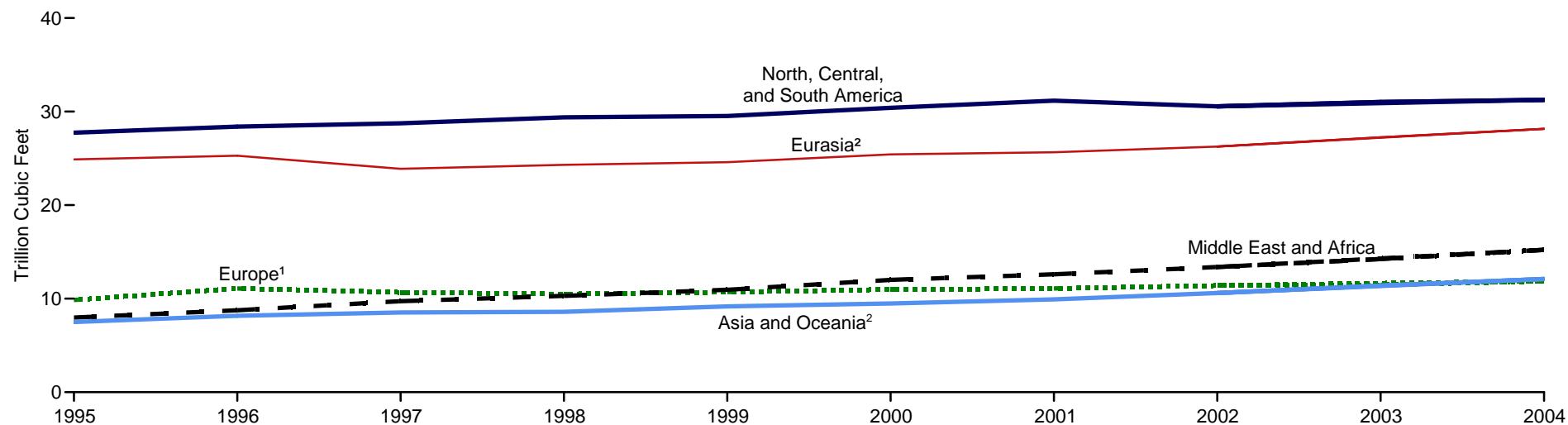
**World and Top Producing Countries, 1995-2004**



**World Areas, 2004**



**World Areas, 1995-2004**



<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.11.

**Table 11.11 World Dry Natural Gas Production, 1995-2004**  
 (Trillion Cubic Feet)

Region and Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 P
<b>North, Central, and South America .....</b>	<b>27.74</b>	<b>28.39</b>	<b>28.75</b>	<b>29.39</b>	<b>29.53</b>	<b>30.40</b>	<b>31.17</b>	<b>30.56</b>	<b>31.02</b>	<b>31.25</b>
Argentina .....	.88	.94	.97	1.04	1.22	1.32	1.31	1.28	1.45	1.58
Canada .....	5.60	5.71	5.76	5.98	6.27	6.47	6.60	6.63	6.45	6.48
Mexico .....	.96	1.06	1.17	1.27	1.29	1.31	1.30	1.33	1.40	1.46
United States .....	18.60	18.85	18.90	19.02	18.83	19.18	19.62	18.93	19.10	18.76
Venezuela .....	.89	.96	.99	1.11	.95	.96	1.12	1.00	.86	.96
Other .....	.81	.86	.96	.96	.98	1.15	1.22	1.39	1.76	2.00
<b>Europe<sup>1</sup> .....</b>	<b>9.86</b>	<b>11.09</b>	<b>10.68</b>	<b>10.49</b>	<b>10.72</b>	<b>10.98</b>	<b>11.10</b>	<b>11.41</b>	<b>11.48</b>	<b>11.89</b>
Germany .....	.74	.80	.79	.77	.82	.78	.79	.79	.78	.73
Italy .....	.72	.71	.68	.67	.62	.59	.54	.52	.49	.46
Netherlands .....	2.98	3.37	2.99	2.84	2.65	2.56	2.75	2.68	2.57	3.04
Norway .....	1.08	1.45	1.62	1.63	1.76	1.87	1.95	2.41	2.70	2.95
Romania .....	.68	.63	.61	.52	.50	.48	.51	.47	.43	.42
United Kingdom .....	2.67	3.18	3.03	3.14	3.49	3.83	3.69	3.66	3.63	3.39
Other .....	.99	.95	.95	.92	.88	.88	.89	.88	.86	.92
<b>Eurasia<sup>2</sup> .....</b>	<b>24.88</b>	<b>25.28</b>	<b>23.88</b>	<b>24.31</b>	<b>24.59</b>	<b>25.43</b>	<b>25.65</b>	<b>26.26</b>	<b>27.25</b>	<b>28.16</b>
Russia .....	21.01	21.23	20.17	20.87	20.83	20.63	20.51	21.03	21.77	22.39
Turkmenistan .....	1.14	1.31	.90	.47	.79	1.64	1.70	1.89	2.09	2.07
Ukraine .....	.62	.64	.64	.64	.63	.64	.64	.65	.69	.68
Uzbekistan .....	1.70	1.70	1.74	1.94	1.96	1.99	2.23	2.04	2.03	2.11
Other .....	.41	.40	.44	.40	.39	.53	.57	.65	.68	.91
<b>Middle East and Africa .....</b>	<b>7.99</b>	<b>8.76</b>	<b>9.74</b>	<b>10.30</b>	<b>10.95</b>	<b>12.01</b>	<b>12.61</b>	<b>13.39</b>	<b>14.25</b>	<b>15.23</b>
Algeria .....	2.05	2.19	2.43	2.60	2.88	2.94	2.79	2.80	2.85	2.83
Egypt .....	.44	.47	.48	.49	.52	.65	.87	.88	1.06	1.15
Iran .....	1.25	1.42	1.66	1.77	2.04	2.13	2.33	2.65	2.86	2.96
Qatar .....	.48	.48	.61	.69	.78	1.03	.95	1.04	1.11	1.38
Saudi Arabia .....	1.34	1.46	1.60	1.65	1.63	1.76	1.90	2.00	2.12	2.32
United Arab Emirates .....	1.11	1.19	1.28	1.31	1.34	1.36	1.39	1.53	1.58	1.63
Other .....	1.33	1.53	1.67	1.79	1.76	2.15	2.39	2.48	2.67	2.95
<b>Asia and Oceania<sup>1</sup> .....</b>	<b>7.50</b>	<b>8.17</b>	<b>8.52</b>	<b>8.59</b>	<b>9.17</b>	<b>9.49</b>	<b>9.92</b>	<b>10.60</b>	<b>11.39</b>	<b>12.10</b>
Australia .....	1.03	1.06	1.06	1.10	1.12	1.16	1.19	1.23	1.27	1.31
China .....	.60	.71	.80	.82	.89	.96	1.07	1.15	1.21	1.44
India .....	.63	.70	.72	.76	.75	.79	.85	.93	.96	1.00
Indonesia .....	2.24	2.35	2.37	2.27	2.51	2.36	2.34	2.48	2.61	2.66
Malaysia .....	1.02	1.23	1.36	1.37	1.42	1.50	1.66	1.71	2.01	2.20
Pakistan .....	.65	.70	.70	.71	.78	.86	.77	.81	.89	.97
Other .....	1.33	1.42	1.52	1.56	1.70	1.86	2.04	2.28	2.44	2.52
<b>World .....</b>	<b>77.96</b>	<b>81.69</b>	<b>81.57</b>	<b>83.07</b>	<b>84.96</b>	<b>88.30</b>	<b>90.45</b>	<b>92.21</b>	<b>95.39</b>	<b>98.62</b>

<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary.

Notes: • Data in this table do not include recent updates for the United States (see Table 6.1) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Totals

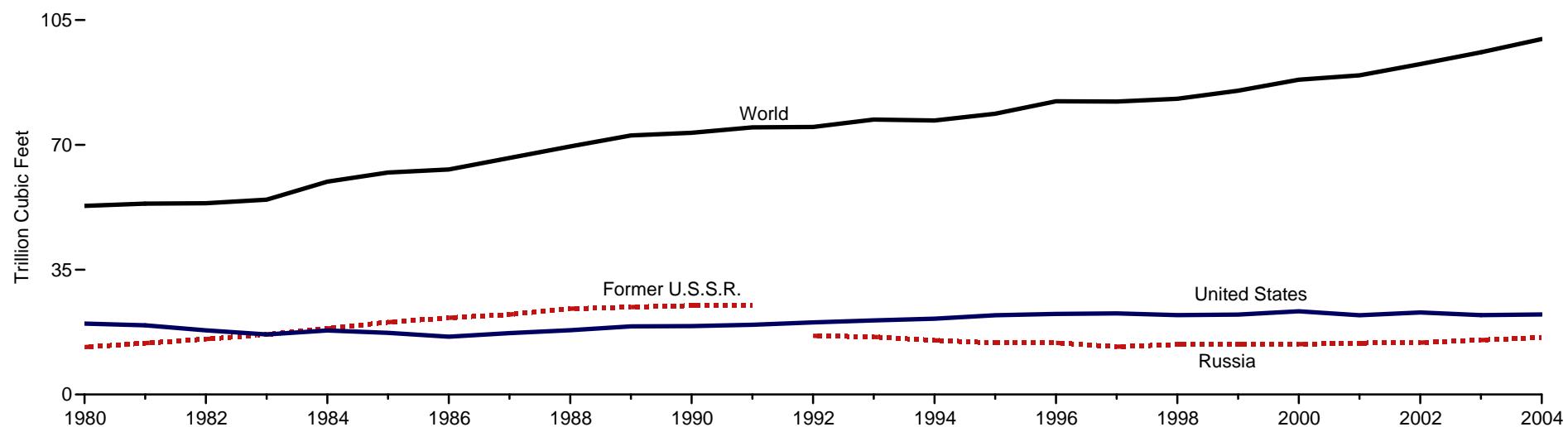
may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

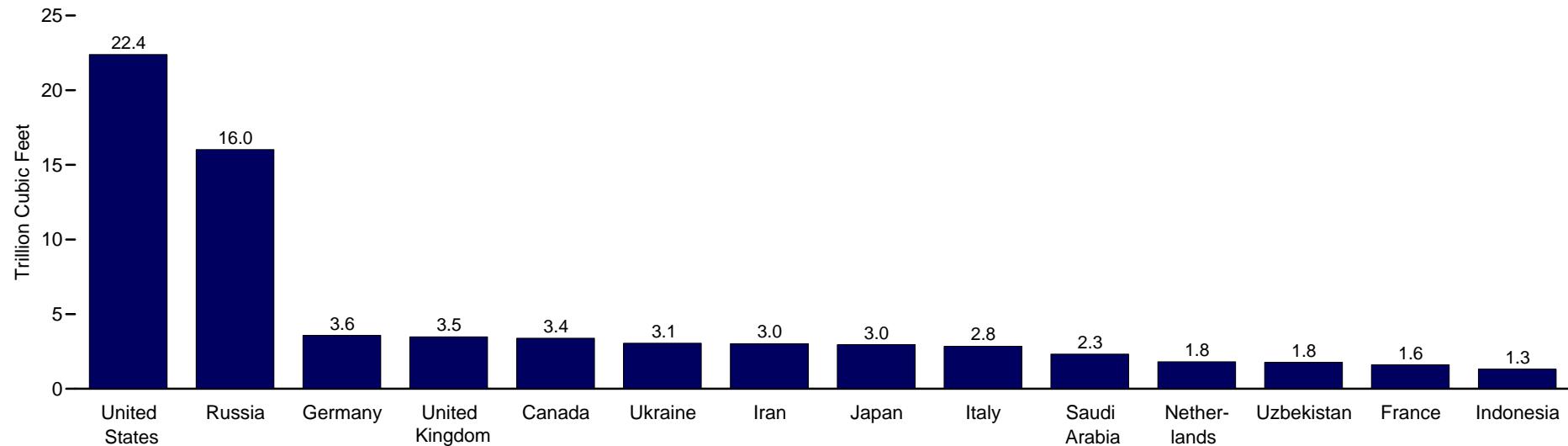
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table 2.4.

**Figure 11.12 World Dry Natural Gas Consumption**

**World and Top Consuming Countries, 1980-2004**



**Top Consuming Countries, 2004**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.12.

**Table 11.12 World Dry Natural Gas Consumption, 1980-2004**  
 (Billion Cubic Feet)

Year	Canada	France	Germany <sup>1</sup>	Indonesia	Iran	Italy	Japan	Netherlands	Former U.S.S.R.	Russia	Saudi Arabia	Ukraine	United Kingdom	United States	Uzbekistan	Other	World
1980	1,883	981	2,621	195	232	972	903	1,493	13,328	--	334	--	1,702	19,877	--	8,369	52,890
1981	1,842	1,003	2,513	232	155	942	925	1,421	14,440	--	564	--	1,740	19,404	--	8,333	53,513
1982	1,859	979	2,334	218	200	944	956	1,511	15,522	--	430	--	1,743	18,001	--	8,931	53,628
1983	1,863	999	2,397	302	310	967	1,020	1,451	16,822	--	418	--	1,815	16,835	--	9,427	54,626
1984	2,017	1,079	2,584	365	476	1,135	1,372	1,540	18,512	--	620	--	1,851	17,951	--	10,189	59,692
1985	2,165	1,110	2,546	513	600	1,151	1,468	1,624	20,302	--	716	--	1,991	17,281	--	10,777	62,244
1986	2,130	1,129	2,595	441	536	1,217	1,494	1,620	21,522	--	890	--	2,020	16,221	--	11,303	63,118
1987	2,112	1,038	2,733	542	565	1,346	1,543	1,672	22,462	--	946	--	2,079	17,211	--	12,062	66,312
1988	2,331	963	2,716	492	706	1,460	1,618	1,513	24,092	--	1,028	--	1,972	18,030	--	12,628	69,548
1989	2,427	984	2,835	546	784	1,581	1,731	1,550	24,529	--	1,052	--	1,951	19,119	--	13,549	72,638
1990	2,378	997	2,669	547	837	1,674	1,851	1,535	24,961	--	1,077	--	2,059	19,174	--	13,611	73,370
1991	2,400	1,131	2,776	557	811	1,775	1,976	1,715	25,014	--	1,130	--	2,218	19,562	--	13,841	74,907
1992	2,596	1,146	2,739	673	883	1,760	2,023	1,669	--	16,482	1,201	3,503	2,170	20,228	1,095	16,868	75,036
1993	2,691	1,158	2,830	850	938	1,801	2,034	1,714	--	16,185	1,268	3,871	2,412	20,790	1,541	17,005	77,086
1994	2,738	1,157	2,965	965	1,123	1,748	2,180	1,654	--	15,214	1,331	3,327	2,542	21,247	1,229	17,400	76,820
1995	2,872	1,183	3,172	1,061	1,243	1,921	2,207	1,701	--	14,507	1,343	2,970	2,690	22,207	1,349	18,297	78,723
1996	2,917	1,314	3,163	1,108	1,416	1,984	2,390	1,874	--	14,504	1,460	2,935	3,182	22,609	1,434	19,939	82,231
1997	2,887	1,300	3,012	1,125	1,663	2,048	2,439	1,763	--	13,434	1,601	2,832	3,013	22,737	1,455	20,825	82,136
1998	2,798	1,313	3,130	983	1,828	2,205	2,535	1,752	--	14,045	1,653	2,606	3,072	22,246	1,409	21,357	82,930
1999	3,108	1,383	3,151	1,124	2,112	2,396	2,736	1,705	--	14,013	1,632	2,755	3,259	22,405	1,423	21,995	85,196
2000	2,991	1,403	3,098	1,081	2,221	2,498	2,833	1,725	--	14,130	1,759	2,779	3,373	23,333	1,511	23,538	88,275
2001	3,121	1,471	3,239	1,182	2,478	2,505	2,831	1,769	--	14,412	1,896	2,617	3,338	22,239	1,596	24,804	89,499
2002	3,173	1,528	3,204	1,218	2,798	2,488	2,928	1,767	--	14,567	2,002	2,779	3,379	23,007	1,642	26,170	92,653
2003	3,373	1,511	3,566	1,222	2,910	2,732	3,045	1,775	--	15,291	2,121	3,023	3,358	22,277	1,670	28,086	95,960
2004 <sup>p</sup>	3,385	1,604	3,576	1,309	3,021	2,847	2,950	1,812	--	16,022	2,319	3,051	3,477	22,430	1,773	30,088	99,665

<sup>1</sup> Through 1990, this is East and West Germany. Beginning in 1991, this is unified Germany.

P=Preliminary. -- = Not applicable.

Notes: • Data in this table do not include recent updates for the United States (see Table 6.1) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Totals

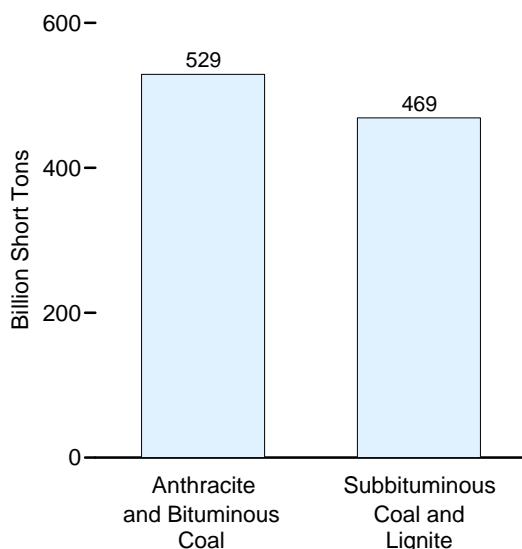
may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

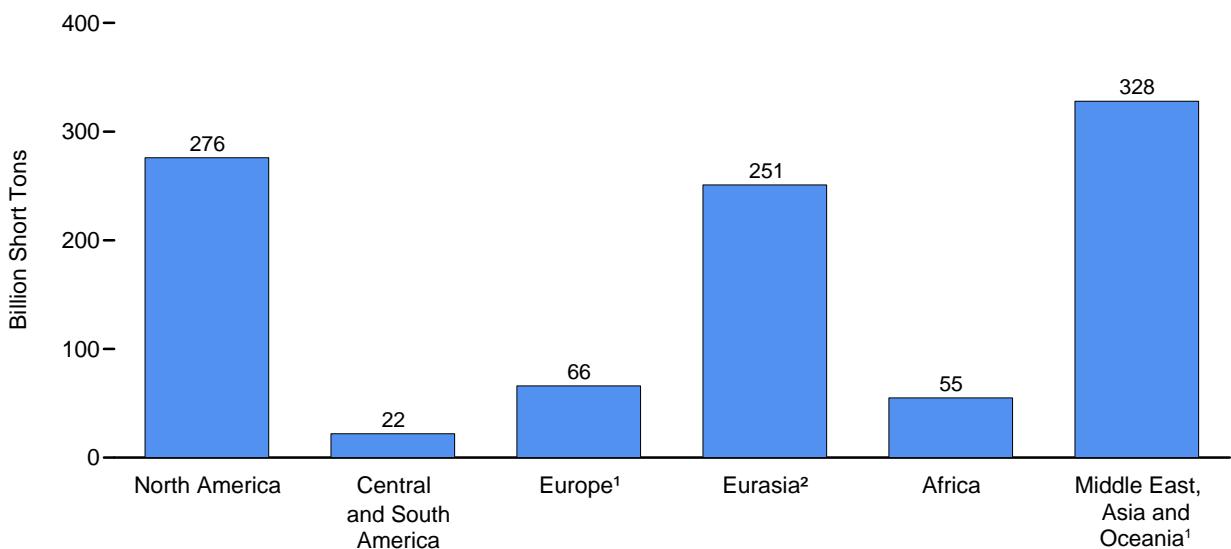
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table 1.3.

**Figure 11.13 World Recoverable Reserves of Coal, 2002**

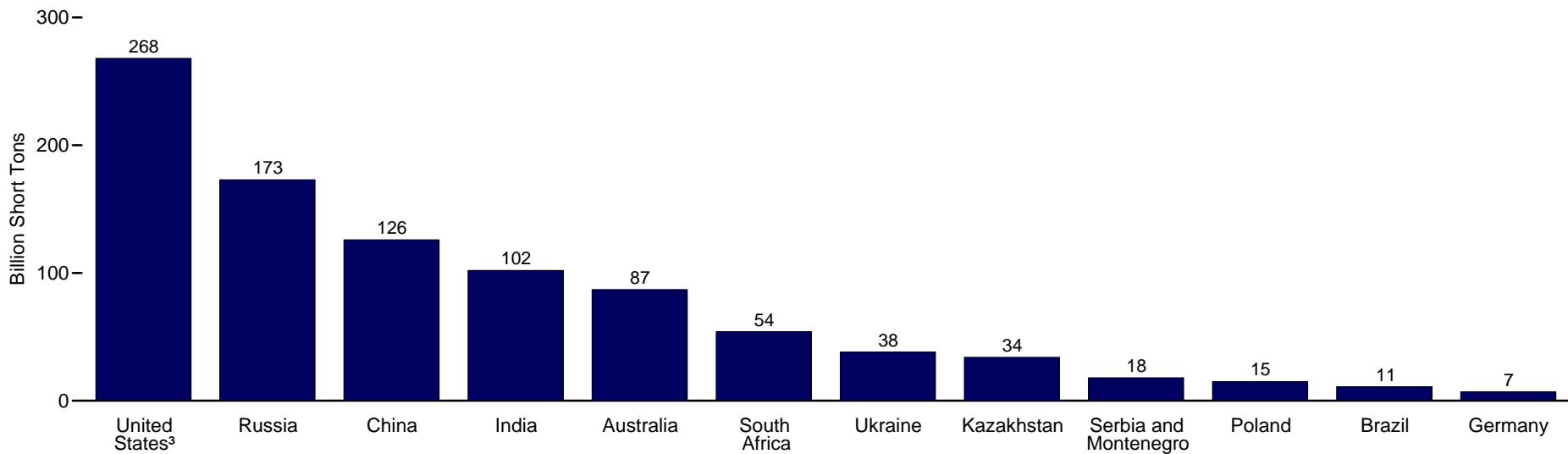
**By Type**



**By Region**



**Top Reserves Countries**



<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>3</sup> U.S. reserves are at end of 2005, 3 years later than other data in this figure.

Notes: • Data are at end of year. • Because vertical scales differ, graphs should not be compared.

Source: Table 11.13.

**Table 11.13 World Recoverable Reserves of Coal, 2002**  
 (Million Short Tons)

Region and Country	Anthracite and Bituminous Coal	Subbituminous Coal and Lignite	Total
<b>North America</b> .....	<b>R128,520</b>	<b>R147,821</b>	<b>R276,342</b>
Canada .....	3,826	3,425	7,251
Greenland .....	0	202	202
Mexico .....	948	387	1,335
United States <sup>1</sup> .....	R123,746	R143,808	R267,554
<b>Central and South America</b> .....	<b>8,489</b>	<b>13,439</b>	<b>21,928</b>
Brazil .....	0	11,148	11,148
Chile .....	34	1,268	1,302
Colombia .....	6,867	420	7,287
Peru .....	1,058	110	1,168
Other .....	529	494	1,023
<b>Europe</b> <sup>2</sup> .....	<b>19,558</b>	<b>46,203</b>	<b>65,762</b>
Bulgaria .....	4	2,406	2,411
Czech Republic .....	2,308	3,812	6,120
Germany .....	202	7,227	7,428
Greece .....	0	4,299	4,299
Hungary .....	218	3,482	3,700
Poland .....	15,432	0	15,432
Romania .....	24	520	545
Serbia and Montenegro (Yugoslavia) .....	10	18,279	18,288
Turkey .....	306	4,308	4,614
United Kingdom .....	243	0	243
Other .....	810	1,871	2,681
<b>Eurasia</b> <sup>3</sup> .....	<b>104,183</b>	<b>146,322</b>	<b>250,505</b>
Kazakhstan .....	31,031	3,448	34,479
Russia .....	54,110	118,964	173,074
Ukraine .....	17,939	19,708	37,647
Uzbekistan .....	1,102	3,307	4,409
Other .....	0	895	895
<b>Africa</b> .....	<b>55,294</b>	<b>192</b>	<b>55,486</b>
Botswana .....	44	0	44
South Africa .....	53,738	0	53,738
Zimbabwe .....	553	0	553
Other .....	959	192	1,151
<b>Middle East, Asia, and Oceania</b> <sup>2</sup> .....	<b>212,727</b>	<b>114,999</b>	<b>327,726</b>
Australia .....	42,549	43,982	86,531
China .....	68,564	57,651	126,215
India .....	99,302	2,601	101,903
Indonesia .....	816	4,661	5,476
North Korea .....	331	331	661
Pakistan .....	0	3,362	3,362
Thailand .....	0	1,493	1,493
Other .....	1,166	918	2,084
<b>World</b> .....	<b>R528,772</b>	<b>R468,976</b>	<b>R997,748</b>

<sup>1</sup> U.S. data are as of the end of 2005, 3 years later than the other data on this table.

<sup>2</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>3</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

R=Revised.

Notes: • Data are at end of year. • World Energy Council data represent "proved recoverable reserves," which are the tonnage within the "proved amount in place" that can be recovered (extracted from the earth in raw form) under present and expected local economic conditions with existing, available technology. • The Energy Information Administration (EIA) does not certify the international reserves data,

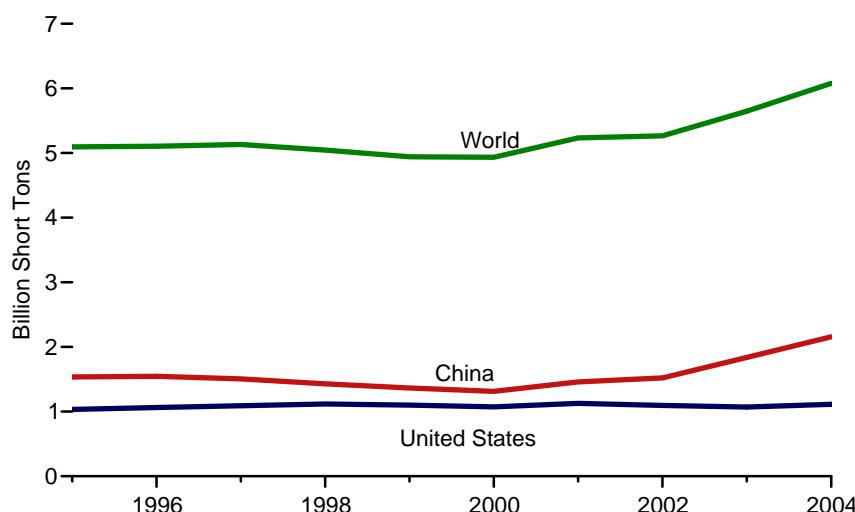
but reproduces the information as a matter of convenience for the reader. • U.S. reserves represent estimated recoverable reserves from the Demonstrated Reserve Base, which includes both measured and indicated tonnage. The U.S. term "measured" approximates the term "proved," used by the World Energy Council. The U.S. "measured and indicated" data have been combined and cannot be recaptured as "measured alone." • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

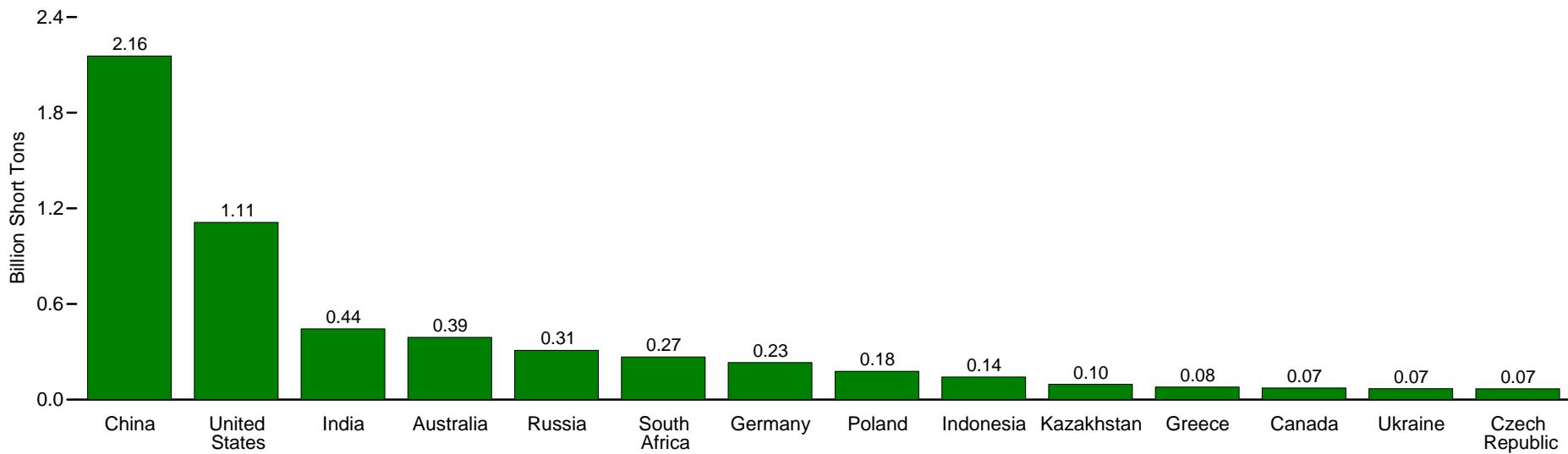
Source: EIA, "International Energy Annual 2005" (June-July 2007), Table 8.2.

**Figure 11.14 World Coal Production**

**World and Top Producing Countries, 1995-2004**



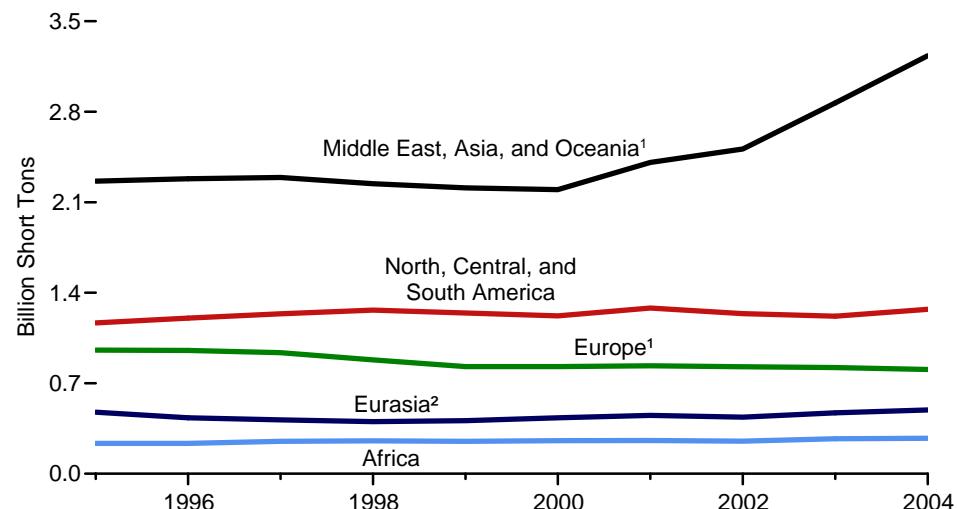
**Top Producing Countries, 2004**



<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

**World Areas, 1995-2004**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.14.

**Table 11.14 World Coal Production, 1995-2004**  
 (Million Short Tons)

Region and Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 P
<b>North, Central, and South America .....</b>	<b>1,166</b>	<b>1,203</b>	<b>1,237</b>	<b>1,266</b>	<b>1,243</b>	<b>1,221</b>	<b>1,281</b>	<b>1,238</b>	<b>1,219</b>	<b>1,272</b>
Canada .....	83	84	87	83	80	76	78	73	68	73
Colombia .....	28	33	36	37	36	42	48	44	55	59
Mexico .....	10	11	11	12	11	13	13	12	11	12
United States .....	1,033	1,064	1,090	1,118	1,100	1,074	1,128	1,094	1,072	1,112
Other .....	12	11	13	16	15	17	15	14	13	16
<b>Europe<sup>1</sup> .....</b>	<b>956</b>	<b>954</b>	<b>936</b>	<b>881</b>	<b>828</b>	<b>828</b>	<b>835</b>	<b>827</b>	<b>821</b>	<b>806</b>
Bosnia and Herzegovina .....	2	2	6	8	7	9	8	10	9	6
Bulgaria .....	31	31	33	33	28	29	29	29	30	29
Czech Republic .....	83	85	82	74	65	72	73	70	70	68
Germany .....	274	265	252	233	226	226	227	233	229	233
Greece .....	64	66	65	67	68	70	73	78	75	79
Hungary .....	16	17	17	16	16	15	15	14	15	12
Macedonia .....	8	8	8	9	8	8	9	8	8	7
Poland .....	221	222	221	197	189	179	180	178	181	178
Romania .....	45	46	37	29	25	32	37	34	36	35
Serbia and Montenegro (Yugoslavia) .....	45	45	47	49	36	41	40	42	44	45
Slovenia .....	5	5	6	5	5	5	5	5	5	5
Spain .....	31	30	29	29	27	26	25	24	23	23
Turkey .....	61	62	66	74	74	70	68	59	53	51
United Kingdom .....	52	54	52	44	40	34	35	33	31	27
Other .....	18	16	15	13	13	11	10	10	11	8
<b>Eurasia<sup>2</sup> .....</b>	<b>476</b>	<b>433</b>	<b>417</b>	<b>403</b>	<b>410</b>	<b>432</b>	<b>451</b>	<b>437</b>	<b>471</b>	<b>493</b>
Estonia .....	14	15	15	14	12	13	13	14	16	15
Kazakhstan .....	93	86	80	78	66	82	93	89	98	96
Russia .....	271	265	253	241	259	265	273	262	283	309
Ukraine .....	95	63	65	66	70	69	68	68	71	69
Other .....	4	4	4	4	4	3	4	4	3	3
<b>Africa .....</b>	<b>235</b>	<b>234</b>	<b>251</b>	<b>254</b>	<b>250</b>	<b>256</b>	<b>257</b>	<b>252</b>	<b>270</b>	<b>274</b>
South Africa .....	227	227	244	247	243	249	251	246	264	268
Zimbabwe .....	5	5	4	5	5	5	4	4	4	4
Other .....	2	2	2	2	2	2	2	2	2	2
<b>Middle East, Asia, and Oceania<sup>1</sup> .....</b>	<b>2,263</b>	<b>2,282</b>	<b>2,291</b>	<b>2,243</b>	<b>2,211</b>	<b>2,198</b>	<b>2,408</b>	<b>2,512</b>	<b>2,868</b>	<b>3,233</b>
Australia .....	267	272	292	317	321	338	363	377	377	391
China .....	1,537	1,545	1,507	1,429	1,365	1,314	1,459	1,521	1,838	2,156
India .....	321	315	338	343	356	370	389	405	429	444
Indonesia .....	45	55	60	68	81	84	102	114	127	142
Mongolia .....	6	6	5	6	7	6	7	7	7	7
North Korea .....	35	31	30	27	31	33	34	32	32	34
South Korea .....	6	5	5	5	5	5	4	4	4	4
Thailand .....	20	24	26	22	20	20	22	22	21	22
Vietnam .....	9	11	13	12	11	13	14	18	18	18
Other .....	17	18	15	15	15	15	16	13	14	15
<b>World .....</b>	<b>5,096</b>	<b>5,106</b>	<b>5,132</b>	<b>5,046</b>	<b>4,941</b>	<b>4,935</b>	<b>5,233</b>	<b>5,265</b>	<b>5,648</b>	<b>6,079</b>

<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary.

Notes: • Data in this table do not include recent updates for the United States (see Table 7.1) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Coal includes anthracite, subanthracite, bituminous coal, subbituminous coal, lignite, and brown coal.

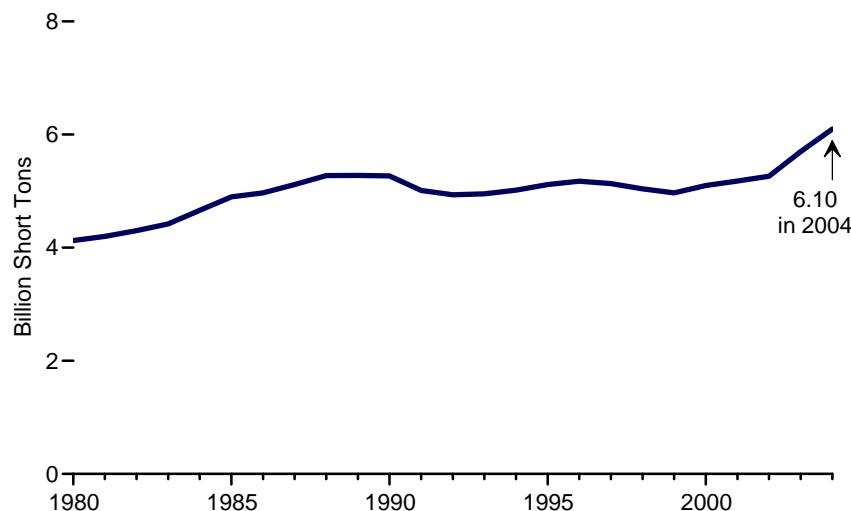
• Production from Estonia is oil shale. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

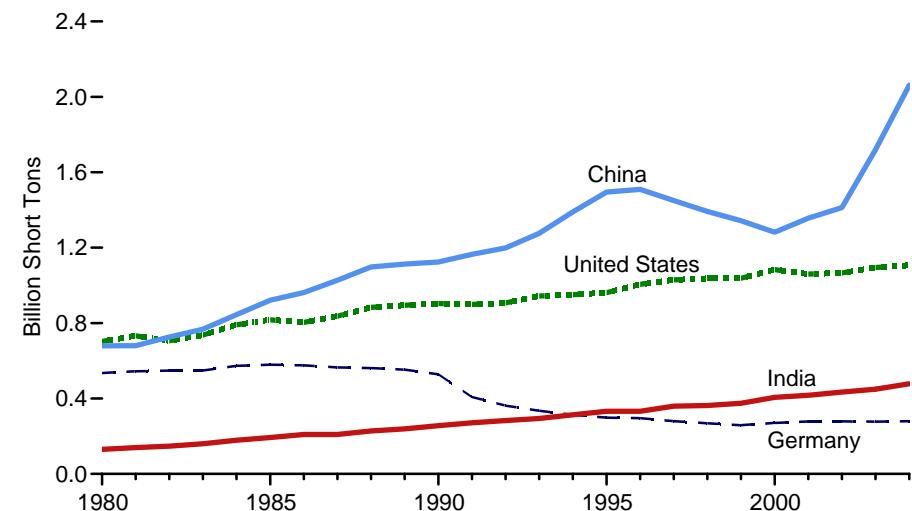
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table 2.5.

**Figure 11.15 World Coal Consumption**

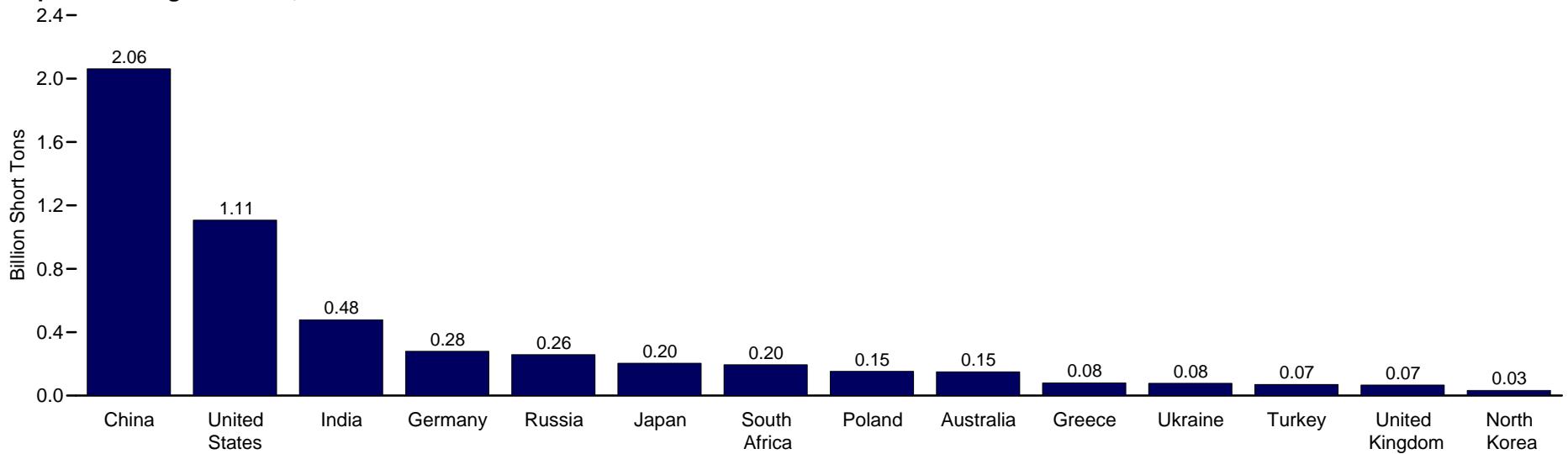
**World Total, 1980-2004**



**Selected Countries, 1980-2004**



**Top Consuming Countries, 2004**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.15.

**Table 11.15 World Coal Consumption, 1980-2004**  
 (Million Short Tons)

Year	Australia	China	Germany <sup>1</sup>	Greece	India	Japan	North Korea	Poland	Former U.S.S.R.	Russia	South Africa	Turkey	Ukraine	United Kingdom	United States	Other	World
1980	74	679	535	26	130	98	49	221	751	--	105	20	--	134	703	602	4,126
1981	75	680	544	30	140	106	51	200	748	--	116	23	--	130	733	623	4,199
1982	79	726	548	31	147	105	54	208	771	--	124	26	--	122	707	655	4,301
1983	78	768	549	36	160	100	56	213	764	--	127	29	--	123	737	681	4,420
1984	81	845	573	36	179	113	57	227	770	--	137	35	--	88	791	729	4,661
1985	86	921	579	42	193	119	60	238	779	--	142	46	--	116	818	758	4,898
1986	84	962	576	44	209	109	59	247	803	--	145	54	--	123	804	749	4,969
1987	93	1,027	565	49	209	111	57	258	807	--	148	54	--	129	837	773	5,116
1988	96	1,098	561	56	228	123	58	253	821	--	151	51	--	123	884	772	5,274
1989	104	1,113	553	59	239	123	57	242	777	--	140	60	--	126	895	788	5,277
1990	104	1,124	528	59	256	126	54	202	848	--	139	60	--	119	904	745	5,269
1991	108	1,165	408	59	271	129	52	202	672	--	144	64	--	118	899	720	5,010
1992	111	1,199	362	62	283	125	46	192	--	326	147	66	151	111	908	845	4,934
1993	109	1,276	335	62	294	127	42	194	--	313	146	60	133	96	944	822	4,953
1994	110	1,390	314	66	314	137	39	184	--	284	161	66	109	91	951	802	5,016
1995	112	1,495	298	64	332	142	36	185	--	270	162	67	110	79	962	802	5,116
1996	120	1,509	296	66	332	142	31	189	--	278	164	73	75	77	1,006	817	5,175
1997	127	1,450	280	66	359	151	30	182	--	253	172	80	72	69	1,030	812	5,133
1998	138	1,392	269	68	363	143	27	168	--	238	161	86	73	68	1,037	807	5,039
1999	141	1,343	258	68	375	155	31	162	--	247	167	84	72	61	1,039	767	4,969
2000	141	1,282	270	72	406	169	33	159	--	253	174	89	73	64	1,084	832	5,100
2001	141	1,357	278	75	417	169	34	152	--	242	178	80	71	70	1,060	854	5,177
2002	145	1,413	279	77	434	173	32	149	--	240	170	73	72	64	1,066	874	5,263
2003	143	1,720	277	78	449	185	33	155	--	243	187	71	75	69	1,095	918	5,698
2004 <sup>p</sup>	150	2,062	280	80	478	204	33	153	--	258	195	70	78	67	1,107	883	6,098

<sup>1</sup> Through 1990, this is East and West Germany. Beginning in 1991, this is unified Germany.

P=Preliminary. -- = Not applicable.

Notes: • Data in this table do not include recent updates for the United States (see Table 7.1) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Totals

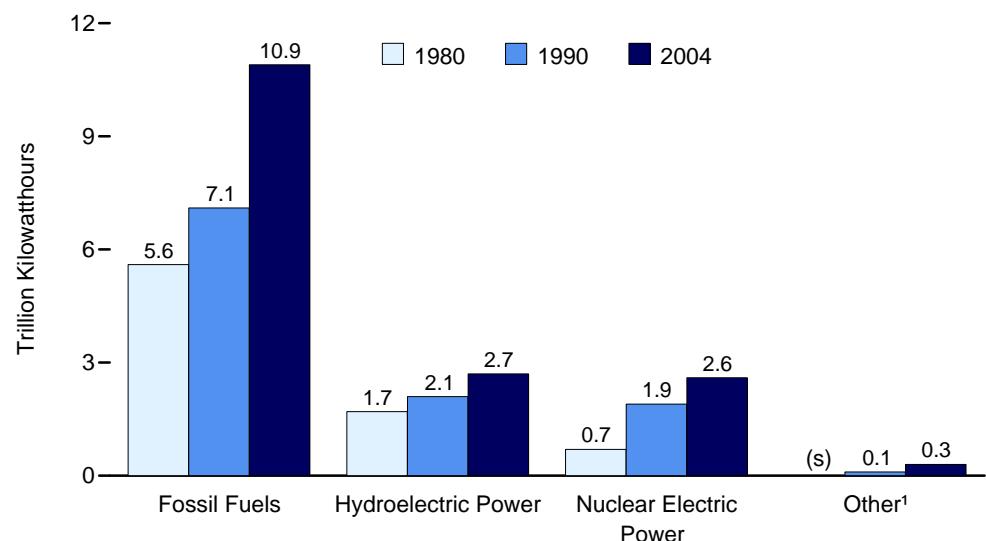
may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table 1.4.

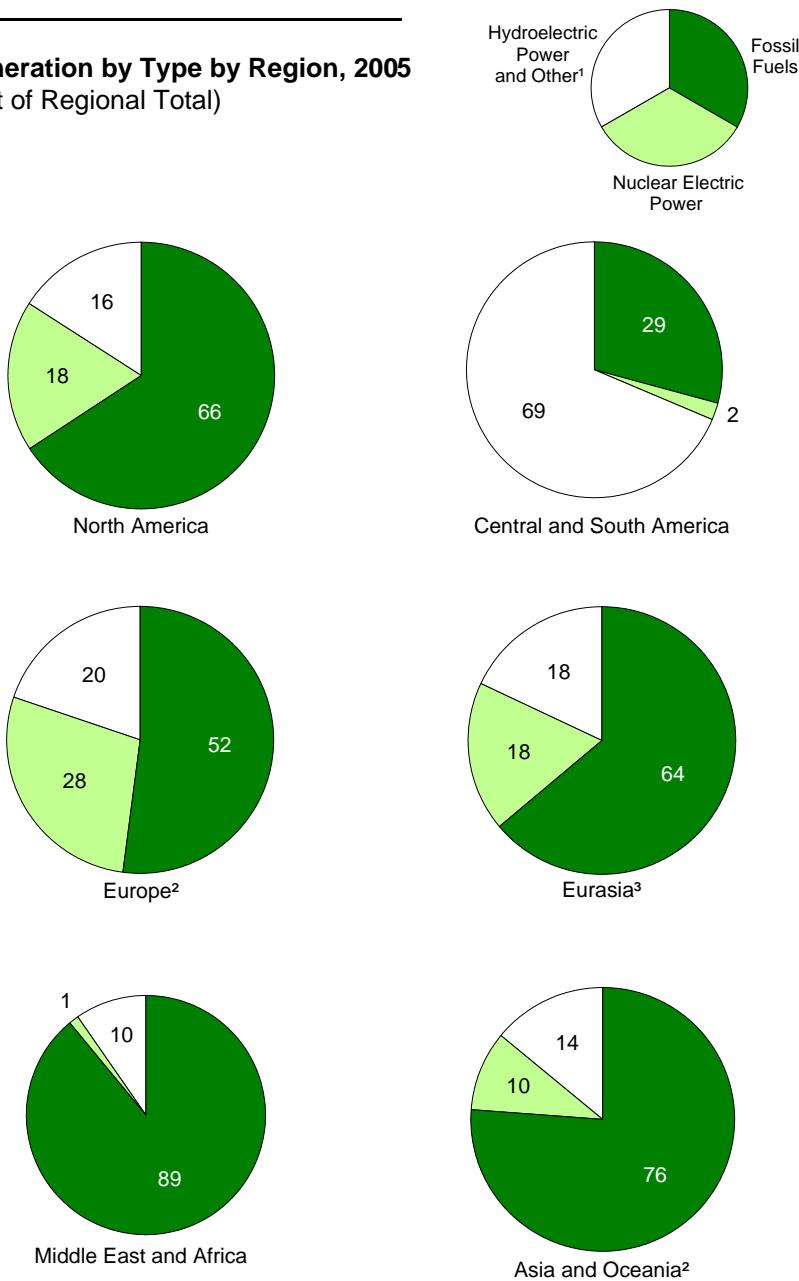
**Figure 11.16 World Net Generation of Electricity**

**Net Generation by Type, 1980, 1990, and 2005**

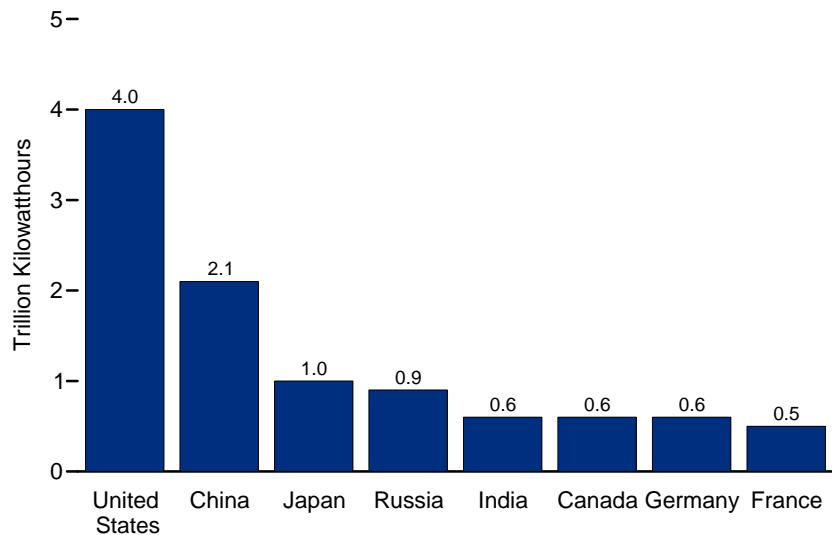


**Net Generation by Type by Region, 2005**

(Percent of Regional Total)



**Top Net Generating Countries, 2005**



<sup>1</sup> Wood, waste, geothermal, solar, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>2</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>3</sup> Includes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

(s)=Less than 0.05 trillion kilowatthours.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.16.

**Table 11.16 World Net Generation of Electricity by Type, 1980, 1990, and 2004**  
 (Billion Kilowatthours)

Region and Country	Fossil Fuels			Nuclear Electric Power			Hydroelectric Power <sup>1</sup>			Total <sup>2</sup>		
	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>
<b>North America</b>	<b>1,880.1</b>	<b>2,292.0</b>	<b>3,168.8</b>	<b>287.0</b>	<b>648.9</b>	<b>883.1</b>	<b>546.9</b>	<b>606.5</b>	<b>619.1</b>	<b>2,721.6</b>	<b>3,624.0</b>	<b>4,786.9</b>
Canada	79.8	101.9	142.9	35.9	69.2	85.9	251.0	293.9	334.2	367.9	468.7	573.0
Mexico	46.0	85.7	199.9	.0	2.8	8.7	16.7	23.2	25.0	63.6	116.6	242.4
United States	1,753.8	2,103.8	2,825.0	251.1	576.9	788.5	279.2	289.4	259.9	2,289.6	3,038.0	3,970.6
Other	.5	.7	1.0	.0	.0	.0	.0	.0	.0	.5	.7	1.0
<b>Central and South America</b>	<b>99.8</b>	<b>114.8</b>	<b>259.2</b>	<b>2.2</b>	<b>9.0</b>	<b>18.9</b>	<b>201.5</b>	<b>365.1</b>	<b>577.1</b>	<b>308.2</b>	<b>497.2</b>	<b>881.4</b>
Argentina	22.2	20.9	55.1	2.2	7.0	7.3	17.3	20.2	30.2	41.8	48.3	93.9
Brazil	7.5	8.1	34.5	.0	1.9	11.6	128.4	204.6	317.6	138.3	219.6	380.9
Paraguay	(s)	(s)	(s)	.0	.0	.0	.7	27.2	51.8	.8	27.2	51.8
Venezuela	17.6	21.0	31.0	.0	.0	.0	14.4	36.6	62.1	32.0	57.6	93.0
Other	52.4	64.8	138.6	.0	.0	.0	40.6	76.4	115.4	95.3	144.4	261.7
<b>Europe <sup>3</sup></b>	<b>1,452.3</b>	<b>1,439.1</b>	<b>1,791.9</b>	<b>229.6</b>	<b>761.3</b>	<b>967.5</b>	<b>458.0</b>	<b>474.5</b>	<b>543.6</b>	<b>2,153.7</b>	<b>2,694.5</b>	<b>3,439.9</b>
Belgium	38.3	25.0	32.2	11.9	40.6	45.8	.3	.3	.3	50.8	66.5	80.2
Czech Republic	--	--	51.6	--	--	25.0	--	--	2.0	--	--	79.1
Finland	22.0	22.8	35.0	6.6	18.3	21.5	10.1	10.8	14.8	38.7	51.8	81.6
France	118.0	44.3	49.7	63.4	298.4	425.8	68.3	52.8	59.1	250.8	397.6	540.6
Germany	390.3	358.9	348.1	55.6	145.1	159.0	18.8	17.2	20.4	469.9	526.0	566.9
Italy	125.5	167.5	223.9	2.1	.0	.0	45.0	31.3	40.8	176.4	202.1	277.6
Netherlands	58.0	63.2	82.6	3.9	3.3	3.6	.0	.1	.1	62.9	67.7	92.7
Norway	.1	.2	.5	.0	.0	.0	82.7	119.9	107.7	82.9	120.4	108.9
Poland	111.1	125.0	140.4	.0	.0	.0	2.3	1.4	2.1	113.8	126.7	143.5
Romania	51.4	49.7	32.4	.0	.0	5.3	12.5	10.9	16.8	63.9	60.6	54.5
Spain	74.5	66.5	150.5	5.2	51.6	60.4	29.2	25.2	31.2	109.2	143.9	263.3
Sweden	10.1	3.2	6.4	25.3	64.8	73.4	58.1	71.8	63.5	94.3	141.5	150.5
Switzerland	.9	.6	1.1	12.9	22.4	25.6	32.5	29.5	33.4	46.4	53.0	62.0
Turkey	12.0	32.3	97.5	.0	.0	.0	11.2	22.9	45.6	23.3	55.2	143.3
United Kingdom	228.9	230.0	276.5	32.3	62.5	73.7	3.9	5.1	4.9	265.1	299.0	363.2
Other	211.2	249.8	263.5	10.3	54.4	48.3	83.2	75.4	100.7	305.4	382.5	432.0
<b>Eurasia <sup>4</sup></b>	<b>1,037.1</b>	<b>1,204.1</b>	<b>835.5</b>	<b>72.9</b>	<b>201.3</b>	<b>236.7</b>	<b>184.0</b>	<b>230.7</b>	<b>233.1</b>	<b>1,294.0</b>	<b>1,636.1</b>	<b>1,307.3</b>
Kazakhstan	--	--	54.3	--	--	.0	--	--	8.9	--	--	63.3
Russia	--	--	577.0	--	--	137.5	--	--	165.3	--	--	881.6
Ukraine	--	--	85.5	--	--	82.7	--	--	9.0	--	--	177.3
Other	1,037.1	1,204.1	118.6	72.9	201.3	16.6	184.0	230.7	49.8	1,294.0	1,636.1	185.1
<b>Middle East</b>	<b>82.8</b>	<b>217.3</b>	<b>552.5</b>	<b>.0</b>	<b>.0</b>	<b>.0</b>	<b>9.6</b>	<b>9.6</b>	<b>14.1</b>	<b>92.4</b>	<b>227.0</b>	<b>566.6</b>
Iran	15.7	49.8	145.2	.0	.0	.0	5.6	6.0	10.6	21.3	55.9	155.7
Saudi Arabia	20.5	64.9	155.2	.0	.0	.0	.0	.0	.0	20.5	64.9	155.2
Other	46.6	102.6	252.1	.0	.0	.0	4.1	3.6	3.6	50.7	106.2	255.6
<b>Africa</b>	<b>128.8</b>	<b>243.6</b>	<b>401.7</b>	<b>.0</b>	<b>8.4</b>	<b>14.3</b>	<b>60.1</b>	<b>54.9</b>	<b>87.4</b>	<b>188.9</b>	<b>307.3</b>	<b>505.4</b>
Egypt	8.6	31.5	78.7	.0	.0	.0	9.7	9.9	12.5	18.3	41.4	91.7
South Africa	92.1	146.6	212.0	.0	8.4	14.3	1.0	1.0	.7	93.1	156.0	227.2
Other	28.2	65.5	111.0	.0	.0	.0	49.4	44.0	74.2	77.6	109.9	186.5
<b>Asia and Oceania <sup>3</sup></b>	<b>907.7</b>	<b>1,626.8</b>	<b>3,889.2</b>	<b>92.7</b>	<b>279.9</b>	<b>498.6</b>	<b>262.7</b>	<b>404.1</b>	<b>664.0</b>	<b>1,268.0</b>	<b>2,333.0</b>	<b>5,103.0</b>
Australia	74.5	131.8	207.0	.0	.0	.0	12.8	14.0	15.7	87.7	146.4	225.3
China	227.9	465.2	1,701.8	.0	.0	47.9	57.6	125.1	327.7	285.5	590.3	2,079.7
India	69.7	198.9	525.4	3.0	5.6	15.0	46.5	70.9	83.8	119.3	275.5	630.6
Indonesia	10.6	35.3	97.2	.0	.0	.0	2.2	6.7	9.4	12.8	43.0	112.6
Japan	381.6	524.0	594.3	78.6	192.2	271.6	87.8	88.4	93.5	549.1	817.3	974.4
South Korea	29.8	45.5	215.2	3.3	50.2	124.2	1.5	4.6	3.8	34.6	100.4	345.2
Taiwan	31.3	43.6	128.6	7.8	31.6	37.9	2.9	8.2	6.4	42.0	83.3	173.0
Thailand	12.3	38.7	112.5	.0	.0	.0	1.3	4.9	6.0	13.6	43.7	121.7
Other	70.1	143.8	307.4	(s)	.4	1.9	50.0	81.2	117.7	123.5	233.2	440.6
<b>World</b>	<b>5,588.5</b>	<b>7,137.9</b>	<b>10,898.8</b>	<b>684.4</b>	<b>1,908.8</b>	<b>2,619.2</b>	<b>1,722.9</b>	<b>2,145.4</b>	<b>2,738.4</b>	<b>8,026.9</b>	<b>11,319.1</b>	<b>16,590.6</b>

<sup>1</sup> Excludes pumped storage, except for the United States.

<sup>2</sup> Wood, waste, geothermal, solar, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies are included in total.

<sup>3</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>4</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary. -- = Not applicable. (s)=Less than 0.05 billion kilowatthours.

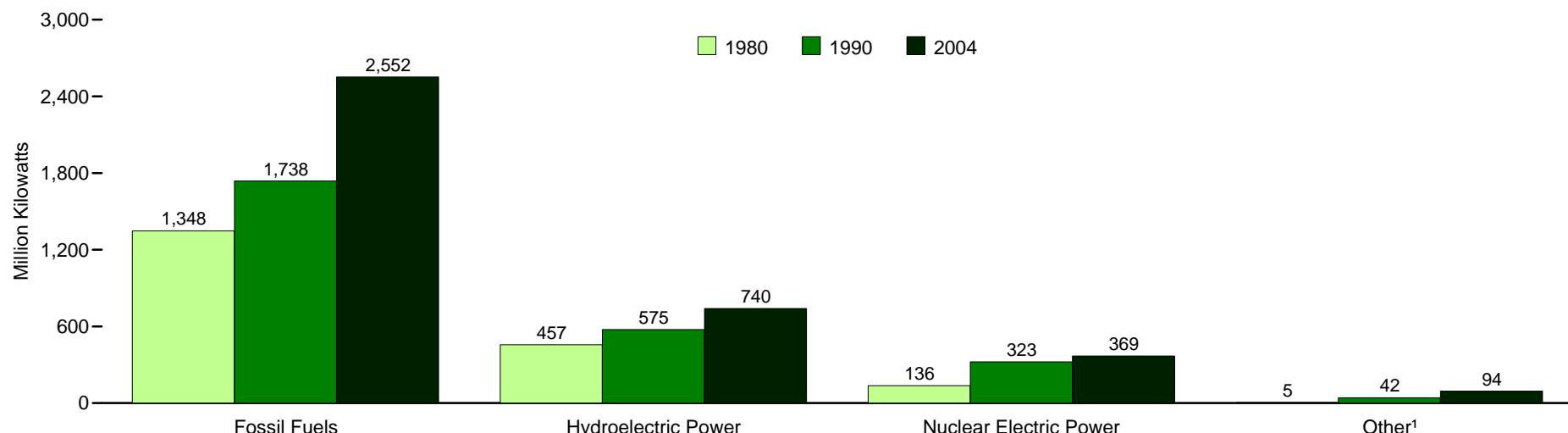
Notes: • Data in this table do not include recent updates for the United States (see Table 8.2a) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

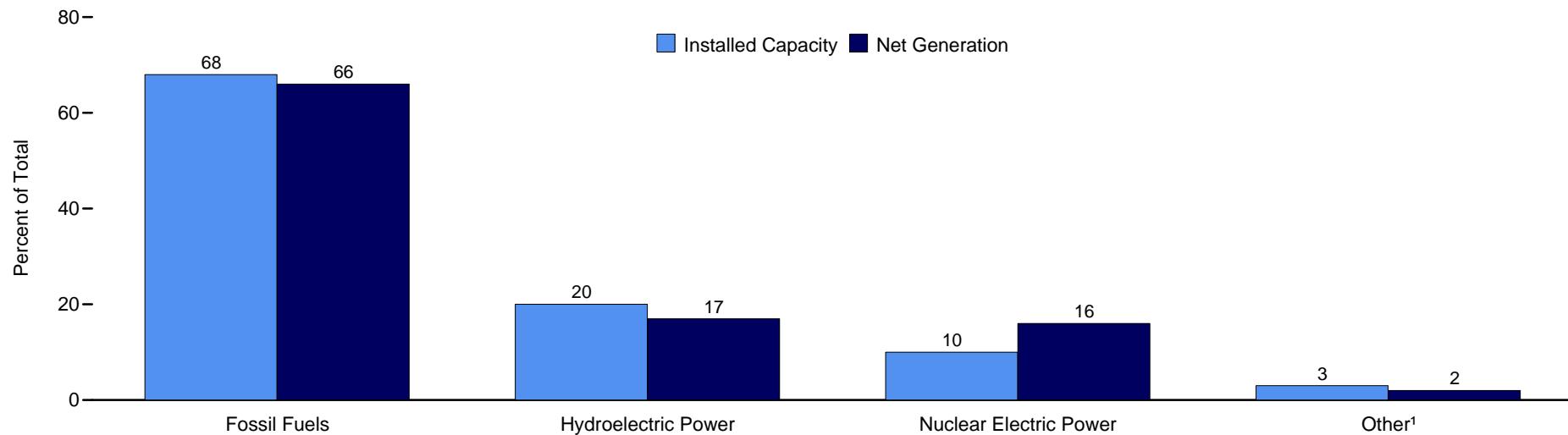
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Tables 2.6, 2.7, 6.1, and 6.3.

**Figure 11.17 World Electrical Installed Capacity by Type**

**Installed Capacity by Type, 1980, 1990, and 2004**



**Installed Capacity and Net Generation Shares of Totals by Type, 2004**



<sup>1</sup> Wood, waste, geothermal, solar, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Note: Shares are based on data prior to rounding for publication and may not sum exactly to 100 percent.  
Sources: Tables 11.16 and 11.17.

**Table 11.17 World Electrical Installed Capacity by Type, 1980, 1990, and 2004**  
 (Million Kilowatts)

Region and Country	Fossil Fuels			Nuclear Electric Power			Hydroelectric Power <sup>1</sup>			Total <sup>2</sup>		
	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>	1980	1990	2004 <sup>P</sup>
<b>North America</b>	<b>481.7</b>	<b>574.9</b>	<b>818.2</b>	<b>57.7</b>	<b>112.2</b>	<b>111.6</b>	<b>135.7</b>	<b>159.1</b>	<b>178.3</b>	<b>676.6</b>	<b>861.3</b>	<b>1,130.9</b>
Canada	26.6	28.0	34.9	5.9	11.9	10.6	47.9	57.9	70.2	80.8	98.9	118.1
Mexico	10.8	18.9	37.6	.0	.7	1.4	6.1	7.8	9.7	17.0	28.0	49.6
United States <sup>3</sup>	444.1	527.8	745.4	51.8	99.6	99.6	81.7	93.4	98.4	578.6	734.1	962.9
Other	.2	.3	.3	.0	.0	.0	.0	.0	.0	.2	.3	.3
<b>Central and South America</b>	<b>36.0</b>	<b>44.9</b>	<b>80.1</b>	<b>.4</b>	<b>1.7</b>	<b>3.0</b>	<b>43.0</b>	<b>84.1</b>	<b>122.2</b>	<b>81.2</b>	<b>132.8</b>	<b>212.2</b>
Argentina	8.0	9.5	19.8	.4	1.0	1.0	3.6	6.6	9.8	12.0	17.2	30.6
Brazil	4.1	4.7	11.7	.0	.7	2.0	27.5	44.8	67.8	33.4	52.1	86.5
Paraguay	.1	(s)	(s)	.0	.0	.0	.2	5.8	7.4	.2	5.8	7.4
Venezuela	5.8	8.5	8.1	.0	.0	.0	2.7	10.0	12.5	8.5	18.5	20.6
Other	18.0	22.1	40.5	.0	.0	.0	9.0	16.9	24.7	27.1	39.2	67.1
<b>Europe <sup>4</sup></b>	<b>351.0</b>	<b>386.1</b>	<b>441.4</b>	<b>46.5</b>	<b>125.7</b>	<b>138.6</b>	<b>135.3</b>	<b>153.9</b>	<b>167.2</b>	<b>533.6</b>	<b>668.8</b>	<b>781.4</b>
Belgium	8.2	7.2	8.1	1.7	5.5	5.8	.7	.1	.1	10.6	12.8	14.3
Czech Republic	--	--	11.4	--	--	3.8	--	--	1.0	--	--	16.2
Finland	6.3	7.8	10.9	2.2	2.4	2.7	2.4	2.6	3.0	11.0	12.7	16.6
France	30.1	22.8	26.9	14.4	52.5	63.4	16.4	20.3	20.9	61.1	95.9	112.2
Germany	84.1	87.5	78.4	10.4	24.5	21.4	7.9	8.7	4.1	102.5	121.6	118.9
Italy	27.6	37.5	54.9	1.4	.0	.0	15.8	12.6	13.7	45.3	50.6	71.4
Netherlands	16.9	16.8	19.4	.5	.5	.4	.0	(s)	(s)	17.4	17.3	20.9
Norway	.2	.2	.1	.0	.0	.0	19.8	25.7	26.3	20.0	26.0	26.6
Poland	23.0	26.1	29.1	.0	.0	.0	.6	.6	.9	23.6	26.8	30.0
Romania	12.7	17.3	13.1	.0	.0	.7	3.5	5.6	6.2	16.1	22.9	20.1
Spain	13.9	19.9	31.9	1.1	7.5	7.6	13.5	11.6	15.5	28.5	39.1	61.0
Sweden	7.9	7.2	7.4	4.6	9.9	9.4	14.9	15.8	16.1	27.4	33.5	33.3
Switzerland	.6	.8	.5	1.9	3.0	3.2	11.5	11.6	13.3	14.0	15.3	17.5
Turkey	3.0	9.2	22.9	.0	.0	.0	2.1	6.6	12.6	5.1	15.8	35.6
United Kingdom	65.6	59.1	60.8	6.5	11.4	12.1	2.5	1.4	1.5	74.5	72.0	76.2
Other	50.9	66.7	65.5	1.7	8.6	8.1	23.8	30.7	32.0	76.5	106.4	110.7
<b>Eurasia <sup>5</sup></b>	<b>201.9</b>	<b>240.8</b>	<b>237.9</b>	<b>12.5</b>	<b>37.9</b>	<b>37.5</b>	<b>52.3</b>	<b>65.0</b>	<b>66.9</b>	<b>266.7</b>	<b>343.7</b>	<b>342.4</b>
Kazakhstan	--	--	14.9	--	--	.0	--	--	2.2	--	--	17.2
Russia	--	--	148.0	--	--	22.2	--	--	45.0	--	--	215.3
Ukraine	--	--	36.2	--	--	11.8	--	--	4.4	--	--	52.4
Other	201.9	240.8	38.8	12.5	37.9	3.4	52.3	65.0	15.3	266.7	343.7	57.5
<b>Middle East</b>	<b>27.9</b>	<b>68.1</b>	<b>105.4</b>	<b>.0</b>	<b>.0</b>	<b>.0</b>	<b>2.6</b>	<b>4.8</b>	<b>6.5</b>	<b>30.4</b>	<b>72.9</b>	<b>111.9</b>
Iran	9.4	15.5	29.9	.0	.0	.0	1.8	2.0	4.4	11.2	17.4	34.3
Saudi Arabia	5.9	19.1	29.1	.0	.0	.0	.0	.0	.0	5.9	19.1	29.1
Other	12.5	33.5	46.4	.0	.0	.0	.8	2.8	2.1	13.3	36.4	48.5
<b>Africa</b>	<b>30.5</b>	<b>57.4</b>	<b>80.7</b>	<b>.0</b>	<b>1.8</b>	<b>1.8</b>	<b>13.9</b>	<b>18.5</b>	<b>21.1</b>	<b>44.5</b>	<b>77.8</b>	<b>103.7</b>
Egypt	2.4	8.7	14.3	.0	.0	.0	2.4	2.7	2.7	4.9	11.5	17.1
South Africa	17.8	28.6	38.0	.0	1.8	1.8	.5	.6	.7	18.4	31.0	40.5
Other	10.3	20.1	28.4	.0	.0	.0	10.9	15.2	17.7	21.2	35.4	46.2
<b>Asia and Oceania <sup>4</sup></b>	<b>218.9</b>	<b>365.4</b>	<b>788.3</b>	<b>18.5</b>	<b>43.9</b>	<b>76.0</b>	<b>74.4</b>	<b>109.3</b>	<b>198.2</b>	<b>312.5</b>	<b>520.2</b>	<b>1,071.6</b>
Australia	17.6	27.8	39.7	.0	.0	.0	6.2	7.3	7.9	23.8	35.1	48.6
China	45.6	92.1	289.8	.0	.0	6.2	20.3	34.6	94.9	65.9	126.6	391.4
India	20.7	51.9	96.5	.9	1.6	2.8	11.8	18.3	29.6	33.3	71.8	131.4
Indonesia	3.9	9.6	19.9	.0	.0	.0	1.0	3.0	4.3	4.9	12.7	25.0
Japan	94.3	119.1	174.7	15.7	29.4	45.7	19.6	20.4	22.0	129.8	169.1	243.5
South Korea	6.5	11.0	41.0	.6	7.6	15.7	.8	1.3	1.6	7.9	20.0	58.8
Taiwan	6.9	10.2	23.6	1.3	5.1	5.1	1.4	2.6	4.5	9.6	17.9	33.3
Thailand	2.6	6.0	21.8	.0	.0	.0	1.3	2.3	3.0	3.8	8.3	24.8
Other	20.8	37.7	81.2	.1	.1	.5	12.1	19.6	30.5	33.6	58.7	114.7
<b>World</b>	<b>1,347.8</b>	<b>1,737.6</b>	<b>2,551.9</b>	<b>135.5</b>	<b>323.1</b>	<b>368.5</b>	<b>457.2</b>	<b>575.2</b>	<b>739.6</b>	<b>1,945.5</b>	<b>2,677.5</b>	<b>3,754.1</b>

<sup>1</sup> Excludes pumped storage, except for the United States.

<sup>2</sup> Wood, waste, geothermal, solar, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies are included in total.

<sup>3</sup> Net summer capability.

<sup>4</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>5</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary. -- = Not applicable. (s)=Less than 0.05 million kilowatts.

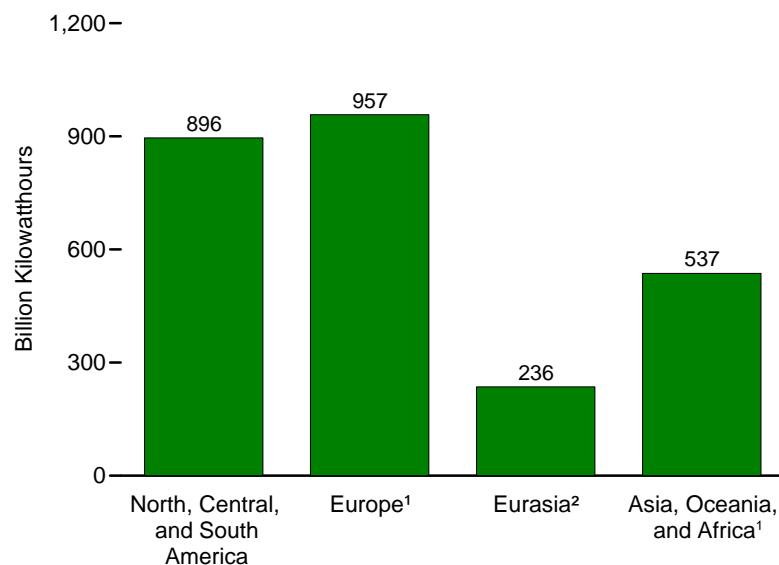
Notes: • Data in this table do not include recent updates for the United States (see Table 8.11a) or for other countries (see the Energy Information Administration's "International Energy Annual 2005"). • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

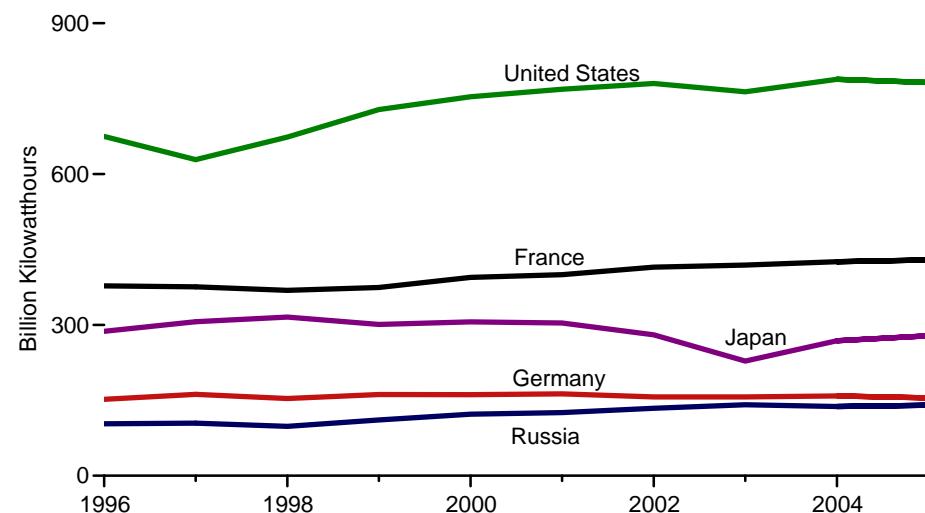
Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Tables 6.4, 6.4h, 6.4n, and 6.4t.

**Figure 11.18 World Nuclear Electricity Net Generation**

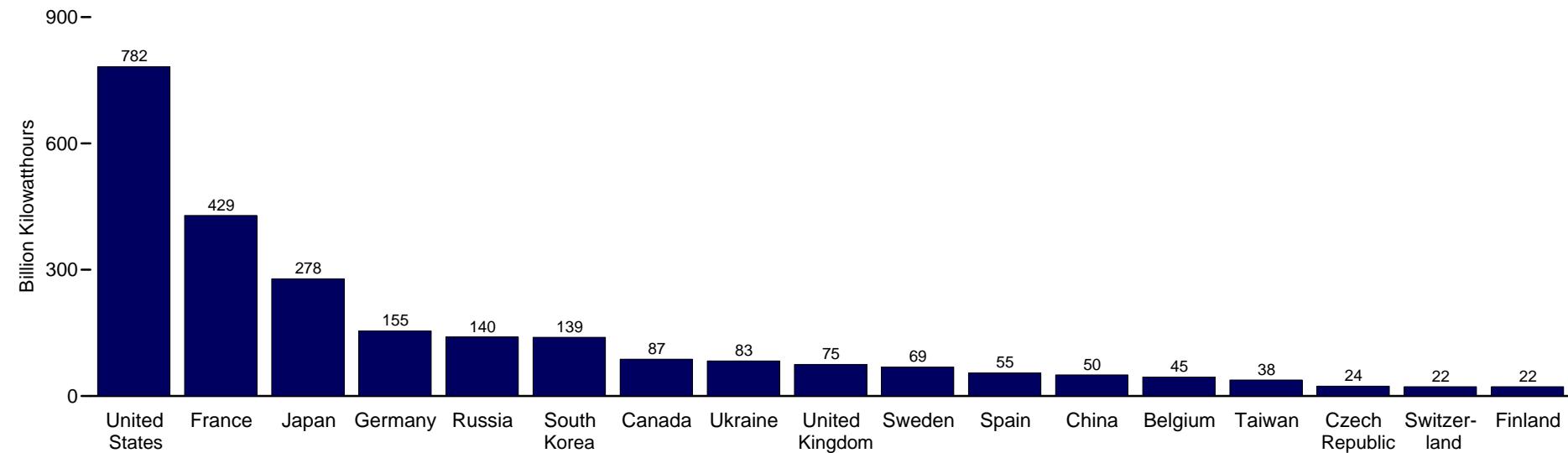
**By Region, 2005**



**Top Net Generating Countries, 1996-2005**



**Top Net Generating Countries, 2005**



<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 11.18.

**Table 11.18 World Nuclear Electricity Net Generation, 1996-2005**  
 (Billion Kilowatthours)

Region and Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>North America .....</b>	<b>770.3</b>	<b>716.4</b>	<b>750.2</b>	<b>807.6</b>	<b>830.9</b>	<b>850.0</b>	<b>861.1</b>	<b>844.9</b>	<b>883.1</b>	<b>879.7</b>
Canada .....	88.1	77.9	67.7	69.8	69.2	72.9	71.8	71.1	85.9	87.4
Mexico .....	7.5	9.9	8.8	9.5	7.8	8.3	9.3	10.0	8.7	10.3
United States .....	674.7	628.6	673.7	728.3	753.9	768.8	780.1	763.7	788.5	782.0
<b>Central and South America .....</b>	<b>9.2</b>	<b>10.5</b>	<b>10.3</b>	<b>10.5</b>	<b>10.9</b>	<b>20.8</b>	<b>19.2</b>	<b>20.4</b>	<b>18.9</b>	<b>16.3</b>
Argentina .....	6.9	7.5	7.1	6.7	6.0	6.5	5.4	7.0	7.3	6.4
Brazil .....	2.3	3.0	3.1	3.8	4.9	14.3	13.8	13.4	11.6	9.9
<b>Europe<sup>1</sup> .....</b>	<b>891.0</b>	<b>902.8</b>	<b>897.7</b>	<b>911.3</b>	<b>914.9</b>	<b>944.1</b>	<b>953.7</b>	<b>957.0</b>	<b>R966.6</b>	<b>957.3</b>
Belgium .....	41.2	45.0	43.9	46.6	45.7	44.0	45.0	45.0	R44.9	45.2
Bulgaria .....	17.8	16.4	16.1	15.0	17.3	18.2	20.2	16.0	15.6	17.3
Czech Republic .....	12.2	12.5	12.5	12.7	12.9	14.0	17.8	24.6	25.0	23.5
Finland .....	18.5	19.0	20.8	21.8	21.4	21.6	21.2	21.6	R21.6	22.1
France .....	377.5	375.7	368.6	374.5	394.4	400.0	414.9	419.0	425.8	429.0
Germany .....	152.0	161.8	153.6	161.5	161.1	162.7	156.6	156.8	R158.7	154.9
Hungary .....	13.5	13.3	13.3	13.4	13.5	13.4	13.3	10.5	11.3	13.1
Netherlands .....	4.0	2.3	3.6	3.6	3.7	3.8	3.7	3.8	3.6	3.8
Romania .....	.9	5.1	4.9	4.8	5.2	5.0	5.1	4.5	5.3	5.3
Slovakia .....	11.3	10.5	10.8	12.5	15.7	16.2	17.1	17.0	16.2	16.8
Slovenia .....	4.4	4.8	4.8	4.5	4.5	5.0	5.3	5.0	5.2	5.6
Spain .....	53.5	52.5	56.0	55.9	59.1	60.5	59.9	58.8	60.4	54.7
Sweden .....	70.6	66.4	69.9	69.5	54.5	68.5	64.2	64.0	R73.6	68.6
Switzerland .....	23.9	24.1	24.5	24.5	25.1	25.5	25.9	26.1	25.6	22.2
United Kingdom .....	89.9	93.2	94.5	90.4	80.8	85.4	83.6	84.3	73.7	75.2
<b>Eurasia<sup>2</sup> .....</b>	<b>194.2</b>	<b>192.5</b>	<b>183.4</b>	<b>189.7</b>	<b>203.4</b>	<b>209.8</b>	<b>223.0</b>	<b>234.4</b>	<b>236.7</b>	<b>235.8</b>
Armenia .....	2.1	1.4	1.4	2.1	1.8	2.0	2.1	1.8	2.2	2.5
Kazakhstan .....	.1	.3	.1	(s)	.0	.0	.0	.0	.0	.0
Lithuania .....	12.7	10.9	12.9	9.4	8.0	10.8	13.4	14.7	14.3	9.8
Russia .....	103.3	104.5	98.3	110.9	122.5	125.4	134.1	141.2	137.5	140.2
Ukraine .....	76.0	75.4	70.6	67.4	71.1	71.7	73.4	76.7	82.7	83.3
<b>Africa .....</b>	<b>11.8</b>	<b>12.6</b>	<b>13.6</b>	<b>12.8</b>	<b>13.0</b>	<b>10.7</b>	<b>12.0</b>	<b>12.7</b>	<b>14.3</b>	<b>12.2</b>
South Africa .....	11.8	12.6	13.6	12.8	13.0	10.7	12.0	12.7	14.3	12.2
<b>Asia and Oceania<sup>1</sup> .....</b>	<b>415.0</b>	<b>436.5</b>	<b>460.8</b>	<b>461.2</b>	<b>476.8</b>	<b>481.3</b>	<b>476.2</b>	<b>448.4</b>	<b>R495.4</b>	<b>524.3</b>
China .....	13.6	11.4	13.5	14.1	15.9	16.6	25.2	41.7	47.9	50.3
India .....	7.4	10.5	10.6	11.5	14.1	18.2	17.8	16.4	15.0	15.7
Japan .....	287.1	306.2	315.7	300.8	305.9	303.9	280.3	228.0	R268.3	278.4
Pakistan .....	.3	.4	.4	.1	.4	2.0	1.8	1.8	1.9	2.4
South Korea .....	70.2	73.2	85.2	97.9	103.5	106.5	113.1	123.2	124.2	139.4
Taiwan .....	36.3	34.8	35.4	36.9	37.0	34.1	38.0	37.4	37.9	38.0
<b>World .....</b>	<b>2,291.5</b>	<b>2,271.3</b>	<b>2,316.0</b>	<b>2,393.1</b>	<b>2,449.9</b>	<b>2,516.7</b>	<b>2,545.3</b>	<b>2,517.8</b>	<b>R2,615.0</b>	<b>2,625.6</b>

<sup>1</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>2</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

R=Revised. (s) = Less than 0.05 billion kilowatthours.

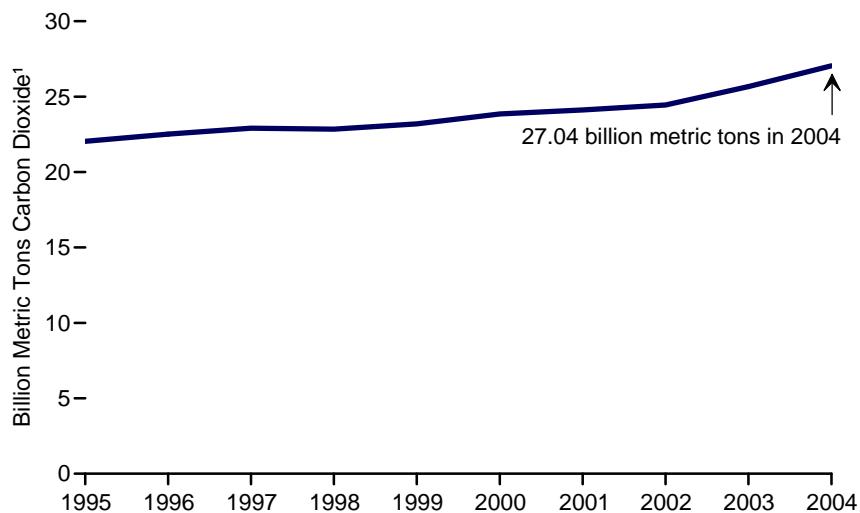
Note: Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

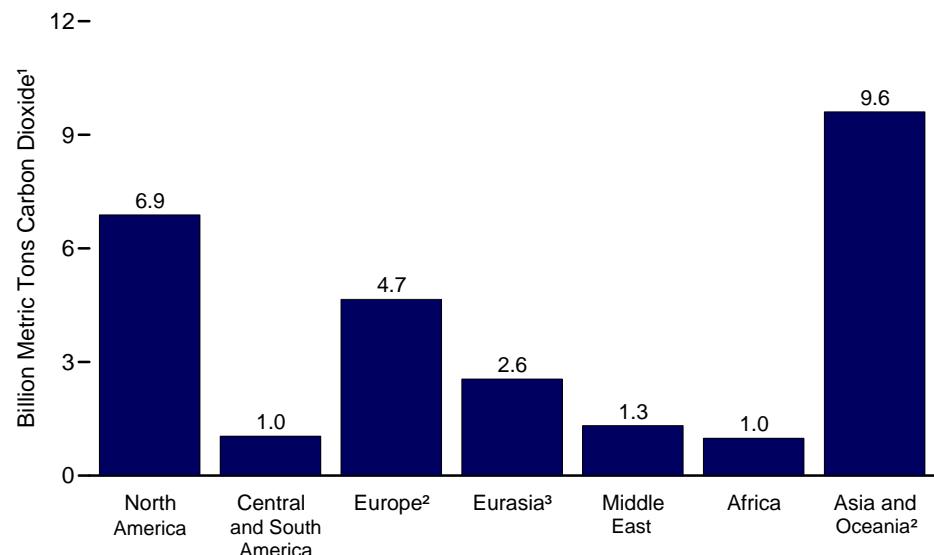
Sources: **United States:** Table 8.2a. **All Other Data:** Energy Information Administration, "International Energy Annual 2005" (June-July 2007), Table 2.7.

**Figure 11.19 World Carbon Dioxide Emissions From Energy Consumption**

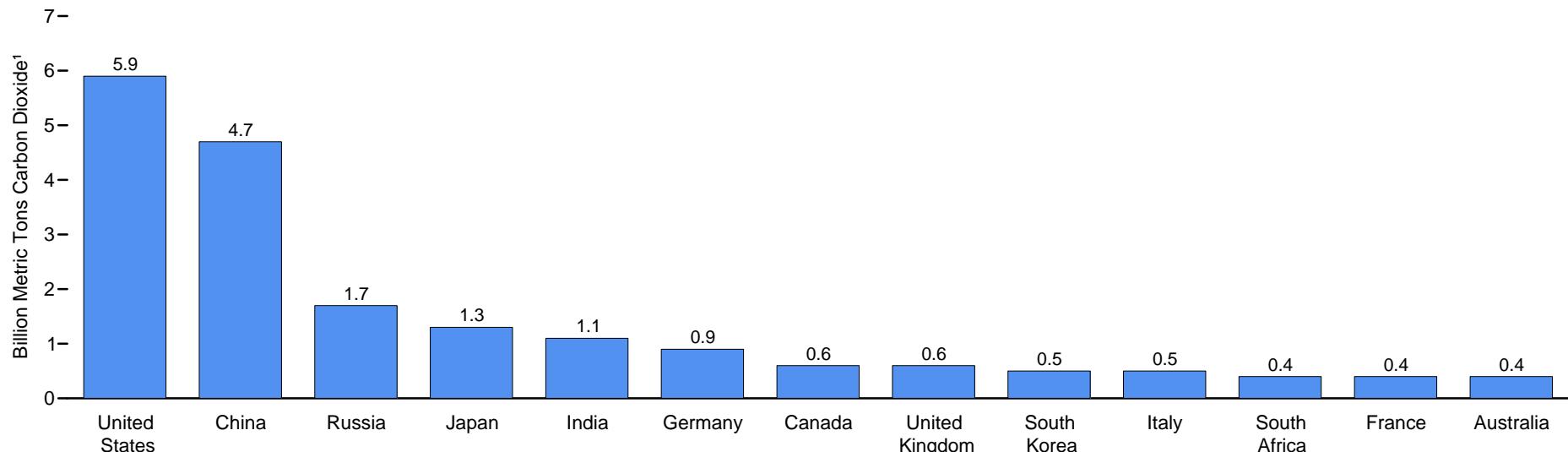
**World, 1995-2004**



**World by Region, 2004**



**Top Countries, 2004**



<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>3</sup> Includes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

Notes: • Data include carbon dioxide emissions from fossil-fuel energy consumption and natural gas venting and flaring. • Because vertical scales differ, graphs should not be compared.

Source: Table 11.19.

**Table 11.19 World Carbon Dioxide Emissions From Energy Consumption, 1995-2004**

(Million Metric Tons of Carbon Dioxide<sup>1</sup>)

Region and Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>P</sup>
<b>North America</b>	<b>6,117</b>	<b>6,327</b>	<b>6,436</b>	<b>6,499</b>	<b>6,577</b>	<b>6,765</b>	<b>6,675</b>	<b>6,707</b>	<b>6,793</b>	<b>6,887</b>
Canada	505	516	541	544	558	568	555	563	593	588
Mexico	319	329	347	368	360	380	377	385	391	385
United States <sup>2</sup>	5,293	5,480	5,548	5,585	5,657	5,816	5,742	5,757	5,808	5,912
Other	1	1	1	1	1	1	1	1	1	1
<b>Central and South America</b>	<b>852</b>	<b>897</b>	<b>942</b>	<b>968</b>	<b>976</b>	<b>991</b>	<b>1,017</b>	<b>1,007</b>	<b>995</b>	<b>1,041</b>
Argentina	119	129	129	135	139	137	127	119	133	142
Brazil	288	305	323	322	334	345	350	351	320	337
Venezuela	123	132	134	141	132	133	148	146	133	143
Other	321	330	355	370	371	375	391	390	409	420
<b>Europe<sup>3</sup></b>	<b>4,260</b>	<b>4,409</b>	<b>4,425</b>	<b>4,418</b>	<b>4,359</b>	<b>4,427</b>	<b>4,488</b>	<b>4,454</b>	<b>4,601</b>	<b>4,653</b>
Belgium	130	137	141	146	138	144	142	138	145	148
France	373	388	382	407	401	400	403	400	406	406
Germany	876	882	876	862	832	847	869	843	863	862
Italy	428	420	420	437	437	444	442	449	470	485
Netherlands	221	226	237	239	236	249	275	256	258	267
Poland	306	342	334	311	324	290	274	272	286	288
Romania	123	125	119	100	91	92	101	99	99	95
Spain	240	236	263	274	296	314	320	337	346	362
Turkey	152	167	181	182	180	200	183	193	204	212
United Kingdom	555	584	561	557	550	551	566	555	566	580
Other	857	900	912	902	874	896	913	911	958	950
<b>Eurasia<sup>4</sup></b>	<b>2,469</b>	<b>2,372</b>	<b>2,211</b>	<b>2,208</b>	<b>2,288</b>	<b>2,322</b>	<b>2,309</b>	<b>2,333</b>	<b>2,441</b>	<b>2,551</b>
Kazakhstan	129	140	118	114	131	141	155	161	170	172
Russia	1,591	1,570	1,457	1,463	1,536	1,556	1,546	1,547	1,602	1,685
Ukraine	448	363	340	330	324	323	315	324	350	364
Uzbekistan	104	103	103	101	102	106	111	113	114	121
Other	197	196	192	200	194	196	182	188	205	210
<b>Middle East</b>	<b>900</b>	<b>933</b>	<b>987</b>	<b>1,019</b>	<b>1,060</b>	<b>1,086</b>	<b>1,121</b>	<b>1,175</b>	<b>1,241</b>	<b>1,320</b>
Iran	260	261	288	292	315	318	332	363	385	402
Saudi Arabia	233	248	253	256	262	288	299	309	345	365
Other	406	424	445	470	484	480	490	504	512	553
<b>Africa</b>	<b>817</b>	<b>835</b>	<b>860</b>	<b>849</b>	<b>858</b>	<b>876</b>	<b>910</b>	<b>909</b>	<b>972</b>	<b>987</b>
Egypt	98	107	111	114	114	119	131	132	144	147
South Africa	344	349	380	362	369	379	388	375	410	430
Other	375	378	368	373	375	378	391	402	418	410
<b>Asia and Oceania<sup>3</sup></b>	<b>6,619</b>	<b>6,742</b>	<b>7,050</b>	<b>6,888</b>	<b>7,076</b>	<b>7,385</b>	<b>7,601</b>	<b>7,864</b>	<b>8,620</b>	<b>9,605</b>
Australia	285	298	327	333	351	353	367	374	372	386
China	2,873	2,902	3,036	2,938	2,901	3,031	3,185	3,306	3,898	4,707
India	867	830	873	901	935	1,001	1,019	1,024	1,042	1,113
Indonesia	213	235	245	239	263	275	297	312	315	308
Japan	1,076	1,103	1,141	1,103	1,149	1,190	1,170	1,186	1,244	1,262
Malaysia	89	101	101	102	106	111	124	138	151	154
South Korea	393	405	436	378	426	443	438	465	475	497
Taiwan	181	195	207	219	220	248	245	269	286	308
Thailand	156	169	175	161	170	160	171	186	205	219
Other	486	504	508	513	554	573	586	604	632	652
<b>World</b>	<b>22,034</b>	<b>22,514</b>	<b>22,909</b>	<b>22,849</b>	<b>23,193</b>	<b>23,851</b>	<b>24,121</b>	<b>24,448</b>	<b>25,664</b>	<b>27,044</b>

<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44. For data in million metric tons carbon equivalent, see the "International Energy Annual 2004" (May-July 2006), Table H.1.

<sup>2</sup> Data for the United States in this table differ from those in Table 12.1 due to: the inclusion of emissions from bunker fuels consumption; the exclusion of emissions from geothermal power generation, cement production and other industrial processes, and municipal solid waste combustion; and the exclusion of data for the U.S. Territories.

<sup>3</sup> Excludes countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

<sup>4</sup> Includes only countries that were part of the former U.S.S.R. See "U.S.S.R." in Glossary.

P=Preliminary.

Notes: • Data in this table do not include recent updates (see the Energy Information Administration's "International Energy Annual 2005"). • Data include carbon dioxide emissions from fossil-fuel energy consumption and natural gas venting and flaring. • See Note 2, "World Carbon Dioxide Emissions," at end of section. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/international>.

Source: Energy Information Administration, "International Energy Annual 2004" (May-July 2006), Table H.1c02.

## International Energy

**Note 1. World Primary Energy Production.** World primary energy production includes production of crude oil (including lease condensate), natural gas plant liquids, dry natural gas, and coal; and net electricity generation from nuclear electric power, hydroelectric power, wood, waste, geothermal, solar, and wind. Data for the United States also include other renewable energy. Crude oil production is measured at the wellhead and includes lease condensate. Natural gas plant liquids are products obtained from processing natural gas at natural gas processing plants, including natural gas plants, cycling plants, and fractionators. Dry natural gas production is that amount of natural gas produced that is available to be marketed and consumed as a gas. Coal (anthracite, bituminous coal, subbituminous coal, and lignite) production is the sum of sales, mine consumption, issues to miners, and issues to coking, briquetting, and other ancillary plants at mines. Coal production data include quantities extracted from surface and underground mines and normally exclude wastes removed at mines or associated preparation plants. The data on generation of electricity from nuclear electric power, hydroelectric power, wood, waste, geothermal, solar, and wind include data reported on a net basis, thus excluding electricity that is generally used by the electric power plant for its own operating

purposes or electricity losses in the transformers that are considered integral parts of the station.

**Note 2. World Carbon Dioxide Emissions.** In Table 11.19, data for carbon dioxide emissions include anthropogenic (human-caused) emissions from the consumption of petroleum, natural gas, and coal, and also from natural gas venting and flaring. They do not include carbon dioxide emissions from geothermal power generation, cement production and other industrial processes, and municipal solid waste combustion. Fossil-fuel consumption and natural gas flaring statistics for each country have been reduced to account for the fraction of fuels not combusted and, in the case of petroleum, for the fraction of sequestration of non-fuel uses. Carbon dioxide emissions have been determined by applying carbon emission coefficients to the adjusted consumption and flaring data. Carbon emission coefficients for petroleum and natural gas consumption and natural gas flaring are from Energy Information Administration (EIA), *Documentation for Emissions of Greenhouse Gases in the United States 2003* (May 2005), Table 6.1. Carbon emission coefficients for coal consumption are from EIA, *Emissions of Greenhouse Gases in the United States 1985-1990* (October 1993), Table 11.

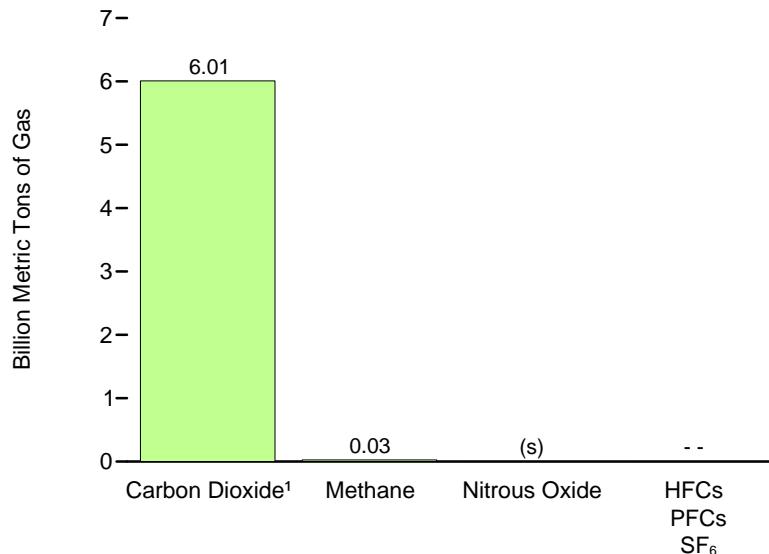
# Environmental Indicators



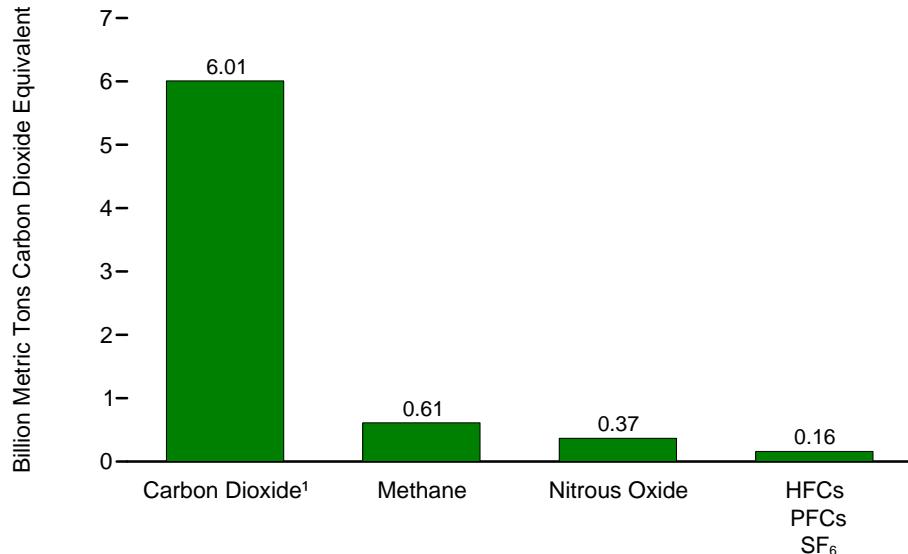
"Harpers Ferry, Junction of the Rivers Shenandoah and Potomac." Engraving by W. Goodacre and James Archer, published in *The History and Topography of the United States of North America*, by John Howard Hinton, 1852. From the collection of the National Park Service, Harpers Ferry National Historical Park, Accession #1297.

**Figure 12.1 Emissions of Greenhouse Gases**

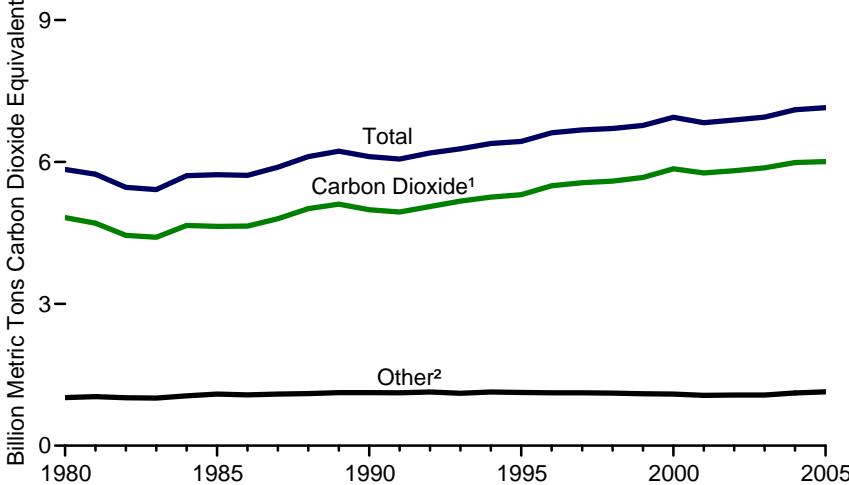
**By Type of Gas, 2005**



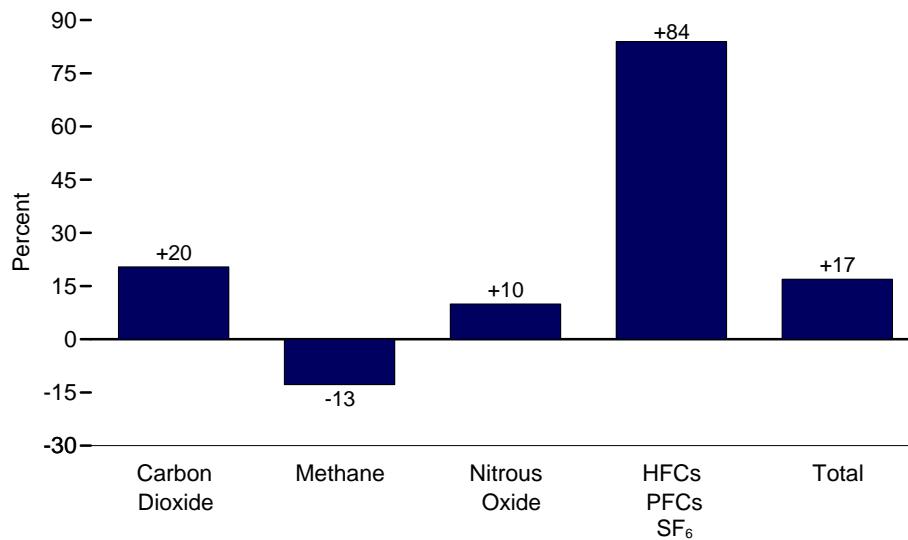
**Based on Global Warming Potential, by Type of Gas, 2005**



**Based on Global Warming Potential, 1980-2005**



**Change 1990-2005, Based on Global Warming Potential**



<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> Methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

(s)=Less than 0.005 billion metric tons of gas.

-- = Not applicable because these gases cannot be summed in native units.

Notes: • HFCs=hydrofluorocarbons; PFCs=perfluorocarbons; and SF<sub>6</sub>=sulfur hexafluoride.  
• Emissions by type of gas should not be compared; for comparison, see emissions based on global warming potential by type of gas. • Because vertical scales differ, graphs should not be compared.

Source: Table 12.1.

**Table 12.1 Emissions of Greenhouse Gases, 1980-2005**

Year	Greenhouse Gases				Greenhouse Gases, Based on Global Warming Potential <sup>1</sup>				
	Carbon Dioxide <sup>2,3</sup>	Methane	Nitrous Oxide	HFCs PFCs SF <sub>6</sub>	Carbon Dioxide <sup>2</sup>	Methane	Nitrous Oxide	HFCs PFCs SF <sub>6</sub>	Total
Year	Million Metric Tons of Gas				Million Metric Tons Carbon Dioxide Equivalent <sup>2</sup>				
1980	4,824.7	28.6	1.0	--	4,824.7	658.0	287.0	70.4	5,840.0
1981	4,704.3	29.2	1.0	--	4,704.3	671.1	292.0	74.0	5,741.3
1982	4,448.8	29.4	1.0	--	4,448.8	676.8	282.6	55.4	5,463.7
1983	4,408.0	29.1	.9	--	4,408.0	669.9	270.2	67.1	5,415.3
1984	4,655.8	29.8	1.0	--	4,655.8	684.5	294.0	75.5	5,709.9
1985	4,638.3	30.0	1.1	--	4,638.3	689.7	330.7	70.5	5,729.3
1986	4,642.5	29.4	1.1	--	4,642.5	676.5	323.8	75.0	5,717.8
1987	4,800.2	29.9	1.1	--	4,800.2	688.3	323.4	77.8	5,889.8
1988	5,012.6	30.1	1.1	--	5,012.6	692.0	316.9	91.3	6,112.8
1989	5,105.8	30.2	1.1	--	5,105.8	693.8	332.8	94.5	6,226.9
1990	R4,990.6	R30.5	1.1	--	R4,990.6	R701.7	R333.5	R87.1	R6,112.8
1991	R4,940.6	R30.4	1.2	--	R4,940.6	R698.2	342.6	R79.0	R6,060.4
1992	R5,056.6	R30.4	1.2	--	R5,056.6	R700.2	349.7	R83.7	R6,190.1
1993	R5,170.0	R29.4	1.2	--	R5,170.0	R675.7	R349.1	R82.9	R6,277.8
1994	R5,255.0	R29.3	1.3	--	R5,255.0	R674.7	374.5	R85.2	R6,389.5
1995	R5,308.5	R29.2	1.2	--	R5,308.5	R672.5	R357.7	R94.9	R6,433.5
1996	R5,495.6	R28.3	1.2	--	R5,495.6	R651.3	R357.9	R110.6	R6,615.4
1997	R5,559.3	R28.3	1.2	--	R5,559.3	R650.8	R350.1	R118.1	R6,678.4
1998	R5,594.0	R27.4	1.2	--	R5,594.0	R629.8	348.8	R134.3	R6,707.0
1999	R5,673.9	R26.8	1.2	--	R5,673.9	R616.5	R346.8	R133.9	R6,771.1
2000	R5,853.4	R26.6	1.2	--	R5,853.4	R611.2	R342.8	R138.0	R6,945.4
2001	R5,767.0	R26.0	1.1	--	R5,767.0	R597.7	R337.9	R128.5	R6,831.0
2002	R5,814.7	R26.1	1.1	--	R5,814.7	R600.2	R333.6	R137.8	R6,886.3
2003	R5,875.3	R26.2	1.1	--	R5,875.3	R602.2	R332.9	R136.6	R6,946.9
2004	R5,988.7	R26.4	1.2	--	R5,988.7	R606.5	R359.9	R149.5	R7,104.6
2005 <sup>P</sup>	6,008.6	26.6	1.2	--	6,008.6	611.9	366.6	160.2	7,147.2

<sup>1</sup> Emissions of greenhouse gases are weighted based upon their relative global warming potential (GWP), with carbon dioxide equal to a weight of one. The use of updated estimates of GWP resulted in a number of revisions to previously published data. It is also important to note that revisions in estimated emissions result from revisions in energy consumption as well.

<sup>2</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>3</sup> Carbon dioxide data in this table differ from those for the United States in Table 11.19 due to: the exclusion of emissions from international bunker fuels consumption; the inclusion of emissions from geothermal power generation, cement production and other industrial processes, and municipal solid waste combustion; and the inclusion of data for the U.S. Territories.

R=Revised. P=Preliminary. -- = Not applicable because these gases cannot be summed in native units.

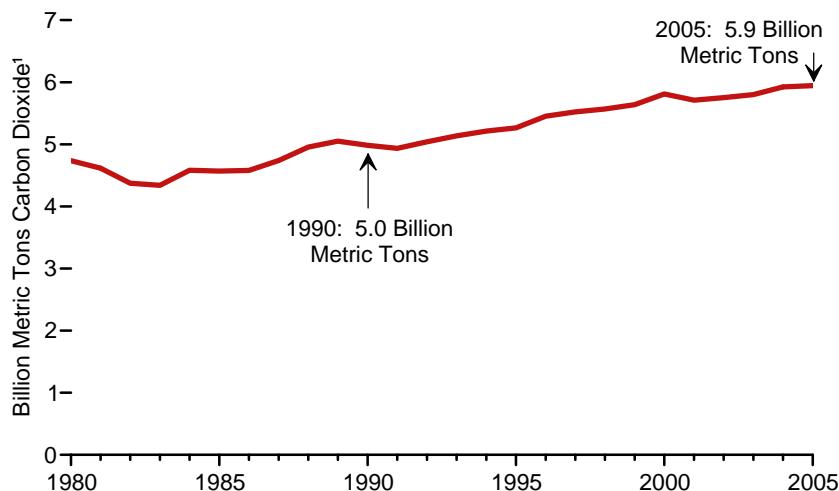
Notes: • HFCs = hydrofluorocarbons; PFCs = perfluorocarbons; and SF<sub>6</sub> = sulfur hexafluoride. • Emissions are from anthropogenic sources. "Anthropogenic" means produced as the result of human activities, including emissions from agricultural activity and domestic livestock. Emissions from natural sources, such as wetlands and wild animals, are not included. • Because of the continuing goal to improve estimation methods for greenhouse gases, data are frequently revised on an annual basis in keeping with the latest findings of the international scientific community. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

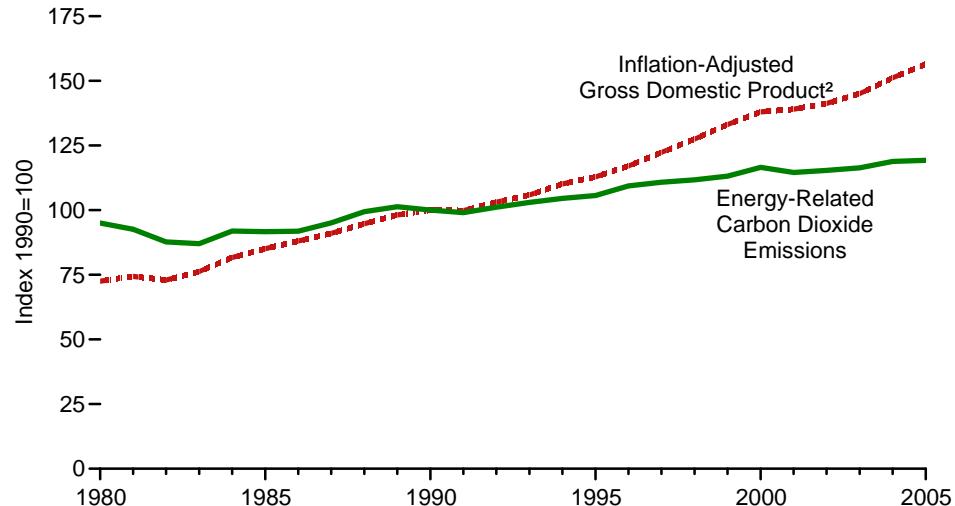
Sources: **1990, 1995, and 1998-2005:** Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005* (November 2006), Tables ES1 and ES2. **All Other Data:** EIA, *Emissions of Greenhouse Gases in the United States*, annual reports and unpublished revisions.

**Figure 12.2 Carbon Dioxide Emissions From Energy Consumption by Sector**

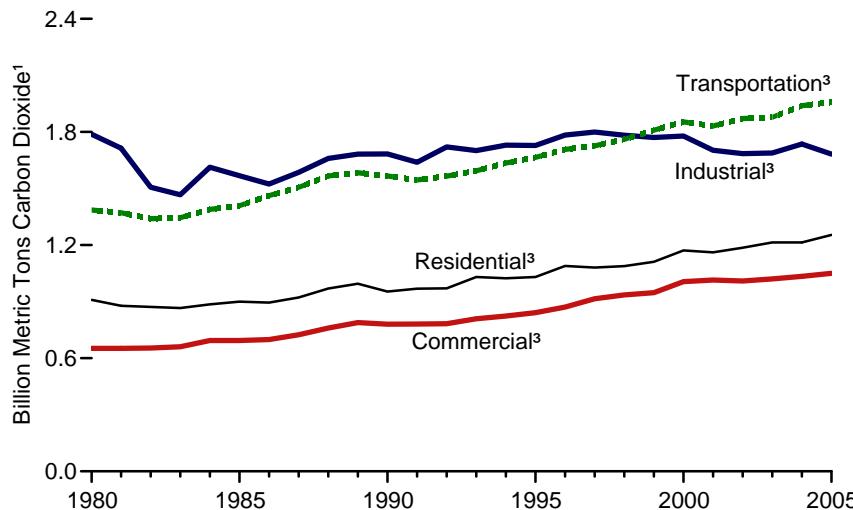
**Total, 1980-2005**



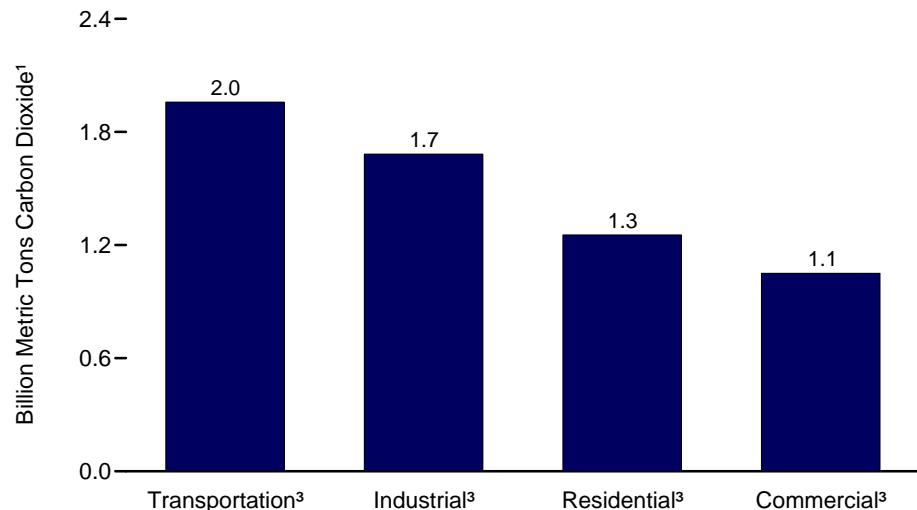
**Economic Growth and Carbon Dioxide Emissions, 1980-2005**



**By End-Use Sector, 1980-2005**



**By End-Use Sector, 2005**



<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> Based on chained (2000) dollars.

<sup>3</sup> Electric power sector emissions are allocated to end-use sectors in proportion to each sector's share of total electricity retail sales (see Table 8.9).

Note: Because vertical scales differ, graphs should not be compared.

Sources: Tables 1.5 and 12.2.

**Table 12.2 Carbon Dioxide Emissions From Energy Consumption by Sector, 1980-2005**  
 (Million Metric Tons of Carbon Dioxide <sup>1</sup>)

Year	End-Use Sectors								Electric Power Sector <sup>4</sup>	Total <sup>7</sup>		
	Residential		Commercial <sup>2</sup>		Industrial <sup>3</sup>		Transportation					
	Primary <sup>5</sup>	Total <sup>6</sup>	Primary <sup>5</sup>	Total <sup>6</sup>	Primary <sup>5</sup>	Total <sup>6</sup>	Primary <sup>5</sup>	Total <sup>6</sup>				
1980	385.2	909.0	244.5	652.5	1,192.8	1,787.7	1,383.9	1,386.2	1,529.0	4,735.4		
1981	360.8	877.8	225.8	652.2	1,123.3	1,714.2	1,369.4	1,371.7	1,536.7	4,616.0		
1982	359.1	872.2	226.1	654.1	983.2	1,506.9	1,338.3	1,340.5	1,467.1	4,373.8		
1983	340.4	866.4	225.7	660.5	923.2	1,466.7	1,343.0	1,345.3	1,506.5	4,338.8		
1984	348.8	885.8	236.2	693.7	1,036.0	1,612.6	1,387.2	1,389.6	1,573.5	4,581.7		
1985	351.4	899.7	217.9	694.0	990.0	1,567.6	1,406.3	1,408.9	1,604.6	4,570.3		
1986	342.5	895.2	216.2	698.8	963.2	1,523.4	1,460.2	1,462.9	1,598.2	4,580.3		
1987	345.8	921.9	220.0	724.6	1,004.3	1,585.6	1,504.4	1,506.9	1,664.5	4,738.9		
1988	366.7	969.6	230.1	760.0	1,054.1	1,659.3	1,564.1	1,566.8	1,740.7	4,955.7		
1989	371.6	994.8	229.9	788.5	1,045.4	1,682.3	1,581.5	1,584.3	1,821.4	5,049.8		
1990	339.5	953.7	223.5	780.7	R1,055.2	R1,683.6	R1,563.6	R1,566.8	1,803.1	R4,984.8		
1991	346.3	969.1	R224.2	R781.6	R1,022.5	R1,639.4	R1,542.6	R1,545.7	1,800.2	R4,935.9		
1992	356.2	970.6	225.3	783.3	R1,082.3	R1,720.8	R1,563.3	R1,566.3	1,814.0	R5,041.0		
1993	R372.1	1,030.7	223.1	808.8	R1,054.3	R1,701.2	R1,591.4	R1,594.6	1,894.3	R5,135.3		
1994	363.6	1,023.8	225.5	823.2	R1,070.6	R1,730.4	R1,632.1	R1,635.4	1,921.0	R5,212.7		
1995	360.6	1,030.7	228.5	841.1	R1,077.7	R1,728.6	R1,662.1	R1,665.3	1,936.8	R5,265.8		
1996	388.9	R1,089.5	R237.1	R871.5	R1,114.3	R1,783.3	R1,704.9	R1,708.1	2,007.1	R5,452.4		
1997	370.6	R1,080.7	237.3	R915.0	R1,114.3	R1,799.6	R1,723.1	R1,726.4	2,076.3	R5,521.7		
1998	338.3	R1,088.1	220.5	R935.7	R1,085.6	R1,782.3	R1,758.5	R1,761.8	2,164.9	R5,567.8		
1999	358.7	R1,111.3	222.2	R947.7	R1,076.1	R1,770.5	R1,806.8	R1,810.0	2,175.8	R5,639.5		
2000	377.5	R1,171.9	R234.0	R1,006.4	R1,069.0	R1,778.0	R1,850.4	R1,854.0	2,279.3	R5,810.2		
2001	R365.8	R1,161.1	R225.6	R1,014.2	R1,049.9	R1,702.8	R1,828.2	R1,831.7	R2,240.2	R5,709.8		
2002	R365.0	R1,186.4	R227.1	R1,009.4	R1,042.0	R1,684.7	R1,868.1	R1,871.7	R2,250.0	R5,752.2		
2003	R382.7	R1,214.0	R238.9	R1,020.3	R1,027.6	R1,688.0	R1,873.7	R1,878.2	R2,277.4	R5,800.5		
2004	R372.0	R1,213.9	R234.2	R1,034.1	R1,073.1	R1,736.0	R1,934.6	R1,939.2	R2,309.4	R5,923.2		
2005 <sup>P</sup>	368.0	1,253.8	229.5	1,050.6	1,019.5	1,682.3	1,953.2	1,958.6	2,375.0	5,945.3		

<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>3</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>4</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>5</sup> Carbon dioxide emissions from the combustion of fossil fuels. The electric power sector also has a small amount of emissions from geothermal power generation and the combustion of the plastics component of municipal solid waste.

<sup>6</sup> In addition to "Primary" emissions, also includes emissions from energy consumption (for electricity

and a small amount of useful thermal output) in the electric power sector, which are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales (see Table 8.9).

<sup>7</sup> The sum of "Primary" emissions in the five energy-use sectors equals the sum of "Total" emissions in the four end-use sectors.

R=Revised. P=Preliminary.

Notes: • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8.

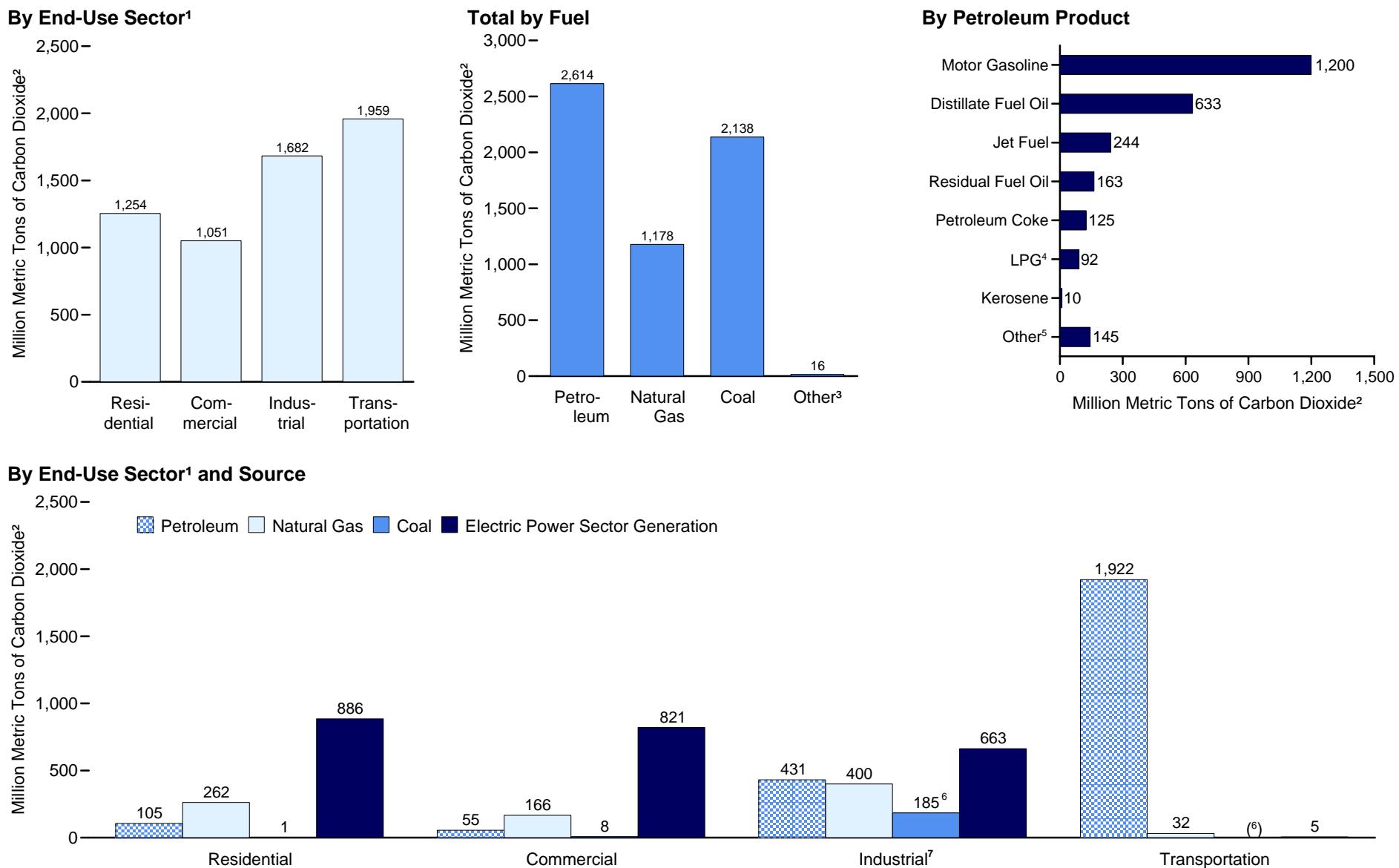
• Because of the continuing goal to improve estimation methods for greenhouse gases, data are frequently revised on an annual basis in keeping with the latest findings of the international scientific community.

• Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

Sources: **1990, 1995, and 1998-2005:** Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005* (November 2006), Tables 7-11. **All Other Data:** EIA, *Emissions of Greenhouse Gases in the United States*, annual reports and unpublished revisions.

**Figure 12.3 Carbon Dioxide Emissions From Energy Consumption by Sector by Energy Source, 2005**



<sup>1</sup> Emissions from energy consumption in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales (see Table 8.9).

<sup>2</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>3</sup> Coal coke net imports, the plastics component of municipal solid waste, and geothermal.

<sup>4</sup> Liquefied petroleum gases.

<sup>5</sup> Aviation gasoline, lubricants, and other products.

<sup>6</sup> Small amounts of coal consumed for transportation are reported as industrial consumption.

<sup>7</sup> The industrial sector also includes 4 million metric tons of coal coke net imports.

Note: Because scales differ, graphs should not be compared

Source: Table 12.3.

**Table 12.3 Carbon Dioxide Emissions From Energy Consumption by Sector by Energy Source, 2005**  
 (Million Metric Tons of Carbon Dioxide <sup>1</sup>)

Energy Source	End-Use Sectors					Electric Power Sector <sup>4</sup>	Total
	Residential	Commercial <sup>2</sup>	Industrial <sup>3</sup>	Transportation	Total		
Petroleum .....	105.3	55.4	431.2	1,921.7	2,513.6	100.3	2,614.0
Aviation Gasoline .....	--	--	--	2.4	2.4	--	2.4
Distillate Fuel Oil .....	67.5	34.4	89.1	434.1	625.2	8.3	633.4
Jet Fuel .....	--	--	--	243.8	243.8	--	243.8
Kerosene .....	6.6	1.6	2.2	--	10.3	--	10.3
Liquefied Petroleum Gases .....	31.2	5.5	54.4	1.1	92.2	--	92.2
Lubricants .....	--	--	--	<sup>5</sup> 5.6	5.6	--	5.6
Motor Gasoline .....	--	3.4	26.2	1,170.5	1,200.2	--	1,200.2
Petroleum Coke .....	--	--	102.5	--	102.5	22.9	125.4
Residual Fuel Oil .....	--	10.5	19.7	64.1	94.3	69.1	163.4
Other .....	--	--	137.1	--	137.1	--	137.1
Natural Gas .....	261.7	166.3	399.7	31.5	859.2	318.9	1,178.1
Coal .....	0.9	7.8	<sup>6</sup> 184.5	( <sup>6</sup> )	193.3	1,944.2	2,137.5
Coal Coke Net Imports .....	--	--	4.1	--	4.1	--	4.1
Municipal Solid Waste <sup>7</sup> .....	--	--	--	--	--	11.1	11.1
Geothermal .....	--	--	--	--	--	0.4	0.4
<b>Primary</b> .....	<b>368.0</b>	<b>229.5</b>	<b>1,019.5</b>	<b>1,953.2</b>	<b>3,570.3</b>	<b>2,375.0</b>	<b>5,945.3</b>
Electric Power Sector Generation <sup>8</sup> .....	885.7	821.1	662.8	5.4	2,375.0	--	--
<b>Total</b> .....	<b>1,253.8</b>	<b>1,050.6</b>	<b>1,682.3</b>	<b>1,958.6</b>	<b>5,945.3</b>	--	<b>5,945.3</b>

<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>3</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>4</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>5</sup> Includes emissions from nonfuel use of lubricants.

<sup>6</sup> Small amounts of coal consumed for transportation are reported as industrial sector consumption.

<sup>7</sup> The plastics component of municipal solid waste.

<sup>8</sup> Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales (see Table 8.9).

-- = Not applicable.

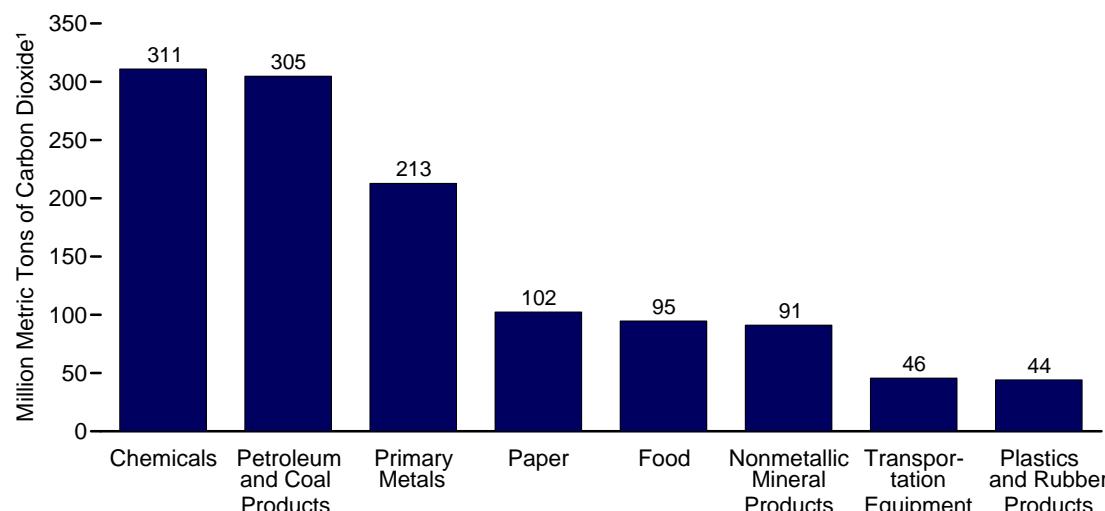
Notes: • Data are preliminary estimates. • Emissions from blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels are counted under their primary energy source—i.e., petroleum, natural gas, or coal. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

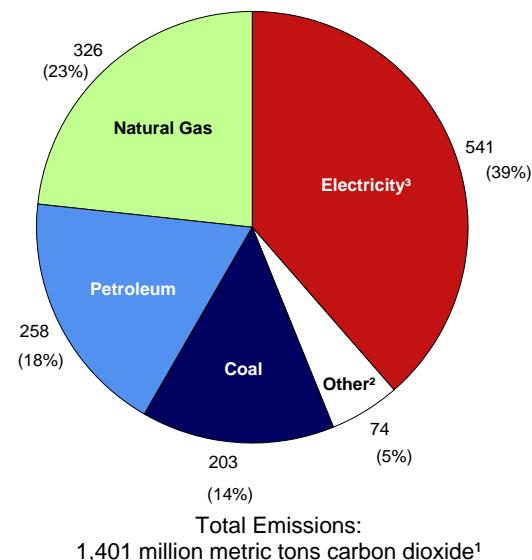
Source: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005* (November 2006), Tables 7-11 and unpublished revisions.

**Figure 12.4 Carbon Dioxide Emissions From Consumption of Energy for All Purposes in the Manufacturing Sector, 2002**

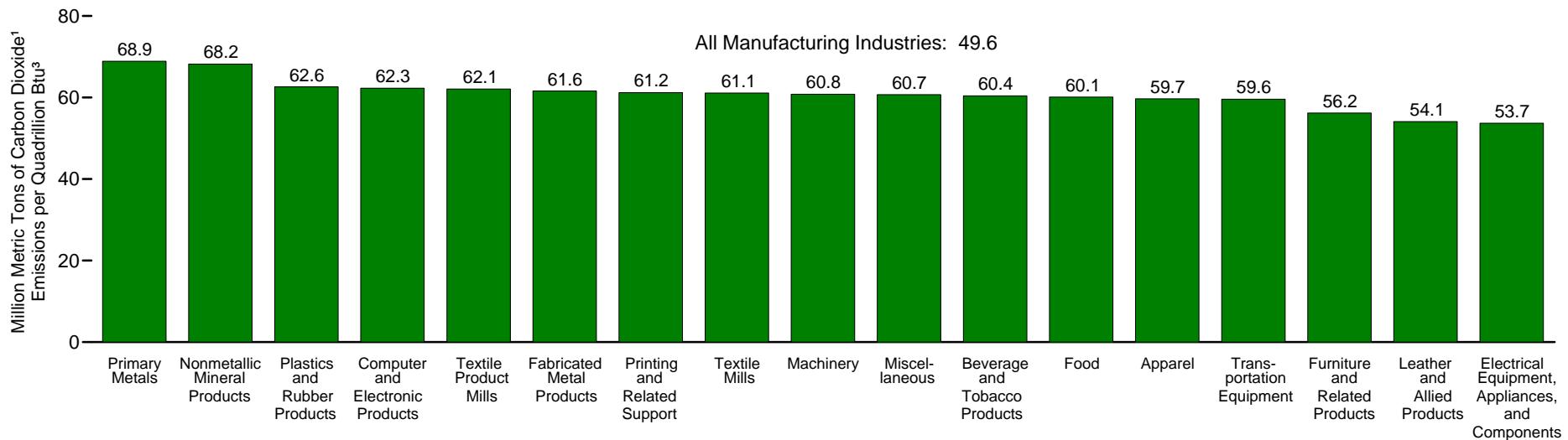
**Carbon Dioxide Emissions by Top Industry Groups**



**Carbon Dioxide Emissions by Energy Source**



**Carbon Dioxide Emissions per Unit of Primary Consumption, Top Industry Groups**



<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>3</sup> Including allocated electricity losses.  
Source: Table 12.4.

<sup>2</sup> All other types of energy that respondents indicated were consumed or allocated.

**Table 12.4 Carbon Dioxide Emissions From Consumption of Energy for All Purposes in the Manufacturing Sector, 2002**  
 (Million Metric Tons of Carbon Dioxide,<sup>1</sup> Except as Noted)

NAICS <sup>2</sup> Code	Major Group	Carbon Dioxide Emissions						Carbon Dioxide Emissions per Unit of Primary Consumption <sup>5</sup>	Carbon Dioxide Emissions per Chained Dollar of Shipments <sup>6</sup>
		Coal	Natural Gas	Petroleum	Electricity <sup>3</sup>	Other <sup>4</sup>	Total		
311	Food .....	17.3	30.7	2.9	43.8	0.1	94.7	60.1	215.2
312	Beverage and Tobacco Products .....	1.6	2.4	0.4	4.9	(s)	9.4	60.4	93.1
313	Textile Mills .....	2.1	4.0	0.6	16.4	0.0	23.0	61.1	518.3
314	Textile Product Mills .....	0.7	1.5	0.3	3.2	0.0	5.8	62.1	170.7
315	Apparel .....	0.0	0.8	0.1	2.3	0.0	3.2	59.7	59.3
316	Leather and Allied Products .....	0.0	0.2	0.0	0.4	0.0	0.6	54.1	59.1
321	Wood Products .....	0.1	3.0	1.2	13.7	0.4	18.4	35.6	205.7
322	Paper .....	22.5	26.6	10.0	42.4	0.8	102.4	36.6	661.3
323	Printing and Related Support .....	0.0	2.4	0.1	9.5	0.0	12.0	61.2	125.9
324	Petroleum and Coal Products .....	19.3	46.4	153.9	24.6	60.8	304.8	43.2	1,301.1
325	Chemicals .....	32.8	106.2	70.2	99.4	2.4	311.0	41.5	738.1
326	Plastics and Rubber Products .....	2.1	6.8	0.9	34.5	(s)	44.2	62.6	249.4
327	Nonmetallic Mineral Products .....	30.1	22.3	11.4	26.8	0.4	91.1	68.2	1,046.0
331	Primary Metals .....	72.4	37.2	2.4	93.8	7.0	212.8	68.9	1,511.1
332	Fabricated Metal Products .....	0.8	11.1	0.9	30.6	0.0	43.4	61.6	173.4
333	Machinery .....	0.1	4.3	0.4	16.0	(s)	20.8	60.8	82.3
334	Computer and Electronic Products .....	0.0	3.4	0.2	24.9	(s)	28.5	62.3	59.9
335	Electrical Equipment, Appliances, and Components .....	0.0	2.8	0.1	8.9	2.3	14.2	53.7	135.3
336	Transportation Equipment .....	1.0	10.7	1.2	32.7	0.1	45.7	59.6	74.1
337	Furniture and Related Products .....	0.1	1.3	0.1	4.6	0.1	6.3	56.2	91.5
339	Miscellaneous .....	0.0	1.7	0.1	6.7	0.0	8.5	60.7	71.7
—	Total Manufacturing .....	202.8	325.9	257.6	540.7	74.2	1,401.2	49.6	352.7

<sup>1</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>2</sup> North American Industry Classification System (NAICS).

<sup>3</sup> Carbon dioxide emitted from energy inputs used to produce electricity (including associated losses), derived by calculating the manufacturing subsector share of the electric power sector's total carbon dioxide emissions based upon the weighted share of electricity retail sales to (receipts by) the manufacturing subsector.

<sup>4</sup> Includes all other types of energy that respondents indicated were consumed or allocated, such as asphalt and road oil, lubricants, naphtha < 401° F, other oils >= 401° F, special naphthas, waxes, and miscellaneous nonfuel products, which are nonfuel products assigned to the petroleum refining industry group (NAICS 324110).

<sup>5</sup> Data are in million metric tons of carbon dioxide per quadrillion Btu of energy (including allocated electricity losses).

<sup>6</sup> Data are in metric tons of carbon dioxide per million chained (2000) dollars.

(s)=Less than 0.05 million metric tons.

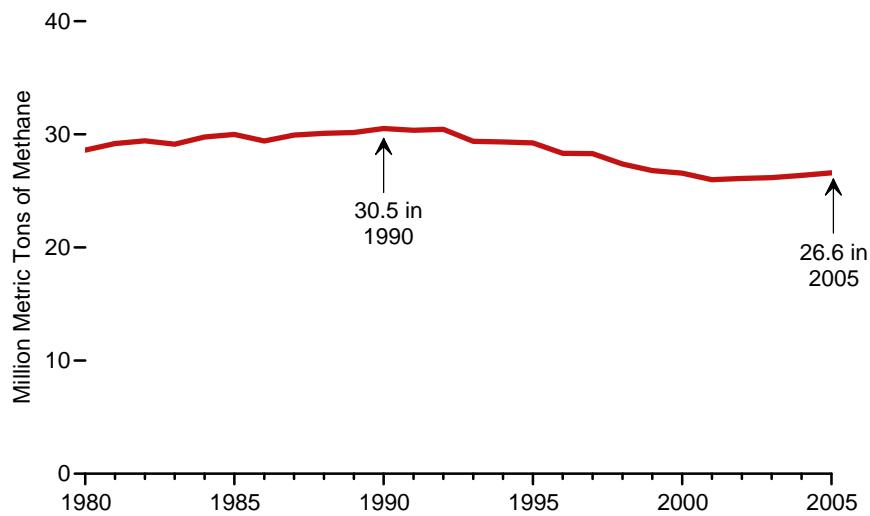
Notes: • Data are estimates for the first use of energy for heat and power and as feedstocks or raw material inputs. "First use" is the consumption of energy that was originally produced offsite or was produced onsite from input materials not classified as energy. Minor revisions to the 2002 Manufacturing Energy Consumption Survey (MECS) consumption data have been made since the estimates in this table have been computed. The revisions would likely not have a discernible effect on the estimates shown. • Electricity was converted from point-of-use to primary electricity using Table A6 of this report. • See Table 2.2 for manufacturing energy use. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/emeu/meics>.

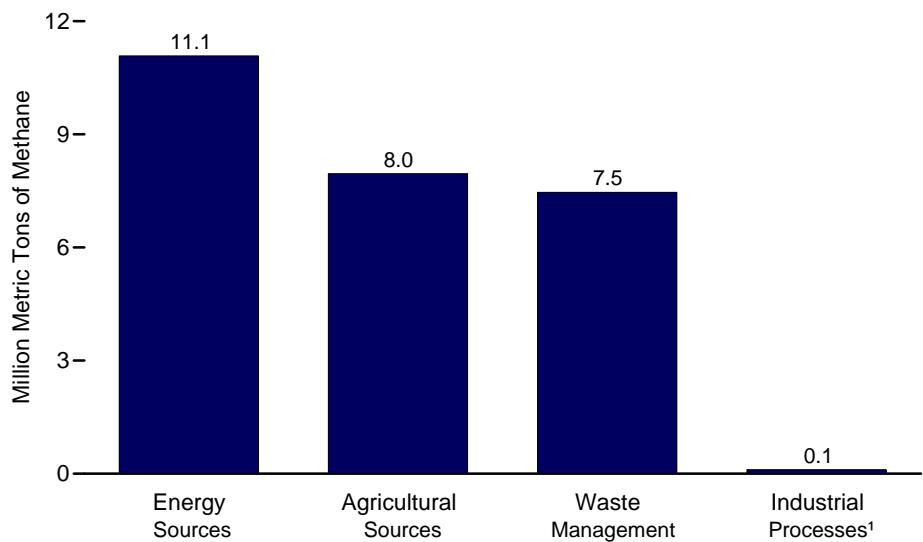
Sources: Energy Information Administration, Form EIA-846, "2002 Manufacturing Energy Consumption Survey," Form EIA-810, "Monthly Refinery Report" (for 2002), and *Documentation for Emissions of Greenhouse Gases in the United States 2003* (May 2005).

**Figure 12.5 Methane Emissions**

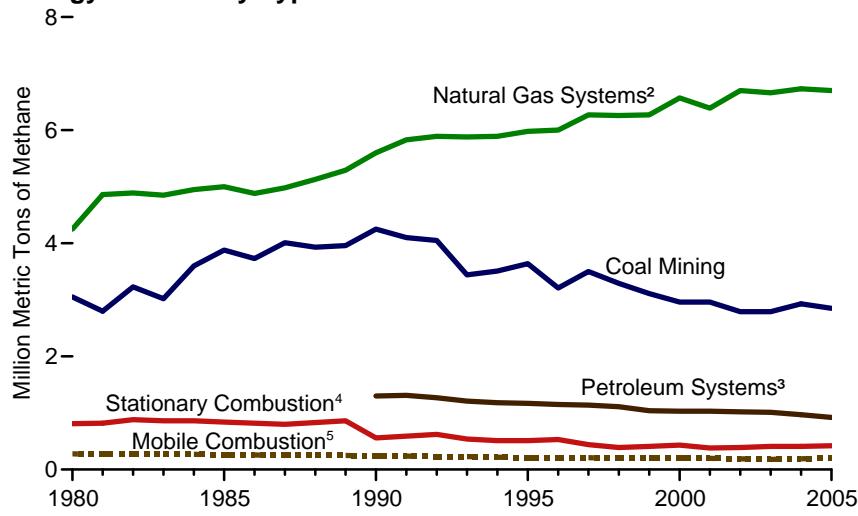
**Total, 1980-2005**



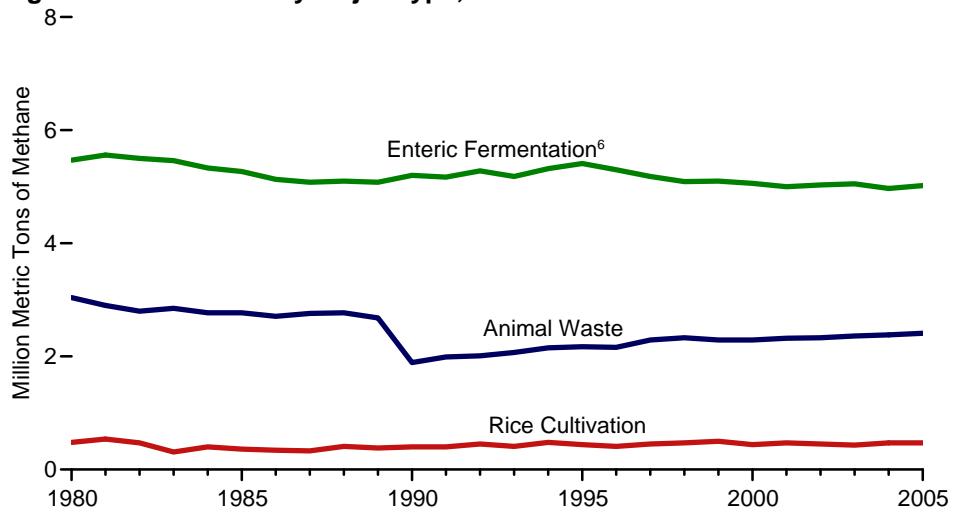
**By Source, 2005**



**Energy Sources by Type 1980-2005**



**Agricultural Sources by Major Type, 1980-2005**



<sup>1</sup> Chemical production, and iron and steel production.

<sup>2</sup> Natural gas production, processing, and distribution.

<sup>3</sup> Petroleum production, refining, and distribution.

<sup>4</sup> Consumption of coal, petroleum, natural gas, and wood for heat or electricity.

<sup>5</sup> Emissions from passenger cars, trucks, buses, motorcycles, and other transport.

<sup>6</sup> Methane emitted as a product of digestion in animals such as cattle, buffalo, sheep, goats, and camels.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 12.5.

**Table 12.5 Methane Emissions, 1980-2005**

(Million Metric Tons of Methane)

Year	Energy Sources						Waste Management			Agricultural Sources					Industrial Processes <sup>6</sup>	Total
	Coal Mining	Natural Gas Systems <sup>1</sup>	Petroleum Systems <sup>2</sup>	Mobile Combustion <sup>3</sup>	Stationary Combustion <sup>4</sup>	Total	Landfills	Waste-water Treatment	Total	Enteric Fermentation <sup>5</sup>	Animal Waste	Rice Cultivation	Crop Residue Burning	Total		
1980	3.05	4.25	NA	0.28	0.81	8.39	10.52	0.53	11.05	5.47	3.04	0.48	0.04	9.04	0.13	28.61
1981	2.80	4.86	NA	.27	.82	8.75	10.71	.53	11.24	5.56	2.90	.54	.05	9.05	.14	29.18
1982	3.23	4.89	NA	.27	.88	9.26	10.72	.54	11.26	5.50	2.80	.47	.05	8.81	.10	29.43
1983	3.02	4.85	NA	.27	.86	9.00	10.81	.54	11.36	5.46	2.85	.31	.03	8.66	.11	29.13
1984	3.60	4.95	NA	.27	.86	9.68	10.87	.55	11.41	5.33	2.77	.40	.04	8.55	.11	29.76
1985	3.88	5.00	NA	.26	.84	9.98	10.90	.55	11.45	5.27	2.77	.36	.05	8.45	.11	29.99
1986	3.73	4.88	NA	.26	.82	9.69	10.84	.56	11.40	5.13	2.71	.34	.04	8.22	.10	29.41
1987	4.01	4.98	NA	.25	.80	10.04	11.00	.56	11.56	5.08	2.76	.33	.04	8.21	.11	29.93
1988	3.93	5.13	NA	.25	.83	10.14	10.94	.57	11.51	5.10	2.77	.41	.03	8.31	.12	30.09
1989	3.96	5.29	NA	.25	.86	10.36	10.93	.57	11.51	5.08	2.68	.38	.04	8.18	.12	30.16
1990	4.25	5.60	1.30	.24	.56	11.96	R10.32	.58	R10.89	5.20	1.89	.40	.04	7.54	.12	R30.51
1991	4.10	5.83	1.31	.24	.59	12.06	R10.01	.59	R10.60	5.17	1.99	.40	.04	7.59	.11	R30.36
1992	4.05	5.89	1.27	.23	.62	R12.05	R9.89	.59	R10.48	5.28	2.01	.45	.05	7.79	.12	R30.44
1993	3.44	5.88	1.21	.23	.54	11.29	R9.67	.60	R10.27	R5.18	2.07	.41	.04	R7.70	.12	R29.38
1994	3.51	5.89	1.18	.22	R.51	R11.32	R9.28	.61	R9.89	R5.32	2.15	.48	.05	R8.00	.13	R29.33
1995	R3.64	5.98	1.17	R.21	R.51	R11.52	R8.91	.62	R9.53	5.41	2.17	.44	.04	R8.06	.13	R29.24
1996	R3.21	6.00	1.15	R.21	R.53	R11.10	R8.54	.62	R9.16	5.30	2.16	.41	.05	7.92	.13	R28.32
1997	3.50	6.27	1.14	R.21	.44	11.57	R7.99	.63	R8.62	5.18	2.29	.45	.05	7.97	.13	R28.30
1998	3.29	6.26	1.11	R.20	.39	R11.24	R7.43	.64	R8.07	R5.09	2.33	.47	.05	7.94	.13	R27.38
1999	R3.11	6.27	1.04	R.20	R.41	R11.03	R7.06	.65	R7.70	5.10	2.29	.50	.05	7.94	.13	R26.80
2000	R2.96	6.57	1.03	R.20	R.43	R11.20	R6.75	.65	R7.41	5.06	2.29	.44	.05	7.85	.13	R26.57
2001	2.96	6.39	1.03	.20	.38	R10.95	R6.42	.66	R7.08	R5.00	2.32	.47	.05	7.84	.11	R25.99
2002	R2.79	6.70	1.02	R.19	R.39	R11.09	R6.38	.67	R7.04	5.03	2.33	.45	.05	R7.86	.11	R26.10
2003	R2.79	6.66	1.01	R.18	R.41	R11.05	R6.47	.67	R7.14	5.05	2.36	.43	.05	7.88	.11	R26.18
2004	R2.93	R6.73	R.97	.19	R.41	R11.23	R6.47	.68	R7.15	R4.97	2.38	R.47	.06	R7.88	.12	R26.37
2005 <sup>P</sup>	2.85	6.70	.92	.20	.42	11.08	6.77	.69	7.46	5.02	2.41	.47	.05	7.96	.11	26.60

<sup>1</sup> Natural gas production, processing, and distribution.

<sup>2</sup> Petroleum production, refining, and distribution.

<sup>3</sup> Emissions from passenger cars, trucks, buses, motorcycles, and other transport.

<sup>4</sup> Consumption of coal, petroleum, natural gas, and wood for heat or electricity.

<sup>5</sup> Methane emitted as a product of digestion in animals such as cattle, buffalo, sheep, goats, and camels.

<sup>6</sup> Chemical production, and iron and steel production.

R=Revised. P=Preliminary. NA=Not available.

Notes: • Emissions are from anthropogenic sources. "Anthropogenic" means produced as the result of human activities, including emissions from agricultural activity and domestic livestock. Emissions from

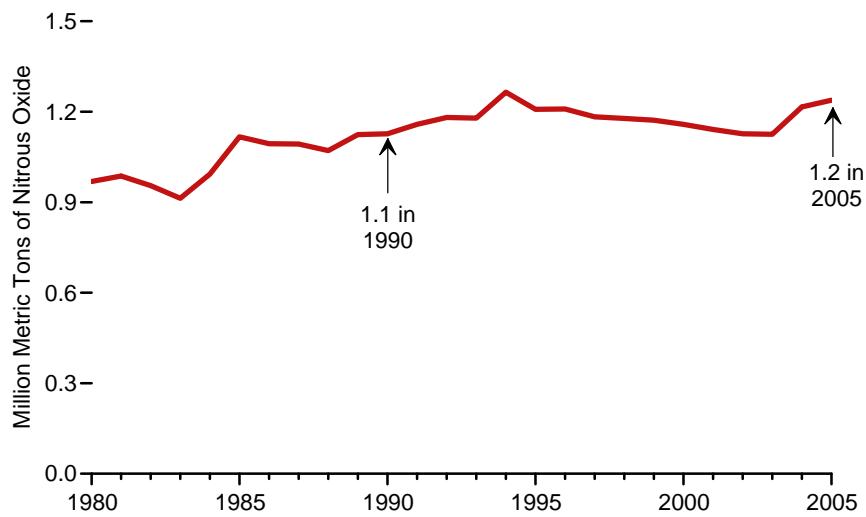
natural sources, such as wetlands and wild animals, are not included. • Under certain conditions, methane may be produced via anaerobic decomposition of organic materials in landfills, animal wastes, and rice paddies. • Because of the continuing goal to improve estimation methods for greenhouse gases, data are frequently revised on an annual basis in keeping with the latest findings of the international scientific community. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

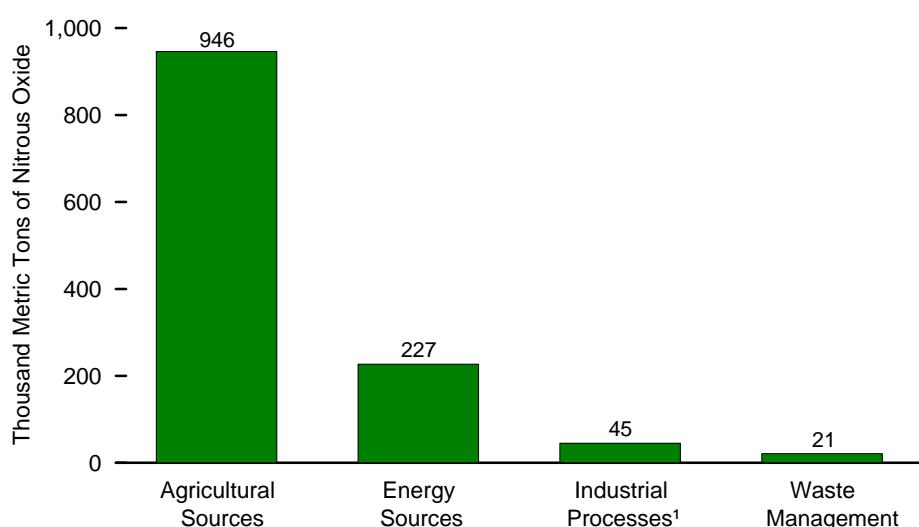
Sources: **1990, 1995, and 1998-2005:** Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005* (November 2006), Table 15. **All Other Data:** EIA, *Emissions of Greenhouse Gases in the United States*, annual reports and unpublished revisions.

**Figure 12.6 Nitrous Oxide Emissions**

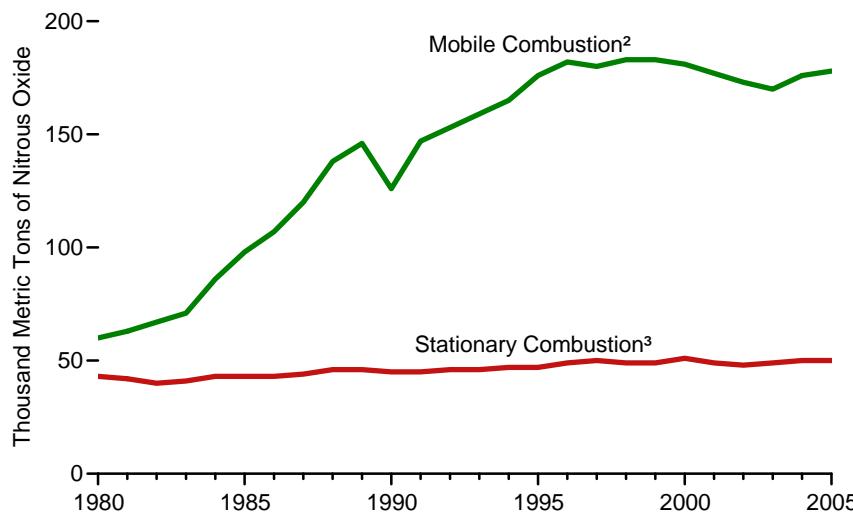
**Total, 1980-2005**



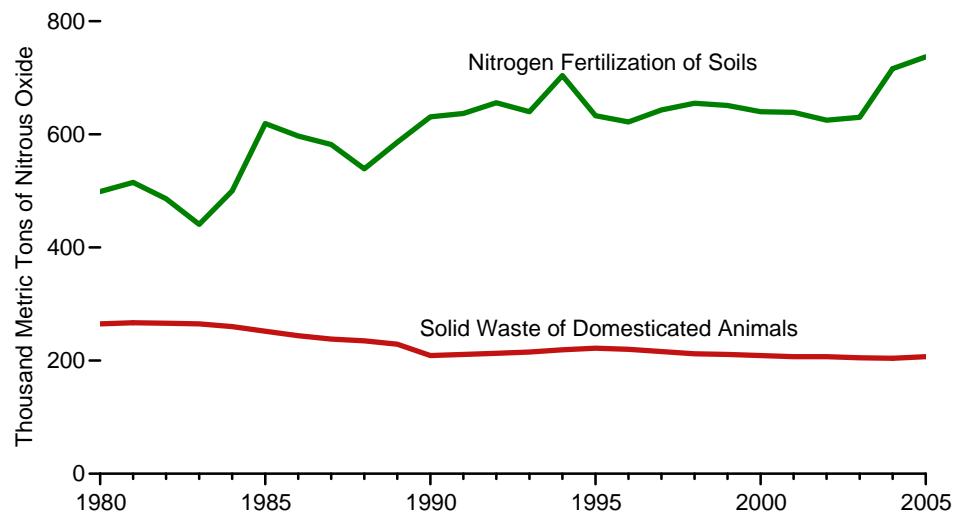
**By Source, 2005**



**Energy Sources by Type, 1980-2005**



**Agricultural Sources by Major Type, 1980-2005**



<sup>1</sup> Adipic acid production (primarily for the manufacture of nylon fibers and plastics) and nitric acid production (primarily for fertilizers).

<sup>2</sup> Emissions from passenger cars and trucks; air, rail, and marine transportation; and farm and construction equipment.

<sup>3</sup> Consumption of coal, petroleum, natural gas, and wood for heat or electricity.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 12.6.

**Table 12.6 Nitrous Oxide Emissions, 1980-2005**

(Thousand Metric Tons of Nitrous Oxide)

Year	Energy Sources			Waste Management			Agricultural Sources				Industrial Processes <sup>3</sup>	Total
	Mobile Combustion <sup>1</sup>	Stationary Combustion <sup>2</sup>	Total	Waste Combustion	Human Sewage in Wastewater	Total	Nitrogen Fertilization of Soils	Crop Residue Burning	Solid Waste of Domesticated Animals	Total		
1980	60	43	102	(s)	13	13	499	1	265	766	88	969
1981	63	42	105	(s)	13	14	515	2	267	783	85	987
1982	67	40	107	(s)	13	14	486	2	266	754	81	955
1983	71	41	112	(s)	14	14	441	1	265	707	80	913
1984	86	43	130	(s)	14	14	500	2	260	762	88	993
1985	98	43	141	(s)	15	15	619	2	252	872	89	1,117
1986	107	43	150	(s)	15	15	597	2	244	842	87	1,094
1987	120	44	164	1	15	16	582	1	238	822	91	1,093
1988	138	46	183	1	15	16	539	1	235	775	96	1,071
1989	146	46	192	(s)	15	16	586	2	229	817	99	1,124
1990	R126	45	R172	1	16	R17	631	2	209	842	96	R1,127
1991	147	45	192	1	16	17	637	2	211	849	99	R1,158
1992	153	R46	198	1	16	17	656	2	213	871	95	1,181
1993	159	46	205	1	17	17	640	1	R215	R856	100	R1,179
1994	165	47	212	1	17	18	704	2	219	925	110	1,265
1995	176	47	223	1	17	18	633	2	222	856	111	1,208
1996	182	49	231	1	17	18	622	2	220	844	116	1,209
1997	R180	R50	R230	1	18	R19	643	2	216	861	74	R1,183
1998	183	49	232	1	18	19	655	2	212	R869	58	1,178
1999	183	R49	R232	1	19	R20	651	2	211	864	57	R1,172
2000	R181	51	R232	1	19	20	640	2	209	851	56	R1,158
2001	R177	49	R226	1	19	20	639	2	R207	848	47	R1,141
2002	R173	48	R222	1	19	20	625	2	207	834	51	R1,127
2003	R170	49	R220	1	19	20	630	2	205	837	47	R1,125
2004	R176	50	R226	1	20	R21	R716	2	204	R922	47	R1,216
2005 <sup>P</sup>	178	50	227	1	20	21	737	2	207	946	45	1,238

<sup>1</sup> Emissions from passenger cars and trucks; air, rail, and marine transportation; and farm and construction equipment.

<sup>2</sup> Consumption of coal, petroleum, natural gas, and wood for heat or electricity.

<sup>3</sup> Adipic acid production (primarily for the manufacture of nylon fibers and plastics), and nitric acid production (primarily for fertilizers).

R=Revised. P=Preliminary. (s)=Less than 0.5 thousand metric tons.

Notes: • Emissions are from anthropogenic sources. "Anthropogenic" means produced as the result of human activities, including emissions from agricultural activity and domestic livestock. Emissions from natural sources, such as wetlands and wild animals, are not included. • Under certain conditions, methane

may be produced via anaerobic decomposition of organic materials in landfills, animal wastes, and rice paddies. • Because of the continuing goal to improve estimation methods for greenhouse gases, data are frequently revised on an annual basis in keeping with the latest findings of the international scientific community. • Totals may not equal sum of components due to independent rounding.

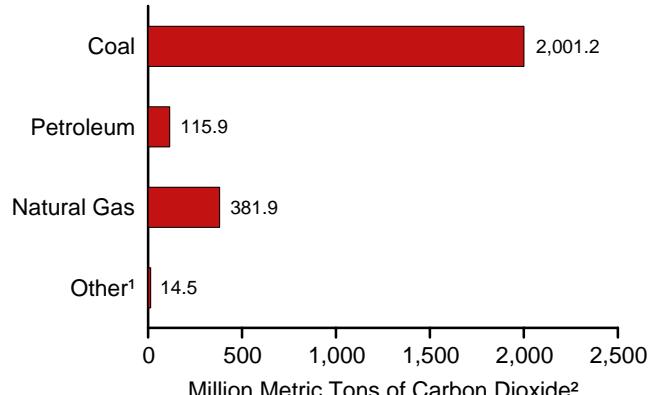
Web Page: For related information, see <http://www.eia.doe.gov/environment.html>.

Sources: **1990, 1995, and 1998-2005:** Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005* (November 2006), Table 25. **All Other Data:** EIA, *Emissions of Greenhouse Gases in the United States*, annual reports and unpublished revisions.

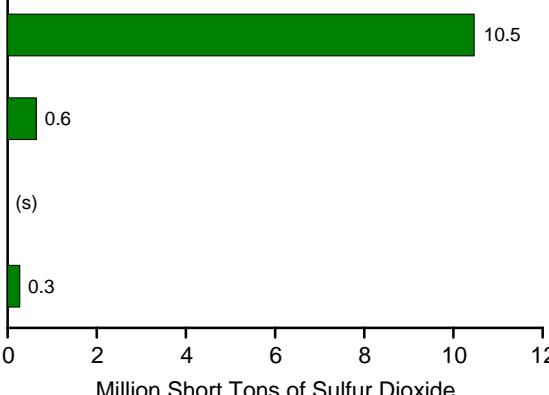
**Figure 12.7 Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output**

**Emissions by Type of Generating Unit, 2005**

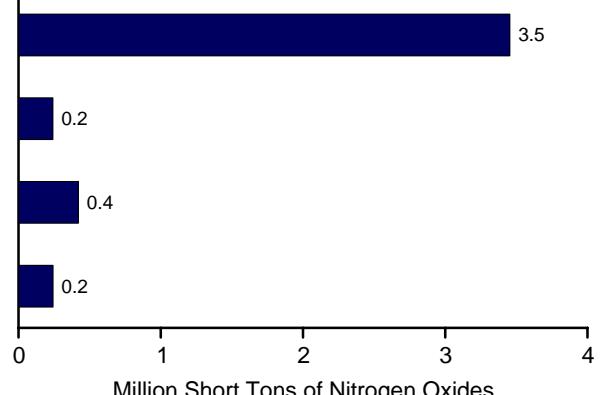
**Carbon Dioxide**



**Sulfur Dioxide**

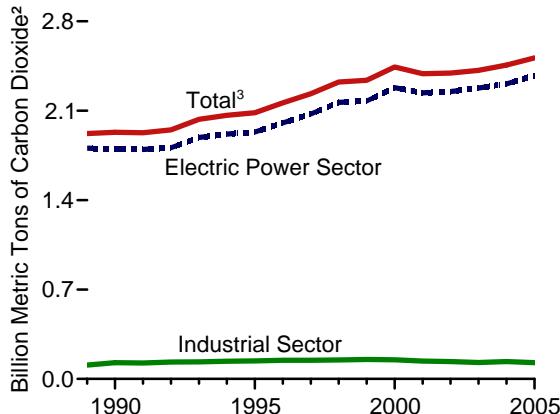


**Nitrogen Oxides**

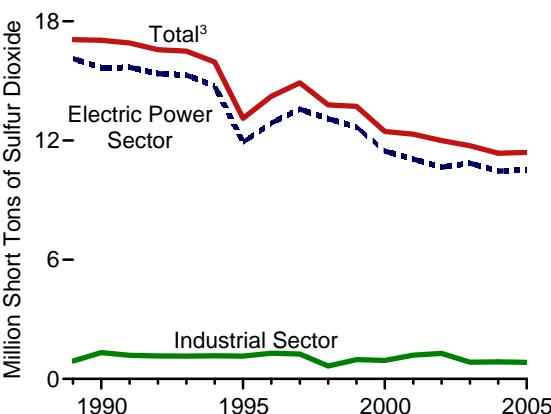


**Emissions by Sector, 1989-2005**

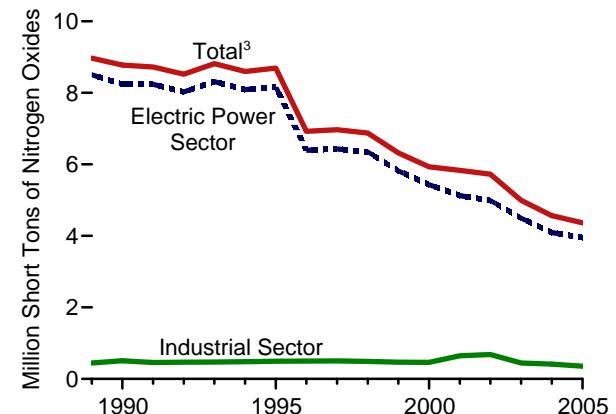
**Carbon Dioxide**



**Sulfur Dioxide**



**Nitrogen Oxides**



<sup>1</sup> For carbon dioxide: municipal solid waste (only the estimated plastics portion of municipal solid waste is included); tire-derived fuel, and geothermal. For sulfur dioxide and nitrogen oxides: blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels; wood, black liquor, and other wood waste; municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass; and chemicals, hydrogen, pitch, sulfur, and tar coal.

<sup>2</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>3</sup> Includes Commercial Sector.

(s)=Less than 0.05 million short tons.

Sources: Tables 12.7a-12.7c.

**Table 12.7a Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output:  
Total (All Sectors), 1989-2005** (Sum of Tables 12.7b and 12.7c)

	Carbon Dioxide						Sulfur Dioxide					Nitrogen Oxides				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	MSW <sup>4</sup>	Geo-thermal <sup>5</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total
Year	Million Metric Tons of Carbon Dioxide <sup>7</sup>						Thousand Short Tons of Sulfur Dioxide					Thousand Short Tons of Nitrogen Oxides				
1989	R1,553.9	R143.9	R217.3	R5.5	0.4	R1,921.0	15,949	1,085	1	43	17,079	8,026	296	545	102	8,969
1990	R1,572.4	R118.4	R232.7	R7.4	.4	R1,931.2	15,742	1,033	1	268	17,043	7,847	229	565	134	8,776
1991	R1,572.1	R110.2	R236.9	R8.4	.4	R1,928.0	15,696	943	1	271	16,912	7,836	213	549	125	8,723
1992	R1,596.7	R95.7	R246.9	R9.9	.4	R1,949.6	15,499	776	1	291	16,568	7,688	175	525	131	8,519
1993	R1,666.2	R107.1	R249.2	R10.3	.4	R2,033.1	15,259	938	1	299	16,497	7,964	191	523	137	8,815
1994	R1,675.7	R101.8	R274.9	R11.1	.4	R2,063.9	14,769	875	1	307	15,953	7,722	176	565	136	8,599
1995	R1,698.0	R76.3	R297.1	R11.8	.3	R2,083.5	12,133	676	2	303	13,113	7,755	135	660	142	8,692
1996	R1,788.7	R83.2	R276.5	R12.6	.4	R2,161.3	13,034	878	3	312	14,226	6,036	164	578	146	6,924
1997	R1,834.9	R92.6	R291.7	R13.2	.4	R2,232.7	13,689	949	2	264	14,904	6,050	177	591	153	6,971
1998	R1,862.9	R122.4	R325.8	R12.6	.4	R2,324.1	12,569	1,065	2	153	13,789	5,800	253	670	152	6,875
1999	R1,869.6	R114.7	R341.4	R12.6	.4	R2,338.7	12,408	1,054	7	248	13,717	5,294	232	653	140	6,319
2000	1,960.0	R107.5	R361.7	R12.2	.4	R2,441.7	11,338	866	3	246	12,453	4,944	193	657	136	5,930
2001	R1,895.2	R116.1	R365.3	R12.8	R3	R2,389.7	R10,918	R1,105	R2	R293	R12,318	R4,515	R324	R696	R295	R5,831
2002	R1,912.7	R90.2	R377.1	14.8	.4	R2,395.0	R10,787	R852	R2	R353	R11,994	R4,472	R248	R689	R317	R5,725
2003	R1,947.2	R111.0	R343.4	13.8	.4	R2,415.7	R10,679	R791	2	R263	R11,735	R3,976	R265	R499	R256	R4,995
2004	R1,962.7	R114.7	R365.2	14.0	.4	R2,456.9	10,402	698	2	R261	R11,364	R3,622	R248	R458	R239	R4,567
2005	2,001.2	115.9	381.9	14.1	.4	2,513.6	10,471	648	2	277	11,397	3,456	244	422	244	4,366

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately.

<sup>4</sup> Municipal solid waste (only the estimated plastics portion of municipal solid waste is included) and tire-derived fuel.

<sup>5</sup> Carbon dioxide in geothermal steam.

<sup>6</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels; wood and wood-derived fuels; municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass; and chemicals, hydrogen, pitch, sulfur, and tar coal.

<sup>7</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

R=Revised.

Notes: • Data are for emissions from energy consumption for electricity generation and useful thermal output. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: Tables 12.7b and 12.7c.

**Table 12.7b Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output:  
Electric Power Sector, 1989-2005** (Subset of Table 12.7a)

	Carbon Dioxide						Sulfur Dioxide					Nitrogen Oxides				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	MSW <sup>4</sup>	Geo-thermal <sup>5</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total
Year	Million Metric Tons of Carbon Dioxide <sup>7</sup>						Thousand Short Tons of Sulfur Dioxide					Thousand Short Tons of Nitrogen Oxides				
1989	R1,501.1	R132.2	R168.8	R4.3	0.4	R1,806.8	15,229	893	1	8	16,130	7,777	271	430	28	8,506
1990	R1,514.8	R100.8	R176.3	R5.7	.4	R1,798.0	14,965	692	1	14	15,672	7,582	193	430	40	8,245
1991	R1,515.2	94.2	R179.6	R7.1	.4	R1,796.6	14,981	684	1	16	15,682	7,590	182	423	46	8,241
1992	R1,537.1	78.4	R186.8	R8.4	.4	R1,811.0	14,743	616	1	13	15,373	7,440	141	395	51	8,027
1993	R1,605.4	R89.5	R187.3	R8.5	.4	R1,891.2	14,476	810	1	14	15,302	7,712	157	393	54	8,316
1994	R1,613.3	R84.2	R210.1	R9.2	.4	R1,917.2	13,994	733	1	12	14,741	7,470	141	430	52	8,094
1995	R1,635.4	R60.5	227.5	R9.9	.3	R1,933.6	11,377	527	1	11	11,917	7,501	104	508	54	8,167
1996	R1,725.3	R65.5	204.2	R9.8	.4	R2,005.2	12,266	601	2	11	12,881	5,784	131	423	56	6,394
1997	R1,771.3	R74.4	R219.1	R10.2	.4	R2,075.3	12,874	692	2	14	13,582	5,796	141	429	66	6,432
1998	R1,801.3	R104.6	R248.6	R10.1	.4	R2,164.9	12,161	926	2	11	13,099	5,561	220	503	68	6,352
1999	R1,807.8	R97.0	R261.1	R10.2	.4	R2,176.4	11,844	832	7	10	12,692	5,067	198	491	59	5,817
2000	R1,897.7	R91.3	R281.6	R10.0	.4	R2,281.1	10,770	696	3	7	11,476	4,724	167	483	60	5,434
2001	R1,837.8	R101.9	R289.6	R10.8	R3	R2,240.4	R10,230	R831	R2	R5	R11,069	R4,274	R279	R469	R106	R5,128
2002	R1,853.7	R78.0	R305.9	12.6	.4	R2,250.6	R10,037	R606	2	R17	R10,661	R4,203	R206	R468	R115	R4,992
2003	R1,891.5	R97.2	R277.9	11.3	.4	R2,278.4	R10,202	R639	2	R15	R10,857	R3,853	R228	R311	R108	R4,500
2004	R1,903.7	R99.2	R296.2	R11.1	.4	R2,310.6	R9,911	R544	2	R10	R10,466	R3,508	R212	R266	R111	R4,098
2005	1,944.2	101.5	318.9	11.1	.4	2,376.2	9,999	508	2	11	10,520	3,363	208	268	113	3,952

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately.

<sup>4</sup> Municipal solid waste (only the estimated plastics portion of municipal solid waste is included) and tire-derived fuel.

<sup>5</sup> Carbon dioxide in geothermal steam.

<sup>6</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels; wood and wood-derived fuels; municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass; and chemicals, hydrogen, pitch, sulfur, and tar coal.

<sup>7</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

R=Revised.

Notes: • Data are for emissions from energy consumption for electricity generation and useful thermal output. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants

within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Table 12.7c for commercial and industrial CHP and electricity-only data. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • See "Useful Thermal Output" in Glossary. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: **Carbon Dioxide:** • 1989-1997—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

• 1998-2000—EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **Sulfur Dioxide and Nitrogen Oxides:** EIA, Form EIA-767, "Steam-Electric Plant Operation and Design Report." Data were adjusted by the Environmental Protection Agency's Continuous Emission Monitoring System.

**Table 12.7c Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors, 1989-2005** (Subset of Table 12.7a)

Year	Carbon Dioxide						Sulfur Dioxide					Nitrogen Oxides				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	MSW <sup>4</sup>	Geo-thermal <sup>5</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total
	Million Metric Tons of Carbon Dioxide <sup>7</sup>						Thousand Short Tons of Sulfur Dioxide					Thousand Short Tons of Nitrogen Oxides				
<b>Commercial Sector <sup>8</sup></b>																
1989	R2.3	R0.6	R1.5	R0.8	—	R5.3	41	6	(s)	1	48	10	2	4	3	19
1990	R2.4	R.7	R2.3	R.9	—	6.3	43	5	(s)	1	49	11	1	6	4	23
1991	R2.6	R.5	R2.3	R1.0	—	R6.5	35	3	(s)	1	39	11	1	7	4	23
1992	2.5	R.5	R2.8	R1.2	—	R7.0	35	3	(s)	1	39	11	1	8	4	24
1993	3.0	R.6	R3.3	R1.3	—	R8.1	44	4	(s)	1	48	13	1	8	4	26
1994	2.9	R.6	R3.7	R1.3	—	R8.5	43	3	(s)	(s)	47	13	1	8	4	26
1995	3.1	R.5	R4.0	R1.4	—	R9.1	43	2	(s)	(s)	46	13	1	10	5	29
1996	3.6	R.5	R4.3	R2.0	—	R10.5	48	2	(s)	1	51	16	1	10	7	34
1997	3.8	.7	R4.6	R2.3	—	R11.4	62	4	(s)	3	69	17	1	11	9	37
1998	3.3	.8	R4.7	R2.1	—	R10.9	36	4	(s)	2	42	14	1	11	8	34
1999	3.4	.7	4.5	R2.0	—	R10.7	51	3	(s)	(s)	54	15	1	10	7	32
2000	3.6	.7	4.6	R1.7	—	R10.6	47	3	(s)	1	51	14	1	10	6	31
2001	3.3	.8	4.3	R1.4	—	R9.8	R48	R4	(s)	R2	R53	R14	R3	R21	R17	R55
2002	3.0	.6	4.0	1.5	—	9.1	R46	R3	(s)	R2	R50	R14	R3	R22	R14	R52
2003	3.9	.7	3.2	1.7	—	9.4	35	3	(s)	2	40	R10	R6	R18	R16	R50
2004	4.0	.9	3.9	1.9	—	10.7	R33	4	(s)	2	R39	R9	R8	R20	R18	R54
2005	4.0	.8	4.1	1.9	—	10.7	36	3	(s)	1	40	10	7	26	17	59
<b>Industrial Sector <sup>9</sup></b>																
1989	R50.4	R11.1	R47.0	R0.4	—	R108.9	679	186	(s)	35	901	241	24	110	69	444
1990	R55.2	R16.9	R54.1	R.7	—	R126.9	734	335	(s)	252	1,322	257	34	128	88	508
1991	R54.3	R15.5	R55.0	R.2	—	R125.0	681	256	(s)	254	1,191	237	30	119	73	459
1992	R57.1	R16.8	R57.3	R.3	—	R131.6	722	157	(s)	277	1,156	240	32	122	74	468
1993	R57.8	R17.0	R58.5	R.5	—	R133.8	739	124	(s)	283	1,147	241	32	122	77	472
1994	R59.5	R17.0	R61.1	R.6	—	R138.2	732	139	(s)	294	1,165	242	33	126	78	479
1995	R59.5	R15.3	R65.5	R.5	—	R140.8	713	146	(s)	291	1,150	243	30	142	81	496
1996	R59.7	R17.2	R67.9	R.7	—	R145.6	720	273	(s)	300	1,294	238	33	144	82	497
1997	R59.7	R17.5	R68.0	R.7	—	R145.9	753	253	(s)	247	1,253	238	35	150	79	502
1998	R58.3	R17.0	R72.5	R.5	—	R148.4	372	135	(s)	R141	648	225	32	157	75	490
1999	R58.4	R17.0	R75.7	R.5	—	R151.6	514	219	(s)	237	971	214	32	151	73	470
2000	R58.7	R15.4	R75.5	R.5	—	R150.1	520	167	(s)	239	927	208	24	164	69	465
2001	R54.1	R13.4	R71.4	R.6	—	R139.5	R640	R270	(s)	R285	R1,196	R227	R42	R206	R172	R648
2002	56.0	R11.6	67.1	.6	—	R135.3	R704	R243	(s)	R334	R1,282	R255	R39	R199	R188	R681
2003	51.8	R13.0	R62.3	.8	—	R127.9	R443	149	(s)	R247	R839	R112	R31	R171	R131	R446
2004	R55.1	R14.5	R65.1	1.0	—	R135.6	458	R150	(s)	R250	R859	R105	27	R173	R110	R415
2005	53.0	13.7	58.9	1.1	—	126.7	435	137	(s)	265	837	83	29	129	114	355

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately.

<sup>4</sup> Municipal solid waste (only the estimated plastics portion of municipal solid waste is included) and tire-derived fuel.

<sup>5</sup> Carbon dioxide in geothermal steam.

<sup>6</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels; wood and wood-derived fuels; municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass; and chemicals, hydrogen, pitch, sulfur, and tar coal.

<sup>7</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>8</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>9</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

R=Revised. — = No data reported. (s)=Less than 0.05 million metric tons or less than 500 short tons.

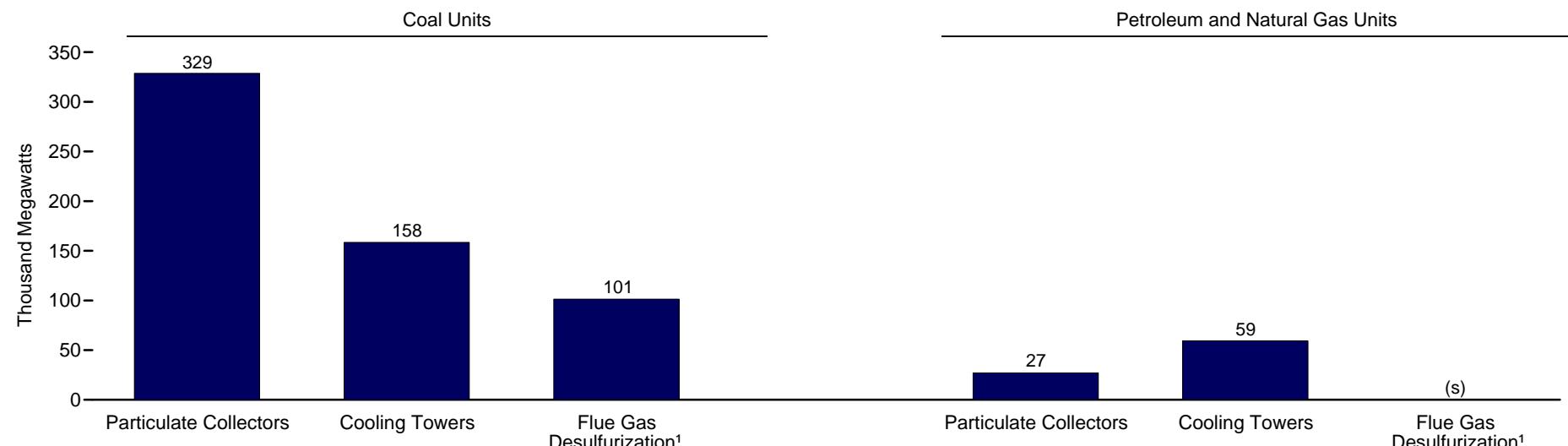
Notes: • Data are for emissions from energy consumption for electricity generation and useful thermal output. • See Table 12.7b for electric power sector data. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • See "Useful Thermal Output" in Glossary. • Totals may not equal sums of components due to independent rounding.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

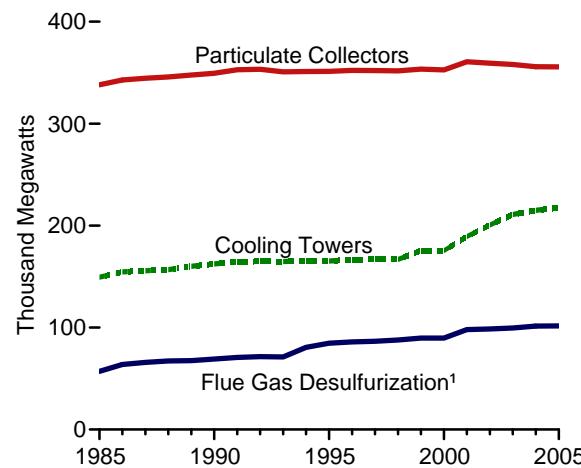
Sources: **Carbon Dioxide:** • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **Sulfur Dioxide and Nitrogen Oxides:** EIA, Form EIA-767, "Steam-Electric Plant Operation and Design Report." Data were adjusted by the Environmental Protection Agency's Continuous Emission Monitoring System.

**Figure 12.8 Installed Nameplate Capacity of Steam-Electric Generators With Environmental Equipment**

**By Fuel and Equipment Type, 2005**



**Total Units by Equipment Type, 1985-2005<sup>2</sup>**

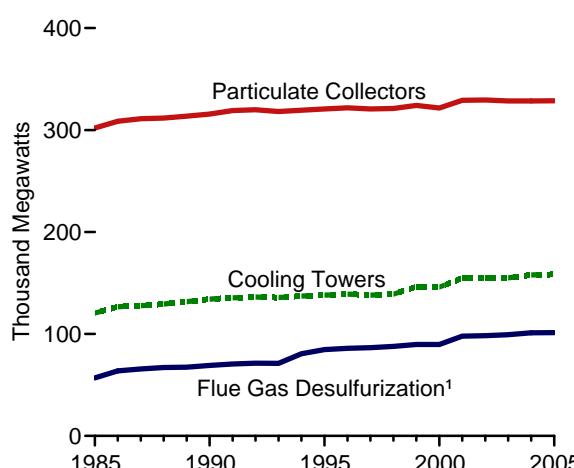


(s)=Less than 0.5 thousand megawatts.

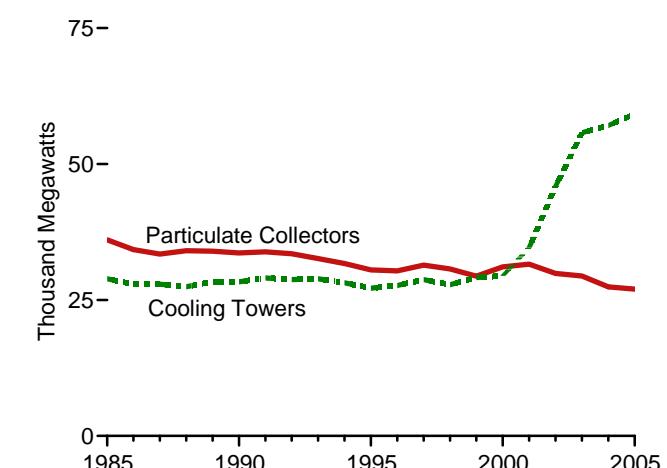
<sup>1</sup> Also called "scrubbers."

<sup>2</sup> Through 2000, data are for electric utility plants with fossil-fueled steam-electric capacity of 100 megawatts or greater. Beginning in 2001, data are for electric utility and unregulated generating plants (independent power producers, commercial plants, and industrial plants) in

**Coal Units by Equipment Type, 1985-2005<sup>2</sup>**



**Petroleum and Natural Gas Units by Equipment Type, 1985-2005<sup>2</sup>**



operating or standby status, with fossil-fueled steam-electric capacity of 100 megawatts or greater, or combustible-renewable steam electric capacity of 10 megawatts or greater.

Notes: • Components are not additive because some generators are included in more than one category. • Because vertical scales differ, graphs should not be compared.

Source: Table 12.8.

**Table 12.8 Installed Nameplate Capacity of Steam-Electric Generators With Environmental Equipment, 1985-2005**  
 (Megawatts)

Year	Coal				Petroleum and Natural Gas				Total			
	Particulate Collectors	Cooling Towers	Flue Gas Desulfurization (Scrubbers)	Total <sup>1</sup>	Particulate Collectors	Cooling Towers	Flue Gas Desulfurization (Scrubbers)	Total <sup>1</sup>	Particulate Collectors	Cooling Towers	Flue Gas Desulfurization (Scrubbers)	Total <sup>1</sup>
1985	302,056	120,591	56,955	304,706	36,054	28,895	65	62,371	338,110	149,486	57,020	367,078
1986	308,566	126,731	63,735	311,217	34,258	27,919	65	59,618	342,825	154,650	63,800	370,835
1987	311,043	127,875	65,688	312,885	33,431	27,912	65	58,783	344,474	155,786	65,753	371,668
1988	311,776	129,366	67,156	313,618	34,063	27,434	65	58,937	345,839	156,800	67,221	372,555
1989	313,680	131,701	67,469	315,521	33,975	28,386	65	59,736	347,655	160,087	67,534	375,257
1990	315,681	134,199	69,057	317,522	33,639	28,359	65	59,372	349,319	162,557	69,122	376,894
1991	319,046	135,565	70,474	319,110	33,864	29,067	260	59,773	352,910	164,632	70,734	378,883
1992	319,856	136,266	71,336	319,918	33,509	28,764	195	59,116	353,365	165,030	71,531	379,034
1993	318,188	135,885	71,106	318,251	32,620	28,922	—	58,580	350,808	164,807	71,106	376,831
1994	319,485	137,266	80,617	319,776	31,695	28,186	—	57,123	351,180	165,452	80,617	376,899
1995	320,685	138,108	84,677	320,749	30,513	27,187	—	54,942	351,198	165,295	84,677	375,691
1996	321,805	139,065	85,842	321,869	30,349	27,685	—	55,275	352,154	166,749	85,842	377,144
1997	320,646	138,120	86,605	320,710	31,422	28,766	—	56,485	352,068	166,886	86,605	377,195
1998	321,082	139,082	87,783	321,353	30,708	27,814	—	55,764	351,790	166,896	87,783	377,117
1999	324,109	146,377	89,666	331,379	29,371	29,142	—	55,812	353,480	175,520	89,666	387,192
2000	321,636	146,093	89,675	328,741	31,090	29,427	—	57,697	352,727	175,520	89,675	386,438
2001 <sup>2</sup>	329,187	154,747	97,804	329,187	31,575	34,649	184	61,634	360,762	189,396	97,988	390,821
2002	329,459	154,750	98,363	329,459	29,879	45,920	310	72,008	359,338	200,670	98,673	401,341
2003	328,587	155,158	99,257	328,587	29,422	55,770	310	81,493	358,009	210,928	99,567	409,954
2004	328,506	157,968	101,182	328,506	27,402	57,082	310	81,450	355,782	214,989	101,492	409,769
2005	328,720	158,493	101,338	328,720	27,005	59,214	310	83,307	355,599	217,646	101,648	411,840

<sup>1</sup> Components are not additive because some generators are included in more than one category.

<sup>2</sup> Through 2000, data are for electric utility plants with fossil-fueled steam-electric capacity of 100 megawatts or greater. Beginning in 2001, data are for electric utility and unregulated generating plants (independent power producers, commercial plants, and industrial plants) in operating or standby status, with fossil-fueled steam-electric capacity of 100 megawatts or greater, or combustible-renewable steam-electric capacity of 10 megawatts or greater.

— = No data reported.

Web Page: For related information, see <http://www.eia.doe.gov/fuelelectric.html>.

Sources: • 1985-1993—Energy Information Administration (EIA), Form EIA-767, "Steam-Electric Plant Operation and Design Report." • 1994 forward—EIA, *Electric Power Annual 2005* (November 2006), Table 5.2, and EIA, Form EIA-767, "Steam-Electric Plant Operation and Design Report."



# Appendix A

## Thermal Conversion Factors

### Using Thermal Conversion Factors

The thermal conversion factors presented in the following tables can be used to estimate the heat content in British thermal units (Btu) of a given amount of energy measured in physical units, such as barrels or cubic feet. For example, 10 barrels of asphalt has a heat content of approximately 66.36 million Btu (10 barrels x 6.636 million Btu per barrel = 66.36 million Btu).

The heat content rates (i.e., thermal conversion factors) provided in this section represent the gross (or higher or upper) energy content of the fuels. Gross heat content rates are applied in all Btu calculations for the *Annual Energy Review* and are commonly used in energy calculations in the United States; net (or lower) heat content rates are typically used in European energy calculations. The difference between the two rates is the amount of energy that is consumed to vaporize water that is created during the combustion process. Generally, the difference ranges from 2 percent to 10 percent, depending on the specific fuel and its hydrogen content. Some fuels, such as unseasoned wood, can be more than 40 percent different in their gross and net heat content rates. See "Heat Content" and "British thermal unit (Btu)" in the Glossary for more information.

Thermal conversion factors for hydrocarbon mixes (Table A1) are weighted averages of the thermal conversion factors for each hydrocarbon included in the mix. For example, in calculating the thermal conversion factor for a 60-40 butane-propane mixture, the thermal conversion factor for butane is weighted 1.5 times the thermal conversion factor for propane.

In general, the annual thermal conversion factors presented in Tables A2 through A6 are computed from final annual data or from the best available data and are labeled "preliminary." Often, the previous year's factor is used as the preliminary value until data become available to calculate the factor appropriate to the year. The source of each factor is described in the section entitled "Thermal Conversion Factor Source Documentation," which follows Table A6 in this appendix.

**Table A1. Approximate Heat Content of Petroleum Products**  
(Million Btu per Barrel)

Asphalt	.....	6.636
Aviation Gasoline	.....	5.048
Butane	.....	4.326
Butane-Propane Mixture (60 percent-40 percent)	.....	4.130
Distillate Fuel Oil	.....	5.825
Ethane	.....	3.082
Ethane-Propane Mixture (70 percent-30 percent)	.....	3.308
Isobutane	.....	3.974
Jet Fuel, Kerosene-Type	.....	5.670
Jet Fuel, Naphtha-Type	.....	5.355
Kerosene	.....	5.670
Lubricants	.....	6.065
Motor Gasoline		
Conventional <sup>1</sup>	.....	5.253
Oxygenated <sup>1</sup>	.....	5.150
Reformulated <sup>1</sup>	.....	5.150
Fuel Ethanol <sup>2</sup>	.....	3.539
Natural Gasoline	.....	4.620
Pentanes Plus	.....	4.620
Petrochemical Feedstocks		
Naphtha less than 401° F	.....	5.248
Other Oils equal to or greater than 401° F	.....	5.825
Still Gas	.....	6.000
Petroleum Coke	.....	6.024
Plant Condensate	.....	5.418
Propane	.....	3.836
Residual Fuel Oil	.....	6.287
Road Oil	.....	6.636
Special Naphthas	.....	5.248
Still Gas	.....	6.000
Unfinished Oils	.....	5.825
Unfractionated Stream	.....	5.418
Waxes	.....	5.537
Miscellaneous	.....	5.796

<sup>1</sup>See Table A3 for motor gasoline annual weighted averages beginning in 1994.

<sup>2</sup>Fuel ethanol, which is derived from agricultural feedstocks (primarily corn), is not a petroleum product but is blended into motor gasoline.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

**Table A2. Approximate Heat Content of Petroleum Production, Imports, and Exports, Selected Years, 1949-2006**  
 (Million Btu per Barrel)

Year	Production		Imports			Exports		
	Crude Oil	Natural Gas Plant Liquids	Crude Oil	Petroleum Products	Total	Crude Oil	Petroleum Products	Total
1949	5.800	4.544	5.952	6.261	6.059	5.800	5.651	5.692
1950	5.800	4.522	5.943	6.263	6.080	5.800	5.751	5.766
1955	5.800	4.406	5.924	6.234	6.040	5.800	5.765	5.768
1960	5.800	4.295	5.911	6.161	6.021	5.800	5.835	5.834
1965	5.800	4.264	5.872	6.123	5.997	5.800	5.742	5.743
1970	5.800	4.146	5.822	6.088	5.985	5.800	5.811	5.810
1971	5.800	4.117	5.824	6.062	5.961	5.800	5.775	5.775
1972	5.800	4.070	5.809	6.045	5.935	5.800	5.741	5.741
1973	5.800	4.049	5.817	5.983	5.897	5.800	5.752	5.752
1974	5.800	4.011	5.827	5.959	5.884	5.800	5.773	5.774
1975	5.800	3.984	5.821	5.935	5.858	5.800	5.747	5.748
1976	5.800	3.964	5.808	5.980	5.856	5.800	5.743	5.745
1977	5.800	3.941	5.810	5.908	5.834	5.800	5.796	5.797
1978	5.800	3.925	5.802	5.955	5.839	5.800	5.814	5.808
1979	5.800	3.955	5.810	5.811	5.810	5.800	5.864	5.832
1980	5.800	3.914	5.812	5.748	5.796	5.800	5.841	5.820
1981	5.800	3.930	5.818	5.659	5.775	5.800	5.837	5.821
1982	5.800	3.872	5.826	5.664	5.775	5.800	5.829	5.820
1983	5.800	3.839	5.825	5.677	5.774	5.800	5.800	5.800
1984	5.800	3.812	5.823	5.613	5.745	5.800	5.867	5.850
1985	5.800	3.815	5.832	5.572	5.736	5.800	5.819	5.814
1986	5.800	3.797	5.903	5.624	5.808	5.800	5.839	5.832
1987	5.800	3.804	5.901	5.599	5.820	5.800	5.860	5.858
1988	5.800	3.800	5.900	5.618	5.820	5.800	5.842	5.840
1989	5.800	3.826	5.906	5.641	5.833	5.800	5.869	5.857
1990	5.800	3.822	5.934	5.614	5.849	5.800	5.838	5.833
1991	5.800	3.807	5.948	5.636	5.873	5.800	5.827	5.823
1992	5.800	3.804	5.953	5.623	5.877	5.800	5.774	5.777
1993	5.800	3.801	5.954	5.620	5.883	5.800	5.777	5.779
1994	5.800	3.794	5.950	5.534	5.861	5.800	5.777	5.779
1995	5.800	3.796	5.938	5.483	5.855	5.800	5.740	5.746
1996	5.800	3.777	5.947	5.468	5.847	5.800	5.728	5.736
1997	5.800	3.762	5.954	5.469	5.862	5.800	5.726	5.734
1998	5.800	3.769	5.953	5.462	5.861	5.800	5.710	5.720
1999	5.800	3.744	5.942	5.421	5.840	5.800	5.684	5.699
2000	5.800	3.733	5.959	5.432	5.849	5.800	5.651	5.658
2001	5.800	3.735	5.976	5.443	5.862	5.800	5.751	5.752
2002	5.800	3.729	5.971	5.451	5.863	5.800	5.687	5.688
2003	5.800	3.739	5.970	5.438	5.857	5.800	5.739	5.740
2004	5.800	3.724	5.981	5.475	5.863	5.800	5.753	5.754
2005	5.800	3.724	5.977	R5.474	R5.845	5.800	5.741	5.743
2006 <sup>P</sup>	5.800	3.712	5.980	5.450	5.843	5.800	5.727	5.729

P=Preliminary.

Note: Crude oil includes lease condensate.

Web Page: For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

**Table A3. Approximate Heat Content of Petroleum Consumption and Biofuels Production, Selected Years, 1949-2006**  
 (Million Btu per Barrel)

Year	Total Petroleum <sup>1</sup> Consumption by Sector						Liquefied Petroleum Gases Consumption	Motor Gasoline Consumption	Fuel Ethanol	Ethanol Feed-stock <sup>4</sup>	Biodiesel	Biodiesel Feed-stock <sup>5</sup>
	Residential	Commercial	Industrial	Transportation	Electric Power <sup>2,3</sup>	Total						
1949	5.493	5.858	5.946	5.465	6.254	5.649	4.011	5.253	NA	NA	NA	NA
1950	5.482	5.865	5.940	5.461	6.254	5.649	4.011	5.253	NA	NA	NA	NA
1955	5.480	5.832	5.867	5.408	6.254	5.591	4.011	5.253	NA	NA	NA	NA
1960	5.430	5.849	5.800	5.388	6.267	5.555	4.011	5.253	NA	NA	NA	NA
1965	5.380	5.837	5.728	5.387	6.267	5.532	4.011	5.253	NA	NA	NA	NA
1970	5.216	5.773	5.603	5.393	6.252	5.503	6 <sup>3</sup> .779	5.253	NA	NA	NA	NA
1971	5.212	5.758	5.598	5.389	6.245	5.504	3.772	5.253	NA	NA	NA	NA
1972	5.193	5.733	5.563	5.388	6.233	5.500	3.760	5.253	NA	NA	NA	NA
1973	5.205	5.749	5.569	5.395	6.245	5.515	3.746	5.253	NA	NA	NA	NA
1974	5.196	5.740	5.538	5.394	6.238	5.504	3.730	5.253	NA	NA	NA	NA
1975	5.192	5.704	5.527	5.392	6.250	5.494	3.715	5.253	NA	NA	NA	NA
1976	5.215	5.726	5.536	5.395	6.251	5.504	3.711	5.253	NA	NA	NA	NA
1977	5.213	5.733	5.554	5.400	6.249	5.518	3.677	5.253	NA	NA	NA	NA
1978	5.213	5.716	5.554	5.404	6.251	5.519	3.669	5.253	NA	NA	NA	NA
1979	5.298	5.769	5.419	5.428	6.258	5.494	3.680	5.253	NA	NA	NA	NA
1980	5.245	5.803	5.374	5.440	6.254	5.479	3.674	5.253	NA	NA	NA	NA
1981	5.191	5.751	5.312	5.432	6.258	5.448	3.643	5.253	3.539	6.486	NA	NA
1982	5.167	5.751	5.263	5.422	6.258	5.415	3.615	5.253	3.539	6.428	NA	NA
1983	5.022	5.642	5.275	5.415	6.255	5.406	3.614	5.253	3.539	6.388	NA	NA
1984	5.184	5.705	5.223	5.418	6.251	5.395	3.599	5.253	3.539	6.356	NA	NA
1985	5.153	5.661	5.215	5.422	6.247	5.387	3.603	5.253	3.539	6.331	NA	NA
1986	5.169	5.694	5.283	5.425	6.257	5.418	3.640	5.253	3.539	6.310	NA	NA
1987	5.144	5.661	5.248	5.429	6.249	5.403	3.659	5.253	3.539	6.291	NA	NA
1988	5.165	5.661	5.241	5.433	6.250	5.410	3.652	5.253	3.539	6.275	NA	NA
1989	5.105	5.621	5.234	5.437	6 <sup>2</sup> .240	5.410	3.683	5.253	3.539	6.260	NA	NA
1990	5.027	5.621	5.270	5.442	6.244	5.411	3.625	5.253	3.539	6.247	NA	NA
1991	4.968	5.599	5.186	5.440	6.246	5.384	3.614	5.253	3.539	6.235	NA	NA
1992	5.004	5.589	5.185	5.442	6.238	5.378	3.624	5.253	3.539	6.224	NA	NA
1993	4.975	5.580	5.196	5.436	6.230	5.379	3.606	5.253	3.539	6.214	NA	NA
1994	4.983	5.592	5.166	5.424	6.213	5.361	3.635	7 <sup>5</sup> .230	3.539	6.204	NA	NA
1995	4.940	5.554	5.137	5.417	6.188	5.341	3.623	5.215	3.539	6.196	NA	NA
1996	4.869	5.498	5.133	5.420	6.195	5.336	3.613	5.216	3.539	6.187	NA	NA
1997	4.859	5.459	5.138	5.416	6.199	5.336	3.616	5.213	3.539	6.180	NA	NA
1998	4.837	5.446	5.155	5.413	6.210	5.349	3.614	5.212	3.539	6.172	NA	NA
1999	4.761	5.369	5.113	5.413	6.205	5.328	3.616	5.211	3.539	6.165	NA	NA
2000	4.761	5.394	5.082	5.421	6.189	5.326	3.607	5.210	3.539	6.159	NA	NA
2001	4.796	5.403	5.164	5.412	6.199	5.345	3.614	5.210	3.539	6.152	84.996	85.208
2002	4.742	5.364	5.116	5.410	6.173	5.324	3.613	5.208	3.539	6.146	84.996	85.208
2003	R4.763	R5.407	R5.161	R5.408	6.182	5.340	3.629	5.207	3.539	6.141	84.996	85.208
2004	R4.807	R5.434	5.164	5.420	6.192	5.350	3.618	5.215	3.539	6.135	84.996	85.208
2005	RE4.800	RE5.435	RE5.194	RE5.427	R6.188	R5.365	3.620	5.218	3.539	6.130	84.996	85.208
2006	E4.787	E5.429	E5.192	E5.426	E6.141	E5.352	P3.604	P5.218	3.539	6.125	NA	NA

<sup>1</sup> Petroleum products supplied, including natural gas plant liquids and crude oil burned directly as fuel.

<sup>2</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>3</sup> Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

<sup>4</sup> Corn input to the production of fuel ethanol (million Btu corn per denatured barrel ethanol), used as the approximate heat content for total biomass inputs to the production of fuel ethanol.

<sup>5</sup> Soybean oil input to the production of biodiesel (million Btu soybean oil per barrel biodiesel), used as the approximate heat content for total biomass inputs to the production of biodiesel.

<sup>6</sup> There is a discontinuity in this time series between 1966 and 1967; beginning in 1967, the single

constant factor is replaced by a quantity-weighted average of liquefied petroleum gases' major components.

<sup>7</sup> There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a factor that is a quantity-weighted average of motor gasoline's major components. See Table A1.

<sup>8</sup> Net heat content (lower heating value).

R=Revised. P=Preliminary. E=Estimate. NA=Not available.

Note: Weighted averages of the products included in each category are calculated by using heat content values shown in Table A1.

Web Page: For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

**Table A4. Approximate Heat Content of Natural Gas, Selected Years, 1949-2006**  
(Btu per Cubic Foot)

Year	Production		Consumption <sup>1</sup>			Imports	Exports
	Marketed	Dry	End-Use Sectors <sup>2</sup>	Electric Power Sector <sup>3</sup>	Total		
1949	1,120	1,035	1,035	1,035	1,035	--	1,035
1950	1,119	1,035	1,035	1,035	1,035	--	1,035
1955	1,120	1,035	1,035	1,035	1,035	1,035	1,035
1960	1,107	1,035	1,035	1,035	1,035	1,035	1,035
1965	1,101	1,032	1,032	1,032	1,032	1,032	1,032
1970	1,102	1,031	1,031	1,031	1,031	1,031	1,031
1971	1,103	1,031	1,031	1,031	1,031	1,031	1,031
1972	1,100	1,027	1,027	1,027	1,027	1,027	1,027
1973	1,093	1,021	1,020	1,024	1,021	1,026	1,023
1974	1,097	1,024	1,024	1,022	1,024	1,027	1,016
1975	1,095	1,021	1,020	1,026	1,021	1,026	1,014
1976	1,093	1,020	1,019	1,023	1,020	1,025	1,013
1977	1,093	1,021	1,019	1,029	1,021	1,026	1,013
1978	1,088	1,019	1,016	1,034	1,019	1,030	1,013
1979	1,092	1,021	1,018	1,035	1,021	1,037	1,013
1980	1,098	1,026	1,024	1,035	1,026	1,022	1,013
1981	1,103	1,027	1,025	1,035	1,027	1,014	1,011
1982	1,107	1,028	1,026	1,036	1,028	1,018	1,011
1983	1,115	1,031	1,031	1,030	1,031	1,024	1,010
1984	1,109	1,031	1,030	1,035	1,031	1,005	1,010
1985	1,112	1,032	1,031	1,038	1,032	1,002	1,011
1986	1,110	1,030	1,029	1,034	1,030	997	1,008
1987	1,112	1,031	1,031	1,032	1,031	999	1,011
1988	1,109	1,029	1,029	1,028	1,029	1,002	1,018
1989	1,107	1,031	1,031	14,028	1,031	1,004	1,019
1990	1,105	1,029	1,030	1,027	1,029	1,012	1,018
1991	1,108	1,030	1,031	1,025	1,030	1,014	1,022
1992	1,110	1,030	1,031	1,025	1,030	1,011	1,018
1993	1,106	1,027	1,028	1,025	1,027	1,020	1,016
1994	1,105	1,028	1,029	1,025	1,028	1,022	1,011
1995	1,106	1,026	1,027	1,021	1,026	1,021	1,011
1996	1,109	1,026	1,027	1,020	1,026	1,022	1,011
1997	1,107	1,026	1,027	1,020	1,026	1,023	1,011
1998	1,109	1,031	1,033	1,024	1,031	1,023	1,011
1999	1,107	1,027	1,028	1,022	1,027	1,022	1,006
2000	1,107	1,025	1,026	1,021	1,025	1,023	1,006
2001	1,105	R1,028	R1,029	1,026	R1,028	1,023	1,010
2002	1,106	1,027	1,029	1,020	1,027	1,022	1,008
2003	1,106	1,031	1,033	1,025	1,031	1,025	1,009
2004	R1,105	1,027	1,027	1,027	1,027	1,025	1,009
2005	R1,104	R1,029	R1,029	R1,028	R1,029	R1,025	1,009
2006	E1,105	E1,029	E1,030	P1,028	E1,029	E1,025	E1,009

<sup>1</sup> Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately.

<sup>2</sup> Residential, commercial, industrial, and transportation sectors.

<sup>3</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and

heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

R=Revised. P=Preliminary. E=Estimate. -- = Not applicable.

Web Page: For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

**Table A5. Approximate Heat Content of Coal and Coal Coke, Selected Years, 1949-2006**  
 (Million Btu per Short Ton)

Year	Production <sup>1</sup>	Waste Coal Supplied <sup>2</sup>	Coal							Coal Coke			
			Consumption				Electric Power Sector <sup>4,5</sup>	Total	Imports	Exports			
			Residential and Commercial Sectors	Industrial Sector		Other <sup>3</sup>							
				Coke Plants	Other								
1949	24.916	NA	24.263	26.797	24.612	23.761	24.793	25.000	26.759	24.800			
1950	25.090	NA	24.461	26.798	24.820	23.937	24.989	25.020	26.788	24.800			
1955	25.201	NA	24.373	26.794	24.821	24.056	24.982	25.000	26.907	24.800			
1960	24.906	NA	24.226	26.791	24.609	23.927	24.713	25.003	26.939	24.800			
1965	24.775	NA	24.028	26.787	24.385	23.780	24.537	25.000	26.973	24.800			
1970	23.842	NA	23.203	26.784	22.983	22.573	23.440	25.000	26.982	24.800			
1971	23.507	NA	23.090	26.784	22.670	22.301	23.124	25.000	26.981	24.800			
1972	23.389	NA	22.998	26.782	22.550	22.204	23.036	25.000	26.979	24.800			
1973	23.376	NA	22.831	26.780	22.586	22.246	23.057	25.000	26.596	24.800			
1974	23.072	NA	22.479	26.778	22.419	21.781	22.677	25.000	26.700	24.800			
1975	22.897	NA	22.261	26.782	22.436	21.642	22.506	25.000	26.562	24.800			
1976	22.855	NA	22.774	26.781	22.530	21.679	22.498	25.000	26.601	24.800			
1977	22.597	NA	22.919	26.787	22.322	21.508	22.265	25.000	26.548	24.800			
1978	22.248	NA	22.466	26.789	22.207	21.275	22.017	25.000	26.478	24.800			
1979	22.454	NA	22.242	26.788	22.452	21.364	22.100	25.000	26.548	24.800			
1980	22.415	NA	22.543	26.790	22.690	21.295	21.947	25.000	26.384	24.800			
1981	22.308	NA	22.474	26.794	22.585	21.085	21.713	25.000	26.160	24.800			
1982	22.239	NA	22.695	26.797	22.712	21.194	21.674	25.000	26.223	24.800			
1983	22.052	NA	22.775	26.798	22.691	21.133	21.576	25.000	26.291	24.800			
1984	22.010	NA	22.844	26.799	22.543	21.101	21.573	25.000	26.402	24.800			
1985	21.870	NA	22.646	26.798	22.020	20.959	21.366	25.000	26.307	24.800			
1986	21.913	NA	22.947	26.798	22.198	21.084	21.462	25.000	26.292	24.800			
1987	21.922	NA	23.404	26.799	22.381	21.136	21.517	25.000	26.291	24.800			
1988	21.823	NA	23.571	26.799	22.360	20.900	21.328	25.000	26.299	24.800			
1989	21.765	10.391	23.650	26.800	22.347	<sup>4</sup> 20.898	21.307	25.000	26.160	24.800			
1990	21.822	9.303	23.137	26.799	22.457	20.779	21.197	25.000	26.202	24.800			
1991	21.681	10.758	23.114	26.799	22.460	20.730	21.120	25.000	26.188	24.800			
1992	21.682	10.396	23.105	26.799	22.250	20.709	21.068	25.000	26.161	24.800			
1993	21.418	10.638	22.994	26.800	22.123	20.677	21.010	25.000	26.335	24.800			
1994	21.394	11.097	23.112	26.800	22.068	20.589	20.929	25.000	26.329	24.800			
1995	21.326	11.722	23.118	26.800	21.950	20.543	20.880	25.000	26.180	24.800			
1996	21.322	12.147	23.011	26.800	22.105	20.547	20.870	25.000	26.174	24.800			
1997	21.296	12.158	22.494	26.800	22.172	20.518	20.830	25.000	26.251	24.800			
1998	21.418	12.639	21.620	27.426	23.164	20.516	20.881	25.000	26.800	24.800			
1999	21.070	12.552	23.880	27.426	22.489	20.490	20.818	25.000	26.081	24.800			
2000	21.072	12.360	25.020	27.426	22.433	20.511	20.828	25.000	26.117	24.800			
2001	<sup>1,R</sup> 20.772	12.169	24.909	27.426	22.622	20.337	20.671	25.000	25.998	24.800			
2002	20.673	12.165	22.962	27.426	22.562	20.238	20.541	25.000	26.062	24.800			
2003	20.499	12.929	22.242	27.425	22.468	20.082	20.387	25.000	25.972	24.800			
2004	20.424	13.148	22.324	27.426	22.473	19.980	20.290	25.000	26.108	24.800			
2005	<sup>R</sup> 20.347	12.898	<sup>R</sup> 22.342	26.279	22.178	<sup>R</sup> 19.988	<sup>R</sup> 20.245	25.000	25.494	24.800			
2006 <sup>P</sup>	20.333	12.695	22.052	26.271	22.050	19.952	20.204	25.000	25.453	24.800			

<sup>1</sup> Beginning in 2001, includes a small amount of refuse recovery (coal recaptured from a refuse mine, and cleaned to reduce the concentration of noncombustible materials).

<sup>2</sup> Waste coal (including fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste) consumed by the electric power and industrial sectors. Beginning in 1989, waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in "Consumption."

<sup>3</sup> Includes transportation. Excludes coal synfuel plants.

<sup>4</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS (North American

Industry Classification System) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

<sup>5</sup> Electric power sector factors are for anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and, beginning in 1998, coal synfuel.

R=Revised. P=Preliminary. NA=Not available.

Web Page: For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

**Table A6. Approximate Heat Rates for Electricity, and Heat Content of Electricity, Selected Years, 1949-2006**  
(Btu per Kilowatthour)

Year	Approximate Heat Rates for Electricity Net Generation			Heat Content of Electricity <sup>5</sup>
	Fossil-Fueled Plants <sup>1,2</sup>	Nuclear Plants <sup>3</sup>	Geothermal Energy Plants <sup>4</sup>	
1949	15,033	--	--	3,412
1950	14,030	--	--	3,412
1955	11,699	--	--	3,412
1960	10,760	11,629	23,200	3,412
1965	10,453	11,804	22,182	3,412
1970	10,494	10,977	21,606	3,412
1971	10,478	10,837	21,655	3,412
1972	10,379	10,792	21,668	3,412
1973	10,389	10,903	21,674	3,412
1974	10,442	11,161	21,674	3,412
1975	10,406	11,013	21,611	3,412
1976	10,373	11,047	21,611	3,412
1977	10,435	10,769	21,611	3,412
1978	10,361	10,941	21,611	3,412
1979	10,353	10,879	21,545	3,412
1980	10,388	10,908	21,639	3,412
1981	10,453	11,030	21,639	3,412
1982	10,454	11,073	21,629	3,412
1983	10,520	10,905	21,290	3,412
1984	10,440	10,843	21,303	3,412
1985	10,447	10,622	21,263	3,412
1986	10,446	10,579	21,263	3,412
1987	10,419	10,442	21,263	3,412
1988	10,324	10,602	21,096	3,412
1989	10,432	10,583	21,096	3,412
1990	10,402	10,582	21,096	3,412
1991	10,436	10,484	20,997	3,412
1992	10,342	10,471	20,914	3,412
1993	10,309	10,504	20,914	3,412
1994	10,316	10,452	20,914	3,412
1995	10,312	10,507	20,914	3,412
1996	10,340	10,503	20,960	3,412
1997	10,213	10,494	20,960	3,412
1998	10,197	10,491	21,017	3,412
1999	10,226	10,450	21,017	3,412
2000	10,201	10,429	21,017	3,412
2001	<sup>2</sup> 10,333	10,448	21,017	3,412
2002	10,173	10,439	21,017	3,412
2003	10,241	10,421	21,017	3,412
2004	10,022	10,427	21,017	3,412
2005	R9,999	R10,435	21,017	3,412
2006	E10,022	E10,427	E21,017	3,412

<sup>1</sup> Through 2000, used as the thermal conversion factor for wood and waste electricity net generation at electric utilities. For all years, used as the thermal conversion factor for hydro, solar, and wind electricity net generation.

<sup>2</sup> Through 2000, heat rates are for fossil-fueled steam-electric plants at electric utilities. Beginning in 2001, heat rates are for all fossil-fueled plants at electric utilities and independent power producers.

<sup>3</sup> Used as the thermal conversion factor for nuclear electricity net generation.

<sup>4</sup> Used as the thermal conversion factor for geothermal electricity net generation.

<sup>5</sup> The value of 3,412 Btu per kilowatthour is a constant. It is used as the thermal conversion factor for electricity retail sales, and electricity imports and exports.

R=Revised. E=Estimate. -- = Not applicable.

Web Page: For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_a.html](http://www.eia.doe.gov/emeu/aer/append_a.html).

Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

# Thermal Conversion Factor Source Documentation

## Approximate Heat Content of Petroleum and Natural Gas Plant Liquids

**Asphalt.** The Energy Information Administration (EIA) adopted the thermal conversion factor of 6.636 million British thermal units (Btu) per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Aviation Gasoline.** EIA adopted the thermal conversion factor of 5.048 million Btu per barrel as adopted by the Bureau of Mines from the Texas Eastern Transmission Corporation publication *Competition and Growth in American Energy Markets 1947-1985*, a 1968 release of historical and projected statistics.

**Butane.** EIA adopted the Bureau of Mines thermal conversion factor of 4.326 million Btu per barrel as published in the *California Oil World and Petroleum Industry, First Issue, April 1942*.

**Butane-Propane Mixture.** EIA adopted the Bureau of Mines calculation of 4.130 million Btu per barrel based on an assumed mixture of 60 percent butane and 40 percent propane. See **Butane** and **Propane**.

**Crude Oil Exports.** Assumed by EIA to be 5.800 million Btu per barrel or equal to the thermal conversion factor for crude oil produced in the United States. See **Crude Oil Production**.

**Crude Oil Imports.** Calculated annually by EIA as the average of the thermal conversion factors for each type of crude oil imported weighted by the quantities imported. Thermal conversion factors for each type were calculated on a foreign country basis, by determining the average American Petroleum Institute (API) gravity of crude oil imported from each foreign country from Form ERA-60 in 1977 and converting average API gravity to average Btu content by using National Bureau of Standards, Miscellaneous Publication No. 97, *Thermal Properties of Petroleum Products*, 1933.

**Crude Oil Production.** EIA adopted the thermal conversion factor of 5.800 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

**Distillate Fuel Oil.** EIA adopted the Bureau of Mines thermal conversion factor of 5.825 million Btu per barrel as reported in a Bureau of Mines internal

memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

**Ethane.** EIA adopted the Bureau of Mines thermal conversion factor of 3.082 million Btu per barrel as published in the *California Oil World and Petroleum Industry, First Issue, April 1942*.

**Ethane-Propane Mixture.** EIA calculation of 3.308 million Btu per barrel based on an assumed mixture of 70 percent ethane and 30 percent propane. See **Ethane** and **Propane**.

**Isobutane.** EIA adopted the Bureau of Mines thermal conversion factor of 3.974 million Btu per barrel as published in the *California Oil World and Petroleum Industry, First Issue, April 1942*.

**Jet Fuel, Kerosene-Type.** EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel for "Jet Fuel, Commercial" as published by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985*, a 1968 release of historical and projected statistics.

**Jet Fuel, Naphtha-Type.** EIA adopted the Bureau of Mines thermal conversion factor of 5.355 million Btu per barrel for "Jet Fuel, Military" as published by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947-1985*, a 1968 release of historical and projected statistics.

**Kerosene.** EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

**Liquefied Petroleum Gases Consumption.** • 1949-1966: U.S. Department of the Interior, Bureau of Mines, Mineral Industry Surveys, "Crude Petroleum and Petroleum Products, 1956," Table 4 footnote, constant value of 4.011 million Btu per barrel. • 1967 forward: Calculated annually by EIA as the average of the thermal conversion factors for all liquefied petroleum gases consumed (see Table A1) weighted by the quantities consumed. The component products of liquefied petroleum gases are ethane (including ethylene), propane (including propylene), normal-butane (including butylene), butane-propane mixtures, ethane-propane mixtures, and isobutane. For 1967-1980, quantities consumed are from EIA, Energy Data Reports, "Petroleum Statement, Annual," Table 1. For 1981 forward, quantities consumed are from EIA, *Petroleum Supply Annual*, Table 2.

**Lubricants.** EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Miscellaneous Products.** EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Motor Gasoline Consumption.** • 1949-1993: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel for “Gasoline, Motor Fuel” as published by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947-1985*, a 1968 release of historical and projected statistics. • 1994 forward: EIA calculated national annual quantity-weighted average conversion factors for conventional, reformulated, and oxygenated motor gasolines (see Table A3). The factor for conventional motor gasoline is 5.253 million Btu per barrel, as used for previous years. The factors for reformulated and oxygenated gasolines, both currently 5.150 million Btu per barrel, are based on data published in Environmental Protection Agency, Office of Mobile Sources, National Vehicle and Fuel Emissions Laboratory report EPA 420-F-95-003, “Fuel Economy Impact Analysis of Reformulated Gasoline.” See **Fuel Ethanol (Blended Into Motor Gasoline)**.

**Natural Gas Plant Liquids Production.** Calculated annually by EIA as the average of the thermal conversion factors for each natural gas plant liquid produced weighted by the quantities produced.

**Natural Gasoline.** EIA adopted the thermal conversion factor of 4.620 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Pentanes Plus.** EIA assumed the thermal conversion factor to be 4.620 million Btu or equal to that for natural gasoline. See **Natural Gasoline**.

**Petrochemical Feedstocks, Naphtha less than 401° F.** Assumed by EIA to be 5.248 million Btu per barrel, equal to the thermal conversion factor for special naphthas. See **Special Naphthas**.

**Petrochemical Feedstocks, Other Oils equal to or greater than 401° F.** Assumed by EIA to be 5.825 million Btu per barrel, equal to the thermal conversion factor for distillate fuel oil. See **Distillate Fuel Oil**.

**Petrochemical Feedstocks, Still Gas.** Assumed by EIA to be 6.000 million Btu per barrel, equal to the thermal conversion factor for still gas. See **Still Gas**.

**Petroleum Coke.** EIA adopted the thermal conversion factor of 6.024 million Btu per barrel as reported in Btu per short ton in the Bureau of Mines internal memorandum, “Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950.” The Bureau of Mines calculated this factor by dividing 30.120 million Btu per short ton, as given in the referenced Bureau of Mines

internal memorandum, by 5.0 barrels per short ton, as given in the Bureau of Mines Form 6-1300-M and successor EIA forms.

**Petroleum Consumption, Commercial Sector.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the commercial sector weighted by the estimated quantities consumed by the commercial sector. The quantities of petroleum products consumed by the commercial sector are estimated in the State Energy Data System—see documentation at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_petrol.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_petrol.pdf).

**Petroleum Consumption, Electric Power Sector.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the electric power sector weighted by the quantities consumed by the electric power sector. Data are from Form EIA-860, “Annual Electric Generator Report”; Form EIA-906, “Power Plant Report”; and predecessor forms.

**Petroleum Consumption, Industrial Sector.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the industrial sector weighted by the estimated quantities consumed by the industrial sector. The quantities of petroleum products consumed by the industrial sector are estimated in the State Energy Data System—see documentation at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_petrol.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_petrol.pdf).

**Petroleum Consumption, Residential Sector.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the residential sector weighted by the estimated quantities consumed by the residential sector. The quantities of petroleum products consumed by the residential sector are estimated in the State Energy Data System—see documentation at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_petrol.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_petrol.pdf).

**Petroleum Consumption, Total.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed weighted by the quantities consumed.

**Petroleum Consumption, Transportation Sector.** Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the transportation sector weighted by the estimated quantities consumed by the transportation sector. The quantities of petroleum products consumed by the transportation sector are estimated in the State Energy Data System—see documentation at [http://www.eia.doe.gov/emeu/states/sep\\_use/notes/use\\_petrol.pdf](http://www.eia.doe.gov/emeu/states/sep_use/notes/use_petrol.pdf).

**Petroleum Products Exports.** Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product exported weighted by the quantities exported.

**Petroleum Products Imports.** Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product imported weighted by the quantities imported.

**Plant Condensate.** Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

**Propane.** EIA adopted the Bureau of Mines thermal conversion factor of 3.836 million Btu per barrel as published in the *California Oil World and Petroleum Industry, First Issue*, April 1942.

**Residual Fuel Oil.** EIA adopted the thermal conversion factor of 6.287 million Btu per barrel as reported in the Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

**Road Oil.** EIA adopted the Bureau of Mines thermal conversion factor of 6.636 million Btu per barrel, which was assumed to be equal to that of asphalt (see **Asphalt**) and was first published by the Bureau of Mines in the *Petroleum Statement, Annual, 1970*.

**Special Naphthas.** EIA adopted the Bureau of Mines thermal conversion factor of 5.248 million Btu per barrel, which was assumed to be equal to that of the total gasoline (aviation and motor) factor and was first published in the *Petroleum Statement, Annual, 1970*.

**Still Gas.** EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel, first published in the *Petroleum Statement, Annual, 1970*.

**Total Petroleum Exports.** Calculated annually by EIA as the average of the thermal conversion factors for crude oil and each petroleum product exported weighted by the quantities exported. See **Crude Oil Exports** and **Petroleum Products Exports**.

**Total Petroleum Imports.** Calculated annually by EIA as the average of the thermal conversion factors for each type of crude oil and petroleum product imported weighted by the quantities imported. See **Crude Oil Imports** and **Petroleum Products Imports**.

**Unfinished Oils.** EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel or equal to that for distillate fuel oil (see **Distillate Fuel Oil**) and first published it in EIA's *Annual Report to Congress, Volume 3, 1977*.

**Unfractionated Stream.** EIA assumed the thermal conversion factor to be 5.418 million Btu per barrel or equal to that for plant condensate (see **Plant Condensate**) and first published it in EIA's *Annual Report to Congress, Volume 2, 1981*.

**Waxes.** EIA adopted the thermal conversion factor of 5.537 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

## Approximate Heat Content of Biofuels

**Biodiesel.** EIA estimated the net heat content (lower heating value) for biodiesel to be 4.996 million Btu per barrel.

**Biodiesel Feedstock.** EIA estimated the soybean oil input to the production of biodiesel to be 5.208 million Btu soybean oil per barrel biodiesel, which is used as the approximate net heat content (lower heating value) for total biomass inputs to the production of biodiesel.

**Ethanol Feedstock.** EIA estimated the corn input to the production of fuel ethanol (million Btu corn per denatured barrel ethanol), which is used as the approximate heat content for total biomass inputs to the production of ethanol.

**Fuel Ethanol.** EIA adopted the thermal conversion factor of 3.539 million Btu per barrel published in "Oxygenate Flexibility for Future Fuels," a paper presented by William J. Piel of the ARCO Chemical Company at the National Conference on Reformulated Gasolines and Clean Air Act Implementation, Washington, D.C., October 1991.

## Approximate Heat Content of Natural Gas

**Natural Gas Consumption, Electric Power Sector.** Calculated annually by EIA by dividing the heat content of natural gas consumed by the electric power sector by the quantity consumed. Data are from Form EIA-860, "Annual Electric Generator Report"; Form EIA-906, "Power Plant Report"; and predecessor forms.

**Natural Gas Consumption, End-Use Sectors.** Calculated annually by EIA by dividing the heat content of natural gas consumed by the end-use sectors (residential, commercial, industrial, and transportation) by the quantity consumed. Data are from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

**Natural Gas Consumption, Total.** • 1949-1962: EIA adopted the thermal conversion factor of 1,035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*. • 1963-1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts*, an AGA annual publication. • 1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity consumed.

**Natural Gas Exports.** • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas exported by the quantity exported. For 1973-1995, data are from Form

FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

**Natural Gas Imports.** • 1949-1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas imported by the quantity imported. For 1973-1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

**Natural Gas Production, Dry.** Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed. See **Natural Gas Consumption, Total**.

**Natural Gas Production, Marketed.** Calculated annually by EIA by dividing the heat content of dry natural gas produced (see **Natural Gas Production, Dry**) and liquids produced (see **Natural Gas Plant Liquids Production**) by the total quantity of marketed natural gas produced.

## Approximate Heat Content of Coal and Coal Coke

**Coal Coke Imports and Exports.** EIA adopted the Bureau of Mines estimate of 24,800 million Btu per short ton.

**Coal Consumption, Electric Power Sector.** Calculated annually by EIA by dividing the heat content of coal consumed by the electric power sector by the quantity consumed. Data are from Form EIA-860, "Annual Electric Generator Report"; Form EIA-906, "Power Plant Report"; and predecessor forms.

**Coal Consumption, Industrial Sector, Coke Plants.** Calculated annually by EIA by dividing the heat content of coal consumed by coke plants by the quantity consumed. Data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants."

**Coal Consumption, Industrial Sector, Other.** Calculated annually by EIA by dividing the heat content of coal consumed by manufacturing plants by the quantity consumed. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants."

**Coal Consumption, Residential and Commercial Sectors.** Calculated annually by EIA by dividing the heat content of coal consumed by the residential and commercial sectors by the quantity consumed. Through 1999, data are from Form EIA-6, "Coal Distribution Report." Beginning in 2000, data are for commercial combined-heat-and-power (CHP) plants from Form EIA-860, "Annual Electric Generator Report"; and Form EIA-906, "Power Plant Report."

**Coal Consumption, Total.** Calculated annually by EIA by dividing the total heat content of coal consumed by all sectors by the total quantity consumed.

**Coal Exports.** Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. Data are from U.S. Department of Commerce, Bureau of the Census, "Monthly Report EM 545."

**Coal Imports.** • 1949-1963: Calculated annually by EIA by dividing the heat content of coal imported by the quantity imported. • 1963 forward: Assumed by EIA to be 25,000 million Btu per short ton.

**Coal Production.** Calculated annually by EIA to balance the heat content of coal supply (production and imports) and the heat content of coal disposition (exports, stock change, and consumption).

## Approximate Heat Rates for Electricity

**Electricity Net Generation, Fossil-Fueled Plants.** There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydro, wind, photovoltaic, or solar thermal energy sources. Therefore, EIA calculates a rate factor that is equal to the annual average heat rate factor for fossil-fueled power plants in the United States. By using that factor, it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption, such as droughts. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu. • 1949-1955: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Thermal-Electric Plant Construction Cost and Annual Production Expenses—1981* and *Steam-Electric Plant Construction Cost and Annual Production Expenses—1978*. • 1956-1988: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 9. • 1989-2000: Calculated annually by EIA by using heat rate data reported on Form EIA-860, "Annual Electric Generator Report" (and predecessor forms); and net generation data reported on Form EIA-759, "Monthly Power Plant Report." The computation includes data for all electric utility steam-electric plants using fossil fuels. 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-906, "Power Plant Report." The computation includes data for all electric utilities and electricity-only independent power producers using fossil fuels.

**Electricity Net Generation, Geothermal Energy Plants.** • 1960-1981: Calculated annually by EIA by weighting the annual average heat rates of operating geothermal units by the installed nameplate capacities as reported on Form

FPC-12, “Power System Statement.” • 1982 forward: Estimated annually by EIA on the basis of an informal survey of relevant plants.

**Electricity Net Generation, Nuclear Plants.** • 1957-1984: Calculated annually by dividing the total heat content consumed in nuclear generating units by the total (net) electricity generated by nuclear generating units. The heat content and electricity generation were reported on Form FERC-1, “Annual Report of Major Electric Utilities, Licensees, and Others”; Form EIA-412, “Annual Report of Public Electric

Utilities”; and predecessor forms. For 1982, the factors were published in EIA, *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants 1982*, page 215. For 1983 and 1984, the factors were published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 13. • 1985 forward: Calculated annually by EIA by using the heat rate reported on Form EIA-860, “Annual Electric Generator Report” (and predecessor forms); and the generation reported on Form EIA-906, “Power Plant Report.”



## Appendix B. Metric and Other Physical Conversion Factors

Data presented in the *Annual Energy Review* and in other Energy Information Administration publications are expressed predominately in units that historically have been used in the United States, such as British thermal units, barrels, cubic feet, and short tons. However, because U.S. commerce involves other nations, most of which use metric units of measure, the U.S. Government is committed to the transition to the metric system, as stated in the Metric Conversion Act of 1975 (Public Law 94–168), amended by the Omnibus Trade and Competitiveness Act of 1988 (Public Law 100–418), and Executive Order 12770 of July 25, 1991.

The metric conversion factors presented in Table B1 can be used to calculate the metric-unit equivalents of values expressed in U.S. customary units. For example, 500 short tons are the equivalent of 453.6 metric tons ( $500 \text{ short tons} \times 0.9071847 \text{ metric tons/short ton} = 453.6 \text{ metric tons}$ ).

In the metric system of weights and measures, the names of multiples and subdivisions of any unit may be derived by combining the name of the unit with prefixes, such as deka, hecto, and kilo, meaning, respectively, 10, 100, 1,000, and deci, centi, and milli, meaning, respectively, one-tenth, one-hundredth, and one-thousandth. Common metric prefixes can be found in Table B2.

The conversion factors presented in Table B3 can be used to calculate equivalents in various physical units commonly used in energy analyses. For example, 10 barrels are the equivalent of 420 U.S. gallons ( $10 \text{ barrels} \times 42 \text{ gallons/barrel} = 420 \text{ gallons}$ ).

**Table B1. Metric Conversion Factors**

Type of Unit	U.S. Unit		Equivalent in Metric Units
<b>Mass</b>	1 short ton (2,000 lb)	=	0.907 184 7 metric tons (t)
	1 long ton	=	1.016 047 metric tons (t)
	1 pound (lb)	=	0.453 592 37 <sup>a</sup> kilograms (kg)
	1 pound uranium oxide (lb U <sub>3</sub> O <sub>8</sub> )	=	0.384 647 <sup>b</sup> kilograms uranium (kgU)
	1 ounce, avoirdupois (avdp oz)	=	28.349 52 grams (g)
<b>Volume</b>	1 barrel of oil (bbl)	=	0.158 987 3 cubic meters (m <sup>3</sup> )
	1 cubic yard (yd <sup>3</sup> )	=	0.764 555 cubic meters (m <sup>3</sup> )
	1 cubic foot (ft <sup>3</sup> )	=	0.028 316 85 cubic meters (m <sup>3</sup> )
	1 U.S. gallon (gal)	=	3.785 412 liters (L)
	1 ounce, fluid (fl oz)	=	29.573 53 milliliters (mL)
	1 cubic inch (in <sup>3</sup> )	=	16.387 06 milliliters (mL)
<b>Length</b>	1 mile (mi)	=	1.609 344 <sup>a</sup> kilometers (km)
	1 yard (yd)	=	0.914 4 <sup>a</sup> meters (m)
	1 foot (ft)	=	0.304 8 <sup>a</sup> meters (m)
	1 inch (in)	=	2.54 <sup>a</sup> centimeters (cm)
<b>Area</b>	1 acre	=	0.404 69 hectares (ha)
	1 square mile (mi <sup>2</sup> )	=	2.589 988 square kilometers (km <sup>2</sup> )
	1 square yard (yd <sup>2</sup> )	=	0.836 127 4 square meters (m <sup>2</sup> )
	1 square foot (ft <sup>2</sup> )	=	0.092 903 04 <sup>a</sup> square meters (m <sup>2</sup> )
	1 square inch (in <sup>2</sup> )	=	6.451 6 <sup>a</sup> square centimeters (cm <sup>2</sup> )
<b>Energy</b>	1 British thermal unit (Btu) <sup>c</sup>	=	1,055.055 852 62 <sup>a</sup> joules (J)
	1 calorie (cal)	=	4.186 8 <sup>a</sup> joules (J)
	1 kilowatthour (kWh)	=	3.6 <sup>a</sup> megajoules (MJ)
<b>Temperature<sup>d</sup></b>	32 degrees Fahrenheit (°F)	=	0 <sup>a</sup> degrees Celsius (°C)
	212 degrees Fahrenheit (°F)	=	100 <sup>a</sup> degrees Celsius (°C)

<sup>a</sup>Exact conversion.<sup>b</sup>Calculated by the Energy Information Administration.<sup>c</sup>The Btu used in this table is the International Table Btu adopted by the Fifth International Conference on Properties of Steam, London, 1956.<sup>d</sup>To convert degrees Fahrenheit (°F) to degrees Celsius (°C) exactly, subtract 32, then multiply by 5/9.

Notes: • Spaces have been inserted after every third digit to the right of the decimal for ease of reading. • Most metric units belong to the International System of Units (SI), and the liter, hectare, and metric ton are accepted for use with the SI units. For more information about the SI units, see <http://physics.nist.gov/cuu/Units/index.html>.

Web Page: For related information, see [http://www.eia.doe.gov/emeu/aer/append\\_b.html](http://www.eia.doe.gov/emeu/aer/append_b.html).

Sources: • General Services Administration, Federal Standard 376B, *Preferred Metric Units for General Use by the Federal Government* (Washington, DC, January 1993), pp. 9-11, 13, and 16. • U.S. Department of Commerce, National Institute of Standards and Technology, Special Publications 330, 811, and 814. • American National Standards Institute/Institute of Electrical and Electronic Engineers, ANSI/IEEE Std 268-1992, pp. 28 and 29.

**Table B2. Metric Prefixes**

<b>Unit Multiple</b>	<b>Prefix</b>	<b>Symbol</b>	<b>Unit Subdivision</b>	<b>Prefix</b>	<b>Symbol</b>
$10^1$	deka	da	$10^{-1}$	deci	d
$10^2$	hecto	h	$10^{-2}$	centi	c
$10^3$	kilo	k	$10^{-3}$	milli	m
$10^6$	mega	M	$10^{-6}$	micro	$\mu$
$10^9$	giga	G	$10^{-9}$	nano	n
$10^{12}$	tera	T	$10^{-12}$	pico	p
$10^{15}$	peta	P	$10^{-15}$	femto	f
$10^{18}$	exa	E	$10^{-18}$	atto	a
$10^{21}$	zetta	Z	$10^{-21}$	zepto	z
$10^{24}$	yotta	Y	$10^{-24}$	yocto	y

Web Page: For related information, see [http://www.eia.doe.gov/emeu/aer/append\\_b.html](http://www.eia.doe.gov/emeu/aer/append_b.html).

Source: U.S. Department of Commerce, National Institute of Standards and Technology, *The International System of Units (SI)*, NIST Special Publication 330, 1991 Edition (Washington, DC, August 1991), p.10.

**Table B3. Other Physical Conversion Factors**

<b>Energy Source</b>	<b>Original Unit</b>	<b>=</b>	<b>Equivalent in Final Units</b>	
<b>Petroleum</b>	1 barrel (bbl)	=	42 <sup>a</sup>	U.S. gallons (gal)
<b>Coal</b>	1 short ton	=	2,000 <sup>a</sup>	pounds (lb)
	1 long ton	=	2,240 <sup>a</sup>	pounds (lb)
	1 metric ton (t)	=	1,000 <sup>a</sup>	kilograms (kg)
<b>Wood</b>	1 cord (cd)	=	1.25 <sup>b</sup>	shorts tons
	1 cord (cd)	=	128 <sup>a</sup>	cubic feet (ft <sup>3</sup> )

<sup>a</sup>Exact conversion.

<sup>b</sup>Calculated by the Energy Information Administration.

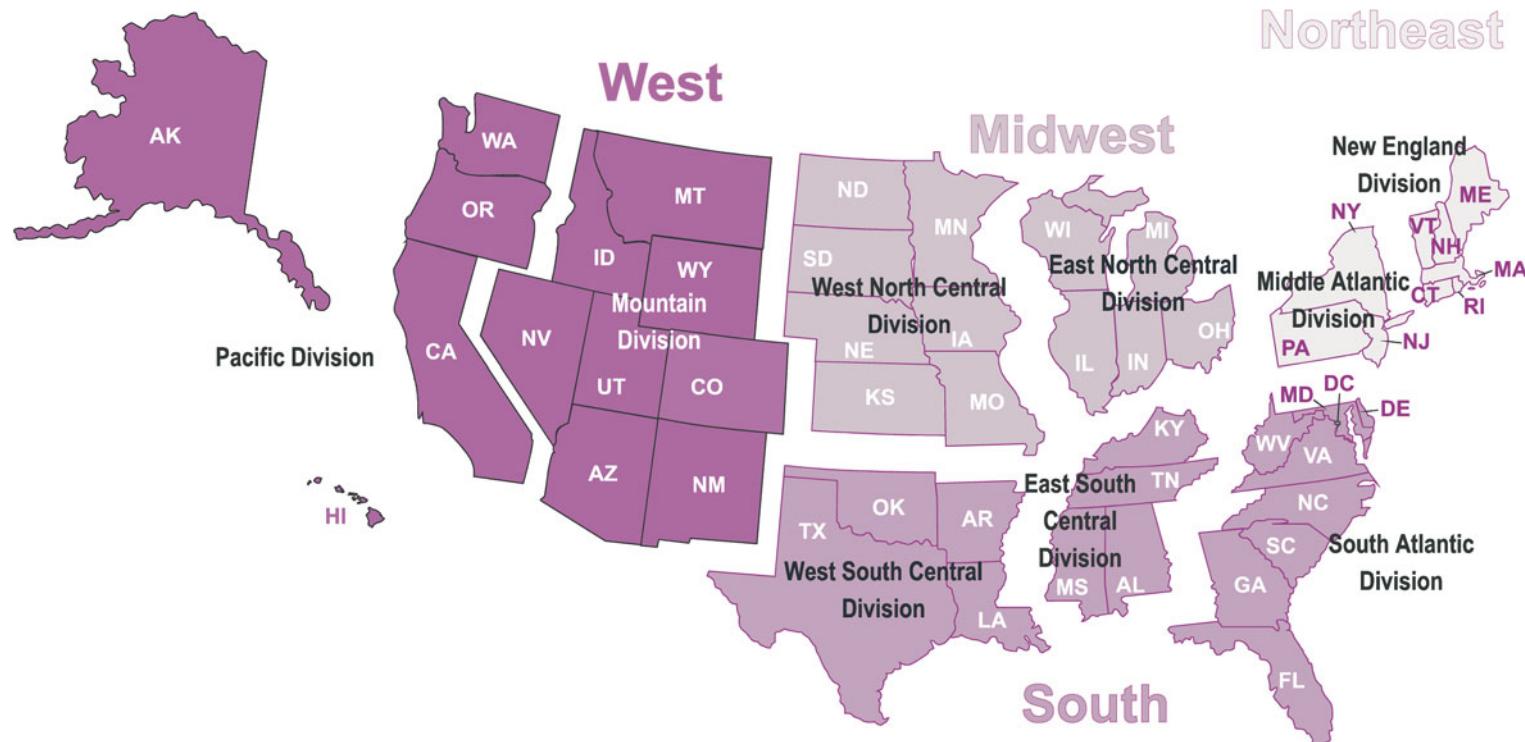
Web Page: For related information, see [http://www.eia.doe.gov/emeu/aer/append\\_b.html](http://www.eia.doe.gov/emeu/aer/append_b.html).

Source: U.S. Department of Commerce, National Institute of Standards and Technology, *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, NIST Handbook 44, 1994 Edition (Washington, DC, October 1993), pp. B-10, C-17 and C-21.



## Appendix C

### Figure C1. U.S. Census Regions and Divisions



Note: Map not to scale.

Web Page: See [www.census.gov/geo/www/us\\_regdiv.pdf](http://www.census.gov/geo/www/us_regdiv.pdf).

Source: U.S. Department of Commerce, Bureau of the Census.



# Appendix D

**Table D1. Population, U.S. Gross Domestic Product, and Implicit Price Deflator, Selected Years, 1949-2006**

Year	Population			U.S. Gross Domestic Product		
	United States <sup>1</sup>	World	United States as Share of World	Billion Nominal Dollars <sup>2</sup>	Billion Chained (2000) Dollars <sup>3</sup>	Implicit Price Deflator <sup>4</sup> (2000 = 1.00000)
	Million People		Percent			
1949	148.7	NA	NA	267.3	1,634.6	0.16352
1950	151.3	2,556.5	5.9	293.8	1,777.3	.16531
1955	165.1	R2,781.0	5.9	414.8	2,212.8	.18743
1960	179.3	R3,040.6	5.9	526.4	2,501.8	.21041
1965	193.5	R3,346.8	5.8	719.1	3,191.1	.22535
1970	203.3	R3,707.9	5.5	1,038.5	3,771.9	.27534
1971	206.8	R3,785.3	5.5	1,127.1	3,898.6	.28911
1972	209.3	R3,861.3	5.4	1,238.3	4,105.0	.30166
1973	211.4	R3,936.8	5.4	1,382.7	4,341.5	.31849
1974	213.3	R4,011.3	5.3	1,500.0	4,319.6	.34725
1975	215.5	R4,083.8	5.3	1,638.3	4,311.2	.38002
1976	217.6	R4,154.7	5.2	1,825.3	4,540.9	.40196
1977	219.8	R4,226.3	5.2	2,030.9	4,750.5	.42752
1978	222.1	R4,297.7	5.2	2,294.7	5,015.0	.45757
1979	224.6	R4,372.0	5.1	2,563.3	5,173.4	.49548
1980	226.5	R4,447.1	5.1	2,789.5	5,161.7	.54043
1981	229.5	R4,522.6	5.1	3,128.4	5,291.7	.59119
1982	231.7	R4,601.8	5.0	3,255.0	5,189.3	.62726
1983	233.8	R4,682.9	5.0	3,536.7	5,423.8	.65207
1984	235.8	R4,762.8	5.0	3,933.2	5,813.6	.67655
1985	237.9	R4,844.2	4.9	4,220.3	6,053.7	.69713
1986	240.1	R4,927.4	4.9	4,462.8	6,263.6	.71250
1987	242.3	R5,013.3	4.8	4,739.5	6,475.1	.73196
1988	244.5	R5,100.0	4.8	5,103.8	6,742.7	.75694
1989	246.8	R5,186.5	4.8	5,484.4	6,981.4	.78556
1990	248.8	R5,274.3	4.7	5,803.1	7,112.5	.81590
1991	253.0	R5,358.1	4.7	5,995.9	7,100.5	.84444
1992	256.5	R5,441.3	4.7	6,337.7	7,336.6	.86385
1993	259.9	R5,522.3	4.7	6,657.4	7,532.7	.88381
1994	263.1	R5,602.2	4.7	7,072.2	7,835.5	.90259
1995	266.3	R5,682.8	4.7	7,397.7	8,031.7	.92106
1996	269.4	R5,762.7	4.7	7,816.9	8,328.9	.93852
1997	272.6	R5,841.8	4.7	8,304.3	8,703.5	.95414
1998	275.9	R5,920.0	4.7	8,747.0	9,066.9	.96472
1999	279.0	R5,997.0	4.7	9,268.4	9,470.3	.97868
2000	281.4	R6,073.3	4.6	9,817.0	9,817.0	1.00000
2001	R285.2	R6,149.1	4.6	10,128.0	9,890.7	1.02399
2002	R288.1	R6,224.2	4.6	10,469.6	10,048.8	1.04187
2003	R290.8	R6,299.3	4.6	R10,960.8	R10,301.0	R1.06404
2004	R293.6	R6,375.0	4.6	R11,712.5	R10,703.5	R1.09426
2005	R296.5	R6,451.4	4.6	R12,455.8	R11,048.6	R1.12737
2006	299.4	6,528.1	4.6	13,244.6	11,413.6	1.16042

<sup>1</sup> Resident population of the 50 States and the District of Columbia estimated for July 1 of each year, except for the April 1 decennial census counts.

<sup>2</sup> See "Nominal Dollars" in Glossary.

<sup>3</sup> See "Chained Dollars" in Glossary.

<sup>4</sup> The gross domestic product implicit price deflator is used to convert nominal dollars to chained (2000) dollars.

R=Revised. NA=Not available.

Web Pages: • For all data beginning in 1949, see [http://www.eia.doe.gov/emeu/aer/append\\_d.html](http://www.eia.doe.gov/emeu/aer/append_d.html).

• For related information, see <http://www.census.gov/> and <http://www.bea.doc.gov/>.

Sources: **U.S. Population:** • 1949-1989—Department of Commerce (DOC), U.S. Bureau of the Census, Current Population Reports Series P-25, November 1998. • 1990 forward—DOC, U.S. Bureau of the Census, State Population Estimates. **World Population:** • 1950 forward—DOC, U.S. Bureau of the Census, International Database (August 24, 2006). **U.S. Gross Domestic Product:** • 1949 forward—DOC, Bureau of Economic Analysis, National Income and Product Accounts (March 30, 2007), Tables 1.1.5, 1.1.6, and 1.1.9.



## Appendix E

**Table E1. Estimated Energy Consumption in the United States, Selected Years, 1635-1945**  
 (Quadrillion Btu)

Year	Fossil Fuels				Renewable Energy			Electricity Net Imports	Total
	Coal	Natural Gas	Petroleum	Total	Conventional Hydroelectric Power	Biomass	Wood <sup>1</sup>		
1635	NA	--	--	--	--	(s)	(s)	--	(s)
1645	NA	--	--	--	--	0.001	0.001	--	0.001
1655	NA	--	--	--	--	.002	.002	--	.002
1665	NA	--	--	--	--	.005	.005	--	.005
1675	NA	--	--	--	--	.007	.007	--	.007
1685	NA	--	--	--	--	.009	.009	--	.009
1695	NA	--	--	--	--	.014	.014	--	.014
1705	NA	--	--	--	--	.022	.022	--	.022
1715	NA	--	--	--	--	.037	.037	--	.037
1725	NA	--	--	--	--	.056	.056	--	.056
1735	NA	--	--	--	--	.080	.080	--	.080
1745	NA	--	--	--	--	.112	.112	--	.112
1755	NA	--	--	--	--	.155	.155	--	.155
1765	NA	--	--	--	--	.200	.200	--	.200
1775	NA	--	--	--	--	.249	.249	--	.249
1785	NA	--	--	--	--	.310	.310	--	.310
1795	NA	--	--	--	--	.402	.402	--	.402
1805	NA	--	--	--	--	.537	.537	--	.537
1815	NA	--	--	--	--	.714	.714	--	.714
1825	NA	--	--	--	--	.960	.960	--	.960
1835	NA	--	--	--	--	1.305	1.305	--	1.305
1845	NA	--	--	--	--	1.757	1.757	--	1.757
1850	0.219	--	--	0.219	--	2.138	2.138	--	2.357
1855	.421	--	--	.421	--	2.389	2.389	--	2.810
1860	.518	--	0.003	.521	--	2.641	2.641	--	3.162
1865	.632	--	.010	.642	--	2.767	2.767	--	3.409
1870	1.048	--	.011	1.059	--	2.893	2.893	--	3.952
1875	1.440	--	.011	1.451	--	2.872	2.872	--	4.323
1880	2.054	--	.096	2.150	--	2.851	2.851	--	5.001
1885	2.840	0.082	.040	2.962	--	2.683	2.683	--	5.645
1890	4.062	.257	.156	4.475	0.022	2.515	2.537	--	7.012
1895	4.950	.147	.168	5.265	.090	2.306	2.396	--	7.661
1900	6.841	.252	.229	7.322	.250	2.015	2.265	--	9.587
1905	10.001	.372	.610	10.983	.386	1.843	2.229	--	13.212
1910	12.714	.540	1.007	14.261	.539	1.765	2.304	--	16.565
1915	13.294	.673	1.418	15.385	.659	1.688	2.347	0.002	17.734
1920	15.504	.813	2.676	18.993	.738	1.610	2.348	.003	21.344
1925	14.706	1.191	4.280	20.177	.668	1.533	2.201	.004	22.382
1930	13.639	1.932	5.897	21.468	.752	1.455	2.207	.005	23.680
1935	10.634	1.919	5.675	18.228	.806	1.397	2.203	.005	20.436
1940	12.535	2.665	7.760	22.960	.880	1.358	2.238	.007	25.205
1945	15.972	3.871	10.110	29.953	1.442	<sup>1</sup> 1.261	2.703	.009	32.665

<sup>1</sup> There is a discontinuity in the "Wood" time series between 1945 and 1949. Through 1945, data are for fuelwood only; beginning in 1949, data also include wood-derived fuel and wood byproducts burned as fuel.

NA=Not available. -- = Not applicable. (s)=Less than 0.0005 quadrillion Btu.

Notes: • For years not shown, there are no data available. • See Tables 1.3 and 10.1 for continuation of these data series from 1949 forward. • See Note, "Geographic Coverage of Statistics for 1635-1945," at end of section.

Sources: **Coal, Natural Gas, and Petroleum:** *Energy in the American Economy, 1850-1975*, Table VII.

**Conventional Hydroelectric Power:** *Energy in the American Economy, 1850-1975*, Table II. **Wood:**

• 1635-1845: U.S. Department of Agriculture Circular No. 641, *Fuel Wood Used in the United States*

1630-1930, February 1942. This source estimates fuelwood consumption in cords per decade, which were converted to Btu using the conversion factor of 20 million Btu per cord. The annual average value for each decade was assigned to the fifth year of the decade on the assumption that annual use was likely to increase during any given decade and the average annual value was more likely to reflect mid-decade yearly consumption than use at either the beginning or end of the decade. Values thus begin in 1635 and are plotted at 10-year intervals. • 1850-1945: *Energy in the American Economy, 1850-1975*, Table VII.

**Electricity Net Imports:** *Energy in the American Economy, 1850-1975*, Tables I and VI. Calculated as the difference between hydroelectric consumption and hydroelectric production times 3,412 Btu per kilowatthour.

## Appendix E

**Note: Geographic Coverage of Statistics for 1635-1945.** Table E1 presents estimates of U.S. energy consumption by energy source for a period that begins a century and a half before the original 13 colonies formed a political union and continues through the decades during which the United States was still expanding territorially. The question thus arises, what exactly is meant by "U.S. consumption" of an energy source for those years when the United States did not formally exist or consisted of less territory than is now encompassed by the 50 States and the District of Columbia?

The documents used to assemble the estimates, and (as far as possible) the sources of those documents, were reviewed carefully for clues to geographic coverage. For most energy sources, the extent of coverage expanded more rapidly than the Nation, defined as all the official States and the District of Columbia. Estimates or measurements of consumption of each energy source generally appear to follow settlement patterns. That is, they were made for areas of the continent that were settled enough to have economically significant consumption even though those areas were not to become States for years. The wood data series, for example, begins in 1635 and includes 12 of the original colonies (excepting Georgia), as well

as Maine, Vermont, and the area that would become the District of Columbia. By the time the series reaches 1810, the rest of the continental States are all included, though the last of the 48 States to achieve statehood did not do so until 1912. Likewise, the coal data series begins in 1850 but includes consumption in areas, such as Utah and Washington (State), which were significant coal-producing regions but had not yet attained statehood. (Note: No data were available on State-level historical coal consumption. The coal data shown in Table E1 through 1945 describe *apparent* consumption, i.e., production plus imports minus exports. The geographic coverage for coal was therefore based on a tally of coal-producing States listed in various historical issues of *Minerals Yearbook*. It is likely that coal was consumed in States where it was not mined in significant quantities.)

By energy source, the extent of coverage can be summarized as follows:

- **Coal**—35 coal-producing States by 1885.
- **Natural Gas**—All 48 contiguous States, the District of Columbia, and Alaska by 1885.
- **Petroleum**—All 48 contiguous States, the District of Columbia, and Alaska by 1885.
- **Conventional Hydroelectric Power**—Coverage for 1890 and 1895 is uncertain, but probably the 48 contiguous States and the District of Columbia. Coverage for 1900 through 1945 is the 48 contiguous States, and the District of Columbia.
- **Wood**—All 48 contiguous States and the District of Columbia by 1810.

# Glossary

**Alcohol:** The family name of a group of organic chemical compounds composed of carbon, **hydrogen**, and oxygen. The series of molecules vary in chain length and are composed of a **hydrocarbon** plus a hydroxyl group: CH<sub>3</sub>-(CH<sub>2</sub>)<sub>n</sub>-OH (e.g., **methanol**, **ethanol**, and tertiary butyl alcohol). See **Fuel Ethanol**.

**Alternative Fuel:** As defined pursuant to the Energy Policy Act of 1992 (EPACT), **methanol**, denatured **ethanol**, and other **alcohols**, separately or in mixtures of 85 percent by volume or more (or other percentage not less than 70 as determined by DOE rule) with **motor gasoline** or other fuels, **compressed natural gas** (CNG), **liquefied natural gas** (LNG), **liquefied petroleum gases** (LPG), **hydrogen**, coal-derived liquid fuels, fuels other than alcohols derived from biological materials, **electricity**, or any other fuel determined to be substantially not **petroleum** and yielding substantial energy security benefits and substantial environmental benefits.

**Alternative-Fueled Vehicle (AFV):** A vehicle either designed and manufactured by an original equipment manufacturer or a converted vehicle designed to operate in either dual-fuel, flexible-fuel, or dedicated modes on fuels other than **motor gasoline** or **diesel fuel**. This does not include a conventional vehicle that is limited to operation on blended or **reformulated motor gasoline** fuels.

**Anthracite:** The highest rank of **coal**; used primarily for residential and commercial **space heating**. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite generally is less than 15 percent. The heat content of anthracite ranges from 22 to 28 million **Btu per short ton** on a moist, mineral-matter-free basis. The heat content of anthracite consumed in the United States averages 25 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). *Note:* Since the 1980's, anthracite refuse or mine waste has been used for steam-electric power generation. This fuel typically has a heat content of 15 million Btu per short ton or less. See **Coal Rank**.

**Anthracite Culm:** Waste from Pennsylvania **anthracite** preparation plants, consisting of coarse rock fragments containing as much as 30 percent small-sized **coal**; sometimes defined as including very fine coal particles called silt. Its heat value ranges from 8 to 17 million **Btu per short ton**.

**Anthropogenic:** Made or generated by a human or caused by human activity. The term is used in the context of global **climate change** to refer to gaseous emissions that are the result of human activities, as well as other potentially climate-altering activities, such as deforestation.

**API:** The American Petroleum Institute, a trade association.

**API Gravity:** American Petroleum Institute measure of specific gravity of **crude oil** or condensate in degrees. An arbitrary scale expressing the gravity or density of liquid **petroleum products**. The measuring scale is calibrated in terms of degrees API; it is calculated as follows:  
Degrees API = (141.5 / sp.gr.60 deg.F/60 deg.F) - 131.5.

**Asphalt:** A dark-brown to black cement-like material obtained by **petroleum** processing and containing bitumens as the predominant component; used primarily for road construction. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. *Note:* The conversion factor for asphalt is 5.5 **barrels per short ton**.

**ASTM:** The acronym for the American Society for Testing and Materials.

**Aviation Gasoline Blending Components:** **Naphthas** that will be used for blending or compounding into finished **aviation gasoline** (e.g., straight run gasoline, alkylate, reformat, benzene, toluene, and xylene). Excludes **oxygenates (alcohols, ethers)**, **butane**, and **pentanes plus**. Oxygenates are reported as **other hydrocarbons, hydrogen**, and **oxygenates**.

**Aviation Gasoline, Finished:** A complex mixture of relatively volatile **hydrocarbons** with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D910 and Military Specification MIL-G-5572. *Note:* Data on blending components are not counted in data on finished aviation gasoline. See **Jet Fuel; Jet Fuel, Kerosene-Type; and Jet Fuel, Naphtha-Type**.

**Barrel (Petroleum):** A unit of volume equal to 42 U.S. gallons.

**Barrels per Calendar Day:** The amount of input that a distillation facility can process under usual operating conditions. The amount is expressed in terms of capacity during a 24-hour period and reduces the maximum processing capability of all units at the facility under continuous operation to account for the following limitations that may delay, interrupt, or slow down production: 1) the capability of downstream processing units to absorb the output of **crude oil** processing facilities of a given refinery (no reduction is necessary for intermediate streams that are distributed to other than downstream facilities as part of a refinery's normal operation); 2) the types and grades of inputs to be processed; 3) the types and grades of products expected to be manufactured; 4) the environmental constraints associated with refinery operations; 5) the reduction of capacity for scheduled downtime due to such conditions as routine inspection, maintenance, repairs, and turnaround; and 6) the reduction of capacity for unscheduled downtime due to such conditions as mechanical problems, repairs, and slowdowns.

**Base 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.

**Biodiesel:** Any liquid biofuel suitable as a **diesel fuel** substitute or diesel fuel additive or extender. Biodiesel can be made from transesterification of oils of vegetables such as soybeans, rapeseed, or sunflowers (end product known as methyl ester) or from animal tallow (end product known as methyl tallowate). Biodiesel can also be made by transesterification of **hydrocarbons** produced by the Fisher-Tropsch process from agricultural byproducts such as rice hulls.

**Biofuels:** Liquid fuels and blending components produced from **biomass** (plant) feedstocks, used primarily for transportation. See **Biodiesel** and **Fuel Ethanol**.

**Biomass:** Organic nonfossil material of biological origin constituting a **renewable energy** source. See **Ethanol**, **Wood Energy**, and **Waste Energy**.

**Bituminous Coal:** A dense **coal**, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and making **coke**. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content usually is less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of bituminous coal consumed in the United States averages 24 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). See **Coal Rank**.

**Black Liquor:** A byproduct of the paper production process, alkaline spent liquor, that can be used as a source of energy. Alkaline spent liquor is removed from the digesters in the process of chemically pulping wood. After evaporation, the residual "black" liquor is burned as a fuel in a recovery furnace that permits the recovery of certain basic chemicals.

**British Thermal Unit (Btu):** The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit). See **Heat Content**.

**Btu:** See **British Thermal Unit**.

**Bunker Fuels:** Fuel supplied to ships and aircraft, both domestic and foreign, consisting primarily of **residual fuel oil** and **distillate fuel oil** for ships and **kerosene-type jet fuel** for aircraft. The term "international bunker fuels" is used to denote the consumption of fuel for international transport activities. *Note:* For the purposes of **greenhouse gas** emissions inventories, data on emissions from combustion of international bunker fuels are subtracted from national emissions totals. Historically, bunker fuels have meant only ship fuel.

**Butane:** A normally gaseous straight-chain or branched-chain **hydrocarbon** ( $C_4H_{10}$ ) extracted from **natural gas** or **refinery gas** streams. It includes isobutane and normal butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

*Isobutane:* A normally gaseous branched-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams.

*Normal Butane:* A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 31.1 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams.

**Butylene:** An olefinic **hydrocarbon** ( $C_4H_8$ ) recovered from refinery processes.

**Capacity:** See **Generator Capacity**.

**Capacity Factor:** See **Generator Capacity Factor**.

**Carbon Dioxide:** A colorless, odorless, non-poisonous gas ( $CO_2$ ) that is a normal part of Earth's atmosphere. Carbon dioxide is a product of **fossil-fuel** combustion as well as other processes. It is considered a **greenhouse gas** as it traps heat (infrared energy) radiated by the Earth into the atmosphere and thereby contributes to the potential for **global warming**. The **global warming potential** (GWP) of other

greenhouse gases is measured in relation to that of carbon dioxide, which by international scientific convention is assigned a value of one (1).

**Carbon Dioxide Equivalent:** The amount of **carbon dioxide** by weight emitted into the atmosphere that would produce the same estimated radiative forcing as a given weight of another radiatively active gas. Carbon dioxide equivalents are computed by multiplying the weight of the gas being measured (for example, **methane**) by its estimated **global warming potential** (which is 21 for methane). “Carbon equivalent units” are defined as carbon dioxide equivalents multiplied by the carbon content of carbon dioxide (i.e., 12/44).

**Chained Dollars:** A measure used to express **real prices**. Real prices are those that have been adjusted to remove the effect of changes in the purchasing power of the dollar; they usually reflect buying power relative to a reference year. Prior to 1996, real prices were expressed in constant dollars, a measure based on the weights of goods and services in a single year, usually a recent year. In 1996, the U.S. Department of Commerce introduced the chained-dollar measure. The new measure is based on the average weights of goods and services in successive pairs of years. It is “chained” because the second year in each pair, with its weights, becomes the first year of the next pair. The advantage of using the chained-dollar measure is that it is more closely related to any given period covered and is therefore subject to less distortion over time.

**Chlorofluorocarbon (CFC):** Any of various compounds consisting of carbon, **hydrogen**, chlorine, and fluorine used as refrigerants. CFCs are now thought to be harmful to the Earth’s atmosphere.

**City Gate:** A point or measuring station at which a distribution gas utility receives gas from a **natural gas pipeline** company or transmission system.

**Climate Change:** A term used to refer to all forms of climatic inconsistency, but especially to significant change from one prevailing climatic condition to another. In some cases, “climate change” has been used synonymously with the term “**global warming**”; scientists, however, tend to use the term in a wider sense to include natural changes in climate as well as climatic cooling.

**Coal:** A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time. See **Coal Rank**.

**Coal Coke:** See **Coke, Coal**.

**Coal Rank:** The classification of **coals** according to their degree of progressive alteration from lignite to anthracite. In the United States, the standard ranks of coal include **lignite**, **subbituminous coal**, **bituminous coal**, and **anthracite** and are based on fixed carbon, volatile matter, heating value, and agglomerating (or caking) properties.

**Coal Stocks:** **Coal** quantities that are held in storage for future use and disposition. *Note:* When coal data are collected for a particular reporting period (month, quarter, or year), coal stocks are commonly measured as of the last day of this period.

**Coal Synfuel:** **Coal**-based solid fuel that has been processed by a **coal synfuel plant**; and coal-based fuels such as briquettes, pellets, or extrusions, which are formed from fresh or recycled coal and binding materials.

**Coal Synfuel Plant:** A plant engaged in the chemical transformation of **coal** into **coal synfuel**.

**Coke, Coal:** A solid carbonaceous residue derived from low-ash, low-sulfur **bituminous coal** from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace. Coke from coal is gray, hard, and porous and has a heating value of 24.8 million **Btu** per **short ton**.

**Coke, Petroleum:** A residue high in carbon content and low in **hydrogen** that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 **barrels** (of 42 U.S. gallons each) per **short ton**. Coke from **petroleum** has a heating value of 6.024 million **Btu** per barrel.

**Combined-Heat-and-Power (CHP) Plant:** A plant designed to produce both heat and **electricity**. If one or more units of the plant is a CHP unit, then the whole plant is designated as a CHP plant. *Note:* This term is being used in place of the term “cogenerator” that was used by EIA in the past. CHP better describes the facilities because some of the plants included do not produce heat and power in a sequential fashion and, as a result, do not meet the legal definition of cogeneration specified in the Public Utility Regulatory Policies Act (PURPA). See **Electricity-Only Plant**.

**Commercial Building:** A building with more than 50 percent of its floorspace used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings are included, except buildings on military bases or reservations.

**Commercial Sector:** An **energy**-consuming sector that consists of service-providing facilities and equipment of: businesses; Federal, State, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. It also includes sewage treatment facilities. Common uses of energy associated with this sector include **space heating**, water heating, air conditioning, lighting, refrigeration, cooking, and running a wide variety of other equipment. *Note:* This sector includes **generators** that produce **electricity** and/or **useful thermal output** primarily to support the activities of the above-mentioned commercial establishments. Various EIA programs differ in sectoral coverage—for more information see <http://www.eia.doe.gov/neic/datadefinitions/Guideforwebcom.htm>. See **End-Use Sectors and Energy-Use Sectors**.

**Completion (Crude Oil/Natural Gas Production):** The term refers to the installation of permanent equipment for the production of **crude oil** or **natural gas**. If a **well** is equipped to produce only crude oil or natural gas from one zone or reservoir, the definition of a “well” (classified as a **crude oil well** or **natural gas well**) and the definition of a “completion” are identical. However, if a well is equipped to produce crude oil and/or natural gas separately from more than one reservoir, a “well” is not synonymous with a “completion.”

**Compressed Natural Gas (CNG):** **Natural gas** compressed to a volume and density that is practical as a portable fuel supply (even when compressed, natural gas is not a liquid).

**Conventional Hydroelectric Power:** See **Hydroelectric Power, Conventional**.

**Conventional Motor Gasoline:** See **Motor Gasoline, Conventional**.

**Conversion Factor:** A number that translates units of one system into corresponding values of another system. Conversion factors can be used to translate physical units of measure for various fuels into **Btu** equivalents.

**Cooling Tower:** A common type of environmental equipment installed at **electric power plants** used to transfer heat, produced by burning fuel, to the atmosphere. Cooling towers are installed where there is insufficient cooling water available or where waste heat discharged into cooling water would affect marine life.

**Criteria Pollutant:** A pollutant determined to be hazardous to human health and regulated under the Environmental Protection Agency's (EPA) National Ambient Air Quality Standards. The 1970 amendments to the Clean Air Act require EPA to describe the health and welfare impacts of a pollutant as the “criteria” for inclusion in the regulatory regime.

**Crude Oil:** A mixture of **hydrocarbons** that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include: 1) small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casinghead) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from **natural gas wells** in lease or field separation facilities and later mixed into the crude stream is also included; 2) small amounts of nonhydrocarbons produced with the oil, such as sulfur and various metals; and 3) drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of **petroleum products**, including heating oils; gasoline, **diesel** and **jet fuels**; **lubricants**; **asphalt**; **ethane**, **propane**, and **butane**; and many other products used for their **energy** or chemical content.

**Crude Oil Domestic First Purchase Price:** The marketed first sales price of domestic **crude oil**, consistent with the removal price defined by the provisions of the Windfall Profits Tax on Domestic Crude Oil (Public Law 96-223, Sec. 4998 [c]).

**Crude Oil Landed Cost:** The price of **crude oil** at the port of discharge, including charges associated with purchasing, transporting, and insuring a cargo from the purchase point to the port of discharge. The cost does not include charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage).

**Crude Oil Refiner Acquisition Cost:** The cost of **crude oil** to the refiner, including transportation and other fees. The composite cost is the weighted average of domestic and imported crude oil costs. The refiner acquisition cost does not include the cost of crude oil purchased for the **Strategic Petroleum Reserve**.

**Crude Oil Refinery Input:** The total **crude oil** put into processing units at refineries.

**Crude Oil Stocks:** Stocks of **crude oil** and **lease condensate** held at refineries, in **petroleum pipelines**, at pipeline terminals, and on leases.

**Crude Oil Used Directly:** **Crude oil** consumed as fuel by **petroleum pipelines** and on crude oil leases.

**Crude Oil Well:** A **well** completed for the production of **crude oil** from one or more crude oil zones or reservoirs. Wells producing both crude oil and **natural gas** are classified as crude oil wells.

**Cubic Foot (Natural Gas)** The amount of **natural gas** contained at standard temperature and pressure (60 degrees Fahrenheit and 14.73 pounds standard per square inch) in a cube whose edges are one foot long.

**Degree-Day Normals:** Simple arithmetic averages of monthly or annual **degree-days** over a long period of time (usually the 30-year period 1971–2000). The averages may be simple degree-day normals or population-weighted degree-day normals.

**Degree-Days, Cooling (CDD):** A measure of how warm a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the base temperature (65 degrees) from the average of the day's high and low temperatures, with negative values set equal to zero. Each day's cooling degree-days are summed to create a cooling degree-day measure for a specified reference period. Cooling degree-days are used in energy analysis as an indicator of air conditioning energy requirements or use.

**Degree-Days, Heating (HDD):** A measure of how cold a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the average of the day's high and low temperatures from the base temperature (65 degrees), with negative values set equal to zero. Each day's heating degree-days are summed to create a heating degree-day measure for a specified reference period. Heating degree-days are used in energy analysis as an indicator of space heating energy requirements or use.

**Degree-Days, Population-Weighted:** Heating or cooling **degree-days** weighted by the population of the area in which the degree-days are recorded. To compute State population-weighted degree-days, each State is divided into from one to nine climatically homogeneous divisions, which are assigned weights based on the ratio of the population of the division to the total population of the State. Degree-day readings for each division are multiplied by the corresponding population weight for each division and those products are then summed to arrive at the State population-weighted degree-day figure. To compute national population-weighted degree-days, the Nation is divided into nine Census regions, each comprising from three to eight States, which are assigned weights based on the ratio of the population of the region to the total population of the Nation. Degree-day readings for each region are multiplied by the corresponding population weight for each region and those products are then summed to arrive at the national population-weighted degree-day figure.

**Demand-Side Management:** The planning, implementation, and monitoring of **electric utility** activities designed to encourage consumers to modify patterns of **electricity** usage, including the timing and level of electricity demand.

**Demonstrated Reserve Base (Coal):** A collective term for the sum of **coal** in both measured and indicated resource categories of reliability, representing 100 percent of the in-place coal in those categories as of a certain date. Includes beds of **bituminous coal** and **anthracite** 28 or more inches thick and beds of **subbituminous coal** 60 or more inches thick that can occur at depths of as much as 1,000 feet. Includes beds of **lignite** 60 or more inches thick that can be surface mined. Includes also thinner and/or deeper beds that currently are being mined or for which there is evidence that they could be mined commercially at a given time. Represents that portion of the identified coal resource from which reserves are calculated.

**Development Well:** A **well** drilled within the proved area of a **crude oil** or **natural gas** reservoir to the depth of a stratigraphic horizon known to be productive.

**Diesel Fuel:** A fuel composed of **distillate fuel oils** obtained in petroleum refining operation or blends of such distillate fuel oils with **residual fuel oil** used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline.

**Direct Use:** Use of electricity that 1) is self-generated, 2) is produced by either the same entity that consumes the power or an affiliate, and 3) is used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of **station use**.

**Distillate Fuel Oil:** A general classification for one of the **petroleum** fractions produced in conventional distillation operations. It includes **diesel fuels** and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those found in cars and trucks, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for **space heating** and **electricity generation**.

**Distillation Unit (Atmospheric):** The primary distillation unit that processes **crude oil** (including mixtures of **other hydrocarbons**) at approximately atmospheric conditions. It includes a pipe still for vaporizing the crude oil and a **fractionation** tower for separating the vaporized hydrocarbon components in the crude oil into fractions with different boiling ranges. This is done by continuously vaporizing and condensing the components to separate higher boiling point material. The selected boiling ranges are set by the processing scheme, the properties of the crude oil, and the product specifications.

**District Heat:** Steam or hot water from an outside source used as an **energy source** in a building. The steam or hot water is produced in a central plant and is piped into the building. District heat may be purchased from a utility or provided by a physical

plant in a separate building that is part of the same facility (for example, a hospital complex or university).

**Dry Hole:** An **exploratory well** or **development well** found to be incapable of producing either **crude oil** or **natural gas** in sufficient quantities to justify completion as a **crude oil well** or **natural gas well**.

**Dry Natural Gas:** See **Natural Gas, Dry**.

**Dry Natural Gas Production:** See **Natural Gas (Dry) Production**.

**Dual-Fired Unit:** A **generating unit** that can produce **electricity** using two or more input fuels. In some of these units, only the primary fuel can be used continuously; the alternate fuel(s) can be used only as a start-up fuel or in emergencies.

**Electric Energy:** The ability of an electric current to produce work, heat, light, or other forms of **energy**. It is measured in **kilowatthours**.

**Electric Power Plant:** A station containing **prime movers**, **electric generators**, and auxiliary equipment for converting mechanical, chemical, and/or fission **energy** into **electricity**.

**Electric Power Sector:** An **energy-consuming sector** that consists of **electricity-only** and **combined-heat-and-power (CHP)** plants within the **NAICS** (North American Industry Classification System) 22 category whose primary business is to sell **electricity**, or electricity and heat, to the public. *Note:* This sector includes **electric utilities** and **independent power producers**. See **Energy-Use Sectors**.

**Electric Utility:** Any firm that generates, transmits, or distributes **electricity** and that recovers the cost of its generation, transmission or distribution assets and operations, either directly or indirectly, through cost-based rates set by a separate regulatory authority (e.g., State Public Service Commission), or is owned by a governmental unit or the consumers that the entity serves. Examples of an “electric utility” include: investor-owned entities, public power districts, public utility districts, municipalities, rural electric cooperatives, State and Federal agencies, and associations part of the aforementioned groups. See **Electric Power Sector**.

**Electrical System Energy Losses:** The amount of **energy** lost during generation, transmission, and distribution of **electricity**, including plant and unaccounted-for uses.

**Electricity:** A form of **energy** characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.

**Electricity Generation:** The process of producing **electric energy**, or the amount of electric energy produced by transforming other forms of **energy**; commonly expressed in **kilowatthours** (kWh) or megawatthours (MWh). See **Electricity Generation, Gross** and **Electricity Generation, Net**.

**Electricity Generation, Gross:** The total amount of **electric energy** produced by **generating units** and measured at the generating terminal.

**Electricity Generation, Net:** The amount of **gross electricity generation** less **station use** (the **electric energy** consumed at the generating station(s) for station service or auxiliaries). *Note:* Electricity required for pumping at **hydroelectric pumped-storage** plants is regarded as electricity for station service and is deducted from gross generation.

**Electricity Retail Sales:** The amount of **electricity** sold by **electric utilities** and other **energy service providers** to customers purchasing electricity for their own use and not for resale. These sales are usually grouped by classes of service, such as residential, commercial, industrial, and other. “Other” sales include sales for public street and highway lighting and other sales to public authorities and railways, and interdepartmental sales.

**Electricity-Only Plant:** A plant designed to produce **electricity** only. See **Combined-Heat-and-Power (CHP) Plant**.

**Emissions:** Anthropogenic releases of gases to the atmosphere. In the context of global **climate change**, they consist of radiatively important **greenhouse gases** (e.g., the release of **carbon dioxide** during fuel combustion).

**End-Use Sectors:** The **residential**, **commercial**, **industrial**, and **transportation** sectors of the economy. See **Energy-Use Sectors**.

**Energy:** The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world’s convertible energy comes from **fossil fuels** that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. **Electric energy** is usually measured in **kilowatthours**, while heat energy is usually measured in **British thermal units**.

**Energy Consumption:** The use of **energy** as a source of heat or power or as an input in the manufacturing process.

**Energy Expenditures:** The money spent directly by consumers to purchase **energy**. Expenditures equal the amount of energy used by the consumer times the price per unit paid by the consumer.

**Energy Service Provider:** An **energy** entity that provides service to a retail or end-use customer.

**Energy Source:** Any substance or natural phenomenon that can be consumed or transformed to supply heat or power. Examples include **petroleum**, **coal**, **natural gas**, **nuclear**, **wood**, **waste**, **electricity**, **wind**, **geothermal**, sunlight (**solar energy**), water movement, and **hydrogen** in fuel cells.

**Energy-Use Sectors:** A group of major **energy**-consuming components of U.S. society developed to measure and analyze energy use. The sectors most commonly referred to in EIA are: **residential**, **commercial**, **industrial**, **transportation**, and **electric power**.

**Ethane:** A normally gaseous straight-chain **hydrocarbon** ( $C_2H_6$ ). It is a colorless, paraffinic gas that boils at a temperature of -127.48 degrees Fahrenheit. It is extracted from **natural gas** and **refinery gas** streams.

**Ether:** The family name applied to a group of organic chemical compounds composed of carbon, **hydrogen**, and oxygen, and which are characterized by an oxygen atom attached to two carbon atoms (for example, **methyl tertiary butyl ether**).

**Ethanol ( $CH_3-CH_2OH$ ):** A clear, colorless, flammable oxygenated **hydrocarbon**. Ethanol is typically produced chemically from **ethylene**, or biologically from fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. It is used in the United States as a gasoline octane enhancer and **oxygenate** (blended up to 10 percent concentration). Ethanol can also be used in high concentrations (E85) in vehicles designed for its use. See **Alcohol and Fuel Ethanol**.

**Ethyl Tertiary Butyl Ether (ETBE):** A colorless, flammable, oxygenated hydrocarbon blend stock,  $(CH_3)_3COC_2H_5$ , formed by the catalytic etherification of **isobutylene** with **ethanol**. See **Oxygenates**.

**Ethylene:** An olefinic **hydrocarbon** recovered from refinery processes or petrochemical processes. Ethylene is used as a **petrochemical feedstock** for numerous chemical applications and the production of consumer goods.

**Exploratory Well:** A well drilled to find and produce **crude oil** or **natural gas** in an area previously considered unproductive, to find a new reservoir in a known field (i.e., one previously producing crude oil or natural gas in another reservoir), or to extend the limit of a known crude oil or natural gas reservoir.

**Exports:** Shipments of goods from within the 50 States and the District of Columbia to U.S. possessions and territories or to foreign countries.

**Extraction Loss:** The reduction in volume of **natural gas** due to the removal of **natural gas liquid** constituents such as **ethane**, **propane**, and **butane** at natural gas processing plants.

**Federal Energy Administration (FEA):** A predecessor of the Energy Information Administration.

**Federal Energy Regulatory Commission (FERC):** The Federal agency with jurisdiction over interstate **electricity** sales, wholesale electric rates, hydroelectric licensing, **natural gas** pricing, **petroleum pipeline** rates, and **natural gas pipeline** certification. FERC is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

**Federal Power Commission (FPC):** The predecessor agency of the **Federal Energy Regulatory Commission**. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and **natural gas** industries. It was abolished on September 30, 1977, when the Department of Energy was created. Its functions were divided between the Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

**Financial Reporting System (FRS):** The Energy Information Administration's statutory requirement to identify major **energy**-producing companies and develop and implement a data-reporting program for energy financial and operating information from these companies. Companies are selected if they are within the top 50 publicly-owned U.S. **crude oil** producers that have at least 1 percent of either production or reserves of **crude oil**, **natural gas**, **coal**, or **uranium** in the United States, or 1 percent of either refining capacity or **petroleum product** sales in the United States.

**Finished Motor Gasoline:** See **Motor Gasoline, Finished**.

**First Purchase Price:** See **Crude Oil Domestic First Purchase Price**.

**First Use:** Manufacturing establishments' consumption of the **energy** that was originally produced offsite or was produced onsite from input materials not classified as energy.

**Fiscal Year:** The U.S. Government's fiscal year runs from October 1 through September 30. The fiscal year is designated by the calendar year in which it ends; e.g., fiscal year 2004 began on October 1, 2002, and ended on September 30, 2004.

**Flared Natural Gas:** See **Natural Gas, Flared**.

**F.O.B.:** See **Free on Board**.

**Footage Drilled:** Total footage for **wells** in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore, which is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

**Former U.S.S.R.:** See **U.S.S.R.**

**Forward Costs (Uranium):** The operating and capital costs that will be incurred in any future production of **uranium** from in-place reserves. Included are costs for labor, materials, power and fuel, royalties, payroll taxes, insurance, and general and administrative costs that are dependent upon the quantity of production and, thus, applicable as variable costs of production. Excluded from forward costs are prior expenditures, if any, incurred for property acquisition, exploration, mine development, and mill construction, as well as income taxes, profit, and the cost of money.

*Note:* By use of forward costing, estimates of reserves for **uranium ore** deposits in differing geological settings can be aggregated and reported as the maximum amount that can theoretically be extracted to recover the specified costs of **uranium oxide** production under the listed forward cost categories.

**Fossil Fuel:** An **energy source** formed in the Earth's crust from decayed organic material, such as **petroleum**, **coal**, and **natural gas**.

**Fossil-Fueled Steam-Electric Power Plant:** An **electric power plant** in which the **prime mover** is a turbine rotated by high-pressure steam produced in a boiler by heat from burning **fossil fuels**.

**Fractionation:** The process by which saturated **hydrocarbons** are removed from **natural gas** and separated into distinct parts, or "fractions" such as **propane**, **butane**, and **ethane**.

**Free Alongside Ship (F.A.S.):** The value of a commodity at the port of exportation, generally including the purchase price plus all charges incurred in placing the commodity alongside the carrier at the port of exportation.

**Free on Board (F.O.B.):** A sales transaction in which the seller makes the product available for pick up at a specified port or terminal at a specified price and the buyer pays for the subsequent transportation and insurance.

**Free on Board (F.O.B.) Rail/Barge Price:** The **free on board** price of coal at the point of first sale. It excludes freight or shipping and insurance costs.

**Fuel Ethanol:** An anhydrous, denatured aliphatic **alcohol** ( $C_2H_5OH$ ) intended for **motor gasoline blending**. See **Ethanol** and **Oxygenates**.

**Full-Power Operation:** Operation of a nuclear **generating unit** at 100 percent of its design capacity. Full-power operation precedes commercial operation.

**Gasohol:** A blend of **finished motor gasoline** containing **alcohol** (generally **ethanol** but sometimes **methanol**) at a concentration between 5.7 percent and 10 percent by volume. See **Oxygenates**.

**Generating Unit:** Any combination of physically connected **generators**, reactors, boilers, combustion turbines, or other **prime movers** operated together to produce electric power.

**Generator:** A machine that converts mechanical **energy** into **electric energy**.

**Generator Capacity:** The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, adjusted for ambient conditions. See **Generator Nameplate (Installed) Capacity** and **Generator Net Summer Capacity**.

**Generator Capacity Factor:** The ratio of the **electric energy** produced by a **generating unit** for a given period of time to the electric energy that could have been produced at continuous full-power operation during the same period.

**Generator Nameplate (Installed) Capacity:** The maximum rated output of a **generator**, **prime mover**, or other electric power production equipment under specific conditions designated by the manufacturer. Installed generator nameplate capacity is commonly expressed in megawatts (MW) and is usually indicated on a nameplate physically attached to the generator.

**Generator Net Summer Capacity:** The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

**Geothermal Energy:** Hot water or steam extracted from geothermal reservoirs in the Earth's crust and used for geothermal heat pumps, water heating, or **electricity generation**.

**Global Warming:** An increase in the near-surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is today most often used to refer to the warming some scientists predict will occur as a result of increased **anthropogenic** emissions of **greenhouse gases**. See **Climate Change**.

**Global Warming Potential (GWP):** An index used to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emission of one kilogram of a **greenhouse gas** to that from the emission of one kilogram of **carbon dioxide** over a period of time, such as 100 years.

**Greenhouse Gases:** Those gases, such as water vapor, **carbon dioxide**, nitrous oxide, **methane**, **hydrofluorocarbons** (HFCs), **perfluorocarbons** (PFCs), and **sulfur hexafluoride**, that are transparent to solar (short-wave) radiation but opaque to long-wave radiation, thus preventing long-wave radiant energy from leaving the Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

**Gross Domestic Product (GDP):** The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

**Gross Domestic Product (GDP) Implicit Price Deflator:** A measure used to convert **nominal prices** to **real prices**. See **Chained Dollars**.

**Gross Electricity Generation:** See **Electricity Generation, Gross**.

**Gross Withdrawals:** See **Natural Gas Gross Withdrawals**.

**Gross Input to Atmospheric Crude Oil Distillation Units:** Total input to atmospheric crude oil distillation units. Includes all **crude oil**, **lease condensate**, **natural gas plant liquids**, **unfinished oils**, **liquefied refinery gases**, slop oils, and other liquid **hydrocarbons** produced from tar sands, gilsonite, and oil shale.

**Heat Content:** The amount of heat energy available to be released by the transformation or use of a specified physical unit of an energy form (e.g., a ton of coal, a barrel of oil, a kilowatthour of electricity, a cubic foot of natural gas, or a pound of

steam). The amount of heat energy is commonly expressed in **British thermal units (Btu)**. Note: Heat content of combustible energy forms can be expressed in terms of either gross heat content (higher or upper heating value) or net heat content (lower heating value), depending upon whether or not the available heat energy includes or excludes the energy used to vaporize water (contained in the original energy form or created during the combustion process). The Energy Information Administration typically uses gross heat content values.

**Heat Rate:** A measure of generating station thermal efficiency commonly stated as **Btu per kilowatthour**. Note: Heat rates can be expressed as either gross or net heat rates, depending whether the electricity output is gross or net generation. Heat rates are typically expressed as net heat rates.

**Household:** A family, an individual, or a group of up to nine unrelated persons occupying the same housing unit. "Occupy" means the housing unit was the person's usual or permanent place of residence.

**Housing Unit:** A house, an apartment, a group of rooms, or a single room if it is either occupied or intended for occupancy as separate living quarters by a family, an individual, or a group of one to nine unrelated persons. Separate living quarters means the occupants (1) live and eat separately from other persons in the house or apartment and (2) have direct access from the outside of the buildings or through a common hall—that is, they can get to it without going through someone else's living quarters. Housing units do not include group quarters such as prisons or nursing homes where ten or more unrelated persons live. A common dining area used by residents is an indication of group quarters. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.

**Hydrocarbon:** An organic chemical compound of **hydrogen** and carbon in the gaseous, liquid, or solid phase. The molecular structure of hydrocarbon compounds varies from the simplest (**methane**, a constituent of **natural gas**) to the very heavy and very complex.

**Hydroelectric Power:** The production of **electricity** from the kinetic **energy** of falling water. See **Hydroelectric Power, Conventional** and **Hydroelectric Pumped Storage**.

**Hydroelectric Power, Conventional:** **Hydroelectric power** generated from flowing water that is not created by **hydroelectric pumped storage**.

**Hydroelectric Pumped Storage:** **Hydroelectric power** that is generated during peak load periods by using water previously pumped into an elevated storage

reservoir during off-peak periods when excess generating capacity is available to do so. When additional generating capacity is needed, the water can be released from the reservoir through a conduit to turbine **generators** located in an **electric power plant** at a lower level.

**Hydrofluorocarbons (HFCs):** A group of man-made chemicals composed of one or two carbon atoms and varying numbers of **hydrogen** and fluorine atoms. Most HFCs have 100-year **global warming potentials** in the thousands.

**Hydrogen (H):** The lightest of all gases, hydrogen occurs chiefly in combination with oxygen in water. It also exists in acids, bases, **alcohols**, **petroleum**, and other **hydrocarbons**.

**Implicit Price Deflator:** The implicit price deflator, published by the U.S. Department of Commerce, Bureau of Economic Analysis, is used to convert **nominal prices** to **real prices**.

**Imports:** Receipts of goods into the 50 States and the District of Columbia from U.S. possessions and territories or from foreign countries.

**Independent Power Producer:** A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an **electric utility**. Independent power producers are included in the **electric power sector**.

**Indicated Resources, Coal:** Coal for which estimates of the **coal rank**, quality, and quantity are based partly on sample analyses and measurements and partly on reasonable geologic projections. Indicated resources are computed partly from specified measurements and partly from projection of visible data for a reasonable distance on the basis of geologic evidence. The points of observation are  $\frac{1}{2}$  to  $1\frac{1}{2}$  miles apart. Indicated coal is projected to extend as a  $\frac{1}{2}$ -mile-wide belt that lies more than  $\frac{1}{4}$  mile from the outcrop or points of observation or measurement.

**Industrial Sector:** An **energy-consuming sector** that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity: manufacturing (NAICS codes 31-33); agriculture, forestry, fishing and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. Note: This sector includes **generators** that produce **electricity** and/or **useful thermal**

**output** primarily to support the above-mentioned industrial activities. Various EIA programs differ in sectoral coverage—for more information see <http://www.eia.doe.gov/neic/datadefinitions/Guideforwebind.htm>. See **End-Use Sectors** and **Energy-Use Sectors**.

**Isobutane:** See **Butane**.

**Isobutylene:** An olefinic **hydrocarbon** recovered from refinery processes or petrochemical processes.

**Isopentane:** A saturated branched-chain **hydrocarbon** obtained by **fractionation** of **natural gasoline** or isomerization of normal pentane.

**Jet Fuel:** A refined petroleum product used in jet aircraft engines. See **Jet Fuel, Kerosene-Type** and **Jet Fuel, Naphtha-Type**.

**Jet Fuel, Kerosene-Type:** A **kerosene**-based product with a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbojet and turboprop aircraft engines.

**Jet Fuel, Naphtha-Type:** A fuel in the heavy **naphtha** boiling range, with an average gravity of 52.8° API, 20 to 90 percent distillation temperature of 290 to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4). It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds.

**Kerosene:** A light **petroleum** distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. See **Jet Fuel, Kerosene-Type**.

**Kerosene-Type Jet Fuel:** See **Jet Fuel, Kerosene-Type**.

**Kilowatt:** A unit of electrical power equal to 1,000 **watts**.

**Kilowatthour (kWh):** A measure of **electricity** defined as a unit of work or **energy**, measured as 1 **kilowatt** (1,000 **watts**) of power expended for 1 hour. One kilowatthour is equivalent to 3,412 **Btu**. See **Watthour**.

**Landed Cost:** See **Crude Oil Landed Cost**.

**Lease and Plant Fuel:** **Natural gas** used in **well**, field, and lease operations (such as natural gas used in drilling operations, heaters, dehydrators, and field compressors) and used as fuel in natural gas processing plants.

**Lease Condensate:** A mixture consisting primarily of pentanes and heavier **hydrocarbons** which is recovered as a liquid from **natural gas** in lease separation facilities. This category excludes **natural gas plant liquids**, such as **butane** and **propane**, which are recovered at downstream natural gas processing plants or facilities.

**Lignite:** The lowest rank of **coal**, often referred to as brown coal, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent. The heat content of lignite ranges from 9 to 17 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million **Btu** per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). See **Coal Rank**.

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

**Liquefied Petroleum Gases (LPG):** A group of **hydrocarbon**-based gases derived from **crude oil** refining or **natural gas fractionation**. They include **ethane**, **ethylene**, **propane**, **propylene**, **normal butane**, **butylene**, **isobutane**, and **isobutylene**. For convenience of transportation, these gases are liquefied through pressurization.

**Liquefied Refinery Gases (LRG):** **Liquefied petroleum gases** fractionated from refinery or **still gases**. Through compression and/or refrigeration, they are retained in the liquid state. The reported categories are **ethane/ethylene**, **propane/propylene**, **normal butane/butylene**, and **isobutane**. Excludes still gas.

**Losses:** See **Electrical System Energy Losses**.

**Low-Power Testing:** The period of time between a nuclear **generating unit**'s initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during that period is 5 percent of the unit's design thermal rating.

**Lubricants:** Substances used to reduce friction between bearing surfaces or incorporated into other materials used as processing aids in the manufacture of other products, or used as carriers of other materials. **Petroleum** lubricants may be produced either from distillates or residues. Lubricants include all grades of lubricating oils, from spindle oil to cylinder oil, and those used in greases.

**Manufacturing:** An energy-consuming subsector of the **industrial sector** that consists of all facilities and equipment engaged in the mechanical, physical, chemical, or electronic transformation of materials, substances, or components into new products. Assembly of component parts of products is included, except for that which is included in construction.

**Measured Resources, Coal:** **Coal** resources for which estimates of the **coal rank**, quality, and quantity have been computed, within a margin of error of less than 20 percent, from sample analyses and measurements from closely spaced and geologically well known sample sites. Measured resources are computed from dimensions revealed in outcrops, trenches, mine workings, and drill holes. The points of observation and measurement are so closely spaced and the thickness and extent of coals are so well defined that the tonnage is judged to be accurate within 20 percent. Although the spacing of the point of observation necessary to demonstrate continuity of the coal differs from region to region, according to the character of the coalbeds, the points of observation are no greater than  $\frac{1}{2}$  mile apart. Measured coal is projected to extend as a belt  $\frac{1}{4}$  mile wide from the outcrop or points of observation or measurement.

**Methane:** A colorless, flammable, odorless **hydrocarbon** gas ( $\text{CH}_4$ ), which is the major component of **natural gas**. It is also an important source of **hydrogen** in various industrial processes.

**Methanol:** A light, volatile **alcohol** ( $\text{CH}_3\text{OH}$ ) eligible for **motor gasoline blending**. See **Oxygenates**.

**Methyl Tertiary Butyl Ether (MTBE):** An ether,  $(\text{CH}_3)_3\text{COCH}_3$ , intended for **motor gasoline blending**. See **Oxygenates**.

**Miscellaneous Petroleum Products:** All finished **petroleum products** not classified elsewhere—for example, petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils.

**Motor Gasoline Blending:** Mechanical mixing of **motor gasoline blending components** and **oxygenates** as required, to produce **finished motor gasoline**. Finished motor gasoline may be further mixed with other motor gasoline blending

components or oxygenates, resulting in increased volumes of finished motor gasoline and/or changes in the formulation of finished motor gasoline (e.g., **conventional motor gasoline** mixed with **MTBE** to produce **oxygenated motor gasoline**).

**Motor Gasoline Blending Components:** **Naphthas** (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into **finished motor gasoline**. These components include reformulated gasoline blendstock for oxygenate blending (RBOB) but exclude **oxygenates (alcohols, ethers)**, **butane**, and **pentanes plus**. *Note:* Oxygenates are reported as individual components and are included in the total for **other hydrocarbons, hydrogen**, and oxygenates.

**Motor Gasoline, Conventional:** **Finished** motor gasoline not included in the **oxygenated** or **reformulated** motor gasoline categories. *Note:* This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock. Conventional motor gasoline can be leaded or unleaded; regular, midgrade, or premium. See **Motor Gasoline Grades**.

**Motor Gasoline, Finished:** A complex mixture of relatively volatile **hydrocarbons** with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition. Motor gasoline, as defined in ASTM Specification D-4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122°F to 158°F at the 10-percent recovery point to 365°F to 374°F at the 90-percent recovery point. "Motor gasoline" includes **conventional motor gasoline**, all types of **oxygenated motor gasoline** including **gasohol**, and **reformulated motor gasoline**, but excludes **aviation gasoline**. Note: Volumetric data on **motor gasoline blending components**, as well as **oxygenates**, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline.

**Motor Gasoline Grades:** The classification of gasoline by octane ratings. Each type of gasoline (**conventional**, **oxygenated**, and **reformulated**; leaded or unleaded) is classified by three grades: regular, midgrade, and premium. *Note:* Motor gasoline sales are reported by grade in accordance with their classification at the time of sale. In general, automotive octane requirements are lower at high altitudes. Therefore, in some areas of the United States, such as the Rocky Mountain States, the octane ratings for the gasoline grades may be 2 or more octane points lower.

**Regular Gasoline:** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than 88.

**Midgrade Gasoline:** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 88 and less than or equal to 90.

**Premium Gasoline:** Gasoline having an antiknock index, i.e., octane rating, greater than 90.

**Motor Gasoline, Oxygenated:** **Finished motor gasoline** other than **reformulated motor gasoline**, having an oxygen content of 2.7 percent or higher by weight and required by the U.S. Environmental Protection Agency (EPA) to be sold in areas designated by EPA as carbon monoxide (CO) nonattainment areas. *Note:* Oxygenated gasoline excludes reformulated gasoline, oxygenated fuels program reformulated gasoline (OPRG), and reformulated gasoline blendstock for oxygenated blending (RBOB). It can be formulated for regular, midgrade, or premium grade. See **Motor Gasoline Grades**.

**Motor Gasoline, Reformulated:** **Finished motor gasoline** formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. *Note:* This category includes oxygenated fuels program reformulated gasoline (OPRG) but excludes reformulated gasoline blendstock for oxygenate blending (RBOB). It can be formulated for regular, midgrade, and premium grades. See **Motor Gasoline Grades**.

**MTBE:** See **Methyl Tertiary Butyl Ether**.

**NAICS:** See **North American Industry Classification System**.

**Naphtha:** A generic term applied to a **petroleum** fraction with an approximate boiling range between 122 and 400° F.

**Naphtha-Type Jet Fuel:** See **Jet Fuel, Naphtha-Type**.

**Natural Gas:** A gaseous mixture of **hydrocarbon** compounds, primarily **methane**, used as a fuel for **electricity generation** and in a variety of ways in buildings, and as raw material input and fuel for industrial processes.

**Natural Gas, Dry:** **Natural gas** which remains after: 1) the liquefiable **hydrocarbon** portion has been removed from the gas stream (i.e., gas after lease, field, and/or plant separation); and 2) any volumes of **nonhydrocarbon gases** have been removed where they occur in sufficient quantity to render the gas unmarketable. *Note:* Dry natural gas is also known as consumer-grade natural gas. The parameters for measurement are cubic feet at 60 degrees Fahrenheit and 14.73 pounds per square inch absolute.

**Natural Gas (Dry) Production:** The process of producing consumer-grade **natural gas**. Natural gas withdrawn from reservoirs is reduced by volumes used at the production (lease) site and by processing losses. Volumes used at the production site include 1) the volume returned to reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; and 2) **vented natural gas** and **flared natural gas**. Processing losses include 1) **nonhydrocarbon gases** (e.g., water vapor, **carbon dioxide**, helium, hydrogen sulfide, and nitrogen) removed from the gas stream; and 2) gas converted to liquid form, such as **lease condensate** and **natural gas plant liquids**. Volumes of dry gas withdrawn from gas storage reservoirs are not considered part of production. Dry natural gas production equals **natural gas marketed production** less **extraction loss**.

**Natural Gas, Flared:** **Natural gas** burned in flares on the base site or at gas processing plants.

**Natural Gas Gross Withdrawals:** Full well stream volume of produced **natural gas**, excluding **lease condensate** separated at the lease.

**Natural Gas Liquids (NGL):** A general term for all liquid products separated from **natural gas** in gas processing or cycling plants. They include **natural gas plant liquids** and **lease condensate**.

**Natural Gas Marketed Production:** **Natural gas gross withdrawals** from production reservoirs, less gas used for reservoir repressuring; **nonhydrocarbon gases** removed in treating or processing operations; and quantities of **vented natural gas** and **flared natural gas**. Includes all quantities of natural gas used in field and processing operations.

**Natural Gas Pipeline:** A continuous pipe conduit, complete with such equipment as valves, compressor stations, communications systems, and meters, for transporting **natural gas** and/or **supplemental gaseous fuels** from one point to another, usually from a point in or beyond the producing field or processing plant to another pipeline or to points of utilization. Also refers to a company operating such facilities.

**Natural Gas Plant Liquids (NGPL):** Those **hydrocarbons** in **natural gas** that are separated as liquids at downstream gas processing plants, fractionating and cycling plants, and in some instances at field facilities. **Lease condensate** is excluded. Products obtained include **liquefied petroleum gases** and **pentanes plus**.

**Natural Gas, Vented:** **Natural gas** released into the air on the production site or at processing plants.

**Natural Gas Well:** A well completed for the production of **natural gas** from one or more natural gas zones or reservoirs. (Wells producing both **crude oil** and natural gas are classified as **crude oil wells**.)

**Natural Gas Wellhead Price:** Price of **natural gas** calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing States and the U.S. Mineral Management Service. The price includes all costs prior to shipment from the lease, including gathering and compression costs, in addition to State production, severance, and similar charges.

**Natural Gasoline:** A mixture of **hydrocarbons** (mostly pentanes and heavier) extracted from **natural gas** that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes **isopentane**, which is a saturated branch-chain hydrocarbon obtained by **fractionation** of natural gasoline or isomerization of normal pentane.

**NERC:** See **North American Electric Reliability Council**.

**Net Electricity Generation:** See **Electricity Generation, Net**.

**Net Summer Capacity:** See **Generator Net Summer Capacity**.

**Neutral Zone:** A 6,200 square-mile area shared equally between Kuwait and Saudi Arabia under a 1992 agreement.

**Nitrogen Oxides (No<sub>x</sub>):** Compounds of nitrogen and oxygen produced by the burning of **fossil fuels**.

**Nominal Dollars:** A measure used to express **nominal price**.

**Nominal Price:** The price paid for a product or service at the time of the transaction. Nominal prices are those that have not been adjusted to remove the effect of changes in the purchasing power of the dollar; they reflect buying power in the year in which the transaction occurred.

**Noncoincident Peak Load:** The sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only in the context of loads within a limited period of time, such as day, week, month, a heating or cooling season, and usually for not more than 1 year.

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

**Normal Butane:** See **Butane**.

**North American Electric Reliability Council (NERC):** A council formed in 1968 by the **electric utility** industry to promote the reliability and adequacy of bulk power supply in the electric utility systems of North America. NERC consists of regional reliability councils and encompasses essentially all the power regions of the contiguous United States, Canada, and Mexico. See the various NERC Regional Reliability Councils at: [http://www.eia.doe.gov/cneaf/electricity/chg\\_str\\_fuel/html/fig02.html](http://www.eia.doe.gov/cneaf/electricity/chg_str_fuel/html/fig02.html).

**North American Industry Classification System (NAICS):** A coding system developed jointly by the United States, Canada, and Mexico to classify businesses and industries according to the type of economic activity in which they are engaged. NAICS replaces the Standard Industrial Classification (SIC) codes.

**Nuclear Electric Power (Nuclear Power):** Electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.

**Nuclear Electric Power Plant:** A single-unit or multiunit facility in which heat produced in one or more reactors by the fissioning of nuclear fuel is used to drive one or more steam turbines.

**Nuclear Reactor:** An apparatus in which a nuclear fission chain reaction can be initiated, controlled, and sustained at a specific rate. A reactor includes fuel (fissionable material), moderating material to control the rate of fission, a heavy-walled pressure vessel to house reactor components, shielding to protect personnel, a system to conduct heat away from the reactor, and instrumentation for monitoring and controlling the reactor's systems.

**OECD:** See **Organization for Economic Cooperation and Development**.

**Offshore:** That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water. If a State agency uses a different basis for classifying onshore and offshore areas, the State classification is used (e.g., Cook Inlet in Alaska is classified as offshore; for Louisiana, the coastline is defined as the Chapman Line, as modified by subsequent adjudication).

**Oil:** See **Crude Oil**.

**OPEC:** See **Organization of the Petroleum Exporting Countries**.

**Operable Nuclear Unit:** In the United States, a nuclear **generating unit** that has completed low-power testing and is in possession of a full-power operating license issued by the Nuclear Regulatory Commission.

**Operable Refineries:** Refineries that were in one of the following three categories at the beginning of a given year: in operation; not in operation and not under active repair, but capable of being placed into operation within 30 days; or not in operation, but under active repair that could be completed within 90 days.

**Operating Income:** Operating revenues less operating expenses. Excludes items of other revenue and expense, such as equity in earnings of unconsolidated affiliates, dividends, interest income and expense, income taxes, extraordinary items, and cumulative effect of accounting changes.

**Organization for Economic Cooperation and Development (OECD):** An international organization helping governments tackle the economic, social and governance challenges of a globalized economy. Its membership comprises about 30 member countries. With active relationships with some 70 other countries, non-governmental organizations (NGOs) and civil society, it has a global reach. For details about the organization, see <http://www.oecd.org>.

**Organization of the Petroleum Exporting Countries (OPEC):** An organization founded in Baghdad, Iraq, in September 1960, to unify and coordinate members' petroleum policies. OPEC members' national oil ministers meet regularly to discuss prices and, since 1982, to set crude oil production quotas. Original OPEC members include Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. Between 1960 and 1975, the organization expanded to include Qatar (1961), Indonesia (1962), Libya (1962), the United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973), and Gabon (1975). Ecuador withdrew in December 1992, and Gabon withdrew in January 1995. Although Iraq remains a member of OPEC, Iraqi production has not been a part of any OPEC quota agreements since March 1998. For more information, go to OPEC's website at: <http://www.opec.org/aboutus/history/history.htm>.

**Other Hydrocarbons:** Materials received by a refinery and consumed as a raw material. Includes **hydrogen**, coal tar derivatives, gilsonite, and **natural gas** received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

**Oxygenated Motor Gasoline:** See **Motor Gasoline, Oxygenated**.

**Oxygenates:** Substances which, when added to **motor gasoline**, increase the amount of oxygen in that gasoline blend. **Ethanol**, **methyl tertiary butyl ether (MTBE)**, **ethyl tertiary butyl ether (ETBE)**, and **methanol** are common oxygenates. See **Motor Gasoline, Oxygenated**.

**Ozone:** A molecule made up of three atoms of oxygen. Occurs naturally in the stratosphere and provides a protective layer shielding the Earth from harmful ultraviolet radiation. In the troposphere, it is a chemical oxidant, a greenhouse gas, and a major component of photochemical smog.

**PAD Districts:** Petroleum Administration for Defense Districts. Geographic aggregations of the 50 States and the District of Columbia into five districts for the Petroleum Administration for Defense in 1950. The districts were originally instituted for economic and geographic reasons as Petroleum Administration for War (PAW) Districts, which were established in 1942.

**Particulate Collectors:** Equipment used to remove fly ash from the combustion gases of a boiler plant before discharge to the atmosphere. Particulate collectors include electrostatic precipitators, mechanical collectors (cyclones, fabric filters [baghouses]), and wet scrubbers.

**Peak Kilowatt:** One thousand **peak watts**.

**Peak Watt:** A manufacturer's unit indicating the amount of power a photovoltaic cell or module will produce at standard test conditions (normally 1,000 **watts** per square meter and 25 degrees Celsius).

**Pentanes Plus:** A mixture of **hydrocarbons**, mostly pentanes and heavier, extracted from **natural gas**. Includes **isopentane**, **natural gasoline**, and **plant condensate**.

**Perfluorocarbons (PFCs):** A group of man-made chemicals composed of one or two carbon atoms and four to six fluorine atoms, containing no chlorine. PFCs have no commercial uses and are emitted as a byproduct of aluminum smelting and semiconductor manufacturing. PFCs have very high 100-year **global warming potentials** and are very long-lived in the atmosphere.

**Petrochemical Feedstocks:** Chemical feedstocks derived from **petroleum** principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics.

**Petroleum:** A broadly defined class of liquid **hydrocarbon** mixtures. Included are **crude oil**, **lease condensate**, **unfinished oils**, refined products obtained from the processing of crude oil, and **natural gas plant liquids**. *Note:* Volumes of finished **petroleum products** include nonhydrocarbon compounds, such as additives and detergents, after they have been blended into the products.

**Petroleum Coke:** See **Coke, Petroleum**.

**Petroleum Consumption:** See **Products Supplied (Petroleum)**.

**Petroleum Imports:** Imports of **petroleum** into the 50 States and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. territories and possessions. Included are imports for the **Strategic Petroleum Reserve** and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

**Petroleum Pipeline:** Crude oil and product pipelines used to transport **crude oil** and **petroleum products**, respectively (including interstate, intrastate, and intracompany pipelines), within the 50 States and the District of Columbia.

**Petroleum Products:** Petroleum products are obtained from the processing of **crude oil** (including **lease condensate**), natural gas, and other **hydrocarbon** compounds. Petroleum products include **unfinished oils**, **liquefied petroleum gases**, **pentanes plus**, **aviation gasoline**, **motor gasoline**, **naphtha-type jet fuel**, **kerosene-type jet fuel**, **kerosene**, **distillate fuel oil**, **residual fuel oil**, **petrochemical feedstocks**, **special naphthas**, **lubricants**, **waxes**, **petroleum coke**, **asphalt**, **road oil**, **still gas**, and **miscellaneous petroleum products**.

**Petroleum Stocks, Primary:** For individual **petroleum products**, quantities that are held at refineries, in **petroleum pipelines**, and at bulk terminals that have a capacity of 50,000 barrels or more, or that are in transit thereto. Stocks held by product retailers and resellers, as well as tertiary stocks held at the point of consumption, are excluded. Stocks of individual products held at gas processing plants are excluded from individual product estimates but are included in other oil estimates and total.

**Photovoltaic Energy:** Direct-current **electricity** generated from sunlight through solid-state semiconductor devices that have no moving parts.

**Photovoltaic Module:** An integrated assembly of interconnected photovoltaic cells designed to deliver a selected level of working voltage and current at its output terminals, packaged for protection against environmental degradation, and suited for incorporation in photovoltaic power systems.

**Pipeline Fuel:** **Natural gas** consumed in the operation of pipelines, primarily in compressors.

**Plant Condensate:** One of the **natural gas liquids**, mostly pentanes and heavier **hydrocarbons**, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

**Primary Energy Consumption:** Coal consumption; **coal coke** net imports; **petroleum** consumption (petroleum **products supplied**, including **natural gas plant liquids** and **crude oil** burned as fuel, but excluding **ethanol** blended into **motor gasoline**); **natural gas** (excluding **supplemental gaseous fuels**) consumption; nuclear electricity net generation (converted to Btu using the nuclear plants **heat rate**); conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate); geothermal electricity net generation (converted to Btu using the geothermal plants heat rate), and geothermal heat pump and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and solar thermal direct use energy; wind electricity net generation (converted to Btu using the fossil-fueled plants heat rate); wood and wood-derived fuels consumption; **biomass** waste (municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass) consumption; **fuel ethanol** and **biodiesel** consumption; losses and co-products from the production of fuel ethanol and biodiesel; and **electricity** net imports (converted to Btu using the electricity **heat content** of 3,412 Btu per kilowatthour). See **Conventional Hydroelectric Power**, **Geothermal Energy**, **Nuclear Electric Power**, **Photovoltaic Energy**, **Solar Thermal Energy**, **Waste Energy**, **Wind Energy**, and **Wood Energy**.

**Primary Energy Production:** Coal production, **waste coal** supplied, and coal refuse recovery; **crude oil** and **lease condensate** production; **natural gas plant liquids** production; **natural gas (dry)** production; nuclear electricity net generation (converted to Btu using the nuclear plants **heat rate**); conventional hydroelectricity net generation (converted to Btu using the fossil-fueled plants heat rate); geothermal electricity net generation (converted to Btu using the geothermal plants heat rate), geothermal heat pump energy, and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and solar thermal direct use energy; wind electricity net generation (converted to Btu using the fossil-fueled plants heat rate); wood and wood-derived fuels consumption; **biomass** waste (municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass) consumption; and **biofuels** feedstock (biomass inputs to the production of **fuel ethanol** and **biodiesel**). See **Conventional Hydroelectric Power**, **Geothermal Energy**, **Nuclear Electric Power**, **Photovoltaic Energy**, **Solar Thermal Energy**, **Waste Energy**, **Wind Energy**, and **Wood Energy**.

**Prime Mover:** The engine, turbine, water wheel, or similar machine that drives an electric **generator**; or, for reporting purposes, a device that converts **energy** to **electricity** directly.

**Process Fuel:** All **energy** consumed in the acquisition, processing, and transportation of energy. Quantifiable process fuel includes three categories: natural gas lease and plant operations, **natural gas pipeline** operations, and oil refinery operations.

**Processing Gain:** The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of **crude oil** into **petroleum products** which, in total, have a lower specific gravity than the crude oil processed.

**Processing Loss:** The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of **crude oil** into **petroleum products** which, in total, have a higher specific gravity than the crude oil processed.

**Processing Plant (Natural Gas):** A surface installation designed to separate and recover **natural gas liquids** from a stream of produced **natural gas** through the processes of condensation, absorption, refrigeration, or other methods, and to control the quality of natural gas marketed or returned to oil or gas reservoirs for pressure maintenance, repressuring, or cycling.

**Products Supplied (Petroleum):** Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas-processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus imports, plus unaccounted-for crude oil (plus net receipts when calculated on a PAD District basis) minus stock change, minus crude oil losses, minus refinery inputs, and minus exports.

**Propane:** A normally gaseous straight-chain **hydrocarbon** ( $C_3H_8$ ). It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It is extracted from **natural gas** or **refinery gas** streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

**Propylene:** An olefinic **hydrocarbon** ( $C_3H_6$ ) recovered from refinery processes or petrochemical processes.

**Proved Reserves, Crude Oil:** The estimated quantities of all liquids defined as **crude oil** that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

**Proved Reserves, Lease Condensate:** The volumes of **lease condensate** expected to be recovered in future years in conjunction with the production of proved reserves

of **natural gas** based on the recovery efficiency of lease and/or field separation facilities installed.

**Proved Reserves, Natural Gas:** The estimated quantities of **natural gas** that analysis of geological and engineering data demonstrates with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

**Proved Reserves, Natural Gas Liquids:** Those volumes of **natural gas liquids** (including **lease condensate**) demonstrated with reasonable certainty to be separable in the future from proved **natural gas** reserves, under existing economic and operating conditions.

**Pumped Storage:** See **Hydroelectric Pumped Storage**.

**Real Price:** A price that has been adjusted to remove the effect of changes in the purchasing power of the dollar. Real prices, which are expressed in constant dollars, usually reflect buying power relative to a base year. See **Chained Dollars**.

**Refiner Acquisition Cost of Crude Oil:** See **Crude Oil Refiner Acquisition Cost**.

**Refinery Gas:** See **Still Gas**.

**Refinery Input:** The raw materials and intermediate materials processed at refineries to produce finished **petroleum products**. They include **crude oil**, products of natural gas processing plants, **unfinished oils**, **other hydrocarbons** and **alcohol**, **motor gasoline blending components** and **aviation gasoline blending components**, and finished **petroleum products**.

**Refinery Output:** The total amount of **petroleum products** produced at a refinery. Includes **petroleum** consumed by the refinery.

**Refinery (Petroleum):** An installation that manufactures finished **petroleum products** from **crude oil**, **unfinished oils**, **natural gas liquids**, **other hydrocarbons**, and **alcohol**.

**Reformulated Gasoline.** Finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. It includes gasoline produced to meet or exceed emissions performance and benzene content standards of federal-program reformulated gasoline even though the gasoline may not meet all of the composition

requirements (e.g. oxygen content) of federal-program reformulated gasoline. *Note:* This category includes Oxygenated Fuels Program Reformulated Gasoline (OPRG). Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) and Gasoline Treated as Blendstock (GTAB).

**Refuse Mine:** A surface mine where **coal** is recovered from previously mined coal. It may also be known as a silt bank, culm bank, refuse bank, slurry dam, or dredge operation.

**Refuse Recovery:** The recapture of **coal** from a **refuse mine** or the coal recaptured by that process. The resulting product has been cleaned to reduce the concentration of noncombustible materials.

**Renewable Energy:** Energy obtained from sources that are essentially inexhaustible (unlike, for example, **fossil fuels**, which are in finite supply). Renewable sources of energy include **conventional hydroelectric power**, **wood**, **waste**, **alcohol fuels**, **geothermal**, **solar**, and **wind**.

**Replacement Fuel:** The portion of any motor fuel that is **methanol**, **ethanol**, or other **alcohols**, **natural gas**, **liquefied petroleum gases**, **hydrogen**, coal-derived liquid fuels, **electricity** (including electricity from **solar energy**), **ethers**, **biodiesel**, or any other fuel the Secretary of Energy determines, by rule, is substantially not **petroleum** and would yield substantial energy security benefits and substantial environmental benefits.

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

**Residential Sector:** An **energy-consuming sector** that consists of living quarters for private households. Common uses of energy associated with this sector include **space heating**, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters. *Note:* Various EIA programs differ in sectoral coverage—for further explanation see <http://www.eia.doe.gov/neic/datadefinitions/Guideforwebres.htm>. See **End-Use Sectors** and **Energy-Use Sectors**.

**Residual Fuel Oil:** The heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the **distillate fuel oils** and lighter **hydrocarbons** are distilled away in refinery operations. It conforms to ASTM Specifications D396 and D975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in

steam-powered vessels in government service and inshore **electric power plants**. No. 6 fuel oil includes Bunker C fuel oil and is used for **electricity generation**, **space heating**, **vessel bunkering**, and various industrial purposes.

**Road Oil:** Any heavy **petroleum** oil, including residual asphaltic oil, used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

**Rotary Rig:** A machine used for drilling wells that employs a rotating tube attached to a bit for boring holes through rock.

**Royalty Interest:** An interest in a mineral property provided through a royalty contract.

**Short Ton (Coal):** A unit of weight equal to 2,000 pounds.

**Solar Energy:** See **Solar Thermal Energy** and **Photovoltaic Energy**.

**Solar Thermal Collector:** A device designed to receive solar radiation and convert it to thermal **energy**. Normally, a solar thermal collector includes a frame, glazing, and an absorber, together with appropriate insulation. The heat collected by the solar thermal collector may be used immediately or stored for later use. Solar collectors are used for **space heating**, domestic hot water heating, and heating swimming pools, hot tubs, or spas.

**Solar Thermal Energy:** The radiant **energy** of the sun that can be converted into other forms of energy, such as heat or **electricity**.

**Space Heating:** The use of **energy** to generate heat for warmth in housing units using space-heating equipment. The equipment could be the main space-heating equipment or secondary space-heating equipment. It does not include the use of energy to operate appliances (such as lights, televisions, and refrigerators) that give off heat as a byproduct.

**Special Naphthas:** All finished **petroleum products** within the **naphtha** boiling range that are used as paint thinners, cleaners, or solvents. Those products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specifications D1836 and D484, respectively. Naphthas to be blended or marketed as **motor gasoline** or **aviation gasoline** or that are to be used as **petrochemical feedstocks** or synthetic natural gas (SNG) feedstocks are excluded.

**Spent Liquor:** The liquid residue left after an industrial process; can be a component of waste materials used as fuel.

**Spot Market Price:** See **Spot Price**.

**Spot Price:** The price for a one-time open market transaction for immediate delivery of the specific quantity of product at a specific location where the commodity is purchased "on the spot" at current market rates.

**Station Use: Energy** that is used to operate an **electric power plant**. It includes energy consumed for plant lighting, power, and auxiliary facilities, regardless of whether the energy is produced at the plant or comes from another source.

**Steam-Electric Power Plant:** An **electric power plant** in which the **prime mover** is a steam turbine. The steam used to drive the turbine is produced in a boiler where **fossil fuels** are burned.

**Still Gas (Refinery Gas):** Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are **methane**, **ethane**, **ethylene**, **normal butane**, **butylene**, **propane**, **propylene**, etc. Still gas is used as a refinery fuel and a **petrochemical feedstock**. The conversion factor is 6 million **Btu** per fuel oil equivalent **barrel**.

**Stocks:** Inventories of fuel stored for future use. See **Crude Oil Stocks**, **Coal Stocks**, and **Petroleum Stocks, Primary**.

**Strategic Petroleum Reserve (SPR):** **Petroleum** stocks maintained by the Federal Government for use during periods of major supply interruption.

**Subbituminous Coal:** A **coal** with properties ranging from those of **lignite** to those of **bituminous coal** and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). See **Coal Rank**.

**Sulfur Dioxide (SO<sub>2</sub>):** A toxic, irritating, colorless gas soluble in water, **alcohol**, and **ether**. Used as a chemical intermediate, in paper pulping and ore refining, and as a solvent.

**Sulfur Hexafluoride ( $\text{SF}_6$ ):** A colorless gas soluble in **alcohol** and **ether**, and slightly less soluble in water. It is used as a dielectric in electronics. It possesses the highest 100-year **global warming potential** of any gas (23,900).

**Supplemental Gaseous Fuels:** Any gaseous substance introduced into or commingled with **natural gas** that increases the volume available for disposition. Such substances include, but are not limited to, propane-air, **refinery gas**, coke-oven gas, manufactured gas, biomass gas, or air or inerts added for Btu stabilization.

**Synthetic Natural Gas (SNG):** (Also referred to as substitute natural gas.) A manufactured product, chemically similar in most respects to **natural gas**, resulting from the conversion or reforming of **hydrocarbons** that may easily be substituted for or interchanged with pipeline-quality natural gas.

**Thermal Conversion Factor:** See **Conversion Factor**.

**Transportation Sector:** An **energy-consuming sector** that consists of all vehicles whose primary purpose is transporting people and/or goods from one physical location to another. Included are automobiles; trucks; buses; motorcycles; trains, subways, and other rail vehicles; aircraft; and ships, barges, and other waterborne vehicles. Vehicles whose primary purpose is not transportation (e.g., construction cranes and bulldozers, farming vehicles, and warehouse tractors and forklifts) are classified in the sector of their primary use. *Note:* Various EIA programs differ in sectoral coverage—for more information see <http://www.eia.doe.gov/neic/datadefinitions/Guideforwebtrans.htm>. See **End-Use Sectors and Energy-Use Sectors**.

**Unaccounted-for Crude Oil:** Represents the arithmetic difference between the calculated supply and the calculated disposition of **crude oil**. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

**Unaccounted-for Natural Gas:** Represents differences between the sum of the components of **natural gas** supply and the sum of 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 cycle and calendar-period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

**Underground Natural Gas Storage:** The use of sub-surface facilities for storing **natural gas** that has been transferred from its original location. The facilities are usually hollowed-out salt domes, geological reservoirs (depleted **crude oil** or natural gas fields) or water-bearing sands topped by an impermeable cap rock (aquifer).

**Undiscovered Recoverable Reserves (Crude Oil and Natural Gas):** Those economic resources of **crude oil** and **natural gas**, yet undiscovered, that are estimated to exist in favorable geologic settings.

**Unfinished Oils:** All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of **crude oil** and include **naphthas** and lighter oils, **kerosene** and light gas oils, heavy gas oils, and residuum.

**Unfractionated Stream:** Mixtures of unsegregated **natural gas liquid** components, excluding those in **plant condensate**. This product is extracted from **natural gas**.

**United States:** The 50 States and the District of Columbia. *Note:* The United States has varying degrees of jurisdiction over a number of territories and other political entities outside the 50 States and the District of Columbia, including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Johnston Atoll, Midway Islands, Wake Island, and the Northern Mariana Islands. EIA data programs may include data from some or all of these areas in U.S. Totals. For these programs, data products will contain notes explaining the extent of geographic coverage included under the term “United States.”

**Uranium:** A heavy, naturally radioactive, metallic element (atomic number 92). Its two principally occurring isotopes are uranium-235 and uranium-238. Uranium-235 is indispensable to the nuclear industry because it is the only isotope existing in nature, to any appreciable extent, that is fissionable by thermal neutrons. Uranium-238 is also important because it absorbs neutrons to produce a radioactive isotope that subsequently decays to the isotope plutonium-239, which also is fissionable by thermal neutrons.

**Uranium Concentrate:** A yellow or brown powder obtained by the milling of **uranium ore**, processing of in situ leach mining solutions, or as a byproduct of phosphoric acid production. See **Uranium Oxide**.

**Uranium Ore:** Rock containing **uranium** mineralization in concentrations that can be mined economically, typically one to four pounds of  $\text{U}_3\text{O}_8$  per ton or 0.05 percent to 0.2 percent  $\text{U}_3\text{O}_8$ . See **Uranium Oxide**.

**Uranium Oxide:** **Uranium concentrate or yellowcake.** Abbreviated as U<sub>3</sub>O<sub>8</sub>.

**Uranium Resource Categories:** Three categories of **uranium** resources defined by the international community to reflect differing levels of confidence in the existence of the resources. Reasonably assured resources (RAR), estimated additional resources (EAR), and speculative resources (SR) are described below.

**Reasonably assured resources (RAR):** **Uranium** that occurs in known mineral deposits of such size, grade, and configuration that it could be recovered within the given production cost ranges, with currently proven mining and processing technology. Estimates of tonnage and grade are based on specific sample data and measurements of the deposits and on knowledge of deposit characteristics. *Note:* RAR corresponds to DOE's uranium reserves category.

**Estimated additional resources (EAR):** **Uranium** in addition to RAR that is expected to occur, mostly on the basis of geological evidence, in extensions of well-explored deposits, in little-explored deposits, and in undiscovered deposits believed to exist along well-defined geological trends with known deposits. This uranium can subsequently be recovered within the given cost ranges. Estimates of tonnage and grade are based on available sampling data and on knowledge of the deposit characteristics, as determined in the best-known parts of the deposit or in similar deposits. *Note:* EAR corresponds to DOE's probable potential resources category.

**Speculative resources (SR):** **Uranium** in addition to EAR that is thought to exist, mostly on the basis of indirect evidence and geological extrapolations, in deposits discoverable with existing exploration techniques. The location of deposits in this category can generally be specified only as being somewhere within given regions or geological trends. The estimates in this category are less reliable than estimates of RAR and EAR. *Note:* SR corresponds to the combination of DOE's possible potential resources and speculative potential resources categories.

**Useful Thermal Output:** The thermal **energy** made available in a **combined-heat-and-power** system for use in any industrial or commercial process, heating or cooling application, or delivered to other end users, i.e., total thermal energy made available for processes and applications other than **electricity generation**.

**U.S.S.R.:** The Union of Soviet Socialist Republics consisted of 15 constituent republics: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine,

and Uzbekistan. As a political entity, the U.S.S.R. ceased to exist as of December 31, 1991.

**Vented Natural Gas:** See **Natural Gas, Vented**.

**Vessel Bunkering:** Includes sales for the fueling of commercial or private boats, such as pleasure craft, fishing boats, tugboats, and ocean-going vessels, including vessels operated by oil companies. Excluded are volumes sold to the U.S. Armed Forces.

**Waste Coal:** Usable material that is a byproduct of previous **coal** processing operations. Waste coal may be relatively clean material composed primarily of coal fines, material in which extraneous noncombustible constituents have been partially removed, or mixed coal, soil, and rock (mine waste) burned as is in unconventional boilers, such as fluidized bed units. Examples include fine coal, coal obtained from a refuse bank or slurry dam, **anthracite culm**, bituminous gob, and lignite waste.

**Waste Energy:** Municipal solid waste, landfill gas, **methane**, digester gas, liquid acetonitrile waste, tall oil, waste alcohol, medical waste, paper pellets, sludge waste, solid byproducts, tires, agricultural byproducts, closed loop biomass, fish oil, and straw used as fuel.

**Watt (W):** The unit of electrical power equal to one ampere under a pressure of one volt. A watt is equal to 1/746 horsepower.

**Watthour (Wh):** The **electric energy** unit of measure equal to one **watt** of power supplied to, or taken from, an electric circuit steadily for one hour.

**Waxes:** Solid or semi-solid materials derived from **petroleum** distillates or residues by such treatments as chilling, precipitating with a solvent, or de-oiling. It is a light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax, whether crude scale or fully refined. The three grades included are microcrystalline, crystalline-fully refined, and crystalline-other. The conversion factor is 280 pounds per 42 U.S. gallons per barrel.

**Well:** A hole drilled in the Earth for the purpose of (1) finding or producing **crude oil** or **natural gas**; or (2) producing services related to the production of crude oil or natural gas. See **Completion (Crude Oil/Natural Gas Production)**, **Crude Oil Well**, **Development Well**, **Dry Hole**, **Exploratory Well**, and **Natural Gas Well**.

**Wellhead:** The point at which the **crude oil** (and/or **natural gas**) exits the ground. Following historical precedent, the volume and price for crude oil production are labeled as "wellhead," even though the cost and volume are now generally measured

at the lease boundary. In the context of domestic crude price data, the term “well-head” is the generic term used to reference the production site or lease property.

**Wellhead Price:** The value of **crude oil** or **natural gas** at the mouth of the well. See **Natural Gas Wellhead Price**.

**Well Servicing Unit:** Truck-mounted equipment generally used for downhole services after a **well** is drilled. Services include well completions and recompletions, maintenance, repairs, workovers, and well plugging and abandonments. Jobs range from minor operations, such as pulling the rods and rod pumps out of a **crude oil well**, to major workovers, such as milling out and repairing collapsed casing. Well depth and characteristics determine the type of equipment used.

**Western Europe:** Includes Austria, Belgium, Bosnia and Herzegovina, Croatia, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Macedonia (The Former Yugoslav Republic of), Malta, Netherlands, Norway, Portugal, Serbia and Montenegro, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

**Wind Energy:** Energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power **generators**. Wind pushes against sails, vanes, or blades radiating from a central rotating shaft.

**Wood Energy:** Wood and wood products used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, pulp waste, and spent pulping liquor.

**Working Gas:** The volume of gas in the reservoir that is in addition to the cushion or **base gas**. 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.

**Yellowcake:** A natural **uranium concentrate** that takes its name from its color and texture. Yellowcake typically contains 70 to 90 percent U<sub>3</sub>O<sub>8</sub> (**uranium oxide**) by weight. It is used as feedstock for **uranium** fuel enrichment and fuel pellet fabrication.



# Annual Historical Data Reports

from the Energy Information Administration



The Energy Information Administration (EIA) produces a variety of annual statistical reports on major energy resources and industry activities. Included are:

## ***Annual Energy Review***

Long-term historical data on U.S. energy production, consumption, stocks, trade, and prices. Includes an overview of U.S. energy and detailed chapters on energy consumption, major fuels, financial indicators, energy resources, international energy data, and environmental indicators. Most series begin in 1949.

[www.eia.doe.gov/aer](http://www.eia.doe.gov/aer)

## ***Petroleum Supply Annual***

Information on the supply and disposition of crude oil and petroleum products. Volume 1 contains summary and detailed statistics, including trade, stocks, and refinery data. Volume 2 contains final monthly statistics for the annual data presented in Volume 1.

[www.eia.doe.gov/oil\\_gas/petroleum/data\\_publications/petroleum\\_supply\\_annual/psa\\_volume1/psa\\_volume1.html](http://www.eia.doe.gov/oil_gas/petroleum/data_publications/petroleum_supply_annual/psa_volume1/psa_volume1.html)

## ***Petroleum Marketing Annual***

Information on volumes and prices of crude oils and refined petroleum products, including motor gasoline, distillate fuel oil, residual fuel oil, aviation fuel, kerosene, and propane.

[www.eia.doe.gov/oil\\_gas/petroleum/data\\_publications/petroleum\\_marketing\\_annual/pma.html](http://www.eia.doe.gov/oil_gas/petroleum/data_publications/petroleum_marketing_annual/pma.html)

## ***Natural Gas Annual***

Review of U.S. natural gas activities, including production, consumption, prices, movements, and storage. Summary data are presented by State and at the national level.

[www.eia.doe.gov/oil\\_gas/natural\\_gas/data\\_publications/natural\\_gas\\_annual/nga.html](http://www.eia.doe.gov/oil_gas/natural_gas/data_publications/natural_gas_annual/nga.html)

## ***Annual Coal Report***

Review of U.S. coal production; number of mines; prices; recoverable reserves; employment; productivity; productive capacity; consumption by sector; and stocks. Data are available at the State level.

[www.eia.doe.gov/cneaf/coal/page/acr/acr\\_sum.html](http://www.eia.doe.gov/cneaf/coal/page/acr/acr_sum.html)

## ***Electric Power Annual***

Review of U.S. electric power industry, including generation; generating capacity; demand, capacity resources, and capacity margins; fuel consumption, stocks, receipts, cost, and quality; emissions; trade; retail customers, sales, revenue, and average retail prices; revenue and expense statistics; and demand-side management.

[www.eia.doe.gov/cneaf/electricity/epa/epa\\_sum.html](http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html)

## ***Renewable Energy Annual***

Four reports: *Renewable Energy Trends*; *Solar Thermal and Photovoltaic Collector Manufacturing Activities*; *Survey of Geothermal Heat Pump Shipments*; and *Green Pricing and Net Metering Programs*.

[www.eia.doe.gov/cneaf/solar.renewables/page/rea\\_data/rea\\_sum.html](http://www.eia.doe.gov/cneaf/solar.renewables/page/rea_data/rea_sum.html)

## ***Uranium Marketing Annual Report***

Review of U.S. uranium industry activities relating to uranium raw materials and uranium marketing. Data for the most recent survey year and industry's plans and commitments for the near-term future.

[www.eia.doe.gov/cneaf/nuclear/umar/umar.html](http://www.eia.doe.gov/cneaf/nuclear/umar/umar.html)