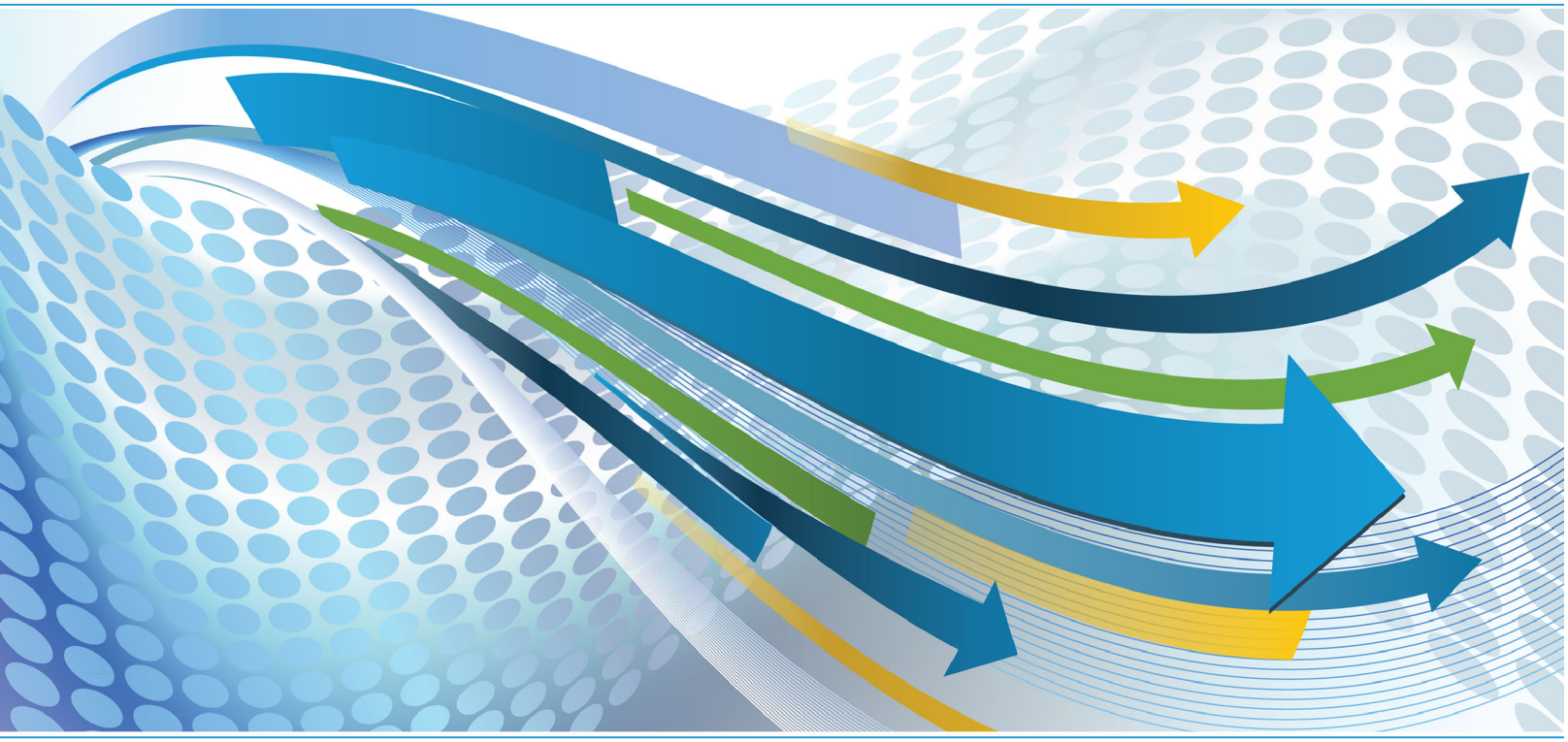
DOE/EIA-0035(2020/12)

December 2020

Monthly Energy Review



Independent Statistics & Analysis
U.S. Energy Information Administration

www.eia.gov/mer

Monthly Energy Review

The *Monthly Energy Review* (MER) is the U.S. Energy Information Administration's (EIA) primary report of recent and historical energy statistics. Included are statistics on total energy production, consumption, stocks, trade, and energy prices; overviews of petroleum, natural gas, coal, electricity, nuclear energy, and renewable energy; carbon dioxide emissions; and data unit conversions.

Release of the MER is in keeping with responsibilities given to EIA in Public Law 95–91 (Department of Energy Organization Act), which states, in part, in Section 205(a)(2):

> *"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 MER is intended for use by members of Congress, federal and state agencies, energy analysts, and the general public. EIA welcomes suggestions from readers regarding MER content and other EIA publications.

Related monthly publications: Other monthly EIA reports are Petroleum Supply Monthly, Petroleum Marketing Monthly, Natural Gas Monthly, and Electric Power Monthly. For more information, contact EIA's Office of Communications via email at infoctr@eia.gov.

Important notes about the data

Data displayed: For tables beginning in 1949, annual data are usually displayed only in 5-year increments between 1950 and 2000 in the tables in Portable Document Format (PDF) files; however, all annual data are shown in the Excel files, comma-separated values (CSV) files, application programming interface (API) files, and in the data browser. Also, only two to three years of monthly data are displayed in the PDF files; however, for many series, monthly data beginning with January 1973 are available in the Excel files, CSV files, API files, and in the data browser.

Comprehensive changes: Each month, most MER tables and figures present data for a new month. These data are usually preliminary (and sometimes estimated or forecasted) and likely to be revised the following month. The first dissemination of most annual data is also preliminary. It is often based on monthly estimates and is likely to be revised later that year after final data are published from sources, according to source data revision policies and publication schedules. In addition, EIA may revise historical data when a major revision in a source publication is needed, when new data sources become available, or when estimation methodologies are improved. A record of current and historical changes to MER data is available at https://www.eia.gov/totalenergy/data/monthly/whatsnew.php.

Annual data from 1949: In 2013, EIA expanded the MER to incorporate annual data as far back as 1949 in those data tables that were previously published in both the Annual Energy Review and MER.

Electronic access

The MER is available on EIA's website in various formats at http://www.eia.gov/totalenergy/data/monthly.

- Full report and report tables: PDF files
- Table data (unrounded): Excel files, CSV files, API files, and data browser
- Graphs: PDF files and data browser

Note: PDF files display selected annual and monthly data; Excel files, CSV files, API files, and data browser display all available annual and monthly data, often with greater precision than the PDF files.

Timing of release: The MER is posted at http://www.eia.gov/totalenergy/data/monthly no later than the last work day of the month.

Released: December 23, 2020

DOE/EIA-0035(2020/12)

Monthly Energy Review

December 2020

U.S. Energy Information Administration
Office of Energy Statistics
U.S. Department of Energy
Washington, DC 20585

This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views in this report therefore should not be construed as representing those of the Department of Energy or other federal agencies.

Contacts

The *Monthly Energy Review* is prepared by the U.S. Energy Information Administration, Office of Energy Statistics, Office of Energy Demand and Integrated Statistics, Integrated Statistics Team, under the direction of Ryan Repice, 202-586-5828 (ryan.repice@eia.gov). Questions and comments specifically related to the *Monthly Energy Review* may be addressed to Alexander Sun, 202-287-5948 (alexander.sun@eia.gov).

For assistance in acquiring data, please contact EIA's Office of Communications at 202-586-8800 (infoctr@eia.gov). Questions about the collection, processing, or interpretation of the information may be directed to the following subject specialists:

Section	**1.**	**Energy Overview** . . . . . Dianne R. Dunn	202-586-2792 dianne.dunn@eia.gov
Section	**2.**	**Energy Consumption by Sector** . . . . . Dianne R. Dunn	202-586-2792 dianne.dunn@eia.gov
Section	**3.**	**Petroleum** . . . . . Javed Zaidi	202-586-1155 javed.zaidi@doe.gov
Section	**4.**	**Natural Gas** . . . . . Michael Kopalek	202-586-4001 michael.kopalek@eia.gov
Section	**5.**	**Crude Oil and Natural Gas Resource Development** . . . Gary Long	202-586-3467 gary.long@eia.gov
Section	**6.**	**Coal** . . . . . .Rosalyn Berry	202-586-6393 rosalyn.berry@eia.gov
Section	**7.**	**Electricity** . . . . . Glenn McGrath	202-586-4325 glenn.mcgrath@eia.gov
Section	**8.**	**Nuclear Energy** . . . . . Tim Shear	202-586-0403 tim.shear@eia.gov
Section	**9.**	**Energy Prices**	
		Petroleum . . . . . Maureen Klein	202-586-8013 maureen.klein@eia.gov
		Natural Gas . . . . . Michael Kopalek	202-586-4001 michael.kopalek@eia.gov
		Average Retail Prices of Electricity . . . . . Peter Wong	202-586-7574 peter.wong@eia.gov
		Cost of Fuel at Electric Generating Plants . . . . . .Eric Harrison	202-586-1158 eric.harrison@eia.gov
Section	**10.**	**Renewable Energy** . . . . . Lolita Jamison	202-586-9567 lolita.jamison@eia.gov
Section	**11.**	**Environment** . . . . . Perry Lindstrom	202-586-0934 perry.lindstrom@eia.gov

Contents

			Page
Section	1.	Energy Overview	1
Section	2.	Energy Consumption by Sector	35
Section	3.	Petroleum	57
Section	4.	Natural Gas	99
Section	5.	Crude Oil and Natural Gas Resource Development	109
Section	6.	Coal	115
Section	7.	Electricity	125
Section	8.	Nuclear Energy	149
Section	9.	Energy Prices	155
Section	10.	Renewable Energy	175
Section	11.	Environment	195
Appendix	A.	British Thermal Unit Conversion Factors	209
Appendix	B.	Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors	225
Appendix	C.	Population, U.S. Gross Domestic Product, and U.S. Gross Output	229
Appendix	D.	Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945	231
Appendix	E.	Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables	235
Glossary			241

Tables

Page

Section 1. Energy Overview
1.1 Primary Energy Overview ... 3
1.2 Primary Energy Production by Source ... 5
1.3 Primary Energy Consumption by Source ... 7
1.4a Primary Energy Imports by Source Overview ... 9
1.4b Primary Energy Exports by Source ... 11
1.4c Primary Energy Net Imports by Source ... 13
1.5 Merchandise Trade Value ... 15
1.6 Cost of Fuels to End Users in Real (1982–1984) Dollars ... 17
1.7 Primary Energy Consumption, Energy Expenditures, and Carbon Dioxide Emissions Indicators ... 19
1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy ... 21
1.9 Heating Degree Days by Census Division ... 22
1.10 Cooling Degree Days by Census Division ... 23
1.11a Non-Combustion Use of Fossil Fuels in Physical Units ... 24
1.11b Heat Content of Non-Combustion Use of Fossil Fuels ... 25

Section 2. Energy Consumption by Sector
2.1 Energy Consumption by Sector ... 37
2.2 Residential Sector Energy Consumption ... 39
2.3 Commercial Sector Energy Consumption ... 41
2.4 Industrial Sector Energy Consumption ... 43
2.5 Transportation Sector Energy Consumption ... 45
2.6 Electric Power Sector Energy Consumption ... 47
2.7 U.S. Government Energy Consumption by Agency, Fiscal Years ... 48
2.8 U.S. Government Energy Consumption by Source, Fiscal Years ... 49

Section 3. Petroleum
3.1 Petroleum Overview ... 59
3.2 Refinery and Blender Net Inputs and Net Production ... 61
3.3 Petroleum Trade
3.3a Overview ... 63
3.3b Imports by Type ... 65
3.3c Imports From OPEC Countries ... 66
3.3d Imports From Non-OPEC Countries ... 67
3.3e Exports by Type ... 68
3.3f Exports by Country of Destination ... 69
3.4 Petroleum Stocks ... 71
3.5 Petroleum Products Supplied by Type ... 73
3.6 Heat Content of Petroleum Products Supplied by Type ... 75
3.7 Petroleum Consumption
3.7a Residential and Commercial Sectors ... 77
3.7b Industrial Sector ... 78
3.7c Transportation and Electric Power Sectors ... 79
3.8 Heat Content of Petroleum Consumption
3.8a Residential and Commercial Sectors ... 82
3.8b Industrial Sector ... 83
3.8c Transportation and Electric Power Sectors ... 84

Section 4. Natural Gas
4.1 Natural Gas Overview ... 101
4.2 Natural Gas Trade by Country ... 102
4.3 Natural Gas Consumption by Sector ... 103
4.4 Natural Gas in Underground Storage ... 104

Tables

Page

Section 5. Crude Oil and Natural Gas Resource Development
5.1 Crude Oil and Natural Gas Drilling Activity Measurements 111
5.2 Crude Oil and Natural Gas Exploratory and Development Wells 112

Section 6. Coal
6.1 Coal Overview 117
6.2 Coal Consumption by Sector 118
6.3 Coal Stocks by Sector 119

Section 7. Electricity
7.1 Electricity Overview 127
7.2 Electricity Net Generation
7.2a Total (All Sectors) 129
7.2b Electric Power Sector 130
7.2c Commercial and Industrial Sectors 131
7.3 Consumption of Combustible Fuels for Electricity Generation
7.3a Total (All Sectors) 133
7.3b Electric Power Sector 134
7.3c Commercial and Industrial Sectors (Selected Fuels) 135
7.4 Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output
7.4a Total (All Sectors) 137
7.4b Electric Power Sector 138
7.4c Commercial and Industrial Sectors (Selected Fuels) 139
7.5 Stocks of Coal and Petroleum: Electric Power Sector 141
7.6 Electricity End Use 143

Section 8. Nuclear Energy
8.1 Nuclear Energy Overview 151
8.2 Uranium Overview 153

Section 9. Energy Prices
9.1 Crude Oil Price Summary 157
9.2 F.O.B. Costs of Crude Oil Imports From Selected Countries 158
9.3 Landed Costs of Crude Oil Imports From Selected Countries 159
9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices 160
9.5 Refiner Prices of Residual Fuel Oil 161
9.6 Refiner Prices of Petroleum Products for Resale 162
9.7 Refiner Prices of Petroleum Products to End Users 163
9.8 Average Retail Prices of Electricity 165
9.9 Cost of Fossil-Fuel Receipts at Electric Generating Plants 167
9.10 Natural Gas Prices 169

Section 10. Renewable Energy
10.1 Renewable Energy Production and Consumption by Source 177
10.2 Renewable Energy Consumption
10.2a Residential and Commercial Sectors 178
10.2b Industrial and Transportation Sectors 179
10.2c Electric Power Sector 180
10.3 Fuel Ethanol Overview 181
10.4 Biodiesel and Other Renewable Fuels Overview 182
10.5 Solar Energy Consumption 183
10.6 Solar Electricity Net Generation 184

Tables

Page

Section 11. Environment
11.1 Carbon Dioxide Emissions From Energy Consumption by Source 197
11.2 Carbon Dioxide Emissions From Energy Consumption: Residential Sector 199
11.3 Carbon Dioxide Emissions From Energy Consumption: Commercial Sector 200
11.4 Carbon Dioxide Emissions From Energy Consumption: Industrial Sector 201
11.5 Carbon Dioxide Emissions From Energy Consumption: Transportation Sector 202
11.6 Carbon Dioxide Emissions From Energy Consumption: Electric Power Sector 203
11.7 Carbon Dioxide Emissions From Biomass Energy Consumption 204

Appendix A. British Thermal Unit Conversion Factors
A1 Approximate Heat Content of Petroleum and Other Liquids 210
A2 Approximate Heat Content of Petroleum Production, Imports, and Exports 211
A3 Approximate Heat Content of Petroleum Consumption and Fuel Ethanol 212
A4 Approximate Heat Content of Natural Gas 213
A5 Approximate Heat Content of Coal and Coal Coke 214
A6 Approximate Heat Rates for Electricity, and Heat Content of Electricity 215

Appendix B. Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors
B1 Metric Conversion Factors 227
B2 Metric Prefixes 228
B3 Other Physical Conversion Factors 228

Appendix C. Population, U.S. Gross Domestic Product, and U.S. Gross Output
C1 Population, U.S. Gross Domestic Product, and U.S. Gross Output 230

Appendix D. Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945
D1 Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945 232

Appendix E. Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables
E1 Noncombustible Renewable Primary Energy Consumption:
E.1a Conventional Hydroelectric Power, Geothermal, and Wind 238
E.1b Solar and Total 239

Figures

		Page
Section 1.	**Energy Overview**	
1.1	Primary Energy Overview	2
1.2	Primary Energy Production	4
1.3	Primary Energy Consumption	6
1.4a	Primary Energy Imports	8
1.4b	Primary Energy Exports	10
1.4c	Primary Energy Net Imports	12
1.5	Merchandise Trade Value	14
1.6	Cost of Fuels to End Users in Real (1982–1984) Dollars	16
1.7	Primary Energy Consumption and Energy Expenditures Indicators	18
1.8	Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949–2018	20
Section 2.	**Energy Consumption by Sector**	
2.1	Energy Consumption by Sector	36
2.2	Residential Sector Energy Consumption	38
2.3	Commercial Sector Energy Consumption	40
2.4	Industrial Sector Energy Consumption	42
2.5	Transportation Sector Energy Consumption	44
2.6	Electric Power Sector Energy Consumption	46
Section 3.	**Petroleum**	
3.1	Petroleum Overview	58
3.2	Refinery and Blender Net Inputs and Net Production	60
3.3	Petroleum Trade	
	3.3a Overview	62
	3.3b Imports and Exports by Type	64
3.4	Petroleum Stocks	70
3.5	Petroleum Products Supplied by Type	72
3.6	Heat Content of Petroleum Products Supplied by Type	74
3.7	Petroleum Consumption by Sector	76
3.8a	Heat Content of Petroleum Consumption by End-User Sector, 1949–2018	80
3.8b	Heat Content of Petroleum Consumption by End-User Sector, Monthly	81
Section 4.	**Natural Gas**	
4.1	Natural Gas	100
Section 5.	**Crude Oil and Natural Gas Resource Development**	
5.1	Crude Oil and Natural Gas Resource Development Indicators	110
Section 6.	**Coal**	
6.1	Coal	116
Section 7.	**Electricity**	
7.1	Electricity Overview	126
7.2	Electricity Net Generation	128
7.3	Consumption of Selected Combustible Fuels for Electricity Generation	132
7.4	Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output	136
7.5	Stocks of Coal and Petroleum: Electric Power Sector	140
7.6	Electricity End Use	142

Figures

Page

Section 8. Nuclear Energy
8.1 Nuclear Energy Overview 150
8.2 Uranium Overview 152

Section 9. Energy Prices
9.1 Petroleum Prices 156
9.2 Average Retail Prices of Electricity 164
9.3 Cost of Fossil-Fuel Receipts at Electric Generating Plants 166
9.4 Natural Gas Prices 168

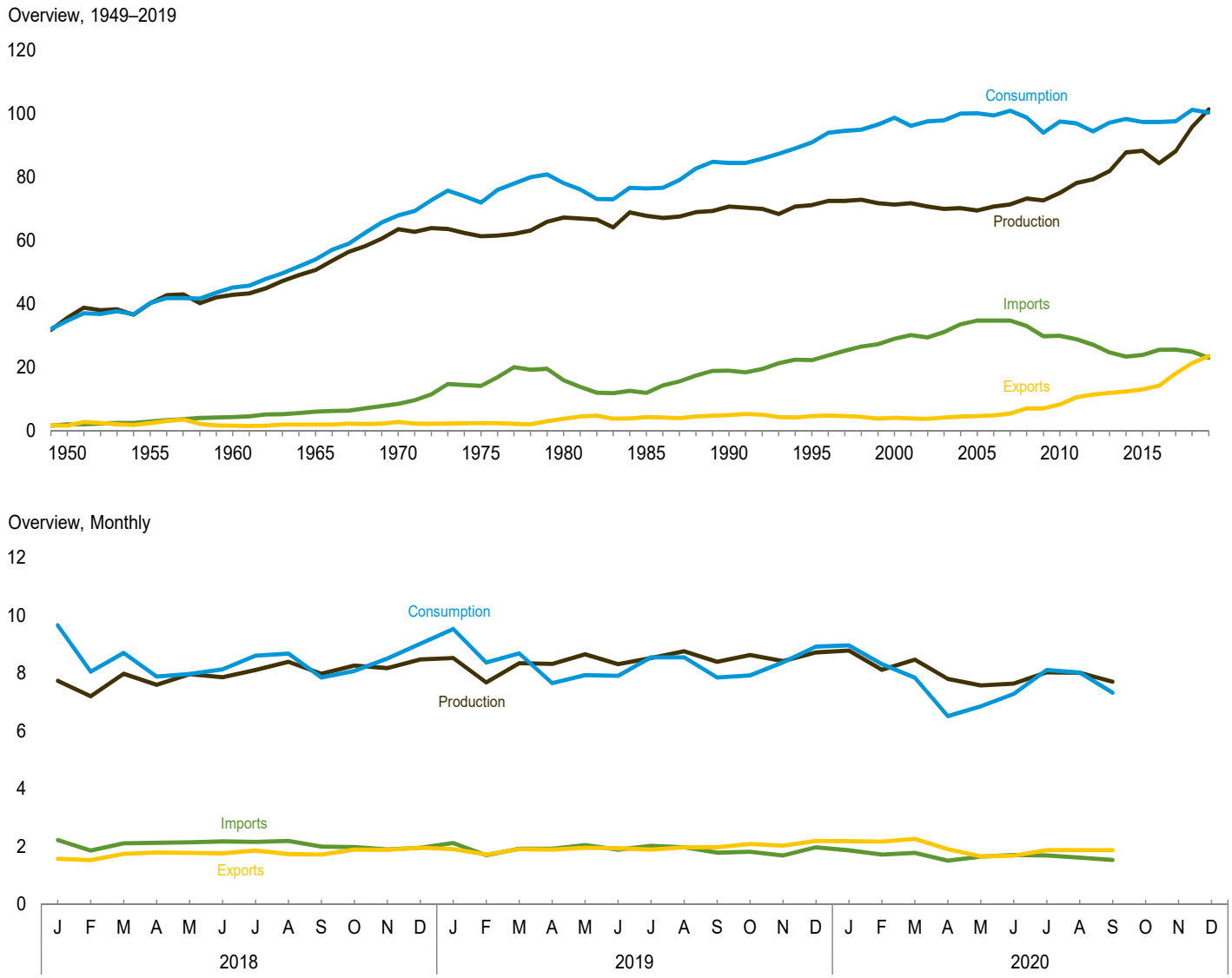
Section 10. Renewable Energy
10.1 Renewable Energy Consumption 176

Section 11. Environment
11.1 Carbon Dioxide Emissions From Energy Consumption by Source 196
11.2 Carbon Dioxide Emissions From Energy Consumption by Sector 198

1. Energy Overview

Figure 1.1 Primary Energy Overview

(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.1.

Table 1.1 Primary Energy Overview

(Quadrillion Btu)

	Production				Trade			Stock Change and Other[d]	Consumption			
	Fossil Fuels[a]	Nuclear Electric Power	Renewable Energy[b]	Total	Imports	Exports	Net Imports[c]		Fossil Fuels[e]	Nuclear Electric Power	Renewable Energy[b]	Total[f]
1950 Total	**32.553**	**0.000**	**2.978**	**35.531**	**1.913**	**1.465**	**0.448**	**-1.380**	**31.615**	**0.000**	**2.978**	**34.599**
1955 Total	**37.347**	**.000**	**2.784**	**40.131**	**2.790**	**2.286**	**.504**	**-.457**	**37.380**	**.000**	**2.784**	**40.178**
1960 Total	**39.855**	**.006**	**2.928**	**42.789**	**4.188**	**1.477**	**2.710**	**-.458**	**42.091**	**.006**	**2.928**	**45.041**
1965 Total	**47.205**	**.043**	**3.396**	**50.644**	**5.892**	**1.829**	**4.063**	**-.754**	**50.515**	**.043**	**3.396**	**53.953**
1970 Total	**59.152**	**.239**	**4.070**	**63.462**	**8.342**	**2.632**	**5.709**	**-1.354**	**63.501**	**.239**	**4.070**	**67.817**
1975 Total	**54.697**	**1.900**	**4.687**	**61.284**	**14.032**	**2.323**	**11.709**	**-1.062**	**65.323**	**1.900**	**4.687**	**71.931**
1980 Total	**58.979**	**2.739**	**5.428**	**67.147**	**15.796**	**3.695**	**12.101**	**-1.227**	**69.782**	**2.739**	**5.428**	**78.021**
1985 Total	**57.502**	**4.076**	**6.084**	**67.661**	**11.781**	**4.196**	**7.584**	**1.088**	**66.035**	**4.076**	**6.084**	**76.334**
1990 Total	**58.523**	**6.104**	**6.040**	**70.668**	**18.817**	**4.752**	**14.065**	**-.299**	**72.281**	**6.104**	**6.040**	**84.433**
1995 Total	**57.496**	**7.075**	**6.557**	**71.129**	**22.180**	**4.496**	**17.684**	**2.118**	**77.162**	**7.075**	**6.559**	**90.931**
2000 Total	**57.307**	**7.862**	**6.102**	**71.271**	**28.865**	**3.962**	**24.904**	**2.528**	**84.620**	**7.862**	**6.104**	**98.702**
2001 Total	**58.485**	**8.029**	**5.162**	**71.675**	**30.052**	**3.731**	**26.321**	**-1.933**	**82.800**	**8.029**	**5.160**	**96.064**
2002 Total	**56.777**	**8.145**	**5.731**	**70.653**	**29.331**	**3.608**	**25.722**	**1.160**	**83.592**	**8.145**	**5.726**	**97.535**
2003 Total	**55.983**	**7.960**	**5.942**	**69.885**	**31.007**	**4.013**	**26.994**	**.956**	**83.909**	**7.960**	**5.944**	**97.835**
2004 Total	**55.884**	**8.223**	**6.063**	**70.169**	**33.492**	**4.351**	**29.141**	**.692**	**85.666**	**8.223**	**6.075**	**100.002**
2005 Total	**54.995**	**8.161**	**6.221**	**69.377**	**34.659**	**4.462**	**30.197**	**.527**	**85.623**	**8.161**	**6.234**	**100.102**
2006 Total	**55.877**	**8.215**	**6.586**	**70.678**	**34.649**	**4.727**	**29.921**	**-1.207**	**84.477**	**8.215**	**6.637**	**99.392**
2007 Total	**56.369**	**8.459**	**6.510**	**71.338**	**34.679**	**5.338**	**29.341**	**.215**	**85.805**	**8.459**	**6.523**	**100.893**
2008 Total	**57.527**	**8.426**	**7.192**	**73.145**	**32.970**	**6.949**	**26.021**	**-.412**	**83.041**	**8.426**	**7.175**	**98.754**
2009 Total	**56.612**	**8.355**	**7.625**	**72.592**	**29.690**	**6.920**	**22.770**	**-1.420**	**77.862**	**8.355**	**7.608**	**93.942**
2010 Total	**58.159**	**8.434**	**8.314**	**74.907**	**29.866**	**8.176**	**21.690**	**.916**	**80.723**	**8.434**	**8.267**	**97.513**
2011 Total	**60.515**	**8.269**	**9.300**	**78.083**	**28.748**	**10.373**	**18.375**	**.404**	**79.263**	**8.269**	**9.204**	**96.863**
2012 Total	**62.291**	**8.062**	**8.886**	**79.239**	**27.068**	**11.267**	**15.801**	**-.666**	**77.304**	**8.062**	**8.847**	**94.374**
2013 Total	**64.177**	**8.244**	**9.418**	**81.839**	**24.623**	**11.788**	**12.835**	**2.443**	**79.224**	**8.244**	**9.451**	**97.117**
2014 Total	**69.616**	**8.338**	**9.767**	**87.720**	**23.241**	**12.270**	**10.971**	**-.415**	**80.017**	**8.338**	**9.740**	**98.276**
2015 Total	**70.201**	**8.337**	**9.729**	**88.267**	**23.794**	**12.902**	**10.892**	**-1.783**	**79.090**	**8.337**	**9.721**	**97.375**
2016 Total	**65.445**	**8.427**	**10.423**	**84.295**	**25.378**	**14.119**	**11.259**	**1.781**	**78.319**	**8.427**	**10.363**	**97.335**
2017 Total	**68.478**	**8.419**	**11.196**	**88.092**	**25.458**	**17.946**	**7.512**	**1.990**	**77.907**	**8.419**	**11.077**	**97.595**
2018 January	5.988	.780	.972	7.741	2.228	1.572	.655	1.263	7.911	.780	.954	9.660
February	5.605	.677	.918	7.200	1.861	1.525	.336	.521	6.476	.677	.892	8.057
March	6.267	.701	1.011	7.979	2.114	1.742	.372	.351	6.990	.701	.996	8.701
April	5.960	.618	1.018	7.597	2.125	1.792	.333	-.049	6.251	.618	1.001	7.881
May	6.212	.704	1.049	7.966	2.142	1.775	.367	-.356	6.219	.704	1.040	7.977
June	6.098	.729	1.030	7.857	2.176	1.762	.414	-.134	6.380	.729	1.015	8.137
July	6.408	.758	.945	8.110	2.161	1.863	.298	.195	6.903	.758	.928	8.604
August	6.692	.756	.949	8.397	2.192	1.737	.454	-.169	6.976	.756	.934	8.683
September	6.443	.677	.865	7.985	1.999	1.723	.275	-.406	6.322	.677	.845	7.854
October	6.743	.621	.902	8.266	1.982	1.894	.088	-.275	6.564	.621	.884	8.078
November	6.603	.669	.905	8.177	1.896	1.884	.012	.319	6.943	.669	.887	8.508
December	6.787	.749	.943	8.480	1.958	1.955	.003	.539	7.336	.749	.925	9.021
Total	**75.807**	**8.438**	**11.508**	**95.754**	**24.833**	**21.224**	**3.610**	**1.798**	**81.271**	**8.438**	**11.301**	**101.162**
2019 January	6.814	.770	.944	8.528	2.122	1.910	.212	.791	7.830	.770	.920	9.531
February	6.134	.676	.873	7.683	1.700	1.725	-.024	.717	6.828	.676	.860	8.375
March	6.679	.680	.990	8.349	1.925	1.912	.013	.329	7.025	.680	.978	8.691
April	6.660	.633	1.030	8.323	1.925	1.893	.032	-.694	6.007	.633	1.013	7.661
May	6.888	.701	1.064	8.653	2.046	1.954	.092	-.809	6.171	.701	1.053	7.935
June	6.597	.718	1.000	8.315	1.889	1.940	-.051	-.360	6.186	.718	.988	7.905
July	6.783	.754	.988	8.525	2.021	1.889	.132	-.109	6.807	.754	.973	8.547
August	7.064	.751	.945	8.760	1.975	1.969	.006	-.215	6.857	.751	.929	8.551
September	6.804	.690	.903	8.397	1.789	1.977	-.188	-.357	6.260	.690	.890	7.852
October	7.052	.648	.930	8.630	1.816	2.088	-.272	-.432	6.351	.648	.921	7.927
November	6.849	.670	.901	8.420	1.688	2.028	-.340	.296	6.807	.670	.887	8.376
December	7.015	.763	.939	8.718	1.969	2.190	-.221	.427	7.227	.763	.920	8.924
Total	**81.339**	**8.452**	**11.509**	**101.299**	**22.865**	**23.474**	**-.609**	**-.417**	**80.357**	**8.452**	**11.332**	**100.274**
2020 January	R 7.011	.774	.995	R 8.781	1.866	2.180	-.314	R .495	7.206	.774	.971	8.963
February	R 6.434	.689	.996	R 8.118	1.719	2.169	-.450	R .643	6.639	.689	.974	8.311
March	R 6.810	.668	.995	R 8.472	1.779	2.261	-.482	R -.148	6.198	.668	.963	R 7.842
April	R 6.269	.618	.918	R 7.806	1.507	1.911	-.404	R -.885	4.978	.618	.910	6.517
May	R 5.872	.672	1.037	R 7.580	1.649	1.653	-.004	R -.719	5.136	.672	1.038	6.858
June	R 5.892	.702	1.051	R 7.644	1.704	1.684	.020	R -.383	5.523	.702	1.044	7.281
July	R 6.301	.725	1.006	R 8.032	R 1.689	1.875	R -.186	R .268	6.373	.725	.998	R 8.114
August	R 6.324	.720	.966	R 8.011	R 1.614	R 1.879	R -.265	R .280	6.334	.720	.952	R 8.026
September	6.124	.686	.894	7.704	1.539	1.872	-.333	-.041	5.747	.686	.883	7.329
9-Month Total	**57.037**	**6.254**	**8.857**	**72.147**	**15.068**	**17.484**	**-2.416**	**-.489**	**54.133**	**6.254**	**8.733**	**69.241**
2019 9-Month Total	**60.423**	**6.371**	**8.737**	**75.531**	**17.392**	**17.169**	**.223**	**-.707**	**59.971**	**6.371**	**8.605**	**75.047**
2018 9-Month Total	**55.674**	**6.399**	**8.758**	**70.832**	**18.998**	**15.492**	**3.506**	**1.216**	**60.427**	**6.399**	**8.605**	**75.554**

[a] Coal, natural gas (dry), crude oil, and natural gas plant liquids.
[b] See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.
[c] Net imports equal imports minus exports.
[d] Includes petroleum stock change and adjustments; natural gas net storage withdrawals and balancing item; coal stock change, losses, and unaccounted for; fuel ethanol stock change; and biodiesel stock change and balancing item.
[e] Coal, coal coke net imports, natural gas, and petroleum.
[f] Also includes electricity net imports.
R=Revised.

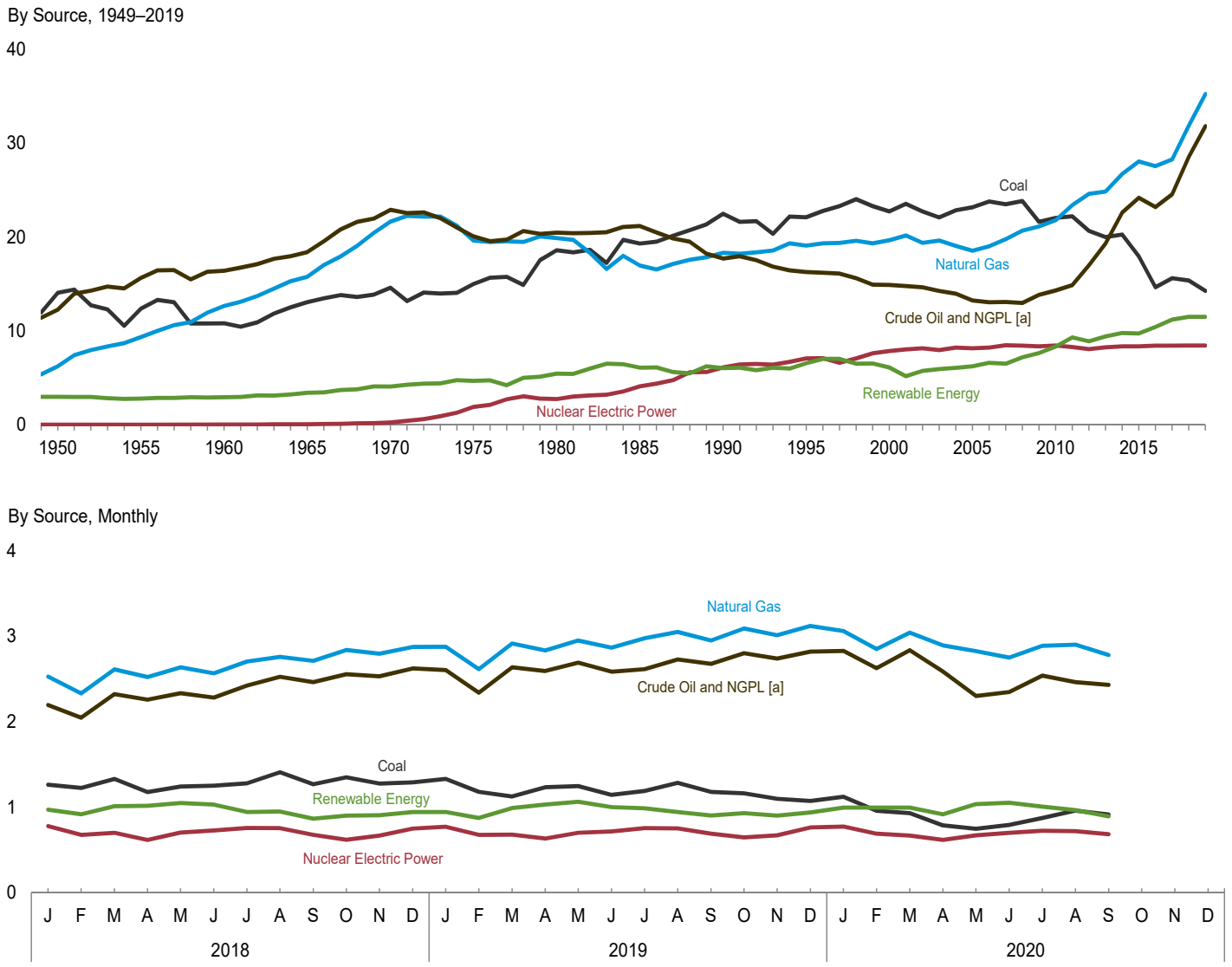
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Production:** Table 1.2. • **Trade:** Tables 1.4a and 1.4b. • **Stock Change and Other:** Calculated as consumption minus production and net imports. • **Consumption:** Table 1.3.

Figure 1.2 Primary Energy Production

(Quadrillion Btu)



[a] National gas plant liquids.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.2.

Table 1.2 Primary Energy Production by Source

(Quadrillion Btu)

	Fossil Fuels					Nuclear Electric Power	Renewable Energy[a]						Total
	Coal[b]	Natural Gas (Dry)	Crude Oil[c]	NGPL[d]	Total		Hydro-electric Power[e]	Geo-thermal	Solar	Wind	Bio-mass	Total	
1950 Total	**14.060**	**6.233**	**11.447**	**0.813**	**32.553**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**35.531**
1955 Total	**12.370**	**9.345**	**14.410**	**1.223**	**37.347**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.131**
1960 Total	**10.817**	**12.656**	**14.935**	**1.447**	**39.855**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**42.789**
1965 Total	**13.055**	**15.775**	**16.521**	**1.853**	**47.205**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**50.644**
1970 Total	**14.607**	**21.666**	**20.401**	**2.478**	**59.152**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**63.462**
1975 Total	**14.989**	**19.640**	**17.729**	**2.338**	**54.697**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**61.284**
1980 Total	**18.598**	**19.908**	**18.249**	**2.225**	**58.979**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**67.147**
1985 Total	**19.325**	**16.980**	**18.992**	**2.204**	**57.502**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**67.661**
1990 Total	**22.488**	**18.326**	**15.571**	**2.138**	**58.523**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**70.668**
1995 Total	**22.130**	**19.082**	**13.887**	**2.398**	**57.496**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.099**	**6.557**	**71.129**
2000 Total	**22.735**	**19.662**	**12.358**	**2.551**	**57.307**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.006**	**6.102**	**71.271**
2001 Total	**23.547**	**20.166**	**12.282**	**2.491**	**58.485**	**8.029**	**2.242**	**.164**	**.062**	**.070**	**2.624**	**5.162**	**71.675**
2002 Total	**22.732**	**19.382**	**12.160**	**2.502**	**56.777**	**8.145**	**2.689**	**.171**	**.060**	**.105**	**2.705**	**5.731**	**70.653**
2003 Total	**22.094**	**19.633**	**11.960**	**2.296**	**55.983**	**7.960**	**2.793**	**.173**	**.058**	**.113**	**2.805**	**5.942**	**69.885**
2004 Total	**22.852**	**19.074**	**11.550**	**2.408**	**55.884**	**8.223**	**2.688**	**.178**	**.058**	**.142**	**2.996**	**6.063**	**70.169**
2005 Total	**23.185**	**18.556**	**10.974**	**2.280**	**54.995**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.101**	**6.221**	**69.377**
2006 Total	**23.790**	**19.022**	**10.767**	**2.299**	**55.877**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.212**	**6.586**	**70.678**
2007 Total	**23.493**	**19.786**	**10.741**	**2.349**	**56.369**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.472**	**6.510**	**71.338**
2008 Total	**23.851**	**20.703**	**10.613**	**2.359**	**57.527**	**8.426**	**2.511**	**.192**	**.074**	**.546**	**3.868**	**7.192**	**73.145**
2009 Total	**21.624**	**21.139**	**11.340**	**2.508**	**56.612**	**8.355**	**2.669**	**.200**	**.078**	**.721**	**3.957**	**7.625**	**72.592**
2010 Total	**22.038**	**21.806**	**11.610**	**2.705**	**58.159**	**8.434**	**2.539**	**.208**	**.091**	**.923**	**4.553**	**8.314**	**74.907**
2011 Total	**22.221**	**23.406**	**11.998**	**2.890**	**60.515**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.704**	**9.300**	**78.083**
2012 Total	**20.677**	**24.610**	**13.842**	**3.162**	**62.291**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.547**	**8.886**	**79.239**
2013 Total	**20.001**	**24.859**	**15.865**	**3.451**	**64.177**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.816**	**9.418**	**81.839**
2014 Total	**20.286**	**26.718**	**18.607**	**4.005**	**69.616**	**8.338**	**2.467**	**.214**	**.338**	**1.728**	**5.020**	**9.767**	**87.720**
2015 Total	**17.946**	**28.067**	**19.712**	**4.476**	**70.201**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.992**	**9.729**	**88.267**
2016 Total	**14.667**	**27.576**	**18.537**	**4.665**	**65.445**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.075**	**10.423**	**84.295**
2017 Total	**15.625**	**28.289**	**19.576**	**4.987**	**68.478**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.099**	**11.196**	**88.092**
2018 January	1.262	2.529	1.769	.429	5.988	.780	.228	.018	.049	.233	.445	.972	7.741
February	1.225	2.332	1.639	.408	5.605	.677	.227	.016	.055	.211	.408	.918	7.200
March	1.332	2.612	1.855	.468	6.267	.701	.235	.018	.074	.241	.443	1.011	7.979
April	1.178	2.523	1.797	.462	5.960	.618	.256	.016	.086	.241	.420	1.018	7.597
May	1.241	2.637	1.850	.484	6.212	.704	.277	.018	.096	.218	.440	1.049	7.966
June	1.251	2.565	1.815	.467	6.098	.729	.251	.017	.102	.225	.435	1.030	7.857
July	1.280	2.704	1.929	.496	6.408	.758	.229	.018	.097	.150	.452	.945	8.110
August	1.408	2.758	2.014	.512	6.692	.756	.200	.018	.095	.181	.455	.949	8.397
September	1.268	2.713	1.962	.500	6.443	.677	.174	.017	.085	.169	.421	.865	7.985
October	1.350	2.839	2.044	.511	6.743	.621	.178	.017	.072	.193	.441	.902	8.266
November	1.278	2.795	2.038	.492	6.603	.669	.199	.017	.056	.200	.432	.905	8.177
December	1.291	2.874	2.123	.499	6.787	.749	.208	.019	.048	.221	.447	.943	8.480
Total	**15.363**	**31.882**	**22.835**	**5.727**	**75.807**	**8.438**	**2.663**	**.209**	**.916**	**2.482**	**5.238**	**11.508**	**95.754**
2019 January	1.331	2.878	2.096	.509	6.814	.770	.221	.018	.052	.216	.437	.944	8.528
February	1.179	2.616	1.863	.476	6.134	.676	.204	.016	.056	.201	.396	.873	7.683
March	1.126	2.915	2.109	.529	6.679	.680	.234	.018	.084	.229	.425	.990	8.349
April	1.234	2.833	2.074	.518	6.660	.633	.248	.016	.095	.257	.414	1.030	8.323
May	1.248	2.950	2.148	.541	6.888	.701	.285	.017	.102	.229	.431	1.064	8.653
June	1.145	2.866	2.066	.519	6.597	.718	.250	.017	.110	.199	.424	1.000	8.315
July	1.191	2.978	2.088	.526	6.783	.754	.221	.018	.113	.196	.439	.988	8.525
August	1.286	3.051	2.195	.533	7.064	.751	.201	.018	.109	.178	.439	.945	8.760
September	1.180	2.949	2.136	.540	6.804	.690	.165	.017	.095	.218	.408	.903	8.397
October	1.162	3.090	2.238	.562	7.052	.648	.163	.016	.085	.245	.422	.930	8.630
November	1.098	3.012	2.198	.540	6.849	.670	.180	.014	.063	.223	.421	.901	8.420
December	1.075	3.121	2.261	.558	7.015	.763	.191	.016	.053	.236	.443	.939	8.718
Total	**14.256**	**35.258**	**25.473**	**6.352**	**81.339**	**8.452**	**2.563**	**.201**	**1.018**	**2.626**	**5.100**	**11.509**	**101.299**
2020 January	1.123	RE 3.060	E 2.253	.575	R 7.011	.774	.226	.017	.066	.251	.436	.995	R 8.781
February	.958	RE 2.851	E 2.106	.519	R 6.434	.689	.235	.016	.078	.259	.407	.996	R 8.118
March	.930	RE 3.043	E 2.250	.587	R 6.810	.668	.209	.019	.093	.260	.414	.995	R 8.472
April	.788	RE 2.894	E 2.053	.534	R 6.269	.618	.196	.018	.112	.261	.332	.918	R 7.806
May	.746	RE 2.825	E 1.770	.531	R 5.872	.672	.272	.018	.131	.251	.364	1.037	R 7.580
June	.793	RE 2.751	E 1.785	.562	R 5.892	.702	.259	.017	.130	.266	.378	1.051	R 7.644
July	R .874	RE 2.888	RE 1.938	.600	R 6.301	.725	.247	.018	.139	.201	.401	1.006	R 8.032
August	R .961	RE 2.900	RE 1.868	.595	R 6.324	.720	.216	.018	.128	.201	.403	.966	R 8.011
September	.914	E 2.779	E 1.856	.574	6.124	.686	.171	.018	.109	.206	.390	.894	7.704
9-Month Total	**8.087**	E **25.992**	E **17.879**	**5.079**	**57.037**	**6.254**	**2.031**	**.159**	**.987**	**2.156**	**3.524**	**8.857**	**72.147**
2019 9-Month Total	**10.921**	**26.035**	**18.775**	**4.692**	**60.423**	**6.371**	**2.029**	**.156**	**.817**	**1.922**	**3.813**	**8.737**	**75.531**
2018 9-Month Total	**11.445**	**23.374**	**16.630**	**4.226**	**55.674**	**6.399**	**2.078**	**.156**	**.739**	**1.868**	**3.917**	**8.758**	**70.832**

[a] Most data are estimates. See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.

[b] Beginning in 1989, includes waste coal supplied. Beginning in 2001, also includes a small amount of refuse recovery. See Table 6.1.

[c] Includes lease condensate.

[d] Natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[e] Conventional hydroelectric power.

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

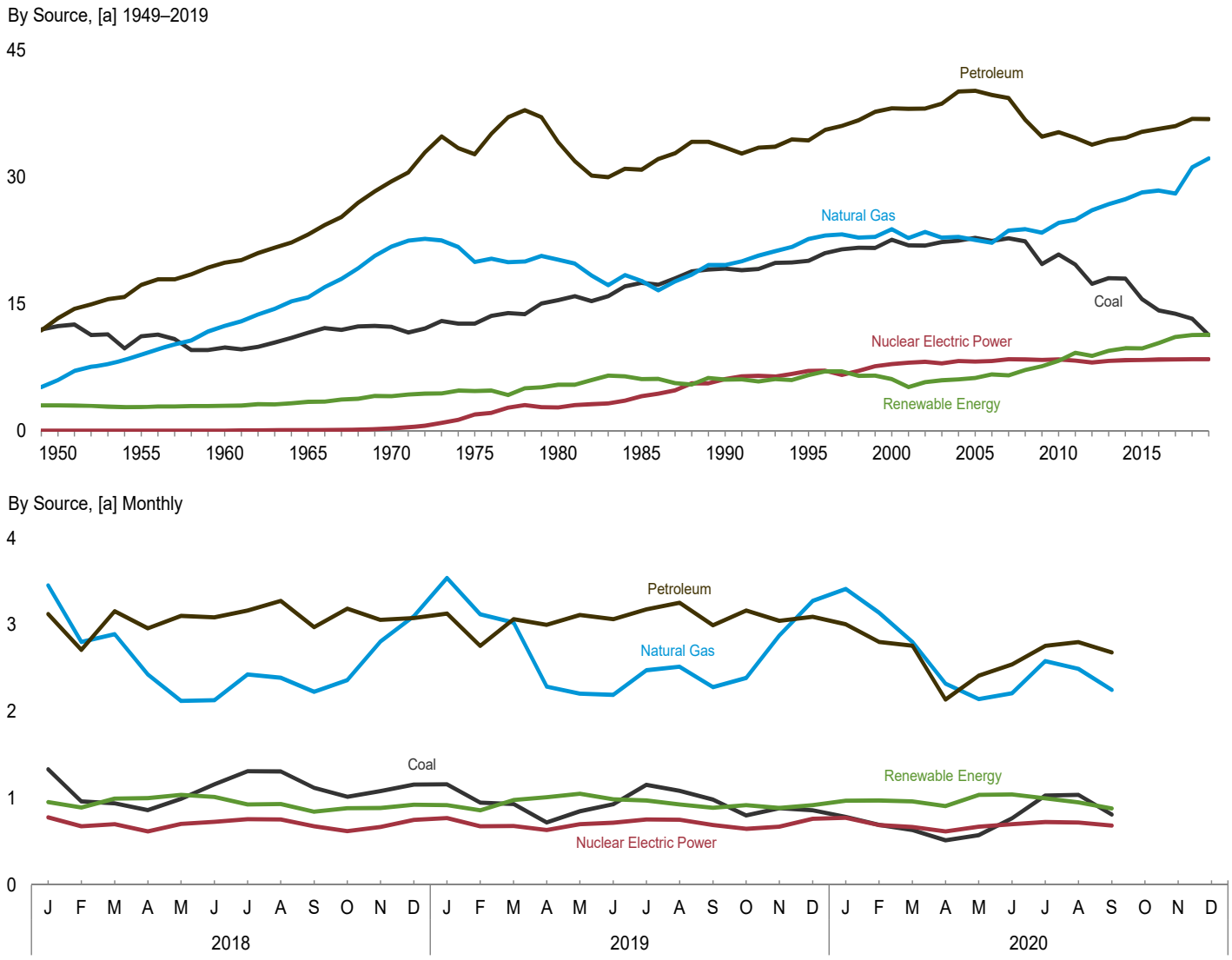
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 1.3 Primary Energy Consumption

(Quadrillion Btu)



[a] Small quantities of net imports of coal coke and electricity are not shown.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.3.

Table 1.3 Primary Energy Consumption by Source

(Quadrillion Btu)

	Fossil Fuels[a]					Renewable Energy[b]						
	Coal	Natural Gas[c]	Petroleum[d]	Total[e]	Nuclear Electric Power	Hydroelectric Power[f]	Geothermal	Solar	Wind	Biomass	Total	Total[g]
1950 Total	**12.347**	**5.968**	**13.298**	**31.615**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**34.599**
1955 Total	**11.167**	**8.998**	**17.225**	**37.380**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.178**
1960 Total	**9.838**	**12.385**	**19.874**	**42.091**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**45.041**
1965 Total	**11.581**	**15.769**	**23.184**	**50.515**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**53.953**
1970 Total	**12.265**	**21.795**	**29.499**	**63.501**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**67.817**
1975 Total	**12.663**	**19.948**	**32.699**	**65.323**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**71.931**
1980 Total	**15.423**	**20.235**	**34.159**	**69.782**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**78.021**
1985 Total	**17.478**	**17.703**	**30.866**	**66.035**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**76.334**
1990 Total	**19.173**	**19.603**	**33.500**	**72.281**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**84.433**
1995 Total	**20.089**	**22.671**	**34.341**	**77.162**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.101**	**6.559**	**90.931**
2000 Total	**22.580**	**23.824**	**38.152**	**84.620**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.008**	**6.104**	**98.702**
2001 Total	**21.914**	**22.773**	**38.084**	**82.800**	**8.029**	**2.242**	**.164**	**.062**	**.070**	**2.622**	**5.160**	**96.064**
2002 Total	**21.904**	**23.510**	**38.117**	**83.592**	**8.145**	**2.689**	**.171**	**.060**	**.105**	**2.701**	**5.726**	**97.535**
2003 Total	**22.321**	**22.831**	**38.707**	**83.909**	**7.960**	**2.793**	**.173**	**.058**	**.113**	**2.806**	**5.944**	**97.835**
2004 Total	**22.466**	**22.923**	**40.139**	**85.666**	**8.223**	**2.688**	**.178**	**.058**	**.142**	**3.008**	**6.075**	**100.002**
2005 Total	**22.797**	**22.565**	**40.217**	**85.623**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.114**	**6.234**	**100.102**
2006 Total	**22.447**	**22.239**	**39.731**	**84.477**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.262**	**6.637**	**99.392**
2007 Total	**22.749**	**23.663**	**39.368**	**85.805**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.485**	**6.523**	**100.893**
2008 Total	**22.387**	**23.843**	**36.769**	**83.041**	**8.426**	**2.511**	**.192**	**.074**	**.546**	**3.851**	**7.175**	**98.754**
2009 Total	**19.691**	**23.416**	**34.779**	**77.862**	**8.355**	**2.669**	**.200**	**.078**	**.721**	**3.940**	**7.608**	**93.942**
2010 Total	**20.834**	**24.575**	**35.321**	**80.723**	**8.434**	**2.539**	**.208**	**.091**	**.923**	**4.506**	**8.267**	**97.513**
2011 Total	**19.658**	**24.955**	**34.639**	**79.263**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.609**	**9.204**	**96.863**
2012 Total	**17.378**	**26.089**	**33.833**	**77.304**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.508**	**8.847**	**94.374**
2013 Total	**18.039**	**26.805**	**34.398**	**79.224**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.848**	**9.451**	**97.117**
2014 Total	**17.998**	**27.383**	**34.658**	**80.017**	**8.338**	**2.467**	**.214**	**.338**	**1.728**	**4.994**	**9.740**	**98.276**
2015 Total	**15.549**	**28.191**	**35.368**	**79.090**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.983**	**9.721**	**97.375**
2016 Total	**14.226**	**28.400**	**35.712**	**78.319**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.015**	**10.363**	**97.335**
2017 Total	**13.837**	**28.055**	**36.043**	**77.907**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**4.979**	**11.077**	**97.595**
2018 January	1.334	3.456	3.126	7.911	.780	.228	.018	.049	.233	.426	.954	9.660
February	.963	2.803	2.711	6.476	.677	.227	.016	.055	.211	.382	.892	8.057
March	.941	2.892	3.159	6.990	.701	.235	.018	.074	.241	.428	.996	8.701
April	.863	2.429	2.962	6.251	.618	.256	.016	.086	.241	.402	1.001	7.881
May	.993	2.123	3.104	6.219	.704	.277	.018	.096	.218	.430	1.040	7.977
June	1.160	2.132	3.089	6.380	.729	.251	.017	.102	.225	.419	1.015	8.137
July	1.311	2.429	3.165	6.903	.758	.229	.018	.097	.150	.435	.928	8.604
August	1.309	2.391	3.277	6.976	.756	.200	.018	.095	.181	.440	.934	8.683
September	1.120	2.228	2.975	6.322	.677	.174	.017	.085	.169	.400	.845	7.854
October	1.017	2.362	3.187	6.564	.621	.178	.017	.072	.193	.423	.884	8.078
November	1.082	2.808	3.057	6.943	.669	.199	.017	.056	.200	.414	.887	8.508
December	1.158	3.101	3.080	7.336	.749	.208	.019	.048	.221	.429	.925	9.021
Total	**13.252**	**31.153**	**36.892**	**81.271**	**8.438**	**2.663**	**.209**	**.916**	**2.482**	**5.031**	**11.301**	**101.162**
2019 January	1.161	3.542	3.130	7.830	.770	.221	.018	.052	.216	.413	.920	9.531
February	.949	3.123	2.757	6.828	.676	.204	.016	.056	.201	.383	.860	8.375
March	.933	3.028	3.065	7.025	.680	.234	.018	.084	.229	.413	.978	8.691
April	.719	2.288	3.001	6.007	.633	.248	.016	.095	.257	.397	1.013	7.661
May	.850	2.207	3.116	6.171	.701	.285	.017	.102	.229	.420	1.053	7.935
June	.931	2.192	3.065	6.186	.718	.250	.017	.110	.199	.412	.988	7.905
July	1.154	2.476	3.179	6.807	.754	.221	.018	.113	.196	.425	.973	8.547
August	1.086	2.517	3.255	6.857	.751	.201	.018	.109	.178	.423	.929	8.551
September	.986	2.282	2.995	6.260	.690	.165	.017	.095	.218	.395	.890	7.852
October	.801	2.387	3.165	6.351	.648	.163	.016	.085	.245	.412	.921	7.927
November	.885	2.878	3.046	6.807	.670	.180	.014	.063	.223	.407	.887	8.376
December	.860	3.277	3.093	7.227	.763	.191	.016	.053	.236	.424	.920	8.924
Total	**11.316**	**32.196**	**36.866**	**80.357**	**8.452**	**2.563**	**.201**	**1.018**	**2.626**	**4.924**	**11.332**	**100.274**
2020 January	.785	3.415	3.007	7.206	.774	.226	.017	.066	.251	.412	.971	8.963
February	.694	R 3.141	2.805	6.639	.689	.235	.016	.078	.259	.386	.974	8.311
March	.633	2.805	2.761	6.198	.668	.209	.019	.093	.260	.383	.963	R 7.842
April	.515	R 2.324	2.140	4.978	.618	.196	.018	.112	.261	.323	.910	6.517
May	.575	R 2.144	2.416	5.136	.672	.272	.018	.131	.251	.365	1.038	6.858
June	.769	2.211	2.544	5.523	.702	.259	.017	.130	.266	.371	1.044	7.281
July	1.031	R 2.583	2.759	6.373	.725	.247	.018	.139	.201	.392	.998	R 8.114
August	1.039	2.494	2.801	6.334	.720	.216	.018	.128	.201	.390	.952	R 8.026
September	.813	2.251	2.683	5.747	.686	.171	.018	.109	.206	.380	.883	7.329
9-Month Total	**6.854**	**23.371**	**23.916**	**54.133**	**6.254**	**2.031**	**.159**	**.987**	**2.156**	**3.401**	**8.733**	**69.241**
2019 9-Month Total	**8.770**	**23.654**	**27.562**	**59.971**	**6.371**	**2.029**	**.156**	**.817**	**1.922**	**3.681**	**8.605**	**75.047**
2018 9-Month Total	**9.994**	**22.883**	**27.568**	**60.427**	**6.399**	**2.078**	**.156**	**.739**	**1.868**	**3.764**	**8.605**	**75.554**

[a] Includes non-combustion use of fossil fuels.
[b] Most data are estimates. See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.
[c] Natural gas only; excludes supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Petroleum products supplied; excludes biofuels that have been blended with petroleum—biofuels are included in "Biomass."
[e] Includes coal coke net imports. See Tables 1.4c.
[f] Conventional hydroelectric power.
[g] Includes coal coke net imports and electricity net imports, which are not separately displayed. See Tables 1.4c.

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

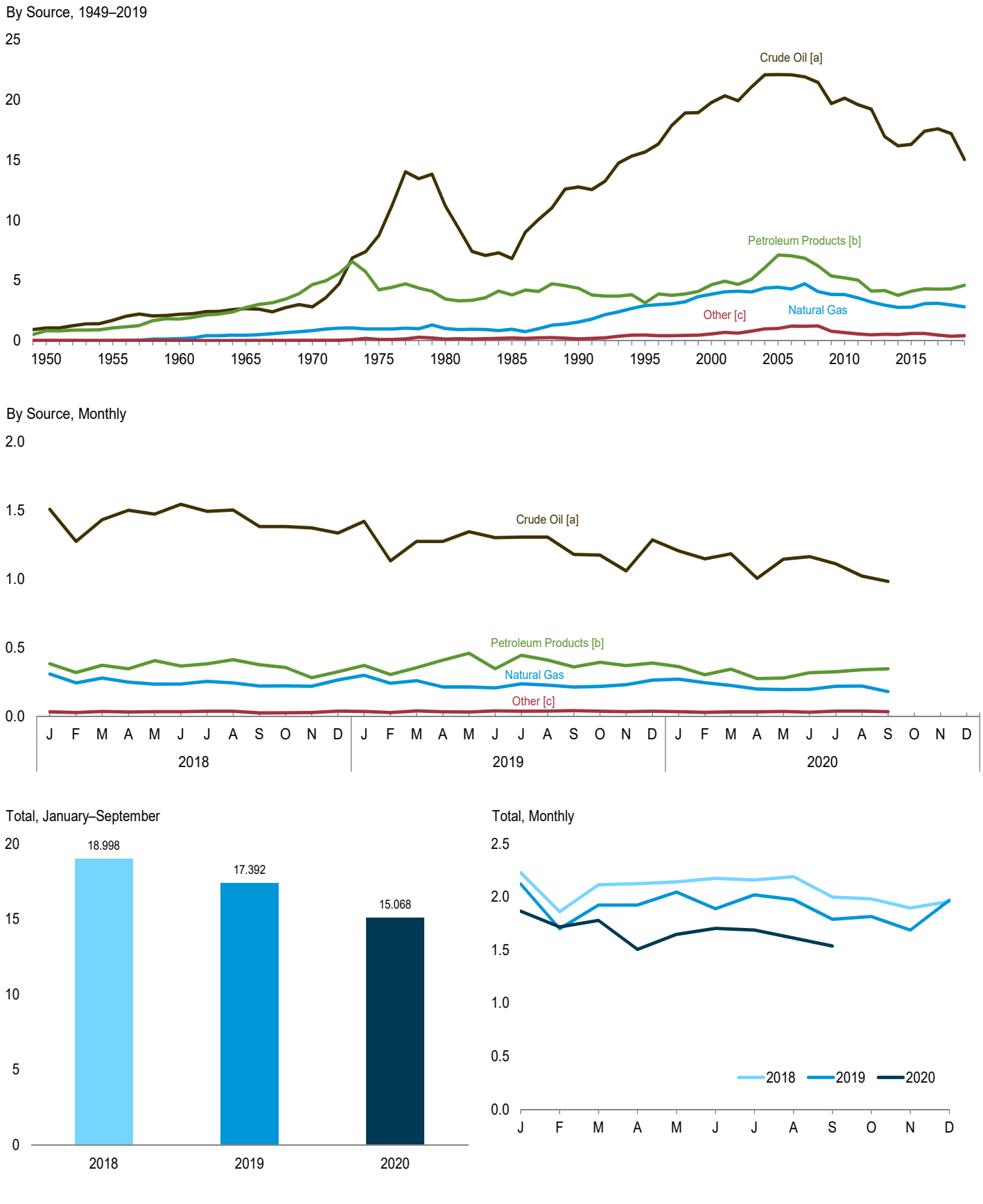
Notes: • See "Primary Energy Consumption" in Glossary. • See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 1.4a Primary Energy Imports

(Quadrillion Btu)



[a] Crude oil and lease condensate, includes imports into the Strategic Petroleum Reserve, which began in 1977.
[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.
[c] Coal, coal coke, biomass, and electricity.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.4a.

Table 1.4a Primary Energy Imports by Source

(Quadrillion Btu)

	Imports								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Total	Biomass[c]	Electricity	Total
1950 Total	**0.009**	**0.011**	**0.000**	**1.056**	**0.830**	**1.886**	**NA**	**0.007**	**1.913**
1955 Total	**.008**	**.003**	**.011**	**1.691**	**1.061**	**2.752**	**NA**	**.016**	**2.790**
1960 Total	**.007**	**.003**	**.161**	**2.196**	**1.802**	**3.999**	**NA**	**.018**	**4.188**
1965 Total	**.005**	**.002**	**.471**	**2.654**	**2.748**	**5.402**	**NA**	**.012**	**5.892**
1970 Total	**.001**	**.004**	**.846**	**2.814**	**4.656**	**7.470**	**NA**	**.021**	**8.342**
1975 Total	**.024**	**.045**	**.978**	**8.721**	**4.227**	**12.948**	**NA**	**.038**	**14.032**
1980 Total	**.030**	**.016**	**1.006**	**11.195**	**3.463**	**14.658**	**NA**	**.085**	**15.796**
1985 Total	**.049**	**.014**	**.952**	**6.814**	**3.796**	**10.609**	**NA**	**.157**	**11.781**
1990 Total	**.067**	**.019**	**1.551**	**12.766**	**4.351**	**17.117**	**NA**	**.063**	**18.817**
1995 Total	**.237**	**.095**	**2.901**	**15.669**	**3.131**	**18.800**	**.001**	**.146**	**22.180**
2000 Total	**.313**	**.094**	**3.869**	**19.783**	**4.641**	**24.424**	**(s)**	**.166**	**28.865**
2001 Total	**.495**	**.063**	**4.068**	**20.348**	**4.946**	**25.294**	**.002**	**.131**	**30.052**
2002 Total	**.422**	**.080**	**4.104**	**19.920**	**4.677**	**24.597**	**.002**	**.125**	**29.331**
2003 Total	**.626**	**.068**	**4.042**	**21.060**	**5.105**	**26.165**	**.002**	**.104**	**31.007**
2004 Total	**.682**	**.170**	**4.365**	**22.082**	**6.063**	**28.145**	**.013**	**.117**	**33.492**
2005 Total	**.762**	**.088**	**4.450**	**22.091**	**7.108**	**29.198**	**.012**	**.150**	**34.659**
2006 Total	**.906**	**.101**	**4.291**	**22.085**	**7.054**	**29.139**	**.066**	**.146**	**34.649**
2007 Total	**.909**	**.061**	**4.723**	**21.914**	**6.842**	**28.756**	**.055**	**.175**	**34.679**
2008 Total	**.855**	**.089**	**4.084**	**21.448**	**6.214**	**27.662**	**.085**	**.195**	**32.970**
2009 Total	**.566**	**.009**	**3.845**	**19.699**	**5.367**	**25.066**	**.027**	**.178**	**29.690**
2010 Total	**.484**	**.030**	**3.834**	**20.140**	**5.219**	**25.359**	**.004**	**.154**	**29.866**
2011 Total	**.327**	**.035**	**3.555**	**19.595**	**5.038**	**24.633**	**.019**	**.178**	**28.748**
2012 Total	**.212**	**.028**	**3.216**	**19.239**	**4.122**	**23.361**	**.049**	**.202**	**27.068**
2013 Total	**.199**	**.003**	**2.955**	**16.957**	**4.169**	**21.126**	**.102**	**.236**	**24.623**
2014 Total	**.252**	**.002**	**2.763**	**16.178**	**3.773**	**19.951**	**.046**	**.227**	**23.241**
2015 Total	**.256**	**.003**	**2.786**	**16.299**	**4.111**	**20.410**	**.079**	**.259**	**23.794**
2016 Total	**.220**	**.006**	**3.082**	**17.392**	**4.309**	**21.700**	**.123**	**.248**	**25.378**
2017 Total	**.168**	**.001**	**3.109**	**17.597**	**4.277**	**21.874**	**.081**	**.224**	**25.458**
2018 January	.010	(s)	.307	1.507	.381	1.888	.004	.018	2.228
February	.007	(s)	.243	1.273	.318	1.591	.003	.016	1.861
March	.011	(s)	.278	1.432	.371	1.803	.004	.019	2.114
April	.010	.001	.248	1.501	.345	1.847	.004	.015	2.125
May	.011	.001	.233	1.472	.404	1.876	.004	.018	2.142
June	.010	(s)	.234	1.544	.365	1.909	.004	.019	2.176
July	.014	(s)	.253	1.492	.382	1.873	.002	.018	2.161
August	.010	(s)	.243	1.502	.411	1.913	.005	.021	2.192
September	.005	(s)	.219	1.381	.375	1.756	.003	.015	1.999
October	.006	.001	.221	1.382	.354	1.736	.006	.013	1.982
November	.008	(s)	.218	1.372	.280	1.652	.005	.013	1.896
December	.018	(s)	.264	1.334	.323	1.657	.004	.014	1.958
Total	**.122**	**.003**	**2.961**	**17.192**	**4.309**	**21.501**	**.048**	**.199**	**24.833**
2019 January	.013	(s)	.298	1.420	.370	1.790	.005	.016	2.122
February	.007	(s)	.239	1.132	.303	1.435	.003	.016	1.700
March	.015	(s)	.259	1.274	.353	1.628	.006	.017	1.925
April	.011	.001	.212	1.273	.409	1.681	.006	.015	1.925
May	.008	(s)	.213	1.344	.459	1.803	.005	.016	2.046
June	.014	(s)	.206	1.300	.345	1.645	.007	.018	1.889
July	.011	(s)	.236	1.304	.444	1.748	.007	.019	2.021
August	.011	.001	.226	1.305	.408	1.713	.006	.020	1.975
September	.013	(s)	.213	1.179	.358	1.537	.007	.018	1.789
October	.015	(s)	.216	1.173	.392	1.565	.007	.012	1.816
November	.010	.001	.229	1.058	.368	1.426	.006	.017	1.688
December	.011	(s)	.262	1.284	.387	1.671	.007	.018	1.969
Total	**.138**	**.003**	**2.810**	**15.045**	**4.596**	**19.641**	**.072**	**.201**	**22.865**
2020 January	.011	(s)	.269	1.204	.361	1.565	.006	.016	1.866
February	.007	(s)	.244	1.146	.302	1.448	.005	.015	1.719
March	.009	(s)	.223	1.183	.342	1.525	.005	.017	1.779
April	.007	(s)	.198	1.004	.274	1.278	.007	.016	1.507
May	.010	.001	.194	1.144	.278	1.421	.005	.018	1.649
June	.006	(s)	.195	1.163	.317	1.480	.006	.018	1.704
July	.010	(s)	.218	1.110	.324	1.434	.005	R .023	R 1.689
August	.006	(s)	.219	1.021	.338	1.358	.007	R .023	R 1.614
September	.010	.001	.179	.981	.345	1.327	.006	.016	1.539
9-Month Total	**.078**	**.002**	**1.939**	**9.955**	**2.881**	**12.837**	**.051**	**.162**	**15.068**
2019 9-Month Total	**.102**	**.002**	**2.103**	**11.531**	**3.448**	**14.979**	**.051**	**.155**	**17.392**
2018 9-Month Total	**.089**	**.002**	**2.259**	**13.104**	**3.352**	**16.456**	**.033**	**.159**	**18.998**

[a] Crude oil and lease condensate. Includes imports into the Strategic Petroleum Reserve, which began in 1977.

[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.

[c] Fuel ethanol (minus denaturant) and biodiesel.

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

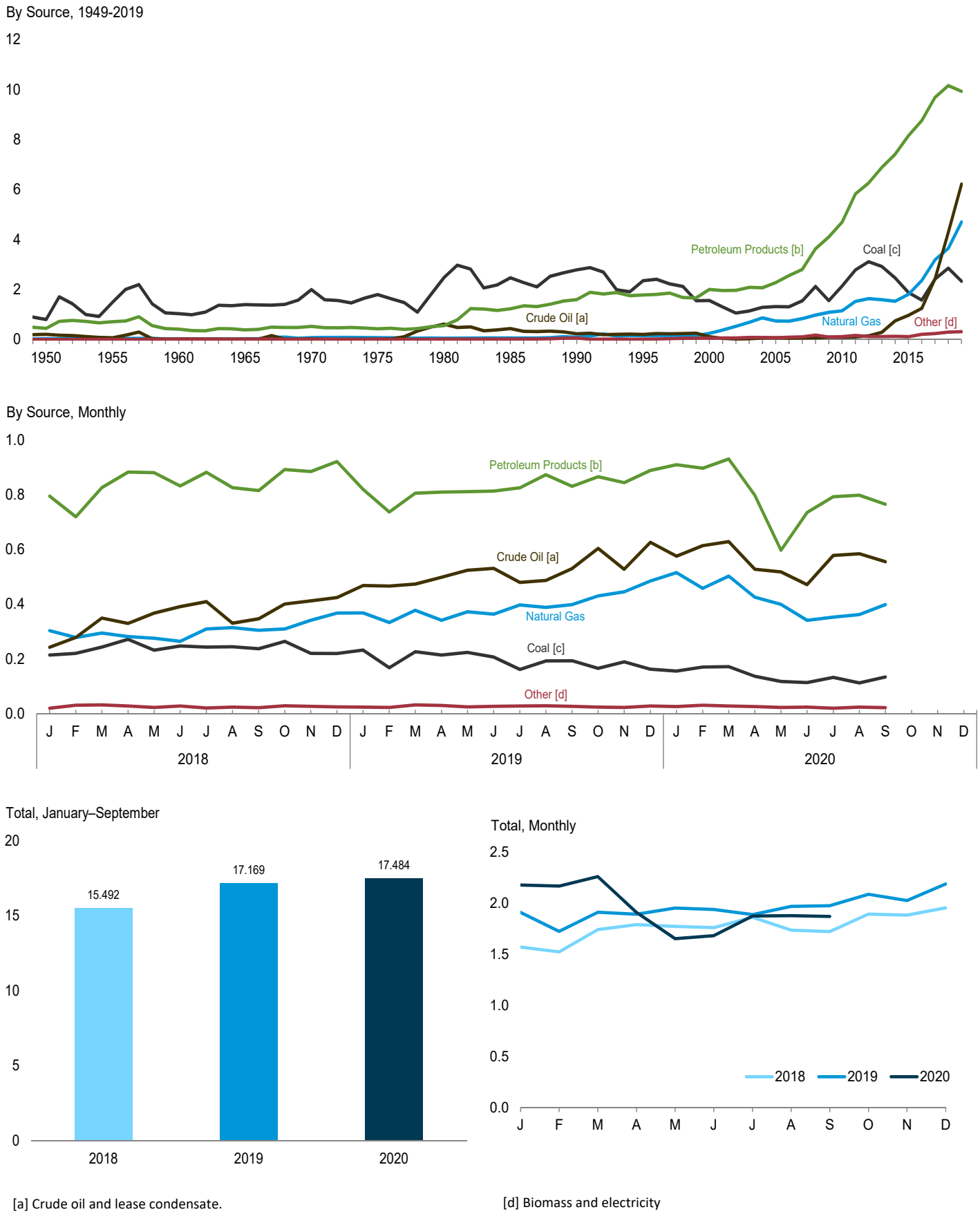
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 1.4b Primary Energy Exports

(Quadrillion Btu)



[a] Crude oil and lease condensate.
[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.
[c] Includes coal coke.
[d] Biomass and electricity

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.4b.

Table 1.4b Primary Energy Exports by Source

(Quadrillion Btu)

	Exports								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Total	Biomass[c]	Electricity	Total
1950 Total	**0.786**	**0.010**	**0.027**	**0.202**	**0.440**	**0.642**	**NA**	**0.001**	**1.465**
1955 Total	**1.465**	**.013**	**.032**	**.067**	**.707**	**.774**	**NA**	**.002**	**2.286**
1960 Total	**1.023**	**.009**	**.012**	**.018**	**.413**	**.431**	**NA**	**.003**	**1.477**
1965 Total	**1.376**	**.021**	**.027**	**.006**	**.386**	**.392**	**NA**	**.013**	**1.829**
1970 Total	**1.936**	**.061**	**.072**	**.029**	**.520**	**.549**	**NA**	**.014**	**2.632**
1975 Total	**1.761**	**.032**	**.074**	**.012**	**.427**	**.439**	**NA**	**.017**	**2.323**
1980 Total	**2.421**	**.051**	**.049**	**.609**	**.551**	**1.160**	**NA**	**.014**	**3.695**
1985 Total	**2.438**	**.028**	**.056**	**.432**	**1.225**	**1.657**	**NA**	**.017**	**4.196**
1990 Total	**2.772**	**.014**	**.087**	**.230**	**1.594**	**1.824**	**NA**	**.055**	**4.752**
1995 Total	**2.318**	**.034**	**.156**	**.200**	**1.776**	**1.976**	**NA**	**.012**	**4.496**
2000 Total	**1.528**	**.028**	**.245**	**.106**	**2.003**	**2.110**	**NA**	**.051**	**3.962**
2001 Total	**1.265**	**.033**	**.377**	**.043**	**1.956**	**1.999**	**(s)**	**.056**	**3.731**
2002 Total	**1.032**	**.020**	**.520**	**.019**	**1.963**	**1.982**	**(s)**	**.054**	**3.608**
2003 Total	**1.117**	**.018**	**.686**	**.026**	**2.083**	**2.110**	**.001**	**.082**	**4.013**
2004 Total	**1.253**	**.033**	**.862**	**.057**	**2.068**	**2.125**	**.001**	**.078**	**4.351**
2005 Total	**1.273**	**.043**	**.735**	**.067**	**2.276**	**2.344**	**.001**	**.065**	**4.462**
2006 Total	**1.264**	**.040**	**.730**	**.052**	**2.554**	**2.606**	**.005**	**.083**	**4.727**
2007 Total	**1.507**	**.036**	**.830**	**.058**	**2.803**	**2.861**	**.036**	**.069**	**5.338**
2008 Total	**2.071**	**.049**	**.972**	**.061**	**3.626**	**3.686**	**.089**	**.083**	**6.949**
2009 Total	**1.515**	**.032**	**1.082**	**.093**	**4.101**	**4.194**	**.035**	**.062**	**6.920**
2010 Total	**2.101**	**.036**	**1.147**	**.088**	**4.691**	**4.780**	**.047**	**.065**	**8.176**
2011 Total	**2.751**	**.024**	**1.519**	**.100**	**5.820**	**5.919**	**.108**	**.051**	**10.373**
2012 Total	**3.087**	**.024**	**1.633**	**.143**	**6.261**	**6.404**	**.078**	**.041**	**11.267**
2013 Total	**2.895**	**.021**	**1.587**	**.284**	**6.886**	**7.170**	**.076**	**.039**	**11.788**
2014 Total	**2.435**	**.023**	**1.528**	**.744**	**7.414**	**8.158**	**.081**	**.045**	**12.270**
2015 Total	**1.852**	**.021**	**1.800**	**.964**	**8.153**	**9.118**	**.080**	**.031**	**12.902**
2016 Total	**1.546**	**.025**	**2.356**	**1.238**	**8.752**	**9.990**	**.181**	**.021**	**14.119**
2017 Total	**2.388**	**.030**	**3.182**	**2.424**	**9.684**	**12.108**	.206	**.032**	**17.946**
2018 January	.210	.004	.303	.242	.795	1.037	.015	.004	1.572
February	.218	.001	.278	.278	.719	.997	.025	.004	1.525
March	.240	.002	.294	.349	.826	1.175	.026	.004	1.742
April	.268	.003	.281	.329	.883	1.213	.021	.006	1.792
May	.228	.002	.275	.367	.881	1.248	.018	.004	1.775
June	.246	.002	.264	.391	.832	1.224	.023	.004	1.762
July	.241	.002	.309	.409	.882	1.291	.017	.003	1.863
August	.243	.001	.314	.330	.826	1.155	.019	.004	1.737
September	.235	.001	.304	.346	.815	1.161	.018	.004	1.723
October	.262	.002	.309	.400	.892	1.293	.025	.003	1.894
November	.217	.003	.341	.412	.885	1.297	.022	.004	1.884
December	.216	.003	.367	.424	.921	1.345	.021	.003	1.955
Total	**2.824**	**.029**	**3.640**	**4.277**	**10.158**	**14.434**	**.249**	**.047**	**21.224**
2019 January	.229	.003	.368	.468	.820	1.287	.018	.005	1.910
February	.166	.001	.333	.466	.737	1.203	.017	.005	1.725
March	.225	.001	.377	.473	.806	1.279	.022	.009	1.912
April	.212	.002	.341	.498	.810	1.309	.022	.007	1.893
May	.221	.002	.372	.524	.811	1.335	.019	.006	1.954
June	.204	.002	.363	.531	.813	1.344	.021	.005	1.940
July	.159	.002	.397	.479	.825	1.304	.020	.007	1.889
August	.190	.002	.388	.487	.873	1.360	.022	.006	1.969
September	.190	.003	.398	.530	.831	1.360	.019	.006	1.977
October	.162	.003	.430	.604	.866	1.470	.018	.005	2.088
November	.186	.002	.445	.527	.844	1.372	.018	.004	2.028
December	.160	.003	.485	.626	.889	1.515	.023	.004	2.190
Total	**2.305**	**.024**	**4.698**	**6.212**	**9.926**	**16.139**	**.240**	**.068**	**23.474**
2020 January	.153	.002	.515	.575	.910	1.485	.020	.005	2.180
February	.168	.002	.458	.614	.897	1.511	.025	.006	2.169
March	.170	.001	.502	.629	.931	1.561	.023	.004	2.261
April	.135	.001	.425	.527	.798	1.325	.020	.005	1.911
May	.116	.001	.399	.518	.597	1.115	.016	.005	1.653
June	.113	(s)	.341	.471	.735	1.206	.019	.004	1.684
July	.132	.001	.352	.578	.793	1.371	.015	.004	1.875
August	.111	.001	.362	.584	.798	1.382	.020	R .003	R 1.879
September	.132	.001	.398	.555	.765	1.320	.017	.003	1.872
9-Month Total	**1.229**	**.010**	**3.753**	**5.051**	**7.226**	**12.277**	**.174**	**.040**	**17.484**
2019 9-Month Total	**1.797**	**.016**	**3.338**	**4.455**	**7.327**	**11.782**	**.181**	**.055**	**17.169**
2018 9-Month Total	**2.130**	**.020**	**2.623**	**3.041**	**7.460**	**10.500**	**.182**	**.037**	**15.492**

[a] Crude oil and lease condensate.

[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.

[c] Beginning in 2001, includes biodiesel. Beginning in 2010, also includes fuel ethanol (minus denaturant). Beginning in 2016, also includes wood and wood-derived fuels.

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

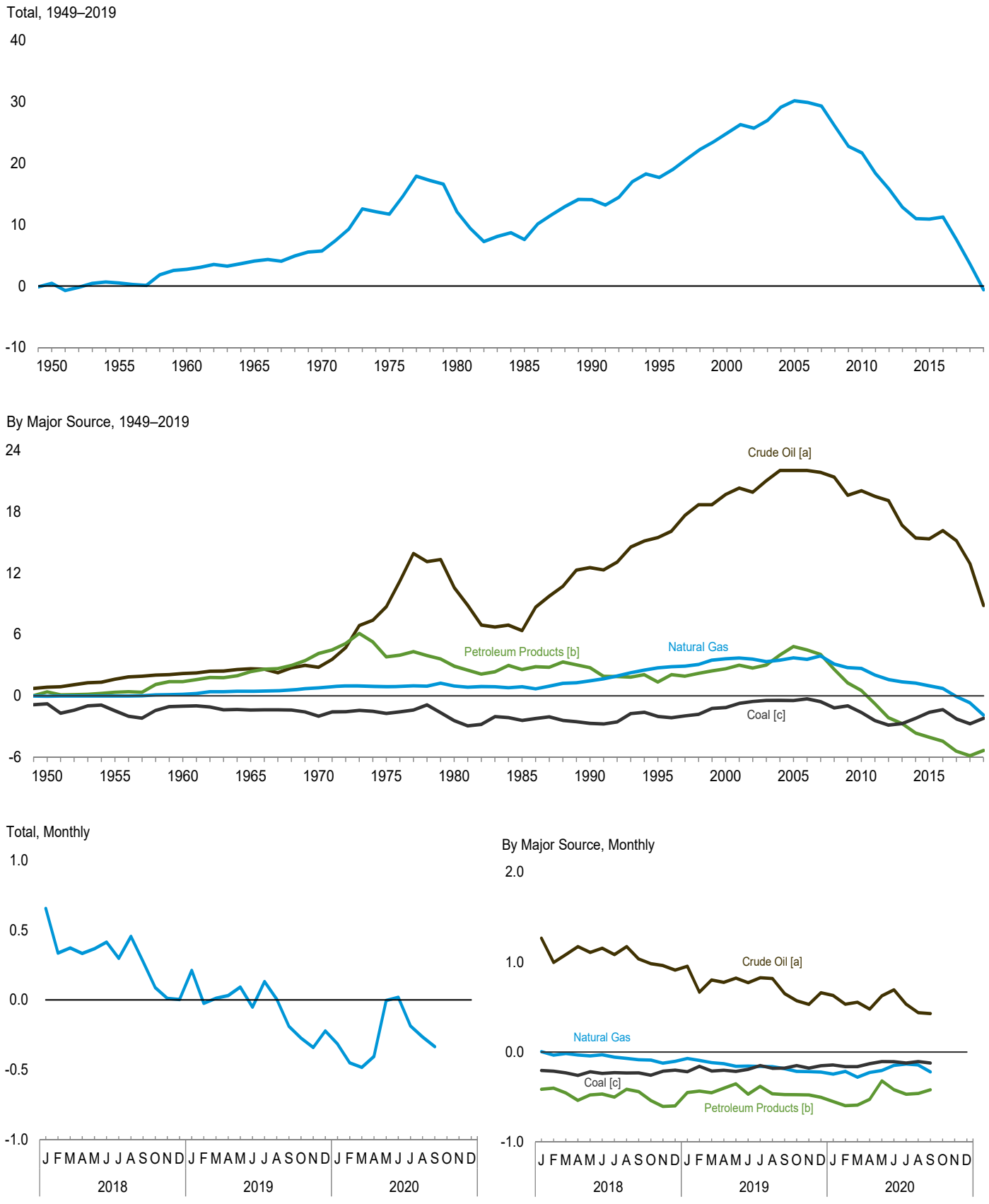
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 1.4c Primary Energy Net Imports

(Quadrillion Btu)



[a] Crude oil and lease condensate. Includes imports into the Strategic Petroleum Reserve, which began in 1977.

[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.

[c] Includes coal coke.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.

Source: Table 1.4c.

Table 1.4c Primary Energy Net Imports by Source

(Quadrillion Btu)

	Net Imports[a]								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[b]	Petroleum Products[c]	Total	Biomass[d]	Electricity	Total
1950 Total	**-0.777**	**0.001**	**-0.027**	**0.854**	**0.390**	**1.244**	**NA**	**0.006**	**0.448**
1955 Total	**-1.456**	**-.010**	**-.021**	**1.624**	**.354**	**1.978**	**NA**	**.014**	**.504**
1960 Total	**-1.017**	**-.006**	**.149**	**2.178**	**1.389**	**3.568**	**NA**	**.015**	**2.710**
1965 Total	**-1.372**	**-.018**	**.444**	**2.648**	**2.362**	**5.010**	**NA**	**(s)**	**4.063**
1970 Total	**-1.935**	**-.058**	**.774**	**2.785**	**4.136**	**6.921**	**NA**	**.007**	**5.709**
1975 Total	**-1.738**	**.014**	**.904**	**8.708**	**3.800**	**12.508**	**NA**	**.021**	**11.709**
1980 Total	**-2.391**	**-.035**	**.957**	**10.586**	**2.912**	**13.499**	**NA**	**.071**	**12.101**
1985 Total	**-2.389**	**-.013**	**.896**	**6.381**	**2.570**	**8.952**	**NA**	**.140**	**7.584**
1990 Total	**-2.705**	**.005**	**1.464**	**12.536**	**2.757**	**15.293**	**NA**	**.008**	**14.065**
1995 Total	**-2.081**	**.061**	**2.745**	**15.469**	**1.355**	**16.824**	**.001**	**.134**	**17.684**
2000 Total	**-1.215**	**.065**	**3.623**	**19.676**	**2.638**	**22.314**	**(s)**	**.115**	**24.904**
2001 Total	**-.771**	**.029**	**3.691**	**20.305**	**2.990**	**23.294**	**.001**	**.075**	**26.321**
2002 Total	**-.610**	**.061**	**3.583**	**19.901**	**2.714**	**22.615**	**.002**	**.072**	**25.722**
2003 Total	**-.491**	**.051**	**3.356**	**21.034**	**3.021**	**24.055**	**.001**	**.022**	**26.994**
2004 Total	**-.571**	**.138**	**3.503**	**22.025**	**3.995**	**26.020**	**.012**	**.039**	**29.141**
2005 Total	**-.512**	**.044**	**3.714**	**22.023**	**4.831**	**26.855**	**.011**	**.085**	**30.197**
2006 Total	**-.358**	**.061**	**3.560**	**22.032**	**4.501**	**26.533**	**.062**	**.063**	**29.921**
2007 Total	**-.598**	**.025**	**3.893**	**21.855**	**4.040**	**25.895**	**.019**	**.107**	**29.341**
2008 Total	**-1.215**	**.041**	**3.112**	**21.388**	**2.588**	**23.976**	**-.004**	**.112**	**26.021**
2009 Total	**-.949**	**-.024**	**2.763**	**19.606**	**1.266**	**20.872**	**-.009**	**.116**	**22.770**
2010 Total	**-1.617**	**-.006**	**2.687**	**20.052**	**.528**	**20.580**	**-.042**	**.089**	**21.690**
2011 Total	**-2.423**	**.011**	**2.036**	**19.495**	**-.781**	**18.714**	**-.089**	**.127**	**18.375**
2012 Total	**-2.875**	**.004**	**1.583**	**19.096**	**-2.139**	**16.957**	**-.029**	**.161**	**15.801**
2013 Total	**-2.696**	**-.017**	**1.369**	**16.673**	**-2.717**	**13.956**	**.026**	**.197**	**12.835**
2014 Total	**-2.183**	**-.022**	**1.235**	**15.434**	**-3.641**	**11.793**	**-.034**	**.182**	**10.971**
2015 Total	**-1.596**	**-.018**	**.986**	**15.335**	**-4.042**	**11.292**	**-.001**	**.227**	**10.892**
2016 Total	**-1.326**	**-.019**	**.725**	**16.154**	**-4.443**	**11.710**	**-.058**	**.227**	**11.259**
2017 Total	**-2.220**	**-.029**	**-.073**	**15.173**	**-5.407**	**9.766**	**-.124**	**.192**	**7.512**
2018 January	-.200	-.004	.004	1.265	-.414	.851	-.011	.014	.655
February	-.211	-.001	-.035	.995	-.401	.594	-.023	.012	.336
March	-.230	-.002	-.017	1.083	-.455	.628	-.022	.015	.372
April	-.258	-.002	-.033	1.172	-.538	.634	-.017	.010	.333
May	-.217	-.002	-.042	1.106	-.477	.628	-.014	.014	.367
June	-.235	-.001	-.030	1.153	-.467	.685	-.019	.015	.414
July	-.227	-.002	-.056	1.082	-.500	.582	-.014	.015	.298
August	-.233	-.001	-.071	1.172	-.414	.758	-.015	.017	.454
September	-.230	-.001	-.085	1.035	-.440	.595	-.014	.011	.275
October	-.255	-.002	-.089	.982	-.539	.444	-.019	.010	.088
November	-.209	-.003	-.123	.960	-.605	.355	-.016	.009	.012
December	-.198	-.003	-.104	.910	-.598	.312	-.016	.011	.003
Total	**-2.702**	**-.026**	**-.679**	**12.915**	**-5.849**	**7.066**	**-.201**	**.152**	**3.610**
2019 January	-.217	-.003	-.070	.952	-.450	.503	-.013	.011	.212
February	-.159	-.001	-.094	.666	-.434	.232	-.014	.011	-.024
March	-.210	-.001	-.118	.801	-.453	.349	-.016	.008	.013
April	-.201	-.001	-.130	.774	-.402	.373	-.017	.008	.032
May	-.212	-.002	-.159	.821	-.352	.468	-.013	.010	.092
June	-.191	-.002	-.157	.770	-.469	.301	-.014	.012	-.051
July	-.149	-.002	-.161	.825	-.381	.444	-.014	.013	.132
August	-.180	-.001	-.163	.817	-.465	.353	-.017	.014	.006
September	-.177	-.002	-.185	.649	-.473	.176	-.012	.012	-.188
October	-.147	-.002	-.214	.569	-.474	.095	-.011	.007	-.272
November	-.177	-.002	-.216	.530	-.476	.055	-.012	.012	-.340
December	-.149	-.003	-.223	.658	-.502	.156	-.016	.014	-.221
Total	**-2.167**	**-.021**	**-1.888**	**8.833**	**-5.331**	**3.502**	**-.168**	**.133**	**-.609**
2020 January	-.142	-.001	-.246	.629	-.549	.080	-.014	.011	-.314
February	-.161	-.002	-.214	.532	-.595	-.063	-.020	.010	-.450
March	-.160	-.001	-.279	.554	-.589	-.036	-.018	.013	-.482
April	-.127	-.001	-.226	.477	-.524	-.047	-.013	.011	-.404
May	-.106	(s)	-.205	.625	-.320	.306	-.011	.012	-.004
June	-.107	(s)	-.147	.692	-.418	.274	-.013	.013	.020
July	-.122	(s)	-.134	.532	-.469	.063	-.011	R .019	R -.186
August	-.105	-.001	-.143	.437	-.461	-.023	-.013	R .020	R -.265
September	-.122	-.001	-.220	.427	-.420	.007	-.011	.013	-.333
9-Month Total	**-1.152**	**-.008**	**-1.814**	**4.904**	**-4.345**	**.560**	**-.123**	**.122**	**-2.416**
2019 9-Month Total	**-1.695**	**-.014**	**-1.235**	**7.076**	**-3.878**	**3.198**	**-.130**	**.100**	**.223**
2018 9-Month Total	**-2.041**	**-.018**	**-.364**	**10.063**	**-4.108**	**5.955**	**-.149**	**.123**	**3.506**

[a] Net imports equal imports minus exports.

[b] Crude oil and lease condensate. Includes imports into the Strategic Petroleum Reserve, which began in 1977.

[c] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.

[d] Beginning in 2001, includes biodiesel. Beginning in 2010, also includes fuel ethanol (minus denaturant). Beginning in 2016, also includes wood and wood-derived fuels.

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

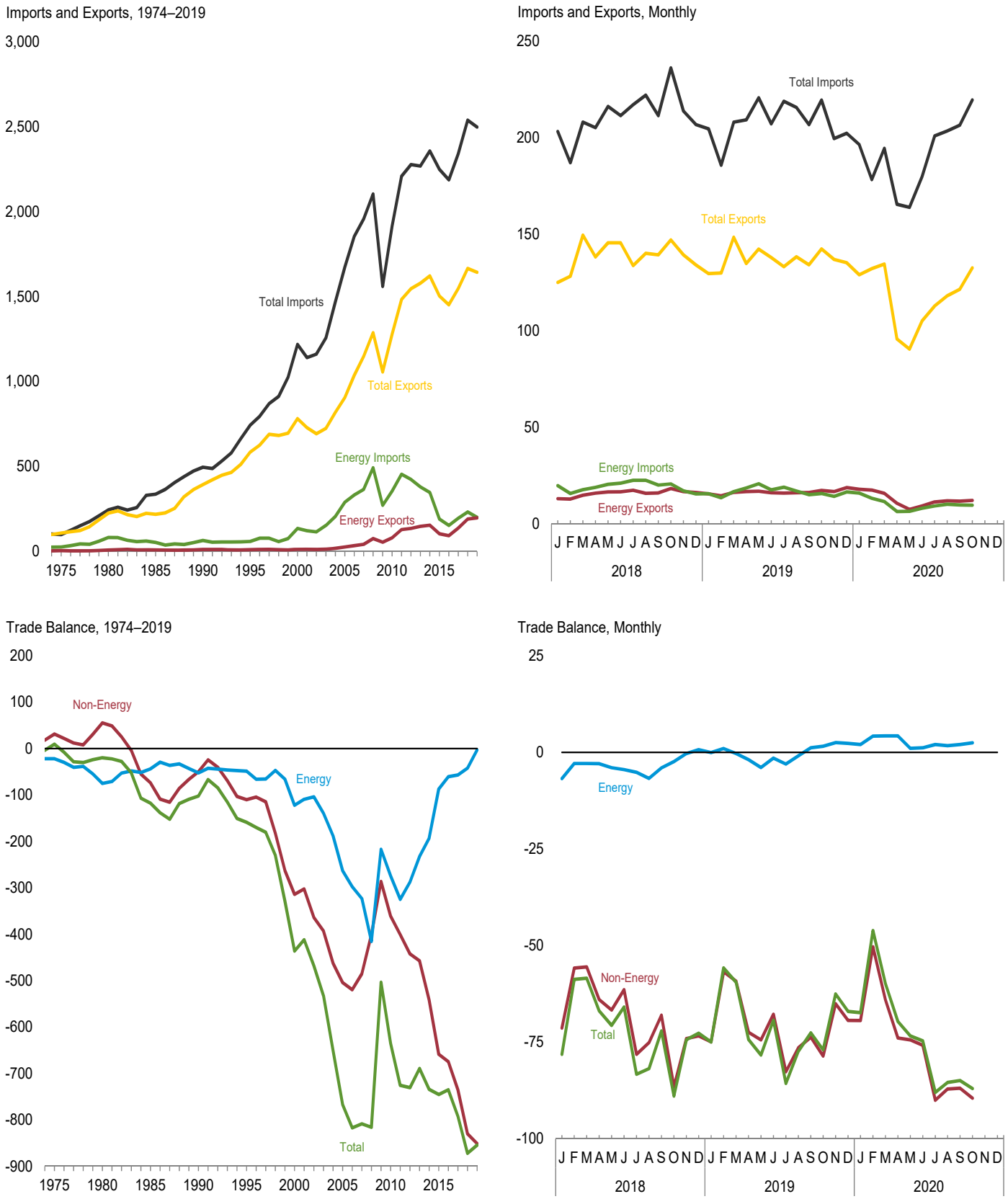
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: Tables 1.4a and 1.4b.

Figure 1.5 Merchandise Trade Value

(Billion Dollars[a])



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.5.

Table 1.5 Merchandise Trade Value

(Million Dollars[a])

	Petroleum[b]			Energy[c]			Non-Energy Balance	Total Merchandise		
	Exports	Imports	Balance	Exports	Imports	Balance		Exports	Imports	Balance
1974 Total	**792**	**24,668**	**-23,876**	**3,444**	**25,454**	**-22,010**	**18,126**	**99,437**	**103,321**	**-3,884**
1975 Total	**907**	**25,197**	**-24,289**	**4,470**	**26,476**	**-22,006**	**31,557**	**108,856**	**99,305**	**9,551**
1980 Total	**2,833**	**78,637**	**-75,803**	**7,982**	**82,924**	**-74,942**	**55,246**	**225,566**	**245,262**	**-19,696**
1985 Total	**4,707**	**50,475**	**-45,768**	**9,971**	**53,917**	**-43,946**	**-73,765**	**218,815**	**336,526**	**-117,712**
1990 Total	**6,901**	**61,583**	**-54,682**	**12,233**	**64,661**	**-52,428**	**-50,068**	**393,592**	**496,088**	**-102,496**
1995 Total	**6,321**	**54,368**	**-48,047**	**10,358**	**59,109**	**-48,751**	**-110,050**	**584,742**	**743,543**	**-158,801**
2000 Total	**10,192**	**119,251**	**-109,059**	**13,179**	**135,367**	**-122,188**	**-313,916**	**781,918**	**1,218,022**	**-436,104**
2001 Total	**8,868**	**102,747**	**-93,879**	**12,494**	**121,923**	**-109,429**	**-302,470**	**729,100**	**1,140,999**	**-411,899**
2002 Total	**8,569**	**102,663**	**-94,094**	**11,541**	**115,748**	**-104,207**	**-364,056**	**693,103**	**1,161,366**	**-468,263**
2003 Total	**10,209**	**132,433**	**-122,224**	**13,768**	**153,298**	**-139,530**	**-392,820**	**724,771**	**1,257,121**	**-532,350**
2004 Total	**13,130**	**179,266**	**-166,136**	**18,642**	**206,660**	**-188,018**	**-462,912**	**818,775**	**1,469,704**	**-650,930**
2005 Total	**19,155**	**250,068**	**-230,913**	**26,488**	**289,723**	**-263,235**	**-504,242**	**905,978**	**1,673,455**	**-767,477**
2006 Total	**28,171**	**299,714**	**-271,543**	**34,711**	**332,500**	**-297,789**	**-519,515**	**1,036,635**	**1,853,938**	**-817,304**
2007 Total	**33,293**	**327,620**	**-294,327**	**41,725**	**364,987**	**-323,262**	**-485,501**	**1,148,199**	**1,956,962**	**-808,763**
2008 Total	**61,695**	**449,847**	**-388,152**	**76,075**	**491,885**	**-415,810**	**-400,389**	**1,287,442**	**2,103,641**	**-816,199**
2009 Total	**44,509**	**251,833**	**-207,324**	**54,536**	**271,739**	**-217,203**	**-286,379**	**1,056,043**	**1,559,625**	**-503,582**
2010 Total	**64,753**	**333,472**	**-268,719**	**80,625**	**354,982**	**-274,357**	**-361,005**	**1,278,495**	**1,913,857**	**-635,362**
2011 Total	**[b]102,180**	**[b]431,866**	**[b]-329,686**	**128,989**	**453,839**	**-324,850**	**-400,597**	**1,482,508**	**2,207,954**	**-725,447**
2012 Total	**111,949**	**408,509**	**-296,560**	**136,054**	**423,860**	**-287,806**	**-442,640**	**1,545,821**	**2,276,267**	**-730,446**
2013 Total	**123,244**	**363,141**	**-239,897**	**147,572**	**379,758**	**-232,186**	**-457,284**	**1,578,517**	**2,267,987**	**-689,470**
2014 Total	**127,818**	**326,709**	**-198,891**	**154,498**	**347,474**	**-192,976**	**-541,506**	**1,621,874**	**2,356,356**	**-734,482**
2015 Total	**85,890**	**177,455**	**-91,565**	**103,612**	**190,501**	**-86,889**	**-658,594**	**1,503,328**	**2,248,811**	**-745,483**
2016 Total	**74,921**	**142,920**	**-67,999**	**92,971**	**153,800**	**-60,829**	**-674,497**	**1,451,460**	**2,186,786**	**-735,326**
2017 Total	**104,975**	**181,672**	**-76,697**	**137,920**	**194,790**	**-56,870**	**-735,526**	**1,547,195**	**2,339,591**	**-792,396**
2018 January	10,015	18,086	-8,071	13,086	19,870	-6,784	-71,369	125,034	203,187	-78,153
February	9,786	14,623	-4,837	12,859	15,746	-2,887	-55,844	128,235	186,966	-58,731
March	11,571	16,733	-5,162	14,880	17,788	-2,908	-55,534	149,547	207,989	-58,442
April	12,710	18,028	-5,318	15,953	18,898	-2,945	-63,956	138,235	205,136	-66,901
May	13,118	19,738	-6,620	16,587	20,544	-3,957	-66,696	145,513	216,167	-70,653
June	13,477	20,295	-6,818	16,609	21,082	-4,473	-61,415	145,503	211,391	-65,888
July	13,777	21,605	-7,828	17,476	22,624	-5,148	-78,139	133,740	217,027	-83,287
August	12,248	21,597	-9,349	15,870	22,621	-6,751	-75,119	140,118	221,988	-81,870
September	12,708	19,282	-6,574	16,088	20,123	-4,035	-68,044	139,331	211,410	-72,079
October	14,637	19,760	-5,123	18,362	20,760	-2,398	-86,564	147,077	236,040	-88,962
November	13,193	15,809	-2,616	16,794	17,113	-319	-74,071	139,337	213,727	-74,390
December	12,420	13,932	-1,512	16,280	15,574	706	-73,391	134,018	206,702	-72,685
Total	**149,661**	**219,489**	**-69,828**	**190,843**	**232,741**	**-41,898**	**-830,143**	**1,665,688**	**2,537,729**	**-872,041**
2019 January	11,965	14,077	-2,112	15,609	15,674	-65	-74,915	129,608	204,587	-74,980
February	11,642	12,273	-631	14,555	13,581	974	-56,750	129,919	185,694	-55,776
March	12,896	15,335	-2,439	16,389	16,707	-318	-59,179	148,472	207,969	-59,497
April	12,953	17,808	-4,855	16,746	18,631	-1,885	-72,450	134,838	209,174	-74,335
May	13,369	20,087	-6,718	16,948	20,860	-3,912	-74,442	142,237	220,591	-78,354
June	12,771	16,978	-4,207	16,142	17,657	-1,515	-67,782	137,870	207,167	-69,297
July	12,669	18,265	-5,596	16,000	19,036	-3,036	-82,634	133,129	218,799	-85,670
August	13,196	16,240	-3,044	16,122	17,009	-887	-76,449	138,310	215,647	-77,336
September	12,912	14,396	-1,484	16,289	15,131	1,158	-73,721	134,162	206,725	-72,563
October	13,925	15,027	-1,102	17,376	15,804	1,572	-78,569	142,418	219,414	-76,997
November	13,187	13,281	-94	16,798	14,279	2,519	-65,055	136,940	199,476	-62,536
December	15,069	15,307	-238	18,863	16,531	2,332	-69,364	135,258	202,289	-67,032
Total	**156,553**	**189,075**	**-32,522**	**197,836**	**200,900**	**-3,064**	**-851,307**	**1,643,161**	**2,497,531**	**-854,371**
2020 January	14,000	14,873	-873	17,912	15,914	1,998	-69,402	128,993	196,397	-67,404
February	14,074	12,543	1,531	17,509	13,286	4,223	-50,326	132,182	178,285	-46,103
March	12,407	11,023	1,384	15,863	11,628	4,235	-64,057	134,560	194,382	-59,822
April	7,904	5,966	1,938	10,749	6,485	4,264	-73,916	95,799	165,452	-69,652
May	4,960	5,907	-947	7,559	6,518	1,041	-74,423	90,549	163,931	-73,382
June	6,722	7,555	-833	9,275	8,108	1,167	-75,820	105,056	179,709	-74,653
July	8,712	8,644	68	11,391	9,348	2,043	-90,055	112,827	200,839	-88,012
August	9,177	9,445	-268	11,946	10,230	1,716	-87,131	118,044	203,459	-85,415
September	8,878	9,156	-278	11,836	9,833	2,003	[R] -86,929	[R] 121,469	[R] 206,395	[R] -84,926
October	8,603	8,927	-324	12,197	9,715	2,482	-89,472	132,511	219,501	-86,990
10-Month Total	**95,438**	**94,039**	**1,398**	**126,237**	**101,065**	**25,172**	**-761,531**	**1,171,989**	**1,908,350**	**-736,360**
2019 10-Month Total	**128,296**	**160,486**	**-32,188**	**162,175**	**170,089**	**-7,914**	**-716,891**	**1,370,963**	**2,095,766**	**-724,803**
2018 10-Month Total	**124,047**	**189,747**	**-65,700**	**157,770**	**200,056**	**-42,286**	**-682,680**	**1,392,334**	**2,117,300**	**-724,966**

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

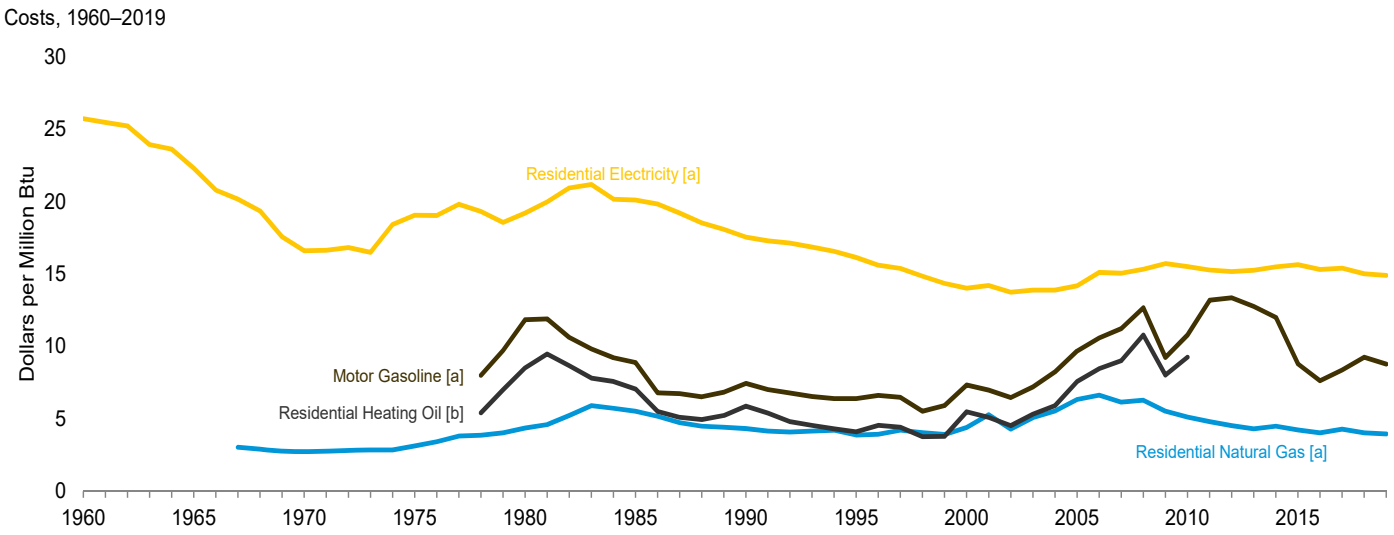
[b] Through 2010, data are for crude oil, petroleum preparations, liquefied propane and butane, and other mineral fuels. Beginning in 2011, data are for petroleum products and preparations.

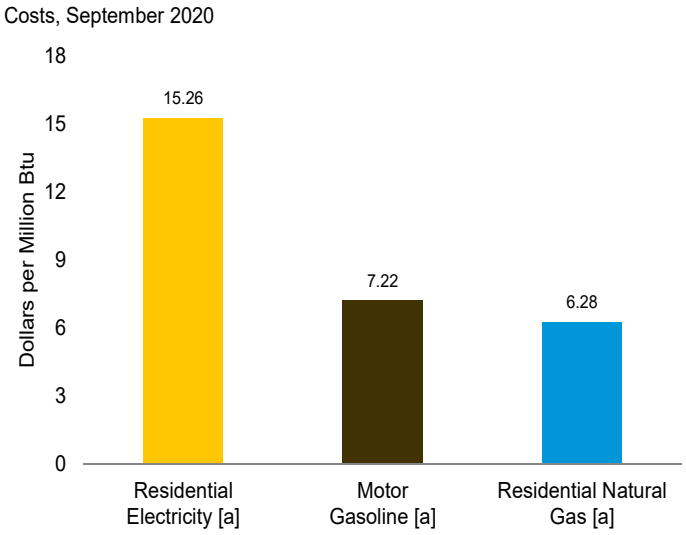
[c] Petroleum, coal, natural gas, and electricity.

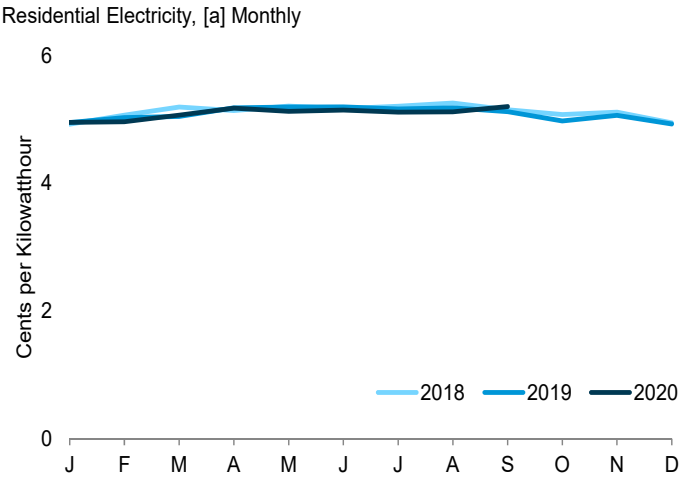
R=Revised.

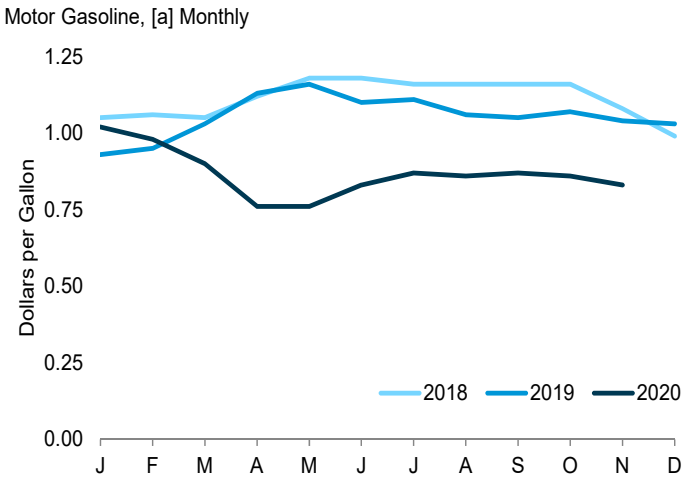
Notes: • Monthly data are not adjusted for seasonal variations. • See Note 1, "Merchandise Trade Value," at end of section. • Totals may not equal sum of components due to independent rounding. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory, which comprises the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands.

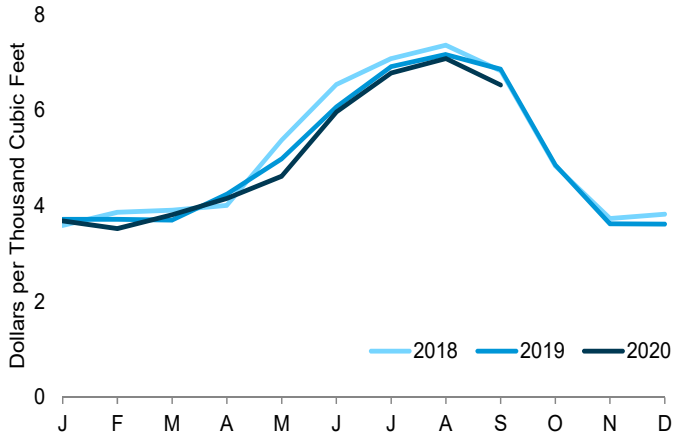
Figure 1.6 Cost of Fuels to End Users In Real (1982-1984) Dollars











[a] Includes Taxes.
[b] Excludes Taxes.
Note: See "Real Dollars" in Glossary.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Tables 1.6.

Table 1.6 Cost of Fuels to End Users in Real (1982–1984) Dollars

	Consumer Price Index, All Urban Consumers[a]	Motor Gasoline[b]		Residential Heating Oil[c]		Residential Natural Gas[b]		Residential Electricity[b]	
	Index 1982–1984=100	Dollars per Gallon	Dollars per Million Btu	Dollars per Gallon	Dollars per Million Btu	Dollars per Thousand Cubic Feet	Dollars per Million Btu	Cents per Kilowatthour	Dollars per Million Btu
1960 Average	**29.6**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**8.8**	**25.74**
1965 Average	**31.5**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**7.6**	**22.33**
1970 Average	**38.8**	**NA**	**NA**	**NA**	**NA**	**2.81**	**2.72**	**5.7**	**16.62**
1975 Average	**53.8**	**NA**	**NA**	**NA**	**NA**	**3.18**	**3.12**	**6.5**	**19.07**
1980 Average	**82.4**	**1.482**	**11.85**	**1.182**	**8.52**	**4.47**	**4.36**	**6.6**	**19.21**
1985 Average	**107.6**	**1.112**	**8.89**	**0.979**	**7.06**	**5.69**	**5.52**	**6.87**	**20.13**
1990 Average	**130.7**	**0.931**	**7.44**	**0.813**	**5.86**	**4.44**	**4.31**	**5.99**	**17.56**
1995 Average	**152.4**	**0.791**	**6.38**	**0.569**	**4.10**	**3.98**	**3.87**	**5.51**	**16.15**
2000 Average	**172.2**	**0.908**	**7.33**	**0.761**	**5.49**	**4.51**	**4.39**	**4.79**	**14.02**
2001 Average	**177.1**	**0.864**	**6.98**	**0.706**	**5.09**	**5.44**	**5.28**	**4.84**	**14.20**
2002 Average	**179.9**	**0.801**	**6.47**	**0.628**	**4.52**	**4.39**	**4.28**	**4.69**	**13.75**
2003 Average	**184.0**	**0.890**	**7.19**	**0.736**	**5.31**	**5.23**	**5.09**	**4.74**	**13.89**
2004 Average	**188.9**	**1.018**	**8.23**	**0.819**	**5.91**	**5.69**	**5.55**	**4.74**	**13.89**
2005 Average	**195.3**	**1.197**	**9.68**	**1.051**	**7.58**	**6.50**	**6.33**	**4.84**	**14.18**
2006 Average	**201.6**	**1.307**	**10.59**	**1.173**	**8.46**	**6.81**	**6.63**	**5.16**	**15.12**
2007 Average	**207.342**	**1.374**	**11.22**	**1.250**	**9.01**	**6.31**	**6.14**	**5.14**	**15.05**
2008 Average	**215.303**	**1.541**	**12.67**	**1.495**	**10.78**	**6.45**	**6.28**	**5.23**	**15.33**
2009 Average	**214.537**	**1.119**	**9.23**	**1.112**	**8.02**	**5.66**	**5.52**	**5.37**	**15.72**
2010 Average	**218.056**	**1.301**	**10.78**	**1.283**	**9.25**	**5.22**	**5.11**	**5.29**	**15.51**
2011 Average	**224.939**	**1.590**	**13.19**	**NA**	**NA**	**4.90**	**4.80**	**5.21**	**15.27**
2012 Average	**229.594**	**1.609**	**13.35**	**NA**	**NA**	**4.64**	**4.53**	**5.17**	**15.17**
2013 Average	**232.957**	**1.538**	**12.77**	**NA**	**NA**	**4.43**	**4.31**	**5.21**	**15.26**
2014 Average	**236.736**	**1.447**	**12.01**	**NA**	**NA**	**4.63**	**4.49**	**5.29**	**15.50**
2015 Average	**237.017**	**1.059**	**8.80**	**NA**	**NA**	**4.38**	**4.22**	**5.34**	**15.64**
2016 Average	**240.007**	**0.918**	**7.63**	**NA**	**NA**	**4.19**	**4.03**	**5.23**	**15.33**
2017 Average	**245.120**	**1.007**	**8.37**	**NA**	**NA**	**4.45**	**4.29**	**5.26**	**15.41**
2018 January	247.867	1.047	8.70	NA	NA	3.59	3.46	4.93	14.45
February	248.991	1.057	8.78	NA	NA	3.87	3.73	5.07	14.87
March	249.554	1.054	8.76	NA	NA	3.91	3.77	5.20	15.23
April	250.546	1.116	9.27	NA	NA	4.01	3.86	5.14	15.07
May	251.588	1.178	9.79	NA	NA	5.37	5.18	5.21	15.28
June	251.989	1.179	9.79	NA	NA	6.54	6.30	5.17	15.15
July	252.006	1.163	9.66	NA	NA	7.08	6.82	5.21	15.27
August	252.146	1.158	9.62	NA	NA	7.36	7.09	5.26	15.41
September	252.439	1.161	9.65	NA	NA	6.83	6.58	5.15	15.10
October	252.885	1.165	9.68	NA	NA	4.83	4.66	5.08	14.89
November	252.038	1.084	9.01	NA	NA	3.74	3.60	5.12	15.00
December	251.233	0.987	8.20	NA	NA	3.83	3.69	4.95	14.50
Average	**251.107**	**1.113**	**9.25**	**NA**	**NA**	**4.18**	**4.03**	**5.13**	**15.02**
2019 January	251.712	0.934	7.77	NA	NA	3.72	3.58	4.95	14.52
February	252.776	0.954	7.93	NA	NA	3.72	3.58	5.03	14.75
March	254.202	1.031	8.57	NA	NA	3.71	3.56	5.05	14.80
April	255.548	1.132	9.41	NA	NA	4.25	4.08	5.18	15.20
May	256.092	1.157	9.62	NA	NA	4.98	4.79	5.20	15.23
June	256.143	1.099	9.13	NA	NA	6.07	5.84	5.20	15.24
July	256.571	1.105	9.19	NA	NA	6.91	6.65	5.17	15.15
August	256.558	1.059	8.80	NA	NA	7.16	6.89	5.18	15.19
September	256.759	1.049	8.72	NA	NA	6.86	6.59	5.13	15.02
October	257.346	1.065	8.85	NA	NA	4.86	4.67	4.98	14.59
November	257.208	1.045	8.68	NA	NA	3.63	3.49	5.07	14.85
December	256.974	1.032	8.58	NA	NA	3.62	3.48	4.93	14.46
Average	**255.657**	**1.055**	**8.77**	**NA**	**NA**	**4.11**	**3.95**	**5.09**	**14.91**
2020 January	257.971	1.020	8.48	NA	NA	3.69	3.54	4.96	14.53
February	258.678	0.978	8.13	NA	NA	3.53	3.39	4.97	14.56
March	258.115	0.904	7.52	NA	NA	3.82	3.67	5.07	14.86
April	256.389	0.759	6.31	NA	NA	4.16	4.00	5.18	15.18
May	256.394	0.759	6.31	NA	NA	4.62	4.44	5.13	15.03
June	257.797	0.830	6.90	NA	NA	5.96	5.73	5.15	15.10
July	259.101	0.866	7.20	NA	NA	6.78	6.52	5.12	15.00
August	259.918	0.864	7.18	NA	NA	7.08	6.81	5.12	15.01
September	260.280	0.868	7.22	NA	NA	[R] 6.53	[R] 6.28	[R] 5.21	[R] 15.26
October	260.388	0.856	7.11	NA	NA	NA	NA	NA	NA
November	260.229	0.830	6.90	NA	NA	NA	NA	NA	NA

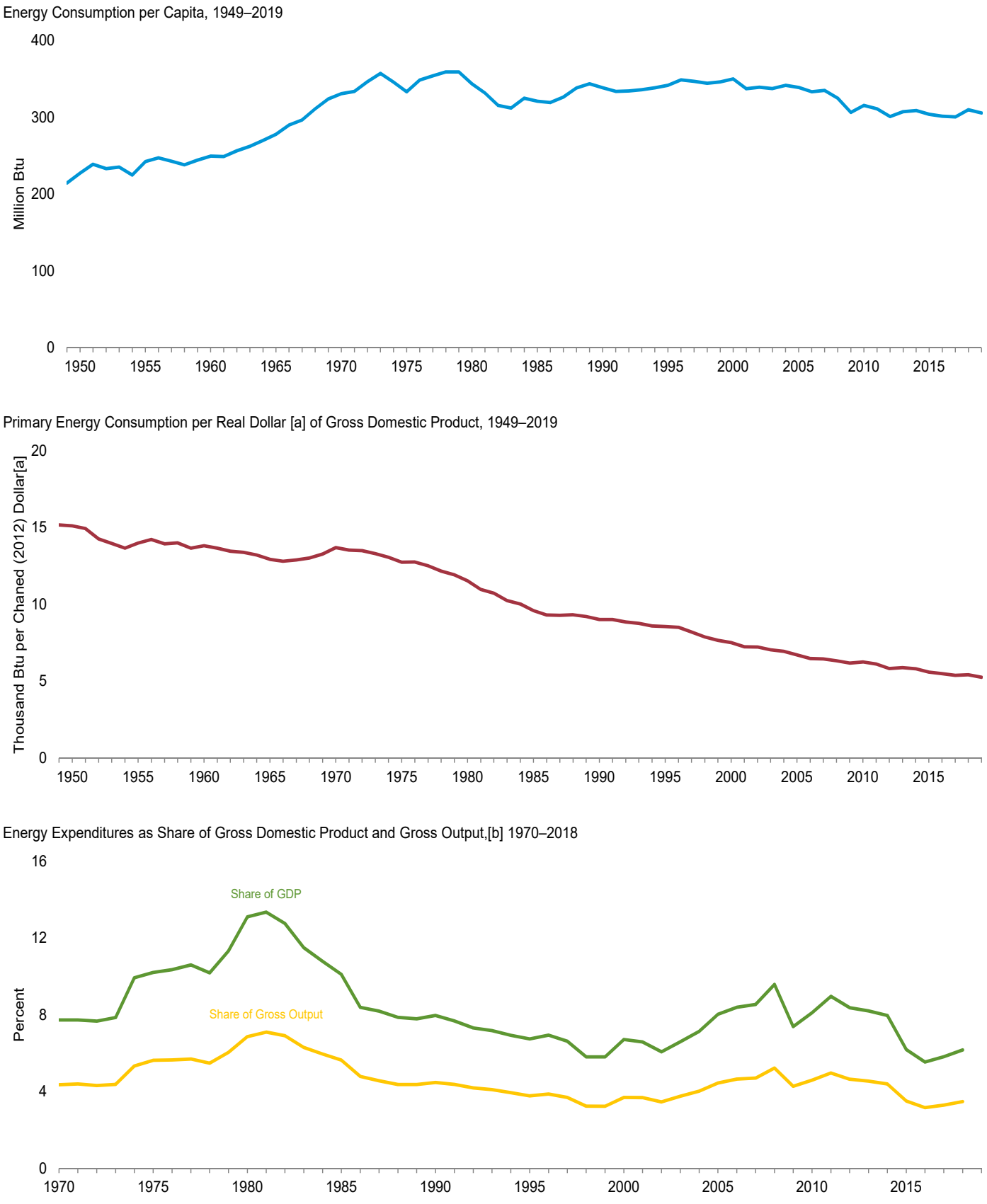
[a] Data are U.S. city averages for all items, and are not seasonally adjusted.
[b] Includes taxes.
[c] Excludes taxes.
R=Revised. NA=Not available.

Notes: • See "Real Dollars" in Glossary. • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. • Annual averages may not equal average of months due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1995.

Sources: • **Fuel Prices:** Tables 9.4 (All Grades), 9.8, and 9.10, adjusted by the CPI; and *Monthy Energy Review,* September 2012, Table 9.8c. • **Consumer Price Index, All Urban Consumers:** U.S. Department of Labor, Bureau of Labor Statistics, series ID CUUR0000SA0. • **Conversion Factors:** Tables A1, A3, A4, and A6.

Figure 1.7 Primary Energy Consumption and Energy Expenditures Indicators



[a] See "Chained Dollars" and "Real Dollars" in Glossary.
[b] Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.7.

Table 1.7 Primary Energy Consumption, Energy Expenditures, and Carbon Dioxide Emissions Indicators

	Primary Energy Consumption[a]			Energy Expenditures[b]				Carbon Dioxide Emissions[c]		
	Consumption	Consumption per Capita	Consumption per Real Dollar[d] of GDP[e]	Expenditures	Expenditures per Capita	Expenditures as Share of GDP[e]	Expenditures as Share of Gross Output[f]	Emissions	Emissions per Capita	Emissions per Real Dollar[d] of GDP[e]
	Quadrillion Btu	Million Btu	Thousand Btu per Chained (2012) Dollar[d]	Million Nominal Dollars[g]	Nominal Dollars[g]	Percent	Percent	Million Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide per Million Chained (2012) Dollars[d]
1950	34.599	227	15.11	NA	NA	NA	NA	2,382	15.6	1,040
1955	40.178	242	13.99	NA	NA	NA	NA	2,685	16.2	935
1960	45.041	249	13.82	NA	NA	NA	NA	2,914	16.1	894
1965	53.953	278	12.94	NA	NA	NA	NA	3,462	17.8	830
1970	67.817	331	13.70	82,875	404	7.7	4.4	4,261	20.8	861
1975	71.931	333	12.74	171,854	796	10.2	5.6	4,426	20.5	784
1980	78.021	343	11.54	374,350	1,647	13.1	6.9	4,750	20.9	703
1981	76.057	331	10.97	427,901	1,865	13.3	7.1	4,627	20.2	668
1982	73.046	315	10.73	426,482	1,841	12.8	6.9	4,394	19.0	646
1983	72.915	312	10.24	417,622	1,786	11.5	6.3	4,371	18.7	614
1984	76.571	325	10.03	435,313	1,846	10.8	6.0	4,596	19.5	602
1985	76.334	321	9.60	438,343	1,842	10.1	5.6	4,587	19.3	577
1986	76.599	319	9.31	384,091	1,599	8.4	4.8	4,598	19.1	559
1987	79.008	326	9.28	397,627	1,641	8.2	4.6	4,756	19.6	559
1988	82.659	338	9.32	411,568	1,683	7.9	4.4	4,981	20.4	562
1989	84.740	343	9.22	439,051	1,779	7.8	4.4	5,068	20.5	551
1990	84.433	338	9.02	474,652	1,901	8.0	4.5	5,040	20.2	538
1991	84.380	334	9.02	472,440	1,867	7.7	4.4	4,995	19.7	534
1992	85.725	334	8.85	476,845	1,859	7.3	4.2	5,095	19.9	526
1993	87.266	336	8.77	492,275	1,894	7.2	4.1	5,186	20.0	521
1994	88.983	338	8.60	504,856	1,919	6.9	3.9	5,264	20.0	508
1995	90.931	341	8.55	514,624	1,933	6.7	3.8	5,323	20.0	501
1996	93.935	349	8.52	560,293	2,080	6.9	3.9	5,512	20.5	500
1997	94.507	347	8.20	567,962	2,083	6.6	3.7	5,583	20.5	485
1998	94.920	344	7.88	526,283	1,908	5.8	3.2	5,631	20.4	468
1999	96.545	346	7.66	558,627	2,002	5.8	3.2	5,693	20.4	451
2000	98.702	350	7.52	687,711	2,437	6.7	3.7	5,867	20.8	447
2001	96.064	337	7.24	696,242	2,443	6.6	3.7	5,765	20.2	435
2002	97.535	339	7.23	663,964	2,308	6.1	3.5	5,809	20.2	431
2003	97.835	337	7.05	755,070	2,603	6.6	3.7	5,860	20.2	422
2004	100.002	342	6.94	871,210	2,975	7.1	4.0	5,979	20.4	415
2005	100.102	339	6.71	1,045,730	3,539	8.0	4.4	5,999	20.3	402
2006	99.392	333	6.48	1,158,821	3,884	8.4	4.6	5,914	19.8	386
2007	100.893	335	6.46	1,233,869	4,096	8.5	4.7	6,003	19.9	384
2008	98.754	325	6.33	1,408,759	4,633	9.6	5.2	5,817	19.1	373
2009	93.942	306	6.18	1,066,293	3,476	7.4	4.3	5,392	17.6	355
2010	97.513	315	6.25	1,214,045	3,925	8.1	4.6	5,585	18.1	358
2011	96.863	311	6.11	1,391,711	4,467	9.0	5.0	5,446	17.5	344
2012	94.374	301	5.83	1,355,033	4,318	8.4	4.6	5,229	16.7	323
2013	97.117	307	5.89	1,376,142	4,355	8.2	4.5	5,356	16.9	325
2014	98.276	309	5.81	1,394,926	4,382	8.0	4.4	5,413	17.0	320
2015	97.375	304	5.59	1,128,068	3,518	6.2	3.5	5,263	16.4	302
2016	97.335	301	5.49	1,038,272	3,215	5.5	3.2	5,171	16.0	292
2017	97.595	300	5.38	1,136,189	3,496	5.8	3.3	5,131	15.8	283
2018	101.162	310	5.41	1,271,064	3,891	6.2	3.5	5,284	16.2	283
2019	100.274	305	5.25	NA	NA	NA	NA	5,146	15.7	270

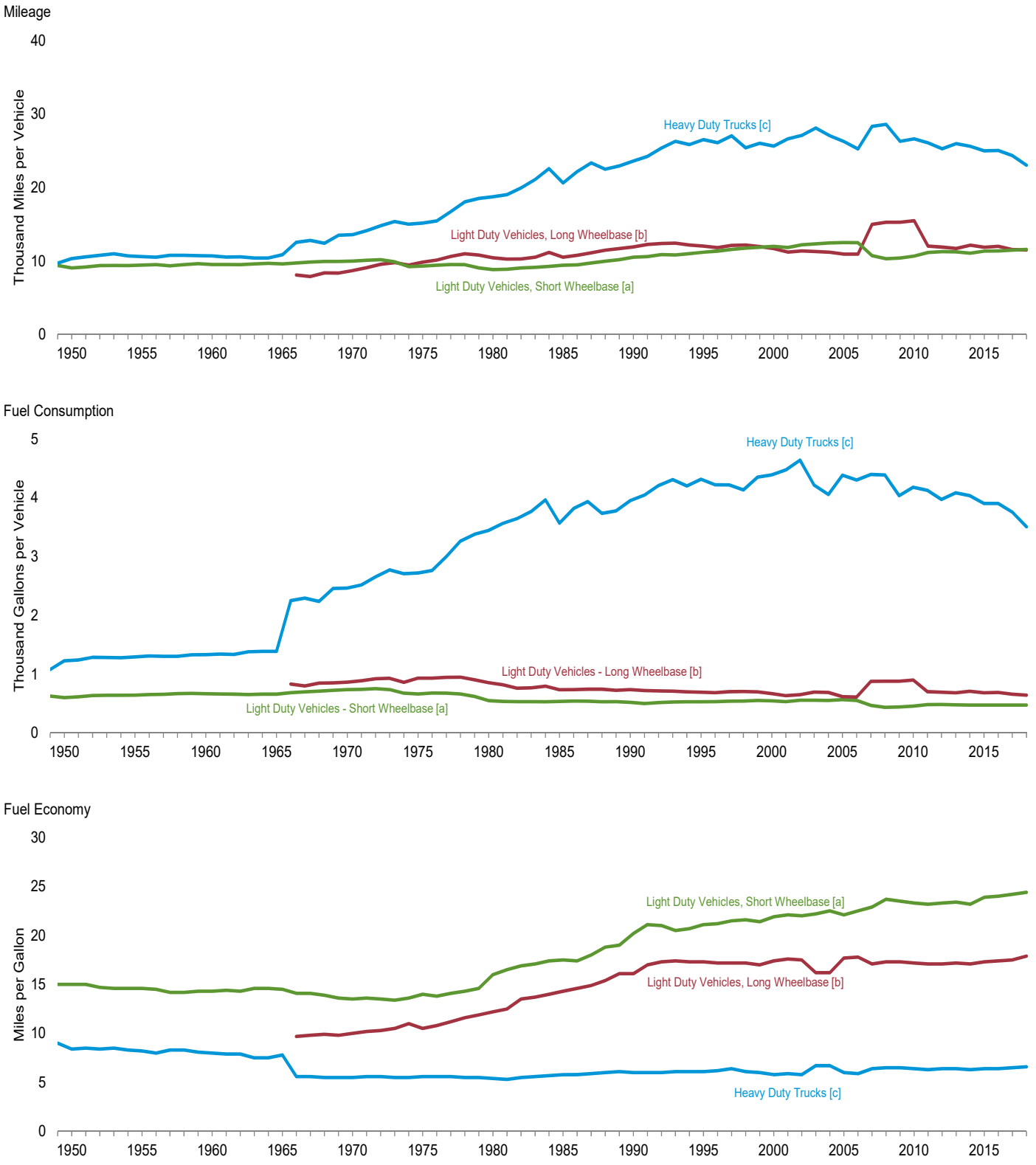
[a] See "Primary Energy Consumption" in Glossary.
[b] Expenditures include taxes where data are available.
[c] Carbon dioxide emissions from energy consumption. See Table 11.1.
[d] See "Chained Dollars" and "Real Dollars" in Glossary.
[e] See "Gross Domestic Product (GDP)" in Glossary.
[f] Gross output is the value of GDP plus the value of intermediate inputs used to produce GDP. Through 1996, data have been adjusted by EIA based on DOC/BEA's 2012 comprehensive revision.
[g] See "Nominal Dollars" in Glossary.
NA=Not available.

Notes: • Data are estimates. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949.

Sources: • **Consumption:** Table 1.3. • **Consumption per Capita:** Calculated as energy consumption divided by U.S. population (see Table C1). • **Consumption per Real Dollar of GDP:** Calculated as energy consumption divided by U.S. gross domestic product in chained (2012) dollars (see Table C1). • **Expenditures:** U.S. Energy Information Administration, "State Energy Price and Expenditure Estimates, 1970 Through 2018" (June 2020), U.S. Table ET1. • **Expenditures per Capita:** Calculated as energy expenditures divided by U.S. population (see Table C1). • **Expenditures as Share of GDP:** Calculated as energy expenditures divided by U.S. gross domestic product in nominal dollars (see Table C1). • **Expenditures as Share of Gross Output:** Calculated as energy expenditures divided by U.S. gross output (see Table C1). • **Emissions: 1949–1972—**U.S. Energy Information Administration, *Annual Energy Review 2011,* Table 11.1. **1973 forward—**Table 11.1. • **Emissions per Capita:** Calculated as carbon dioxide emissions divided by U.S. population (see Table C1). • **Emissions per Real Dollar of GDP:** Calculated as carbon dioxide emissions divided by U.S. gross domestic product in chained (2012) dollars (see Table C1).

Figure 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949-2018



[a] Through 1989, data are for passenger cars and motorcycles. For 1990–2006, data are for passenger cars only. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase less than or equal to 121 inches.
[b] For 1966–2000, data are for vans, pickup trucks, and sport utility vehicles. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase greater than 121 inches.
[c] For 1949–1965, data are for single-unit trucks with 2 axles and 6 or more tires, combination trucks, and other vehicles with 2 axles and 4 tires that are not passenger cars. For 1966–2006 data are for single-unit truck with 2 axles and 6 or more tires, and combination trucks. Beginning in 2007, data are for single-unit trucks with 2 axles and 6 or more tires (or a gross vehicle weight rating exceeding 10,000 pounds), and combination trucks.
Note: Through 1965, "Light-Duty Vehicles, Long Wheelbase" data are included in "Heavy-Duty Trucks."
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.8.

Table 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy

	Light-Duty Vehicles, Short Wheelbase[a]			Light-Duty Vehicles, Long Wheelbase[b]			Heavy-Duty Trucks[c]			All Motor Vehicles[d]		
	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy
	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
1950	9,060	603	15.0	([e])	([e])	([e])	10,316	1,229	8.4	9,321	725	12.8
1955	9,447	645	14.6	([e])	([e])	([e])	10,576	1,293	8.2	9,661	761	12.7
1960	9,518	668	14.3	([e])	([e])	([e])	10,693	1,333	8.0	9,732	784	12.4
1965	9,603	661	14.5	([e])	([e])	([e])	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
1975	9,309	665	14.0	9,829	934	10.5	15,167	2,722	5.6	9,627	790	12.2
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	10,157	533	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	12,460	553	22.5	11,184	690	16.2	27,023	4,057	6.7	12,200	714	17.1
2005	12,510	567	22.1	10,920	617	17.7	26,235	4,385	6.0	12,082	706	17.1
2006	12,485	554	22.5	10,920	612	17.8	25,231	4,304	5.9	12,017	698	17.2
2007	[a] 10,710	[a] 468	[a] 22.9	[b] 14,970	[b] 877	[b] 17.1	[c] 28,290	[c] 4,398	6.4	11,915	693	17.2
2008	10,290	435	23.7	15,256	880	17.3	28,573	4,387	6.5	11,631	667	17.4
2009	10,391	442	23.5	15,252	882	17.3	26,274	4,037	6.5	11,631	661	17.6
2010	10,650	456	23.3	15,474	901	17.2	26,604	4,180	6.4	11,866	681	17.4
2011	11,150	481	23.2	12,007	702	17.1	26,054	4,128	6.3	11,652	665	17.5
2012	11,262	484	23.3	11,885	694	17.1	25,255	3,973	6.4	11,707	665	17.6
2013	11,244	480	23.4	11,712	683	17.2	25,951	4,086	6.4	11,679	663	17.6
2014	11,048	476	23.2	12,138	710	17.1	25,594	4,036	6.3	11,621	666	17.5
2015	11,327	475	23.9	11,855	684	17.3	24,979	3,904	6.4	11,742	656	17.9
2016	11,370	475	24.0	11,991	689	17.4	25,037	3,904	6.4	11,810	658	17.9
2017	11,467	474	24.2	11,543	659	17.5	24,335	3,758	6.5	11,789	653	18.1
2018	11,576	475	24.4	11,486	643	17.9	23,037	3,507	6.6	11,843	651	18.2

[a] Through 1989, data are for passenger cars and motorcycles. For 1990–2006, data are for passenger cars only. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase less than or equal to 121 inches.

[b] For 1966–2006, data are for vans, pickup trucks, and sport utility vehicles. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase greater than 121 inches.

[c] For 1949–1965, data are for single-unit trucks with 2 axles and 6 or more tires, combination trucks, and other vehicles with 2 axles and 4 tires that are not passenger cars. For 1966–2006, data are for single-unit trucks with 2 axles and 6 or more tires, and combination trucks. Beginning in 2007, data are for single-unit trucks with 2 axles and 6 or more tires (or a gross vehicle weight rating exceeding 10,000 pounds), and combination trucks.

[d] Includes buses and motorcycles, which are not separately displayed.

[e] Included in "Heavy-Duty Trucks."

Note: Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949.

Sources: • **Light-Duty Vehicles, Short Wheelbase: 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.

Table 1.9 Heating Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	**6,794**	**6,324**	**7,027**	**7,455**	**3,521**	**3,547**	**2,277**	**6,341**	**3,906**	**5,367**
1955 Total	**6,872**	**6,231**	**6,486**	**6,912**	**3,508**	**3,513**	**2,294**	**6,704**	**4,320**	**5,246**
1960 Total	**6,828**	**6,391**	**6,908**	**7,184**	**3,780**	**4,134**	**2,767**	**6,281**	**3,799**	**5,404**
1965 Total	**7,029**	**6,393**	**6,587**	**6,932**	**3,372**	**3,501**	**2,237**	**6,086**	**3,819**	**5,146**
1970 Total	**7,022**	**6,388**	**6,721**	**7,090**	**3,452**	**3,823**	**2,558**	**6,119**	**3,726**	**5,218**
1975 Total	**6,547**	**5,892**	**6,406**	**6,880**	**2,970**	**3,437**	**2,312**	**6,260**	**4,117**	**4,905**
1980 Total	**7,071**	**6,477**	**6,975**	**6,836**	**3,378**	**3,964**	**2,494**	**5,554**	**3,539**	**5,080**
1985 Total	**6,749**	**5,971**	**6,668**	**7,262**	**2,899**	**3,660**	**2,535**	**6,059**	**3,935**	**4,889**
1990 Total	**5,987**	**5,252**	**5,780**	**6,137**	**2,307**	**2,942**	**1,968**	**5,391**	**3,603**	**4,180**
1995 Total	**6,684**	**6,093**	**6,740**	**6,911**	**2,988**	**3,648**	**2,147**	**5,101**	**3,269**	**4,640**
2000 Total	**6,625**	**5,999**	**6,315**	**6,500**	**2,905**	**3,551**	**2,153**	**4,971**	**3,460**	**4,494**
2001 Total	**6,202**	**5,541**	**5,844**	**6,221**	**2,604**	**3,327**	**2,162**	**5,004**	**3,545**	**4,257**
2002 Total	**6,234**	**5,550**	**6,128**	**6,485**	**2,664**	**3,443**	**2,292**	**5,197**	**3,510**	**4,356**
2003 Total	**6,975**	**6,258**	**6,536**	**6,593**	**2,884**	**3,559**	**2,205**	**4,817**	**3,355**	**4,544**
2004 Total	**6,709**	**5,892**	**6,178**	**6,329**	**2,715**	**3,291**	**2,041**	**5,010**	**3,346**	**4,344**
2005 Total	**6,644**	**5,950**	**6,222**	**6,213**	**2,775**	**3,380**	**1,985**	**4,896**	**3,377**	**4,348**
2006 Total	**5,885**	**5,211**	**5,703**	**5,821**	**2,475**	**3,211**	**1,802**	**4,915**	**3,557**	**4,040**
2007 Total	**6,537**	**5,756**	**6,074**	**6,384**	**2,525**	**3,187**	**2,105**	**4,939**	**3,506**	**4,268**
2008 Total	**6,434**	**5,782**	**6,677**	**7,118**	**2,712**	**3,600**	**2,125**	**5,233**	**3,566**	**4,494**
2009 Total	**6,644**	**5,922**	**6,512**	**6,841**	**2,812**	**3,536**	**2,152**	**5,139**	**3,538**	**4,481**
2010 Total	**5,934**	**5,553**	**6,185**	**6,565**	**3,167**	**3,948**	**2,449**	**5,082**	**3,624**	**4,463**
2011 Total	**6,114**	**5,483**	**6,172**	**6,565**	**2,565**	**3,343**	**2,114**	**5,322**	**3,818**	**4,312**
2012 Total	**5,561**	**4,970**	**5,356**	**5,515**	**2,306**	**2,876**	**1,650**	**4,574**	**3,411**	**3,769**
2013 Total	**6,426**	**5,838**	**6,621**	**7,135**	**2,736**	**3,648**	**2,326**	**5,273**	**3,362**	**4,465**
2014 Total	**6,675**	**6,203**	**7,194**	**7,304**	**2,951**	**3,932**	**2,422**	**4,744**	**2,774**	**4,550**
2015 Total	**6,521**	**5,777**	**6,165**	**6,088**	**2,487**	**3,222**	**2,087**	**4,602**	**2,898**	**4,087**
2016 Total	**5,929**	**5,353**	**5,701**	**5,786**	**2,456**	**3,094**	**1,752**	**4,619**	**3,031**	**3,878**
2017 Total	**6,038**	**5,333**	**5,684**	**5,997**	**2,232**	**2,835**	**1,582**	**4,568**	**3,187**	**3,828**
2018 January	1,257	1,216	1,308	1,373	700	929	660	770	458	896
February	869	813	980	1,178	307	410	348	747	496	625
March	926	913	922	869	435	474	186	604	487	609
April	674	618	703	716	205	312	142	380	299	410
May	168	108	99	89	12	13	0	163	176	85
June	61	29	24	23	1	0	0	56	65	26
July	2	1	4	11	0	0	0	9	8	4
August	3	2	8	20	0	0	0	25	14	7
September	65	34	48	90	2	3	3	89	62	38
October	457	355	420	494	99	138	70	384	187	254
November	818	766	913	1,003	380	566	372	678	354	594
December	1,026	929	1,003	1,103	488	634	472	897	564	732
Total	**6,326**	**5,784**	**6,433**	**6,968**	**2,627**	**3,478**	**2,252**	**4,803**	**3,169**	**4,279**
2019 January	R 1,221	1,154	1,303	1,359	R 583	748	R 546	893	542	859
February	R 1,030	R 942	R 1,062	R 1,284	R 377	459	356	R 867	R 654	719
March	976	891	961	1,001	376	505	305	R 667	R 488	631
April	R 528	R 412	R 475	454	110	R 166	78	375	275	288
May	R 313	188	R 236	272	16	25	11	R 314	239	158
June	55	32	49	R 46	2	3	0	R 97	59	34
July	2	1	1	8	0	0	0	15	19	5
August	16	10	20	32	0	0	0	17	12	10
September	R 117	57	42	67	2	1	0	95	R 63	41
October	R 389	302	390	R 526	77	R 128	R 85	478	R 236	254
November	R 830	R 790	912	924	392	572	345	R 616	R 370	R 588
December	R 1,060	R 972	976	1,097	450	573	R 418	R 871	R 572	715
Total	**R 6,535**	**R 5,752**	**R 6,428**	**R 7,070**	**2,384**	**3,180**	**R 2,144**	**R 5,306**	**R 3,530**	**R 4,302**
2020 January	1,031	957	1,052	1,224	R 482	R 635	R 431	R 849	563	739
February	R 924	842	1,002	R 1,070	396	555	402	764	446	652
March	R 775	R 671	734	744	231	293	140	R 603	R 524	484
April	R 654	R 568	R 568	533	177	248	R 89	415	R 305	358
May	R 288	R 252	R 258	246	74	86	13	R 186	R 146	157
June	28	18	23	21	2	3	0	R 72	69	26
July	1	0	1	6	0	0	0	14	19	5
August	R 9	4	13	R 19	0	0	0	9	R 16	7
September	101	81	112	143	17	19	8	103	29	58
9-Month Total	**3,812**	**3,394**	**3,763**	**4,005**	**1,379**	**1,838**	**1,083**	**3,016**	**2,118**	**2,486**
2019 9-Month Total	**4,256**	**3,688**	**4,150**	**4,523**	**1,465**	**1,907**	**1,297**	**3,341**	**2,352**	**2,745**
2018 9-Month Total	**4,025**	**3,733**	**4,097**	**4,368**	**1,661**	**2,141**	**1,338**	**2,844**	**2,064**	**2,700**

[a] Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
[b] New Jersey, New York, and Pennsylvania.
[c] Illinois, Indiana, Michigan, Ohio, and Wisconsin.
[d] Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.
[e] Delaware, Florida, Georgia, Maryland (and the District of Columbia), North Carolina, South Carolina, Virginia, and West Virginia.
[f] Alabama, Kentucky, Mississippi, and Tennessee.
[g] Arkansas, Louisiana, Oklahoma, and Texas.
[h] Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.
[i] Alaska, California, Hawaii, Oregon, and Washington.
R=Revised.

Notes: • Degree days are relative measurements of outdoor air temperature used as an index for heating and cooling energy requirements. Heating degree days are the number of degrees that the daily average temperature falls below 65 degrees Fahrenheit (°F). Cooling degree days are the number of degrees that the daily average temperature rises above 65°F. The daily average temperature is the mean of the maximum and minimum temperatures in a 24-hour period. For example, a weather station recording an average daily temperature of 40°F would report 25 heating degree days for that day (and 0 cooling degree days). If a weather station recorded an average daily temperature of 78°F, cooling degree days for that station would be 13 (and 0 heating degree days). • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: State-level degree day data are from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Centers for Environmental Information. Using these state-level data, the U.S. Energy Information Administration calculates population-weighted census-division and U.S. degree day averages using state populations from

Table 1.10 Cooling Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	**295**	**401**	**505**	**647**	**1,414**	**1,420**	**2,282**	**682**	**629**	**871**
1955 Total	**532**	**761**	**922**	**1,139**	**1,636**	**1,674**	**2,508**	**780**	**558**	**1,144**
1960 Total	**318**	**487**	**626**	**871**	**1,583**	**1,532**	**2,367**	**974**	**796**	**1,000**
1965 Total	**310**	**498**	**618**	**832**	**1,613**	**1,552**	**2,461**	**780**	**577**	**979**
1970 Total	**423**	**615**	**747**	**980**	**1,744**	**1,571**	**2,282**	**971**	**734**	**1,079**
1975 Total	**422**	**584**	**721**	**937**	**1,791**	**1,440**	**2,162**	**903**	**597**	**1,049**
1980 Total	**438**	**680**	**769**	**1,158**	**1,911**	**1,754**	**2,651**	**1,071**	**653**	**1,214**
1985 Total	**324**	**509**	**602**	**780**	**1,878**	**1,522**	**2,519**	**1,095**	**761**	**1,121**
1990 Total	**429**	**562**	**602**	**913**	**2,054**	**1,563**	**2,526**	**1,212**	**838**	**1,200**
1995 Total	**471**	**704**	**877**	**928**	**2,028**	**1,613**	**2,398**	**1,213**	**794**	**1,261**
2000 Total	**279**	**458**	**632**	**983**	**1,925**	**1,674**	**2,775**	**1,480**	**772**	**1,232**
2001 Total	**464**	**623**	**722**	**994**	**1,897**	**1,478**	**2,543**	**1,508**	**861**	**1,255**
2002 Total	**508**	**772**	**899**	**1,045**	**2,182**	**1,757**	**2,515**	**1,467**	**783**	**1,363**
2003 Total	**475**	**615**	**619**	**907**	**1,980**	**1,452**	**2,496**	**1,553**	**978**	**1,268**
2004 Total	**368**	**591**	**585**	**722**	**2,038**	**1,517**	**2,482**	**1,290**	**828**	**1,217**
2005 Total	**598**	**892**	**944**	**1,063**	**2,098**	**1,676**	**2,647**	**1,372**	**777**	**1,388**
2006 Total	**485**	**693**	**734**	**1,034**	**2,053**	**1,648**	**2,786**	**1,466**	**922**	**1,360**
2007 Total	**447**	**694**	**881**	**1,102**	**2,219**	**1,892**	**2,475**	**1,564**	**828**	**1,392**
2008 Total	**462**	**667**	**683**	**818**	**1,993**	**1,537**	**2,501**	**1,385**	**918**	**1,282**
2009 Total	**350**	**524**	**534**	**698**	**2,029**	**1,479**	**2,590**	**1,393**	**894**	**1,241**
2010 Total	**635**	**908**	**964**	**1,096**	**2,269**	**1,977**	**2,757**	**1,358**	**674**	**1,456**
2011 Total	**554**	**836**	**859**	**1,074**	**2,259**	**1,727**	**3,112**	**1,450**	**736**	**1,470**
2012 Total	**565**	**815**	**974**	**1,221**	**2,162**	**1,762**	**2,915**	**1,573**	**917**	**1,495**
2013 Total	**540**	**683**	**690**	**892**	**2,000**	**1,441**	**2,536**	**1,462**	**892**	**1,306**
2014 Total	**420**	**596**	**610**	**814**	**2,009**	**1,493**	**2,474**	**1,431**	**1,068**	**1,299**
2015 Total	**555**	**804**	**729**	**942**	**2,405**	**1,718**	**2,741**	**1,478**	**1,068**	**1,488**
2016 Total	**626**	**888**	**958**	**1,073**	**2,412**	**1,957**	**2,882**	**1,497**	**928**	**1,559**
2017 Total	**450**	**661**	**709**	**911**	**2,254**	**1,585**	**2,718**	**1,548**	**1,053**	**1,428**
2018 January	0	0	0	0	21	1	4	4	15	8
February	0	0	0	0	81	22	33	3	8	23
March	0	0	0	2	35	15	87	14	9	21
April	0	0	0	0	79	7	58	70	25	33
May	25	65	140	168	265	268	395	137	39	174
June	57	111	192	272	385	376	550	299	117	270
July	254	287	257	304	441	430	607	415	320	376
August	266	297	257	258	439	392	565	344	257	351
September	64	121	122	124	391	338	392	238	142	231
October	0	4	4	6	176	77	142	45	46	70
November	0	0	0	0	66	1	13	5	16	18
December	0	0	0	0	40	2	9	0	9	11
Total	**667**	**885**	**972**	**1,134**	**2,418**	**1,928**	**2,856**	**1,573**	**1,002**	**1,585**
2019 January	0	0	0	0	29	5	12	0	8	9
February	0	0	0	0	67	14	24	0	5	18
March	0	0	0	0	56	10	36	10	8	18
April	0	0	1	6	R 101	31	90	51	26	42
May	3	31	48	R 42	293	219	R 292	57	24	129
June	R 64	112	127	174	R 361	R 300	R 438	R 233	117	227
July	R 275	326	320	321	R 481	427	548	R 394	R 212	373
August	166	R 217	R 195	225	R 442	408	R 625	R 386	R 250	R 337
September	28	88	R 136	183	375	R 382	R 523	R 208	R 133	243
October	0	8	7	2	R 204	81	139	R 49	R 42	R 76
November	0	0	0	0	53	1	16	R 11	16	16
December	0	0	0	0	50	5	13	0	10	14
Total	R **536**	R **783**	R **833**	R **954**	R **2,511**	R **1,882**	R **2,757**	R **1,399**	R **852**	R **1,503**
2020 January	0	0	0	0	47	13	R 29	0	9	15
February	0	0	0	0	46	4	13	2	8	R 13
March	0	0	2	6	102	55	131	R 7	8	43
April	0	0	0	1	108	20	R 105	43	20	43
May	3	11	31	37	166	R 106	277	R 158	R 67	105
June	100	R 144	185	256	343	297	457	R 262	R 113	247
July	R 291	R 360	R 335	344	R 503	462	R 601	R 412	R 217	R 398
August	R 217	259	R 218	R 246	R 457	R 388	R 574	R 438	R 297	357
September	36	58	55	72	274	212	325	230	221	183
9-Month Total	**647**	**833**	**826**	**963**	**2,046**	**1,557**	**2,512**	**1,553**	**959**	**1,402**
2019 9-Month Total	**536**	**775**	**826**	**951**	**2,204**	**1,795**	**2,589**	**1,339**	**783**	**1,398**
2018 9-Month Total	**667**	**881**	**968**	**1,129**	**2,136**	**1,848**	**2,692**	**1,523**	**931**	**1,487**

[a] Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
[b] New Jersey, New York, and Pennsylvania.
[c] Illinois, Indiana, Michigan, Ohio, and Wisconsin.
[d] Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.
[e] Delaware, Florida, Georgia, Maryland (and the District of Columbia), North Carolina, South Carolina, Virginia, and West Virginia.
[f] Alabama, Kentucky, Mississippi, and Tennessee.
[g] Arkansas, Louisiana, Oklahoma, and Texas.
[h] Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.
[i] Alaska, California, Hawaii, Oregon, and Washington.
R=Revised.

Notes: • Degree days are relative measurements of outdoor air temperature used as an index for heating and cooling energy requirements. Cooling degree days are the number of degrees that the daily average temperature rises above 65 degrees Fahrenheit (°F). Heating degree days are the number of degrees that the daily average temperature falls below 65°F. The daily average temperature is the mean of the maximum and minimum temperatures in a 24-hour period. For example, if a weather station recorded an average daily temperature of 78°F, cooling degree days for that station would be 13 (and 0 heating degree days). A weather station recording an average daily temperature of 40°F would report 25 heating degree days for that day (and 0 cooling degree days). • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: State-level degree day data are from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Centers for Environmental Information. Using these state-level data, the U.S. Energy Information Administration calculates population-weighted census-division and U.S. degree day averages using state populations from the same year the degree days are measured. See methodology at http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf.

Table 1.11a Non-Combustion Use of Fossil Fuels in Physical Units

	Coal	Natural Gas	Petroleum							
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petro-chemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total
	Thousand Short Tons	Billion Cubic Feet	Thousand Barrels per Day							
1973 Total	**3,523**	**898**	**522**	**684**	**162**	**356**	**56**	**88**	**88**	**1,956**
1975 Total	**3,105**	**761**	**419**	**654**	**137**	**320**	**54**	**75**	**122**	**1,781**
1980 Total	**2,612**	**759**	**396**	**890**	**159**	**692**	**52**	**100**	**143**	**2,433**
1985 Total	**1,536**	**642**	**425**	**982**	**145**	**395**	**58**	**83**	**95**	**2,184**
1990 Total	**758**	**675**	**483**	**1,071**	**164**	**546**	**72**	**56**	**85**	**2,477**
1995 Total	**921**	**868**	**486**	**1,357**	**156**	**590**	**62**	**37**	**70**	**2,758**
1996 Total	**884**	**896**	**484**	**1,413**	**151**	**592**	**65**	**39**	**70**	**2,813**
1997 Total	**842**	**909**	**505**	**1,447**	**160**	**686**	**62**	**38**	**72**	**2,970**
1998 Total	**656**	**938**	**521**	**1,441**	**168**	**690**	**97**	**56**	**83**	**3,056**
1999 Total	**654**	**906**	**547**	**1,578**	**169**	**651**	**106**	**76**	**77**	**3,204**
2000 Total	**674**	**918**	**525**	**1,543**	**166**	**662**	**90**	**51**	**78**	**3,115**
2001 Total	**607**	**839**	**519**	**1,386**	**153**	**586**	**97**	**41**	**83**	**2,864**
2002 Total	**937**	**836**	**512**	**1,474**	**151**	**628**	**86**	**53**	**85**	**2,989**
2003 Total	**961**	**808**	**503**	**1,397**	**140**	**676**	**84**	**42**	**80**	**2,923**
2004 Total	**938**	**818**	**537**	**1,458**	**141**	**784**	**95**	**27**	**74**	**3,117**
2005 Total	**929**	**761**	**546**	**1,369**	**141**	**729**	**91**	**33**	**75**	**2,983**
2006 Total	**562**	**573**	**521**	**1,424**	**137**	**726**	**126**	**37**	**86**	**3,057**
2007 Total	**556**	**587**	**494**	**1,444**	**142**	**664**	**123**	**41**	**82**	**2,989**
2008 Total	**541**	**597**	**417**	**1,279**	**131**	**574**	**117**	**44**	**85**	**2,648**
2009 Total	**375**	**513**	**360**	**1,401**	**118**	**507**	**108**	**24**	**85**	**2,604**
2010 Total	**719**	**654**	**362**	**1,597**	**131**	**539**	**36**	**14**	**89**	**2,767**
2011 Total	**730**	**680**	**355**	**1,639**	**125**	**520**	**34**	**12**	**91**	**2,775**
2012 Total	**707**	**706**	**340**	**1,747**	**114**	**444**	**37**	**8**	**88**	**2,778**
2013 Total	**732**	**721**	**323**	**1,870**	**121**	**448**	**34**	**52**	**93**	**2,943**
2014 Total	**562**	**725**	**327**	**1,780**	**126**	**410**	**10**	**55**	**97**	**2,807**
2015 Total	**520**	**703**	**343**	**1,918**	**138**	**378**	**10**	**52**	**99**	**2,938**
2016 Total	**435**	**727**	**351**	**1,943**	**130**	**371**	**10**	**49**	**100**	**2,955**
2017 Total	**463**	**746**	**351**	**2,023**	**121**	**394**	**9**	**52**	**103**	**3,053**
2018 January	39	74	158	2,384	105	351	10	56	101	3,165
February	34	66	203	2,184	135	352	5	52	101	3,032
March	39	70	278	2,236	132	377	9	53	99	3,185
April	41	66	225	2,166	122	400	9	57	105	3,084
May	42	63	385	2,152	103	383	10	54	105	3,192
June	39	60	476	2,221	131	401	10	45	106	3,390
July	42	61	460	2,404	128	414	9	49	105	3,569
August	42	61	507	2,450	134	432	13	39	105	3,681
September	42	60	385	2,398	99	407	12	45	104	3,450
October	41	63	410	2,334	107	427	13	48	95	3,435
November	41	69	247	2,403	118	376	8	37	106	3,295
December	43	72	182	2,362	91	389	8	41	106	3,179
Total	**484**	**785**	**327**	**2,309**	**117**	**393**	**10**	**48**	**103**	**3,307**
2019 January	40	76	195	2,562	114	354	8	39	103	3,376
February	37	68	201	2,522	105	344	3	48	94	3,316
March	41	71	232	2,257	97	323	9	42	93	3,054
April	38	63	318	R 2,275	156	357	7	55	91	R 3,260
May	43	63	369	2,231	107	345	10	48	89	3,200
June	42	58	413	2,288	104	355	13	51	90	3,315
July	40	59	510	2,451	129	348	12	63	98	3,612
August	39	61	507	2,380	115	386	10	51	97	3,546
September	39	59	480	2,505	96	365	8	51	91	3,596
October	39	63	438	2,480	130	285	8	53	89	3,484
November	37	69	310	2,482	105	338	11	49	92	3,388
December	40	73	198	2,494	94	387	12	47	97	3,328
Total	**474**	**784**	**348**	**2,410**	**113**	**349**	**9**	**50**	**94**	**3,373**
2020 January	38	74	191	2,457	123	367	7	46	101	3,294
February	38	69	191	2,317	108	292	8	52	97	3,064
March	37	67	204	2,507	62	325	7	47	95	3,247
April	31	60	292	2,257	82	315	5	55	86	R 3,091
May	28	57	365	2,373	83	299	6	38	79	3,244
June	32	55	511	2,350	104	291	6	47	83	3,392
July	38	58	491	2,599	116	306	7	42	93	3,652
August	33	60	479	2,424	94	319	11	41	81	R 3,448
September	31	60	422	2,379	103	303	9	40	84	3,341
9-Month Total	**307**	**561**	**350**	**2,408**	**97**	**313**	**8**	**45**	**89**	**3,310**
2019 9-Month Total	**359**	**578**	**360**	**2,385**	**114**	**353**	**9**	**50**	**94**	**3,364**
2018 9-Month Total	**359**	**580**	**343**	**2,290**	**121**	**391**	**10**	**50**	**104**	**3,308**

[a] Ethane, propane, normal butane, isobutane, natural gasoline, and refinery olefins (ethylene, propylene, butylene, and isobutylene).
[b] Includes still gas not burned as refinery fuel.
[c] Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.
R=Revised.
Notes: • Data are estimates. • Non-combustion use estimates are included in total energy consumption. See Table 1.3. • Non-combustion estimates are all for industrial sector consumption, except for some lubricants consumed by the transportation sector. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia. • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary for all available annual and monthly data beginning in 1973.
Sources: • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.

Table 1.11b Heat Content of Non-Combustion Use of Fossil Fuels

(Quadrillion Btu)

	Coal	Natural Gas	Petroleum								Total	Percent of Total Energy Consumption
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petrochemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total		
1973 Total	**0.113**	**0.916**	**1.264**	**0.872**	**0.359**	**0.726**	**0.117**	**0.169**	**0.185**	**3.691**	**4.720**	**6.2**
1975 Total	**.099**	**.777**	**1.014**	**.822**	**.304**	**.652**	**.113**	**.144**	**.256**	**3.306**	**4.182**	**5.8**
1980 Total	**.084**	**.777**	**.962**	**1.128**	**.354**	**1.426**	**.108**	**.193**	**.303**	**4.473**	**5.334**	**6.8**
1985 Total	**.049**	**.662**	**1.029**	**1.194**	**.322**	**.817**	**.120**	**.159**	**.201**	**3.843**	**4.554**	**6.0**
1990 Total	**.024**	**.695**	**1.170**	**1.345**	**.362**	**1.123**	**.150**	**.107**	**.179**	**4.437**	**5.156**	**6.1**
1995 Total	**.029**	**.892**	**1.178**	**1.716**	**.346**	**1.214**	**.129**	**.071**	**.145**	**4.799**	**5.720**	**6.3**
1996 Total	**.028**	**.921**	**1.176**	**1.779**	**.335**	**1.209**	**.136**	**.075**	**.146**	**4.855**	**5.804**	**6.2**
1997 Total	**.027**	**.933**	**1.224**	**1.821**	**.354**	**1.400**	**.130**	**.072**	**.150**	**5.151**	**6.111**	**6.5**
1998 Total	**.021**	**.969**	**1.263**	**1.819**	**.371**	**1.403**	**.203**	**.107**	**.174**	**5.339**	**6.329**	**6.7**
1999 Total	**.021**	**.932**	**1.324**	**1.989**	**.375**	**1.329**	**.221**	**.145**	**.161**	**5.545**	**6.498**	**6.7**
2000 Total	**.022**	**.942**	**1.276**	**1.928**	**.369**	**1.344**	**.188**	**.097**	**.164**	**5.367**	**6.330**	**6.4**
2001 Total	**.019**	**.863**	**1.257**	**1.725**	**.338**	**1.192**	**.203**	**.078**	**.174**	**4.968**	**5.850**	**6.1**
2002 Total	**.030**	**.856**	**1.240**	**1.831**	**.334**	**1.272**	**.180**	**.102**	**.178**	**5.138**	**6.025**	**6.2**
2003 Total	**.031**	**.832**	**1.220**	**1.748**	**.309**	**1.371**	**.176**	**.080**	**.169**	**5.074**	**5.936**	**6.1**
2004 Total	**.030**	**.840**	**1.304**	**1.820**	**.313**	**1.592**	**.199**	**.051**	**.156**	**5.436**	**6.305**	**6.3**
2005 Total	**.030**	**.782**	**1.323**	**1.701**	**.312**	**1.474**	**.190**	**.063**	**.157**	**5.220**	**6.031**	**6.0**
2006 Total	**.018**	**.589**	**1.261**	**1.754**	**.303**	**1.477**	**.264**	**.070**	**.180**	**5.310**	**5.917**	**6.0**
2007 Total	**.018**	**.603**	**1.197**	**1.768**	**.313**	**1.351**	**.256**	**.078**	**.173**	**5.136**	**5.757**	**5.7**
2008 Total	**.017**	**.613**	**1.012**	**1.564**	**.291**	**1.172**	**.245**	**.085**	**.180**	**4.550**	**5.180**	**5.2**
2009 Total	**.012**	**.526**	**.873**	**1.676**	**.262**	**1.031**	**.226**	**.046**	**.179**	**4.293**	**4.831**	**5.1**
2010 Total	**.023**	**.669**	**.878**	**1.931**	**.291**	**1.096**	**.074**	**.026**	**.188**	**4.483**	**5.175**	**5.3**
2011 Total	**.023**	**.695**	**.859**	**1.947**	**.276**	**1.057**	**.070**	**.023**	**.193**	**4.425**	**5.144**	**5.3**
2012 Total	**.023**	**.724**	**.827**	**2.109**	**.254**	**.901**	**.077**	**.015**	**.187**	**4.369**	**5.115**	**5.4**
2013 Total	**.023**	**.741**	**.783**	**2.270**	**.268**	**.901**	**.070**	**.100**	**.197**	**4.589**	**5.354**	**5.5**
2014 Total	**.018**	**.749**	**.793**	**2.125**	**.280**	**.827**	**.021**	**.106**	**.205**	**4.358**	**5.125**	**5.2**
2015 Total	**.017**	**.730**	**.832**	**2.317**	**.305**	**.760**	**.022**	**.099**	**.208**	**4.542**	**5.289**	**5.4**
2016 Total	**.014**	**.755**	**.853**	**2.330**	**.289**	**.754**	**.021**	**.094**	**.212**	**4.553**	**5.323**	**5.5**
2017 Total	**.015**	**.774**	**.849**	**2.393**	**.267**	**.797**	**.020**	**.100**	**.217**	**4.643**	**5.432**	**5.6**
2018 January	.001	.076	.032	.238	.020	.060	.002	.009	.018	.380	.457	4.7
February	.001	.069	.038	.199	.023	.054	.001	.008	.016	.339	.408	5.1
March	.001	.073	.057	.218	.025	.065	.002	.009	.018	.393	.466	5.4
April	.001	.068	.045	.204	.022	.067	.002	.009	.018	.366	.436	5.5
May	.001	.065	.079	.213	.019	.066	.002	.009	.019	.407	.473	5.9
June	.001	.062	.095	.213	.024	.067	.002	.007	.018	.426	.489	6.0
July	.001	.063	.095	.240	.024	.071	.002	.008	.019	.458	.523	6.1
August	.001	.063	.104	.246	.025	.074	.002	.006	.019	.477	.542	6.2
September	.001	.063	.077	.233	.018	.067	.002	.007	.018	.422	.486	6.2
October	.001	.066	.084	.235	.020	.073	.002	.008	.017	.440	.507	6.3
November	.001	.071	.049	.233	.021	.062	.001	.006	.018	.392	.465	5.5
December	.001	.075	.037	.236	.017	.067	.001	.007	.019	.385	.461	5.1
Total	**.015**	**.815**	**.793**	**2.708**	**.259**	**.794**	**.020**	**.092**	**.218**	**4.884**	**5.714**	**5.6**
2019 January	.001	.079	.040	.257	.021	.061	.002	.006	.019	.405	.485	5.1
February	.001	.071	.037	.226	.018	.053	(s)	.007	.015	.357	.429	5.1
March	.001	.074	.048	.221	.018	.055	.002	.007	.017	.368	.443	5.1
April	.001	.066	.063	.215	.028	.059	.001	.009	.016	.392	.459	6.0
May	.001	.065	.076	.221	.020	.059	.002	.008	.016	.402	.468	5.9
June	.001	.061	.082	.224	.019	.059	.002	.008	.016	.410	.472	6.0
July	.001	.061	.105	.249	.024	.060	.002	.010	.018	.468	.531	6.2
August	.001	.064	.104	.242	.022	.066	.002	.008	.017	.461	.526	6.2
September	.001	.061	.096	.246	.018	.060	.001	.008	.016	.445	.507	6.5
October	.001	.066	.090	.252	.025	.049	.001	.009	.016	.442	.510	6.4
November	.001	.072	.062	.240	.019	.056	.002	.008	.016	.402	.475	5.7
December	.001	.076	.041	.248	.018	.066	.002	.008	.017	.399	.476	5.3
Total	**.015**	**.815**	**.844**	**2.841**	**.250**	**.704**	**.019**	**.096**	**.198**	**4.951**	**5.782**	**5.8**
2020 January	.001	.077	.039	.239	.023	.063	.001	.007	.018	.391	.469	5.2
February	.001	.071	.037	.207	.019	.047	.001	.008	.016	R .335	.408	4.9
March	.001	.070	.042	R .247	.012	.056	.001	.008	.017	.382	.453	5.8
April	.001	.062	.058	.210	.015	.053	.001	.009	.015	.360	.423	6.5
May	.001	.060	.075	.233	.016	.052	.001	.006	.014	.397	.457	6.7
June	.001	.057	.102	.222	.019	.048	.001	.007	.014	.413	.472	6.5
July	.001	.061	.101	.252	.022	.052	.001	.007	.017	.452	.514	6.3
August	.001	.062	.098	.240	.018	.054	.002	.007	.014	.434	.497	6.2
September	.001	.063	.084	.232	.019	.050	.002	.006	.015	.407	.471	6.4
9-Month Total	**.010**	**.583**	**.636**	**2.081**	**.162**	**.475**	**.012**	**.065**	**.140**	**3.571**	**4.165**	**6.0**
2018 9-Month Total	**.011**	**.602**	**.651**	**2.102**	**.188**	**.532**	**.014**	**.072**	**.149**	**3.707**	**4.320**	**5.8**
2017 9-Month Total	**.011**	**.602**	**.622**	**2.004**	**.200**	**.591**	**.015**	**.072**	**.163**	**3.667**	**4.281**	**5.7**

[a] Ethane, propane, normal butane, isobutane, natural gasoline, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

[b] Includes still gas not burned as refinery fuel.

[c] Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.

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

Notes: • Data are estimates. • Non-combustion use estimates are included in total energy consumption. See Table 1.3. • Non-combustion estimates are all for industrial sector consumption, except for some lubricants consumed by the transportation sector. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.• See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary for all available annual and monthly data beginning in 1973.

Sources: • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section. • **Percent of Total Energy Consumption:** Calculated as total non-combustion use of fossil fuels divided by total primary energy consumption (see Table 1.3).

Note 1. Merchandise Trade Value. Imports data presented are based on the customs values. Those values do not include insurance and freight and are consequently lower than the cost, insurance, and freight (CIF) values, which are also reported by the Bureau of the Census. All exports data, and imports data through 1980, are on a free alongside ship (f.a.s.) basis.

"Balance" is exports minus imports; a positive balance indicates a surplus trade value and a negative balance indicates a deficit trade value. "Energy" includes mineral fuels, lubricants, and related material. "Non-Energy Balance" and "Total Merchandise" include foreign exports (i.e., re-exports) and nonmonetary gold and U.S. Department of Defense Grant-Aid shipments. The "Non-Energy Balance" is calculated by subtracting the "Energy" from the "Total Merchandise Balance."

"Imports" consist of government and nongovernment shipments of merchandise into the 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the U.S. Foreign Trade Zones. They reflect the total arrival from foreign countries of merchandise that immediately entered consumption channels, warehouses, the Foreign Trade Zones, or the Strategic Petroleum Reserve. They exclude shipments between the United States, Puerto Rico, and U.S. possessions, shipments to U.S. Armed Forces and diplomatic missions abroad for their own use, U.S. goods returned to the United States by its Armed Forces, and in-transit shipments.

Note 2. Non-Combustion 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 non-combustion use as construction materials, chemical feedstocks, lubricants, solvents, and waxes. For example, coal tars from coal coke manufacturing are used as feedstock in the chemical industry, for metallurgical work, and in anti-dandruff shampoos; natural gas is used to make nitrogenous fertilizers and as chemical feedstocks; asphalt and road oil are used for roofing and paving; hydrocarbon gas liquids 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.

Coal

The U.S. Energy Information Administration (EIA) assumes all non-combustion use of coal comes from the process of manufacturing coal coke in the industrial sector. Among the byproducts of the process are "coal tars" or "coal liquids," which typically are rich in aromatic hydrocarbons, such as benzene, and are used as chemical feedstock. EIA estimates non-combustion use ratios of coal tar for 1973 forward. Prior to 1998, estimate ratios are based on coal tar production data from the United States International Trade Commission's *Synthetic Organic Chemicals*. For 1998 forward, coal tar production is estimated using chemicals industry coal, coke, and breeze nonfuel use data from EIA, Form EIA-846, "Manufacturing Energy Consumption Survey" (MECS). For Table 1.11b, coal tar values in Table 1.11a are multiplied by 32.0067 million Btu/short ton, which is the product of 4.95 barrels/short ton (the density of coal tar) and 6.466 million Btu/barrel (the approximate heat content of coal tar).

Natural Gas

EIA assumes that all non-combustion use of natural gas takes place in the industrial sector. EIA estimates non-combustion ratios of natural gas using total natural gas nonfuel use data from MECS, and natural gas used as feedstock for hydrogen production data from EIA, Form EIA-820, "Annual Refinery Report." For Table 1.11b, natural gas values in Table 1.11a are multiplied by the heat content factors for natural gas end-use sectors consumption shown in Table A4.

Asphalt and Road Oil

EIA assumes all asphalt and road oil consumption is for non-combustion use. For Table 1.11b, asphalt and road oil values in Table 1.11a are multiplied by 6.636 million Btu/ barrel (the approximate heat content of asphalt and road oil) and the number of days in the period.

Distillate Fuel Oil

EIA assumes that all non-combustion use of distillate fuel oil occurs in the industrial sector. EIA estimates non-combustion ratios of distillate fuel oil using total distillate fuel oil nonfuel use data from MECS. Ratios prior to 1985 are assumed to be equal to the 1985 ratio. For Table 1.11b, distillate fuel oil values in Table 1.11a are multiplied by the heat content factors for distillate fuel oil consumption shown in Table A3 and the number of days in the period. Distillate fuel oil is included in "other" petroleum products.

Hydrocarbon Gas Liquids (HGL)

EIA estimates non-combustion ratios of hydrocarbon gas liquids (HGL), which include ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). EIA assumes that 100% of ethane, ethylene, and propylene consumption is for non-combustion use; 85% of normal butane, butylene, isobutane, and isobutylene consumption is for non-combustion use; and 50% of natural gasoline consumption is for non-combustion use. Non-combustion use of propane in the industrial sector is estimated using data from the American Petroleum Institute (API), the Propane Education & Research Council (PERC), and EIA's *Petroleum Supply Annual* (PSA). For 1984 through 2009, propane non-combustion ratios are estimated using API propane and propylene chemical industry sales data. Propane non-combustion ratios prior to 1984 are assumed to be equal to the 1984 ratio. For 2010 through 2016, propane non-combustion ratios are estimated by subtracting API data for total odorized propane sales from PSA data for total propane product supplied. Beginning in 2017, propane non-combustion ratios are estimated by subtracting PERC data for total odorized propane sales from PSA data for total propane product supplied. For Table 1.11b, HGL component values are multiplied by the appropriate heat content factors in Table A1 and the number of days in the period.

Lubricants

EIA assumes all lubricants consumption is for non-combustion use. For Table 1.11b, lubricants values in Table 1.11a are multiplied by 6.065 million Btu/barrel (the approximate heat content of lubricants) and the number of days in the period.

Petrochemical Feedstocks, Naphtha

EIA assumes all naphtha for petrochemical feedstocks is for non-combustion use. For Table 1.11b, naphtha petrochemical feedstock values in 1.11a are multiplied by 5.248 million Btu/barrel (the approximate heat content of naphtha for petrochemical feedstocks) and the number of days in the period.

Petrochemical Feedstocks, Other Oils

EIA assumes all other oils for petrochemical feedstocks are for non-combustion use. For Table 1.11b, other oils petrochemical feedstock values in 1.11a are multiplied by 5.825 million Btu/barrel (the approximate heat content of other oils for petrochemical feedstocks) and the number of days in the period.

Petrochemical Feedstocks, Still Gas

EIA assumes all still gas not burned as refinery fuel or for pipeline gas supplies is for non-combustion use. EIA estimates non-combustion ratios of still gas by subtracting data for all known fuel uses (refinery fuel use from the PSA, and pipeline gas supplies from EIA's *Natural Gas Annual*) from the products supplied values in the PSA. The remainder is assumed to be dispatched to chemical plants as a feedstock for non-combustion use. For Table 1.11b, still gas for petrochemical feedstock values in 1.11a are multiplied by the still gas heat content factors (through 2015, the still gas heat content factor is 6.000 million Btu per fuel oil equivalent barrel; beginning in 2016, the still gas heat content factor is 6.287 million Btu per residual fuel oil equivalent barrel) and the number of days in the period.

Petroleum Coke

EIA assumes all non-combustion use of petroleum coke occurs in the industrial sector. Examples include petroleum coke used in the production of chemicals and metals. EIA estimates non-combustion ratios of petroleum coke by subtracting data for all known fuel use by refineries from PSA and MECS data. Non-combustion ratios prior to 1988 are assumed to be equal to the 1988 ratio. For Table 1.11b, petroleum coke values in 1.11a are multiplied by 5.719 million Btu/barrel (the approximate heat content of marketable petroleum coke) and the number of days in the period.

Residual Fuel Oil

EIA assumes that all non-combustion use of residual fuel oil occurs in the industrial sector. EIA estimates non-combustion ratios of residual fuel oil using total minus chemicals industry residual fuel oil nonfuel use data from MECS. Ratios prior to 1994 are assumed to be equal to the 1994 ratio. For Table 1.11b, residual fuel oil values in Table 1.11a are multiplied by 6.287 million Btu/barrel (the approximate heat content of residual fuel oil) and the number of days in the period. Residual fuel oil is included in "other" petroleum products.

Special Naphthas

EIA assumes all special naphthas consumption is for non- combustion use. For Table 1.11b, special naphthas values in Table 1.11a are multiplied by 5.248 million Btu/barrel (the approximate heat content of special naphthas) and the number of days in the period.

Waxes

EIA assumes all waxes consumption is for non-combustion use. For Table 1.11b, waxes values in Table 1.11a are multiplied by 5.537 million Btu/barrel (the approximate heat content of waxes) and the number of days in the period. Waxes are included in "other" petroleum products.

Miscellaneous Petroleum Products

Miscellaneous products include all finished petroleum products not classified elsewhere. EIA assumes all miscellaneous petroleum products consumption is for non-combustion use. For Table 1.11b, miscellaneous petroleum products values in Table 1.11a are multiplied by 5.796 million Btu/barrel (the approximate heat content of miscellaneous petroleum products) and the number of days in the period. Miscellaneous petroleum products are included in "other" petroleum products.

Table 1.2 Sources

Coal

1949–1988: Coal production data from Table 6.1 are converted to Btu by multiplying by the coal production heat content factors in Table A5.

1989 forward: Coal production data from Table 6.1 are converted to Btu by multiplying by the coal production heat content factors in Table A5. Waste coal supplied data from Table 6.1 are converted to Btu by multiplying by the waste coal supplied heat content factors in Table A5. Coal production (including waste coal supplied) is equal to coal production plus waste coal supplied.

Natural Gas (Dry)

1949 forward: Natural gas (dry) production data from Table 4.1 are converted to Btu by multiplying by the natural gas (dry) production heat content factors in Table A4.

Crude Oil

1949 forward: Crude oil (including lease condensate) production data from Table 3.1 are converted to Btu by multiplying by the crude oil (including lease condensate) production heat content factors in Table A2.

NGPL

1949 forward: Natural gas plant liquids (NGPL) production data from Table 3.1 are converted to Btu by multiplying by the NGPL production heat content factors in Table A2.

Fossil Fuels Total

1949 forward: Total fossil fuels production is the sum of the production values for coal, natural gas (dry), crude oil, and NGPL.

Nuclear Electric Power

1949 forward: Nuclear electricity net generation data from Table 7.2a are converted to Btu by multiplying by the nuclear heat rate factors in Table A6.

Renewable Energy
1949 forward: Table 10.1.

Total Primary Energy Production
1949 forward: Total primary energy production is the sum of the production values for fossil fuels, nuclear electric power, and renewable energy.

Table 1.3 Sources

Coal
1949 forward: Coal consumption data from Table 6.1 are converted to Btu by multiplying by the total coal consumption heat content factors in Table A5.

Natural Gas
1949–1979: Natural gas (including supplemental gaseous fuels) consumption data from Table 4.1 are converted to Btu by multiplying by the total natural gas consumption heat content factors in Table A4.

1980 forward: Natural gas (including supplemental gaseous fuels) consumption data from Table 4.1 are converted to Btu by multiplying by the total natural gas consumption heat content factors in Table A4. Supplemental gaseous fuels data in Btu are estimated using the method described in Note 3, “Supplemental Gaseous Fuels,” at the end of Section 4. Natural gas (excluding supplemental gaseous fuels) consumption is equal to natural gas (including supplemental gaseous fuels) consumption minus supplemental gaseous fuels.

Petroleum
1949–1992: Petroleum (excluding biofuels) consumption is equal to total petroleum products supplied from Table 3.6.

1993–2008: Petroleum (excluding biofuels) consumption is equal to total petroleum products supplied from Table 3.6 minus fuel ethanol consumption from Table 10.3.

2009–2011: Petroleum (excluding biofuels) consumption is equal to: total petroleum products supplied from Table 3.6; minus fuel ethanol (minus denaturant) consumption from Table 10.3; minus biodiesel consumption (calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1); minus other renewable diesel fuel and other renewables fuels consumption from Table 10.4.

2012 forward: Petroleum (excluding biofuels) consumption is equal to: total petroleum products supplied from Table 3.6; minus fuel ethanol (minus denaturant) consumption from Table 10.3; minus biodiesel consumption from Table 10.4; minus other renewable diesel fuel and other renewables fuels consumption from Table 10.4.

Coal Coke Net Imports
1949 forward: Table 1.4c.

Fossil Fuels Total
1949 forward: Total fossil fuels consumption is the sum of the consumption values for coal, natural gas, and petroleum, plus coal coke net imports.

Nuclear Electric Power
1949 forward: Nuclear electricity net generation data from Table 7.2a are converted to Btu by multiplying by the nuclear heat rate factors in Table A6.

Renewable Energy
1949 forward: Table 10.1.

Electricity Net Imports
1949 forward: Table 1.4c.

Total Primary Energy Consumption
1949 forward: Total primary energy consumption is the sum of the consumption values for fossil fuels, nuclear electric power, and renewable energy, plus electricity net imports.

Table 1.4a Sources

Coal
1949 forward: Coal imports data from Table 6.1 are converted to Btu by multiplying by the coal imports heat content factors in Table A5.

Coal Coke
1949 forward: Coal coke imports data from U.S. Department of Commerce, Bureau of the Census, Monthly Report IM 145, are converted to Btu by multiplying by the coal coke imports heat content factor in Table A5.

Natural Gas
1949 forward: Natural gas imports data from Table 4.1 are converted to Btu by multiplying by the natural gas imports heat content factors in Table A4.

Crude Oil
1949 forward: Crude oil imports data from Table 3.3b are converted to Btu by multiplying by the crude oil imports heat content factors in Table A2.

Petroleum Products
1949–1992: Petroleum products (excluding biofuels) imports are equal to total petroleum imports from Table 3.3b minus crude oil imports from Table 3.3b; petroleum products (excluding biofuels) imports data are converted to Btu by multiplying by the total petroleum products imports heat content factors in Table A2.

1993–2008: Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below).

2009 forward: Renewable fuels (excluding fuel ethanol) imports data are from U.S. Energy Information Administration, Petroleum Supply Annual (PSA), Tables 1 and 25, and Petroleum Supply Monthly (PSM), Tables 1 and 37 (for biomass-based diesel fuel and other renewable fuels, the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1; for other renewable diesel fuel, the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus renewable fuels (excluding fuel ethanol) imports.

Total Petroleum
1949 forward: Total petroleum imports are equal to crude oil imports plus petroleum products imports.

Biomass—Fuel Ethanol (Minus Denaturant)
1993 forward: Fuel ethanol (including denaturant) imports data are from PSA/PSM Table 1. Fuel ethanol (minus denaturant) production is equal to fuel ethanol (including denaturant) production from Table 10.3 minus denaturant from Table 10.3. Fuel ethanol (minus denaturant) imports are equal to fuel ethanol (including denaturant) imports multiplied by the ratio of fuel ethanol (minus denaturant) production to fuel ethanol (including denaturant) production. Fuel ethanol (minus denaturant) imports data are converted to Btu by multiplying by 3.539 million Btu per barrel, the undenatured ethanol heat content factor in Table A3.

Biomass—Biodiesel

2001 forward: Biodiesel imports data are from Table 10.4, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1.

Biomass—Other Renewable Fuels

2009 forward: Other renewable fuels imports data are from PSA Table 25 and PSM Table 37. For other renewable diesel fuel, the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1; for other renewable fuels, the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1.

Total Biomass

1993–2000: Total biomass imports are equal to fuel ethanol (minus denaturant) imports.

2001–2008: Total biomass imports are equal to fuel ethanol (minus denaturant) imports plus biodiesel imports.

2009 forward: Total biomass imports are the sum of imports values for fuel ethanol (minus denaturant), biodiesel, and other renewable fuels.

Electricity

1949 forward: Electricity imports data from Table 7.1 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Total Primary Energy Imports

1949 forward: Total primary energy imports are the sum of the imports values for coal, coal coke, natural gas, total petroleum, total biomass, and electricity.

Table 1.4b Sources

Coal

1949 forward: Coal exports data from Table 6.1 are converted to Btu by multiplying by the coal exports heat content factors in Table A5.

Coal Coke

1949 forward: Coal coke exports data from U.S. Department of Commerce, Bureau of the Census, Monthly Report EM 545, are converted to Btu by multiplying by the coal coke exports heat content factor in Table A5.

Natural Gas

1949 forward: Natural gas exports data from Table 4.1 are converted to Btu by multiplying by the natural gas exports heat content factors in Table A4.

Crude Oil

1949 forward: Crude oil exports data from Table 3.3b are converted to Btu by multiplying by the crude oil exports heat content factor in Table A2.

Petroleum Products

1949–2009: Petroleum products (excluding biofuels) exports are equal to total petroleum exports from Table 3.3b minus crude oil exports from Table 3.3b; petroleum products (excluding biofuels) exports data are converted to Btu by multiplying by the total petroleum products exports heat content factors in Table A2.

2010: Petroleum products (including biofuels) exports are equal to total petroleum exports from Table 3.3b minus crude oil exports from Table 3.3b; petroleum products (including biofuels) exports data are converted to Btu by multiplying by the total petroleum products exports heat content factors in Table A2. Petroleum products (excluding biofuels) exports are equal to petroleum products (including biofuels) exports minus fuel ethanol (minus denaturant) exports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below).

2011 forward: Biomass-based diesel fuel exports data are from U.S. Energy Information Administration (EIA), Petroleum Supply Annual (PSA), Table 31, and Petroleum Supply Monthly (PSM), Table 49, and are converted to Btu by multiplying

by the biodiesel heat content factor in Table A1. Petroleum products (excluding biofuels) exports are equal to petroleum products (including biofuels) exports (see 2010 sources above) minus fuel ethanol (minus denaturant) exports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biomass-based diesel fuel exports.

Total Petroleum
1949 forward: Total petroleum exports are equal to crude oil exports plus petroleum products exports.

Biomass—Fuel Ethanol (Minus Denaturant)
2010 forward: Fuel ethanol (including denaturant) exports data are from PSA/PSM Table 1. Fuel ethanol (minus denaturant) production is equal to fuel ethanol (including denaturant) production from Table 10.3 minus denaturant from Table 10.3. Fuel ethanol (minus denaturant) exports are equal to fuel ethanol (including denaturant) exports multiplied by the ratio of fuel ethanol (minus denaturant) production to fuel ethanol (including denaturant) production. Fuel ethanol (minus denaturant) exports are converted to Btu by multiplying by 3.539 million Btu per barrel, the undenatured ethanol heat content factor in Table A3.

Biomass—Biodiesel
2001 forward: Biodiesel exports data are from Table 10.4, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1.

Biomass—Densified Biomass
2016 forward: Densified biomass exports data are from EIA, Form EIA-63C, "Densified Biomass Fuel Report."

Total Biomass
2001–2009: Total biomass exports are equal to biodiesel exports.

2010–2015: Total biomass exports are equal to fuel ethanol (minus denaturant) exports plus biodiesel exports.

2016 forward: Total biomass exports are the sum of the exports values for fuel ethanol (minus denaturant), biodiesel, and densified biomass.

Electricity
1949 forward: Electricity exports data from Table 7.1 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Total Primary Energy Exports
1949 forward: Total primary energy exports are the sum of the exports values for coal, coal coke, natural gas, total petroleum, total biomass, and electricity.

Table 1.5 Sources

U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Division:

Petroleum Exports
1974–1987: "U.S. Exports," FT-410, December issues.

1988 and 1989: "Report on U.S. Merchandise Trade," Final Revisions.

1990–1992: "U.S. Merchandise Trade," Final Report.

1993–2016: "U.S. International Trade in Goods and Services," Annual Revisions.

2017–2019: "U.S. International Trade in Goods and Services," 2019 Annual Revisions.

2020: "U.S. International Trade in Goods and Services," FT-900, monthly.

Petroleum Imports
1974–1987: "U.S. Merchandise Trade," FT-900, December issues, 1975–1988.

1988 and 1989: "Report on U.S. Merchandise Trade," Final Revisions.

1990–1993: "U.S. Merchandise Trade," Final Report.

1994–2016: "U.S. International Trade in Goods and Services," Annual Revisions.

2017–2019: "U.S. International Trade in Goods and Services," 2019 Annual Revisions.

2020: "U.S. International Trade in Goods and Services," FT-900, monthly.

Energy Exports and Imports

1974–1987: U.S. merchandise trade press releases and database printouts for adjustments.

1988: January–July, monthly FT-900 supplement, 1989 issues. August–December, monthly FT-900, 1989 issues.

1989: Monthly FT-900, 1990 issues.

1990–1992: "U.S. Merchandise Trade," Final Report. 1993–2009: "U.S. International Trade in Goods and Services," Annual Revisions.

1993–2016: "U.S. International Trade in Goods and Services," Annual Revisions.

2017–2019: "U.S. International Trade in Goods and Services," 2019 Annual Revisions.

2020: "U.S. International Trade in Goods and Services," FT-900, monthly.

Petroleum Balance

1974 forward: The petroleum balance is calculated by the U.S. Energy Information Administration (EIA) as petroleum imports minus petroleum exports.

Energy Balance

1974 forward: The energy balance is calculated by EIA as energy imports minus energy exports.

Non-Energy Balance

1974 forward: The non-energy balance is calculated by EIA as the total merchandise balance minus the energy balance.

Total Merchandise

1974–1987: U.S. merchandise trade press releases and database printouts for adjustments.

1988: "Report on U.S. Merchandise Trade, 1988 Final Revisions," August 18, 1989.

1989: "Report on U.S. Merchandise Trade, 1989 Revisions," July 10, 1990.

1990: "U.S. Merchandise Trade, 1990 Final Report," May 10, 1991, and "U.S. Merchandise Trade, December 1992,"

February 18, 1993, page 3.

1991: "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993.

1992–2016: "U.S. International Trade in Goods and Services," Annual Revisions.

2017–2019: "U.S. International Trade in Goods and Services," 2019 Annual Revisions.

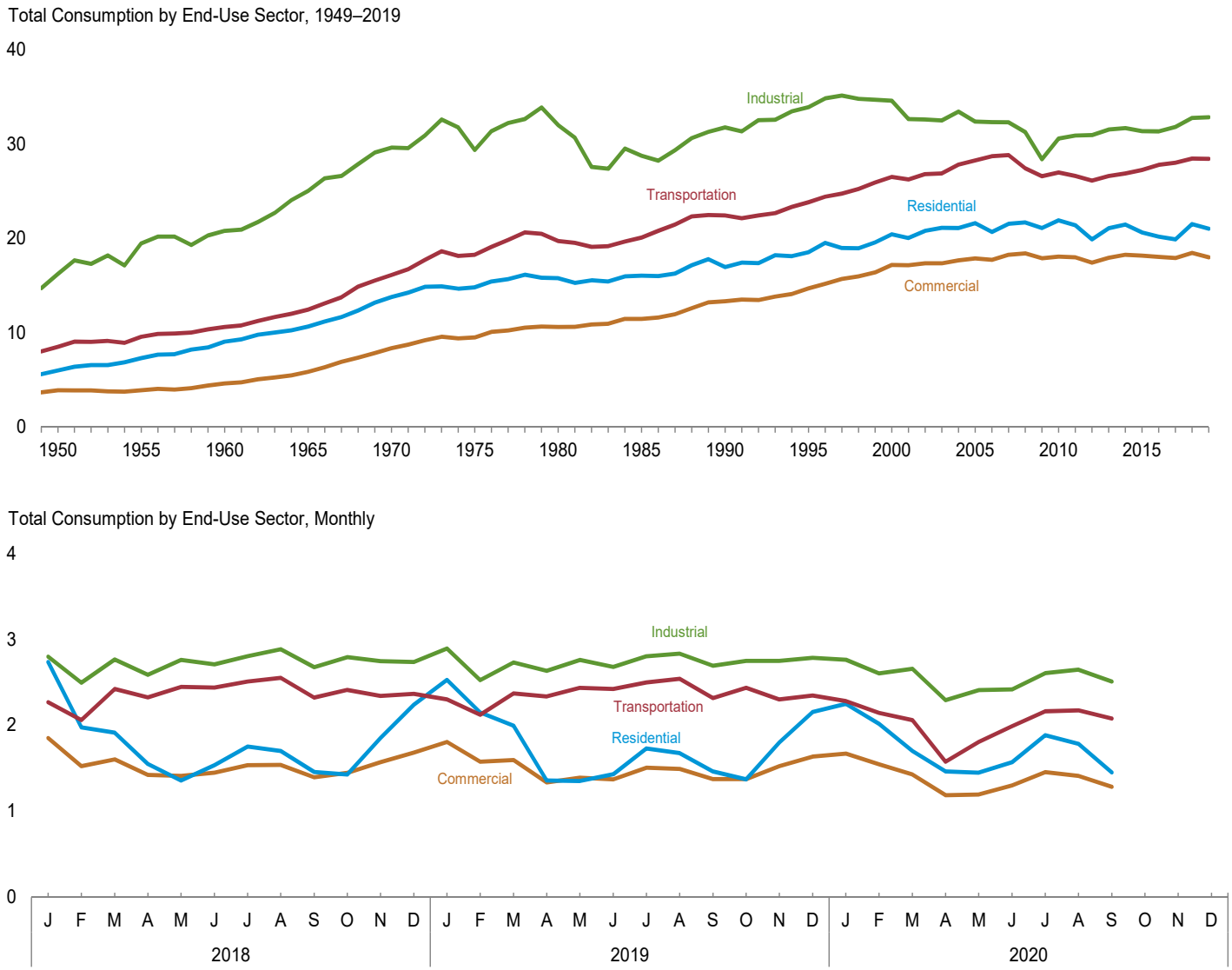
2020: "U.S. International Trade in Goods and Services," FT-900, monthly.

THIS PAGE INTENTIONALLY LEFT BLANK

2. Energy Consumption By Sector

Figure 2.1 Energy Consumption by Sector

(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.1.

Table 2.1 Energy Consumption by Sector

(Trillion Btu)

	End-Use Sectors								Electric Power Sector[c,d]	Balancing Item[g]	Primary Total[h]
	Residential		Commercial[a]		Industrial[b]		Transportation				
	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]		
1950 Total	**4,830**	**5,989**	**2,834**	**3,893**	**13,872**	**16,224**	**8,383**	**8,492**	**4,679**	**(s)**	**34,599**
1955 Total	**5,608**	**7,278**	**2,561**	**3,895**	**16,073**	**19,455**	**9,474**	**9,550**	**6,461**	**(s)**	**40,178**
1960 Total	**6,651**	**9,040**	**2,723**	**4,610**	**16,949**	**20,795**	**10,560**	**10,596**	**8,158**	**(s)**	**45,041**
1965 Total	**7,280**	**10,640**	**3,177**	**5,846**	**20,085**	**25,035**	**12,399**	**12,432**	**11,012**	**(s)**	**53,953**
1970 Total	**8,323**	**13,766**	**4,237**	**8,346**	**22,941**	**29,605**	**16,062**	**16,098**	**16,253**	**(s)**	**67,817**
1975 Total	**7,990**	**14,814**	**4,059**	**9,493**	**21,400**	**29,379**	**18,211**	**18,245**	**20,270**	**1**	**71,931**
1980 Total	**7,440**	**15,754**	**4,105**	**10,578**	**22,549**	**31,993**	**19,659**	**19,697**	**24,269**	**-1**	**78,021**
1985 Total	**7,149**	**16,042**	**3,732**	**11,451**	**19,384**	**28,757**	**20,042**	**20,088**	**26,032**	**-4**	**76,334**
1990 Total	**6,553**	**16,941**	**3,894**	**13,317**	**21,120**	**31,749**	**22,366**	**22,419**	**[d] 30,495**	**7**	**84,433**
1995 Total	**6,935**	**18,517**	**4,101**	**14,690**	**22,657**	**33,908**	**23,757**	**23,812**	**33,479**	**3**	**90,931**
2000 Total	**7,156**	**20,422**	**4,278**	**17,175**	**22,748**	**34,587**	**26,456**	**26,515**	**38,062**	**2**	**98,702**
2001 Total	**6,864**	**20,038**	**4,085**	**17,137**	**21,726**	**32,653**	**26,179**	**26,242**	**37,215**	**-6**	**96,064**
2002 Total	**6,907**	**20,786**	**4,132**	**17,346**	**21,727**	**32,590**	**26,747**	**26,808**	**38,016**	**5**	**97,535**
2003 Total	**7,233**	**21,120**	**4,298**	**17,346**	**21,469**	**32,489**	**26,807**	**26,881**	**38,028**	**-1**	**97,835**
2004 Total	**6,987**	**21,082**	**4,232**	**17,656**	**22,340**	**33,444**	**27,748**	**27,826**	**38,701**	**-6**	**100,002**
2005 Total	**6,901**	**21,613**	**4,052**	**17,854**	**21,343**	**32,374**	**28,179**	**28,261**	**39,626**	**(s)**	**100,102**
2006 Total	**6,155**	**20,671**	**3,748**	**17,707**	**21,455**	**32,317**	**28,618**	**28,697**	**39,417**	**(s)**	**99,392**
2007 Total	**6,589**	**21,520**	**3,923**	**18,253**	**21,284**	**32,306**	**28,727**	**28,815**	**40,371**	**-1**	**100,893**
2008 Total	**6,889**	**21,668**	**4,100**	**18,402**	**20,455**	**31,261**	**27,339**	**27,421**	**39,969**	**1**	**98,754**
2009 Total	**6,637**	**21,082**	**4,056**	**17,888**	**18,670**	**28,380**	**26,510**	**26,592**	**38,069**	**(s)**	**93,942**
2010 Total	**6,641**	**21,895**	**4,023**	**18,059**	**20,327**	**30,574**	**26,897**	**26,978**	**39,619**	**7**	**97,513**
2011 Total	**6,473**	**21,382**	**4,066**	**17,982**	**20,505**	**30,893**	**26,518**	**26,599**	**39,293**	**8**	**96,863**
2012 Total	**5,684**	**19,870**	**3,725**	**17,422**	**20,781**	**30,954**	**26,050**	**26,126**	**38,131**	**2**	**94,374**
2013 Total	**6,689**	**21,052**	**4,161**	**17,930**	**21,378**	**31,525**	**26,533**	**26,612**	**38,357**	**-1**	**97,117**
2014 Total	**7,006**	**21,446**	**4,390**	**18,265**	**21,455**	**31,691**	**26,789**	**26,869**	**38,629**	**6**	**98,276**
2015 Total	**6,465**	**20,618**	**4,441**	**18,157**	**21,417**	**31,361**	**27,161**	**27,238**	**37,890**	**1**	**97,375**
2016 Total	**6,028**	**20,176**	**4,321**	**18,030**	**21,554**	**31,347**	**27,710**	**27,786**	**37,727**	**-4**	**97,335**
2017 Total	**6,093**	**19,883**	**4,368**	**17,900**	**21,953**	**31,798**	**27,939**	**28,014**	**37,241**	**(s)**	**97,595**
2018 January	1,248	2,737	704	1,853	1,999	2,798	2,262	2,269	3,446	2	9,660
February	886	1,978	539	1,525	1,769	2,495	2,055	2,061	2,811	-2	8,057
March	856	1,914	536	1,603	1,967	2,767	2,416	2,422	2,931	-4	8,701
April	610	1,549	407	1,423	1,812	2,589	2,319	2,325	2,737	-6	7,881
May	293	1,358	251	1,412	1,881	2,760	2,442	2,448	3,112	-2	7,977
June	229	1,536	224	1,451	1,848	2,709	2,433	2,439	3,402	2	8,137
July	215	1,753	219	1,536	1,909	2,803	2,501	2,508	3,756	5	8,604
August	205	1,702	223	1,538	1,988	2,886	2,546	2,553	3,717	5	8,683
September	221	1,457	226	1,396	1,857	2,678	2,316	2,322	3,234	1	7,854
October	410	1,429	341	1,447	1,980	2,793	2,406	2,412	2,944	-2	8,078
November	800	1,852	507	1,571	1,924	2,747	2,334	2,341	2,945	-2	8,508
December	1,006	2,240	601	1,682	1,932	2,737	2,358	2,365	3,127	-2	9,021
Total	**6,975**	**21,502**	**4,776**	**18,440**	**22,866**	**32,761**	**28,389**	**28,465**	**38,163**	**-7**	**101,162**
2019 January	1,207	2,528	697	1,807	2,074	2,893	2,293	2,300	3,257	2	9,531
February	1,028	2,149	597	1,578	1,791	2,526	2,116	2,123	2,843	(s)	8,375
March	899	1,996	549	1,595	1,940	2,730	2,366	2,372	2,939	-2	8,691
April	481	1,357	344	1,337	1,854	2,634	2,331	2,337	2,655	-4	7,661
May	348	1,352	276	1,389	1,912	2,760	2,430	2,436	2,972	-2	7,935
June	247	1,432	228	1,370	1,841	2,680	2,416	2,422	3,172	1	7,905
July	229	1,732	226	1,506	1,917	2,804	2,492	2,498	3,676	7	8,547
August	229	1,676	233	1,494	1,955	2,833	2,535	2,542	3,592	6	8,551
September	221	1,463	221	1,374	1,879	2,693	2,312	2,318	3,215	3	7,852
October	372	1,370	309	1,374	1,970	2,749	2,430	2,435	2,848	-2	7,927
November	791	1,802	509	1,524	1,965	2,750	2,294	2,300	2,818	-1	8,376
December	982	2,156	589	1,637	2,009	2,786	2,341	2,348	3,005	-3	8,924
Total	**7,033**	**21,013**	**4,777**	**17,986**	**23,109**	**32,838**	**28,358**	**28,432**	**36,992**	**6**	**100,274**
2020 January	1,042	2,251	614	1,671	2,009	2,762	2,276	2,283	3,025	-3	8,963
February	933	2,018	559	1,548	1,871	2,605	2,138	2,144	2,815	-5	8,311
March	708	1,702	445	1,428	1,916	2,657	2,055	2,060	2,724	-5	[R] 7,842
April	540	1,464	327	1,187	1,634	2,294	1,572	1,576	2,448	-4	6,517
May	389	1,449	255	1,195	1,692	2,408	1,802	1,806	2,721	-1	6,858
June	259	1,571	214	1,301	[R] 1,664	2,417	1,985	1,990	3,156	2	7,281
July	233	[R] 1,884	208	[R] 1,455	1,802	2,606	2,157	2,163	[R] 3,708	6	[R] 8,114
August	222	[R] 1,785	209	[R] 1,411	1,834	2,647	2,170	2,175	[R] 3,584	8	[R] 8,026
September	247	1,452	225	1,285	1,777	2,509	2,075	2,080	3,002	3	7,329
9-Month Total	**4,571**	**15,577**	**3,057**	**12,481**	**16,200**	**22,905**	**18,231**	**18,279**	**27,183**	**(s)**	**69,241**
2019 9-Month Total	**4,888**	**15,685**	**3,370**	**13,450**	**17,165**	**24,553**	**21,291**	**21,348**	**28,321**	**11**	**75,047**
2018 9-Month Total	**4,761**	**15,983**	**3,328**	**13,738**	**17,029**	**24,485**	**21,291**	**21,348**	**29,146**	**(s)**	**75,554**

[a] Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[c] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[d] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

[e] See "Primary Energy Consumption" in Glossary.

[f] Total energy consumption in the end-use sectors consists of primary energy consumption, electricity retail sales, and electrical system energy losses. See Note 1, "Electrical System Energy Losses," at end of section.

[g] 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 coal and natural gas.

[h] Primary energy consumption total. See Table 1.3.

R=Revised. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

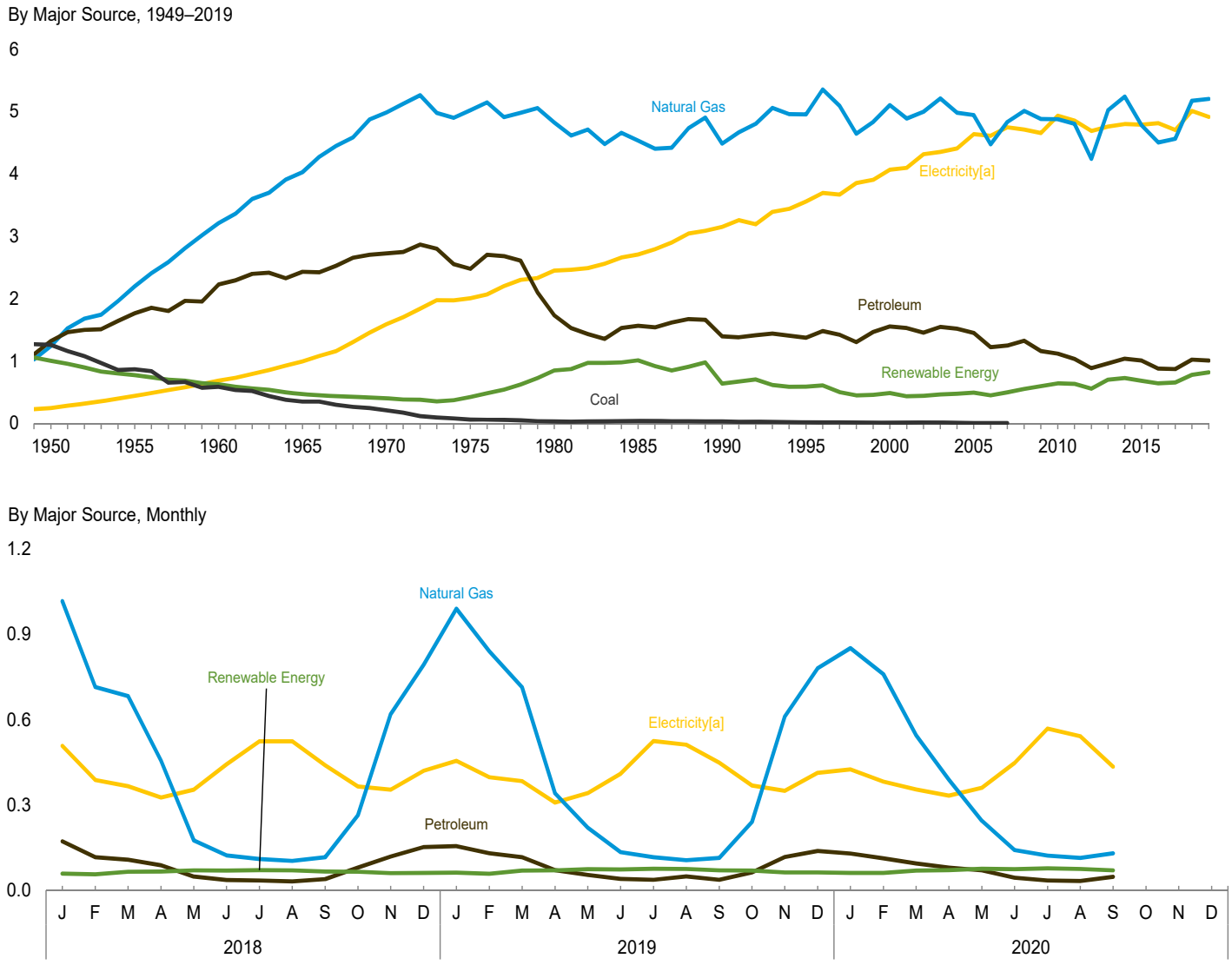
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **End-Use Sectors:** Tables 2.2–2.5. • **Electric Power Sector:** Table 2.6. • **Balancing Item:** Calculated as primary energy total consumption minus the sum of total energy consumption in the four end-use sectors. • **Primary Total:** Table 1.3.

Figure 2.2 Residential Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity retail sales.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.

Source: Table 2.2.

Table 2.2 Residential Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]											
	Fossil Fuels				Renewable Energy[b]							
	Coal	Natural Gas[c]	Petro-leum	Total	Geo-thermal	Solar[d]	Bio-mass	Total	Total Primary	Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
1950 Total	**1,261**	**1,240**	**1,322**	**3,824**	**NA**	**NA**	**1,006**	**1,006**	**4,830**	**246**	**913**	**5,989**
1955 Total	**867**	**2,198**	**1,767**	**4,833**	**NA**	**NA**	**775**	**775**	**5,608**	**438**	**1,232**	**7,278**
1960 Total	**585**	**3,212**	**2,228**	**6,025**	**NA**	**NA**	**627**	**627**	**6,651**	**687**	**1,701**	**9,040**
1965 Total	**352**	**4,028**	**2,432**	**6,812**	**NA**	**NA**	**468**	**468**	**7,280**	**993**	**2,367**	**10,640**
1970 Total	**209**	**4,987**	**2,726**	**7,922**	**NA**	**NA**	**401**	**401**	**8,323**	**1,591**	**3,852**	**13,766**
1975 Total	**63**	**5,023**	**2,479**	**7,565**	**NA**	**NA**	**425**	**425**	**7,990**	**2,007**	**4,817**	**14,814**
1980 Total	**31**	**4,825**	**1,734**	**6,590**	**NA**	**NA**	**850**	**850**	**7,440**	**2,448**	**5,866**	**15,754**
1985 Total	**39**	**4,534**	**1,566**	**6,139**	**NA**	**NA**	**1,010**	**1,010**	**7,149**	**2,709**	**6,184**	**16,042**
1990 Total	**31**	**4,487**	**1,395**	**5,912**	**6**	**55**	**580**	**640**	**6,553**	**3,153**	**7,235**	**16,941**
1995 Total	**17**	**4,954**	**1,374**	**6,345**	**7**	**63**	**520**	**589**	**6,935**	**3,557**	**8,026**	**18,517**
2000 Total	**11**	**5,105**	**1,554**	**6,670**	**9**	**58**	**420**	**486**	**7,156**	**4,069**	**9,197**	**20,422**
2001 Total	**12**	**4,889**	**1,529**	**6,430**	**9**	**55**	**370**	**435**	**6,864**	**4,100**	**9,074**	**20,038**
2002 Total	**12**	**4,995**	**1,457**	**6,464**	**10**	**53**	**380**	**443**	**6,907**	**4,317**	**9,562**	**20,786**
2003 Total	**12**	**5,209**	**1,547**	**6,768**	**13**	**52**	**400**	**465**	**7,233**	**4,353**	**9,534**	**21,120**
2004 Total	**11**	**4,981**	**1,520**	**6,512**	**14**	**51**	**410**	**475**	**6,987**	**4,408**	**9,687**	**21,082**
2005 Total	**8**	**4,946**	**1,450**	**6,405**	**16**	**50**	**430**	**496**	**6,901**	**4,638**	**10,074**	**21,613**
2006 Total	**6**	**4,476**	**1,222**	**5,704**	**18**	**53**	**380**	**451**	**6,155**	**4,611**	**9,905**	**20,671**
2007 Total	**8**	**4,835**	**1,249**	**6,092**	**22**	**55**	**420**	**497**	**6,589**	**4,750**	**10,180**	**21,520**
2008 Total	**NA**	**5,010**	**1,325**	**6,335**	**26**	**58**	**470**	**555**	**6,889**	**4,711**	**10,068**	**21,668**
2009 Total	**NA**	**4,883**	**1,158**	**6,041**	**33**	**60**	**504**	**597**	**6,637**	**4,657**	**9,788**	**21,082**
2010 Total	**NA**	**4,878**	**1,120**	**5,999**	**37**	**65**	**541**	**642**	**6,641**	**4,933**	**10,321**	**21,895**
2011 Total	**NA**	**4,805**	**1,034**	**5,838**	**40**	**71**	**524**	**635**	**6,473**	**4,855**	**10,054**	**21,382**
2012 Total	**NA**	**4,242**	**886**	**5,128**	**40**	**79**	**438**	**557**	**5,684**	**4,690**	**9,496**	**19,870**
2013 Total	**NA**	**5,023**	**963**	**5,986**	**40**	**91**	**572**	**703**	**6,689**	**4,759**	**9,604**	**21,052**
2014 Total	**NA**	**5,242**	**1,036**	**6,279**	**40**	**110**	**579**	**728**	**7,006**	**4,801**	**9,638**	**21,446**
2015 Total	**NA**	**4,777**	**1,007**	**5,784**	**40**	**128**	**513**	**681**	**6,465**	**4,791**	**9,362**	**20,618**
2016 Total	**NA**	**4,506**	**878**	**5,384**	**40**	**162**	**442**	**643**	**6,028**	**4,815**	**9,334**	**20,176**
2017 Total	**NA**	**4,563**	**871**	**5,435**	**40**	**194**	**425**	**658**	**6,093**	**4,704**	**9,085**	**19,883**
2018 January	NA	1,017	172	1,189	3	12	44	59	1,248	508	982	2,737
February	NA	715	116	830	3	13	40	56	886	388	704	1,978
March	NA	683	107	790	3	18	44	65	856	366	692	1,914
April	NA	456	88	544	3	21	43	66	610	326	613	1,549
May	NA	175	48	223	3	23	44	70	293	354	711	1,358
June	NA	123	36	160	3	23	43	69	229	443	864	1,536
July	NA	110	34	144	3	24	44	71	215	524	1,014	1,753
August	NA	103	31	135	3	23	44	70	205	524	973	1,702
September	NA	116	39	155	3	20	43	66	221	440	796	1,457
October	NA	264	80	345	3	18	44	65	410	365	654	1,429
November	NA	620	119	740	3	14	43	60	800	354	698	1,852
December	NA	793	152	945	3	13	44	61	1,006	420	814	2,240
Total	**NA**	**5,174**	**1,022**	**6,197**	**40**	**221**	**517**	**778**	**6,975**	**5,013**	**9,515**	**21,502**
2019 January	NA	990	155	1,145	3	13	45	62	1,207	455	867	2,528
February	NA	840	130	970	3	15	41	58	1,028	398	723	2,149
March	NA	714	116	830	3	21	45	69	899	384	712	1,996
April	NA	341	71	411	3	23	43	70	481	308	568	1,357
May	NA	220	54	274	3	26	45	74	348	342	662	1,352
June	NA	134	40	174	3	26	43	73	247	410	775	1,432
July	NA	116	37	153	3	27	45	76	229	525	978	1,732
August	NA	106	49	155	3	26	45	75	229	512	935	1,676
September	NA	114	37	151	3	23	43	70	221	449	794	1,463
October	NA	240	63	304	3	20	45	69	372	368	629	1,370
November	NA	611	117	728	3	16	43	63	791	350	661	1,802
December	NA	781	138	919	3	15	45	63	982	413	761	2,156
Total	**NA**	**5,205**	**1,007**	**6,212**	**40**	**252**	**529**	**821**	**7,033**	**4,914**	**9,066**	**21,013**
2020 January	NA	852	129	980	3	16	42	61	1,042	425	784	2,251
February	NA	760	112	872	3	18	39	61	933	382	704	2,018
March	NA	545	94	639	3	24	42	69	708	355	639	1,702
April	NA	389	80	469	3	27	41	71	540	333	592	1,464
May	NA	244	70	314	3	30	42	76	389	360	701	1,449
June	NA	141	44	184	3	30	41	74	259	448	865	1,571
July	NA	122	34	156	3	31	42	77	233	569	R 1,082	R 1,884
August	NA	114	33	147	3	30	42	75	222	542	R 1,022	R 1,785
September	NA	130	47	177	3	26	41	70	247	435	770	1,452
9-Month Total	**NA**	**3,297**	**641**	**3,937**	**30**	**231**	**373**	**634**	**4,571**	**3,848**	**7,158**	**15,577**
2019 9-Month Total	**NA**	**3,574**	**688**	**4,262**	**30**	**201**	**396**	**626**	**4,888**	**3,783**	**7,014**	**15,685**
2018 9-Month Total	**NA**	**3,498**	**670**	**4,169**	**30**	**176**	**387**	**592**	**4,761**	**3,873**	**7,349**	**15,983**

[a] See "Primary Energy Consumption" in Glossary.
[b] See Table 10.2a for notes on series components.
[c] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Distributed (small-scale) solar photovoltaic (PV) electricity generation in the residential sector and distributed solar thermal energy in the residential, commercial, and industrial sectors. See Tables 10.2a and 10.5.
[e] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.
[f] 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 1, "Electrical System Energy Losses," at end of section.

R=Revised. NA=Not available.

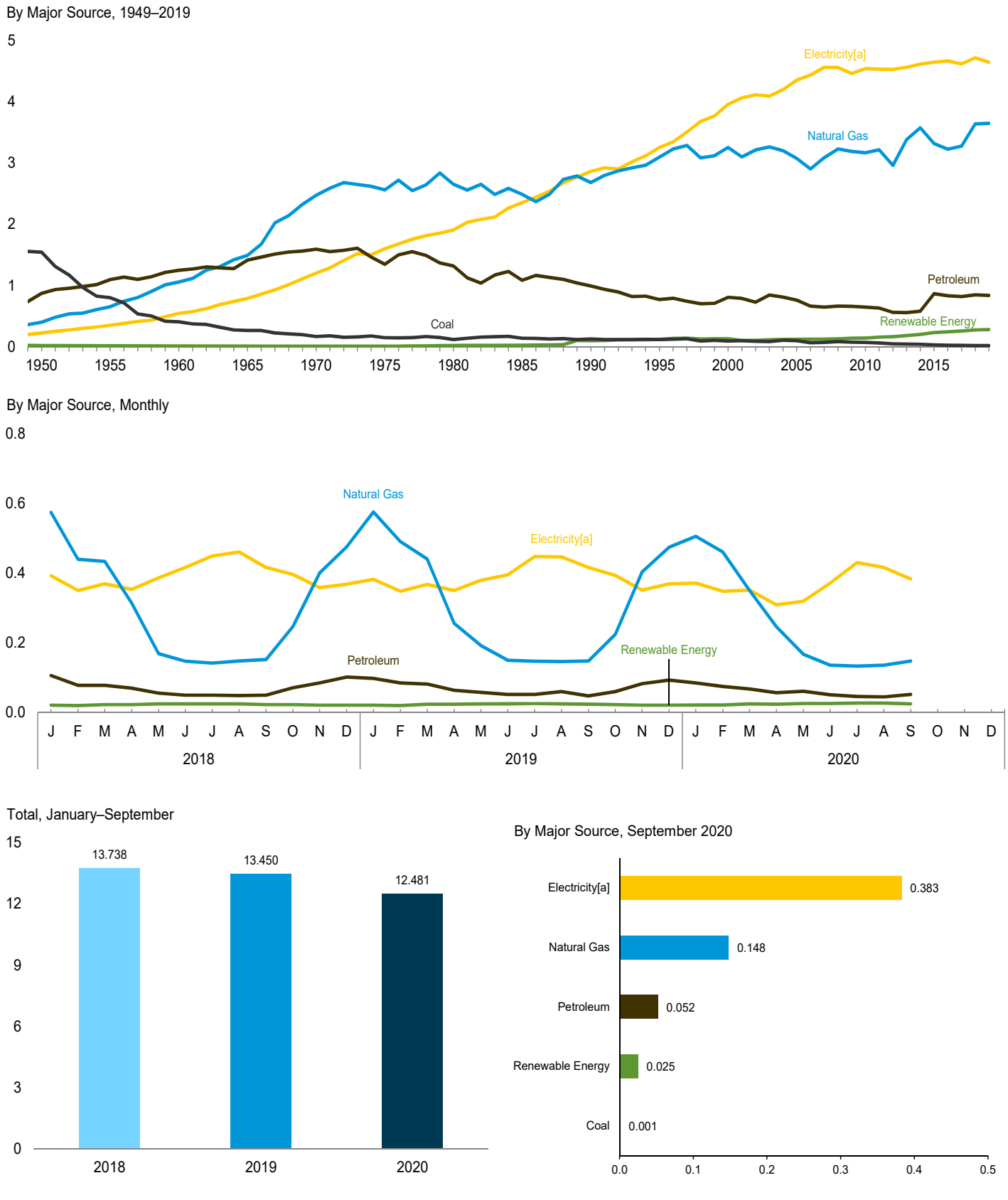
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 2.3 Commercial Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity retail sales.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.

Source: Table 2.3.

Table 2.3 Commercial Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]													
	Fossil Fuels				Renewable Energy[b]									
	Coal	Natural Gas[c]	Petroleum[d]	Total	Hydroelectric Power[e]	Geothermal	Solar[f]	Wind	Biomass	Total	Total Primary	Electricity Retail Sales[g]	Electrical System Energy Losses[h]	Total
1950 Total	**1,542**	**401**	**872**	**2,815**	**NA**	**NA**	**NA**	**NA**	**19**	**19**	**2,834**	**225**	**834**	**3,893**
1955 Total	**801**	**651**	**1,095**	**2,547**	**NA**	**NA**	**NA**	**NA**	**15**	**15**	**2,561**	**350**	**984**	**3,895**
1960 Total	**407**	**1,056**	**1,248**	**2,711**	**NA**	**NA**	**NA**	**NA**	**12**	**12**	**2,723**	**543**	**1,344**	**4,610**
1965 Total	**265**	**1,490**	**1,413**	**3,168**	**NA**	**NA**	**NA**	**NA**	**9**	**9**	**3,177**	**789**	**1,880**	**5,846**
1970 Total	**165**	**2,473**	**1,592**	**4,229**	**NA**	**NA**	**NA**	**NA**	**8**	**8**	**4,237**	**1,201**	**2,908**	**8,346**
1975 Total	**147**	**2,558**	**1,346**	**4,051**	**NA**	**NA**	**NA**	**NA**	**8**	**8**	**4,059**	**1,598**	**3,835**	**9,493**
1980 Total	**115**	**2,651**	**1,318**	**4,084**	**NA**	**NA**	**NA**	**NA**	**21**	**21**	**4,105**	**1,906**	**4,567**	**10,578**
1985 Total	**137**	**2,488**	**1,083**	**3,708**	**NA**	**NA**	**NA**	**NA**	**24**	**24**	**3,732**	**2,351**	**5,368**	**11,451**
1990 Total	**124**	**2,680**	**991**	**3,795**	**1**	**3**	**(s)**	**–**	**94**	**98**	**3,894**	**2,860**	**6,564**	**13,317**
1995 Total	**117**	**3,096**	**769**	**3,982**	**1**	**5**	**(s)**	**–**	**113**	**119**	**4,101**	**3,252**	**7,337**	**14,690**
2000 Total	**92**	**3,252**	**807**	**4,150**	**1**	**8**	**1**	**–**	**119**	**128**	**4,278**	**3,956**	**8,942**	**17,175**
2001 Total	**97**	**3,097**	**789**	**3,983**	**1**	**8**	**1**	**–**	**92**	**101**	**4,085**	**4,062**	**8,990**	**17,137**
2002 Total	**90**	**3,212**	**725**	**4,027**	**(s)**	**9**	**1**	**–**	**95**	**105**	**4,132**	**4,110**	**9,104**	**17,346**
2003 Total	**82**	**3,261**	**842**	**4,184**	**1**	**11**	**1**	**–**	**101**	**114**	**4,298**	**4,090**	**8,958**	**17,346**
2004 Total	**103**	**3,201**	**809**	**4,113**	**1**	**12**	**1**	**–**	**105**	**120**	**4,232**	**4,198**	**9,225**	**17,656**
2005 Total	**97**	**3,073**	**761**	**3,931**	**1**	**14**	**2**	**–**	**105**	**121**	**4,052**	**4,351**	**9,451**	**17,854**
2006 Total	**65**	**2,902**	**661**	**3,627**	**1**	**14**	**3**	**–**	**103**	**120**	**3,748**	**4,435**	**9,525**	**17,707**
2007 Total	**70**	**3,085**	**646**	**3,801**	**1**	**14**	**4**	**–**	**103**	**122**	**3,923**	**4,560**	**9,771**	**18,253**
2008 Total	**81**	**3,228**	**660**	**3,970**	**1**	**15**	**6**	**–**	**109**	**131**	**4,100**	**4,559**	**9,743**	**18,402**
2009 Total	**73**	**3,187**	**659**	**3,919**	**1**	**17**	**8**	**(s)**	**112**	**137**	**4,056**	**4,459**	**9,373**	**17,888**
2010 Total	**70**	**3,165**	**647**	**3,881**	**1**	**19**	**12**	**(s)**	**111**	**142**	**4,023**	**4,539**	**9,497**	**18,059**
2011 Total	**62**	**3,216**	**632**	**3,910**	**(s)**	**20**	**20**	**(s)**	**115**	**155**	**4,066**	**4,531**	**9,385**	**17,982**
2012 Total	**44**	**2,960**	**560**	**3,563**	**(s)**	**20**	**33**	**1**	**108**	**162**	**3,725**	**4,528**	**9,168**	**17,422**
2013 Total	**41**	**3,380**	**558**	**3,979**	**(s)**	**20**	**41**	**1**	**120**	**182**	**4,161**	**4,562**	**9,206**	**17,930**
2014 Total	**40**	**3,572**	**578**	**4,190**	**(s)**	**20**	**52**	**1**	**127**	**200**	**4,390**	**4,614**	**9,261**	**18,265**
2015 Total	**31**	**3,316**	**864**	**4,211**	**(s)**	**20**	**57**	**1**	**152**	**230**	**4,441**	**4,643**	**9,073**	**18,157**
2016 Total	**24**	**3,224**	**832**	**4,079**	**2**	**20**	**62**	**1**	**158**	**242**	**4,321**	**4,665**	**9,044**	**18,030**
2017 Total	**21**	**3,273**	**820**	**4,113**	**2**	**20**	**76**	**1**	**156**	**255**	**4,368**	**4,616**	**8,916**	**17,900**
2018 January	3	574	106	683	(s)	2	5	(s)	13	21	704	392	757	1,853
February	2	439	78	520	(s)	2	6	(s)	12	20	539	350	636	1,525
March	2	433	78	513	(s)	2	8	(s)	13	23	536	369	698	1,603
April	1	313	70	384	(s)	2	9	(s)	13	23	407	353	663	1,423
May	1	169	56	226	(s)	2	10	(s)	13	25	251	386	775	1,412
June	1	147	50	199	(s)	2	10	(s)	13	25	224	416	811	1,451
July	1	142	50	193	(s)	2	10	(s)	13	25	219	449	868	1,536
August	1	148	49	198	(s)	2	10	(s)	14	25	223	460	855	1,538
September	1	152	50	203	(s)	2	9	(s)	12	23	226	416	754	1,396
October	1	246	71	318	(s)	2	8	(s)	13	23	341	396	710	1,447
November	2	400	85	486	(s)	2	6	(s)	13	21	507	358	706	1,571
December	2	475	102	579	(s)	2	6	(s)	13	21	601	368	713	1,682
Total	**19**	**3,638**	**845**	**4,502**	**2**	**20**	**94**	**2**	**156**	**274**	**4,776**	**4,715**	**8,949**	**18,440**
2019 January	2	575	98	676	(s)	2	6	(s)	13	21	697	382	728	1,807
February	2	490	85	577	(s)	2	6	(s)	12	20	597	348	633	1,578
March	2	440	82	525	(s)	2	9	(s)	13	24	549	367	680	1,595
April	1	256	R 64	320	(s)	2	10	(s)	12	24	344	350	643	1,337
May	1	192	58	251	(s)	2	10	(s)	12	25	276	379	734	1,389
June	1	150	52	203	(s)	2	11	(s)	12	25	228	395	747	1,370
July	1	147	52	200	(s)	2	11	(s)	13	26	226	447	833	1,506
August	1	146	60	207	(s)	2	11	(s)	13	25	233	446	815	1,494
September	1	148	48	198	(s)	2	9	(s)	12	24	221	416	736	1,374
October	1	224	60	286	(s)	2	8	(s)	13	23	309	393	672	1,374
November	1	403	83	488	(s)	2	6	(s)	12	21	509	351	664	1,524
December	2	474	93	568	(s)	2	6	(s)	13	21	589	369	679	1,637
Total	**17**	**3,645**	**836**	**4,497**	**2**	**24**	**103**	**2**	**149**	**279**	**4,777**	**4,643**	**8,566**	**17,986**
2020 January	2	505	85	592	NM	2	7	(s)	13	22	614	371	686	1,671
February	2	460	75	538	NM	2	8	(s)	12	22	559	348	641	1,548
March	2	350	68	420	NM	2	10	(s)	12	25	445	351	632	1,428
April	1	246	57	303	(s)	2	11	(s)	11	24	327	309	550	1,187
May	1	167	61	229	NM	2	12	(s)	12	26	255	319	621	1,195
June	1	136	51	188	NM	2	12	(s)	12	26	214	371	716	1,301
July	1	133	46	180	NM	2	13	(s)	12	27	208	430	R 817	R 1,455
August	1	136	45	183	NM	2	12	(s)	12	27	209	416	R 785	R 1,411
September	1	148	52	201	(s)	2	11	(s)	11	25	225	383	677	1,285
9-Month Total	**12**	**2,282**	**540**	**2,833**	**1**	**18**	**97**	**1**	**106**	**223**	**3,057**	**3,298**	**6,126**	**12,481**
2019 9-Month Total	**12**	**2,544**	**599**	**3,156**	**1**	**18**	**82**	**1**	**112**	**214**	**3,370**	**3,530**	**6,549**	**13,450**
2018 9-Month Total	**14**	**2,518**	**587**	**3,118**	**2**	**15**	**75**	**1**	**117**	**210**	**3,328**	**3,592**	**6,818**	**13,738**

[a] See "Primary Energy Consumption" in Glossary.
[b] See Table 10.2a for notes on series components and estimation.
[c] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."
[e] Conventional hydroelectric power.
[f] Solar photovoltaic (PV) electricity net generation in the commercial sector, both utility-scale and distributed (small-scale). See Tables 10.2a and 10.5.
[g] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.
[h] 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 1, "Electrical System Energy Losses," at end of section.

R=Revised. NA=Not available. NM=Not meaningful. – =No data reported. (s)=Less than 0.5 trillion Btu.

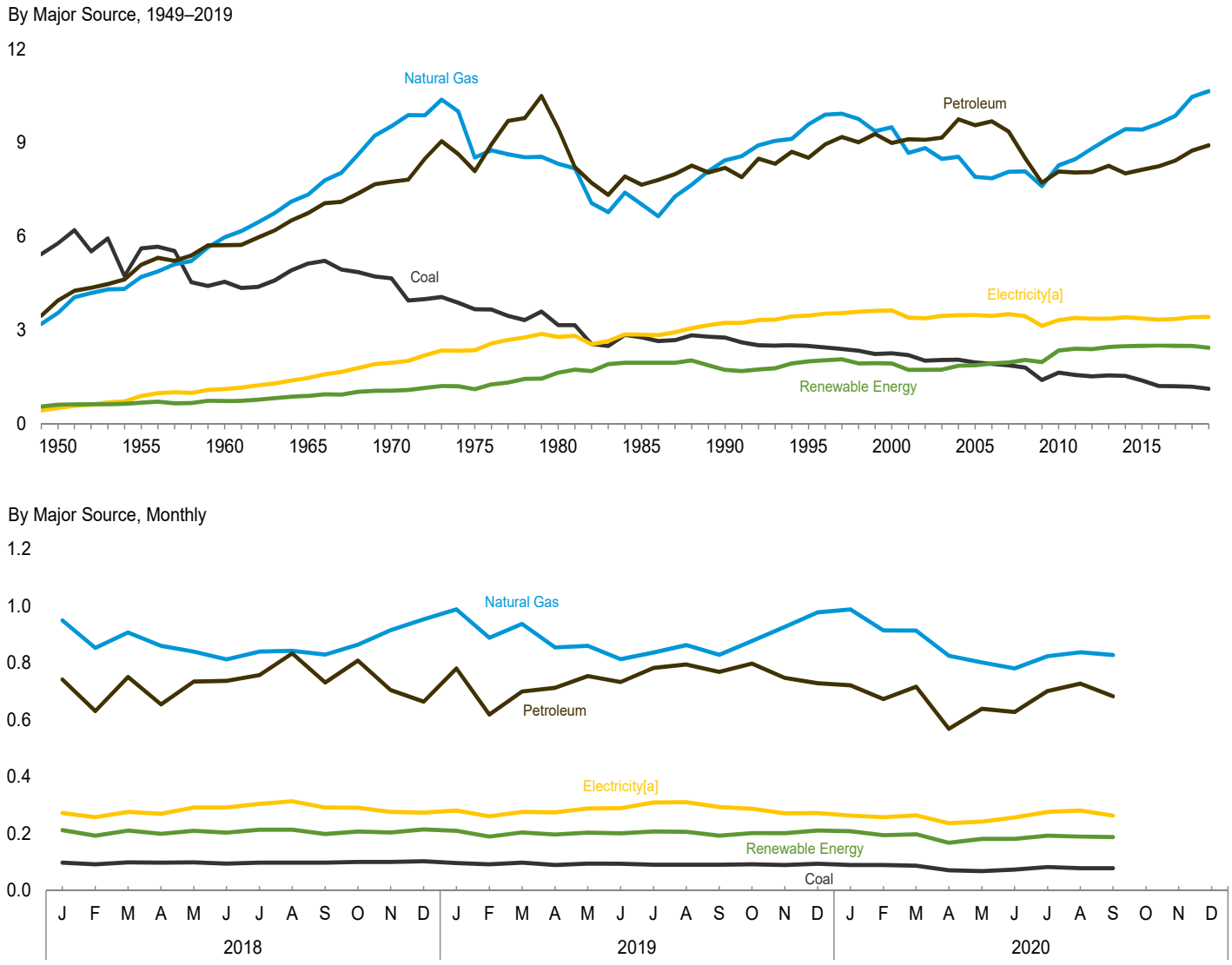
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity retail sales beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 2.4 Industrial Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity retail sales.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.

Source: Table 2.4.

Table 2.4 Industrial Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]													
	Fossil Fuels[b]				Renewable Energy[c]									
	Coal	Natural Gas[d]	Petroleum[e]	Total[f]	Hydroelectric Power[g]	Geothermal	Solar[h]	Wind	Biomass	Total	Total Primary	Electricity Retail Sales[i]	Electrical System Energy Losses[j]	Total[f]
1950 Total	**5,781**	**3,546**	**3,943**	**13,271**	**69**	**NA**	**NA**	**NA**	**532**	**602**	**13,872**	**500**	**1,852**	**16,224**
1955 Total	**5,620**	**4,701**	**5,093**	**15,404**	**38**	**NA**	**NA**	**NA**	**631**	**669**	**16,073**	**887**	**2,495**	**19,455**
1960 Total	**4,543**	**5,973**	**5,720**	**16,231**	**39**	**NA**	**NA**	**NA**	**680**	**719**	**16,949**	**1,107**	**2,739**	**20,795**
1965 Total	**5,127**	**7,339**	**6,750**	**19,197**	**33**	**NA**	**NA**	**NA**	**855**	**888**	**20,085**	**1,463**	**3,487**	**25,035**
1970 Total	**4,656**	**9,536**	**7,754**	**21,888**	**34**	**NA**	**NA**	**NA**	**1,019**	**1,053**	**22,941**	**1,948**	**4,716**	**29,605**
1975 Total	**3,667**	**8,532**	**8,092**	**20,304**	**32**	**NA**	**NA**	**NA**	**1,063**	**1,096**	**21,400**	**2,346**	**5,632**	**29,379**
1980 Total	**3,155**	**8,333**	**9,463**	**20,916**	**33**	**NA**	**NA**	**NA**	**1,600**	**1,633**	**22,549**	**2,781**	**6,664**	**31,993**
1985 Total	**2,760**	**7,032**	**7,655**	**17,433**	**33**	**NA**	**NA**	**NA**	**1,918**	**1,951**	**19,384**	**2,855**	**6,518**	**28,757**
1990 Total	**2,756**	**8,443**	**8,199**	**19,402**	**31**	**2**	**(s)**	**–**	**1,684**	**1,717**	**21,120**	**3,226**	**7,404**	**31,749**
1995 Total	**2,488**	**9,592**	**8,524**	**20,665**	**55**	**3**	**(s)**	**–**	**1,934**	**1,992**	**22,657**	**3,455**	**7,796**	**33,908**
2000 Total	**2,256**	**9,500**	**8,998**	**20,820**	**42**	**4**	**(s)**	**–**	**1,881**	**1,928**	**22,748**	**3,631**	**8,208**	**34,587**
2001 Total	**2,192**	**8,676**	**9,110**	**20,007**	**33**	**5**	**(s)**	**–**	**1,681**	**1,719**	**21,726**	**3,400**	**7,526**	**32,653**
2002 Total	**2,019**	**8,832**	**9,096**	**20,007**	**39**	**5**	**(s)**	**–**	**1,676**	**1,720**	**21,727**	**3,379**	**7,484**	**32,590**
2003 Total	**2,041**	**8,488**	**9,164**	**19,745**	**43**	**3**	**(s)**	**–**	**1,678**	**1,725**	**21,469**	**3,454**	**7,565**	**32,489**
2004 Total	**2,047**	**8,550**	**9,753**	**20,488**	**33**	**4**	**(s)**	**–**	**1,815**	**1,852**	**22,340**	**3,473**	**7,631**	**33,444**
2005 Total	**1,954**	**7,907**	**9,567**	**19,472**	**32**	**4**	**(s)**	**–**	**1,834**	**1,871**	**21,343**	**3,477**	**7,554**	**32,374**
2006 Total	**1,914**	**7,861**	**9,693**	**19,529**	**29**	**4**	**1**	**–**	**1,892**	**1,926**	**21,455**	**3,451**	**7,411**	**32,317**
2007 Total	**1,865**	**8,074**	**9,363**	**19,326**	**16**	**5**	**1**	**–**	**1,937**	**1,958**	**21,284**	**3,507**	**7,515**	**32,306**
2008 Total	**1,793**	**8,083**	**8,502**	**18,420**	**17**	**5**	**1**	**–**	**2,012**	**2,035**	**20,455**	**3,444**	**7,362**	**31,261**
2009 Total	**1,392**	**7,609**	**7,720**	**16,698**	**18**	**4**	**2**	**–**	**1,948**	**1,972**	**18,670**	**3,130**	**6,580**	**28,380**
2010 Total	**1,631**	**8,278**	**8,080**	**17,983**	**16**	**4**	**3**	**–**	**2,320**	**2,343**	**20,327**	**3,314**	**6,934**	**30,574**
2011 Total	**1,561**	**8,481**	**8,052**	**18,105**	**17**	**4**	**4**	**(s)**	**2,375**	**2,401**	**20,505**	**3,382**	**7,005**	**30,893**
2012 Total	**1,513**	**8,819**	**8,063**	**18,399**	**22**	**4**	**7**	**(s)**	**2,349**	**2,383**	**20,781**	**3,363**	**6,810**	**30,954**
2013 Total	**1,546**	**9,140**	**8,260**	**18,929**	**33**	**4**	**9**	**(s)**	**2,403**	**2,449**	**21,378**	**3,362**	**6,785**	**31,525**
2014 Total	**1,530**	**9,441**	**8,021**	**18,971**	**12**	**4**	**11**	**1**	**2,456**	**2,484**	**21,455**	**3,404**	**6,832**	**31,691**
2015 Total	**1,380**	**9,426**	**8,138**	**18,926**	**13**	**4**	**14**	**(s)**	**2,460**	**2,491**	**21,417**	**3,366**	**6,578**	**31,361**
2016 Total	**1,205**	**9,617**	**8,247**	**19,051**	**12**	**4**	**19**	**1**	**2,467**	**2,503**	**21,554**	**3,333**	**6,461**	**31,347**
2017 Total	**1,195**	**9,864**	**8,433**	**19,463**	**13**	**4**	**22**	**1**	**2,450**	**2,490**	**21,953**	**3,358**	**6,487**	**31,798**
2018 January	98	950	742	1,786	1	(s)	1	(s)	211	213	1,999	273	527	2,798
February	93	853	631	1,576	1	(s)	1	(s)	190	193	1,769	258	468	2,495
March	99	908	751	1,755	1	(s)	2	(s)	208	211	1,967	277	523	2,767
April	98	861	655	1,612	1	(s)	2	(s)	197	200	1,812	270	508	2,589
May	99	840	735	1,672	1	(s)	2	(s)	206	210	1,881	292	587	2,760
June	95	813	737	1,644	1	(s)	2	(s)	200	204	1,848	292	569	2,709
July	98	840	758	1,695	1	(s)	3	(s)	210	214	1,909	305	590	2,803
August	98	843	834	1,773	1	(s)	2	(s)	211	214	1,988	314	584	2,886
September	98	830	732	1,658	1	(s)	2	(s)	195	199	1,857	292	529	2,678
October	101	865	809	1,772	1	(s)	2	(s)	205	208	1,980	291	521	2,793
November	101	916	705	1,719	1	(s)	2	(s)	202	205	1,924	277	546	2,747
December	103	954	664	1,718	1	(s)	1	(s)	212	215	1,932	274	530	2,737
Total	**1,180**	**10,474**	**8,752**	**20,380**	**10**	**4**	**24**	**1**	**2,446**	**2,486**	**22,866**	**3,414**	**6,481**	**32,761**
2019 January	97	989	781	1,865	1	(s)	2	(s)	207	210	2,074	282	537	2,893
February	93	889	619	1,601	1	(s)	2	(s)	187	190	1,791	261	474	2,526
March	98	938	700	1,735	1	(s)	2	(s)	201	205	1,940	277	513	2,730
April	90	855	713	1,657	1	(s)	3	(s)	193	197	1,854	275	505	2,634
May	95	861	754	1,708	1	(s)	3	(s)	200	204	1,912	289	559	2,760
June	94	814	733	1,640	1	(s)	3	(s)	197	201	1,841	290	549	2,680
July	91	837	783	1,709	1	(s)	3	(s)	204	208	1,917	310	577	2,804
August	91	863	795	1,748	1	(s)	3	(s)	203	207	1,955	311	567	2,833
September	91	829	769	1,686	(s)	(s)	3	(s)	189	193	1,879	294	520	2,693
October	93	878	798	1,768	1	(s)	2	(s)	198	202	1,970	288	492	2,749
November	90	927	748	1,763	1	(s)	2	(s)	199	202	1,965	272	514	2,750
December	94	978	729	R 1,799	1	(s)	2	(s)	208	211	2,009	273	503	2,786
Total	**1,117**	**10,660**	**8,924**	**20,679**	**9**	**4**	**28**	**1**	**2,387**	**2,429**	**23,109**	**3,420**	**6,309**	**32,838**
2020 January	90	989	722	1,800	1	(s)	2	(s)	206	209	2,009	264	488	2,762
February	90	915	673	1,676	1	(s)	2	(s)	192	195	1,871	258	476	2,605
March	88	914	717	1,718	1	(s)	3	(s)	194	198	1,916	265	476	2,657
April	72	826	569	1,466	1	(s)	3	(s)	164	168	1,634	237	422	2,294
May	68	802	639	1,510	1	(s)	3	(s)	178	182	1,692	243	473	2,408
June	74	781	628	1,483	1	(s)	3	1	177	182	R 1,664	257	495	2,417
July	83	R 824	702	1,609	1	(s)	3	1	187	193	1,802	277	R 527	2,606
August	79	838	728	1,644	1	(s)	3	1	185	190	1,834	282	531	2,647
September	79	828	683	1,589	1	(s)	3	1	183	188	1,777	264	468	2,509
9-Month Total	**724**	**7,717**	**6,062**	**14,495**	**7**	**3**	**26**	**3**	**1,666**	**1,705**	**16,200**	**2,348**	**4,358**	**22,905**
2019 9-Month Total	**840**	**7,876**	**6,648**	**15,350**	**7**	**3**	**22**	**1**	**1,782**	**1,815**	**17,165**	**2,587**	**4,801**	**24,553**
2018 9-Month Total	**875**	**7,738**	**6,575**	**15,170**	**7**	**3**	**19**	**1**	**1,828**	**1,859**	**17,029**	**2,572**	**4,884**	**24,485**

[a] See "Primary Energy Consumption" in Glossary.
[b] Includes non-combustion use of fossil fuels.
[c] See Table 10.2b for notes on series components and estimation.
[d] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[e] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."
[f] Includes coal coke net imports, which are not separately displayed. See Tables 1.4a and 1.4b.
[g] Conventional hydroelectric power.
[h] Solar photovoltaic (PV) electricity net generation in the industrial sector, both utility-scale and distributed (small-scale). See Tables 10.2b and 10.5.
[i] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.
[j] 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 1, "Electrical System Energy Losses," at end of section.

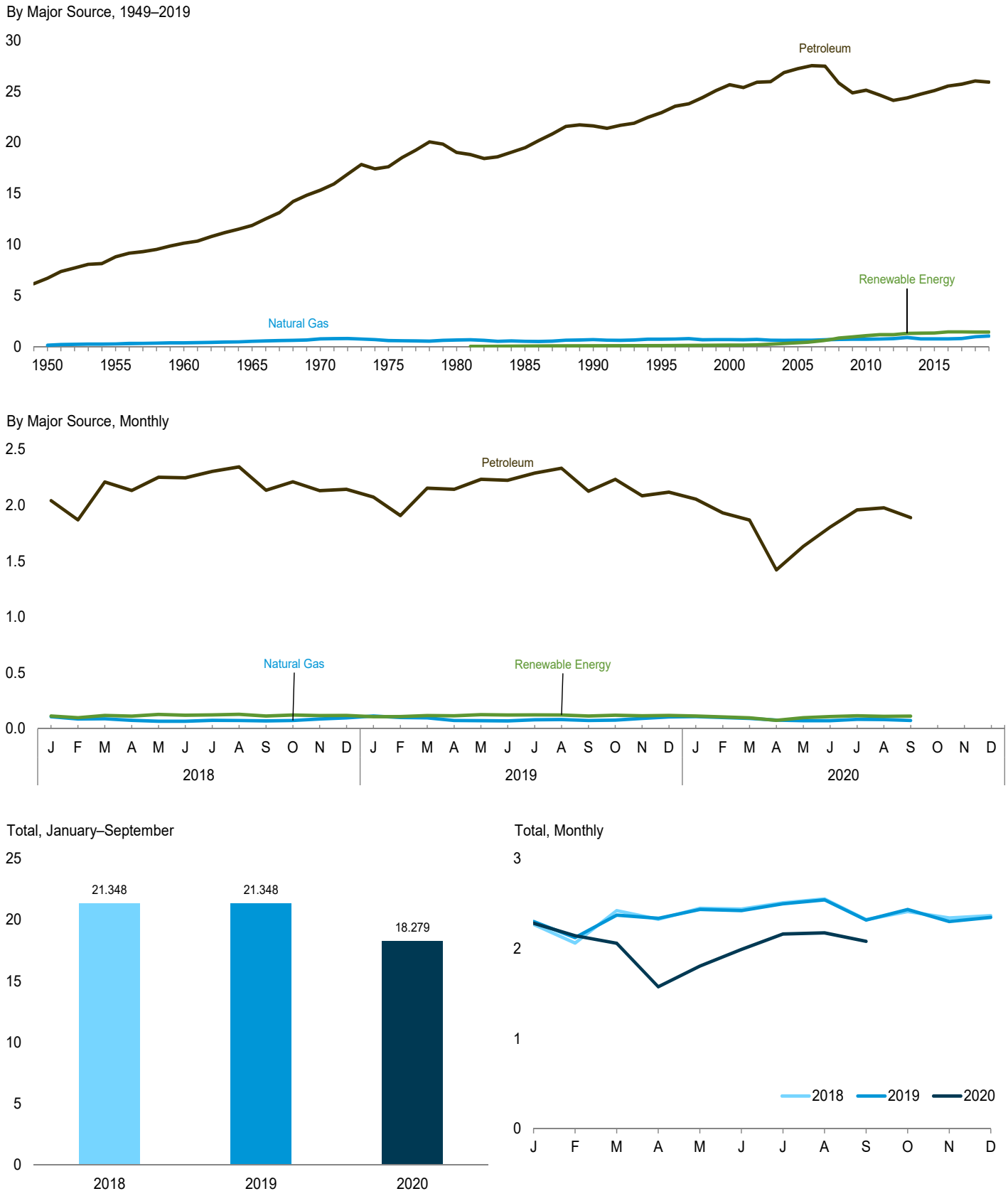
R=Revised. NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity retail sales. • 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 7. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 2.5 Transportation Sector Energy Consumption
(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.5.

Table 2.5 Transportation Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]						Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
	Fossil Fuels				Renewable Energy[b]	Total Primary			
	Coal	Natural Gas[c]	Petroleum[d]	Total	Biomass				
1950 Total	**1,564**	**130**	**6,690**	**8,383**	**NA**	**8,383**	**23**	**86**	**8,492**
1955 Total	**421**	**254**	**8,799**	**9,474**	**NA**	**9,474**	**20**	**56**	**9,550**
1960 Total	**75**	**359**	**10,125**	**10,560**	**NA**	**10,560**	**10**	**26**	**10,596**
1965 Total	**16**	**517**	**11,866**	**12,399**	**NA**	**12,399**	**10**	**24**	**12,432**
1970 Total	**7**	**745**	**15,311**	**16,062**	**NA**	**16,062**	**11**	**26**	**16,098**
1975 Total	**1**	**595**	**17,615**	**18,211**	**NA**	**18,211**	**10**	**24**	**18,245**
1980 Total	**([g])**	**650**	**19,009**	**19,659**	**NA**	**19,659**	**11**	**27**	**19,697**
1985 Total	**([g])**	**519**	**19,472**	**19,992**	**50**	**20,042**	**14**	**32**	**20,088**
1990 Total	**([g])**	**679**	**21,626**	**22,305**	**60**	**22,366**	**16**	**37**	**22,419**
1995 Total	**([g])**	**724**	**22,920**	**23,644**	**112**	**23,757**	**17**	**38**	**23,812**
2000 Total	**([g])**	**672**	**25,649**	**26,321**	**135**	**26,456**	**18**	**42**	**26,515**
2001 Total	**([g])**	**658**	**25,379**	**26,037**	**142**	**26,179**	**20**	**43**	**26,242**
2002 Total	**([g])**	**699**	**25,879**	**26,578**	**170**	**26,747**	**19**	**42**	**26,808**
2003 Total	**([g])**	**627**	**25,950**	**26,577**	**230**	**26,807**	**23**	**51**	**26,881**
2004 Total	**([g])**	**602**	**26,856**	**27,458**	**290**	**27,748**	**25**	**54**	**27,826**
2005 Total	**([g])**	**624**	**27,217**	**27,840**	**339**	**28,179**	**26**	**56**	**28,261**
2006 Total	**([g])**	**625**	**27,518**	**28,143**	**475**	**28,618**	**25**	**54**	**28,697**
2007 Total	**([g])**	**663**	**27,462**	**28,126**	**602**	**28,727**	**28**	**60**	**28,815**
2008 Total	**([g])**	**692**	**25,823**	**26,515**	**825**	**27,339**	**26**	**56**	**27,421**
2009 Total	**([g])**	**715**	**24,860**	**25,575**	**935**	**26,510**	**27**	**56**	**26,592**
2010 Total	**([g])**	**719**	**25,103**	**25,822**	**1,075**	**26,897**	**26**	**55**	**26,978**
2011 Total	**([g])**	**734**	**24,626**	**25,360**	**1,159**	**26,518**	**26**	**54**	**26,599**
2012 Total	**([g])**	**780**	**24,111**	**24,890**	**1,160**	**26,050**	**25**	**51**	**26,126**
2013 Total	**([g])**	**887**	**24,362**	**25,249**	**1,284**	**26,533**	**26**	**53**	**26,612**
2014 Total	**([g])**	**760**	**24,727**	**25,487**	**1,302**	**26,789**	**26**	**53**	**26,869**
2015 Total	**([g])**	**745**	**25,082**	**25,827**	**1,334**	**27,161**	**26**	**51**	**27,238**
2016 Total	**([g])**	**757**	**25,511**	**26,268**	**1,443**	**27,710**	**26**	**50**	**27,786**
2017 Total	**([g])**	**799**	**25,702**	**26,500**	**1,439**	**27,939**	**26**	**50**	**28,014**
2018 January	([g])	107	2,042	2,149	113	2,262	3	5	2,269
February	([g])	87	1,869	1,956	99	2,055	2	4	2,061
March	([g])	89	2,208	2,298	119	2,416	2	4	2,422
April	([g])	75	2,132	2,207	112	2,319	2	4	2,325
May	([g])	66	2,250	2,315	127	2,442	2	4	2,448
June	([g])	66	2,246	2,312	121	2,433	2	4	2,439
July	([g])	75	2,303	2,378	124	2,501	2	4	2,508
August	([g])	74	2,343	2,417	129	2,546	2	4	2,553
September	([g])	69	2,135	2,204	113	2,316	2	4	2,322
October	([g])	73	2,211	2,283	122	2,406	2	4	2,412
November	([g])	86	2,131	2,217	117	2,334	2	4	2,341
December	([g])	96	2,143	2,239	119	2,358	2	4	2,365
Total	**([g])**	**962**	**26,012**	**26,975**	**1,415**	**28,389**	**26**	**50**	**28,465**
2019 January	([g])	114	2,073	2,186	107	2,293	2	4	2,300
February	([g])	101	1,908	2,008	108	2,116	2	4	2,123
March	([g])	97	2,152	2,249	117	2,366	2	4	2,372
April	([g])	73	2,142	2,216	115	2,331	2	4	2,337
May	([g])	71	2,233	2,304	126	2,430	2	4	2,436
June	([g])	70	2,224	2,294	122	2,416	2	4	2,422
July	([g])	80	2,288	2,368	124	2,492	2	4	2,498
August	([g])	81	2,332	2,413	122	2,535	2	4	2,542
September	([g])	74	2,125	2,199	113	2,312	2	4	2,318
October	([g])	77	2,232	2,309	121	2,430	2	3	2,435
November	([g])	92	2,086	2,178	116	2,294	2	4	2,300
December	([g])	105	2,117	2,222	119	2,341	2	4	2,348
Total	**([g])**	**1,035**	**25,912**	**26,947**	**1,411**	**28,358**	**26**	**48**	**28,432**
2020 January	([g])	109	2,054	2,163	113	2,276	2	4	2,283
February	([g])	101	1,932	2,032	106	2,138	2	4	2,144
March	([g])	91	1,867	1,957	97	2,055	2	4	2,060
April	([g])	76	1,422	1,497	75	1,572	2	3	1,576
May	([g])	71	1,633	1,704	98	1,802	2	3	1,806
June	([g])	72	1,804	1,877	109	1,985	2	3	1,990
July	([g])	84	1,958	2,042	115	2,157	2	4	2,163
August	([g])	81	1,977	2,059	111	2,170	2	4	2,175
September	([g])	74	1,890	1,963	112	2,075	2	3	2,080
9-Month Total	**([g])**	**758**	**16,536**	**17,294**	**937**	**18,231**	**17**	**31**	**18,279**
2019 9-Month Total	**([g])**	**761**	**19,477**	**20,238**	**1,054**	**21,291**	**20**	**37**	**21,348**
2018 9-Month Total	**([g])**	**708**	**19,528**	**20,235**	**1,056**	**21,291**	**20**	**37**	**21,348**

[a] See "Primary Energy Consumption" in Glossary.

[b] See Table 10.2b for notes on series components.

[c] Natural gas only; does not include supplemental gaseous fuels—see Note 3, "Supplemental Gaseous Fuels," at end of Section 4. Data are for natural gas consumed in the operation of pipelines (primarily in compressors) and small amounts consumed as vehicle fuel—see Table 4.3.

[d] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass." Includes non-combustion use of lubricants.

[e] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

[f] 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 1, "Electrical System Energy Losses," at end of section.

[g] Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

NA=Not available.

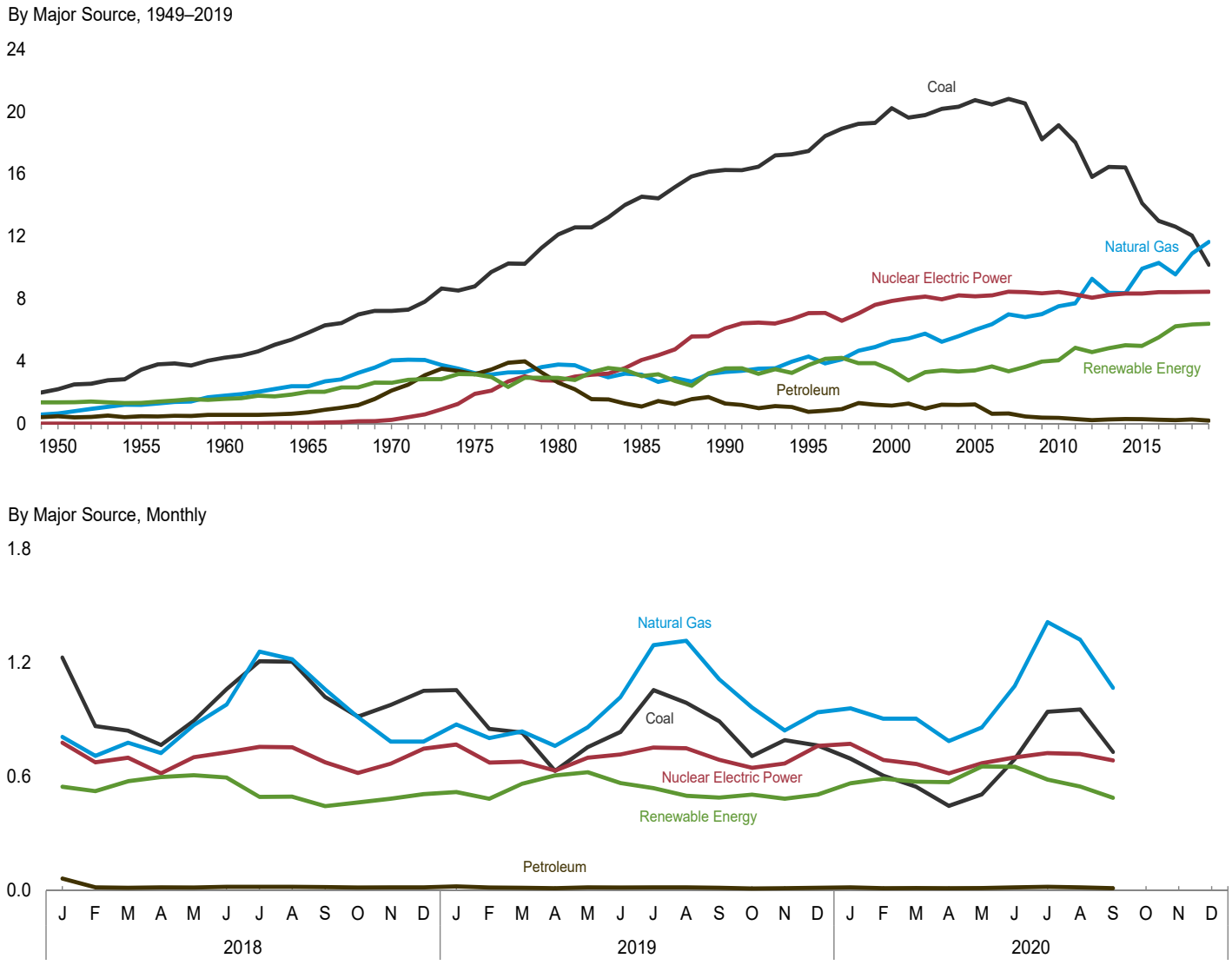
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 2.6 Electric Power Sector Energy Consumption

(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.6.

Table 2.6 Electric Power Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]												
	Fossil Fuels				Nuclear Electric Power	Renewable Energy[b]						Electricity Net Imports[f]	Total Primary
	Coal	Natural Gas[c]	Petroleum	Total		Hydroelectric Power[d]	Geothermal	Solar[e]	Wind	Biomass	Total		
1950 Total	**2,199**	**651**	**472**	**3,322**	**0**	**1,346**	**NA**	**NA**	**NA**	**5**	**1,351**	**6**	**4,679**
1955 Total	**3,458**	**1,194**	**471**	**5,123**	**0**	**1,322**	**NA**	**NA**	**NA**	**3**	**1,325**	**14**	**6,461**
1960 Total	**4,228**	**1,785**	**553**	**6,565**	**6**	**1,569**	**(s)**	**NA**	**NA**	**2**	**1,571**	**15**	**8,158**
1965 Total	**5,821**	**2,395**	**722**	**8,938**	**43**	**2,026**	**2**	**NA**	**NA**	**3**	**2,031**	**(s)**	**11,012**
1970 Total	**7,227**	**4,054**	**2,117**	**13,399**	**239**	**2,600**	**6**	**NA**	**NA**	**4**	**2,609**	**7**	**16,253**
1975 Total	**8,786**	**3,240**	**3,166**	**15,191**	**1,900**	**3,122**	**34**	**NA**	**NA**	**2**	**3,158**	**21**	**20,270**
1980 Total	**12,123**	**3,778**	**2,634**	**18,534**	**2,739**	**2,867**	**53**	**NA**	**NA**	**4**	**2,925**	**71**	**24,269**
1985 Total	**14,542**	**3,135**	**1,090**	**18,767**	**4,076**	**2,937**	**97**	**(s)**	**(s)**	**14**	**3,049**	**140**	**26,032**
1990 Total	**16,261**	**3,309**	**1,289**	**20,859**	**6,104**	**3,014**	**161**	**4**	**29**	**317**	**3,524**	**8**	**[g]30,495**
1995 Total	**17,466**	**4,302**	**755**	**22,523**	**7,075**	**3,149**	**138**	**5**	**33**	**422**	**3,747**	**134**	**33,479**
2000 Total	**20,220**	**5,293**	**1,144**	**26,658**	**7,862**	**2,768**	**144**	**5**	**57**	**453**	**3,427**	**115**	**38,062**
2001 Total	**19,614**	**5,458**	**1,276**	**26,348**	**8,029**	**2,209**	**142**	**6**	**70**	**337**	**2,763**	**75**	**37,215**
2002 Total	**19,783**	**5,767**	**961**	**26,511**	**8,145**	**2,650**	**147**	**6**	**105**	**380**	**3,288**	**72**	**38,016**
2003 Total	**20,185**	**5,246**	**1,205**	**26,636**	**7,960**	**2,749**	**146**	**5**	**113**	**397**	**3,411**	**22**	**38,028**
2004 Total	**20,305**	**5,595**	**1,201**	**27,101**	**8,223**	**2,655**	**148**	**6**	**142**	**388**	**3,339**	**39**	**38,701**
2005 Total	**20,737**	**6,015**	**1,222**	**27,974**	**8,161**	**2,670**	**147**	**6**	**178**	**406**	**3,406**	**85**	**39,626**
2006 Total	**20,462**	**6,375**	**637**	**27,474**	**8,215**	**2,839**	**145**	**5**	**264**	**412**	**3,665**	**63**	**39,417**
2007 Total	**20,808**	**7,005**	**648**	**28,461**	**8,459**	**2,430**	**145**	**6**	**341**	**423**	**3,345**	**107**	**40,371**
2008 Total	**20,513**	**6,829**	**459**	**27,801**	**8,426**	**2,494**	**146**	**9**	**546**	**435**	**3,630**	**112**	**39,969**
2009 Total	**18,225**	**7,022**	**382**	**25,630**	**8,355**	**2,650**	**146**	**9**	**721**	**441**	**3,967**	**116**	**38,069**
2010 Total	**19,133**	**7,528**	**370**	**27,031**	**8,434**	**2,521**	**148**	**12**	**923**	**459**	**4,064**	**89**	**39,619**
2011 Total	**18,035**	**7,712**	**295**	**26,042**	**8,269**	**3,085**	**149**	**17**	**1,167**	**437**	**4,855**	**127**	**39,293**
2012 Total	**15,821**	**9,287**	**214**	**25,322**	**8,062**	**2,606**	**148**	**40**	**1,339**	**453**	**4,586**	**161**	**38,131**
2013 Total	**16,451**	**8,376**	**255**	**25,082**	**8,244**	**2,529**	**151**	**83**	**1,600**	**470**	**4,833**	**197**	**38,357**
2014 Total	**16,427**	**8,362**	**295**	**25,085**	**8,338**	**2,454**	**151**	**165**	**1,726**	**530**	**5,026**	**182**	**38,629**
2015 Total	**14,138**	**9,926**	**276**	**24,341**	**8,337**	**2,308**	**148**	**228**	**1,776**	**525**	**4,985**	**227**	**37,890**
2016 Total	**12,996**	**10,301**	**244**	**23,542**	**8,427**	**2,459**	**146**	**328**	**2,094**	**505**	**5,531**	**227**	**37,727**
2017 Total	**12,622**	**9,555**	**218**	**22,395**	**8,419**	**2,752**	**147**	**486**	**2,341**	**510**	**6,235**	**192**	**37,241**
2018 January	1,229	811	64	2,103	780	227	12	30	233	46	548	14	3,446
February	868	711	17	1,596	677	226	12	35	211	42	525	12	2,811
March	843	780	15	1,638	701	234	12	46	241	44	577	15	2,931
April	768	725	17	1,510	618	255	11	55	240	39	599	10	2,737
May	896	873	16	1,785	704	276	13	62	218	40	608	14	3,112
June	1,062	981	20	2,063	729	250	12	67	225	42	596	15	3,402
July	1,209	1,261	20	2,489	758	228	12	61	150	44	494	15	3,756
August	1,207	1,221	20	2,449	756	199	12	60	181	43	496	17	3,717
September	1,021	1,061	19	2,101	677	174	12	54	168	37	445	11	3,234
October	917	915	16	1,848	621	177	12	45	193	39	465	10	2,944
November	980	786	18	1,784	669	198	12	34	200	40	484	9	2,945
December	1,054	786	18	1,858	749	206	13	28	221	41	509	11	3,127
Total	**12,053**	**10,912**	**260**	**23,225**	**8,438**	**2,651**	**145**	**576**	**2,480**	**496**	**6,348**	**152**	**38,163**
2019 January	1,058	876	22	1,956	770	220	12	32	216	41	520	11	3,257
February	853	804	16	1,673	676	203	11	34	201	36	484	11	2,843
March	834	840	15	1,688	680	233	12	52	228	37	563	8	2,939
April	632	763	12	1,407	633	247	11	60	257	34	607	8	2,655
May	757	862	18	1,637	701	284	12	63	229	37	624	10	2,972
June	837	1,021	16	1,874	718	249	12	70	199	37	567	12	3,172
July	1,057	1,294	18	2,370	754	221	12	72	196	40	540	13	3,676
August	991	1,318	18	2,327	751	200	12	69	178	40	500	14	3,592
September	893	1,115	15	2,023	690	164	12	60	218	37	490	12	3,215
October	709	966	11	1,686	648	162	10	54	245	35	506	7	2,848
November	793	845	13	1,651	670	179	8	38	223	36	485	12	2,818
December	766	941	15	1,722	763	190	10	30	236	39	506	14	3,005
Total	**10,181**	**11,645**	**189**	**22,015**	**8,452**	**2,552**	**134**	**635**	**2,623**	**448**	**6,392**	**133**	**36,992**
2020 January	696	961	17	1,674	774	225	11	41	250	38	566	11	3,025
February	606	906	13	1,526	689	234	11	50	259	36	590	10	2,815
March	548	907	14	1,469	668	208	13	57	260	37	574	13	2,724
April	447	788	13	1,247	618	195	13	71	261	33	572	11	2,448
May	508	860	14	1,381	672	271	13	86	251	35	655	12	2,721
June	693	1,078	17	1,789	702	258	12	84	265	33	653	13	3,156
July	943	1,416	20	2,379	725	246	12	92	200	35	586	[R] 19	[R] 3,708
August	955	1,322	18	2,294	720	215	12	83	200	39	549	[R] 20	[R] 3,584
September	732	1,070	12	1,815	686	170	12	68	206	33	489	13	3,002
9-Month Total	**6,128**	**9,308**	**138**	**15,573**	**6,254**	**2,022**	**109**	**632**	**2,152**	**319**	**5,235**	**122**	**27,183**
2019 9-Month Total	**7,912**	**8,893**	**150**	**16,955**	**6,371**	**2,020**	**105**	**512**	**1,920**	**338**	**4,896**	**100**	**28,321**
2018 9-Month Total	**9,102**	**8,424**	**208**	**17,735**	**6,399**	**2,069**	**108**	**469**	**1,866**	**376**	**4,889**	**123**	**29,146**

[a] See "Primary Energy Consumption" in Glossary.
[b] See Table 10.2c for notes on series components.
[c] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Conventional hydroelectric power.
[e] Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector. See Tables 10.2c and 10.5.
[f] Net imports equal imports minus exports.
[g] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.
R=Revised. 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 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 2.7 U.S. Government Energy Consumption by Agency, Fiscal Years

(Trillion Btu)

Fiscal Year[a]	Agri-culture	Defense	DHS[b]	Energy	GSA[c]	HHS[d]	Interior	Justice	NASA[e]	Postal Service	Trans-portation	Veterans Affairs	Other[f]	Total
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	17.5	7.1	7.4	7.0	12.4	30.6	19.0	24.9	17.5	1,438.0
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	17.1	1,128.5
1996	9.1	904.5	– –	44.6	14.5	6.6	4.3	12.1	11.5	36.4	19.6	26.8	17.7	1,107.7
1997	7.4	880.0	– –	43.1	14.4	7.9	6.6	12.0	12.0	40.8	19.1	27.3	20.8	1,091.2
1998	7.9	837.1	– –	31.5	14.1	7.4	6.4	15.8	11.7	39.5	18.5	27.6	19.5	1,037.1
1999	7.8	810.7	– –	27.0	14.4	7.1	7.5	15.4	11.4	39.8	22.6	27.5	19.8	1,010.9
2000	7.4	779.1	– –	30.5	17.6	8.0	7.8	19.7	11.1	43.3	21.2	27.0	20.3	993.1
2001	7.4	787.2	– –	31.1	18.4	8.5	9.5	19.7	10.9	43.4	17.8	27.7	20.7	1,002.3
2002	7.2	837.5	– –	30.7	17.5	8.0	8.2	17.7	10.7	41.6	18.3	27.7	18.4	1,043.4
2003	7.7	895.1	18.3	31.9	18.5	10.1	7.3	22.7	10.8	50.9	5.5	30.6	22.7	1,132.3
2004	7.0	960.7	23.5	31.4	18.3	8.8	8.7	17.5	9.9	50.5	5.2	29.9	20.4	1,191.7
2005	7.5	933.2	18.9	29.6	18.4	9.6	8.6	18.8	10.3	53.5	5.0	30.0	23.2	1,166.4
2006	6.8	843.7	17.1	32.9	18.2	9.3	8.1	23.5	10.2	51.8	4.6	29.3	20.9	1,076.4
2007	6.8	864.6	17.1	31.5	19.1	9.9	7.5	20.7	10.6	45.8	5.6	30.0	21.0	1,090.2
2008	6.5	910.8	21.7	32.1	18.8	10.3	7.1	19.0	10.8	47.1	7.7	29.0	22.4	1,143.2
2009	6.6	874.3	18.6	31.1	18.6	10.8	7.9	16.5	10.2	44.2	4.3	29.9	21.8	1,094.8
2010	6.8	889.9	21.2	31.7	18.8	10.4	7.3	15.7	10.1	43.3	5.7	30.2	21.8	1,112.7
2011	8.3	890.3	20.3	33.1	18.5	10.5	7.3	13.9	10.1	43.0	6.7	30.6	21.4	1,114.1
2012	6.7	828.5	20.1	30.3	16.3	10.0	6.7	15.1	8.9	40.8	5.6	29.7	20.5	1,039.3
2013	7.3	749.5	18.9	28.9	16.4	10.5	6.2	15.3	8.7	41.9	5.3	29.9	20.4	959.3
2014	6.3	730.6	18.5	29.4	17.0	9.5	6.2	15.6	8.3	43.0	5.2	31.4	20.6	941.5
2015	6.2	734.5	17.9	30.1	16.3	9.0	6.8	16.2	8.4	44.0	6.0	30.7	19.8	945.8
2016	6.2	709.2	18.1	28.9	15.8	8.7	6.4	15.6	8.5	43.9	6.0	30.3	19.5	917.2
2017	6.3	707.9	19.2	28.8	15.0	8.8	5.9	15.5	8.6	43.7	6.6	29.1	19.7	915.1
2018	6.1	690.6	16.8	27.3	15.6	10.0	6.1	16.2	8.4	45.5	5.8	29.7	18.8	897.0
2019	5.9	682.1	16.2	26.4	15.4	9.8	6.2	15.8	8.6	46.0	5.9	31.9	18.9	889.0

[a] For 1975 and 1976, the U.S. Government's fiscal year was July 1 through June 30. Beginning in 1977, the U.S. Government's fiscal year is October 1 through September 30 (for example, fiscal year 2014 is October 2013 through September 2014).

[b] U.S. Department of Homeland Security.

[c] General Services Administration.

[d] U.S. Department of Health and Human Services.

[e] National Aeronautics and Space Administration.

[f] Includes all U.S. government agencies not separately displayed. See http://ctsedwweb.ee.doe.gov/Annual/Report/AgencyReference.aspx for agency list.

– – =Not applicable.

Notes: • Data in this table are developed using conversion factors that often differ from those in Tables A1–A6. • 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: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all annual data beginning in 1975.

Sources: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program. See http://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx, "A-1 Total Site-Delivered Energy Use in All End-Use Sectors, by Federal Agency (Billion Btu)".

Table 2.8 U.S. Government Energy Consumption by Source, Fiscal Years

(Trillion Btu)

Fiscal Year[a]	Coal	Natural Gas[b]	Petroleum						Other Mobility Fuels[f]	Electricity	Purchased Steam and Other[g]	Total
			Aviation Gasoline	Fuel Oil[c]	Jet Fuel	LPG[d]	Motor Gasoline[e]	Total				
1975	77.9	166.2	22.0	376.0	707.4	5.6	63.2	1,174.2	0.0	141.5	5.1	1,565.0
1976	71.3	151.8	11.6	329.7	610.0	4.7	60.4	1,016.4	.0	139.3	4.6	1,383.4
1977	68.4	141.2	8.8	348.5	619.2	4.1	61.4	1,042.1	.0	141.1	5.7	1,398.5
1978	66.0	144.7	6.2	332.3	601.1	3.0	60.1	1,002.9	.0	141.0	6.4	1,360.9
1979	65.1	148.9	4.7	327.1	618.6	3.7	59.1	1,013.1	.0	141.2	7.1	1,375.4
1980	63.5	147.3	4.9	307.7	638.7	3.8	56.5	1,011.6	.2	141.9	6.8	1,371.2
1981	65.1	142.2	4.6	351.3	653.3	3.5	53.2	1,066.0	.2	144.5	6.2	1,424.2
1982	68.6	146.2	3.6	349.4	672.7	3.7	53.1	1,082.5	.2	147.5	6.2	1,451.4
1983	62.4	147.8	2.6	329.5	673.4	3.8	51.6	1,060.8	.2	151.5	9.0	1,431.8
1984	65.3	157.4	1.9	342.9	693.7	3.9	51.2	1,093.6	.2	155.9	10.1	1,482.5
1985	64.8	149.9	1.9	292.6	705.7	3.8	50.4	1,054.3	.2	167.2	13.9	1,450.3
1986	63.8	140.9	1.4	271.6	710.2	3.6	45.3	1,032.1	.3	155.8	13.7	1,406.7
1987	67.0	145.6	1.0	319.5	702.3	3.6	43.1	1,069.5	.4	169.9	13.9	1,466.3
1988	60.2	144.6	6.0	284.8	617.2	2.7	41.2	951.9	.4	171.2	32.0	1,360.3
1989	48.7	152.4	.8	245.3	761.7	3.5	41.1	1,052.4	2.2	188.6	20.6	1,464.7
1990	44.3	159.4	.5	245.2	732.4	3.8	37.2	1,019.1	2.6	193.6	19.1	1,438.0
1991	45.9	154.1	.4	232.6	774.5	3.0	34.1	1,044.7	6.0	192.7	18.3	1,461.7
1992	51.7	151.2	1.0	200.6	628.2	3.0	35.6	868.4	8.4	192.5	22.5	1,294.8
1993	38.3	152.9	.7	187.0	612.4	3.5	34.5	838.1	5.8	193.1	18.6	1,246.8
1994	35.0	143.9	.6	198.5	550.7	3.2	29.5	782.6	7.7	190.9	18.2	1,178.2
1995	31.7	149.4	.3	178.4	522.3	3.0	31.9	735.9	8.4	184.8	18.2	1,128.5
1996	23.3	147.3	.2	170.5	513.0	3.1	27.6	714.4	18.7	184.0	20.1	1,107.7
1997	22.5	153.8	.3	180.0	475.7	2.6	39.0	697.6	14.5	183.6	19.2	1,091.2
1998	23.9	140.4	.2	174.5	445.5	3.5	43.0	666.8	5.9	181.4	18.8	1,037.1
1999	21.2	137.4	.1	162.1	444.7	2.4	41.1	650.4	.4	180.0	21.5	1,010.9
2000	22.7	133.8	.2	171.3	403.1	2.5	43.9	621.0	1.8	193.6	20.2	993.1
2001	18.8	133.7	.2	176.9	415.2	3.1	42.5	638.0	4.8	188.4	18.6	1,002.3
2002	16.9	133.7	.2	165.6	472.9	2.8	41.3	682.8	3.2	188.3	18.5	1,043.4
2003	18.1	135.5	.3	190.8	517.9	3.2	46.3	758.4	3.3	193.8	23.2	1,132.3
2004	17.4	135.3	.2	261.4	508.2	2.9	44.1	816.9	3.1	197.1	22.0	1,191.7
2005	17.1	135.7	.4	241.4	492.2	3.4	48.8	786.1	5.6	197.6	24.3	1,166.4
2006	23.5	132.6	.6	209.3	442.6	2.7	48.3	703.6	2.1	196.7	18.2	1,076.4
2007	20.4	131.5	.4	212.9	461.1	2.7	46.5	723.7	2.9	194.9	16.7	1,090.2
2008	20.8	129.6	.4	198.4	525.4	2.3	49.0	775.4	3.6	196.1	17.7	1,143.2
2009	20.3	131.7	.3	166.4	505.7	3.2	48.3	723.9	10.1	191.3	17.7	1,094.8
2010	20.0	130.1	.4	157.8	535.8	2.5	51.3	747.7	3.0	193.7	18.2	1,112.7
2011	18.5	124.7	.9	166.5	533.6	2.0	52.7	755.8	2.7	193.2	19.1	1,114.1
2012	15.9	116.2	.4	148.6	493.5	1.7	50.1	694.4	3.1	187.2	22.5	1,039.3
2013	14.3	122.5	.7	140.0	424.0	1.9	46.6	613.2	2.8	184.7	21.8	959.3
2014	13.5	125.6	.3	133.5	414.3	1.8	44.9	594.8	3.6	182.1	21.9	941.5
2015	12.6	122.2	.3	134.4	418.9	1.8	46.8	602.2	3.7	184.3	20.9	945.8
2016	10.2	115.4	.3	129.7	403.9	1.7	46.5	582.2	3.6	184.5	21.4	917.2
2017	9.1	115.1	.3	135.1	400.1	1.5	46.4	583.5	2.7	181.7	23.0	915.1
2018	6.2	125.8	.3	127.8	383.2	1.7	45.5	558.5	3.0	180.0	23.6	897.0
2019	5.0	131.6	.3	125.4	376.9	1.8	46.6	551.0	2.7	178.1	20.6	889.0

[a] For 1975 and 1976, the U.S. Government's fiscal year was July 1 through June 30. Beginning in 1977, the U.S. Government's fiscal year is October 1 through September 30 (for example, fiscal year 2014 is October 2013 through September 2014).

[b] Natural gas, plus a small amount of supplemental gaseous fuels.

[c] Distillate fuel oil, including diesel fuel; and residual fuel oil, including Navy Special.

[d] Liquefied petroleum gases, primarily propane.

[e] Includes E10 (a mixture of 10% ethanol and 90% motor gasoline) and E15 (a mixture of 15% ethanol and 85% motor gasoline).

[f] Other types of fuel used in vehicles and equipment. Primarily includes alternative fuels such as compressed natural gas (CNG); liquefied natural gas (LNG); E85 (a mixture of 85% ethanol and 15% motor gasoline); B20 (a mixture of 20% biodiesel and 80% diesel fuel); B100 (100% biodiesel); hydrogen; and methanol.

[g] Other types of energy used in facilities. Primarily includes chilled water, but also includes small amounts of renewable energy such as wood and solar thermal.

Notes: • Data in this table are developed using conversion factors that often differ from those in Tables A1–A6. • 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: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all annual data beginning in 1975.

Sources: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program. See http://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx, "A-5 Historical Federal Energy Consumption and Cost Data by Agency and Energy Type (FY 1975 to Present)".

Note 1. Electrical System Energy Losses. Electrical system energy losses are calculated as the difference between total primary consumption by the electric power sector (see Table 2.6) and the total energy content of electricity retail sales (see Tables 7.6 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, geothermal, solar thermal, photovoltaic, and wind energy sources. 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, about two thirds of total energy input is lost in conversion. Currently, of electricity generated, approximately 5% is lost in plant use and 7% is lost in transmission and distribution.

Note 2. Other Energy Losses. Similar to electrical system energy losses, there are also other energy losses from energy consumption not separately identified. There are losses in the production of energy, the transformation of one form of energy to another form of energy, and the distribution and use of energy. For example, there are transformation losses in the process of refining crude oil into usable petroleum products, processing natural gas into marketable dry gas, and in the process of converting energy from the sun into usable energy with solar panels. All uses of primary energy have efficiency losses, usually in the form of heat, when energy is converted to do useful work. Examples include when motor gasoline is burned to move vehicles, when natural gas is burned to heat homes, or in any household appliance that uses electricity. The Lawrence Livermore National Laboratory estimates primary energy losses by end-use sector by applying an end-use efficiency factor to EIA's *Monthly Energy Review* consumption data. https://flowcharts.llnl.gov/.

Note 3. Energy Consumption Data and Surveys. Most of the data in this section of the Monthly Energy Review (MER) are developed from a group of energy-related surveys, typically called "supply surveys," conducted by the U.S. Energy Information Administration (EIA). Supply surveys are directed to suppliers and marketers of specific energy sources. They measure the quantities of specific energy sources produced, or the quantities supplied to the market, or both. The data obtained from EIA's supply surveys are integrated to yield the summary consumption statistics published in this section (and in Section 1) of the MER.

Users of EIA's energy consumption statistics should be aware of a second group of energy-related surveys, typically called "consumption surveys." Consumption surveys gather information on the types of energy consumed by end users of energy, along with the characteristics of those end users that can be associated with energy use. For example, the "Manufacturing Energy Consumption Survey" belongs to the consumption survey group because it collects information directly from end users (the manufacturing establishments). There are important differences between the supply and consumption surveys that need to be taken into account in any analysis that uses both data sources. For information on those differences, see "Energy Consumption by End-Use Sector, A Comparison of Measures by Consumption and Supply Surveys," DOE/EIA-0533, U.S. Energy Information Administration, Washington, DC, April 6, 1990.

Table 2.2 Sources

Coal

1949–2007: Residential sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the residential and commercial sectors coal consumption heat content factors in Table A5.

Natural Gas

1949–1979: Residential sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4.

1980 forward: Residential sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4. The residential sector portion of supplemental gaseous fuels data in Btu is estimated using the method described in

Note 3, “Supplemental Gaseous Fuels,” at the end of Section 4. Residential sector natural gas (excluding supplemental gaseous fuels) consumption is equal to residential sector natural gas (including supplemental gaseous fuels) consumption minus the residential sector portion of supplemental gaseous fuels.

Petroleum
1949 forward: Table 3.8a.

Fossil Fuels Total
1949–2007: Residential sector total fossil fuels consumption is the sum of the residential sector consumption values for coal, natural gas, and petroleum.

2008 forward: Residential sector total fossil fuels consumption is the sum of the residential sector consumption values for natural gas and petroleum.

Renewable Energy
1949 forward: Table 10.2a.

Total Primary Energy Consumption
1949 forward: Residential sector total primary energy consumption is the sum of the residential sector consumption values for fossil fuels and renewable energy.

Electricity Retail Sales
1949 forward: Residential sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electrical System Energy Losses
1949 forward: Total electrical system energy losses are equal to electric power sector total primary energy consumption from Table 2.6 minus total electricity retail sales from Table 7.6 (converted to Btu by multiplying by the electricity heat content factor in Table A6). Total electrical system energy losses are allocated to the residential sector in proportion to the residential sector’s share of total electricity retail sales from Table 7.6. See Note 1, "Electrical System Energy Losses."

Total Energy Consumption
1949 forward: Residential sector total energy consumption is the sum of the residential sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.3 Sources

Coal
1949 forward: Commercial sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the residential and commercial sectors coal consumption heat content factors in Table A5.

Natural Gas
1949–1979: Commercial sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4.

1980 forward: Commercial sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4. The commercial sector portion of supplemental gaseous fuels data in Btu is estimated using the method described in Note 3, “Supplemental Gaseous Fuels,” at the end of Section 4. Commercial sector natural gas (excluding supplemental gaseous fuels) consumption is equal to commercial sector natural gas (including supplemental gaseous fuels) consumption minus the commercial sector portion of supplemental gaseous fuels.

Petroleum
1949–1992: Table 3.8a.

1993–2008: The commercial sector share of motor gasoline consumption is equal to commercial sector motor gasoline consumption from Table 3.7a divided by motor gasoline product supplied from Table 3.5. Commercial sector fuel ethanol (including denaturant) consumption is equal to total fuel ethanol (including denaturant) consumption from Table 10.3 multiplied by the commercial sector share of motor gasoline consumption. Commercial sector petroleum (excluding biofuels) consumption is equal to commercial sector petroleum (including biofuels) consumption from Table 3.8a minus commercial sector fuel ethanol (including denaturant) consumption.

2009 forward: Commercial sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the commercial sector share of motor gasoline consumption (see 1993–2008 sources above). Commercial sector petroleum (excluding biofuels) consumption is equal to commercial sector petroleum (including biofuels) consumption from Table 3.8a minus commercial sector fuel ethanol (minus denaturant) consumption.

Fossil Fuels Total
1949 forward: Commercial sector total fossil fuels consumption is the sum of the commercial sector consumption values for coal, natural gas, and petroleum.

Renewable Energy
1949 forward: Table 10.2a.

Total Primary Energy Consumption
1949 forward: Commercial sector total primary energy consumption is the sum of the commercial sector consumption values for fossil fuels and renewable energy.

Electricity Retail Sales
1949 forward: Commercial sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electrical System Energy Losses
1949 forward: Total electrical system energy losses are equal to electric power sector total primary energy consumption from Table 2.6 minus total electricity retail sales from Table 7.6 (converted to Btu by multiplying by the electricity heat content factor in Table A6). Total electrical system energy losses are allocated to the commercial sector in proportion to the commercial sector's share of total electricity retail sales from Table 7.6. See Note 1, "Electrical System Energy Losses."

Total Energy Consumption
1949 forward: Commercial sector total energy consumption is the sum of the commercial sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.4 Sources

Coal
1949 forward: Coke plants coal consumption from Table 6.2 is converted to Btu by multiplying by the coke plants coal consumption heat content factors in Table A5. Other industrial coal consumption from Table 6.2 is converted to Btu by multiplying by the other industrial coal consumption heat content factors in Table A5. Industrial sector coal consumption is equal to coke plants coal consumption and other industrial coal consumption.

Natural Gas
1949–1979: Industrial sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4.

1980 forward: Industrial sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4. The industrial sector portion of supplemental gaseous fuels data in Btu is estimated using the method described in Note 3, "Supplemental Gaseous Fuels," at the end of Section 4. Industrial sector natural gas (excluding supplemental gaseous fuels) consumption is equal to industrial sector natural gas (including supplemental gaseous fuels) consumption minus the industrial sector portion of supplemental gaseous fuels.

Petroleum

1949–1992: Table 3.8b.

1993–2008: The industrial sector share of motor gasoline consumption is equal to industrial sector motor gasoline consumption from Table 3.7b divided by motor gasoline product supplied from Table 3.5. Industrial sector fuel ethanol (including denaturant) consumption is equal to total fuel ethanol (including denaturant) consumption from Table 10.3 multiplied by the industrial sector share of motor gasoline consumption. Industrial sector petroleum (excluding biofuels) consumption is equal to industrial sector petroleum (including biofuels) consumption from Table 3.8b minus industrial sector fuel ethanol (including denaturant) consumption.

2009 forward: Industrial sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the industrial sector share of motor gasoline consumption (see 1993–2008 sources above). Industrial sector petroleum (excluding biofuels) consumption is equal to industrial sector petroleum (including biofuels) consumption from Table 3.8b minus industrial sector fuel ethanol (minus denaturant) consumption.

Coal Coke Net Imports

1949 forward: Coal coke net imports are equal to coal coke imports from Table 1.4a minus coal coke exports from Table 1.4b.

Fossil Fuels Total

1949 forward: Industrial sector total fossil fuels consumption is the sum of the industrial sector consumption values for coal, natural gas, and petroleum, plus coal coke net imports.

Renewable Energy

1949 forward: Table 10.2b.

Total Primary Energy Consumption

1949 forward: Industrial sector total primary energy consumption is the sum of the industrial sector consumption values for fossil fuels and renewable energy.

Electricity Retail Sales

1949 forward: Industrial sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electrical System Energy Losses

1949 forward: Total electrical system energy losses are equal to electric power sector total primary energy consumption from Table 2.6 minus total electricity retail sales from Table 7.6 (converted to Btu by multiplying by the electricity heat content factor in Table A6). Total electrical system energy losses are allocated to the industrial sector in proportion to the industrial sector's share of total electricity retail sales from Table 7.6. See Note 1, "Electrical System Energy Losses."

Total Energy Consumption

1949 forward: Industrial sector total energy consumption is the sum of the industrial sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.5 Sources

Coal

1949–1977: Transportation sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the other industrial sector coal consumption heat content factors in Table A5.

Natural Gas

1949 forward: Transportation sector natural gas consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas end-use sectors consumption heat content factors in Table A4.

Petroleum

1949–1992: Table 3.8c.

1993–2008: The transportation sector share of motor gasoline consumption is equal to transportation sector motor gasoline consumption from Table 3.7c divided by motor gasoline product supplied from Table 3.5. Transportation sector fuel ethanol (including denaturant) consumption is equal to total fuel ethanol (including denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption. Transportation sector petroleum (excluding biofuels) consumption is equal to transportation sector petroleum (including biofuels) consumption from Table 3.8c minus transportation sector fuel ethanol (including denaturant) consumption.

2009–2011: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel consumption (calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1); minus other renewable diesel fuel and other renewable fuels consumption from Table 10.4.

2012 forward: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel consumption from Table 10.4; minus other renewable diesel fuel and other renewable fuels consumption from Table 10.4.

Fossil Fuels Total

1949–1977: Transportation sector total fossil fuels consumption is the sum of the transportation sector consumption values for coal, natural gas, and petroleum.

1978 forward: Transportation sector total fossil fuels consumption is the sum of the transportation sector consumption values for natural gas and petroleum.

Renewable Energy

1981 forward: Table 10.2b.

Total Primary Energy Consumption

1949–1980: Transportation sector total primary energy consumption is equal to transportation sector fossil fuels consumption.

1981 forward: Transportation sector total primary energy consumption is the sum of the transportation sector consumption values for fossil fuels and renewable energy.

Electricity Retail Sales
1949 forward: Transportation sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electrical System Energy Losses
1949 forward: Total electrical system energy losses are equal to electric power sector total primary energy consumption from Table 2.6 minus total electricity retail sales from Table 7.6 (converted to Btu by multiplying by the electricity heat content factor in Table A6). Total electrical system energy losses are allocated to the transportation sector in proportion to the transportation sector's share of total electricity retail sales from Table 7.6. See Note 1, "Electrical System Energy Losses."

Total Energy Consumption
1949 forward: Transportation sector total energy consumption is the sum of the transportation sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.6 Sources

Coal
1949 forward: Electric power sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the electric power sector coal consumption heat content factors in Table A5.

Natural Gas
1949–1979: Electric power sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas electric power sector consumption heat content factors in Table A4.

1980 forward: Electric power sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas electric power sector consumption heat content factors in Table A4. The electric power sector portion of supplemental gaseous fuels data in Btu is estimated using the method described in Note 3, "Supplemental Gaseous Fuels," at the end of Section 4. Electric power sector natural gas (excluding supplemental gaseous fuels) consumption is equal to electric power sector natural gas (including supplemental gaseous fuels) consumption minus the electric power sector portion of supplemental gaseous fuels.

Petroleum
1949 forward: Table 3.8c.

Fossil Fuels Total
1949 forward: Electric power sector total fossil fuels consumption is the sum of the electric power sector consumption values for coal, natural gas, and petroleum.

Nuclear Electric Power
1949 forward: Nuclear electricity net generation data from Table 7.2a are converted to Btu by multiplying by the nuclear heat rate factors in Table A6.

Renewable Energy
1949 forward: Table 10.2c.

Electricity Net Imports
1949 forward: Electricity net imports are equal to electricity imports from Table 1.4a minus electricity exports from Table 1.4b.

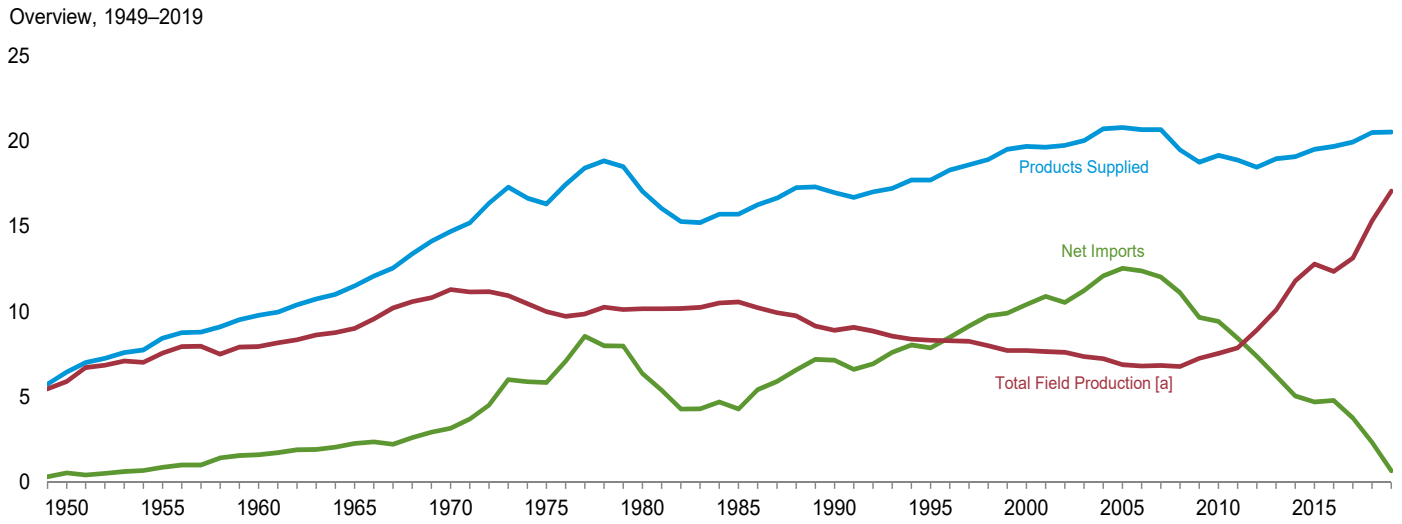
Total Primary Energy Consumption
1949 forward: Electric power sector total primary energy consumption is the sum of the electric power sector consumption values for fossil fuels, nuclear electric power, and renewable energy, plus electricity net imports.

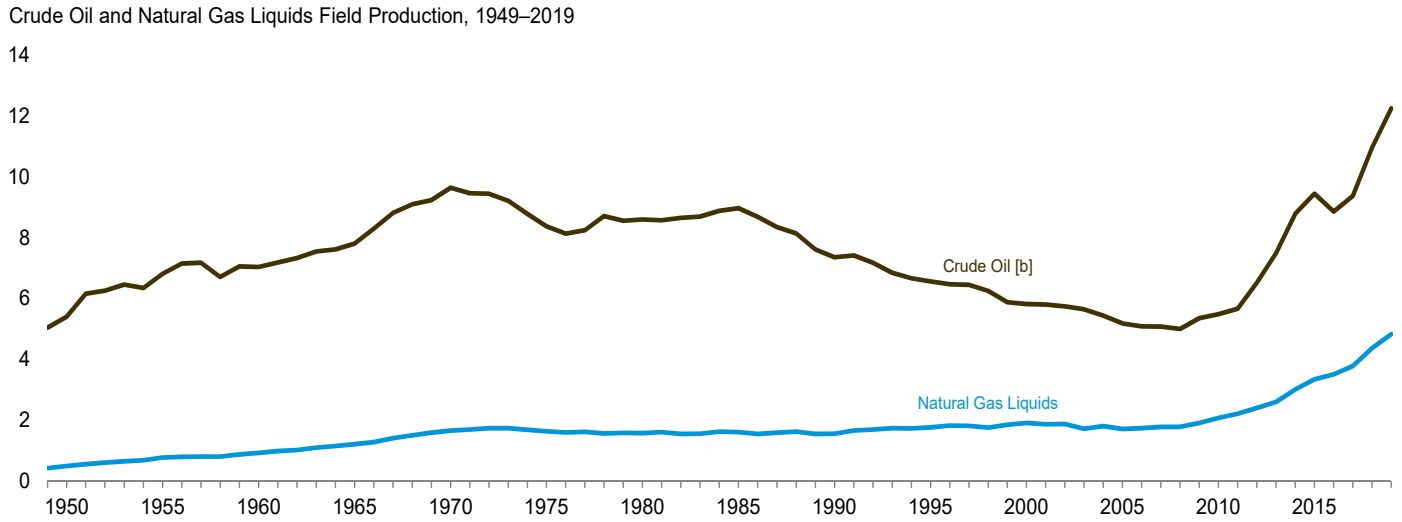
THIS PAGE INTENTIONALLY LEFT BLANK

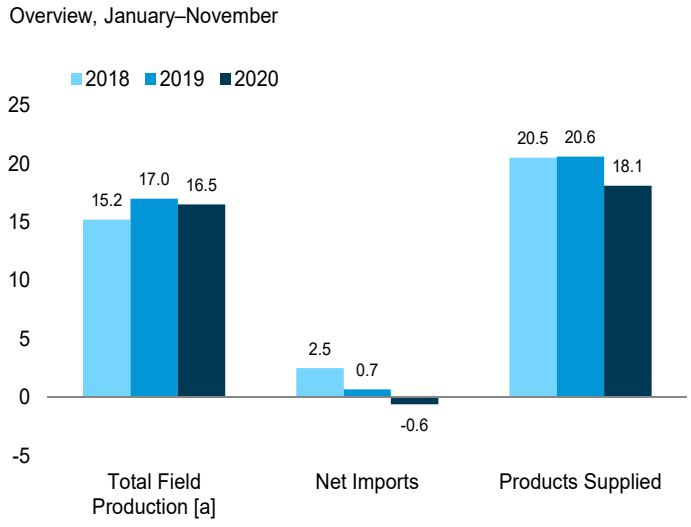
3. Petroleum

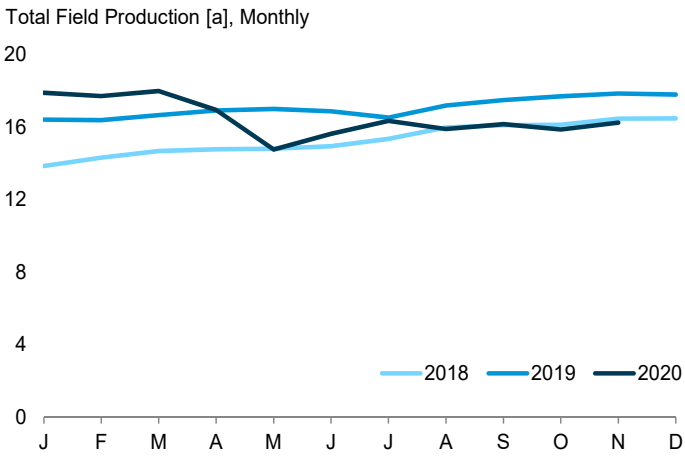
Figure 3.1 Petroleum Overview

(Million Barrels Per Day)









[a] Crude oil, including lease condensate, and natural gas liquids field production.
[b] Includes lease condensate.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.1.

Table 3.1 Petroleum Overview

(Thousand Barrels per Day)

	Field Production[a]					Renewable Fuels and Oxygenates[e]	Processing Gain[f]	Trade			Stock Change[i]	Adjustments[c,j]	Petroleum Products Supplied
	Crude Oil[b,c]			Natural Gas Liquids	Total[c]			Imports[g]	Exports	Net Imports[h]			
	48 States[d]	Alaska	Total										
1950 Average	**5,407**	**0**	**5,407**	**499**	**5,906**	**NA**	**2**	**850**	**305**	**545**	**-56**	**-51**	**6,458**
1955 Average	**6,807**	**0**	**6,807**	**771**	**7,578**	**NA**	**34**	**1,248**	**368**	**880**	**(s)**	**-37**	**8,455**
1960 Average	**7,034**	**2**	**7,035**	**929**	**7,965**	**NA**	**146**	**1,815**	**202**	**1,613**	**-83**	**-8**	**9,797**
1965 Average	**7,774**	**30**	**7,804**	**1,210**	**9,014**	**NA**	**220**	**2,468**	**187**	**2,281**	**-8**	**-10**	**11,512**
1970 Average	**9,408**	**229**	**9,637**	**1,660**	**11,297**	**NA**	**359**	**3,419**	**259**	**3,161**	**103**	**-16**	**14,697**
1975 Average	**8,183**	**191**	**8,375**	**1,633**	**10,007**	**NA**	**460**	**6,056**	**209**	**5,846**	**32**	**41**	**16,322**
1980 Average	**6,980**	**1,617**	**8,597**	**1,573**	**10,170**	**NA**	**597**	**6,909**	**544**	**6,365**	**140**	**64**	**17,056**
1985 Average	**7,146**	**1,825**	**8,971**	**1,609**	**10,581**	**NA**	**557**	**5,067**	**781**	**4,286**	**-103**	**200**	**15,726**
1990 Average	**5,582**	**1,773**	**7,355**	**1,559**	**8,914**	**NA**	**683**	**8,018**	**857**	**7,161**	**107**	**338**	**16,988**
1995 Average	**5,076**	**1,484**	**6,560**	**1,762**	**8,322**	**NA**	**774**	**8,835**	**949**	**7,886**	**-246**	**496**	**17,725**
2000 Average	**4,851**	**970**	**5,822**	**1,911**	**7,733**	**NA**	**948**	**11,459**	**1,040**	**10,419**	**-69**	**532**	**19,701**
2001 Average	**4,839**	**963**	**5,801**	**1,868**	**7,670**	**NA**	**903**	**11,871**	**971**	**10,900**	**325**	**501**	**19,649**
2002 Average	**4,759**	**985**	**5,744**	**1,880**	**7,624**	**NA**	**957**	**11,530**	**984**	**10,546**	**-105**	**529**	**19,761**
2003 Average	**4,675**	**974**	**5,649**	**1,719**	**7,369**	**NA**	**974**	**12,264**	**1,027**	**11,238**	**56**	**509**	**20,034**
2004 Average	**4,533**	**908**	**5,441**	**1,809**	**7,250**	**NA**	**1,051**	**13,145**	**1,048**	**12,097**	**209**	**542**	**20,731**
2005 Average	**4,320**	**864**	**5,184**	**1,717**	**6,901**	**NA**	**989**	**13,714**	**1,165**	**12,549**	**[k] 146**	**509**	**20,802**
2006 Average	**4,345**	**741**	**5,086**	**1,739**	**6,825**	**NA**	**994**	**13,707**	**1,317**	**12,390**	**59**	**537**	**20,687**
2007 Average	**4,352**	**722**	**5,074**	**1,783**	**6,857**	**NA**	**996**	**13,468**	**1,433**	**12,036**	**-152**	**640**	**20,680**
2008 Average	**4,317**	**683**	**5,000**	**1,784**	**6,783**	**NA**	**993**	**12,915**	**1,802**	**11,114**	**195**	**803**	**19,498**
2009 Average	**4,711**	**645**	**5,357**	**1,910**	**7,267**	**746**	**979**	**11,691**	**2,024**	**9,667**	**107**	**221**	**18,771**
2010 Average	**4,885**	**600**	**5,484**	**2,074**	**7,558**	**907**	**1,068**	**11,793**	**2,353**	**9,441**	**42**	**246**	**19,178**
2011 Average	**5,106**	**561**	**5,667**	**2,216**	**7,883**	**1,016**	**1,076**	**11,436**	**2,986**	**8,450**	**-138**	**332**	**18,896**
2012 Average	**5,995**	**526**	**6,521**	**2,408**	**8,929**	**964**	**1,059**	**10,598**	**3,205**	**7,393**	**151**	**289**	**18,482**
2013 Average	**6,979**	**515**	**7,494**	**2,606**	**10,100**	**1,002**	**1,087**	**9,859**	**3,621**	**6,237**	**-138**	**402**	**18,967**
2014 Average	**8,293**	**496**	**8,789**	**3,015**	**11,804**	**1,055**	**1,081**	**9,241**	**4,176**	**5,065**	**267**	**363**	**19,100**
2015 Average	**8,964**	**483**	**9,446**	**3,342**	**12,789**	**1,095**	**1,062**	**9,449**	**4,738**	**4,711**	**431**	**306**	**19,532**
2016 Average	**8,361**	**490**	**8,852**	**3,509**	**12,361**	**1,158**	**1,118**	**10,055**	**5,261**	**4,795**	**125**	**385**	**19,692**
2017 Average	**8,877**	**495**	**9,371**	**3,783**	**13,154**	**1,198**	**1,111**	**10,144**	**6,376**	**3,768**	**-364**	**356**	**19,952**
2018 January	9,491	508	9,998	3,853	13,851	1,210	1,102	10,280	6,461	3,819	-405	176	20,564
February	9,748	513	10,261	4,061	14,321	1,228	1,097	9,586	6,907	2,679	-142	226	19,693
March	9,976	512	10,489	4,200	14,689	1,214	1,096	9,822	7,337	2,485	-457	791	20,731
April	9,999	497	10,496	4,286	14,782	1,205	1,113	10,375	7,797	2,578	119	478	20,038
May	9,961	496	10,457	4,352	14,809	1,230	1,141	10,227	7,717	2,510	169	731	20,251
June	10,154	451	10,605	4,337	14,942	1,260	1,133	10,726	7,824	2,902	-109	425	20,770
July	10,509	395	10,903	4,452	15,355	1,273	1,169	10,193	7,963	2,231	186	830	20,671
August	10,956	428	11,384	4,602	15,985	1,289	1,185	10,434	7,164	3,270	622	248	21,356
September	10,992	471	11,463	4,638	16,102	1,214	1,141	9,889	7,415	2,474	1,311	465	20,084
October	11,067	487	11,554	4,588	16,142	1,220	1,116	9,468	8,011	1,457	-520	332	20,786
November	11,410	497	11,907	4,563	16,470	1,240	1,149	9,272	8,281	991	-257	666	20,774
December	11,508	496	12,004	4,483	16,487	1,222	1,210	9,021	8,301	720	24	712	20,327
Average	**10,485**	**479**	**10,964**	**4,369**	**15,333**	**1,234**	**1,138**	**9,943**	**7,601**	**2,341**	**44**	**509**	**20,512**
2019 January	11,369	496	11,865	4,554	16,419	1,112	1,109	9,768	7,982	1,786	246	435	20,615
February	11,191	488	11,679	4,713	16,392	1,115	1,007	8,671	8,219	452	-597	722	20,284
March	11,456	481	11,937	4,729	16,667	1,087	1,038	8,905	7,946	959	-100	324	20,176
April	11,659	475	12,135	4,790	16,925	1,138	1,065	9,525	8,382	1,143	596	658	20,333
May	11,689	474	12,163	4,840	17,003	1,151	1,064	9,893	8,238	1,655	1,281	795	20,387
June	11,633	455	12,088	4,795	16,882	1,159	1,076	9,297	8,576	720	-99	718	20,654
July	11,371	448	11,819	4,707	16,526	1,155	1,066	9,601	8,084	1,517	158	629	20,735
August	12,043	382	12,425	4,766	17,191	1,133	1,099	9,387	8,438	949	-271	516	21,158
September	12,046	449	12,495	4,990	17,485	1,071	1,018	8,712	8,672	40	-77	559	20,248
October	12,198	475	12,673	5,022	17,695	1,093	1,014	8,599	9,039	-440	-532	821	20,714
November	12,376	484	12,860	4,995	17,854	1,129	1,131	8,103	8,741	-638	-284	976	20,736
December	12,321	481	12,802	4,992	17,794	1,157	1,133	9,159	9,331	-171	-44	486	20,443
Average	**11,782**	**466**	**12,248**	**4,825**	**17,073**	**1,125**	**1,069**	**9,141**	**8,471**	**670**	**28**	**635**	**20,543**
2020 January	[E] 12,272	[E] 482	[E] 12,755	5,145	[E] 17,900	1,161	1,136	8,572	9,177	-605	550	863	19,905
February	[E] 12,269	[E] 477	[E] 12,746	4,965	[E] 17,711	1,142	939	8,457	9,983	-1,526	-664	908	19,839
March	[E] 12,268	[E] 470	[E] 12,737	5,253	[E] 17,990	1,049	978	8,345	9,621	-1,276	1,334	876	18,284
April	[E] 11,547	[E] 463	[E] 12,010	4,934	[E] 16,944	668	767	7,236	8,452	-1,216	2,654	181	14,691
May	[E] 9,615	[E] 404	[E] 10,019	4,745	[E] 14,764	781	807	7,757	6,818	939	1,242	54	16,103
June	[E] 10,081	[E] 361	[E] 10,442	5,197	[E] 15,639	969	873	8,367	7,692	675	1,168	447	17,435
July	[RE] 10,529	[E] 444	[RE] 10,973	5,369	[RE] 16,342	1,033	936	7,846	8,412	-566	-57	[R] 522	18,323
August	[RE] 10,130	[E] 444	[RE] 10,574	5,325	[RE] 15,899	1,025	924	7,465	8,498	-1,033	-756	[R] 868	18,439
September	[RE] 10,418	[RE] 442	[RE] 10,860	[R] 5,309	[RE] 16,169	[R] 1,036	[R] 946	[R] 7,543	[R] 8,376	[R] -833	[R] -650	[R] 340	[R] 18,307
October	[E] 10,050	[E] 466	[E] 10,516	[E] 5,361	[E] 15,877	[E] 951	[E] 863	[E] 7,285	[E] 7,789	[E] -504	[E] -1,587	[E] 186	[E] 18,960
November	[E] 10,422	[E] 508	[E] 10,930	[E] 5,323	[E] 16,253	[E] 1,003	[E] 905	[E] 7,516	[E] 7,721	[E] -206	[E] -297	[E] 927	[E] 19,178
11-Month Average	**[E] 10,868**	**[E] 451**	**[E] 11,318**	**[E] 5,176**	**[E] 16,495**	**[E] 983**	**[E] 916**	**[E] 7,852**	**[E] 8,407**	**[E] -555**	**[E] 267**	**[E] 560**	**[E] 18,132**
2019 11-Month Average	**11,732**	**464**	**12,197**	**4,809**	**17,006**	**1,122**	**1,063**	**9,140**	**8,392**	**748**	**35**	**649**	**20,552**
2018 11-Month Average	**10,390**	**477**	**10,868**	**4,359**	**15,226**	**1,235**	**1,131**	**10,028**	**7,536**	**2,492**	**46**	**490**	**20,529**

[a] Crude oil production on leases, and natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[b] Includes lease condensate.

[c] Once a month, data for crude oil production, total field production, and adjustments are revised going back as far as the data year of the U.S. Energy Information Administration's (EIA) last published *Petroleum Supply Annual* (PSA)—these revisions are released at the same time as EIA's *Petroleum Supply Monthly*. Once a year, data for these series are revised going back as far as 10 years—these revisions are released at the same time as the PSA.

[d] United States excluding Alaska and Hawaii.

[e] Renewable fuels and oxygenate plant net production of fuel ethanol, biodiesel, other renewable fuels, natural gasoline, finished motor gasoline, and motor gasoline blending components. For 2009–2018, also includes oxygenates (excluding fuel ethanol).

[f] Refinery and blender net production minus refinery and blender net inputs. See Table 3.2.

[g] Includes Strategic Petroleum Reserve imports. See Table 3.3b.

[h] Net imports equal imports minus exports.

[i] A negative value indicates a decrease in stocks and a positive value indicates an increase. The current month stock change estimate is based on the change from the previous month's estimate, rather than the stocks values shown in Table 3.4. Includes crude oil stocks in the Strategic Petroleum Reserve, but excludes distillate fuel oil stocks in the Northeast Home Heating Oil Reserve. See Table 3.4.

[j] An adjustment for crude oil, hydrogen, oxygenates, renewable fuels, other hydrocarbons, motor gasoline blending components, finished motor gasoline, and distillate fuel oil. See EIA's *Petroleum Supply Monthly,* Appendix B, "PSM Explanatory Notes," for further information.

[k] Derived from the 2004 petroleum stocks value that excludes crude oil stocks on leases (1,628 million barrels), not the 2004 petroleum stocks value that includes crude oil stocks on leases (1,645 million barrels).

R=Revised. E=Estimate. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

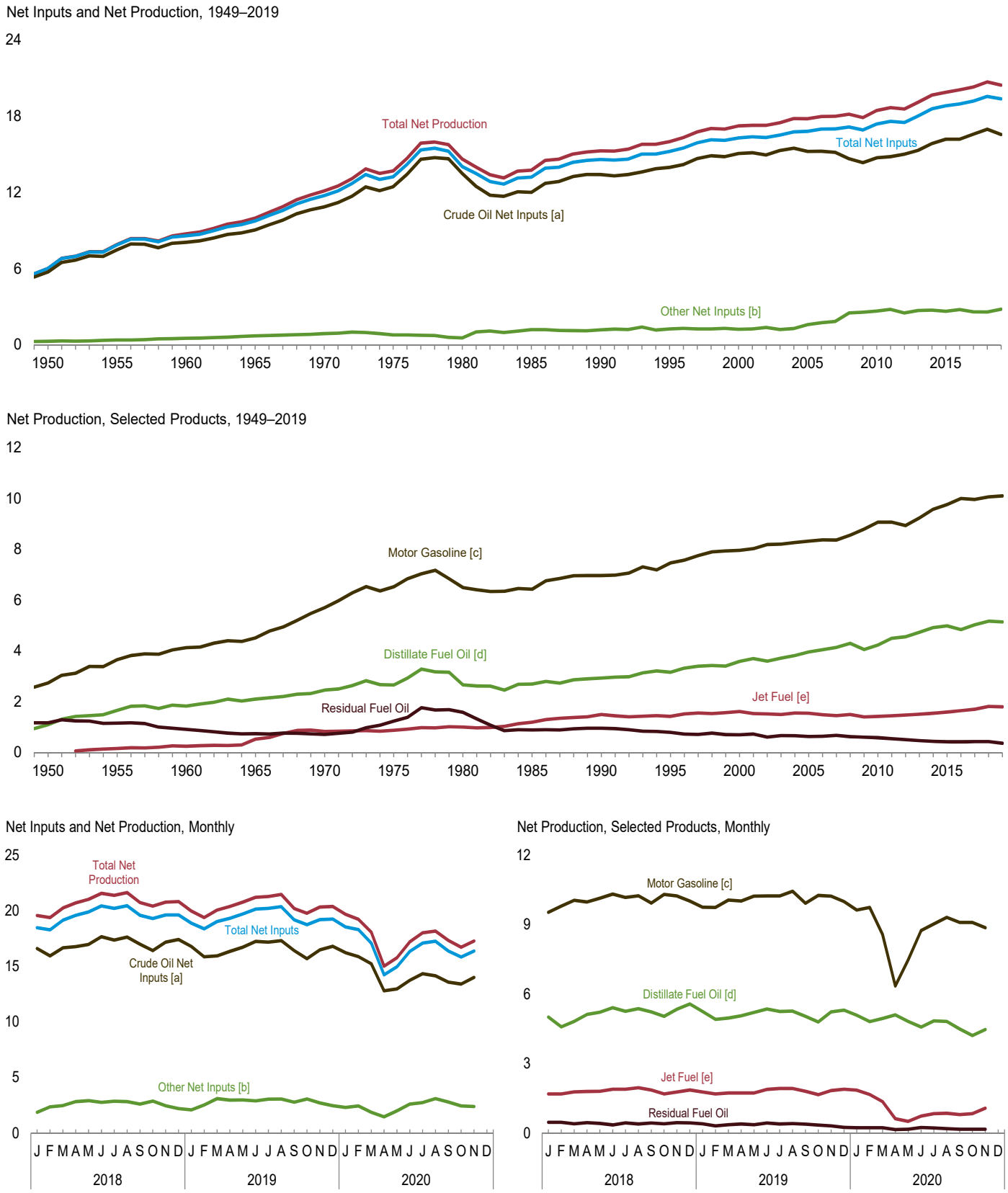
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.2 Refinery and Blender Net Inputs and Net Production

(Million Barrels per Day)



[a] Includes lease condensate.
[b] Natural gas liquids and other liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[e] Beginning in 2005, includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.2.

Table 3.2 Refinery and Blender Net Inputs and Net Production

(Thousand Barrels per Day)

	Refinery and Blender Net Inputs[a]				Refinery and Blender Net Production[b]									
						Hydrocarbon Gas Liquids								
						Propane/Propylene								
	Crude Oil[c]	Natural Gas Liquids[d]	Other Liquids[e]	Total	Distillate Fuel Oil[f]	Propane	Propylene	Total[g]	Total[h]	Jet Fuel[i]	Motor Gasoline[j]	Residual Fuel Oil	Other Products[k]	Total
1950 Average	**5,739**	**259**	**19**	**6,018**	**1,093**	**NA**	**NA**	**NA**	**80**	**(i)**	**2,735**	**1,165**	**947**	**6,019**
1955 Average	**7,480**	**345**	**32**	**7,857**	**1,651**	**NA**	**NA**	**NA**	**119**	**155**	**3,648**	**1,152**	**1,166**	**7,891**
1960 Average	**8,067**	**455**	**61**	**8,583**	**1,823**	**NA**	**NA**	**NA**	**212**	**241**	**4,126**	**908**	**1,420**	**8,729**
1965 Average	**9,043**	**618**	**88**	**9,750**	**2,096**	**NA**	**NA**	**NA**	**293**	**523**	**4,507**	**736**	**1,814**	**9,970**
1970 Average	**10,870**	**763**	**121**	**11,754**	**2,454**	E 184	E 55	**239**	**345**	**827**	**5,699**	**706**	**2,082**	**12,113**
1975 Average	**12,442**	**710**	**72**	**13,225**	**2,653**	E 179	E 60	**238**	**311**	**871**	**6,518**	**1,235**	**2,097**	**13,685**
1980 Average	**13,481**	**462**	**81**	**14,025**	**2,661**	E 202	E 72	**273**	**330**	**999**	**6,492**	**1,580**	**2,559**	**14,622**
1985 Average	**12,002**	**509**	**681**	**13,192**	**2,686**	E 223	E 72	**295**	**391**	**1,189**	**6,419**	**882**	**2,183**	**13,750**
1990 Average	**13,409**	**467**	**713**	**14,589**	**2,925**	**299**	**105**	**404**	**499**	**1,488**	**6,959**	**950**	**2,452**	**15,272**
1995 Average	**13,973**	**471**	**775**	**15,220**	**3,155**	**352**	**151**	**503**	**654**	**1,416**	**7,459**	**788**	**2,522**	**15,994**
2000 Average	**15,067**	**380**	**849**	**16,295**	**3,580**	**366**	**217**	**583**	**705**	**1,606**	**7,951**	**696**	**2,705**	**17,243**
2001 Average	**15,128**	**429**	**825**	**16,382**	**3,695**	**352**	**204**	**556**	**667**	**1,530**	**8,022**	**721**	**2,651**	**17,285**
2002 Average	**14,947**	**429**	**941**	**16,316**	**3,592**	**347**	**225**	**572**	**671**	**1,514**	**8,183**	**601**	**2,712**	**17,273**
2003 Average	**15,304**	**419**	**791**	**16,513**	**3,707**	**341**	**229**	**570**	**658**	**1,488**	**8,194**	**660**	**2,780**	**17,487**
2004 Average	**15,475**	**422**	**866**	**16,762**	**3,814**	**341**	**243**	**584**	**645**	**1,547**	**8,265**	**655**	**2,887**	**17,814**
2005 Average	**15,220**	**441**	**1,149**	**16,811**	**3,954**	**311**	**229**	**540**	**573**	**1,546**	**8,318**	**628**	**2,782**	**17,800**
2006 Average	**15,242**	**501**	**1,238**	**16,981**	**4,040**	**302**	**241**	**543**	**627**	**1,481**	**8,364**	**635**	**2,827**	**17,975**
2007 Average	**15,156**	**505**	**1,337**	**16,999**	**4,133**	**330**	**232**	**562**	**655**	**1,448**	**8,358**	**673**	**2,728**	**17,994**
2008 Average	**14,648**	**485**	**2,019**	**17,153**	**4,294**	**312**	**207**	**519**	**630**	**1,493**	**8,548**	**620**	**2,561**	**18,146**
2009 Average	**14,336**	**485**	**2,082**	**16,904**	**4,048**	**291**	**246**	**537**	**623**	**1,396**	**8,786**	**598**	**2,431**	**17,882**
2010 Average	**14,724**	**442**	**2,219**	**17,385**	**4,223**	**282**	**278**	**560**	**659**	**1,418**	**9,059**	**585**	**2,509**	**18,452**
2011 Average	**14,806**	**490**	**2,300**	**17,596**	**4,492**	**270**	**282**	**552**	**619**	**1,449**	**9,058**	**537**	**2,518**	**18,673**
2012 Average	**14,999**	**509**	**1,997**	**17,505**	**4,550**	**276**	**277**	**553**	**630**	**1,471**	**8,926**	**501**	**2,487**	**18,564**
2013 Average	**15,312**	**496**	**2,211**	**18,019**	**4,733**	**284**	**281**	**564**	**623**	**1,499**	**9,234**	**467**	**2,550**	**19,106**
2014 Average	**15,848**	**511**	**2,214**	**18,574**	**4,916**	**306**	**281**	**587**	**653**	**1,541**	**9,570**	**435**	**2,537**	**19,654**
2015 Average	**16,188**	**517**	**2,119**	**18,824**	**4,983**	**283**	**276**	**559**	**615**	**1,590**	**9,754**	**417**	**2,527**	**19,886**
2016 Average	**16,187**	**536**	**2,238**	**18,961**	**4,834**	**307**	**280**	**587**	**632**	**1,650**	**9,995**	**418**	**2,550**	**20,079**
2017 Average	**16,590**	**566**	**2,031**	**19,187**	**5,024**	**307**	**285**	**592**	**628**	**1,702**	**9,954**	**427**	**2,563**	**20,298**
2018 January	16,599	630	1,233	18,463	5,006	296	304	600	393	1,687	9,529	467	2,483	19,565
February	15,936	629	1,718	18,283	4,584	295	274	568	409	1,688	9,797	462	2,440	19,380
March	16,665	556	1,923	19,144	4,823	295	276	571	632	1,781	10,053	403	2,550	20,240
April	16,766	497	2,326	19,589	5,120	307	286	593	800	1,795	9,974	450	2,563	20,703
May	16,969	454	2,465	19,887	5,214	300	292	591	855	1,804	10,138	415	2,602	21,028
June	17,666	456	2,309	20,430	5,410	321	286	607	874	1,893	10,314	348	2,724	21,563
July	17,357	442	2,414	20,213	5,257	320	286	607	870	1,894	10,174	444	2,742	21,382
August	17,623	504	2,316	20,443	5,369	310	293	604	880	1,955	10,243	391	2,790	21,629
September	16,991	565	2,035	19,591	5,230	296	294	590	650	1,856	9,927	429	2,639	20,732
October	16,412	687	2,196	19,295	5,035	279	294	574	464	1,691	10,301	397	2,522	20,411
November	17,162	746	1,704	19,612	5,350	294	314	608	395	1,769	10,240	450	2,558	20,762
December	17,409	732	1,474	19,615	5,576	303	313	616	373	1,856	10,020	440	2,561	20,826
Average	**16,969**	**575**	**2,011**	**19,555**	**5,168**	**301**	**293**	**594**	**634**	**1,806**	**10,061**	**425**	**2,599**	**20,693**
2019 January	16,783	675	1,415	18,873	5,250	297	292	589	368	1,771	9,747	398	2,448	19,981
February	15,846	592	1,935	18,372	4,905	257	289	545	429	1,689	9,744	309	2,303	19,379
March	15,935	512	2,580	19,027	4,968	288	261	549	629	1,728	10,060	357	2,323	20,065
April	16,341	486	2,482	19,309	5,059	295	272	567	804	1,728	10,020	389	2,374	20,374
May	16,719	460	2,519	19,699	5,212	295	283	577	867	1,729	10,229	363	2,362	20,763
June	17,236	431	2,469	20,136	5,351	300	290	591	859	1,883	10,236	430	2,454	21,212
July	17,175	448	2,593	20,216	5,246	292	286	579	852	1,922	10,240	390	2,632	21,282
August	17,297	481	2,580	20,358	5,266	295	284	579	806	1,924	10,437	410	2,613	21,456
September	16,403	601	2,178	19,182	5,035	272	282	553	613	1,799	9,916	383	2,454	20,199
October	15,681	712	2,357	18,749	4,794	252	281	533	409	1,653	10,259	340	2,308	19,764
November	16,482	744	1,972	19,197	5,231	294	287	581	272	1,833	10,229	314	2,449	20,328
December	16,793	716	1,735	19,244	5,309	316	280	596	348	1,890	9,992	249	2,589	20,377
Average	**16,563**	**571**	**2,237**	**19,371**	**5,137**	**288**	**282**	**570**	**606**	**1,796**	**10,095**	**361**	**2,444**	**20,439**
2020 January	16,231	699	1,608	18,538	5,085	297	269	566	388	1,855	9,626	229	2,491	19,674
February	15,867	638	1,793	18,298	4,812	280	234	514	381	1,666	9,742	229	2,407	19,237
March	15,226	498	1,363	17,088	4,951	279	245	525	621	1,359	8,575	232	2,328	18,067
April	12,786	318	1,134	14,238	5,101	230	264	494	683	619	6,352	145	2,106	15,005
May	12,958	336	1,660	14,953	4,821	234	258	492	671	505	7,477	167	2,118	15,760
June	13,732	402	2,202	16,336	4,580	249	255	504	710	731	8,745	239	2,204	17,209
July	14,338	456	2,283	17,077	4,842	265	258	522	732	836	9,026	225	2,350	18,012
August	14,151	422	2,675	17,249	4,823	274	252	527	712	851	9,312	192	2,282	18,173
September	R 13,573	R 536	R 2,263	R 16,372	R 4,493	R 260	R 270	R 530	R 556	R 800	R 9,090	R 165	R 2,214	R 17,318
October	E 13,405	RF 568	RE 1,870	RF 15,843	E 4,213	NA	NA	RE 532	F 423	E 836	E 9,096	E 167	RE 1,971	RE 16,706
November	E 13,993	F 618	E 1,761	F 16,372	E 4,472	NA	NA	E 621	F 290	E 1,072	E 8,867	E 165	E 2,410	E 17,276
11-Month Average	**E 14,204**	**E 499**	**E 1,875**	**E 16,577**	**E 4,745**	**NA**	**NA**	**E 530**	**E 562**	**E 1,010**	**E 8,718**	**E 196**	**E 2,261**	**E 17,493**
2019 11-Month Average	**16,541**	**558**	**2,283**	**19,382**	**5,121**	**285**	**282**	**568**	**630**	**1,788**	**10,105**	**372**	**2,430**	**20,445**
2018 11-Month Average	**16,929**	**560**	**2,061**	**19,549**	**5,130**	**301**	**291**	**592**	**659**	**1,802**	**10,064**	**423**	**2,602**	**20,681**

[a] See "Refinery and Blender Net Inputs" in Glossary.

[b] See "Refinery and Blender Net Production" in Glossary.

[c] Includes lease condensate.

[d] Ethane, propane, normal butane, isobutane, and natural gasoline (pentanes plus).

[e] Unfinished oils (net). Beginning in 1981, also includes aviation gasoline blending components (net) and motor gasoline blending components (net). Beginning in 1993, also includes fuel ethanol. Beginning in 2009, also includes renewable fuels (excluding fuel ethanol), hydrogen, and other hydrocarbons. For 2009–2018, also includes oxygenates (excluding fuel ethanol).

[f] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[g] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures."

[h] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

[i] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products.") For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other Products.")

[j] Finished motor gasoline. Through 1963, also includes aviation gasoline and special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[k] Asphalt and road oil, kerosene, lubricants, petrochemical feedstocks, petroleum coke, still gas (refinery gas), waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 2005, also includes naphtha-type jet fuel.

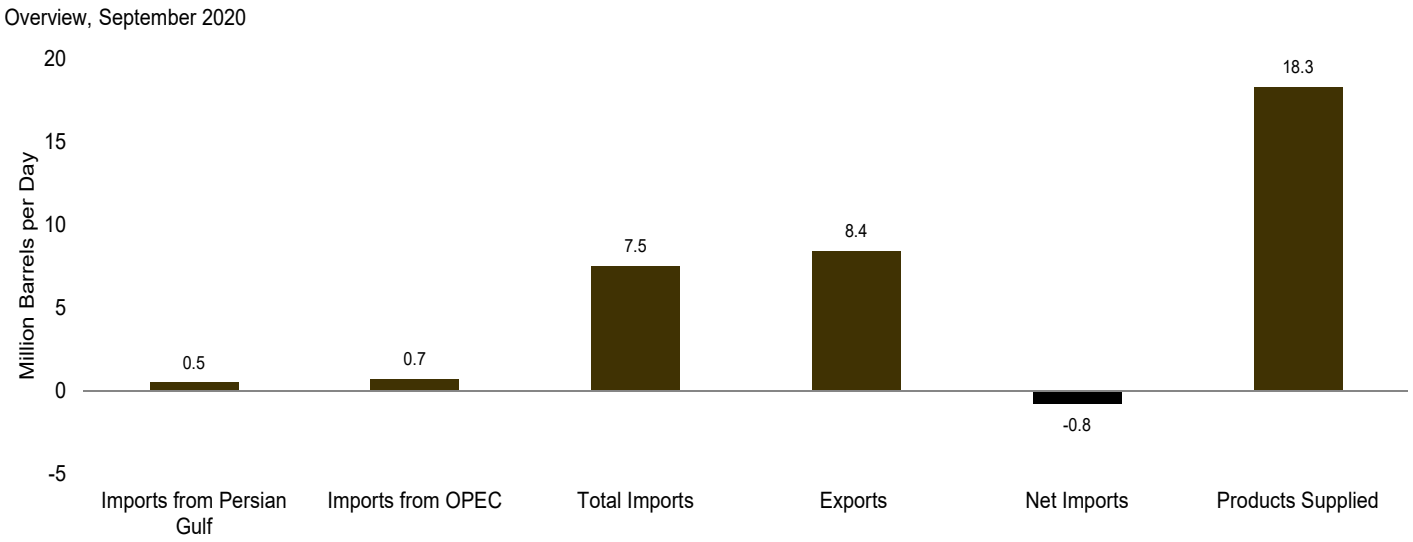
R=Revised. E=Estimate. F=Forecast. NA=Not available.

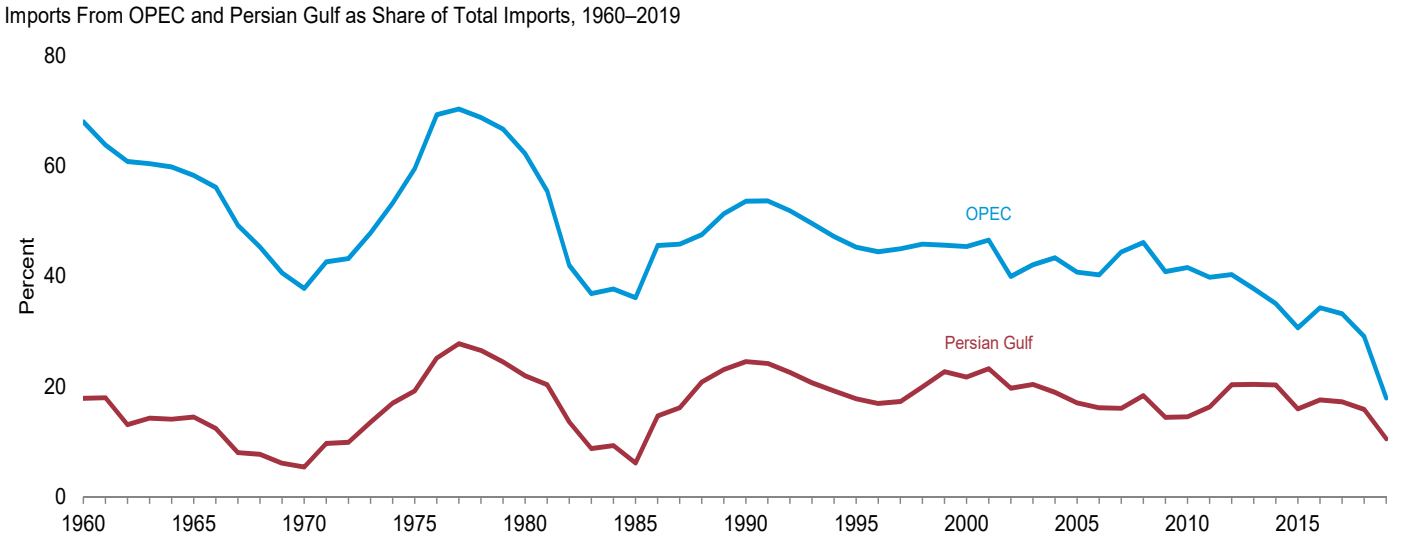
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

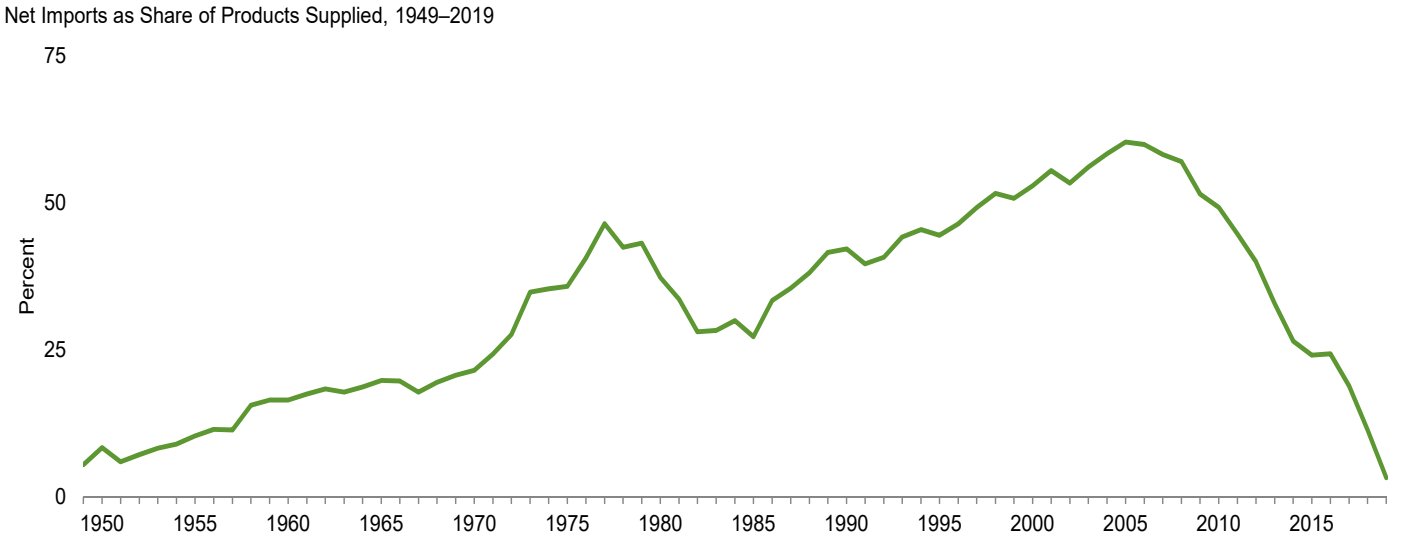
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.3a Petroleum Trade: Overview







Note: OPEC=Organization of the Petroleum Exporting Countries.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.3a.

Table 3.3a Petroleum Trade: Overview

	Thousand Barrels per Day						Percent					
							As Share of Products Supplied				As Share of Total Imports	
	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Exports	Net Imports	Products Supplied	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Net Imports	Imports From Persian Gulf[a]	Imports From OPEC[b]
1950 Average	**NA**	**NA**	**850**	**305**	**545**	**6,458**	**NA**	**NA**	**13.2**	**8.4**	**NA**	**NA**
1955 Average	**NA**	**NA**	**1,248**	**368**	**880**	**8,455**	**NA**	**NA**	**14.8**	**10.4**	**NA**	**NA**
1960 Average	**326**	**1,233**	**1,815**	**202**	**1,613**	**9,797**	**3.3**	**12.6**	**18.5**	**16.5**	**17.9**	**68.0**
1965 Average	**359**	**1,439**	**2,468**	**187**	**2,281**	**11,512**	**3.1**	**12.5**	**21.4**	**19.8**	**14.5**	**58.3**
1970 Average	**184**	**1,294**	**3,419**	**259**	**3,161**	**14,697**	**1.3**	**8.8**	**23.3**	**21.5**	**5.4**	**37.8**
1975 Average	**1,165**	**3,601**	**6,056**	**209**	**5,846**	**16,322**	**7.1**	**22.1**	**37.1**	**35.8**	**19.2**	**59.5**
1980 Average	**1,519**	**4,300**	**6,909**	**544**	**6,365**	**17,056**	**8.9**	**25.2**	**40.5**	**37.3**	**22.0**	**62.2**
1985 Average	**311**	**1,830**	**5,067**	**781**	**4,286**	**15,726**	**2.0**	**11.6**	**32.2**	**27.3**	**6.1**	**36.1**
1990 Average	**1,966**	**4,296**	**8,018**	**857**	**7,161**	**16,988**	**11.6**	**25.3**	**47.2**	**42.2**	**24.5**	**53.6**
1995 Average	**1,573**	**4,002**	**8,835**	**949**	**7,886**	**17,725**	**8.9**	**22.6**	**49.8**	**44.5**	**17.8**	**45.3**
2000 Average	**2,488**	**5,203**	**11,459**	**1,040**	**10,419**	**19,701**	**12.6**	**26.4**	**58.2**	**52.9**	**21.7**	**45.4**
2001 Average	**2,761**	**5,528**	**11,871**	**971**	**10,900**	**19,649**	**14.1**	**28.1**	**60.4**	**55.5**	**23.3**	**46.6**
2002 Average	**2,269**	**4,605**	**11,530**	**984**	**10,546**	**19,761**	**11.5**	**23.3**	**58.3**	**53.4**	**19.7**	**39.9**
2003 Average	**2,501**	**5,162**	**12,264**	**1,027**	**11,238**	**20,034**	**12.5**	**25.8**	**61.2**	**56.1**	**20.4**	**42.1**
2004 Average	**2,493**	**5,701**	**13,145**	**1,048**	**12,097**	**20,731**	**12.0**	**27.5**	**63.4**	**58.4**	**19.0**	**43.4**
2005 Average	**2,334**	**5,587**	**13,714**	**1,165**	**12,549**	**20,802**	**11.2**	**26.9**	**65.9**	**60.3**	**17.0**	**40.7**
2006 Average	**2,211**	**5,517**	**13,707**	**1,317**	**12,390**	**20,687**	**10.7**	**26.7**	**66.3**	**59.9**	**16.1**	**40.2**
2007 Average	**2,163**	**5,980**	**13,468**	**1,433**	**12,036**	**20,680**	**10.5**	**28.9**	**65.1**	**58.2**	**16.1**	**44.4**
2008 Average	**2,370**	**5,954**	**12,915**	**1,802**	**11,114**	**19,498**	**12.2**	**30.5**	**66.2**	**57.0**	**18.4**	**46.1**
2009 Average	**1,689**	**4,776**	**11,691**	**2,024**	**9,667**	**18,771**	**9.0**	**25.4**	**62.3**	**51.5**	**14.4**	**40.9**
2010 Average	**1,711**	**4,906**	**11,793**	**2,353**	**9,441**	**19,178**	**8.9**	**25.6**	**61.5**	**49.2**	**14.5**	**41.6**
2011 Average	**1,861**	**4,555**	**11,436**	**2,986**	**8,450**	**18,896**	**9.9**	**24.1**	**60.5**	**44.7**	**16.3**	**39.8**
2012 Average	**2,156**	**4,271**	**10,598**	**3,205**	**7,393**	**18,482**	**11.7**	**23.1**	**57.3**	**40.0**	**20.3**	**40.3**
2013 Average	**2,009**	**3,720**	**9,859**	**3,621**	**6,237**	**18,967**	**10.6**	**19.6**	**52.0**	**32.9**	**20.4**	**37.7**
2014 Average	**1,875**	**3,237**	**9,241**	**4,176**	**5,065**	**19,100**	**9.8**	**16.9**	**48.4**	**26.5**	**20.3**	**35.0**
2015 Average	**1,507**	**2,894**	**9,449**	**4,738**	**4,711**	**19,532**	**7.7**	**14.8**	**48.4**	**24.1**	**15.9**	**30.6**
2016 Average	**1,766**	**3,446**	**10,055**	**5,261**	**4,795**	**19,692**	**9.0**	**17.5**	**51.1**	**24.3**	**17.6**	**34.3**
2017 Average	**1,746**	**3,366**	**10,144**	**6,376**	**3,768**	**19,952**	**8.8**	**16.9**	**50.8**	**18.9**	**17.2**	**33.2**
2018 January	1,591	3,009	10,280	6,461	3,819	20,564	7.7	14.6	50.0	18.6	15.5	29.3
February	1,554	2,740	9,586	6,907	2,679	19,693	7.9	13.9	48.7	13.6	16.2	28.6
March	1,738	2,845	9,822	7,337	2,485	20,731	8.4	13.7	47.4	12.0	17.7	29.0
April	1,899	3,523	10,375	7,797	2,578	20,038	9.5	17.6	51.8	12.9	18.3	34.0
May	1,567	2,731	10,227	7,717	2,510	20,251	7.7	13.5	50.5	12.4	15.3	26.7
June	1,487	3,041	10,726	7,824	2,902	20,770	7.2	14.6	51.6	14.0	13.9	28.3
July	1,489	2,971	10,193	7,963	2,231	20,671	7.2	14.4	49.3	10.8	14.6	29.1
August	1,599	2,857	10,434	7,164	3,270	21,356	7.5	13.4	48.9	15.3	15.3	27.4
September	1,645	2,996	9,889	7,415	2,474	20,084	8.2	14.9	49.2	12.3	16.6	30.3
October	1,563	2,729	9,468	8,011	1,457	20,786	7.5	13.1	45.6	7.0	16.5	28.8
November	1,567	2,703	9,272	8,281	991	20,774	7.5	13.0	44.6	4.8	16.9	29.2
December	1,237	2,516	9,021	8,301	720	20,327	6.1	12.4	44.4	3.5	13.7	27.9
Average	**1,578**	**2,888**	**9,943**	**7,601**	**2,341**	**20,512**	**7.7**	**14.1**	**48.5**	**11.4**	**15.9**	**29.0**
2019 January	1,304	2,553	9,768	7,982	1,786	20,615	6.3	12.4	47.4	8.7	13.3	26.1
February	1,272	1,803	8,671	8,219	452	20,284	6.3	8.9	42.8	2.2	14.7	20.8
March	1,096	1,643	8,905	7,946	959	20,176	5.4	8.1	44.1	4.8	12.3	18.5
April	947	1,566	9,525	8,382	1,143	20,333	4.7	7.7	46.8	5.6	9.9	16.4
May	912	1,693	9,893	8,238	1,655	20,387	4.5	8.3	48.5	8.1	9.2	17.1
June	995	1,699	9,297	8,576	720	20,654	4.8	8.2	45.0	3.5	10.7	18.3
July	890	1,420	9,601	8,084	1,517	20,735	4.3	6.8	46.3	7.3	9.3	14.8
August	794	1,660	9,387	8,438	949	21,158	3.8	7.8	44.4	4.5	8.5	17.7
September	980	1,601	8,712	8,672	40	20,248	4.8	7.9	43.0	0.2	11.2	18.4
October	741	1,301	8,599	9,039	-440	20,714	3.6	6.3	41.5	-2.1	8.6	15.1
November	685	1,322	8,103	8,741	-638	20,736	3.3	6.4	39.1	-3.1	8.5	16.3
December	960	1,411	9,159	9,331	-171	20,443	4.7	6.9	44.8	-0.8	10.5	15.4
Average	**963**	**1,639**	**9,141**	**8,471**	**670**	**20,543**	**4.7**	**8.0**	**44.5**	**3.3**	**10.5**	**17.9**
2020 January	773	926	8,572	9,177	-605	19,905	3.9	4.7	43.1	-3.0	9.0	10.8
February	811	981	8,457	9,983	-1,526	19,839	4.1	4.9	42.6	-7.7	9.6	11.6
March	772	831	8,345	9,621	-1,276	18,284	4.2	4.5	45.6	-7.0	9.3	10.0
April	610	675	7,236	8,452	-1,216	14,691	4.2	4.6	49.3	-8.3	8.4	9.3
May	1,429	1,532	7,757	6,818	939	16,103	8.9	9.5	48.2	5.8	18.4	19.8
June	1,465	1,617	8,367	7,692	675	17,435	8.4	9.3	48.0	3.9	17.5	19.3
July	968	1,014	7,846	8,412	-566	18,323	5.3	5.5	42.8	-3.1	12.3	12.9
August	499	622	7,465	8,498	-1,033	18,439	2.7	3.4	40.5	-5.6	6.7	8.3
September	R 511	R 667	R 7,543	R 8,376	R -833	R 18,307	R 2.8	R 3.6	R 41.2	R -4.6	R 6.8	R 8.8
October	NA	NA	E 7,285	E 7,789	E -504	E 18,960	NA	NA	E 38.4	E -2.7	NA	NA
November	NA	NA	E 7,516	E 7,721	E -206	E 19,178	NA	NA	E 39.2	E -1.1	NA	NA
11-Month Average	**NA**	**NA**	**E 7,852**	**E 8,407**	**E -555**	**E 18,132**	**NA**	**NA**	**E 43.3**	**E -3.1**	**NA**	**NA**
2019 11-Month Average	**963**	**1,660**	**9,140**	**8,392**	**748**	**20,552**	**4.7**	**8.1**	**44.5**	**3.6**	**10.5**	**18.2**
2018 11-Month Average	**1,609**	**2,922**	**10,028**	**7,536**	**2,492**	**20,529**	**7.8**	**14.2**	**48.8**	**12.1**	**16.0**	**29.1**

[a] Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

[b] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. See Table 3.3c for notes on which countries are included in the data.

R=Revised. E=Estimate. NA=Not available.

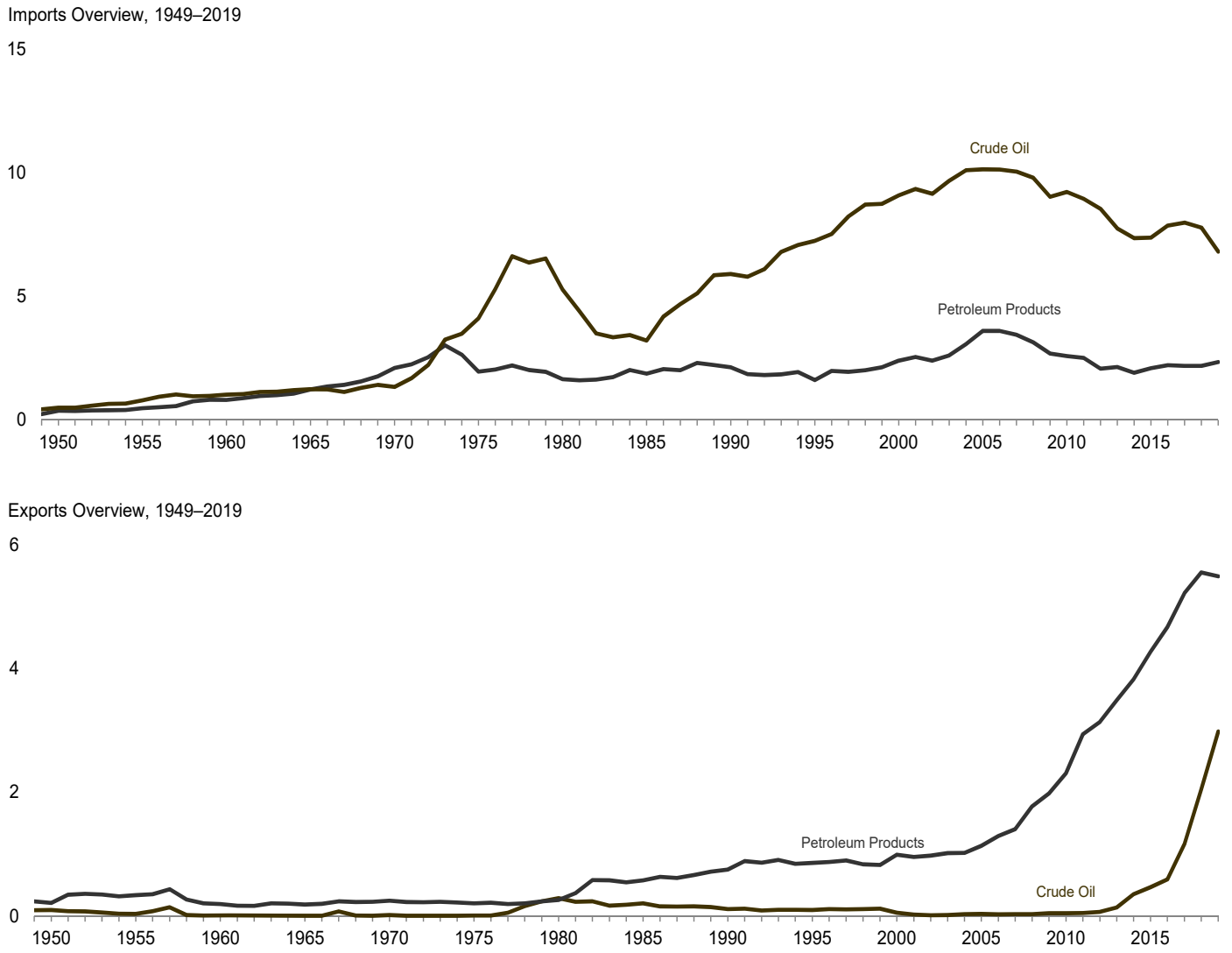
Notes: • For the feature article "Measuring Dependence on Imported Oil," published in the August 1995 *Monthly Energy Review,* see http://www.eia.gov/totalenergy/data/monthly/pdf/historical/imported_oil.pdf. • Beginning in October 1977, data include Strategic Petroleum Reserve imports. See Table 3.3b. • Annual averages may not equal average of months due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia. U.S. exports include shipments to U.S. territories, and imports include receipts from U.S. territories.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Figure 3.3b Petroleum Trade: Imports and Exports by Type

(Million Barrels per Day)



[a] Includes fuel ethanol blended into motor gasoline.
[b] Includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[c] Includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.3b and 3.3e.

Table 3.3b Petroleum Trade: Imports by Type

(Thousand Barrels per Day)

	Crude Oil[a]		Distillate Fuel Oil	Hydrocarbon Gas Liquids				Jet Fuel[e]	Motor Gasoline[f]	Residual Fuel Oil	Other[g]	Total
				Propane/Propylene								
	SPR[b]	Total		Propane	Propylene	Total[c]	Total[d]					
1950 Average	– –	487	7	NA	NA	–	–	([e])	(s)	329	27	850
1955 Average	– –	782	12	NA	NA	–	–	([e])	13	417	24	1,248
1960 Average	– –	1,015	35	NA	NA	NA	4	34	27	637	62	1,815
1965 Average	– –	1,238	36	NA	NA	NA	21	81	28	946	119	2,468
1970 Average	– –	1,324	147	NA	NA	26	58	144	67	1,528	150	3,419
1975 Average	– –	4,105	155	NA	NA	60	185	133	184	1,223	70	6,056
1980 Average	44	5,263	142	NA	NA	84	226	80	140	939	120	6,909
1985 Average	118	3,201	200	NA	NA	67	235	39	381	510	501	5,067
1990 Average	27	5,894	278	NA	NA	115	197	108	342	504	695	8,018
1995 Average	–	7,230	193	95	6	102	192	106	265	187	662	8,835
2000 Average	8	9,071	295	154	7	161	256	162	427	352	897	11,459
2001 Average	11	9,328	344	140	6	145	250	148	454	295	1,051	11,871
2002 Average	16	9,140	267	137	8	145	199	107	498	249	1,069	11,530
2003 Average	–	9,665	333	159	9	168	271	109	518	327	1,041	12,264
2004 Average	77	10,088	325	198	11	209	305	127	496	426	1,377	13,145
2005 Average	52	10,126	329	219	14	233	374	190	603	530	1,562	13,714
2006 Average	8	10,118	365	201	26	228	360	186	475	350	1,854	13,707
2007 Average	7	10,031	304	162	20	182	276	217	413	372	1,856	13,468
2008 Average	19	9,783	213	162	23	185	275	103	302	349	1,891	12,915
2009 Average	56	9,013	225	126	21	147	194	81	223	331	1,623	11,691
2010 Average	–	9,213	228	93	29	121	179	98	134	366	1,574	11,793
2011 Average	–	8,935	179	82	28	110	183	69	105	328	1,637	11,436
2012 Average	–	8,527	126	85	31	116	170	55	44	256	1,421	10,598
2013 Average	–	7,730	155	103	24	127	182	84	45	225	1,438	9,859
2014 Average	–	7,344	195	89	19	108	143	94	49	173	1,242	9,241
2015 Average	–	7,363	200	104	19	124	156	132	71	192	1,335	9,449
2016 Average	–	7,850	147	120	22	142	180	147	59	205	1,468	10,055
2017 Average	–	7,969	151	133	23	156	196	160	32	189	1,448	10,144
2018 January	–	8,018	290	224	15	240	273	121	19	234	1,325	10,280
February	–	7,498	284	175	22	197	230	93	33	167	1,281	9,586
March	–	7,620	157	149	23	172	216	85	38	234	1,471	9,822
April	–	8,254	91	131	10	141	168	88	33	190	1,552	10,375
May	–	7,834	122	114	21	135	158	140	62	259	1,652	10,227
June	–	8,487	90	85	21	105	136	154	42	224	1,593	10,726
July	–	7,936	144	104	21	125	161	151	35	213	1,553	10,193
August	–	7,989	176	100	21	121	160	152	82	237	1,638	10,434
September	–	7,593	172	110	14	124	172	181	94	227	1,451	9,889
October	–	7,354	161	133	15	147	197	116	42	223	1,374	9,468
November	–	7,542	227	156	13	169	228	103	29	142	1,003	9,272
December	–	7,097	190	190	15	206	268	105	29	180	1,152	9,021
Average	–	7,768	175	139	18	157	197	124	45	211	1,422	9,943
2019 January	–	7,558	307	214	15	230	297	100	45	197	1,263	9,768
February	–	6,670	361	173	13	186	246	140	52	165	1,038	8,671
March	–	6,783	180	176	10	186	254	144	103	132	1,308	8,905
April	–	6,999	121	124	18	143	207	197	76	136	1,788	9,525
May	–	7,154	160	107	21	129	183	188	151	169	1,888	9,893
June	–	7,152	126	105	20	125	169	174	53	97	1,525	9,297
July	–	6,938	174	106	16	122	180	214	91	102	1,902	9,601
August	–	6,944	154	105	17	122	178	175	148	144	1,642	9,387
September	–	6,483	118	102	17	119	176	186	111	166	1,472	8,712
October	–	6,242	186	116	15	131	198	148	124	116	1,585	8,599
November	–	5,818	258	132	13	145	191	131	100	198	1,407	8,103
December	–	6,833	295	134	15	149	200	171	62	165	1,435	9,159
Average	–	6,801	202	133	16	149	207	164	94	149	1,525	9,141
2020 January	–	6,408	217	156	11	168	210	148	91	192	1,306	8,572
February	–	6,519	148	120	9	129	157	165	90	169	1,208	8,457
March	–	6,296	164	111	15	126	159	150	122	129	1,324	8,345
April	–	5,520	231	92	14	105	128	143	90	210	916	7,236
May	–	6,087	190	79	14	93	116	125	114	150	975	7,757
June	–	6,397	154	59	12	72	109	137	120	155	1,295	8,367
July	–	5,906	116	95	14	109	140	166	124	130	1,263	7,846
August	–	5,432	145	83	13	95	130	166	115	187	1,289	7,465
September	–	[R] 5,398	[R] 180	[R] 124	[R] 13	[R] 137	[R] 172	[R] 169	[R] 152	[R] 206	[R] 1,268	[R] 7,543
October	–	[E] 5,303	[E] 239	NA	NA	[E] 114	NA	[E] 177	[E] 93	[E] 154	NA	[E] 7,285
November	–	[E] 5,486	[E] 312	NA	NA	[E] 135	NA	[E] 151	[E] 65	[E] 191	NA	[E] 7,516
11-Month Average	–	[E] **5,885**	[E] **190**	**NA**	**NA**	[E] **117**	**NA**	[E] **154**	[E] **107**	[E] **170**	**NA**	[E] **7,852**
2019 11-Month Average	–	6,798	194	133	16	149	207	164	97	147	1,533	9,140
2018 11-Month Average	–	7,831	173	134	18	152	191	126	46	214	1,447	10,028

[a] Includes lease condensate.

[b] "SPR" is the Strategic Petroleum Reserve, which began in October 1977. Through 2003, includes crude oil imports by SPR only; beginning in 2004, includes crude oil imports by SPR, and crude oil imports into SPR by others.

[c] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[d] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[e] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other.") For 1956–2004, also includes naphtha-type jet fuel. (Through 1955, naphtha-type jet fuel is included in "Motor Gasoline." Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[f] 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. Beginning in 1981, also includes motor gasoline blending components. Beginning in 1993, also includes fuel ethanol. Beginning in 2005, also includes naphtha-type jet fuel. Beginning in 2009, also includes renewable fuels (excluding fuel ethanol) and other hydrocarbons. For 2011–2018, also includes oxygenates (excluding fuel ethanol).

[g] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas.

R=Revised. E=Estimate. NA=Not available. – – =Not applicable. – =No data reported. (s)=Less than 500 barrels per day.

Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.3c Petroleum Trade: Imports From OPEC Countries

(Thousand Barrels per Day)

	Algeria[a]	Angola[b]	Iraq	Kuwait[c]	Libya[d]	Nigeria[e]	Saudi Arabia[c]	United Arab Emirates	Vene-zuela	Other[f]	Total OPEC
1960 Average	([a])	([b])	**22**	**182**	([d])	([e])	**84**	**NA**	**911**	**34**	**1,233**
1965 Average	([a])	([b])	**16**	**74**	**42**	([e])	**158**	**14**	**994**	**142**	**1,439**
1970 Average	**8**	([b])	**–**	**48**	**47**	([e])	**30**	**63**	**989**	**109**	**1,294**
1975 Average	**282**	([b])	**2**	**16**	**232**	**762**	**715**	**117**	**702**	**773**	**3,601**
1980 Average	**488**	([b])	**28**	**27**	**554**	**857**	**1,261**	**172**	**481**	**432**	**4,300**
1985 Average	**187**	([b])	**46**	**21**	**4**	**293**	**168**	**45**	**605**	**461**	**1,830**
1990 Average	**280**	([b])	**518**	**86**	**–**	**800**	**1,339**	**17**	**1,025**	**231**	**4,296**
1995 Average	**234**	([b])	**–**	**218**	**–**	**627**	**1,344**	**10**	**1,480**	**88**	**4,002**
2000 Average	**225**	([b])	**620**	**272**	**–**	**896**	**1,572**	**15**	**1,546**	**57**	**5,203**
2001 Average	**278**	([b])	**795**	**250**	**–**	**885**	**1,662**	**40**	**1,553**	**65**	**5,528**
2002 Average	**264**	([b])	**459**	**228**	**–**	**621**	**1,552**	**15**	**1,398**	**68**	**4,605**
2003 Average	**382**	([b])	**481**	**220**	**–**	**867**	**1,774**	**21**	**1,376**	**40**	**5,162**
2004 Average	**452**	([b])	**656**	**250**	**20**	**1,140**	**1,558**	**20**	**1,554**	**50**	**5,701**
2005 Average	**478**	([b])	**531**	**243**	**56**	**1,166**	**1,537**	**18**	**1,529**	**28**	**5,587**
2006 Average	**657**	([b])	**553**	**185**	**87**	**1,114**	**1,463**	**9**	**1,419**	**29**	**5,517**
2007 Average	**670**	**508**	**484**	**181**	**117**	**1,134**	**1,485**	**10**	**1,361**	**29**	**5,980**
2008 Average	**548**	**513**	**627**	**210**	**103**	**988**	**1,529**	**4**	**1,189**	**243**	**5,954**
2009 Average	**493**	**460**	**450**	**182**	**79**	**809**	**1,004**	**40**	**1,063**	**195**	**4,776**
2010 Average	**510**	**393**	**415**	**197**	**70**	**1,023**	**1,096**	**2**	**988**	**212**	**4,906**
2011 Average	**358**	**346**	**459**	**191**	**15**	**818**	**1,195**	**10**	**951**	**212**	**4,555**
2012 Average	**242**	**233**	**476**	**305**	**61**	**441**	**1,365**	**3**	**960**	**186**	**4,271**
2013 Average	**115**	**216**	**341**	**328**	**59**	**281**	**1,329**	**3**	**806**	**243**	**3,720**
2014 Average	**110**	**154**	**369**	**311**	**6**	**92**	**1,166**	**13**	**789**	**224**	**3,237**
2015 Average	**108**	**136**	**229**	**204**	**7**	**81**	**1,059**	**4**	**827**	**239**	**2,894**
2016 Average	**182**	**168**	**424**	**210**	**16**	**235**	**1,106**	**14**	**796**	**295**	**3,446**
2017 Average	**189**	**135**	**604**	**145**	**65**	**334**	**955**	**34**	**674**	**231**	**3,366**
2018 January	234	71	699	100	76	349	744	20	528	187	3,009
February	119	34	617	177	38	386	667	63	472	167	2,740
March	107	10	721	131	79	153	760	107	561	216	2,845
April	208	169	834	107	87	275	904	43	632	265	3,523
May	134	118	583	49	40	102	872	45	559	229	2,731
June	147	193	421	92	75	267	847	109	643	246	3,041
July	243	188	485	63	44	43	876	30	625	375	2,971
August	198	146	421	83	19	66	1,039	43	592	250	2,857
September	200	73	485	36	61	113	1,043	67	708	211	2,996
October	178	94	377	–	32	182	1,108	63	570	124	2,729
November	162	28	392	101	(s)	180	1,001	59	563	218	2,703
December	183	–	226	16	121	177	930	55	576	232	2,516
Average	**176**	**94**	**521**	**79**	**56**	**189**	**901**	**58**	**586**	**227**	**2,888**
2019 January	98	10	429	21	60	181	777	27	634	317	2,553
February	51	–	422	106	36	33	663	32	289	171	1,803
March	136	10	275	129	25	142	666	3	69	187	1,643
April	125	43	265	61	88	137	583	22	114	128	1,566
May	142	46	366	57	111	243	462	22	11	233	1,693
June	122	123	355	26	55	251	579	16	(s)	171	1,699
July	75	–	360	20	39	193	454	36	–	243	1,420
August	63	47	249	46	66	380	461	19	–	329	1,660
September	49	71	400	–	69	245	458	121	–	189	1,601
October	23	75	252	–	86	128	444	22	–	271	1,301
November	34	25	283	41	90	211	355	5	–	278	1,322
December	16	11	436	43	34	163	470	–	–	238	1,411
Average	**78**	**38**	**341**	**45**	**63**	**193**	**530**	**27**	**92**	**231**	**1,639**
2020 January	17	10	299	46	67	64	407	7	–	8	926
February	33	33	262	46	36	76	488	6	–	(s)	981
March	12	–	290	23	–	54	445	4	–	3	831
April	1	30	140	–	–	57	431	13	–	3	675
May	1	50	242	–	–	69	1,158	2	–	9	1,532
June	7	66	146	34	–	103	1,221	39	–	2	1,617
July	4	7	136	84	–	34	718	29	–	–	1,014
August	11	12	209	–	(s)	114	273	3	–	–	622
September	14	32	83	35	(s)	91	366	14	–	32	667
9-Month Average	**11**	**27**	**201**	**30**	**11**	**74**	**612**	**13**	**–**	**6**	**985**
2019 9-Month Average	**96**	**39**	**346**	**51**	**61**	**202**	**566**	**33**	**123**	**220**	**1,738**
2018 9-Month Average	**177**	**112**	**585**	**92**	**58**	**193**	**863**	**58**	**592**	**239**	**2,968**

[a] Algeria joined OPEC in 1969. For 1960–1968, Algeria is included in "Total Non-OPEC" on Table 3.3d.

[b] Angola joined OPEC in January 2007. For 1960–2006, Angola is included in "Total Non-OPEC" on Table 3.3d.

[c] Through 1970, includes half the imports from the Neutral Zone between Kuwait and Saudi Arabia. Beginning in 1971, imports from the Neutral Zone are reported as originating in either Kuwait or Saudi Arabia depending on the country reported to U.S. Customs.

[d] Libya joined OPEC in 1962. For 1960 and 1961, Libya is included in "Total Non-OPEC" on Table 3.3d.

[e] Nigeria joined OPEC in 1971. For 1960–1970, Nigeria is included in "Total Non-OPEC" on Table 3.3d.

[f] Includes these countries for the dates indicated: Congo-Brazzaville (June 2018 forward), Ecuador (1973–1992 and November 2007–2019), Equatorial Guinea (May 2017 forward), Gabon (1975–1994 and July 2016 forward), Indonesia (1962–2008 and January–November 2016), Iran (1960 forward), and Qatar (1961–2018).

NA=Not available. – =No data reported. (s)=Less than 500 barrels per day.

Notes: • See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. Petroleum imports not classified as "OPEC" on this table are included on Table 3.3d. • The country of origin for petroleum products may not be the country of origin for the crude oil from which the products were produced. For example, refined products imported from West European refining areas may have been produced from Middle East crude oil. • Includes imports for the Strategic Petroleum Reserve, which began in October 1977. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1973.

Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports.

Table 3.3d Petroleum Trade: Imports From Non-OPEC Countries

(Thousand Barrels per Day)

	Brazil	Canada	Colombia	Ecuador[a]	Mexico	Nether-lands	Norway	Russia[b]	United Kingdom	U.S. Virgin Islands	Other	Total Non-OPEC
1960 Average	**1**	**120**	**42**	**NA**	**16**	**NA**	**NA**	**–**	**(s)**	**NA**	**NA**	**581**
1965 Average	**–**	**323**	**51**	**–**	**48**	**1**	**–**	**–**	**(s)**	**–**	**606**	**1,029**
1970 Average	**2**	**766**	**46**	**–**	**42**	**39**	**–**	**3**	**11**	**189**	**1,027**	**2,126**
1975 Average	**5**	**846**	**9**	**([a])**	**71**	**19**	**17**	**14**	**14**	**406**	**1,052**	**2,454**
1980 Average	**3**	**455**	**4**	**([a])**	**533**	**2**	**144**	**1**	**176**	**388**	**903**	**2,609**
1985 Average	**61**	**770**	**23**	**([a])**	**816**	**58**	**32**	**8**	**310**	**247**	**913**	**3,237**
1990 Average	**49**	**934**	**182**	**([a])**	**755**	**55**	**102**	**45**	**189**	**282**	**1,128**	**3,721**
1995 Average	**8**	**1,332**	**219**	**97**	**1,068**	**15**	**273**	**25**	**383**	**278**	**1,136**	**4,833**
2000 Average	**51**	**1,807**	**342**	**128**	**1,373**	**30**	**343**	**72**	**366**	**291**	**1,453**	**6,257**
2001 Average	**82**	**1,828**	**296**	**120**	**1,440**	**43**	**341**	**90**	**324**	**268**	**1,511**	**6,343**
2002 Average	**116**	**1,971**	**260**	**110**	**1,547**	**66**	**393**	**210**	**478**	**236**	**1,539**	**6,925**
2003 Average	**108**	**2,072**	**195**	**145**	**1,623**	**87**	**270**	**254**	**440**	**288**	**1,622**	**7,103**
2004 Average	**104**	**2,138**	**176**	**245**	**1,665**	**101**	**244**	**298**	**380**	**330**	**1,763**	**7,444**
2005 Average	**156**	**2,181**	**196**	**283**	**1,662**	**151**	**233**	**410**	**396**	**328**	**2,130**	**8,127**
2006 Average	**193**	**2,353**	**155**	**278**	**1,705**	**174**	**196**	**369**	**272**	**328**	**2,168**	**8,190**
2007 Average	**200**	**2,455**	**155**	**203**	**1,532**	**128**	**142**	**414**	**277**	**346**	**1,636**	**7,489**
2008 Average	**258**	**2,493**	**200**	**([a])**	**1,302**	**168**	**102**	**465**	**236**	**320**	**1,416**	**6,961**
2009 Average	**309**	**2,479**	**276**	**([a])**	**1,210**	**140**	**108**	**563**	**245**	**277**	**1,307**	**6,915**
2010 Average	**272**	**2,535**	**365**	**([a])**	**1,284**	**108**	**89**	**612**	**256**	**253**	**1,112**	**6,887**
2011 Average	**253**	**2,729**	**433**	**([a])**	**1,206**	**100**	**113**	**624**	**159**	**186**	**1,077**	**6,881**
2012 Average	**226**	**2,946**	**433**	**([a])**	**1,035**	**99**	**75**	**477**	**149**	**12**	**874**	**6,327**
2013 Average	**151**	**3,142**	**389**	**([a])**	**919**	**89**	**54**	**460**	**147**	**–**	**786**	**6,138**
2014 Average	**160**	**3,388**	**318**	**([a])**	**842**	**85**	**45**	**330**	**117**	**–**	**720**	**6,004**
2015 Average	**215**	**3,765**	**395**	**([a])**	**758**	**57**	**61**	**371**	**123**	**–**	**811**	**6,554**
2016 Average	**167**	**3,780**	**483**	**([a])**	**669**	**60**	**76**	**441**	**122**	**(s)**	**812**	**6,610**
2017 Average	**224**	**4,054**	**362**	**([a])**	**682**	**62**	**79**	**389**	**111**	**–**	**814**	**6,778**
2018 January	272	4,442	512	([a])	669	68	57	386	79	–	786	7,271
February	187	4,263	477	([a])	713	50	56	297	110	–	692	6,846
March	84	4,195	364	([a])	784	91	91	356	84	–	929	6,977
April	184	4,278	282	([a])	632	64	122	243	205	–	843	6,852
May	123	4,467	437	([a])	608	78	72	491	180	–	1,039	7,496
June	283	4,553	240	([a])	886	53	85	439	152	–	995	7,685
July	179	4,173	319	([a])	681	43	166	454	164	–	1,042	7,222
August	249	4,239	319	([a])	935	68	39	515	175	–	1,038	7,577
September	77	4,038	229	([a])	771	44	74	519	207	–	935	6,893
October	230	4,193	229	([a])	718	89	138	271	106	–	765	6,739
November	93	4,384	259	([a])	601	49	136	254	155	–	640	6,569
December	92	4,277	333	([a])	635	49	94	271	132	–	620	6,505
Average	**171**	**4,292**	**333**	**([a])**	**719**	**62**	**94**	**375**	**146**	**–**	**862**	**7,055**
2019 January	141	4,655	380	([a])	569	103	88	344	122	–	813	7,215
February	90	4,320	420	([a])	720	108	69	226	47	–	867	6,868
March	172	4,429	412	([a])	712	68	80	363	118	–	907	7,262
April	153	4,412	472	([a])	680	124	112	566	182	–	1,258	7,958
May	256	4,428	468	([a])	656	218	147	564	266	–	1,198	8,200
June	213	4,398	395	([a])	574	88	190	534	156	–	1,050	7,598
July	338	4,674	379	([a])	670	121	51	496	182	–	1,270	8,181
August	197	4,379	384	([a])	744	138	94	617	146	–	1,027	7,726
September	186	4,285	283	([a])	589	121	123	486	179	–	859	7,111
October	285	4,422	266	([a])	548	95	40	675	130	–	838	7,298
November	125	3,963	284	([a])	705	96	46	649	139	–	774	6,782
December	143	4,784	340	([a])	641	76	48	696	81	–	939	7,749
Average	**193**	**4,432**	**373**	**([a])**	**650**	**113**	**91**	**520**	**146**	**–**	**984**	**7,502**
2020 January	101	4,505	337	242	854	48	1	601	109	–	848	7,646
February	134	4,583	343	236	804	64	–	614	74	–	624	7,476
March	120	4,366	322	260	801	114	18	645	62	–	805	7,514
April	104	4,088	277	176	631	93	16	408	54	–	713	6,561
May	110	3,682	250	58	889	24	44	350	101	–	716	6,225
June	159	3,760	369	112	849	98	99	551	87	–	667	6,751
July	115	3,981	331	108	755	72	12	563	84	–	808	6,831
August	113	3,877	186	242	769	91	20	552	64	–	928	6,843
September	92	3,945	351	227	715	125	15	527	91	–	789	6,876
9-Month Average	**116**	**4,085**	**307**	**184**	**786**	**81**	**25**	**534**	**81**	**–**	**768**	**6,968**
2019 9-Month Average	**195**	**4,445**	**399**	**([a])**	**657**	**121**	**106**	**468**	**156**	**–**	**1,029**	**7,577**
2018 9-Month Average	**182**	**4,295**	**353**	**([a])**	**742**	**63**	**85**	**412**	**151**	**–**	**925**	**7,207**

[a] Ecuador was a member of OPEC from 1973–1992 and November 2007–2019. For those time periods, Ecuador is included in "Total OPEC" on Table 3.3c.

[b] Through 1992, may include imports from republics other than Russia in the former U.S.S.R. See "Union of Soviet Socialist Republics (U.S.S.R.)" in Glossary.

NA=Not available. – =No data reported. (s)=Less than 500 barrels per day.

Notes: • See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. Petroleum imports not classified as "OPEC" on Table 3.3c are included on this table. • The country of origin for petroleum products may not be the country of origin for the crude oil from which the products were produced. For example, refined products imported from West European refining areas may have been produced from Middle East crude oil. • Includes imports for the Strategic Petroleum Reserve, which began in October 1977. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1973.

Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports.

Table 3.3e Petroleum Trade: Exports by Type

(Thousand Barrels per Day)

	Crude Oil[a]	Distillate Fuel Oil	Hydrocarbon Gas Liquids		Jet Fuel[d]	Motor Gasoline[e]	Residual Fuel Oil	Other[f]	Total
			Propane[b]	Total[c]					
1950 Average	**95**	**34**	**NA**	**4**	**([d])**	**68**	**44**	**58**	**305**
1955 Average	**32**	**67**	**NA**	**12**	**(s)**	**95**	**93**	**69**	**368**
1960 Average	**8**	**27**	**NA**	**8**	**(s)**	**37**	**51**	**71**	**202**
1965 Average	**3**	**10**	**NA**	**21**	**3**	**2**	**41**	**108**	**187**
1970 Average	**14**	**2**	**13**	**27**	**6**	**1**	**54**	**154**	**259**
1975 Average	**6**	**1**	**13**	**26**	**2**	**2**	**15**	**158**	**209**
1980 Average	**287**	**3**	**10**	**21**	**1**	**1**	**33**	**197**	**544**
1985 Average	**204**	**67**	**48**	**64**	**13**	**10**	**197**	**225**	**781**
1990 Average	**109**	**109**	**28**	**41**	**43**	**55**	**211**	**287**	**857**
1995 Average	**95**	**183**	**38**	**59**	**26**	**104**	**136**	**12**	**949**
2000 Average	**50**	**173**	**53**	**78**	**32**	**144**	**139**	**46**	**1,040**
2001 Average	**20**	**119**	**31**	**45**	**29**	**133**	**191**	**433**	**971**
2002 Average	**9**	**112**	**55**	**67**	**15**	**124**	**177**	**479**	**984**
2003 Average	**12**	**107**	**37**	**59**	**20**	**125**	**197**	**506**	**1,027**
2004 Average	**27**	**110**	**28**	**45**	**40**	**124**	**205**	**497**	**1,048**
2005 Average	**32**	**138**	**37**	**60**	**53**	**136**	**251**	**496**	**1,165**
2006 Average	**25**	**215**	**45**	**68**	**41**	**142**	**283**	**544**	**1,317**
2007 Average	**27**	**268**	**42**	**70**	**41**	**127**	**330**	**569**	**1,433**
2008 Average	**29**	**528**	**53**	**101**	**61**	**172**	**355**	**555**	**1,802**
2009 Average	**44**	**587**	**85**	**139**	**69**	**195**	**415**	**574**	**2,024**
2010 Average	**42**	**656**	**109**	**164**	**84**	**296**	**405**	**706**	**2,353**
2011 Average	**47**	**854**	**124**	**249**	**97**	**479**	**424**	**835**	**2,986**
2012 Average	**67**	**1,007**	**171**	**314**	**132**	**409**	**388**	**886**	**3,205**
2013 Average	**134**	**1,134**	**302**	**468**	**156**	**373**	**362**	**994**	**3,621**
2014 Average	**351**	**1,101**	**423**	**703**	**163**	**442**	**364**	**1,052**	**4,176**
2015 Average	**465**	**1,176**	**615**	**966**	**168**	**476**	**326**	**1,161**	**4,738**
2016 Average	**591**	**1,179**	**799**	**1,211**	**175**	**635**	**298**	**1,171**	**5,261**
2017 Average	**1,158**	**1,381**	**914**	**1,404**	**184**	**749**	**308**	**1,192**	**6,376**
2018 January	1,362	999	849	1,456	197	975	279	1,194	6,461
February	1,735	1,034	818	1,436	176	934	313	1,278	6,907
March	1,969	1,128	889	1,427	247	951	332	1,281	7,337
April	1,919	1,464	876	1,670	226	867	323	1,329	7,797
May	2,067	1,372	1,003	1,753	245	720	394	1,167	7,717
June	2,279	1,467	877	1,619	215	686	353	1,205	7,824
July	2,307	1,302	1,075	1,663	269	821	334	1,267	7,963
August	1,859	1,278	1,033	1,660	223	681	384	1,079	7,164
September	2,015	1,298	823	1,582	166	815	279	1,260	7,415
October	2,256	1,334	928	1,614	277	1,009	330	1,190	8,011
November	2,400	1,392	1,038	1,659	215	1,072	231	1,313	8,281
December	2,391	1,385	1,163	1,671	211	1,017	301	1,325	8,301
Average	**2,048**	**1,289**	**949**	**1,602**	**223**	**879**	**321**	**1,240**	**7,601**
2019 January	2,643	1,280	1,030	1,561	264	826	230	1,178	7,982
February	2,915	1,160	892	1,517	192	912	242	1,281	8,219
March	2,673	1,173	918	1,652	173	873	243	1,159	7,946
April	2,911	1,261	1,166	1,923	195	655	357	1,081	8,382
May	2,959	1,287	1,085	1,802	194	742	301	954	8,238
June	3,100	1,516	1,158	1,860	213	699	194	994	8,576
July	2,706	1,374	1,188	1,893	209	683	142	1,077	8,084
August	2,755	1,530	1,035	1,832	254	696	287	1,084	8,438
September	3,093	1,427	1,124	1,885	243	783	202	1,040	8,672
October	3,412	1,205	1,168	2,081	222	898	148	1,074	9,039
November	3,080	1,148	1,159	1,981	226	1,049	204	1,053	8,741
December	3,537	1,301	1,235	1,955	256	964	199	1,119	9,331
Average	**2,982**	**1,306**	**1,098**	**1,830**	**220**	**815**	**229**	**1,090**	**8,471**
2020 January	3,251	1,263	1,263	2,163	215	822	169	1,294	9,177
February	3,708	1,380	1,191	2,202	246	881	231	1,335	9,983
March	3,557	1,459	1,337	2,139	214	777	152	1,325	9,621
April	3,077	1,096	1,213	2,067	66	762	157	1,226	8,452
May	2,929	733	1,053	1,846	23	314	145	828	6,818
June	2,753	1,330	1,250	2,032	44	468	154	912	7,692
July	3,267	1,368	1,218	2,008	54	597	121	997	8,412
August	3,298	1,337	1,139	1,996	30	764	125	946	8,498
September	[R] 3,238	[R] 1,177	[R] 1,210	[R] 2,015	[R] 45	[R] 782	[R] 141	[R] 978	[R] 8,376
October	[E] 2,725	[E] 1,113	NA	NA	[E] 52	[E] 678	[E] 114	NA	[E] 7,789
November	[E] 2,814	[E] 954	NA	NA	[E] 81	[E] 738	[E] 137	NA	[E] 7,721
11-Month Average	**[E] 3,146**	**[E] 1,201**	**NA**	**NA**	**[E] 97**	**[E] 688**	**[E] 149**	**NA**	**[E] 8,407**
2019 11-Month Average	**2,930**	**1,306**	**1,085**	**1,818**	**217**	**801**	**232**	**1,087**	**8,392**
2018 11-Month Average	**2,016**	**1,280**	**929**	**1,595**	**224**	**866**	**323**	**1,232**	**7,536**

[a] Includes lease condensate.

[b] Through 1983, also includes 40% of "Butane-Propane Mixtures." Through 2012, also includes propylene.

[c] Ethane, propane, normal butane, isobutane, and natural gasoline (pentanes plus). Through 2012, also includes refinery olefins (ethylene, propylene, butylene, and isobutylene).

[d] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other.") For 1953–2004, also includes naphtha-type jet fuel. (Through 1952, naphtha-type jet fuel is included in the products from which it was blended: motor gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[e] Finished motor gasoline. Through 1952, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components.

[f] Asphalt and road oil, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 1981, also includes motor gasoline blending components. Beginning in 2005, also includes naphtha-type jet fuel. For 2009–2018, also includes oxygenates (excluding fuel ethanol). Beginning in 2010, also includes fuel ethanol. Beginning in 2011, also includes renewable fuels (excluding fuel ethanol).

R=Revised. E=Estimate. NA=Not available. (s)=Less than 500 barrels per day.

Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.3f Petroleum Trade: Exports by Country of Destination

(Thousand Barrels per Day)

	Brazil	Canada	China	India	Japan	Mexico	Nether-lands	Singa-pore	South Korea	United Kingdom	Other	Total
1960 Average	**4**	**34**	**NA**	**NA**	**62**	**18**	**6**	**NA**	**NA**	**12**	**NA**	**202**
1965 Average	**3**	**26**	**NA**	**NA**	**40**	**27**	**10**	**NA**	**NA**	**12**	**NA**	**187**
1970 Average	**7**	**31**	**NA**	**NA**	**69**	**33**	**15**	**NA**	**NA**	**12**	**NA**	**259**
1975 Average	**6**	**22**	**NA**	**1**	**27**	**42**	**23**	**NA**	**NA**	**7**	**NA**	**209**
1980 Average	**4**	**108**	**–**	**1**	**32**	**28**	**23**	**6**	**2**	**7**	**335**	**544**
1985 Average	**3**	**74**	**–**	**2**	**108**	**61**	**44**	**24**	**27**	**14**	**424**	**781**
1990 Average	**2**	**91**	**–**	**6**	**92**	**89**	**54**	**15**	**60**	**11**	**438**	**857**
1995 Average	**16**	**73**	**2**	**3**	**76**	**125**	**33**	**46**	**57**	**14**	**505**	**949**
2000 Average	**28**	**110**	**3**	**3**	**90**	**358**	**42**	**36**	**20**	**10**	**342**	**1,040**
2001 Average	**23**	**112**	**6**	**3**	**62**	**274**	**45**	**67**	**14**	**13**	**352**	**971**
2002 Average	**26**	**106**	**14**	**3**	**74**	**254**	**23**	**81**	**11**	**12**	**380**	**984**
2003 Average	**27**	**141**	**24**	**7**	**69**	**228**	**15**	**51**	**10**	**6**	**447**	**1,027**
2004 Average	**27**	**158**	**13**	**11**	**63**	**209**	**36**	**41**	**12**	**14**	**464**	**1,048**
2005 Average	**39**	**181**	**12**	**11**	**56**	**268**	**25**	**43**	**16**	**21**	**492**	**1,165**
2006 Average	**42**	**159**	**11**	**8**	**58**	**255**	**83**	**45**	**21**	**28**	**607**	**1,317**
2007 Average	**46**	**189**	**14**	**14**	**54**	**279**	**81**	**71**	**16**	**9**	**660**	**1,433**
2008 Average	**54**	**264**	**13**	**10**	**54**	**333**	**131**	**77**	**18**	**17**	**830**	**1,802**
2009 Average	**55**	**223**	**44**	**30**	**58**	**322**	**192**	**115**	**23**	**33**	**928**	**2,024**
2010 Average	**123**	**233**	**52**	**10**	**88**	**448**	**165**	**128**	**13**	**19**	**1,073**	**2,353**
2011 Average	**157**	**351**	**73**	**17**	**79**	**570**	**248**	**121**	**15**	**35**	**1,320**	**2,986**
2012 Average	**166**	**416**	**85**	**36**	**89**	**565**	**239**	**115**	**16**	**41**	**1,435**	**3,205**
2013 Average	**179**	**549**	**129**	**41**	**117**	**532**	**274**	**136**	**13**	**36**	**1,616**	**3,621**
2014 Average	**217**	**809**	**89**	**70**	**150**	**559**	**241**	**124**	**46**	**53**	**1,817**	**4,176**
2015 Average	**188**	**955**	**191**	**78**	**166**	**690**	**226**	**122**	**65**	**89**	**1,968**	**4,738**
2016 Average	**260**	**935**	**203**	**140**	**250**	**880**	**265**	**147**	**108**	**92**	**1,980**	**5,261**
2017 Average	**395**	**871**	**447**	**200**	**350**	**1,081**	**251**	**210**	**176**	**186**	**2,209**	**6,376**
2018 January	363	997	523	141	407	1,137	275	193	56	155	2,215	6,461
February	349	1,135	606	203	323	1,154	238	232	175	223	2,268	6,907
March	399	959	703	400	318	1,261	230	94	238	305	2,429	7,337
April	400	1,115	558	205	350	1,238	369	218	213	319	2,812	7,797
May	308	1,162	494	268	279	1,067	229	291	377	265	2,977	7,717
June	450	1,062	554	500	344	1,008	295	223	451	260	2,678	7,824
July	354	1,127	513	241	495	1,343	322	125	413	233	2,797	7,963
August	358	933	130	291	443	1,088	301	176	478	291	2,675	7,164
September	380	965	52	265	572	1,153	418	200	385	267	2,756	7,415
October	554	1,023	107	378	459	1,358	462	176	555	303	2,637	8,011
November	401	875	62	308	789	1,354	503	263	445	267	3,011	8,281
December	476	937	203	362	807	1,169	399	43	772	372	2,761	8,301
Average	**400**	**1,024**	**374**	**297**	**466**	**1,194**	**337**	**185**	**382**	**272**	**2,670**	**7,601**
2019 January	457	878	93	401	646	1,177	620	37	339	375	2,957	7,982
February	328	1,163	177	455	284	1,234	442	184	607	368	2,977	8,219
March	564	944	129	673	505	1,210	372	140	506	263	2,640	7,946
April	428	1,155	80	575	516	1,197	440	119	397	293	3,181	8,382
May	428	1,030	300	469	580	1,018	294	124	501	372	3,121	8,238
June	565	861	424	438	440	993	525	82	807	286	3,155	8,576
July	466	979	286	231	589	1,165	355	79	759	269	2,905	8,084
August	443	1,052	300	417	574	1,043	373	63	616	383	3,174	8,438
September	585	1,013	317	396	633	1,056	478	149	606	322	3,116	8,672
October	446	1,190	36	586	558	1,208	553	137	618	285	3,423	9,039
November	476	1,148	133	400	595	1,355	360	168	613	371	3,122	8,741
December	493	1,026	78	480	709	1,242	595	237	590	439	3,441	9,331
Average	**474**	**1,035**	**196**	**460**	**555**	**1,158**	**451**	**126**	**580**	**336**	**3,102**	**8,471**
2020 January	462	1,253	98	498	683	1,168	471	150	758	394	3,243	9,177
February	546	1,212	82	525	481	1,135	671	280	492	567	3,991	9,983
March	512	1,002	251	546	714	1,244	460	248	427	414	3,803	9,621
April	410	862	369	458	635	872	380	472	375	290	3,328	8,452
May	275	698	1,450	350	489	536	301	147	348	253	1,969	6,818
June	299	785	906	559	471	826	411	253	392	303	2,488	7,692
July	431	894	851	345	663	975	507	77	409	392	2,866	8,412
August	497	760	823	336	390	1,114	478	174	467	456	3,004	8,498
September	454	1,045	1,017	429	392	1,039	373	109	431	242	2,847	8,376
9-Month Average	**431**	**944**	**653**	**449**	**547**	**990**	**449**	**211**	**456**	**367**	**3,055**	**8,553**
2019 9-Month Average	**475**	**1,007**	**234**	**450**	**532**	**1,121**	**433**	**108**	**570**	**326**	**3,024**	**8,280**
2018 9-Month Average	**373**	**1,050**	**458**	**280**	**393**	**1,161**	**298**	**194**	**311**	**258**	**2,626**	**7,401**

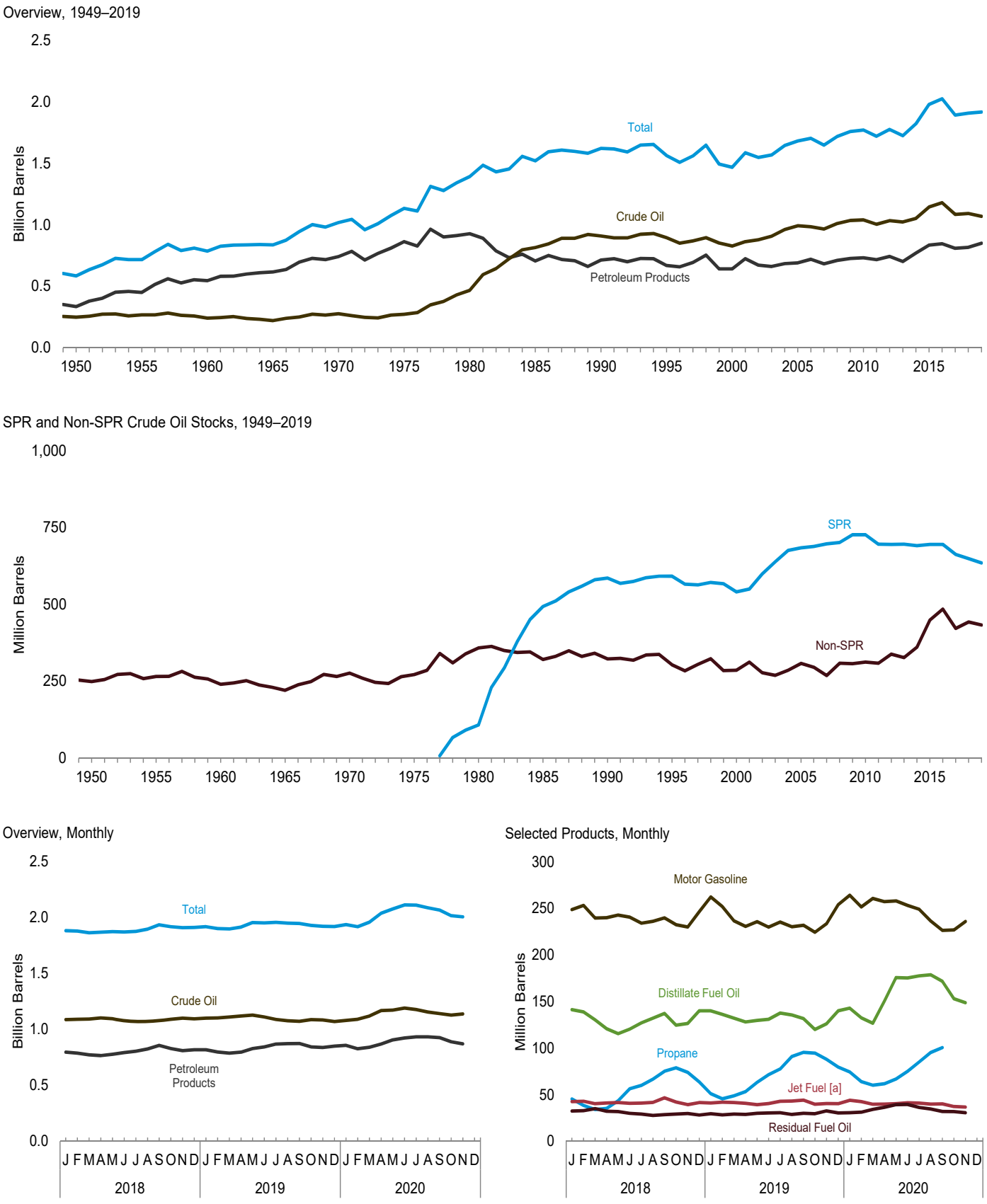
NA=Not available. – =No data reported.

Notes: • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1981.

Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports.

Figure 3.4 Petroleum Stocks



[a] Includes kerosene-type jet fuel only.
Notes: • SPR=Strategic Petroleum Reserve. • Stocks are at end of period.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.4.

Table 3.4 Petroleum Stocks

(Million Barrels)

	Crude Oil[a]				Hydrocarbon Gas Liquids								
					Propane/Propylene								
	SPR[b]	Non-SPR[c,d]	Total[d]	Distillate Fuel Oil[e]	Propane	Propylene[f]	Total[g]	Total[h]	Jet Fuel[i]	Motor Gasoline[j]	Residual Fuel Oil[k]	Other[l]	Total
1950 Year	– –	**248**	**248**	**72**	**NA**	**NA**	**NA**	**2**	**([i])**	**116**	**41**	**104**	**583**
1955 Year	– –	**266**	**266**	**111**	**NA**	**NA**	**NA**	**7**	**3**	**165**	**39**	**123**	**715**
1960 Year	– –	**240**	**240**	**138**	**NA**	**NA**	**NA**	**23**	**7**	**195**	**45**	**137**	**785**
1965 Year	– –	**220**	**220**	**155**	**NA**	**NA**	**NA**	**35**	**19**	**175**	**56**	**176**	**836**
1970 Year	– –	**276**	**276**	**195**	**NA**	**NA**	**44**	**74**	**28**	**209**	**54**	**181**	**1,018**
1975 Year	– –	**271**	**271**	**209**	**NA**	**NA**	**82**	**133**	**30**	**235**	**74**	**181**	**1,133**
1980 Year	**108**	**358**	**466**	**205**	**NA**	**NA**	**71**	**137**	**42**	**261**	**92**	**189**	**1,392**
1985 Year	**493**	**321**	**814**	**144**	**NA**	**NA**	**39**	**82**	**40**	**223**	**50**	**165**	**1,519**
1990 Year	**586**	**323**	**908**	**132**	**NA**	**NA**	**49**	**104**	**52**	**220**	**49**	**156**	**1,621**
1995 Year	**592**	**303**	**895**	**130**	**NA**	**NA**	**43**	**100**	**40**	**202**	**37**	**158**	**1,563**
2000 Year	**541**	**286**	**826**	**118**	**NA**	**NA**	**41**	**88**	**45**	**196**	**36**	**159**	**1,468**
2001 Year	**550**	**312**	**862**	**145**	**NA**	**NA**	**66**	**128**	**42**	**210**	**41**	**158**	**1,586**
2002 Year	**599**	**278**	**877**	**134**	**NA**	**NA**	**53**	**113**	**39**	**209**	**31**	**144**	**1,548**
2003 Year	**638**	**269**	**907**	**137**	**NA**	**NA**	**50**	**101**	**39**	**207**	**38**	**140**	**1,568**
2004 Year	**676**	**286**	**961**	**126**	**NA**	**NA**	**55**	**111**	**40**	**218**	**42**	**146**	**1,645**
2005 Year	**685**	**308**	**992**	**136**	**NA**	**NA**	**57**	**117**	**42**	**208**	**37**	**148**	**1,682**
2006 Year	**689**	**296**	**984**	**144**	**NA**	**NA**	**62**	**125**	**39**	**212**	**42**	**157**	**1,703**
2007 Year	**697**	**268**	**965**	**134**	**NA**	**NA**	**52**	**106**	**39**	**218**	**39**	**146**	**1,648**
2008 Year	**702**	**308**	**1,010**	**146**	**NA**	**NA**	**55**	**127**	**38**	**214**	**36**	**149**	**1,719**
2009 Year	**727**	**307**	**1,034**	**166**	**NA**	**NA**	**50**	**113**	**43**	**223**	**37**	**142**	**1,758**
2010 Year	**727**	**312**	**1,039**	**164**	**46**	**2**	**47**	**118**	**43**	**219**	**41**	**145**	**1,770**
2011 Year	**696**	**308**	**1,004**	**149**	**48**	**2**	**50**	**121**	**41**	**223**	**34**	**146**	**1,720**
2012 Year	**695**	**338**	**1,033**	**135**	**63**	**2**	**64**	**148**	**40**	**231**	**34**	**154**	**1,775**
2013 Year	**696**	**327**	**1,023**	**128**	**40**	**1**	**42**	**121**	**37**	**228**	**38**	**149**	**1,724**
2014 Year	**691**	**361**	**1,052**	**136**	**72**	**2**	**74**	**170**	**38**	**240**	**34**	**151**	**1,822**
2015 Year	**695**	**449**	**1,144**	**161**	**91**	**2**	**93**	**192**	**40**	**235**	**42**	**164**	**1,979**
2016 Year	**695**	**485**	**1,180**	**166**	**77**	**2**	**79**	**196**	**43**	**239**	**41**	**161**	**2,025**
2017 Year	**663**	**422**	**1,084**	**146**	**62**	**2**	**64**	**187**	**41**	**237**	**29**	**167**	**1,892**
2018 January	664	421	1,085	141	45	2	47	153	43	249	32	177	1,879
February	665	424	1,089	139	39	1	40	137	43	253	33	181	1,875
March	665	425	1,090	130	34	1	35	136	40	240	35	190	1,861
April	664	437	1,101	121	35	1	37	142	41	240	32	188	1,865
May	660	434	1,094	116	44	1	45	159	42	243	32	185	1,870
June	660	415	1,075	121	57	1	58	179	41	241	30	181	1,867
July	660	410	1,070	127	60	2	62	194	41	234	29	177	1,873
August	660	408	1,068	132	67	2	68	212	42	236	28	174	1,892
September	660	417	1,077	137	75	2	77	223	47	240	29	178	1,931
October	655	434	1,089	125	79	2	81	222	42	233	29	176	1,915
November	650	449	1,099	127	74	2	76	205	39	230	30	178	1,907
December	**649**	**443**	**1,092**	**140**	**64**	**2**	**66**	**184**	**42**	**247**	**28**	**176**	**1,908**
2019 January	649	449	1,098	140	51	1	53	161	41	262	30	182	1,914
February	649	452	1,101	136	46	1	47	151	42	252	28	187	1,897
March	649	459	1,108	132	49	2	51	160	42	237	29	186	1,894
April	649	470	1,118	128	53	2	55	175	41	231	29	190	1,912
May	645	481	1,126	130	63	2	65	202	39	236	30	189	1,952
June	645	463	1,108	131	72	2	73	224	41	230	30	184	1,949
July	645	442	1,086	138	78	2	80	238	43	235	31	182	1,954
August	645	430	1,075	136	91	2	93	256	43	230	29	177	1,946
September	645	426	1,070	132	96	3	98	263	44	232	30	172	1,943
October	641	443	1,085	120	95	2	97	253	40	224	30	176	1,927
November	635	446	1,081	126	88	2	90	232	41	234	33	172	1,918
December	**635**	**433**	**1,068**	**140**	**80**	**2**	**81**	**212**	**40**	**254**	**31**	**172**	**1,917**
2020 January	635	443	1,078	143	75	2	76	195	44	264	31	179	1,934
February	635	454	1,089	133	64	1	65	179	43	252	31	188	1,914
March	635	482	1,117	127	60	1	62	181	40	261	34	196	1,956
April	638	529	1,167	151	62	1	63	196	40	257	37	188	2,035
May	648	521	1,169	176	67	1	68	210	40	258	39	181	2,074
June	656	532	1,188	175	75	2	77	234	42	253	40	177	2,109
July	656	519	1,175	178	85	1	87	257	41	249	36	171	2,107
August	648	504	1,152	179	95	2	97	283	40	237	35	159	2,084
September	642	R 497	R 1,140	172	R 101	R 2	102	R 299	40	227	32	R 155	R 2,064
October	E 639	E 486	E 1,125	E 153	NA	NA	E 96	RF 287	E 37	E 227	E 32	RE 151	E 2,012
November	E 638	E 497	E 1,135	E 149	NA	NA	E 89	F 263	E 37	E 236	E 31	E 154	E 2,003

[a] Includes lease condensate.

[b] "SPR" is the Strategic Petroleum Reserve, which began in October 1977. Crude oil stocks in the SPR include non-U.S. stocks held under foreign or commercial storage agreements.

[c] All crude oil stocks other than those in "SPR."

[d] Beginning in 1981, includes stocks of Alaskan crude oil in transit.

[e] Excludes stocks in the Northeast Home Heating Oil Reserve. Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[f] Includes propylene stocks at refineries only.

[g] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[h] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[i] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other.") For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[j] Includes finished motor gasoline and motor gasoline blending components; excludes oxygenates. Through 1963, also includes aviation gasoline and special naphthas.

[k] Through 2019, includes residual fuel oil stocks at (or in) refineries, bulk terminals, and pipelines. Beginning in 2020, includes residual fuel oil stocks at refineries and bulk terminals only.

[l] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 1993, also includes fuel ethanol. Beginning in 2005, also includes naphtha-type jet fuel. For 2005–2018, also includes oxygenates (excluding fuel ethanol). Beginning in 2009, also includes renewable fuels (excluding fuel ethanol) and other hydrocarbons.

R=Revised. E=Estimate. F=Forecast. NA=Not available. – – =Not applicable.

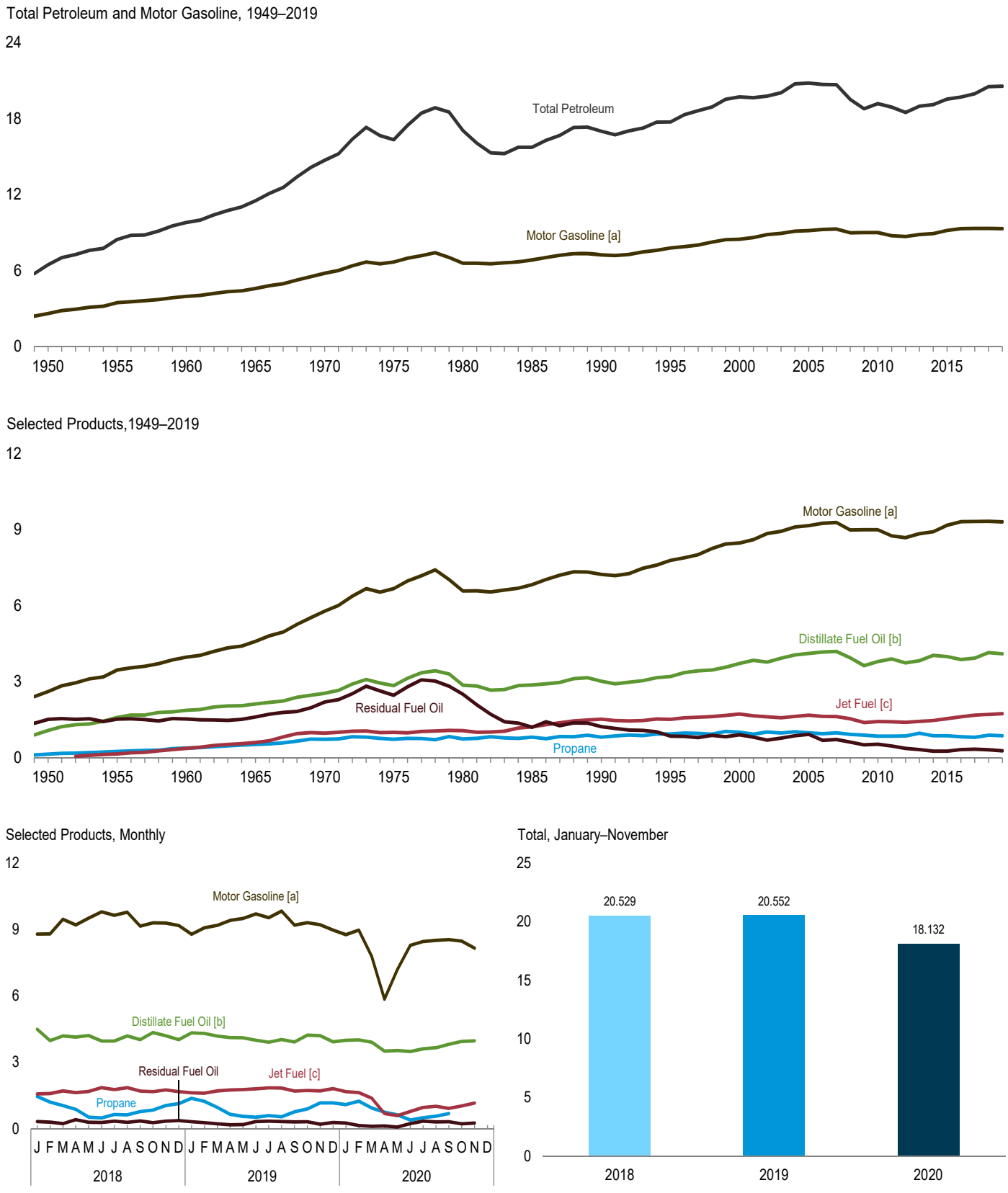
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2019:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2020:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Figure 3.5 Petroleum Products Supplied by Type

(Million Barrels per Day)



[a] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[b] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[c] Beginning in 2005, includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.5.

Table 3.5 Petroleum Products Supplied by Type

(Thousand Barrels per Day)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[a]	Hydrocarbon Gas Liquids			Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene										
				Propane	Propylene	Total[b]	Total[c]								
1950 Average	**180**	**108**	**1,082**	E 146	E 13	E 158	**234**	([d])	**323**	**106**	**2,616**	**41**	**1,517**	**250**	**6,458**
1955 Average	**254**	**192**	**1,592**	E 251	E 22	E 273	**404**	**154**	**320**	**116**	**3,463**	**67**	**1,526**	**366**	**8,455**
1960 Average	**302**	**161**	**1,872**	E 386	E 33	E 419	**621**	**371**	**271**	**117**	**3,969**	**149**	**1,529**	**435**	**9,797**
1965 Average	**368**	**120**	**2,126**	E 523	E 45	E 568	**841**	**602**	**267**	**129**	**4,593**	**202**	**1,608**	**657**	**11,512**
1970 Average	**447**	**55**	**2,540**	E 727	E 55	**782**	**1,224**	**967**	**263**	**136**	**5,785**	**212**	**2,204**	**866**	**14,697**
1975 Average	**419**	**39**	**2,851**	E 730	E 60	**790**	**1,352**	**1,001**	**159**	**137**	**6,675**	**247**	**2,462**	**982**	**16,322**
1980 Average	**396**	**35**	**2,866**	E 742	E 72	**813**	**1,590**	**1,068**	**158**	**159**	**6,579**	**237**	**2,508**	**1,460**	**17,056**
1985 Average	**425**	**27**	**2,868**	E 810	E 72	**883**	**1,721**	**1,218**	**114**	**145**	**6,831**	**264**	**1,202**	**909**	**15,726**
1990 Average	**483**	**24**	**3,021**	E 812	E 105	**917**	**1,705**	**1,522**	**43**	**164**	**7,235**	**339**	**1,229**	**1,225**	**16,988**
1995 Average	**486**	**21**	**3,207**	E 938	E 157	**1,096**	**2,100**	**1,514**	**54**	**156**	**7,789**	**365**	**852**	**1,180**	**17,725**
2000 Average	**525**	**20**	**3,722**	E 1,011	E 224	**1,235**	**2,434**	**1,725**	**67**	**166**	**8,472**	**406**	**909**	**1,255**	**19,701**
2001 Average	**519**	**19**	**3,847**	E 932	E 210	**1,142**	**2,200**	**1,655**	**72**	**153**	**8,610**	**437**	**811**	**1,325**	**19,649**
2002 Average	**512**	**18**	**3,776**	E 1,015	E 233	**1,248**	**2,295**	**1,614**	**43**	**151**	**8,848**	**463**	**700**	**1,342**	**19,761**
2003 Average	**503**	**16**	**3,927**	E 977	E 238	**1,215**	**2,205**	**1,578**	**55**	**140**	**8,935**	**455**	**772**	**1,448**	**20,034**
2004 Average	**537**	**17**	**4,058**	E 1,021	E 255	**1,276**	**2,264**	**1,630**	**64**	**141**	**9,105**	**524**	**865**	**1,525**	**20,731**
2005 Average	**546**	**19**	**4,118**	E 986	E 243	**1,229**	**2,146**	**1,679**	**70**	**141**	**9,159**	**515**	**920**	**1,489**	**20,802**
2006 Average	**521**	**18**	**4,169**	E 947	E 268	**1,215**	**2,135**	**1,633**	**54**	**137**	**9,253**	**522**	**689**	**1,557**	**20,687**
2007 Average	**494**	**17**	**4,196**	E 983	E 252	**1,235**	**2,191**	**1,622**	**32**	**142**	**9,286**	**490**	**723**	**1,487**	**20,680**
2008 Average	**417**	**15**	**3,945**	E 924	E 230	**1,154**	**2,044**	**1,539**	**14**	**131**	**8,989**	**464**	**622**	**1,317**	**19,498**
2009 Average	**360**	**14**	**3,631**	E 893	E 267	**1,160**	**2,127**	**1,393**	**18**	**118**	**8,997**	**427**	**511**	**1,175**	**18,771**
2010 Average	**362**	**15**	**3,800**	**852**	**305**	**1,157**	**2,263**	**1,432**	**20**	**131**	**8,993**	**376**	**535**	**1,251**	**19,178**
2011 Average	**355**	**15**	**3,899**	**851**	**310**	**1,161**	**2,250**	**1,425**	**12**	**125**	**8,753**	**361**	**461**	**1,240**	**18,896**
2012 Average	**340**	**14**	**3,741**	**862**	**308**	**1,170**	**2,293**	**1,398**	**5**	**114**	**8,682**	**360**	**369**	**1,165**	**18,482**
2013 Average	**323**	**12**	**3,827**	**969**	**306**	**1,275**	**2,501**	**1,434**	**5**	**121**	**8,843**	**354**	**319**	**1,227**	**18,967**
2014 Average	**327**	**12**	**4,037**	**870**	**298**	**1,167**	**2,443**	**1,470**	**9**	**126**	**8,921**	**347**	**257**	**1,151**	**19,100**
2015 Average	**343**	**11**	**3,995**	**865**	**295**	**1,160**	**2,550**	**1,548**	**6**	**138**	**9,178**	**349**	**259**	**1,153**	**19,532**
2016 Average	**351**	**11**	**3,877**	**833**	**301**	**1,134**	**2,541**	**1,614**	**9**	**130**	**9,317**	**345**	**326**	**1,170**	**19,692**
2017 Average	**351**	**11**	**3,932**	**803**	**309**	**1,111**	**2,637**	**1,682**	**5**	**121**	**9,327**	**316**	**342**	**1,228**	**19,952**
2018 January	158	10	4,491	1,461	331	1,792	3,537	1,568	35	105	8,788	339	323	1,211	20,564
February	203	7	3,979	1,207	312	1,520	3,157	1,590	3	135	8,796	198	299	1,326	19,693
March	278	13	4,196	1,049	306	1,355	3,094	1,706	6	132	9,465	292	236	1,313	20,731
April	225	12	4,139	879	288	1,167	2,863	1,630	3	122	9,206	304	408	1,126	20,038
May	385	12	4,209	524	311	835	2,582	1,685	8	103	9,515	305	296	1,153	20,251
June	476	14	3,959	488	308	796	2,604	1,857	2	131	9,797	353	280	1,295	20,770
July	460	16	3,963	648	294	942	2,843	1,773	2	128	9,640	323	346	1,177	20,671
August	507	15	4,196	625	314	938	2,903	1,858	2	134	9,778	440	292	1,232	21,356
September	385	9	4,022	771	302	1,073	2,902	1,704	(s)	99	9,153	402	349	1,060	20,084
October	410	16	4,348	838	315	1,152	2,976	1,675	1	107	9,294	414	273	1,271	20,786
November	247	7	4,204	1,047	328	1,375	3,325	1,756	1	118	9,290	270	342	1,213	20,774
December	182	12	4,019	1,137	325	1,462	3,381	1,676	1	91	9,179	269	367	1,150	20,327
Average	**327**	**12**	**4,146**	**888**	**311**	**1,199**	**3,014**	**1,707**	**5**	**117**	**9,329**	**327**	**318**	**1,210**	**20,512**
2019 January	195	9	4,327	1,372	320	1,692	3,715	1,621	26	114	8,778	294	319	1,217	20,615
February	201	9	4,307	1,237	299	1,536	3,590	1,607	17	105	9,072	128	279	969	20,284
March	232	13	4,184	963	265	1,228	3,136	1,711	(s)	97	9,184	295	221	1,102	20,176
April	318	12	4,120	657	289	945	2,886	1,756	2	156	9,411	235	177	1,261	20,333
May	369	15	4,110	558	302	860	2,745	1,773	1	107	9,497	320	192	1,257	20,387
June	413	16	3,993	525	311	836	2,753	1,802	1	104	9,703	403	322	1,144	20,654
July	510	17	3,911	591	297	888	2,930	1,847	1	129	9,533	405	342	1,110	20,735
August	507	13	4,029	541	294	834	2,854	1,841	(s)	115	9,834	337	329	1,299	21,158
September	480	15	3,921	761	283	1,044	3,041	1,702	6	96	9,198	263	305	1,222	20,248
October	438	14	4,224	895	316	1,211	3,148	1,727	2	130	9,308	232	319	1,172	20,714
November	310	12	4,201	1,169	301	1,470	3,398	1,711	12	105	9,209	347	208	1,222	20,736
December	198	9	3,927	1,172	306	1,478	3,499	1,809	14	94	8,971	363	284	1,275	20,443
Average	**348**	**13**	**4,103**	**868**	**298**	**1,166**	**3,139**	**1,743**	**7**	**113**	**9,309**	**303**	**275**	**1,189**	**20,543**
2020 January	191	14	3,998	1,087	282	1,369	3,396	1,673	24	123	8,761	251	258	1,217	19,905
February	191	8	4,011	1,243	254	1,497	3,208	1,629	30	108	8,967	261	150	1,276	19,839
March	204	8	3,913	936	257	1,193	3,311	1,387	7	62	7,781	255	109	1,247	18,284
April	292	6	3,505	746	278	1,024	2,857	691	2	82	5,853	189	125	1,088	14,691
May	365	14	3,533	626	274	900	2,881	596	(s)	83	7,188	219	81	1,143	16,103
June	511	11	3,492	394	263	657	2,760	786	1	104	8,286	227	232	1,026	17,435
July	491	13	3,610	494	275	770	3,021	964	1	116	8,458	247	341	1,062	18,323
August	479	11	3,663	563	259	822	2,891	1,016	10	94	8,508	375	305	1,088	18,439
September	R 422	12	R 3,818	R 686	R 285	R 971	R 2,923	R 921	8	R 103	R 8,545	R 294	R 320	R 940	R 18,307
October	F 439	F 12	E 3,946	NA	NA	E 1,247	RF 3,253	E 1,034	F 7	RF 106	E 8,472	F 315	E 221	RE 1,154	E 18,960
November	F 311	F 11	E 3,972	NA	NA	E 1,294	F 3,286	E 1,164	F 4	F 110	E 8,158	F 281	E 254	E 1,627	E 19,178
11-Month Average	E **355**	E **11**	E **3,769**	**NA**	**NA**	E **1,066**	E **3,072**	E **1,077**	E **8**	E **99**	E **8,088**	E **265**	E **218**	E **1,169**	E **18,132**
2019 11-Month Average	**362**	**13**	**4,120**	**840**	**298**	**1,138**	**3,106**	**1,737**	**6**	**114**	**9,341**	**298**	**274**	**1,181**	**20,552**
2018 11-Month Average	**341**	**12**	**4,158**	**865**	**310**	**1,175**	**2,980**	**1,710**	**6**	**119**	**9,343**	**332**	**313**	**1,215**	**20,529**

[a] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[d] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[e] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[f] 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.

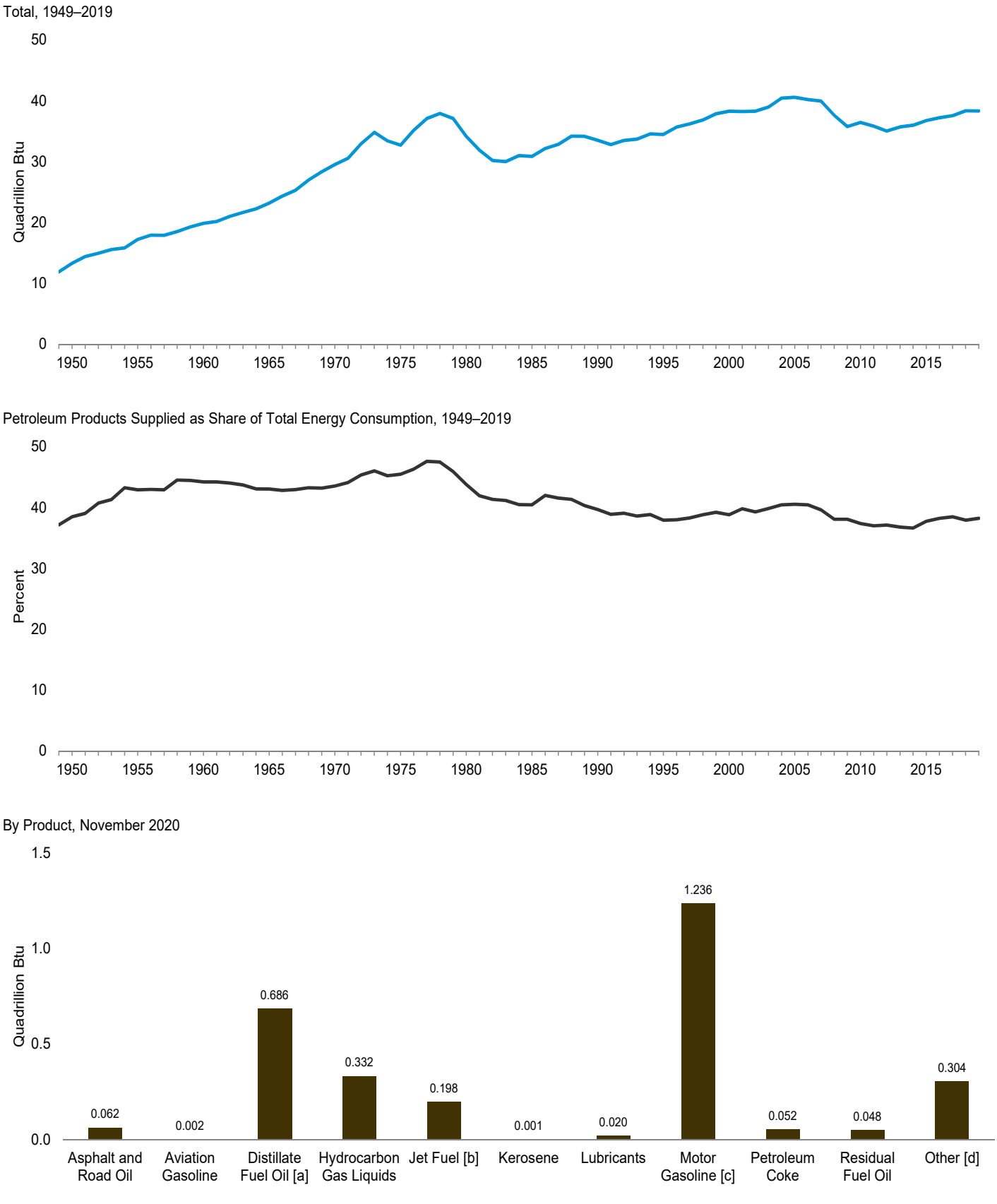
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.6 Heat Content of Petroleum Products Supplied by Type



[a] Includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[b] Includes kerosene-type jet fuel only.
[c] Includes fuel ethanol blended into motor gasoline.
[d] All petroleum products not separately displayed.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 1.1 and 3.6.

Table 3.6 Heat Content of Petroleum Products Supplied by Type

(Trillion Btu)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[a]	Hydrocarbon Gas Liquids				Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene											
				Propane	Propylene	Total[b]	Total[c]								
1950 Total	**435**	**199**	**2,300**	E 204	E 18	E 222	**326**	(d)	**668**	**236**	**5,015**	**90**	**3,482**	**546**	**13,298**
1955 Total	**615**	**354**	**3,385**	E 352	E 30	E 383	**562**	**301**	**662**	**258**	**6,640**	**147**	**3,502**	**798**	**17,225**
1960 Total	**734**	**298**	**3,992**	E 543	E 47	E 589	**866**	**739**	**563**	**259**	**7,631**	**328**	**3,517**	**947**	**19,874**
1965 Total	**890**	**222**	**4,519**	E 733	E 63	E 796	**1,170**	**1,215**	**553**	**286**	**8,806**	**444**	**3,691**	**1,390**	**23,184**
1970 Total	**1,082**	**100**	**5,401**	E 1,019	E 77	**1,096**	**1,667**	**1,973**	**544**	**301**	**11,091**	**465**	**5,057**	**1,817**	**29,499**
1975 Total	**1,014**	**71**	**6,061**	E 1,024	E 84	**1,108**	**1,811**	**2,047**	**329**	**304**	**12,798**	**542**	**5,649**	**2,071**	**32,699**
1980 Total	**962**	**64**	**6,110**	E 1,043	E 100	**1,143**	**2,135**	**2,190**	**329**	**354**	**12,648**	**522**	**5,772**	**3,073**	**34,159**
1985 Total	**1,029**	**50**	**6,098**	E 1,136	E 101	**1,237**	**2,252**	**2,497**	**236**	**322**	**13,098**	**582**	**2,759**	**1,945**	**30,866**
1990 Total	**1,170**	**45**	**6,422**	E 1,138	E 147	**1,285**	**2,259**	**3,129**	**88**	**362**	**13,872**	**745**	**2,820**	**2,589**	**33,500**
1995 Total	**1,178**	**40**	**6,812**	E 1,316	E 220	**1,536**	**2,791**	**3,132**	**112**	**346**	**14,794**	**802**	**1,955**	**2,499**	**34,458**
2000 Total	**1,276**	**36**	**7,927**	E 1,421	E 315	**1,735**	**3,216**	**3,580**	**140**	**369**	**16,127**	**895**	**2,091**	**2,636**	**38,292**
2001 Total	**1,257**	**35**	**8,170**	E 1,306	E 294	**1,600**	**2,895**	**3,426**	**150**	**338**	**16,345**	**961**	**1,861**	**2,793**	**38,231**
2002 Total	**1,240**	**34**	**8,020**	E 1,423	E 326	**1,749**	**3,006**	**3,340**	**90**	**334**	**16,790**	**1,018**	**1,605**	**2,816**	**38,293**
2003 Total	**1,220**	**30**	**8,341**	E 1,370	E 333	**1,702**	**2,905**	**3,265**	**113**	**309**	**16,949**	**1,000**	**1,772**	**3,043**	**38,947**
2004 Total	**1,304**	**31**	**8,642**	E 1,435	E 358	**1,793**	**2,976**	**3,383**	**133**	**313**	**17,316**	**1,148**	**1,990**	**3,205**	**40,441**
2005 Total	**1,323**	**35**	**8,745**	E 1,382	E 341	**1,723**	**2,812**	**3,475**	**144**	**312**	**17,358**	**1,125**	**2,111**	**3,122**	**40,561**
2006 Total	**1,261**	**33**	**8,831**	E 1,328	E 375	**1,703**	**2,768**	**3,379**	**111**	**303**	**17,511**	**1,141**	**1,581**	**3,276**	**40,196**
2007 Total	**1,197**	**32**	**8,858**	E 1,379	E 352	**1,731**	**2,835**	**3,358**	**67**	**313**	**17,428**	**1,072**	**1,659**	**3,134**	**39,952**
2008 Total	**1,012**	**28**	**8,346**	E 1,299	E 323	**1,622**	**2,656**	**3,193**	**30**	**291**	**16,799**	**1,017**	**1,432**	**2,788**	**37,591**
2009 Total	**873**	**27**	**7,657**	E 1,252	E 374	**1,626**	**2,707**	**2,883**	**36**	**262**	**16,714**	**937**	**1,173**	**2,483**	**35,752**
2010 Total	**878**	**27**	**8,011**	**1,194**	**428**	**1,621**	**2,881**	**2,963**	**41**	**291**	**16,632**	**831**	**1,228**	**2,645**	**36,427**
2011 Total	**859**	**27**	**8,211**	**1,194**	**434**	**1,628**	**2,811**	**2,950**	**25**	**276**	**16,175**	**801**	**1,058**	**2,621**	**35,815**
2012 Total	**827**	**25**	**7,898**	**1,212**	**432**	**1,645**	**2,887**	**2,901**	**11**	**254**	**16,085**	**802**	**849**	**2,474**	**35,012**
2013 Total	**783**	**22**	**8,051**	**1,358**	**429**	**1,787**	**3,166**	**2,969**	**11**	**268**	**16,332**	**786**	**731**	**2,583**	**35,702**
2014 Total	**793**	**22**	**8,492**	**1,219**	**417**	**1,636**	**3,067**	**3,042**	**19**	**280**	**16,473**	**772**	**590**	**2,430**	**35,978**
2015 Total	**832**	**21**	**8,402**	**1,212**	**413**	**1,626**	**3,221**	**3,204**	**13**	**305**	**16,941**	**776**	**595**	**2,435**	**36,745**
2016 Total	**853**	**20**	**8,170**	**1,171**	**423**	**1,594**	**3,184**	**3,350**	**18**	**289**	**17,238**	**771**	**751**	**2,553**	**37,198**
2017 Total	**849**	**21**	**8,263**	**1,126**	**432**	**1,557**	**3,272**	**3,481**	**11**	**267**	**17,201**	**708**	**784**	**2,667**	**37,525**
2018 January	32	1	802	174	39	213	377	276	6	20	1,377	64	63	223	3,242
February	38	1	642	130	34	163	305	252	(s)	23	1,245	34	53	220	2,813
March	57	2	749	125	36	161	321	300	1	25	1,483	55	46	242	3,281
April	45	2	715	101	33	134	285	277	1	22	1,396	56	77	201	3,077
May	79	2	751	62	37	99	266	296	1	19	1,491	58	58	213	3,235
June	95	2	684	56	35	92	259	316	(s)	24	1,485	65	53	232	3,214
July	95	3	707	77	35	112	295	312	(s)	24	1,510	61	67	218	3,292
August	104	2	749	74	37	112	302	327	(s)	25	1,532	84	57	228	3,410
September	77	1	695	89	35	124	293	290	(s)	18	1,388	74	66	190	3,091
October	84	3	776	100	37	137	314	294	(s)	20	1,456	79	53	233	3,313
November	49	1	726	121	38	158	342	299	(s)	21	1,409	50	65	217	3,178
December	37	2	718	135	39	174	360	295	(s)	17	1,438	51	72	213	3,203
Total	**793**	**22**	**8,715**	**1,245**	**436**	**1,680**	**3,720**	**3,533**	**11**	**259**	**17,209**	**730**	**729**	**2,630**	**38,351**
2019 January	40	1	773	163	38	201	397	285	5	21	1,375	56	62	225	3,240
February	37	1	695	133	32	165	343	255	3	18	1,283	22	49	162	2,869
March	48	2	747	115	31	146	328	301	(s)	18	1,438	56	43	204	3,185
April	63	2	712	76	33	109	288	299	(s)	28	1,426	43	33	225	3,120
May	76	2	733	66	36	102	285	312	(s)	20	1,487	61	37	232	3,246
June	82	2	690	61	36	96	281	306	(s)	19	1,471	74	61	205	3,191
July	105	3	698	70	35	106	310	325	(s)	24	1,493	77	67	206	3,306
August	104	2	719	64	35	99	302	324	(s)	22	1,540	64	64	240	3,380
September	96	2	677	88	33	120	311	290	1	18	1,394	48	57	218	3,112
October	90	2	754	107	38	144	334	304	(s)	25	1,458	44	62	217	3,290
November	62	2	726	135	35	169	347	291	2	19	1,396	64	39	219	3,166
December	41	1	701	140	36	176	370	318	2	18	1,405	69	55	235	3,216
Total	**844**	**23**	**8,625**	**1,217**	**418**	**1,635**	**3,897**	**3,608**	**14**	**250**	**17,166**	**678**	**631**	**2,585**	**38,322**
2020 January	39	2	714	129	33	163	352	294	4	23	1,372	48	50	225	3,123
February	37	1	670	138	28	167	307	268	5	19	1,314	46	27	221	2,914
March	42	1	699	112	31	142	345	244	1	12	1,219	48	21	230	2,862
April	58	1	605	86	32	118	280	118	(s)	15	887	35	24	194	2,217
May	75	2	631	75	33	107	295	105	(s)	16	1,126	42	16	211	2,518
June	102	2	603	45	30	76	272	134	(s)	19	1,256	42	44	184	2,656
July	101	2	644	59	33	92	306	169	(s)	22	1,325	47	66	196	2,878
August	98	2	654	67	31	98	300	178	2	18	1,333	71	59	201	2,915
September	R 84	2	R 659	R 79	R 33	R 112	R 298	R 157	1	R 19	R 1,295	R 54	R 60	R 169	R 2,798
October	F 90	F 2	E 704	NA	NA	E 148	RF 341	E 182	F 1	F 20	E 1,327	F 60	E 43	RE 234	E 3,004
November	F 62	F 2	E 686	NA	NA	E 149	F 332	E 198	F 1	F 20	E 1,236	F 52	E 48	E 304	E 2,941
11-Month Total	E **789**	E **18**	E **7,269**	**NA**	**NA**	E **1,371**	E **3,426**	E **2,046**	E **16**	E **202**	E **13,689**	E **545**	E **459**	E **2,369**	E **30,826**
2019 11-Month Total	**803**	**22**	**7,924**	**1,077**	**381**	**1,459**	**3,527**	**3,290**	**12**	**232**	**15,761**	**609**	**576**	**2,350**	**35,106**
2018 11-Month Total	**755**	**20**	**7,997**	**1,109**	**397**	**1,506**	**3,359**	**3,238**	**11**	**242**	**15,771**	**679**	**657**	**2,417**	**35,148**

[a] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[d] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[e] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[f] 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.

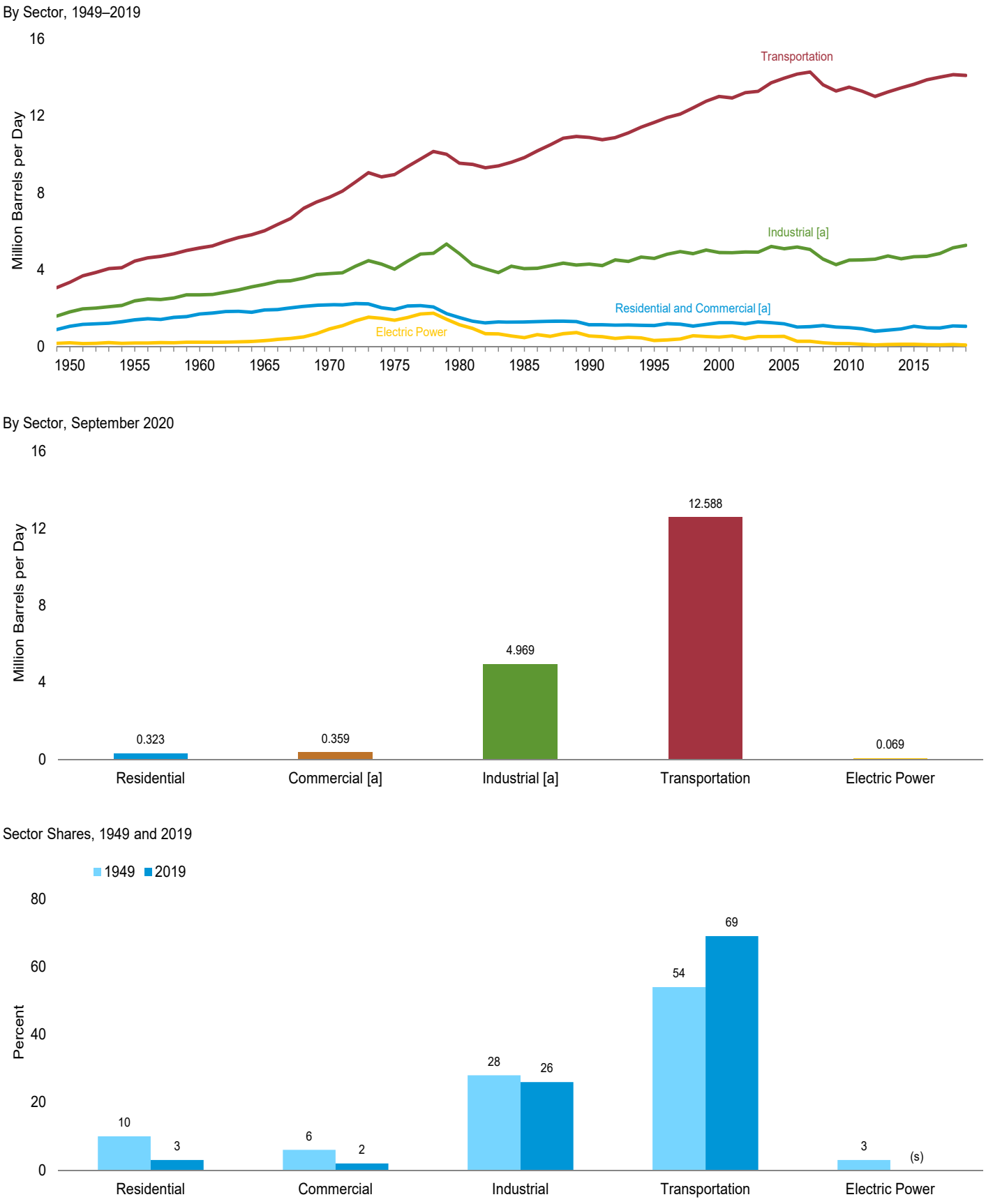
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.7 Petroleum Consumption by Sector



[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
(s)=Less than 0.5 percent.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.7a–3.7c.

Table 3.7a Petroleum Consumption: Residential and Commercial Sectors

(Thousand Barrels per Day)

	Residential Sector				Commercial Sector[a]						
	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Total	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Motor Gasoline[c,d]	Petroleum Coke	Residual Fuel Oil	Total
1950 Average	**390**	**104**	**168**	**662**	**123**	**28**	**23**	**52**	**NA**	**185**	**411**
1955 Average	**562**	**144**	**179**	**885**	**177**	**38**	**24**	**69**	**NA**	**209**	**519**
1960 Average	**736**	**217**	**171**	**1,123**	**232**	**58**	**23**	**35**	**NA**	**243**	**590**
1965 Average	**805**	**275**	**161**	**1,242**	**251**	**74**	**26**	**40**	**NA**	**281**	**672**
1970 Average	**883**	**392**	**144**	**1,419**	**276**	**102**	**30**	**45**	**NA**	**311**	**764**
1975 Average	**850**	**365**	**78**	**1,293**	**276**	**92**	**24**	**46**	**NA**	**214**	**653**
1980 Average	**617**	**222**	**51**	**890**	**243**	**63**	**20**	**56**	**NA**	**245**	**626**
1985 Average	**514**	**224**	**77**	**815**	**297**	**68**	**16**	**50**	**NA**	**99**	**530**
1990 Average	**460**	**252**	**31**	**742**	**252**	**73**	**6**	**58**	**0**	**100**	**489**
1995 Average	**426**	**282**	**36**	**743**	**225**	**78**	**11**	**10**	**(s)**	**62**	**385**
2000 Average	**424**	**395**	**46**	**865**	**230**	**107**	**14**	**23**	**(s)**	**40**	**415**
2001 Average	**427**	**375**	**46**	**849**	**239**	**102**	**15**	**20**	**(s)**	**30**	**406**
2002 Average	**404**	**384**	**29**	**817**	**209**	**101**	**8**	**24**	**(s)**	**35**	**376**
2003 Average	**438**	**389**	**34**	**861**	**233**	**112**	**9**	**32**	**(s)**	**48**	**434**
2004 Average	**433**	**364**	**41**	**839**	**221**	**108**	**10**	**23**	**(s)**	**53**	**416**
2005 Average	**402**	**366**	**40**	**809**	**210**	**94**	**10**	**24**	**(s)**	**50**	**389**
2006 Average	**335**	**318**	**32**	**685**	**189**	**88**	**7**	**26**	**(s)**	**33**	**343**
2007 Average	**342**	**345**	**21**	**708**	**181**	**87**	**4**	**32**	**(s)**	**33**	**337**
2008 Average	**354**	**394**	**10**	**758**	**181**	**113**	**2**	**24**	**(s)**	**31**	**351**
2009 Average	**276**	**391**	**13**	**680**	**187**	**99**	**2**	**28**	**(s)**	**31**	**348**
2010 Average	**266**	**378**	**14**	**658**	**185**	**100**	**2**	**28**	**(s)**	**27**	**343**
2011 Average	**248**	**351**	**9**	**608**	**186**	**102**	**2**	**24**	**(s)**	**23**	**336**
2012 Average	**228**	**281**	**4**	**513**	**168**	**96**	**1**	**21**	**(s)**	**14**	**300**
2013 Average	**233**	**331**	**4**	**568**	**163**	**108**	**(s)**	**22**	**(s)**	**11**	**304**
2014 Average	**253**	**349**	**7**	**609**	**169**	**114**	**1**	**29**	**(s)**	**3**	**318**
2015 Average	**262**	**318**	**5**	**584**	**171**	**106**	**1**	**[d] 204**	**(s)**	**2**	**483**
2016 Average	**206**	**306**	**7**	**518**	**154**	**107**	**1**	**203**	**(s)**	**2**	**467**
2017 Average	**205**	**307**	**4**	**517**	**153**	**111**	**1**	**196**	**(s)**	**2**	**462**
2018 January	465	706	26	1,197	296	208	4	187	(s)	3	699
February	332	574	2	907	211	177	(s)	187	(s)	2	577
March	249	520	4	773	158	164	1	202	(s)	1	526
April	237	400	2	640	151	135	(s)	196	(s)	1	484
May	141	182	6	328	90	82	1	203	0	1	376
June	113	144	1	258	72	73	(s)	209	0	1	354
July	102	129	2	233	65	70	(s)	205	0	1	341
August	86	131	2	219	55	70	(s)	208	0	(s)	334
September	123	152	(s)	275	79	75	(s)	195	(s)	1	349
October	255	290	1	546	162	108	(s)	198	(s)	1	471
November	340	523	1	864	217	164	(s)	198	(s)	2	581
December	451	599	1	1,051	287	183	(s)	195	(s)	3	668
Average	**241**	**361**	**4**	**606**	**153**	**126**	**1**	**199**	**(s)**	**1**	**480**
2019 January	408	663	19	1,090	259	197	3	187	(s)	2	649
February	376	624	13	[R] 1,013	239	188	2	193	(s)	2	624
March	300	520	(s)	821	191	163	(s)	196	(s)	1	551
April	200	310	1	511	127	112	(s)	200	(s)	1	441
May	151	223	1	375	96	91	(s)	202	0	1	391
June	132	146	1	278	84	73	(s)	207	0	1	364
July	123	127	1	251	78	68	(s)	203	0	1	350
August	188	130	(s)	318	120	69	(s)	209	0	1	399
September	109	150	4	263	69	74	1	196	0	1	340
October	164	283	2	448	104	106	(s)	198	0	1	409
November	332	506	9	847	212	159	1	196	0	2	570
December	381	573	10	964	242	176	2	191	(s)	2	613
Average	**238**	**353**	**5**	**596**	**151**	**123**	**1**	**198**	**(s)**	**1**	**474**
2020 January	311	588	18	916	198	179	3	187	(s)	2	568
February	273	561	22	856	174	173	4	191	(s)	1	543
March	239	427	5	671	152	140	1	166	0	1	460
April	222	356	2	579	141	123	(s)	125	0	1	390
May	242	222	(s)	464	154	91	(s)	153	0	1	399
June	158	140	1	298	100	71	(s)	176	0	1	349
July	103	126	1	[R] 229	65	68	(s)	180	0	1	314
August	90	128	7	226	57	68	1	181	0	(s)	309
September	156	161	6	323	99	76	1	182	0	1	359
9-Month Average	**199**	**300**	**7**	**506**	**127**	**110**	**1**	**171**	**(s)**	**1**	**410**
2019 9-Month Average	**220**	**320**	**4**	**544**	**140**	**115**	**1**	**199**	**(s)**	**1**	**456**
2018 9-Month Average	**205**	**325**	**5**	**534**	**130**	**117**	**1**	**199**	**(s)**	**1**	**448**

[a] Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Hydrocarbon gas liquids.

[c] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[d] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

R=Revised. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

Notes: • Data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 3.7b Petroleum Consumption: Industrial Sector

(Thousand Barrels per Day)

	Industrial Sector[a]												
			Hydrocarbon Gas Liquids										
			Propane/Propylene										
	Asphalt and Road Oil	Distillate Fuel Oil	Propane	Propylene	Total[b]	Total[c]	Kerosene	Lubricants	Motor Gasoline[d,e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
1950 Average	**180**	**328**	**12**	**13**	**24**	**100**	**132**	**43**	**131**	**41**	**617**	**250**	**1,822**
1955 Average	**254**	**466**	**59**	**22**	**81**	**212**	**116**	**47**	**173**	**67**	**686**	**366**	**2,387**
1960 Average	**302**	**476**	**98**	**33**	**131**	**333**	**78**	**48**	**198**	**149**	**689**	**435**	**2,708**
1965 Average	**368**	**541**	**152**	**45**	**197**	**470**	**80**	**62**	**179**	**202**	**689**	**657**	**3,247**
1970 Average	**447**	**577**	**201**	**55**	**256**	**699**	**89**	**70**	**150**	**203**	**708**	**866**	**3,808**
1975 Average	**419**	**630**	**242**	**60**	**302**	**863**	**58**	**68**	**116**	**246**	**658**	**982**	**4,038**
1980 Average	**396**	**621**	**445**	**72**	**516**	**1,293**	**87**	**82**	**82**	**234**	**586**	**1,460**	**4,842**
1985 Average	**425**	**526**	**497**	**72**	**569**	**1,408**	**21**	**75**	**114**	**261**	**326**	**909**	**4,065**
1990 Average	**483**	**541**	**471**	**105**	**576**	**1,364**	**6**	**84**	**97**	**325**	**179**	**1,225**	**4,304**
1995 Average	**486**	**532**	**566**	**157**	**723**	**1,727**	**7**	**80**	**105**	**328**	**147**	**1,180**	**4,594**
2000 Average	**525**	**563**	**500**	**224**	**724**	**1,923**	**8**	**86**	**79**	**361**	**105**	**1,255**	**4,903**
2001 Average	**519**	**611**	**444**	**210**	**654**	**1,713**	**11**	**79**	**155**	**390**	**89**	**1,325**	**4,892**
2002 Average	**512**	**566**	**521**	**233**	**754**	**1,801**	**7**	**78**	**163**	**383**	**83**	**1,342**	**4,934**
2003 Average	**503**	**551**	**463**	**238**	**701**	**1,691**	**12**	**72**	**171**	**375**	**96**	**1,448**	**4,918**
2004 Average	**537**	**570**	**535**	**255**	**790**	**1,778**	**14**	**73**	**195**	**423**	**108**	**1,525**	**5,222**
2005 Average	**546**	**594**	**506**	**243**	**749**	**1,666**	**19**	**72**	**187**	**404**	**123**	**1,489**	**5,100**
2006 Average	**521**	**594**	**521**	**268**	**789**	**1,710**	**14**	**71**	**198**	**425**	**104**	**1,557**	**5,193**
2007 Average	**494**	**595**	**536**	**252**	**787**	**1,744**	**6**	**73**	**161**	**412**	**84**	**1,487**	**5,056**
2008 Average	**417**	**637**	**389**	**230**	**619**	**1,510**	**2**	**67**	**131**	**394**	**84**	**1,317**	**4,559**
2009 Average	**360**	**509**	**383**	**267**	**650**	**1,617**	**2**	**61**	**128**	**363**	**57**	**1,175**	**4,272**
2010 Average	**362**	**547**	**369**	**305**	**674**	**1,780**	**4**	**61**	**140**	**310**	**52**	**1,251**	**4,508**
2011 Average	**355**	**586**	**393**	**310**	**703**	**1,792**	**2**	**58**	**138**	**295**	**59**	**1,240**	**4,523**
2012 Average	**340**	**602**	**480**	**308**	**788**	**1,910**	**1**	**53**	**136**	**319**	**30**	**1,165**	**4,558**
2013 Average	**323**	**601**	**525**	**306**	**831**	**2,057**	**1**	**57**	**142**	**295**	**21**	**1,227**	**4,723**
2014 Average	**327**	**648**	**401**	**298**	**698**	**1,974**	**1**	**59**	**114**	**290**	**18**	**1,151**	**4,582**
2015 Average	**343**	**555**	**437**	**295**	**732**	**2,122**	**1**	**64**	**[e] 140**	**295**	**15**	**1,153**	**4,688**
2016 Average	**351**	**548**	**415**	**301**	**717**	**2,123**	**1**	**61**	**142**	**289**	**23**	**1,170**	**4,707**
2017 Average	**351**	**572**	**379**	**309**	**688**	**2,214**	**1**	**56**	**143**	**269**	**22**	**1,228**	**4,856**
2018 January	158	734	541	331	873	2,617	5	50	138	279	18	1,211	5,209
February	203	569	451	312	764	2,402	(s)	63	138	144	19	1,326	4,864
March	278	715	360	306	666	2,405	1	62	148	252	14	1,313	5,188
April	225	593	338	288	626	2,322	(s)	57	144	259	24	1,126	4,751
May	385	681	254	311	565	2,312	1	48	149	272	17	1,153	5,019
June	476	493	265	308	573	2,382	(s)	62	153	300	17	1,295	5,179
July	460	487	444	294	738	2,639	(s)	60	151	265	20	1,177	5,259
August	507	631	418	314	732	2,696	(s)	63	153	384	17	1,232	5,683
September	385	588	539	302	841	2,670	(s)	47	143	349	20	1,060	5,260
October	410	663	433	315	748	2,572	(s)	51	146	378	17	1,271	5,508
November	247	580	355	328	683	2,632	(s)	55	145	226	22	1,213	5,121
December	182	399	349	325	674	2,593	(s)	43	144	218	23	1,150	4,751
Average	**327**	**595**	**396**	**311**	**707**	**2,521**	**1**	**55**	**146**	**278**	**19**	**1,210**	**5,152**
2019 January	195	789	506	320	826	2,849	4	54	137	242	20	1,217	5,506
February	201	739	420	299	719	2,773	2	49	142	79	17	969	4,973
March	232	675	275	265	540	2,448	(s)	46	144	258	14	1,102	[R] 4,917
April	318	641	229	289	517	2,458	(s)	74	147	210	11	1,261	5,120
May	369	634	238	302	540	2,426	(s)	50	149	274	11	1,257	5,170
June	413	519	302	311	612	2,529	(s)	49	152	368	19	1,144	5,192
July	510	457	390	297	687	2,729	(s)	61	149	357	20	1,110	5,393
August	507	452	336	294	630	2,650	(s)	54	154	293	19	1,299	5,427
September	480	562	532	283	814	2,812	1	45	144	226	18	1,222	5,509
October	438	701	500	316	816	2,753	(s)	61	146	221	19	1,172	5,511
November	310	609	498	301	799	2,728	2	50	144	326	13	1,222	[R] 5,402
December	198	431	418	306	724	2,745	2	44	140	332	17	1,275	5,185
Average	**348**	**600**	**387**	**298**	**685**	**2,658**	**1**	**53**	**146**	**267**	**16**	**1,189**	**5,278**
2020 January	191	692	315	282	597	2,624	3	58	137	209	15	1,217	5,147
February	191	714	504	254	758	2,469	4	51	140	228	9	1,276	5,084
March	204	575	363	257	620	2,737	1	29	122	213	6	1,247	5,135
April	292	251	262	278	[R] 539	[R] 2,372	(s)	39	92	152	7	1,088	4,293
May	365	200	308	274	582	2,563	(s)	39	113	182	5	1,143	4,610
June	511	191	178	263	440	[R] 2,544	(s)	49	130	177	14	1,026	4,641
July	491	294	295	275	570	2,821	(s)	55	132	191	20	1,062	5,065
August	479	328	361	259	620	2,689	1	44	133	326	18	1,088	5,107
September	422	456	443	285	728	2,680	1	48	134	268	19	940	4,969
9-Month Average	**350**	**410**	**336**	**270**	**605**	**2,613**	**1**	**46**	**126**	**216**	**13**	**1,121**	**4,896**
2019 9-Month Average	**360**	**606**	**358**	**295**	**653**	**2,629**	**1**	**54**	**147**	**258**	**16**	**1,178**	**5,248**
2018 9-Month Average	**343**	**611**	**401**	**307**	**708**	**2,495**	**1**	**57**	**146**	**279**	**18**	**1,209**	**5,161**

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[d] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[e] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[f] 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. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

Notes: • Data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 3.7c Petroleum Consumption: Transportation and Electric Power Sectors

(Thousand Barrels per Day)

	Transportation Sector								Electric Power Sector[a]			
	Aviation Gasoline	Distillate Fuel Oil[c]	HGL[b] Propane[d]	Jet Fuel[e]	Lubricants	Motor Gasoline[f,g]	Residual Fuel Oil	Total	Distillate Fuel Oil[h]	Petroleum Coke	Residual Fuel Oil[i]	Total
1950 Average	**108**	**226**	**2**	**([e])**	**64**	**2,433**	**524**	**3,356**	**15**	**NA**	**192**	**207**
1955 Average	**192**	**372**	**9**	**154**	**70**	**3,221**	**440**	**4,458**	**15**	**NA**	**191**	**206**
1960 Average	**161**	**418**	**13**	**371**	**68**	**3,736**	**367**	**5,135**	**10**	**NA**	**231**	**241**
1965 Average	**120**	**514**	**23**	**602**	**67**	**4,374**	**336**	**6,036**	**14**	**NA**	**302**	**316**
1970 Average	**55**	**738**	**32**	**967**	**66**	**5,589**	**332**	**7,778**	**66**	**9**	**853**	**928**
1975 Average	**39**	**998**	**31**	**992**	**70**	**6,512**	**310**	**8,951**	**107**	**1**	**1,280**	**1,388**
1980 Average	**35**	**1,311**	**13**	**1,062**	**77**	**6,441**	**608**	**9,546**	**79**	**2**	**1,069**	**1,151**
1985 Average	**27**	**1,491**	**21**	**1,218**	**71**	**6,667**	**342**	**9,838**	**40**	**3**	**435**	**478**
1990 Average	**24**	**1,722**	**16**	**1,522**	**80**	**7,080**	**443**	**10,888**	**45**	**14**	**507**	**566**
1995 Average	**21**	**1,973**	**13**	**1,514**	**76**	**7,674**	**397**	**11,668**	**51**	**37**	**247**	**334**
2000 Average	**20**	**2,422**	**8**	**1,725**	**81**	**8,370**	**386**	**13,012**	**82**	**45**	**378**	**505**
2001 Average	**19**	**2,489**	**10**	**1,655**	**74**	**8,435**	**255**	**12,938**	**80**	**47**	**437**	**564**
2002 Average	**18**	**2,536**	**10**	**1,614**	**73**	**8,662**	**295**	**13,208**	**60**	**80**	**287**	**427**
2003 Average	**16**	**2,629**	**13**	**1,578**	**68**	**8,733**	**249**	**13,286**	**76**	**79**	**379**	**534**
2004 Average	**17**	**2,783**	**14**	**1,630**	**69**	**8,887**	**321**	**13,720**	**52**	**101**	**382**	**535**
2005 Average	**19**	**2,858**	**20**	**1,679**	**68**	**8,948**	**365**	**13,957**	**54**	**111**	**382**	**547**
2006 Average	**18**	**3,017**	**20**	**1,633**	**67**	**9,029**	**395**	**14,178**	**35**	**97**	**157**	**289**
2007 Average	**17**	**3,037**	**16**	**1,622**	**69**	**9,093**	**433**	**14,287**	**42**	**78**	**173**	**293**
2008 Average	**15**	**2,738**	**29**	**1,539**	**64**	**8,834**	**402**	**13,621**	**34**	**70**	**104**	**209**
2009 Average	**14**	**2,626**	**20**	**1,393**	**57**	**8,841**	**344**	**13,297**	**33**	**63**	**79**	**175**
2010 Average	**15**	**2,764**	**[d] 5**	**1,432**	**70**	**8,824**	**389**	**13,499**	**38**	**65**	**67**	**170**
2011 Average	**15**	**2,849**	**5**	**1,425**	**67**	**8,591**	**338**	**13,291**	**30**	**66**	**41**	**137**
2012 Average	**14**	**2,719**	**5**	**1,398**	**61**	**8,525**	**291**	**13,013**	**25**	**41**	**33**	**99**
2013 Average	**12**	**2,804**	**5**	**1,434**	**65**	**8,679**	**253**	**13,253**	**26**	**59**	**34**	**119**
2014 Average	**12**	**2,928**	**5**	**1,470**	**67**	**8,778**	**195**	**13,455**	**39**	**57**	**41**	**137**
2015 Average	**11**	**2,974**	**5**	**1,548**	**74**	**[g] 8,835**	**202**	**13,649**	**33**	**54**	**41**	**128**
2016 Average	**11**	**2,944**	**5**	**1,614**	**70**	**8,973**	**271**	**13,887**	**26**	**57**	**31**	**113**
2017 Average	**11**	**2,976**	**5**	**1,682**	**64**	**8,988**	**290**	**14,016**	**26**	**47**	**29**	**101**
2018 January	10	2,826	5	1,568	56	8,463	185	13,112	169	60	118	348
February	7	2,844	5	1,590	71	8,471	255	13,244	24	54	23	101
March	13	3,051	5	1,706	70	9,115	199	14,160	23	40	21	84
April	12	3,132	5	1,630	64	8,866	359	14,069	26	45	24	94
May	12	3,267	5	1,685	54	9,164	252	14,440	30	33	25	89
June	14	3,252	5	1,857	69	9,435	233	14,866	30	54	29	113
July	16	3,285	5	1,773	68	9,284	298	14,729	23	58	28	110
August	15	3,398	5	1,858	71	9,417	245	15,009	25	56	30	111
September	9	3,209	5	1,704	52	8,814	296	14,090	24	53	33	110
October	16	3,242	5	1,675	57	8,950	227	14,172	25	36	28	89
November	7	3,037	5	1,756	62	8,947	294	14,109	30	44	25	99
December	12	2,855	5	1,676	48	8,839	320	13,757	27	51	22	100
Average	**12**	**3,118**	**5**	**1,707**	**62**	**8,984**	**263**	**14,152**	**38**	**49**	**34**	**121**
2019 January	9	2,833	5	1,621	60	8,454	265	13,247	38	52	33	123
February	9	2,926	5	1,607	55	8,737	239	13,579	26	48	21	95
March	13	2,994	5	1,711	51	8,845	186	13,806	23	37	20	80
April	12	3,131	5	1,756	83	9,063	145	14,194	21	25	21	67
May	15	3,202	5	1,773	56	9,147	156	14,355	26	47	24	97
June	16	3,233	5	1,802	55	9,345	276	14,732	26	35	27	88
July	17	3,229	5	1,847	68	9,181	293	14,640	24	48	29	101
August	13	3,246	5	1,841	61	9,470	278	14,915	24	43	31	98
September	15	3,158	5	1,702	51	8,858	260	14,049	23	38	27	87
October	14	3,232	5	1,727	69	8,964	273	14,285	23	11	26	60
November	12	3,023	5	1,711	56	8,869	170	13,847	25	21	24	70
December	9	2,845	5	1,809	50	8,640	240	13,598	27	31	25	83
Average	**13**	**3,089**	**5**	**1,743**	**60**	**8,965**	**232**	**14,107**	**26**	**36**	**26**	**88**
2020 January	14	2,770	5	1,673	65	8,437	216	13,181	27	41	25	93
February	8	2,826	5	1,629	57	8,635	118	13,279	23	32	21	77
March	8	2,929	5	1,387	33	7,493	83	11,938	19	42	19	79
April	6	2,875	5	691	44	5,637	98	9,357	16	37	18	72
May	14	2,918	5	596	44	6,923	56	10,556	19	37	19	75
June	11	3,019	5	786	55	7,980	194	12,049	24	50	24	98
July	13	3,123	5	964	61	8,146	295	12,606	25	56	26	108
August	11	3,164	5	1,016	50	8,194	260	12,700	23	49	26	98
September	12	3,089	5	921	54	8,230	276	12,588	18	26	25	69
9-Month Average	**11**	**2,969**	**5**	**1,073**	**51**	**7,740**	**178**	**12,027**	**22**	**41**	**23**	**85**
2019 9-Month Average	**13**	**3,107**	**5**	**1,741**	**60**	**9,013**	**233**	**14,173**	**26**	**41**	**26**	**93**
2018 9-Month Average	**12**	**3,143**	**5**	**1,709**	**64**	**9,009**	**258**	**14,200**	**42**	**50**	**37**	**129**

[a] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[b] Hydrocarbon gas liquids.

[c] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[d] There is a discontinuity in this time series between 2009 and 2010 due to a change in data sources.

[e] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other" on Table 3.7b.)

[f] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[g] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[h] Fuel oil nos. 1, 2, and 4. Through 1979, data are for gas turbine and internal combustion plant use of petroleum. Through 2000, electric utility data also include small amounts of kerosene and jet fuel.

[i] Fuel oil nos. 5 and 6. Through 1979, data are for steam plant use of petroleum. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

NA=Not available.

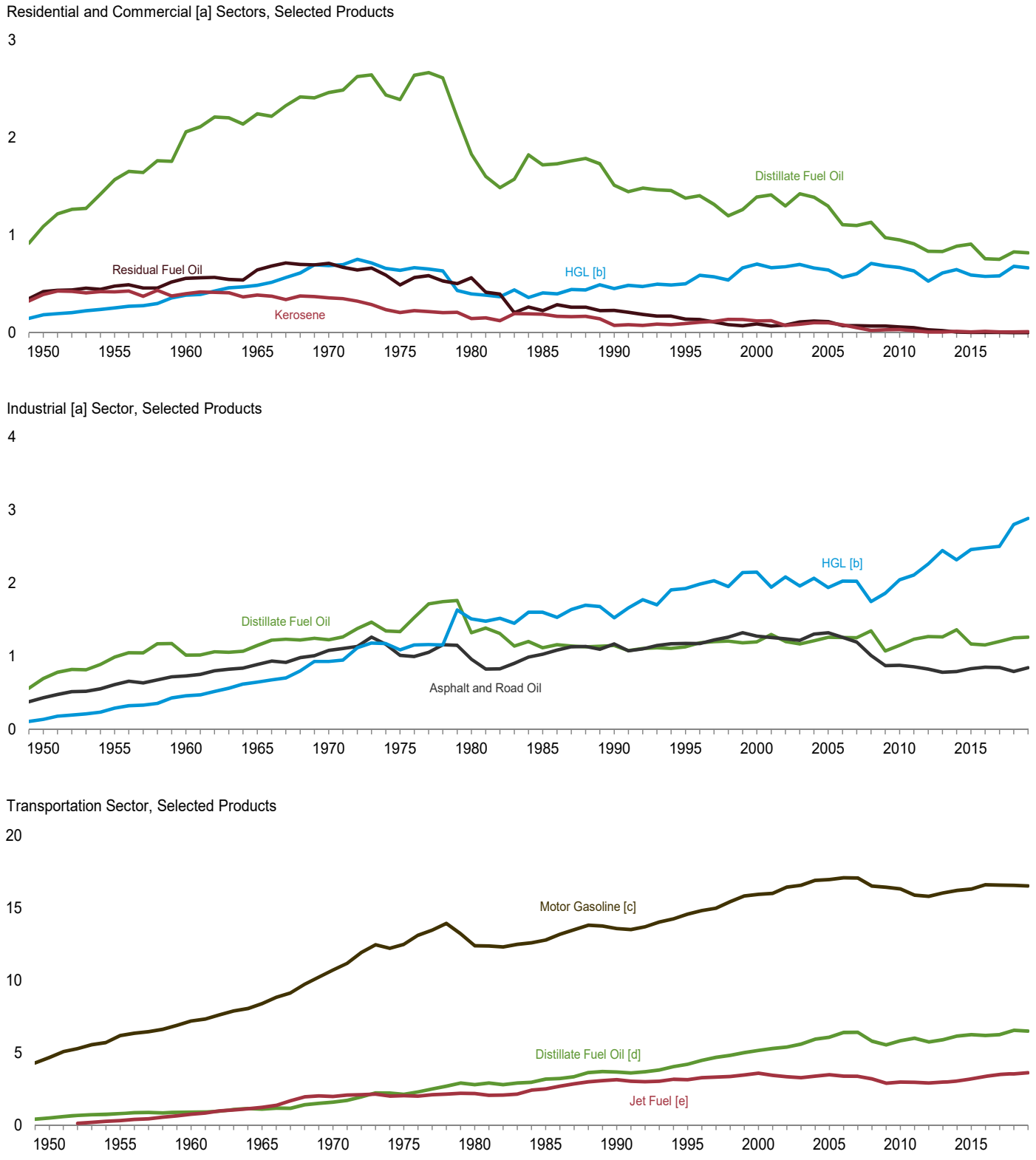
Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S-flagged aircraft. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.8a Heat Content of Petroleum Consumption by End-Use Sector, 1949-2019

(Quadrillion Btu)

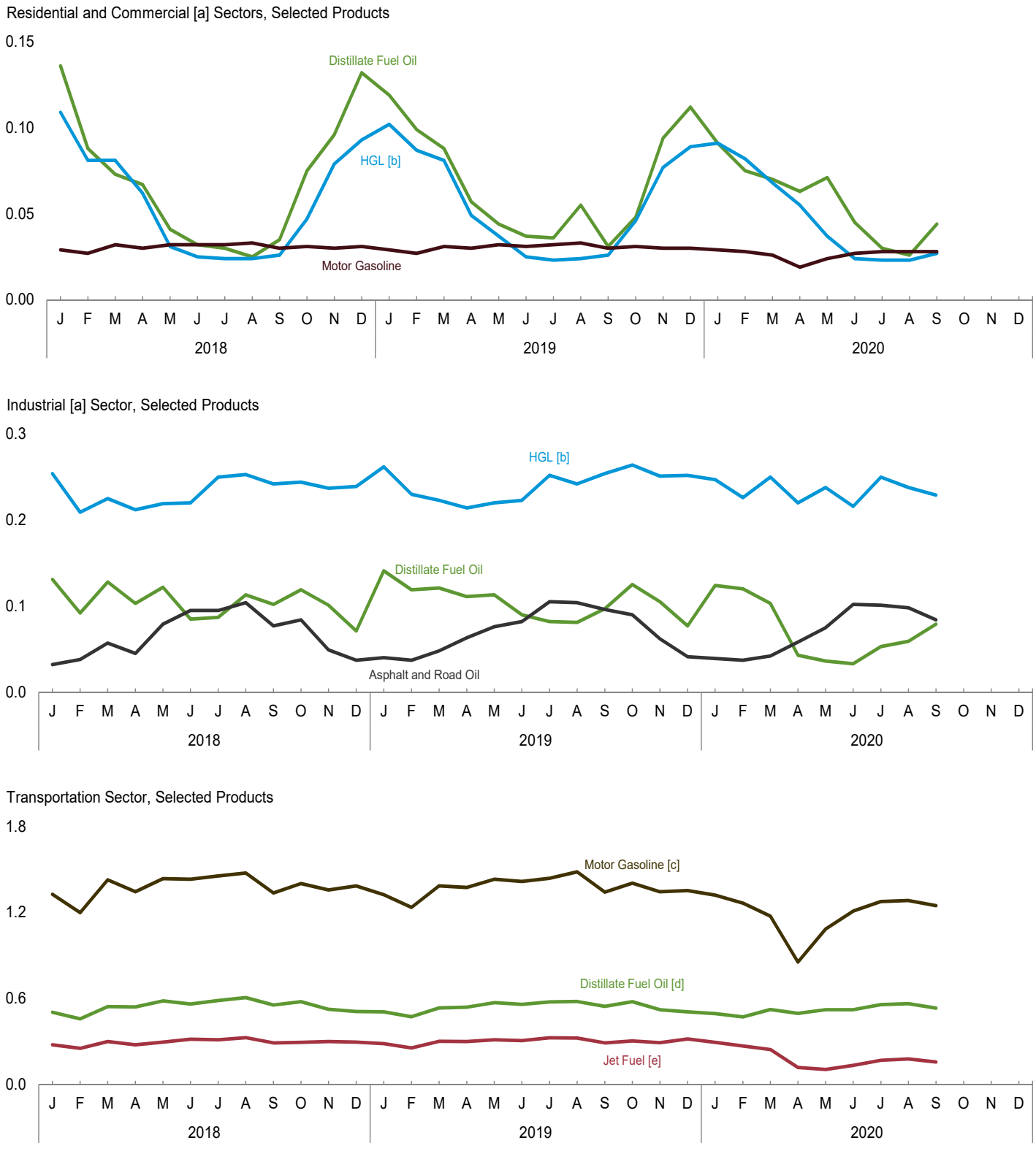


[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[e] Beginning in 2005, includes kerosene-type jet fuel only.

Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

Figure 3.8b Heat Content of Petroleum Consumption by End-Use Sector, Monthly

(Quadrillion Btu)



[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Includes fuel ethanol blended into motor gasoline.
[d] Includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[e] Includes kerosene-type jet fuel only.

Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

Table 3.8a Heat Content of Petroleum Consumption: Residential and Commercial Sectors

(Trillion Btu)

	Residential Sector				Commercial Sector[a]						
	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Total	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Motor Gasoline[c,d]	Petroleum Coke	Residual Fuel Oil	Total
1950 Total	**829**	**146**	**347**	**1,322**	**262**	**39**	**47**	**100**	**NA**	**424**	**872**
1955 Total	**1,194**	**202**	**371**	**1,767**	**377**	**54**	**51**	**133**	**NA**	**480**	**1,095**
1960 Total	**1,568**	**305**	**354**	**2,228**	**494**	**81**	**48**	**67**	**NA**	**559**	**1,248**
1965 Total	**1,713**	**386**	**334**	**2,432**	**534**	**103**	**54**	**77**	**NA**	**645**	**1,413**
1970 Total	**1,878**	**549**	**298**	**2,726**	**587**	**143**	**61**	**86**	**NA**	**714**	**1,592**
1975 Total	**1,807**	**512**	**161**	**2,479**	**587**	**130**	**49**	**89**	**NA**	**492**	**1,346**
1980 Total	**1,316**	**312**	**107**	**1,734**	**518**	**88**	**41**	**107**	**NA**	**565**	**1,318**
1985 Total	**1,092**	**315**	**159**	**1,566**	**631**	**95**	**33**	**96**	**NA**	**228**	**1,083**
1990 Total	**978**	**353**	**64**	**1,395**	**536**	**102**	**12**	**111**	**0**	**230**	**991**
1995 Total	**904**	**395**	**74**	**1,374**	**478**	**109**	**22**	**18**	**(s)**	**141**	**769**
2000 Total	**904**	**556**	**95**	**1,554**	**490**	**151**	**30**	**44**	**(s)**	**92**	**807**
2001 Total	**907**	**526**	**95**	**1,529**	**508**	**143**	**31**	**37**	**(s)**	**70**	**790**
2002 Total	**859**	**538**	**60**	**1,457**	**444**	**141**	**16**	**45**	**(s)**	**80**	**726**
2003 Total	**931**	**545**	**70**	**1,547**	**496**	**157**	**19**	**60**	**(s)**	**111**	**842**
2004 Total	**923**	**512**	**85**	**1,520**	**470**	**152**	**20**	**45**	**(s)**	**122**	**810**
2005 Total	**853**	**514**	**84**	**1,450**	**447**	**132**	**22**	**46**	**(s)**	**116**	**762**
2006 Total	**709**	**446**	**66**	**1,222**	**400**	**123**	**15**	**48**	**(s)**	**75**	**662**
2007 Total	**721**	**484**	**44**	**1,249**	**381**	**122**	**9**	**60**	**(s)**	**75**	**648**
2008 Total	**750**	**553**	**21**	**1,325**	**384**	**158**	**4**	**45**	**(s)**	**71**	**663**
2009 Total	**582**	**548**	**28**	**1,158**	**395**	**139**	**4**	**52**	**(s)**	**71**	**662**
2010 Total	**562**	**530**	**29**	**1,120**	**391**	**140**	**5**	**52**	**(s)**	**62**	**650**
2011 Total	**523**	**493**	**19**	**1,034**	**391**	**143**	**3**	**44**	**(s)**	**54**	**635**
2012 Total	**482**	**396**	**8**	**886**	**355**	**136**	**1**	**39**	**(s)**	**31**	**562**
2013 Total	**491**	**463**	**8**	**963**	**344**	**152**	**1**	**40**	**(s)**	**24**	**561**
2014 Total	**533**	**490**	**14**	**1,036**	**357**	**160**	**2**	**54**	**1**	**8**	**581**
2015 Total	**551**	**446**	**10**	**1,007**	**360**	**148**	**1**	**[d] 376**	**1**	**4**	**890**
2016 Total	**435**	**430**	**14**	**878**	**326**	**150**	**2**	**375**	**(s)**	**4**	**858**
2017 Total	**432**	**431**	**8**	**871**	**323**	**156**	**1**	**361**	**(s)**	**4**	**845**
2018 January	83	84	5	172	53	25	1	29	(s)	1	108
February	54	62	(s)	116	34	19	(s)	27	(s)	(s)	80
March	45	62	1	107	28	19	(s)	32	(s)	(s)	80
April	41	46	(s)	88	26	16	(s)	30	(s)	(s)	72
May	25	22	1	48	16	10	(s)	32	0	(s)	58
June	19	17	(s)	36	12	8	(s)	32	0	(s)	53
July	18	15	(s)	34	12	8	(s)	32	0	(s)	52
August	15	16	(s)	31	10	8	(s)	33	0	(s)	51
September	21	17	(s)	39	14	9	(s)	30	(s)	(s)	52
October	46	35	(s)	80	29	13	(s)	31	(s)	(s)	73
November	59	60	(s)	119	37	19	(s)	30	(s)	(s)	87
December	81	71	(s)	152	51	22	(s)	31	(s)	(s)	104
Total	**508**	**507**	**8**	**1,022**	**323**	**176**	**1**	**366**	**(s)**	**3**	**870**
2019 January	73	79	3	155	46	23	1	29	(s)	(s)	100
February	61	67	2	130	39	20	(s)	27	(s)	(s)	87
March	54	62	(s)	116	34	19	(s)	31	(s)	(s)	85
April	35	36	(s)	71	22	13	(s)	30	(s)	(s)	66
May	27	27	(s)	54	17	11	(s)	32	0	(s)	60
June	23	17	(s)	40	14	8	(s)	31	0	(s)	54
July	22	15	(s)	37	14	8	(s)	32	0	(s)	54
August	34	15	(s)	49	21	8	(s)	33	0	(s)	63
September	19	17	1	37	12	9	(s)	30	0	(s)	50
October	29	34	(s)	63	19	13	(s)	31	0	(s)	62
November	58	58	2	117	37	18	(s)	30	0	(s)	85
December	68	68	2	138	43	21	(s)	30	(s)	(s)	95
Total	**501**	**495**	**10**	**1,007**	**319**	**172**	**2**	**365**	**(s)**	**3**	**861**
2020 January	56	70	3	129	35	21	1	29	(s)	(s)	87
February	46	63	4	112	29	19	1	28	(s)	(s)	77
March	43	51	1	94	27	17	(s)	26	0	(s)	70
April	38	41	(s)	80	24	14	(s)	19	0	(s)	58
May	43	26	(s)	70	28	11	(s)	24	0	(s)	63
June	27	16	(s)	44	17	8	(s)	27	0	(s)	52
July	18	15	(s)	34	12	8	(s)	28	0	(s)	48
August	16	15	1	33	10	8	(s)	28	0	(s)	47
September	27	19	1	47	17	9	(s)	28	0	(s)	54
9-Month Total	**315**	**316**	**10**	**641**	**200**	**116**	**2**	**237**	**(s)**	**2**	**556**
2019 9-Month Total	**346**	**335**	**7**	**688**	**220**	**120**	**1**	**275**	**(s)**	**2**	**619**
2018 9-Month Total	**322**	**340**	**8**	**670**	**205**	**122**	**1**	**275**	**(s)**	**2**	**606**

[a] Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Hydrocarbon gas liquids.

[c] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[d] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

NA=Not available. (s)=Less than 0.5 trillion Btu and greater 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 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 3.8b Heat Content of Petroleum Consumption: Industrial Sector

(Trillion Btu)

	Industrial Sector[a]												
			Hydrocarbon Gas Liquids										
			Propane/Propylene										
	Asphalt and Road Oil	Distillate Fuel Oil	Propane	Propylene	Total[b]	Total[c]	Kerosene	Lubricants	Motor Gasoline[d,e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
1950 Total	**435**	**698**	**17**	**18**	**34**	**138**	**274**	**94**	**251**	**90**	**1,416**	**546**	**3,943**
1955 Total	**615**	**991**	**83**	**30**	**113**	**293**	**241**	**103**	**332**	**147**	**1,573**	**798**	**5,093**
1960 Total	**734**	**1,016**	**137**	**47**	**184**	**461**	**161**	**107**	**381**	**328**	**1,584**	**947**	**5,720**
1965 Total	**890**	**1,150**	**213**	**63**	**276**	**649**	**165**	**137**	**342**	**444**	**1,582**	**1,390**	**6,750**
1970 Total	**1,082**	**1,226**	**282**	**77**	**359**	**930**	**185**	**155**	**288**	**446**	**1,624**	**1,817**	**7,754**
1975 Total	**1,014**	**1,339**	**339**	**84**	**423**	**1,126**	**119**	**149**	**223**	**540**	**1,509**	**2,071**	**8,092**
1980 Total	**962**	**1,324**	**625**	**100**	**726**	**1,718**	**181**	**182**	**158**	**516**	**1,349**	**3,073**	**9,463**
1985 Total	**1,029**	**1,119**	**696**	**101**	**798**	**1,813**	**44**	**166**	**218**	**575**	**748**	**1,944**	**7,655**
1990 Total	**1,170**	**1,150**	**660**	**147**	**807**	**1,781**	**12**	**186**	**185**	**714**	**411**	**2,588**	**8,199**
1995 Total	**1,178**	**1,130**	**794**	**220**	**1,014**	**2,269**	**15**	**178**	**200**	**721**	**337**	**2,498**	**8,525**
2000 Total	**1,276**	**1,199**	**703**	**315**	**1,017**	**2,498**	**16**	**190**	**150**	**796**	**241**	**2,635**	**8,999**
2001 Total	**1,257**	**1,299**	**623**	**294**	**917**	**2,212**	**23**	**174**	**295**	**858**	**203**	**2,793**	**9,113**
2002 Total	**1,240**	**1,203**	**730**	**326**	**1,056**	**2,313**	**14**	**172**	**308**	**842**	**190**	**2,816**	**9,099**
2003 Total	**1,220**	**1,169**	**649**	**333**	**982**	**2,185**	**24**	**159**	**323**	**825**	**220**	**3,043**	**9,169**
2004 Total	**1,304**	**1,213**	**752**	**358**	**1,109**	**2,292**	**28**	**161**	**371**	**937**	**249**	**3,205**	**9,760**
2005 Total	**1,323**	**1,262**	**709**	**341**	**1,050**	**2,138**	**39**	**160**	**354**	**894**	**281**	**3,122**	**9,574**
2006 Total	**1,261**	**1,258**	**731**	**375**	**1,106**	**2,171**	**30**	**156**	**374**	**938**	**239**	**3,276**	**9,703**
2007 Total	**1,197**	**1,256**	**751**	**352**	**1,103**	**2,207**	**13**	**161**	**302**	**910**	**193**	**3,134**	**9,373**
2008 Total	**1,012**	**1,348**	**547**	**323**	**870**	**1,904**	**4**	**150**	**245**	**870**	**194**	**2,788**	**8,514**
2009 Total	**873**	**1,073**	**537**	**374**	**911**	**1,992**	**4**	**135**	**238**	**805**	**130**	**2,483**	**7,733**
2010 Total	**878**	**1,153**	**517**	**428**	**944**	**2,204**	**7**	**136**	**260**	**694**	**120**	**2,645**	**8,096**
2011 Total	**859**	**1,236**	**551**	**434**	**985**	**2,169**	**4**	**127**	**254**	**663**	**135**	**2,621**	**8,069**
2012 Total	**827**	**1,271**	**674**	**432**	**1,107**	**2,349**	**2**	**118**	**252**	**717**	**70**	**2,474**	**8,080**
2013 Total	**783**	**1,266**	**736**	**429**	**1,165**	**2,544**	**1**	**125**	**263**	**663**	**48**	**2,583**	**8,277**
2014 Total	**793**	**1,366**	**562**	**417**	**979**	**2,409**	**3**	**131**	**210**	**653**	**41**	**2,430**	**8,035**
2015 Total	**832**	**1,170**	**612**	**413**	**1,025**	**2,621**	**2**	**142**	[e] **258**	**663**	**34**	**2,435**	**8,156**
2016 Total	**853**	**1,157**	**584**	**423**	**1,007**	**2,597**	**2**	**135**	**262**	**653**	**52**	**2,553**	**8,265**
2017 Total	**849**	**1,205**	**532**	**432**	**964**	**2,679**	**1**	**125**	**264**	**610**	**50**	**2,667**	**8,451**
2018 January	32	131	64	39	104	268	1	9	22	54	3	223	744
February	38	92	49	34	82	224	(s)	11	19	25	3	220	632
March	57	128	43	36	79	239	(s)	12	23	48	3	242	752
April	45	103	39	33	72	223	(s)	10	22	48	5	201	657
May	79	122	30	37	67	234	(s)	9	23	52	3	213	737
June	95	85	31	35	66	233	(s)	11	23	56	3	232	738
July	95	87	53	35	88	270	(s)	11	24	51	4	218	760
August	104	113	50	37	87	278	(s)	12	24	74	3	228	835
September	77	102	62	35	97	267	(s)	8	22	65	4	190	733
October	84	119	52	37	89	266	(s)	10	23	72	3	233	810
November	49	101	41	38	79	262	(s)	10	22	42	4	217	707
December	37	71	42	39	80	267	(s)	8	23	42	4	213	665
Total	**793**	**1,254**	**554**	**436**	**990**	**3,029**	**2**	**122**	**269**	**629**	**43**	**2,630**	**8,771**
2019 January	40	141	60	38	98	294	1	10	22	47	4	225	783
February	37	119	45	32	77	[R] 255	(s)	8	20	14	3	162	621
March	48	121	33	31	64	246	(s)	9	23	49	3	204	702
April	63	111	26	33	60	239	(s)	13	22	39	2	225	714
May	76	113	28	36	64	247	(s)	9	23	53	2	232	756
June	82	90	35	36	71	255	(s)	9	23	68	4	205	735
July	105	82	46	35	82	286	(s)	11	23	68	4	206	785
August	104	81	40	35	75	278	(s)	10	24	56	4	240	797
September	96	97	61	33	94	285	(s)	8	22	42	3	218	771
October	90	125	60	38	97	287	(s)	12	23	42	4	217	800
November	62	105	57	35	92	270	(s)	9	22	60	2	219	749
December	41	77	50	36	86	280	(s)	8	22	63	3	235	731
Total	**844**	**1,263**	**542**	**418**	**960**	**3,222**	**2**	**118**	**269**	**602**	**37**	**2,585**	**8,942**
2020 January	39	124	38	33	71	260	1	11	21	40	3	225	724
February	37	120	56	28	84	224	1	9	21	41	2	221	674
March	42	103	43	31	74	277	(s)	6	19	41	1	230	718
April	58	43	30	32	62	224	(s)	7	14	28	1	194	570
May	75	36	37	33	69	258	(s)	7	18	35	1	211	640
June	102	33	20	30	51	247	(s)	9	20	33	3	184	630
July	101	53	35	33	68	282	(s)	10	21	37	4	196	704
August	98	59	43	31	74	276	(s)	8	21	63	4	201	729
September	84	79	51	33	84	270	(s)	9	20	50	4	169	684
9-Month Total	**636**	**649**	**353**	**283**	**637**	**2,316**	**2**	**76**	**174**	**368**	**22**	**1,830**	**6,074**
2019 9-Month Total	**651**	**955**	**375**	**309**	**685**	**2,384**	**1**	**89**	**202**	**437**	**28**	**1,914**	**6,662**
2018 9-Month Total	**622**	**963**	**420**	**322**	**742**	**2,235**	**2**	**94**	**202**	**472**	**31**	**1,967**	**6,589**

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[d] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[e] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[f] 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. (s)=Less than 0.5 trillion Btu and greater 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 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 3.8c Heat Content of Petroleum Consumption: Transportation and Electric Power Sectors (Trillion Btu)

	Transportation Sector								Electric Power Sector[a]			
	Aviation Gasoline	Distillate Fuel Oil[c]	HGL[b] Propane[d]	Jet Fuel[e]	Lubricants	Motor Gasoline[f,g]	Residual Fuel Oil	Total	Distillate Fuel Oil[h]	Petroleum Coke	Residual Fuel Oil[i]	Total
1950 Total	**199**	**480**	**3**	**([e])**	**141**	**4,664**	**1,201**	**6,690**	**32**	**NA**	**440**	**472**
1955 Total	**354**	**791**	**13**	**301**	**155**	**6,175**	**1,009**	**8,799**	**32**	**NA**	**439**	**471**
1960 Total	**298**	**892**	**19**	**739**	**152**	**7,183**	**844**	**10,125**	**22**	**NA**	**530**	**553**
1965 Total	**222**	**1,093**	**32**	**1,215**	**149**	**8,386**	**770**	**11,866**	**29**	**NA**	**693**	**722**
1970 Total	**100**	**1,569**	**44**	**1,973**	**147**	**10,716**	**761**	**15,311**	**141**	**19**	**1,958**	**2,117**
1975 Total	**71**	**2,121**	**43**	**2,029**	**155**	**12,485**	**711**	**17,615**	**226**	**2**	**2,937**	**3,166**
1980 Total	**64**	**2,795**	**18**	**2,179**	**172**	**12,383**	**1,398**	**19,009**	**169**	**5**	**2,459**	**2,634**
1985 Total	**50**	**3,170**	**30**	**2,497**	**156**	**12,784**	**786**	**19,472**	**85**	**7**	**998**	**1,090**
1990 Total	**45**	**3,661**	**23**	**3,129**	**176**	**13,575**	**1,016**	**21,626**	**97**	**30**	**1,163**	**1,289**
1995 Total	**40**	**4,191**	**18**	**3,132**	**168**	**14,576**	**911**	**23,036**	**108**	**81**	**566**	**755**
2000 Total	**36**	**5,159**	**12**	**3,580**	**179**	**15,933**	**888**	**25,787**	**175**	**99**	**871**	**1,144**
2001 Total	**35**	**5,286**	**14**	**3,426**	**164**	**16,013**	**586**	**25,524**	**170**	**103**	**1,003**	**1,276**
2002 Total	**34**	**5,387**	**14**	**3,340**	**162**	**16,437**	**677**	**26,051**	**127**	**175**	**659**	**961**
2003 Total	**30**	**5,584**	**18**	**3,265**	**150**	**16,565**	**571**	**26,184**	**161**	**175**	**869**	**1,205**
2004 Total	**31**	**5,925**	**19**	**3,383**	**152**	**16,901**	**740**	**27,150**	**111**	**211**	**879**	**1,201**
2005 Total	**35**	**6,068**	**28**	**3,475**	**151**	**16,958**	**837**	**27,553**	**114**	**231**	**876**	**1,222**
2006 Total	**33**	**6,390**	**28**	**3,379**	**147**	**17,088**	**906**	**27,972**	**73**	**203**	**361**	**637**
2007 Total	**32**	**6,411**	**22**	**3,358**	**152**	**17,066**	**994**	**28,034**	**89**	**163**	**397**	**648**
2008 Total	**28**	**5,792**	**40**	**3,193**	**141**	**16,510**	**926**	**26,630**	**73**	**146**	**240**	**459**
2009 Total	**27**	**5,537**	**28**	**2,883**	**127**	**16,425**	**791**	**25,817**	**70**	**132**	**181**	**382**
2010 Total	**27**	**5,826**	**[d] 7**	**2,963**	**155**	**16,320**	**892**	**26,190**	**80**	**137**	**154**	**370**
2011 Total	**27**	**5,997**	**7**	**2,950**	**148**	**15,877**	**776**	**25,783**	**64**	**138**	**93**	**295**
2012 Total	**25**	**5,736**	**7**	**2,901**	**135**	**15,795**	**671**	**25,270**	**52**	**85**	**77**	**214**
2013 Total	**22**	**5,894**	**7**	**2,969**	**143**	**16,030**	**581**	**25,646**	**55**	**123**	**77**	**255**
2014 Total	**22**	**6,154**	**7**	**3,042**	**149**	**16,209**	**447**	**26,030**	**82**	**118**	**95**	**295**
2015 Total	**21**	**6,251**	**7**	**3,204**	**163**	**[g] 16,308**	**463**	**26,416**	**70**	**112**	**94**	**276**
2016 Total	**20**	**6,197**	**7**	**3,350**	**154**	**16,601**	**623**	**26,953**	**55**	**118**	**71**	**244**
2017 Total	**21**	**6,248**	**7**	**3,481**	**142**	**16,576**	**665**	**27,140**	**55**	**97**	**66**	**218**
2018 January	1	504	1	276	10	1,326	36	2,155	30	11	23	64
February	1	458	1	252	12	1,199	45	1,968	4	9	4	17
March	2	544	1	300	13	1,428	39	2,327	4	7	4	15
April	2	541	1	277	12	1,344	68	2,244	4	8	4	17
May	2	583	1	296	10	1,436	49	2,377	5	6	5	16
June	2	561	1	316	13	1,431	44	2,367	5	9	6	20
July	3	586	1	312	13	1,455	58	2,426	4	10	6	20
August	2	606	1	327	13	1,475	48	2,472	4	10	6	20
September	1	554	1	290	10	1,336	56	2,247	4	9	6	19
October	3	578	1	294	11	1,402	44	2,333	4	6	6	16
November	1	524	1	299	11	1,357	55	2,248	5	8	5	18
December	2	509	1	295	9	1,385	62	2,263	5	9	4	18
Total	**22**	**6,550**	**8**	**3,533**	**137**	**16,573**	**604**	**27,427**	**81**	**101**	**78**	**260**
2019 January	1	506	1	285	11	1,324	52	2,179	7	9	6	22
February	1	472	1	255	9	1,236	42	2,016	4	8	4	16
March	2	534	1	301	10	1,385	36	2,269	4	7	4	15
April	2	540	1	299	15	1,374	27	2,257	4	4	4	12
May	2	571	1	312	11	1,432	30	2,359	5	8	5	18
June	2	558	1	306	10	1,416	52	2,346	5	6	5	16
July	3	576	1	325	13	1,438	57	2,412	4	8	6	18
August	2	579	1	324	11	1,483	54	2,454	4	8	6	18
September	2	545	1	290	9	1,342	49	2,238	4	6	5	15
October	2	577	1	304	13	1,404	53	2,353	4	2	5	11
November	2	522	1	291	10	1,344	32	2,202	4	4	5	13
December	1	507	1	318	9	1,353	47	2,237	5	6	5	15
Total	**23**	**6,487**	**8**	**3,608**	**132**	**16,532**	**532**	**27,322**	**54**	**76**	**59**	**189**
2020 January	2	494	1	294	12	1,321	42	2,167	5	7	5	17
February	1	471	1	268	10	1,265	22	2,038	4	5	4	13
March	1	523	1	244	6	1,174	16	1,964	3	7	4	14
April	1	496	1	118	8	854	18	1,496	3	6	3	13
May	2	521	1	105	8	1,084	11	1,731	3	7	4	14
June	2	521	1	134	10	1,209	37	1,913	4	9	4	17
July	2	557	1	169	12	1,276	57	2,074	5	10	5	20
August	2	564	1	178	9	1,283	51	2,089	4	9	5	18
September	2	533	1	157	10	1,247	52	2,001	3	4	5	12
9-Month Total	**15**	**4,680**	**6**	**1,666**	**85**	**10,714**	**306**	**17,473**	**34**	**65**	**39**	**138**
2019 9-Month Total	**18**	**4,881**	**6**	**2,695**	**100**	**12,431**	**400**	**20,531**	**41**	**65**	**44**	**150**
2018 9-Month Total	**17**	**4,938**	**6**	**2,645**	**106**	**12,430**	**442**	**20,583**	**66**	**79**	**64**	**208**

[a] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[b] Hydrocarbon gas liquids.

[c] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[d] There is a discontinuity in this time series between 2009 and 2010 due to a change in data sources.

[e] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other" on Table 3.8b.)

[f] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

[g] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[h] Fuel oil nos. 1, 2, and 4. Through 1979, data are for gas turbine and internal combustion plant use of petroleum. Through 2000, electric utility data also include small amounts of kerosene and jet fuel.

[i] Fuel oil nos. 5 and 6. Through 1979, data are for steam plant use of petroleum. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

NA=Not available.

Notes: • Transportation sector data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

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. This also includes petroleum products supplied for non-combustion use in the industrial and transportation sectors (see Tables 1.11a and 1.11b). In general, except for crude oil, product supplied of each product is computed as follows: field production, plus renewable fuels and oxygenate plant net production, plus refinery and blender net production, plus imports, plus net receipts, plus adjustments, minus stock change, minus refinery and blender net inputs, minus 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 used 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 Tables 3.5 and 3.6) is an approximation of petroleum consumption and is synonymous with the term "Petroleum Consumption" in Tables 3.7a–3.8c.

Note 2. Petroleum Survey Respondents. The U.S. Energy Information Administration (EIA) uses a number of sources and methods to maintain the survey respondent lists. On a regular basis, survey managers review such industry publications as the *Oil & Gas Journal* and *Oil Daily* for information on facilities or companies starting up or closing down operations. Those sources are augmented by articles in newspapers, communications from respondents indicating changes in status, and information received from survey systems.

To supplement routine frames maintenance and to provide more thorough coverage, a comprehensive frames investigation is conducted every 3 years. This investigation results in the reassessment and recompilation of the complete frame for each survey. The effort also includes the evaluation of the impact of potential frame changes on the historical time series of data from these respondents. The results of this frame study are usually implemented in January to provide a full year under the same frame.

Note 3. Historical Petroleum Data. Detailed information on petroleum data through 1993 can be found in Notes 1–6 on pages 60 and 61 in the July 2013 *Monthly Energy Review* (MER) at http://www.eia.gov/totalenergy/data/monthly/archive/00351307.pdf. The notes discuss:

Note 1, "Petroleum Survey Respondents": In 1993, EIA added numerous companies that produce, blend, store, or import oxygenates to the monthly surveys.

Note 2, "Motor Gasoline": In 1981, EIA expanded its universe to include nonrefinery blenders and separated blending components from finished motor gasoline as a reporting category. In 1993, EIA made adjustments to finished motor gasoline product supplied data to more accurately account for fuel ethanol and motor gasoline blending components blended into finished motor gasoline.

Note 3, "Distillate and Residual Fuel Oils": In 1981, EIA eliminated the requirement to report crude oil in pipelines or burned on leases as either distillate or residual fuel oil.

Note 4, "Petroleum New Stock Basis": In 1975, 1979, 1981, and 1983, EIA added numerous respondents to bulk terminal and pipeline surveys; in 1984, EIA made changes in the reporting of natural gas liquids; and in 1993, EIA changed how it collected bulk terminal and pipeline stocks of oxygenates. These changes affected stocks reported and stock change calculations.

Note 5, "Stocks of Alaskan Crude Oil": In 1981, EIA began to include data for stocks of Alaskan crude oil in transit.

Note 6, "Petroleum Data Discrepancies": In 1976, 1978, and 1979, there are some small discrepancies between data in the MER and the *Petroleum Supply Annual*.

Table 3.1 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports.

1976–1980: U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement*, *Annual*, annual reports.

1981–2001: EIA, *Petroleum Supply Annual* (PSA), annual reports.

2002 forward: EIA, PSA, annual reports, and unpublished revisions; *Petroleum Supply Monthly*, monthly reports; revisions to crude oil production, total field production, and adjustments (based on crude oil production data from: Form EIA-914, "Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report"; state government agencies; U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, and predecessor agencies; and Form EIA-182, "Domestic Crude Oil First Purchase Report"); and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.2 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports; and U.S. Energy Information Administration (EIA) estimates. (For 1967–1975, refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Chemical Use"; and estimates for propane are equal to total propane/propylene minus propylene.)

1976–1980: EIA, Energy Data Reports, *Petroleum Statement, Annual,* annual reports, and estimates. (Refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Chemical Use"; and estimates for propane are equal to total propane/propylene minus propylene.)

1981–2019: EIA, *Petroleum Supply Annual*, annual reports, unpublished revisions, and estimates. (For 1981–1985, refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Petrochemical Use"; and estimates for propane are equal to total propane/propylene minus propylene. For 1986–1988, refinery and blender net production estimates for propylene are created using the 1989 annual propylene share of "Net Refinery Production of Propane/Propylene"; and estimates for propane are equal to total propane/propylene minus propylene.)

2020: EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Table 3.5 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports; and U.S. Energy Information Administration (EIA) estimates. (For 1949–1966, product supplied estimates for total propane/propylene are created using sales and shipments data from Bureau of Mines, Mineral Industry Surveys, *Sales of Liquefied Petroleum Gases and Ethane,* annual reports, and *Shipments of Liquefied Petroleum Gases and Ethane,* annual reports–annual growth rates of sales and shipments are applied to the 1967 total propane/propylene product supplied value to create historical annual estimates. For 1949–1966, product supplied estimates for propylene are created using the 1967 annual propylene share of total propane/propylene product supplied; and estimates for propane are equal to total propane/propylene minus propylene. For 1967–1975, product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene.)

1976–1980: EIA, Energy Data Reports, *Petroleum Statement, Annual,* annual reports, and estimates. (Product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene.)

1981–2019: EIA, *Petroleum Supply Annual*, annual reports, unpublished revisions, and estimates. (For 1981–1992, product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene. For 1993–2009, product supplied

estimates for propylene are equal to propylene refinery and blender net production from Table 3.2, plus propylene imports from Table 3.3b; and estimates for propane are equal to total propane/propylene minus propylene.)

2020: EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Table 3.6 Sources

Asphalt and Road Oil

Product supplied data in thousand barrels per day for asphalt and road oil are from Table 3.5, and are converted to trillion Btu by multiplying by the asphalt and road oil heat content factor in Table A1.

Aviation Gasoline

Product supplied data in thousand barrels per day for aviation gasoline are from Table 3.5, and are converted to trillion Btu by multiplying by the aviation gasoline (finished) heat content factor in Table A1.

Distillate Fuel Oil

1949–2008: Product supplied data in thousand barrels per day for distillate fuel oil are from Table 3.5, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Consumption data for other renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Product supplied data for distillate fuel oil from Table 3.5, minus consumption data for biodiesel and other renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total distillate fuel oil product supplied is the sum of values for distillate fuel oil (excluding biodiesel and other renewable diesel fuel), biodiesel, and other renewable diesel fuel.

2012 forward: Consumption data for biodiesel are from Table 10.4. Consumption data for other renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Product supplied data for distillate fuel oil from Table 3.5, minus consumption data for biodiesel and other renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total distillate fuel oil product supplied is the sum of the values for distillate fuel oil (excluding biodiesel and other renewable diesel fuel), biodiesel, and other renewable diesel fuel.

Hydrocarbon Gas Liquids (HGL)—Propane

Product supplied data in thousand barrels per day for propane are from Table 3.5, and are converted to trillion Btu by multiplying by the propane heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Propylene

Product supplied data in thousand barrels per day for propylene are from Table 3.5, and are converted to trillion Btu by multiplying by the propylene heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total

Prior to the current two months, total propane/propylene product supplied is the sum of the data in trillion Btu for propane and propylene.

For the current two months, product supplied data in thousand barrels per day for total propane/propylene are from Table 3.5, and are converted to trillion Btu by multiplying by the propane/propylene heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Total

Prior to the current two months, product supplied data in thousand barrels per day for the component products of HGL (ethane, propane, normal butane, isobutane, natural gasoline, and refinery olefins—ethylene, propylene, butylene, and isobutylene) are from the PSA, PSM, and earlier publications (see sources for Table 3.5). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total HGL product supplied is the sum of the data in trillion Btu for the HGL component products.

For the current two months: Note that "liquefied petroleum gases" ("LPG") below include ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene), but exclude natural gasoline. Product supplied data in thousand barrels per day for LPG are from EIA's Short-Term Integrated Forecasting System (STIFS). (The STIFS model results are used in EIA's *Short-Term Energy Outlook*, which is accessible on the Web at https://www.eia.gov/outlooks/steo/.) These data are converted to trillion Btu by multiplying by the previous year's quantity-weighted LPG heat content factor (derived using LPG component heat content factors in Table A1). Product supplied data in thousand barrels per day for natural gasoline are from STIFS, and are converted to trillion Btu by multiplying by the natural gasoline heat content factor in Table A1. Total HGL product supplied is the sum of the data in trillion Btu for LPG and natural gasoline.

Jet Fuel

Product supplied data in thousand barrels per day for kerosene-type jet fuel and, through 2004, naphtha-type jet fuel are from the PSA, PSM, and earlier publications (see sources for Table 3.5). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total jet fuel product supplied is the sum of the data in trillion Btu for kerosene-type and naphtha-type jet fuel.

Kerosene

Product supplied data in thousand barrels per day for kerosene are from Table 3.5, and are converted to trillion Btu by multiplying by the kerosene heat content factor in Table A1.

Lubricants

Product supplied data in thousand barrels per day for lubricants are from Table 3.5, and are converted to trillion Btu by multiplying by the lubricants heat content factor in Table A1.

Motor Gasoline

Product supplied data in thousand barrels per day for motor gasoline are from Table 3.5, and are converted to trillion Btu by multiplying by the motor gasoline heat content factors in Table A3.

Other Petroleum Products

Prior to the current two months, product supplied data in thousand barrels per day for "other" petroleum products are from the PSA, PSM, and earlier publications (see sources for Table 3.5). "Other" petroleum products include petrochemical feedstocks, special naphthas, still gas (refinery gas), waxes, and miscellaneous products; 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; and beginning in 2005, also includes naphtha-type jet fuel. These data are converted to trillion Btu by multiplying by the appropriate heat content factors in MER Table A1. Total "Other" petroleum product supplied is the sum of the data in trillion Btu for the individual products.

For the current two months, total "Other" petroleum products supplied is calculated by first estimating total petroleum products supplied (product supplied data in thousand barrels per day for total petroleum from Table 3.5 are converted to trillion Btu by multiplying by the total petroleum consumption heat content factor in Table A3), and then subtracting data in trillion Btu (from Table 3.6) for asphalt and road oil, aviation gasoline, distillate fuel oil, jet fuel, kerosene, total HGL, lubricants, motor gasoline, petroleum coke, and residual fuel oil.

Petroleum Coke

Product supplied data in thousand barrels per day for petroleum coke are from Table 3.5, and are converted to trillion Btu by multiplying by the petroleum coke heat content factors in Table A3.

Residual Fuel Oil
Product supplied data in thousand barrels per day for residual fuel oil are from Table 3.5, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Total Petroleum
Total petroleum products supplied is the sum of the data in trillion Btu for the products (except "Propane") shown in Table 3.6.

Tables 3.7a–3.7c Sources

Petroleum consumption data for 1949–1972 are from the following sources:

1949–1959: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports, and U.S. Energy Information Administration (EIA) estimates.

1960–1972: EIA, State Energy Data System.

Petroleum consumption data beginning in 1973 are derived from data for "petroleum products supplied" from the following sources:

1973–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement Annual*, annual reports.

1976–1980: EIA, Energy Data Reports, *Petroleum Statement Annual*, annual reports.

1981–2019: EIA, *Petroleum Supply Annual* (PSA), annual reports, and unpublished revisions.

2020: EIA, *Petroleum Supply Monthly* (PSM), monthly reports.

Beginning in 1973, energy-use allocation procedures by individual product are as follows:

Asphalt and Road Oil
All consumption of asphalt and road oil is assigned to the industrial sector.

Aviation Gasoline
All consumption of aviation gasoline is assigned to the transportation sector.

Distillate Fuel Oil
Distillate fuel oil consumption is assigned to the sectors as follows:

Distillate Fuel Oil, Electric Power Sector
See sources for Table 7.4b. For 1973–1979, electric utility consumption of distillate fuel oil is assumed to be the amount of petroleum (minus small amounts of kerosene and kerosene-type jet fuel deliveries) consumed in gas turbine and internal combustion plants. For 1980–2000, electric utility consumption of distillate fuel oil is assumed to be the amount of light oil (fuel oil nos. 1 and 2, plus small amounts of kerosene and jet fuel) consumed.

Distillate Fuel Oil, End-Use Sectors, Annual Data
The aggregate end-use amount is total distillate fuel oil product supplied minus the amount consumed by the electric power sector. The end-use total consumed annually is allocated to the individual end-use sectors (residential, commercial, industrial, and transportation) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-0535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172). Shares for the current year are based on the most recent Sales report.

Following are notes on the individual sector groupings:

Beginning in 1979, the residential sector sales total is directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares.

Beginning in 1979, the commercial sector sales total is directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares.

Beginning in 1979, the industrial sector sales total is the sum of the sales for industrial, farm, oil company, off-highway diesel, and all other uses. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares, and this estimated industrial portion is added to oil company, off-highway diesel, and all other uses.

The transportation sector sales total is the sum of the sales for railroad, vessel bunkering, on-highway diesel, and military uses for all years.

Distillate Fuel Oil, End-Use Sectors, Monthly Data

Residential sector and commercial sector monthly consumption is estimated by allocating the annual estimates, which are described above, into the months in proportion to each month's share of the year's sales of No. 2 heating oil. (For each month of the current year, the residential and commercial consumption increase from the same month in the previous year is based on the percent increase in that month's No. 2 heating oil sales from the same month in the previous year.) The years' No. 2 heating oil sales totals are from the following sources: for 1973–1980, the Ethyl Corporation, *Monthly Report of Heating Oil Sales*; for 1981 and 1982, the American Petroleum Institute, *Monthly Report of Heating Oil Sales*; and for 1983 forward, EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale.

The transportation highway use portion is allocated into the months in proportion to each month's share of the year's total sales for highway use as reported by the Federal Highway Administration's Table MF-25, "Private and Commercial Highway Use of Special Fuels by Months." Beginning in 1994, the sales-for-highway-use data are no longer available as a monthly series; the 1993 data are used for allocating succeeding year's totals into months.

A distillate fuel oil "balance" is calculated as total distillate fuel oil product supplied minus the amount consumed by the electric power sector, residential sector, commercial sector, and for highway use.

Industrial sector monthly consumption is estimated by multiplying each month's distillate fuel oil "balance" by the annual industrial consumption share of the annual distillate fuel oil "balance."

Total transportation sector monthly consumption is estimated as total distillate fuel oil product supplied minus the amount consumed by the residential, commercial, industrial, and electric power sectors.

Hydrocarbon Gas Liquids (HGL)—Propane

Annual residential sector propane consumption: Through 2002, annual residential sector propane consumption is estimated by applying the average of the state residential shares for 2003–2008 to the combined residential and commercial propane sales. Beginning in 2003, annual residential sector propane consumption is assumed to equal propane retail sales to the residential sector and sales to retailers/cylinder markets.

Monthly residential sector propane consumption: Beginning in 1973, annual residential sector propane consumption is split into the estimated portion for residential space heating and water heating, and the estimated portion for all other residential uses. The annual values in thousand barrels for residential space heating and water heating are allocated to the months in proportion to U.S. heating degree days in Table 1.9. The annual values in thousand barrels for all other residential uses are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month. Monthly total residential sector propane consumption is the sum of the monthly values for residential space heating and water heating and for all other residential uses.

Annual commercial sector propane consumption: Through 2002, annual commercial sector propane consumption is equal to the combined residential and commercial propane sales minus residential sector propane consumption. Beginning in 2003, annual commercial sector propane consumption is assumed to equal commercial sector propane sales.

Monthly commercial sector propane consumption: Beginning in 1973, annual commercial sector propane consumption is split into the estimated portion for commercial space heating and water heating, and the estimated portion for all other commercial uses. The annual values in thousand barrels for commercial space heating and water heating are allocated to the months in proportion to U.S. heating degree days in Table 1.9. The annual values in thousand barrels for all other commercial uses are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month. Monthly total commercial sector propane consumption is the sum of the monthly values for commercial space heating and water heating and for all other commercial uses.

Annual transportation sector propane consumption: Through 2009, annual transportation sector propane consumption is assumed to equal the transportation portion of propane sales for internal combustion engines (these sales are allocated between the transportation and industrial sectors using data for special fuels used on highways provided by the U.S. Department of Transportation, Federal Highway Administration). Beginning in 2010, annual transportation sector propane consumption is from EIA, *Annual Energy Outlook,* Table 37, "Transportation Sector Energy Use by Fuel Type within a Mode."

Monthly transportation sector propane consumption: Beginning in 1973, the annual values in thousand barrels for transportation sector propane consumption are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month.

Annual and monthly industrial sector propane consumption: Industrial sector propane consumption is estimated as the difference between propane total product supplied from Table 3.5 and the sum of the estimated propane consumption by the residential, commercial, and transportation sectors.

Sources of the annual consumption estimates for creating annual sector shares are:

1973–1982: EIA's "Sales of Liquefied Petroleum Gases and Ethane" reports, based primarily on data collected by Form EIA-174, "Sales of Liquefied Petroleum Gases."

1983: End-use consumption estimates for 1983 are based on 1982 end-use consumption because the collection of data under Form EIA-174 was discontinued after data year 1982.

1984–2007: American Petroleum Institute (API), "Sales of Natural Gas Liquids and Liquefied Refinery Gases," table on sales of natural gas liquids and liquefied refinery gases by end use. EIA adjusts the data to remove quantities of natural gasoline and to estimate withheld values.

2008 and 2009: Propane consumption is from API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," table on sales of propane by end use. EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

2010–2016: Propane consumption is from API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," table on sales of odorized propane by end use; and EIA, *Annual Energy Outlook*, Table 37, "Transportation Sector Energy Use by Fuel Type Within a Mode." EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

2017 forward: Propane consumption is from Propane Education & Research Council, "Retail Propane Sales Report," data on propane sales by sector; and EIA, *Annual Energy Outlook,* Table 37, "Transportation Sector Energy Use by Fuel Type Within a Mode." EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

Hydrocarbon Gas Liquids (HGL)—Propylene

Industrial sector propylene consumption is equal to propylene product supplied in Table 3.5.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total

Industrial sector total propane/propylene consumption is the sum of the industrial sector consumption values for propane and propylene.

Hydrocarbon Gas Liquids (HGL)—Total

The residential, commercial, and transportation sector total HGL consumption values are equal to the propane consumption values for those sectors. The industrial sector total HGL consumption value is equal to total HGL product supplied in Table 3.5 minus propane consumption in the residential, commercial, and transportation sectors.

Jet Fuel

Through 1982, small amounts of kerosene-type jet fuel were consumed by the electric power sector. Kerosene-type jet fuel deliveries to the electric power sector as reported on Form FERC-423 (formerly Form FPC-423) were used as estimates of this consumption. Through 2004, all remaining jet fuel (kerosene-type and naphtha-type) is assigned to the transportation sector. Beginning in 2005, kerosene-type jet fuel is assigned to the transportation sector, while naphtha-type jet fuel is classified under "Other Petroleum Products," which is assigned to the industrial sector. (Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.)

Kerosene

Kerosene product supplied is allocated to the individual end-use sectors (residential, commercial, and industrial) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-0535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172).

Beginning in 1979, the residential sector sales total is directly from the Sales reports. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial, and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, the commercial sector sales total is directly from the Sales reports. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial, and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, the industrial sector sales total is the sum of the sales for industrial, farm, and all other uses. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial and industrial sectors in proportion to the 1979 shares, and the estimated industrial (including farm) portion is added to all other uses.

Lubricants

1973–2009: The consumption of lubricants is allocated to the industrial and transportation sectors for all months according to proportions developed from annual sales of lubricants to the two sectors from U.S. Department of Commerce, U.S. Census Bureau, *Current Industrial Reports*, "Sales of Lubricating and Industrial Oils and Greases." The 1973 shares are applied to 1973 and 1974; the 1975 shares are applied to 1975 and 1976; and the 1977 shares are applied to 1977 through 2009.

2010 forward: The consumption of lubricants in the industrial sector is estimated by EIA based on Kline & Company data on finished lubricant demand for industrial (less marine and railroad) use. The consumption of lubricants in the transportation sector is estimated by EIA based on Kline & Company data on finished lubricant demand for consumer total, commercial total, marine, and railroad use. Estimates for lubricant consumption from 2010 forward are not compatible with data before 2010.

Motor Gasoline

The total monthly consumption of motor gasoline is allocated to the sectors in proportion to aggregations of annual sales categories created on the basis of the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Tables MF-21, MF-24, and MF-25, as follows:

Through 2014, commercial sales are the sum of sales for public non-highway use and miscellaneous use. Beginning in 2015, commercial sales are the sum of sales for public non-highway use, lawn and garden use, and miscellaneous use.

For all years, industrial sales are the sum of sales for agriculture, construction, and "industrial and commercial" use (as classified in the *Highway Statistics*).

Through 2014, transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for marine use. Beginning in 2015, transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for boating use and recreational vehicle use.

Petroleum Coke

Portions of petroleum coke are consumed by the electric power sector (see sources for Table 7.4b) and the commercial sector (see sources for Table 7.4c). The remaining petroleum coke is assigned to the industrial sector.

Residual Fuel Oil

Residual fuel oil consumption is assigned to the sectors as follows:

Residual Fuel Oil, Electric Power Sector

See sources for Table 7.4b. For 1973–1979, electric utility consumption of residual fuel oil is assumed to be the amount of petroleum consumed in steam-electric power plants. For 1980–2000, electric utility consumption of residual fuel oil is assumed to be the amount of heavy oil (fuel oil nos. 4, 5, and 6) consumed.

Residual Fuel Oil, End-Use Sectors, Annual Data

The aggregate end-use amount is total residual fuel oil product supplied minus the amount consumed by the electric power sector. The end-use total consumed annually is allocated to the individual end-use sectors (commercial, industrial, and transportation) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172). Shares for the current year are based on the most recent Sales report.

Following are notes on the individual sector groupings:

Beginning in 1979, commercial sales data are directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is allocated to the commercial and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, industrial sales data are the sum of sales for industrial, oil company, and all other uses. Through 1978, each year's sales subtotal of the heating plus industrial category is allocated to the commercial and industrial sectors in proportion to the 1979 shares, and the estimated industrial portion is added to oil company and all other uses.

Transportation sales are the sum of sales for railroad, vessel bunkering, and military uses for all years.

Residual Fuel Oil, End-Use Sectors, Monthly Data

Commercial sector monthly consumption is estimated by allocating the annual estimates, which are described above, into the months in proportion to each month's share of the year's sales of No. 2 heating oil. (For each month of the current year, the consumption increase from the same month in the previous year is based on the percent increase in that month's No. 2 heating oil sales from the same month in the previous year.) The years' No. 2 heating oil sales totals are from the following sources: for 1973–1980, the Ethyl Corporation, *Monthly Report of Heating Oil Sales*; for 1981 and 1982, the American Petroleum Institute, *Monthly Report of Heating Oil Sales*; and for 1983 forward, EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale.

A residual fuel oil "balance" is calculated as total residual fuel oil product supplied minus the amount consumed by the electric power sector, commercial sector, and by industrial combined-heat-and-power plants (see sources for Table 7.4c).

Transportation sector monthly consumption is estimated by multiplying each month's residual fuel oil "balance" by the annual transportation consumption share of the annual residual fuel oil "balance."

Total industrial sector monthly consumption is estimated as total residual fuel oil product supplied minus the amount consumed by the commercial, transportation, and electric power sectors.

Other Petroleum Products

Consumption of all remaining petroleum products is assigned to the industrial sector. Other petroleum products include petrochemical feedstocks, special naphthas, still gas (refinery gas), waxes, and miscellaneous products. 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.

Table 3.8a Sources

Distillate Fuel Oil

Residential and commercial sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7a, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Hydrocarbon Gas Liquids (HGL)—Propane

Residential and commercial sector consumption data in thousand barrels per day for propane are from Table 3.7a, and are converted to trillion Btu by multiplying by the propane heat content factor in Table A1. The residential and commercial sector total HGL consumption values are equal to the propane consumption values for those sectors.

Kerosene

Residential and commercial sector consumption data in thousand barrels per day for kerosene are from Table 3.7a, and are converted to trillion Btu by multiplying by the kerosene heat content factor in Table A1.

Motor Gasoline

Commercial sector consumption data in thousand barrels per day for motor gasoline are from Table 3.7a, and are converted to trillion Btu by multiplying by the motor gasoline heat content factors in Table A3.

Petroleum Coke

1949–2003: Commercial sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7a, and are converted to trillion Btu by multiplying by the total petroleum coke heat content factor in Table A1.

2004 forward: Commercial sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7a, and are converted to trillion Btu by multiplying by the marketable petroleum coke heat content factor in Table A1.

Residual Fuel Oil

Commercial sector consumption data in thousand barrels per day for residual fuel oil are from Table 3.7a, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Total Petroleum

Residential sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Residential Sector" in Table 3.8a. Commercial sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Commercial Sector" in Table 3.8a.

Table 3.8b Sources

Asphalt and Road Oil

Industrial sector consumption data in thousand barrels per day for asphalt and road oil are from Table 3.7b, and are converted to trillion Btu by multiplying by the asphalt and road oil heat content factor in Table A1.

Distillate Fuel Oil
Industrial sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7b, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Hydrocarbon Gas Liquids (HGL)—Propane
Industrial sector propane consumption data are calculated by subtracting propane consumption data in trillion Btu for the residential (Table 3.8a), commercial (Table 3.8a), and transportation (Table 3.8c) sectors from total propane consumption (see sources for Table 3.6).

Hydrocarbon Gas Liquids (HGL)—Propylene
Product supplied data in thousand barrels per day for propylene are from Table 3.5, and are converted to trillion Btu by multiplying by the propylene heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total
Total industrial sector propane/propylene consumption is the sum of the data in trillion Btu for propane and propylene.

Hydrocarbon Gas Liquids (HGL)—Total
Industrial sector consumption data for HGL are calculated by subtracting HGL consumption data in trillion Btu for the residential (Table 3.8a), commercial (Table 3.8a), and transportation (Table 3.8c) sectors from total HGL consumption (Table 3.6).

Kerosene
Industrial sector consumption data in thousand barrels per day for kerosene are from Table 3.7b, and are converted to trillion Btu by multiplying by the kerosene heat content factor in Table A1.

Lubricants
Industrial sector consumption data in thousand barrels per day for lubricants are from Table 3.7b, and are converted to trillion Btu by multiplying by the lubricants heat content factor in Table A1.

Motor Gasoline
Industrial sector consumption data in thousand barrels per day for motor gasoline are from Table 3.7b, and are converted to trillion Btu by multiplying by the motor gasoline heat content factors in Table A3.

Other Petroleum Products
Industrial sector "Other" petroleum data are equal to the "Other" petroleum data in Table 3.6.

Petroleum Coke
1949–2003: Industrial sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7b, and are converted to trillion Btu by multiplying by the total petroleum coke heat content factor in Table A1.

2004 forward: Industrial sector consumption data for petroleum coke are calculated by subtracting petroleum coke consumption data in trillion Btu for the commercial (Table 3.8a) and electric power (Table 3.8c) sectors from total petroleum coke consumption (Table 3.6).

Residual Fuel Oil
Industrial sector consumption data in thousand barrels per day for residual fuel oil are from Table 3.7b, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Total Petroleum
Industrial sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown in Table 3.8b.

Table 3.8c Sources

Aviation Gasoline

Transportation sector consumption data in thousand barrels per day for aviation gasoline are from Table 3.7c, and are converted to trillion Btu by multiplying by the aviation gasoline (finished) heat content factor in Table A1.

Distillate Fuel Oil, Electric Power Sector

Electric power sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7c, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Distillate Fuel Oil, Transportation Sector

1949–2008: Transportation sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7c, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Consumption data for other renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Transportation sector distillate fuel oil consumption data from Table 3.7c, minus consumption data for biodiesel and other renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel heat content factors in Table A3. Total transportation sector distillate fuel oil consumption is the sum of the values for distillate fuel oil (excluding biodiesel and other renewable diesel fuel), biodiesel, and other renewable diesel fuel.

2012 forward: Consumption data for biodiesel are from Table 10.4. Consumption data for other renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Transportation sector distillate fuel oil consumption data from Table 3.7c, minus consumption data for biodiesel and other renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total transportation sector distillate fuel oil consumption is the sum of the values for distillate fuel oil (excluding biodiesel and other renewable diesel fuel), biodiesel, and other renewable diesel fuel.

Hydrocarbon Gas Liquids (HGL)—Propane

Transportation sector consumption data in thousand barrels per day for propane are from Table 3.7c, and are converted to trillion Btu by multiplying by the propane heat content factor in Table A1. The transportation sector total HGL consumption values are equal to the transportation sector propane consumption values.

Jet Fuel

Transportation sector consumption data in thousand barrels per day for kerosene-type jet fuel and, through 2004, naphtha-type jet fuel (see sources for Table 3.7c) are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total transportation sector jet fuel consumption is the sum of the data in trillion Btu for kerosene-type and naphtha-type jet fuel. (Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.)

Lubricants

Transportation sector consumption data in thousand barrels per day for lubricants are from Table 3.7c, and are converted to trillion Btu by multiplying by the lubricants heat content factor in Table A1.

Motor Gasoline

Transportation sector consumption data in thousand barrels per day for motor gasoline are from Table 3.7c, and are converted to trillion Btu by multiplying by the motor gasoline heat content factors in Table A3.

Petroleum Coke

1949–2003: Electric power sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7c, and are converted to trillion Btu by multiplying by the total petroleum coke heat content factor in Table A1.

2004 forward: Electric power sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7c, and are converted to trillion Btu by multiplying by the marketable petroleum coke heat content factor in Table A1.

Residual Fuel Oil

Transportation and electric power consumption data in thousand barrels per day for residual fuel oil are from Table 3.7c, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Total Petroleum

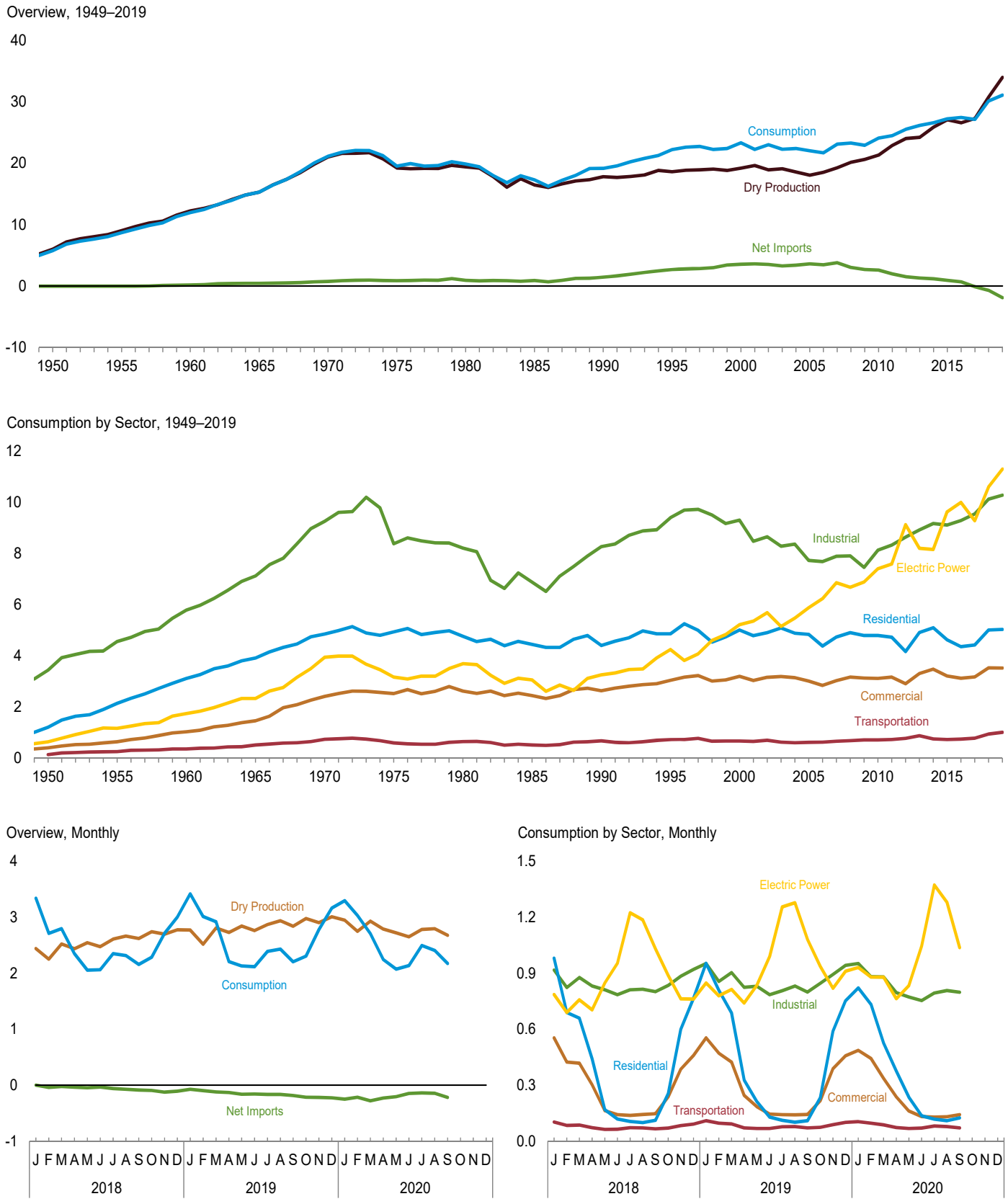
Transportation sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Transportation Sector" in Table 3.8c. Electric power sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Electric Power Sector" in Table 3.8c.

THIS PAGE INTENTIONALLY LEFT BLANK

4. Natural Gas

Figure 4.1 Natural Gas

(Trillion Cubic Feet)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#naturalgas.
Sources: Tables 4.1 and 4.3.

Table 4.1 Natural Gas Overview

(Billion Cubic Feet)

	Gross Withdrawals[a]	Marketed Production (Wet)[b]	NGPL Production[c]	Dry Gas Production[d]	Supplemental Gaseous Fuels[e]	Trade			Net Storage Withdrawals[f]	Balancing Item[g]	Consumption[h]
						Imports	Exports	Net Imports			
1950 Total	**8,480**	**[i] 6,282**	**260**	**[i] 6,022**	**NA**	**0**	**26**	**-26**	**-54**	**-175**	**5,767**
1955 Total	**11,720**	**[i] 9,405**	**377**	**[i] 9,029**	**NA**	**11**	**31**	**-20**	**-68**	**-247**	**8,694**
1960 Total	**15,088**	**[i] 12,771**	**543**	**[i] 12,228**	**NA**	**156**	**11**	**144**	**-132**	**-274**	**11,967**
1965 Total	**17,963**	**[i] 16,040**	**753**	**[i] 15,286**	**NA**	**456**	**26**	**430**	**-118**	**-319**	**15,280**
1970 Total	**23,786**	**[i] 21,921**	**906**	**[i] 21,014**	**NA**	**821**	**70**	**751**	**-398**	**-228**	**21,139**
1975 Total	**21,104**	**[i] 20,109**	**872**	**[i] 19,236**	**NA**	**953**	**73**	**880**	**-344**	**-235**	**19,538**
1980 Total	**21,870**	**20,180**	**777**	**19,403**	**155**	**985**	**49**	**936**	**23**	**-640**	**19,877**
1985 Total	**19,607**	**17,270**	**816**	**16,454**	**126**	**950**	**55**	**894**	**235**	**-428**	**17,281**
1990 Total	**21,523**	**18,594**	**784**	**17,810**	**123**	**1,532**	**86**	**1,447**	**-513**	**307**	**[j] 19,174**
1995 Total	**23,744**	**19,506**	**908**	**18,599**	**110**	**2,841**	**154**	**2,687**	**415**	**396**	**22,207**
2000 Total	**24,174**	**20,198**	**1,016**	**19,182**	**90**	**3,782**	**244**	**3,538**	**829**	**-306**	**23,333**
2001 Total	**24,501**	**20,570**	**954**	**19,616**	**86**	**3,977**	**373**	**3,604**	**-1,166**	**99**	**22,239**
2002 Total	**23,941**	**19,885**	**957**	**18,928**	**68**	**4,015**	**516**	**3,499**	**467**	**65**	**23,027**
2003 Total	**24,119**	**19,974**	**876**	**19,099**	**68**	**3,944**	**680**	**3,264**	**-197**	**44**	**22,277**
2004 Total	**23,970**	**19,517**	**927**	**18,591**	**60**	**4,259**	**854**	**3,404**	**-114**	**461**	**22,403**
2005 Total	**23,457**	**18,927**	**876**	**18,051**	**64**	**4,341**	**729**	**3,612**	**52**	**236**	**22,014**
2006 Total	**23,535**	**19,410**	**906**	**18,504**	**66**	**4,186**	**724**	**3,462**	**-436**	**103**	**21,699**
2007 Total	**24,664**	**20,196**	**930**	**19,266**	**63**	**4,608**	**822**	**3,785**	**192**	**-203**	**23,104**
2008 Total	**25,636**	**21,112**	**953**	**20,159**	**61**	**3,984**	**963**	**3,021**	**34**	**2**	**23,277**
2009 Total	**26,057**	**21,648**	**1,024**	**20,624**	**65**	**3,751**	**1,072**	**2,679**	**-355**	**-103**	**22,910**
2010 Total	**26,816**	**22,382**	**1,066**	**21,316**	**65**	**3,741**	**1,137**	**2,604**	**-13**	**115**	**24,087**
2011 Total	**28,479**	**24,036**	**1,134**	**22,902**	**60**	**3,469**	**1,506**	**1,963**	**-354**	**-94**	**24,477**
2012 Total	**29,542**	**25,283**	**1,250**	**24,033**	**61**	**3,138**	**1,619**	**1,519**	**-9**	**-66**	**25,538**
2013 Total	**29,523**	**25,562**	**1,357**	**24,206**	**55**	**2,883**	**1,572**	**1,311**	**546**	**38**	**26,155**
2014 Total	**31,405**	**27,498**	**1,608**	**25,890**	**60**	**2,695**	**1,514**	**1,181**	**-254**	**-283**	**26,593**
2015 Total	**32,915**	**28,772**	**1,707**	**27,065**	**59**	**2,718**	**1,784**	**935**	**-547**	**-268**	**27,244**
2016 Total	**32,592**	**28,400**	**1,808**	**26,592**	**57**	**3,006**	**2,335**	**671**	**340**	**-216**	**27,444**
2017 Total	**33,292**	**29,204**	**1,897**	**27,306**	**66**	**3,033**	**3,154**	**-121**	**254**	**-360**	**27,146**
2018 January	2,993	2,618	177	2,441	6	300	300	(s)	913	-19	3,341
February	2,751	2,414	163	2,251	5	237	276	-38	477	16	2,711
March	3,069	2,704	183	2,521	6	271	291	-21	293	-2	2,797
April	2,976	2,613	177	2,436	5	242	279	-37	-37	-17	2,351
May	3,099	2,731	185	2,546	6	227	272	-45	-433	-18	2,055
June	2,973	2,656	180	2,476	6	228	262	-34	-358	-27	2,063
July	3,138	2,799	189	2,610	6	247	306	-59	-194	-12	2,351
August	3,206	2,856	193	2,662	6	237	311	-74	-244	-36	2,314
September	3,154	2,809	190	2,619	6	214	302	-88	-344	-37	2,156
October	3,315	2,939	199	2,740	6	215	307	-92	-299	-70	2,286
November	3,260	2,894	196	2,698	6	212	338	-125	212	-75	2,716
December	3,391	2,976	201	2,774	6	257	364	-107	329	-3	3,000
Total	**37,326**	**33,009**	**2,235**	**30,774**	**69**	**2,889**	**3,608**	**-719**	**314**	**-299**	**30,140**
2019 January	3,385	2,981	208	2,773	5	291	365	-74	730	-17	3,417
February	3,067	2,709	189	2,520	5	233	330	-97	586	-1	3,013
March	3,396	3,019	211	2,809	5	253	374	-121	257	-28	2,922
April	3,329	2,934	205	2,729	5	207	338	-132	-401	8	2,209
May	3,432	3,055	213	2,842	5	208	369	-161	-494	-62	2,131
June	3,317	2,969	207	2,761	5	201	360	-159	-452	-39	2,117
July	3,412	3,084	215	2,869	5	230	393	-163	-270	-50	2,391
August	3,467	3,159	220	2,939	5	220	385	-165	-303	-46	2,430
September	3,399	3,054	213	2,841	5	208	395	-186	-440	-17	2,203
October	3,571	3,200	223	2,977	5	211	426	-215	-364	-98	2,305
November	3,496	3,120	218	2,902	5	224	441	-218	159	-71	2,778
December	3,621	3,232	226	3,007	5	256	481	-225	433	-58	3,163
Total	**40,892**	**36,515**	**2,548**	**33,968**	**62**	**2,742**	**4,656**	**-1,915**	**-558**	**-478**	**31,079**
2020 January	[RE] 3,590	[RE] 3,182	234	[RE] 2,948	6	262	510	-248	571	[R] 20	3,296
February	[RE] 3,342	[RE] 2,959	212	[RE] 2,747	6	238	454	-216	535	[R] -40	3,033
March	[RE] 3,561	[RE] 3,166	235	[RE] 2,931	6	217	497	-280	49	[R] 3	2,708
April	[RE] 3,372	[RE] 3,002	214	[RE] 2,788	6	193	421	-227	-306	[R] -15	2,245
May	[RE] 3,298	[RE] 2,934	212	[RE] 2,722	5	189	395	-206	-448	[R] -2	2,071
June	[RE] 3,225	[RE] 2,876	226	[RE] 2,650	5	190	338	-149	-358	[R] -14	2,135
July	[RE] 3,383	[RE] 3,023	241	[RE] 2,783	6	213	349	-136	-161	[R] 4	[R] 2,494
August	[RE] 3,383	[RE] 3,032	238	[RE] 2,794	4	214	359	-145	-228	[R] -19	[R] 2,406
September	[E] 3,267	[E] 2,908	230	[E] 2,678	4	174	395	-220	-323	35	2,173
9-Month Total	**[E] 30,421**	**[E] 27,081**	**2,041**	**[E] 25,040**	**47**	**1,891**	**3,719**	**-1,828**	**-669**	**-28**	**22,562**
2019 9-Month Total	**30,205**	**26,963**	**1,881**	**25,082**	**45**	**2,051**	**3,308**	**-1,257**	**-787**	**-251**	**22,833**
2018 9-Month Total	**27,359**	**24,200**	**1,638**	**22,561**	**51**	**2,204**	**2,600**	**-396**	**73**	**-151**	**22,139**

[a] Gases withdrawn from natural gas, crude oil, coalbed, and shale gas wells. Includes natural gas, natural gas plant liquids, and nonhydrocarbon gases; but excludes lease condensate.

[b] Gross withdrawals minus repressuring, nonhydrocarbon gases removed, and vented and flared. See Note 1, "Natural Gas Production," at end of section.

[c] Natural gas plant liquids (NGPL) production, gaseous equivalent. This data series was previously called "Extraction Loss." See Note 2, "Natural Gas Plant Liquids Production," at end of section.

[d] Marketed production (wet) minus NGPL production.

[e] See Note 3, "Supplemental Gaseous Fuels," at end of section.

[f] Net withdrawals from underground storage. For 1980–2017, also includes net withdrawals of liquefied natural gas in above-ground tanks. See Note 4, "Natural Gas Storage," at end of section.

[g] See Note 5, "Natural Gas Balancing Item," at end of section. Beginning in 1980, excludes transit shipments that cross the U.S.-Canada border (i.e., natural gas delivered to its destination via the other country).

[h] See Note 6, "Natural Gas Consumption," at end of section.

[i] Through 1979, may include unknown quantities of nonhydrocarbon gases.

[j] 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 4.3. See Note 7, "Natural Gas Consumption, 1989–1992," at end of section.

R=Revised. E=Estimate. (s)=Less than 0.5 billion cubic feet and greater than -0.5 billion cubic feet. NA=Not available.

Notes: • See Note 8, "Natural Gas Data Adjustments, 1993–2000," at end of section. • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia (except Alaska, for which underground storage is excluded from "Net Storage Withdrawals" through 2012).

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#naturalgas (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Imports and Exports:** Table 4.2. • **Consumption:** Table 4.3. • **Balancing Item:** Calculated as consumption minus dry gas production, supplemental gaseous fuels, net imports, and net storage withdrawals. • **All Other Data: 1949–2019—**U.S. Energy Information Administration (EIA), *Natural Gas Annual*, annual reports. **2020 forward—**EIA, *Natural Gas Monthly,* November 2020, Table 1.

Table 4.2 Natural Gas Trade by Country

(Billion Cubic Feet)

	Imports									Exports[a]				
	Algeria[b]	Canada[c]	Egypt[b]	Mexico[c]	Nigeria[b]	Qatar[b]	Trinidad and Tobago[b]	Other[b,d]	Total	Canada[c]	Japan[b]	Mexico[c]	Other[b,e]	Total
1950 Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**23**	**0**	**26**
1955 Total	**0**	**11**	**0**	**(s)**	**0**	**0**	**0**	**0**	**11**	**11**	**0**	**20**	**0**	**31**
1960 Total	**0**	**109**	**0**	**47**	**0**	**0**	**0**	**0**	**156**	**6**	**0**	**6**	**0**	**11**
1965 Total	**0**	**405**	**0**	**52**	**0**	**0**	**0**	**0**	**456**	**18**	**0**	**8**	**0**	**26**
1970 Total	**1**	**779**	**0**	**(s)**	**0**	**0**	**0**	**0**	**821**	**11**	**44**	**15**	**0**	**70**
1975 Total	**5**	**948**	**0**	**0**	**0**	**0**	**0**	**0**	**953**	**10**	**53**	**9**	**0**	**73**
1980 Total	**86**	**797**	**0**	**102**	**0**	**0**	**0**	**0**	**985**	**(s)**	**45**	**4**	**0**	**49**
1985 Total	**24**	**926**	**0**	**0**	**0**	**0**	**0**	**0**	**950**	**(s)**	**53**	**2**	**0**	**55**
1990 Total	**84**	**1,448**	**0**	**0**	**0**	**0**	**0**	**0**	**1,532**	**17**	**53**	**16**	**0**	**86**
1995 Total	**18**	**2,816**	**0**	**7**	**0**	**0**	**0**	**0**	**2,841**	**28**	**65**	**61**	**0**	**154**
2000 Total	**47**	**3,544**	**0**	**12**	**13**	**46**	**99**	**21**	**3,782**	**73**	**66**	**106**	**0**	**244**
2001 Total	**65**	**3,729**	**0**	**10**	**38**	**23**	**98**	**14**	**3,977**	**167**	**66**	**141**	**0**	**373**
2002 Total	**27**	**3,785**	**0**	**2**	**8**	**35**	**151**	**8**	**4,015**	**189**	**63**	**263**	**0**	**516**
2003 Total	**53**	**3,437**	**0**	**0**	**50**	**14**	**378**	**11**	**3,944**	**271**	**66**	**343**	**0**	**680**
2004 Total	**120**	**3,607**	**0**	**0**	**12**	**12**	**462**	**46**	**4,259**	**395**	**62**	**397**	**0**	**854**
2005 Total	**97**	**3,700**	**73**	**9**	**8**	**3**	**439**	**11**	**4,341**	**358**	**65**	**305**	**0**	**729**
2006 Total	**17**	**3,590**	**120**	**13**	**57**	**0**	**389**	**0**	**4,186**	**341**	**61**	**322**	**0**	**724**
2007 Total	**77**	**3,783**	**115**	**54**	**95**	**18**	**448**	**18**	**4,608**	**482**	**47**	**292**	**2**	**822**
2008 Total	**0**	**3,589**	**55**	**43**	**12**	**3**	**267**	**15**	**3,984**	**559**	**39**	**365**	**0**	**963**
2009 Total	**0**	**3,271**	**160**	**28**	**13**	**13**	**236**	**29**	**3,751**	**701**	**31**	**338**	**3**	**1,072**
2010 Total	**0**	**3,280**	**73**	**30**	**42**	**46**	**190**	**81**	**3,741**	**739**	**33**	**333**	**32**	**1,137**
2011 Total	**0**	**3,117**	**35**	**3**	**2**	**91**	**129**	**92**	**3,469**	**937**	**18**	**499**	**52**	**1,506**
2012 Total	**0**	**2,963**	**3**	**(s)**	**0**	**34**	**112**	**26**	**3,138**	**971**	**14**	**620**	**14**	**1,619**
2013 Total	**0**	**2,786**	**0**	**1**	**3**	**7**	**70**	**17**	**2,883**	**911**	**0**	**661**	**0**	**1,572**
2014 Total	**0**	**2,635**	**0**	**1**	**0**	**0**	**43**	**16**	**2,695**	**770**	**13**	**729**	**3**	**1,514**
2015 Total	**0**	**2,626**	**0**	**1**	**0**	**0**	**71**	**20**	**2,718**	**701**	**8**	**1,054**	**20**	**1,784**
2016 Total	**0**	**2,918**	**0**	**1**	**0**	**0**	**84**	**3**	**3,006**	**771**	**11**	**1,405**	**148**	**2,335**
2017 Total	**0**	**2,955**	**0**	**1**	**6**	**0**	**70**	**0**	**3,033**	**917**	**53**	**1,671**	**513**	**3,154**
2018 January	0	283	0	(s)	0	0	14	3	300	91	4	147	58	300
February	0	230	0	1	0	0	7	0	237	76	7	140	52	276
March	0	264	0	(s)	0	0	4	3	271	68	0	161	63	291
April	0	239	0	(s)	0	0	3	0	242	63	11	142	64	279
May	0	225	0	(s)	0	0	2	0	227	40	13	151	68	272
June	0	226	0	(s)	0	0	3	0	228	51	10	164	37	262
July	0	241	0	1	0	0	5	0	247	57	13	172	64	306
August	0	231	0	1	0	0	5	0	237	66	10	175	60	311
September	0	211	0	(s)	0	0	3	0	214	70	17	161	54	302
October	0	209	0	(s)	0	0	6	0	215	65	3	159	80	307
November	0	210	0	(s)	0	0	3	0	212	90	24	147	77	338
December	0	242	0	(s)	3	0	12	0	257	100	14	152	98	364
Total	**0**	**2,811**	**0**	**3**	**3**	**0**	**66**	**6**	**2,889**	**836**	**126**	**1,871**	**775**	**3,608**
2019 January	0	276	0	(s)	0	0	12	3	291	87	17	165	95	365
February	0	226	0	(s)	0	0	7	0	233	92	10	142	86	330
March	0	249	0	(s)	0	0	3	0	253	93	7	157	117	374
April	0	204	0	(s)	0	0	3	0	207	71	14	150	102	338
May	0	208	0	(s)	0	0	0	0	208	70	7	174	117	369
June	0	201	0	(s)	0	0	0	0	201	62	15	173	110	360
July	0	228	0	(s)	0	0	3	0	230	69	21	192	111	393
August	0	217	0	(s)	0	0	3	0	220	78	18	182	107	385
September	0	208	0	(s)	0	0	0	0	208	72	28	173	122	395
October	0	205	0	(s)	0	0	6	0	211	76	25	178	147	426
November	0	221	0	(s)	0	0	3	0	224	92	18	162	170	441
December	0	245	0	1	3	0	7	0	256	109	21	161	189	481
Total	**0**	**2,687**	**0**	**2**	**3**	**0**	**47**	**3**	**2,742**	**972**	**201**	**2,010**	**1,474**	**4,656**
2020 January	0	249	0	(s)	2	0	9	3	262	99	32	168	211	510
February	0	232	0	(s)	0	0	6	0	238	77	21	154	201	454
March	0	214	0	(s)	0	0	3	(s)	217	87	22	174	215	497
April	0	190	0	(s)	0	0	3	0	193	72	18	139	192	421
May	0	187	0	(s)	0	0	3	0	189	68	14	145	169	395
June	0	185	0	(s)	3	0	2	0	190	67	22	163	87	338
July	0	209	0	(s)	0	0	4	0	213	72	11	181	86	349
August	0	211	0	(s)	0	0	3	0	214	61	23	189	86	359
September	0	173	0	(s)	0	0	1	0	174	62	7	185	141	395
9-Month Total	**0**	**1,849**	**0**	**2**	**4**	**0**	**34**	**3**	**1,891**	**664**	**169**	**1,498**	**1,388**	**3,719**
2019 9-Month Total	**0**	**2,017**	**0**	**1**	**0**	**0**	**31**	**3**	**2,051**	**694**	**138**	**1,509**	**968**	**3,308**
2018 9-Month Total	**0**	**2,150**	**0**	**3**	**0**	**0**	**46**	**6**	**2,204**	**582**	**85**	**1,413**	**520**	**2,600**

[a] Includes re-exports.

[b] As liquefied natural gas.

[c] By pipeline, except for small amounts of: liquefied natural gas (LNG) imported from Canada in 1973, 1977, 1981, and 2013 forward; LNG exported to Canada in 2007 and 2012 forward; compressed natural gas (CNG) imported from Canada in 2014 forward; CNG exported to Canada in 2013 forward; and LNG exported to Mexico beginning in 1998. See Note 9, "Natural Gas Imports and Exports," at end of section.

[d] Australia in 1997–2001 and 2004; Brunei in 2002; Equatorial Guinea in 2007; Indonesia in 1986 and 2000; Malaysia in 1999 and 2002–2005; Norway in 2008–2016; Oman in 2000–2005; Peru in 2010 and 2011; United Arab Emirates in 1996–2000; United Kingdom in 2018; Yemen in 2010–2015; and Other (unassigned) in 2004–2015.

[e] Argentina in 2016–2020; Bahamas in 2017–2020; Bangladesh 2019 and 2020; Barbados in 2016–2020; Belgium in 2019 and 2020; Brazil in 2010–2012, and 2014–2020; Chile in 2011, 2016–2020; China in 2011, 2016–2020; Colombia in 2018–2020, Dominican Republic in 2016–2020; Egypt in 2015–2018; France in 2018–2020; Greece in 2018–2020; Haiti 2019 and 2020; India in 2010–2012, 2016–2020; Israel 2018 and 2020; Italy in 2016–2020; Jamaica 2018–2020; Jordan in 2016–2020; Kuwait in 2016–2020; Lithuania in 2017 and 2019–2020; Malaysia in 2019; Malta in 2017–2020; Netherlands in 2017–2020; Pakistan in 2017–2020; Panama in 2018–2020; Poland in 2017–2020; Portugal in 2012, 2016–2020; Russia in 2007; Singapore in 2018–2020; South Korea in 2009–2011, 2016–2020; Spain in 2010–2011, 2016–2020; Taiwan in 2015, 2017–2020; Thailand in 2017, 2019–2020; Turkey in 2015–2020; United Arab Emirates in 2016–2020; and United Kingdom in 2010, 2011, 2017–2020.

(s)=Less than 500 million cubic feet.

Notes: • See Note 9, "Natural Gas Imports and Exports," at end of section. • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#naturalgas (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1954:** U.S. Energy Information Administration (EIA) estimates based on Bureau of Mines, Minerals Yearbook, "Natural Gas" chapter. • **1955–1971:** Federal Power Commission data. • **1972–1987:** EIA, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." • **1988–2019:** EIA, *Natural Gas Annual,* annual reports. • **2020 forward:** EIA, *Natural Gas Monthly,* October 2020, Tables 4 and 5; and U.S. Department of Energy, Office of Fossil Energy, "Natural Gas Imports and Exports."

Table 4.3 Natural Gas Consumption by Sector

(Billion Cubic Feet)

	End-Use Sectors											
			Industrial					Transportation				
				Other Industrial								
	Residential	Commercial[a]	Lease and Plant Fuel	CHP[b]	Non-CHP[c]	Total	Total	Pipelines[d] and Distribution[e]	Vehicle Fuel	Total	Electric Power Sector[f,g]	Total
1950 Total	**1,198**	**388**	**928**	([h])	**2,498**	**2,498**	**3,426**	**126**	**NA**	**126**	**629**	**5,767**
1955 Total	**2,124**	**629**	**1,131**	([h])	**3,411**	**3,411**	**4,542**	**245**	**NA**	**245**	**1,153**	**8,694**
1960 Total	**3,103**	**1,020**	**1,237**	([h])	**4,535**	**4,535**	**5,771**	**347**	**NA**	**347**	**1,725**	**11,967**
1965 Total	**3,903**	**1,444**	**1,156**	([h])	**5,955**	**5,955**	**7,112**	**501**	**NA**	**501**	**2,321**	**15,280**
1970 Total	**4,837**	**2,399**	**1,399**	([h])	**7,851**	**7,851**	**9,249**	**722**	**NA**	**722**	**3,932**	**21,139**
1975 Total	**4,924**	**2,508**	**1,396**	([h])	**6,968**	**6,968**	**8,365**	**583**	**NA**	**583**	**3,158**	**19,538**
1980 Total	**4,752**	**2,611**	**1,026**	([h])	**7,172**	**7,172**	**8,198**	**635**	**NA**	**635**	**3,682**	**19,877**
1985 Total	**4,433**	**2,432**	**966**	([h])	**5,901**	**5,901**	**6,867**	**504**	**NA**	**504**	**3,044**	**17,281**
1990 Total	**4,391**	**2,623**	**1,236**	**1,055**	[i] **5,963**	[i] **7,018**	**8,255**	**660**	**(s)**	**660**	[i] **3,245**	[i] **19,174**
1995 Total	**4,850**	**3,031**	**1,220**	**1,258**	**6,906**	**8,164**	**9,384**	**700**	**5**	**705**	**4,237**	**22,207**
2000 Total	**4,996**	**3,182**	**1,151**	**1,386**	**6,757**	**8,142**	**9,293**	**642**	**13**	**655**	**5,206**	**23,333**
2001 Total	**4,771**	**3,023**	**1,119**	**1,310**	**6,035**	**7,344**	**8,463**	**625**	**15**	**640**	**5,342**	**22,239**
2002 Total	**4,889**	**3,144**	**1,113**	**1,240**	**6,287**	**7,527**	**8,640**	**667**	**15**	**682**	**5,672**	**23,027**
2003 Total	**5,079**	**3,179**	**1,122**	**1,144**	**6,007**	**7,150**	**8,273**	**591**	**18**	**610**	**5,135**	**22,277**
2004 Total	**4,869**	**3,129**	**1,098**	**1,191**	**6,066**	**7,256**	**8,354**	**566**	**21**	**587**	**5,464**	**22,403**
2005 Total	**4,827**	**2,999**	**1,112**	**1,084**	**5,518**	**6,601**	**7,713**	**584**	**23**	**607**	**5,869**	**22,014**
2006 Total	**4,368**	**2,832**	**1,142**	**1,115**	**5,412**	**6,527**	**7,669**	**584**	**24**	**608**	**6,222**	**21,699**
2007 Total	**4,722**	**3,013**	**1,226**	**1,050**	**5,604**	**6,655**	**7,881**	**621**	**25**	**646**	**6,841**	**23,104**
2008 Total	**4,892**	**3,153**	**1,220**	**955**	**5,715**	**6,670**	**7,890**	**648**	**26**	**674**	**6,668**	**23,277**
2009 Total	**4,779**	**3,119**	**1,275**	**990**	**5,178**	**6,167**	**7,443**	**670**	**27**	**697**	**6,873**	**22,910**
2010 Total	**4,782**	**3,103**	**1,286**	**1,029**	**5,797**	**6,826**	**8,112**	**674**	**29**	**703**	**7,387**	**24,087**
2011 Total	**4,714**	**3,155**	**1,323**	**1,063**	**5,931**	**6,994**	**8,317**	**688**	**30**	**718**	**7,574**	**24,477**
2012 Total	**4,150**	**2,895**	**1,396**	**1,149**	**6,077**	**7,226**	**8,622**	**731**	**30**	**761**	**9,111**	**25,538**
2013 Total	**4,897**	**3,295**	**1,483**	**1,170**	**6,255**	**7,425**	**8,909**	**833**	**30**	**863**	**8,191**	**26,155**
2014 Total	**5,087**	**3,466**	**1,512**	**1,145**	**6,501**	**7,646**	**9,158**	**700**	**35**	**735**	**8,146**	**26,593**
2015 Total	**4,613**	**3,202**	**1,576**	**1,222**	**6,300**	**7,522**	**9,098**	**678**	**39**	**718**	**9,613**	**27,244**
2016 Total	**4,347**	**3,110**	**1,545**	**1,209**	**6,519**	**7,729**	**9,274**	**687**	**42**	**729**	**9,985**	**27,444**
2017 Total	**4,412**	**3,164**	**1,584**	**1,257**	**6,693**	**7,949**	**9,533**	**722**	**48**	**770**	**9,266**	**27,146**
2018 January	981	554	134	115	667	782	917	99	4	103	786	3,341
February	690	424	124	101	599	699	823	80	4	84	690	2,711
March	659	418	139	105	633	738	877	82	4	86	757	2,797
April	441	302	134	102	595	697	831	68	4	72	704	2,351
May	169	164	140	105	566	671	811	59	4	63	848	2,055
June	119	142	136	107	542	649	785	59	4	64	953	2,063
July	106	138	144	116	552	668	811	68	4	72	1,224	2,351
August	100	143	147	116	552	668	814	67	4	71	1,186	2,314
September	112	147	144	110	547	657	801	62	4	66	1,030	2,156
October	255	237	151	110	575	684	835	66	4	70	888	2,286
November	599	386	149	113	623	736	884	79	4	83	763	2,716
December	766	459	153	115	653	768	921	88	4	92	762	3,000
Total	**4,998**	**3,514**	**1,694**	**1,314**	**7,103**	**8,417**	**10,112**	**877**	**50**	**927**	**10,590**	**30,140**
2019 January	953	554	151	121	680	801	952	105	4	110	848	3,417
February	809	472	137	108	611	719	856	93	4	97	779	3,013
March	688	424	153	113	638	751	903	89	4	93	813	2,922
April	328	246	148	105	571	676	824	66	4	71	740	2,209
May	212	185	154	111	564	675	830	64	4	68	836	2,131
June	129	145	150	111	524	635	785	64	4	68	990	2,117
July	112	142	156	118	532	650	806	73	4	77	1,255	2,391
August	102	141	160	120	552	672	832	74	4	78	1,278	2,430
September	110	143	154	114	530	644	799	67	4	71	1,081	2,203
October	232	216	162	114	570	684	846	70	4	74	937	2,305
November	589	389	158	117	618	735	893	85	4	89	819	2,778
December	752	457	163	122	657	779	942	96	4	101	911	3,163
Total	**5,016**	**3,513**	**1,846**	**1,374**	**7,047**	**8,422**	**10,268**	**944**	**51**	**995**	**11,287**	**31,079**
2020 January	821	487	[E] 161	125	666	791	952	[E] 100	[E] 5	[E] 105	931	3,296
February	733	443	[E] 150	114	618	732	881	[E] 92	[E] 5	[E] 97	879	3,033
March	525	337	[E] 160	115	605	720	880	[E] 82	[E] 5	[E] 87	879	2,708
April	375	237	[E] 152	107	537	644	796	[E] 68	[E] 5	[E] 73	764	2,245
May	235	161	[E] 148	108	517	625	773	[E] 63	[E] 5	[E] 68	834	2,071
June	136	132	[RE] 145	110	497	607	753	[E] 65	[E] 5	[E] 70	1,045	2,135
July	118	129	[E] 153	116	525	641	794	[E] 76	[E] 5	[E] 81	1,373	[R] 2,494
August	110	131	[RE] 153	117	537	654	807	[E] 73	[E] 5	[E] 78	1,281	[R] 2,406
September	125	142	[E] 147	107	543	651	798	[E] 66	[E] 5	[E] 71	1,037	2,173
9-Month Total	**3,177**	**2,199**	[E] **1,369**	**1,019**	**5,046**	**6,065**	**7,434**	[E] **685**	[E] **44**	[E] **729**	**9,022**	**22,562**
2019 9-Month Total	**3,443**	**2,451**	**1,363**	**1,021**	**5,202**	**6,223**	**7,587**	**693**	**38**	**732**	**8,620**	**22,833**
2018 9-Month Total	**3,378**	**2,431**	**1,242**	**977**	**5,252**	**6,229**	**7,471**	**644**	**38**	**682**	**8,177**	**22,139**

[a] All commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Table 7.4c for CHP fuel use.

[b] Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.

[c] All industrial sector fuel use other than that in "Lease and Plant Fuel" and "CHP."

[d] Natural gas consumed in the operation of pipelines, primarily in compressors. Beginning in 2009, includes line loss, which is known volumes of natural gas that are the result of leaks, damage, accidents, migration, and/or blow down.

[e] Natural gas used as fuel in the delivery of natural gas to consumers. Beginning in 2009, includes line loss, which is known volumes of natural gas that are the result of leaks, damage, accidents, migration, and/or blow down.

[f] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[g] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

[h] Included in "Non-CHP."

[i] 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 7, "Natural Gas Consumption, 1989–1992," at end of section.

R=Revised. E=Estimate. NA=Not available. (s)=Less than 500 million cubic feet.

Notes: • Data are for natural gas, plus a small amount of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of section. • See Note 8, "Natural Gas Data Adjustments, 1993–2000," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#naturalgas (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Residential, Commercial, Lease and Plant Fuel, Other Industrial Total** and **Pipelines and Distribution: 1949–2019—**U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA),* annual reports and unpublished revisions. **2020 forward—**EIA, *Natural Gas Monthly (NGM),* November 2020, Table 2. • **Other Industrial CHP:** Table 7.4c. • **Other Industrial Non-CHP:** Calculated as other industrial total minus other industrial CHP. • **Industrial Total:** Calculated as lease and plant fuel plus other industrial total. • **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). **1999–2019—**EIA, NGA, annual reports. **2020 forward—**EIA, NGM, November 2020, Table 2. • **Transportation Total:** Calculated as pipelines and distribution plus vehicle fuel. • **Electric Power Sector:** Table 7.4b. • **Total Consumption:** Calculated as the sum of residential, commercial, industrial total, transportation total, and electric power sector.

Table 4.4 Natural Gas in Underground Storage

(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas From Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total[a]	Volume	Percent	Withdrawals	Injections	Net[b,c]
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**175**	**230**	**-54**
1955 Total	**863**	**505**	**1,368**	**40**	**8.7**	**437**	**505**	**-68**
1960 Total	**NA**	**NA**	**2,184**	**NA**	**NA**	**713**	**844**	**-132**
1965 Total	**1,848**	**1,242**	**3,090**	**83**	**7.2**	**960**	**1,078**	**-118**
1970 Total	**2,326**	**1,678**	**4,004**	**257**	**18.1**	**1,459**	**1,857**	**-398**
1975 Total	**3,162**	**2,212**	**5,374**	**162**	**7.9**	**1,760**	**2,104**	**-344**
1980 Total	**3,642**	**2,655**	**6,297**	**-99**	**-3.6**	**1,910**	**1,896**	**14**
1985 Total	**3,842**	**2,607**	**6,448**	**-270**	**-9.4**	**2,359**	**2,128**	**231**
1990 Total	**3,868**	**3,068**	**6,936**	**555**	**22.1**	**1,934**	**2,433**	**-499**
1995 Total	**4,349**	**2,153**	**6,503**	**-453**	**-17.4**	**2,974**	**2,566**	**408**
2000 Total	**4,352**	**1,719**	**6,071**	**-806**	**-31.9**	**3,498**	**2,684**	**814**
2001 Total	**4,301**	**2,904**	**7,204**	**1,185**	**68.9**	**2,309**	**3,464**	**-1,156**
2002 Total	**4,340**	**2,375**	**6,715**	**-528**	**-18.2**	**3,138**	**2,670**	**468**
2003 Total	**4,303**	**2,563**	**6,866**	**187**	**7.9**	**3,099**	**3,292**	**-193**
2004 Total	**4,201**	**2,696**	**6,897**	**133**	**5.2**	**3,037**	**3,150**	**-113**
2005 Total	**4,200**	**2,635**	**6,835**	**-61**	**-2.3**	**3,057**	**3,002**	**55**
2006 Total	**4,211**	**3,070**	**7,281**	**435**	**16.5**	**2,493**	**2,924**	**-431**
2007 Total	**4,234**	**2,879**	**7,113**	**-191**	**-6.2**	**3,325**	**3,133**	**192**
2008 Total	**4,232**	**2,840**	**7,073**	**-39**	**-1.4**	**3,374**	**3,340**	**34**
2009 Total	**4,277**	**3,130**	**7,407**	**290**	**10.2**	**2,966**	**3,315**	**-349**
2010 Total	**4,301**	**3,111**	**7,412**	**-19**	**-.6**	**3,274**	**3,291**	**-17**
2011 Total	**4,302**	**3,462**	**7,764**	**351**	**11.3**	**3,074**	**3,422**	**-348**
2012 Total	**4,372**	**3,413**	**7,785**	**-49**	**-1.4**	**2,818**	**2,825**	**-7**
2013 Total	**4,365**	**2,890**	**7,255**	**-523**	**-15.3**	**3,702**	**3,156**	**546**
2014 Total	**4,365**	**3,141**	**7,506**	**251**	**8.7**	**3,586**	**3,839**	**-253**
2015 Total	**4,372**	**3,667**	**8,038**	**525**	**16.7**	**3,100**	**3,638**	**-539**
2016 Total	**4,380**	**3,297**	**7,677**	**-370**	**-10.1**	**3,325**	**2,977**	**348**
2017 Total	**4,360**	**3,033**	**7,392**	**-264**	**-8.0**	**3,590**	**3,337**	**254**
2018 January	4,357	2,141	6,498	-482	-18.4	1,037	141	896
February	4,357	1,673	6,030	-665	-28.4	599	133	467
March	4,353	1,390	5,743	-672	-32.6	449	164	285
April	4,350	1,427	5,777	-864	-37.7	224	256	-32
May	4,352	1,847	6,199	-779	-29.7	66	489	-423
June	4,354	2,195	6,549	-712	-24.5	88	436	-349
July	4,354	2,381	6,736	-673	-22.0	175	362	-186
August	4,355	2,617	6,972	-633	-19.5	172	407	-235
September	4,356	2,950	7,306	-617	-17.3	130	464	-334
October	4,357	3,236	7,593	-580	-15.2	131	422	-291
November	4,356	3,030	7,386	-679	-18.3	418	213	205
December	4,361	2,708	7,069	-324	-10.7	511	191	320
Total	**4,361**	**2,708**	**7,069**	**-324**	**-10.7**	**3,999**	**3,676**	**324**
2019 January	4,366	1,994	6,360	-147	-6.8	804	95	709
February	4,366	1,426	5,792	-246	-14.7	672	104	568
March	4,361	1,185	5,545	-205	-14.8	435	190	245
April	4,367	1,559	5,927	133	9.3	104	486	-382
May	4,372	2,031	6,403	184	9.9	85	557	-472
June	4,375	2,461	6,835	266	12.1	92	523	-431
July	4,374	2,714	7,089	333	14.0	162	416	-254
August	4,377	2,998	7,374	381	14.6	168	453	-286
September	4,378	3,415	7,793	465	15.7	109	529	-419
October	4,379	3,762	8,141	526	16.2	116	461	-346
November	4,380	3,610	7,990	580	19.1	351	201	150
December	4,380	3,188	7,568	480	17.7	556	138	418
Total	**4,380**	**3,188**	**7,568**	**480**	**17.7**	**3,653**	**4,153**	**-500**
2020 January	4,380	2,616	6,997	622	31.2	665	94	571
February	4,379	2,081	6,460	655	45.9	634	99	535
March	4,379	2,030	6,409	845	71.3	285	236	49
April	4,384	2,333	6,717	773	49.6	131	437	-306
May	4,387	2,778	7,165	747	36.8	74	522	-448
June	4,389	3,133	7,523	672	27.3	85	443	-358
July	4,390	3,294	7,684	579	21.3	151	312	-161
August	4,381	3,522	7,903	524	17.5	174	401	-228
September	4,389	3,840	8,229	425	12.4	126	450	-323
9-Month Total	– –	– –	– –	– –	– –	**2,325**	**2,995**	**-669**
2019 9-Month Total	– –	– –	– –	– –	– –	**2,630**	**3,352**	**-722**
2018 9-Month Total	– –	– –	– –	– –	– –	**2,940**	**2,851**	**89**

[a] For total underground storage capacity at the end of each calendar year, see Note 4, "Natural Gas Storage," at end of section.

[b] For 1980–2018, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.

[c] Positive numbers indicate that withdrawals are greater than injections. Negative numbers indicate that injections are greater than withdrawals. Net withdrawals or injections may not equal the difference between applicable ending stocks. See Note 4, "Natural Gas Storage," at end of section.

– – =Not applicable. NA=Not available.

Notes: • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia (except Alaska, which is excluded through 2012).

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#naturalgas (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Storage Activity: 1949–1975—**U.S. Energy Information Administration (EIA), *Natural Gas Annual 1994, Volume 2,* Table 9. **1976–1979—**EIA, *Natural Gas Production and Consumption 1979,* Table 1. **1980–1995—**EIA, *Historical Natural Gas Annual 1930 Through 2000,* Table 11. **1996–2014—**EIA, *Natural Gas Monthly (NGM),* monthly issues. **2015 forward—**EIA, NGM, Octber 2020, Table 8. • **All Other Data: 1954–1974—**American Gas Association, *Gas Facts,* annual issues. **1975 and 1976—**Federal Energy Administration (FEA), Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Power Commission (FPC), Form FPC-8, "Underground Gas Storage Report." **1977 and 1978—**EIA, Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Energy Regulatory Commission (FERC), Form FERC-8, "Underground Gas Storage Report." **1979–1995—**EIA, Form EIA-191, "Underground Gas Storage Report," and FERC, Form FERC-8, "Underground Gas Storage Report." **1996–2019—**EIA, NGA, annual reports. **2020 forward—**EIA, NGM, November 2020, Table 8.

Note 1. Natural Gas Production. Final annual data are from the U.S. Energy Information Administration's (EIA) *Natural Gas Annual (NGA)*.

Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see EIA's *Natural Gas Monthly (NGM)*.

Monthly data are considered preliminary until after publication of the NGA. Preliminary monthly data are gathered from reports to the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary, to a standard pressure base of 14.73 psia (pounds per square inch absolute) at 60° Fahrenheit. Unless there are major changes, data are not revised until after publication of the NGA.

Differences between annual data in the NGA and the sum of preliminary monthly data (January–December) are allocated proportionally to the months to create final monthly data.

Note 2. Natural Gas Plant Liquids Production. Natural gas plant liquids (NGPL) production is the reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants—these natural gas plant liquids are transferred to petroleum supply.

Annual data are from EIA's *Natural Gas Annual (NGA)*, where they are estimated on the basis of the type and quantity of liquid products extracted from the gas stream and the calculated volume of such products at standard conditions. For a detailed explanation of the calculations used to derive estimated NGPL production, see the NGA.

Through 2006, preliminary monthly data are estimated on the basis of NGPL production as an annual percentage of marketed production. Beginning in 2007, preliminary monthly data are estimated on the basis of NGPL production reported on Form EIA-816, "Monthly Natural Gas Liquids Report."

Monthly data are revised and considered final after publication of the NGA. Final monthly data are estimated by allocating annual NGPL production data to the months on the basis of total natural gas marketed production data from the NGA.

Note 3. Supplemental Gaseous Fuels. Supplemental gaseous fuels are any substances that, introduced into or commingled with natural gas, increase the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, and air or inert gases added for Btu stabilization.

Annual data beginning with 1980 are from EIA's *Natural Gas Annual (NGA)*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years. Monthly data are considered preliminary until after publication of the NGA. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. The ratio is applied to the monthly sum of the three elements to compute a monthly supplemental gaseous fuels figure.

Although the total amount of supplemental gaseous fuels consumed is known for 1980 forward, the amount consumed by each energy-use sector is estimated by EIA. These estimates are used to create natural gas (without supplemental gaseous fuels) data for Tables 1.3, 2.2, 2.3, 2.4, and 2.6 (note: to avoid double-counting in these tables, supplemental gaseous fuels are accounted for in their primary energy category: "Coal," "Petroleum," or "Biomass"). It is assumed that supplemental gaseous fuels are commingled with natural gas consumed by the residential, commercial, other industrial, and electric power sectors, but are not commingled with natural gas used for lease and plant fuel, pipelines and distribution, or vehicle fuel. The estimated consumption of supplemental gaseous fuels by each sector (residential, commercial, other industrial, and electric power) is calculated as that sector's natural gas consumption (see Table 4.3) divided by the sum of natural gas consumption by the residential, commercial, other industrial, and electric power sectors (see Table 4.3), and then multiplied by total supplemental gaseous fuels consumption (see Table 4.1). For estimated sectoral consumption of supplemental gaseous fuels in Btu, the residential, commercial, and other industrial values in cubic feet are multiplied by the "End-Use Sectors" conversion factors (see Table A4), and the electric power

values in cubic feet are multiplied by the "Electric Power Sector" conversion factors (see Table A4). Total supplemental gaseous fuels consumption in Btu is calculated as the sum of the Btu values for the sectors.

Note 4. Natural Gas Storage. Natural gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals from the quantity in storage at the end of the previous period. Injection and withdrawal data from the FERC-8/EIA-191 survey may be adjusted to correspond to data from Form EIA-176 for publication of EIA's *Natural Gas Annual (NGA)*.

Total underground storage capacity, which includes both active and inactive fields, at the end of each calendar year since 1975 (first year data were available), in billion cubic feet, was:

Total underground storage capacity, including active and inactive fields (billion cubic feet)

Decade	Year-0	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9
1970s						6,280	6,544	6,678	6,890	6,929
1980s	7,434	7,805	7,915	7,985	8,043	8,087	8,145	8,124	8,124	8,120
1990s	7,794	7,993	7,932	7,989	8,043	7,953	7,980	8,332	8,179	8,229
2000s	8,241	8,182	8,207	8,206	8,255	8,268	8,330	8,402	8,499	8,656
2010s	8,764	8,849	8,991	9,173	9,233	9,231	9,239	9,261	9,241	9,231

Through 1990, monthly underground storage data are collected from the Federal Energy Regulatory Commission Form FERC-8 (interstate data) and EIA Form EIA-191 (intrastate data). Beginning in 1991, all data are collected on the revised Form EIA-191. Injection and withdrawal data from the EIA-191 survey may be adjusted to correspond to data from Form EIA-176 following publication of EIA's NGA.

The final monthly and annual storage and withdrawal data for 1980–2017 include both underground and liquefied natural gas (LNG) storage. Annual data on LNG additions and withdrawals are from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying the ratio to the annual LNG data.

Note 5. Natural Gas Balancing Item. The balancing item for natural gas represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition. The differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Note 6. Natural Gas Consumption. Natural gas consumption statistics include data for the following: "Residential Sector": residential deliveries; "Commercial Sector": commercial deliveries, including to commercial combined-heat-and-power (CHP) and commercial electricity-only plants; "Industrial Sector": lease and plant fuel use, and other industrial deliveries, including to industrial CHP and industrial electricity-only plants also includes the relatively small amount of natural gas consumption for non-combustion use (see Tables 1.11a and 1.11b); "Transportation Sector": pipelines and distribution use, and vehicle fuel use; and "Electric Power Sector": electric utility and independent power producer use.

Final data for series other than "Other Industrial CHP" and "Electric Power Sector" are from EIA's *Natural Gas Annual (NGA)*. Monthly data are considered preliminary until after publication of the NGA. For more detailed information on the methods of estimating preliminary and final monthly data, see EIA's *Natural Gas Monthly*.

Note 7. Natural Gas Consumption, 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 8. Natural Gas Data Adjustments, 1993–2000. For 1993–2000, the original data for natural gas delivered to industrial consumers (now "Other Industrial" in Table 4.3) included deliveries to both industrial users and independent power producers (IPPs). These data were adjusted to remove the estimated consumption at IPPs from "Other Industrial" and include it with electric utilities under "Electric Power Sector." (To estimate the monthly IPP consumption, the monthly pattern for Other Industrial CHP in Table 4.3 was used.)

For 1996–2000, monthly data for several natural gas series shown in EIA's Natural Gas Navigator (see http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm) were not reconciled and updated to be consistent with the final annual data in EIA's *Natural Gas Annual*. In the *Monthly Energy Review*, monthly data for these series were adjusted so that the monthly data sum to the final annual values. The Table 4.1 data series (and years) that were adjusted are: Gross Withdrawals (1996, 1997), Marketed Production (1997), NGPL Production (1997, 1998, and 2000), Dry Gas Production (1996, 1997), Supplemental Gaseous Fuels (1997–2000), Balancing Item (1997–2000), and Total Consumption (1997–2000). The Table 4.3 data series (and years) that were adjusted are: Lease and Plant Fuel (1997–2000), Total Industrial (1997–2000), Pipelines and Distribution (2000), Total Transportation (2000), and Total Consumption (1997–2000).

Note 9. Natural Gas Imports and Exports. The United States imports natural gas via pipeline from Canada and Mexico; and imports liquefied natural gas (LNG) via tanker from Algeria, Australia, Brunei, Egypt, Equatorial Guinea, Indonesia, Malaysia, Nigeria, Norway, Oman, Peru, Qatar, Trinidad and Tobago, the United Arab Emirates, and Yemen. In addition, small amounts of LNG arrived from Canada in 1973 (667 million cubic feet), 1977 (572 million cubic feet), 1981 (6 million cubic feet), 2013 (555 million cubic feet), 2014 (132 million cubic feet), 2015 (437 million cubic feet), 2016 (924 million cubic feet), 2017 (1,569 million cubic feet), 2018 (1,885 million cubic feet), 2019 (226 million cubic feet), and 2020 (23 million cubic feet). Also, small amounts of compressed natural gas (CNG) were imported from Canada in 2014 forward. The United States exports natural gas via pipeline to Canada and Mexico; and exports LNG via tanker to Argentina, Bahamas, Bangladesh, Barbados, Belgium, Brazil, Chile, China, Columbia, Dominican Republic, Egypt, France, Greece, Haiti, India, Israel, Italy, Jamaica, Japan, Jordan, Kuwait, Lithuania, Malaysia, Malta, Netherlands, Pakistan, Panama, Poland, Portugal, Russia, Singapore, South Korea, Spain, Taiwan, Thailand, Turkey, United Arab Emirates, and United Kingdom. Also, small amounts of LNG have gone to Mexico since 1998 and to Canada in 2007 and 2012 forward. Small amounts of CNG have been exported to Canada since 2013.

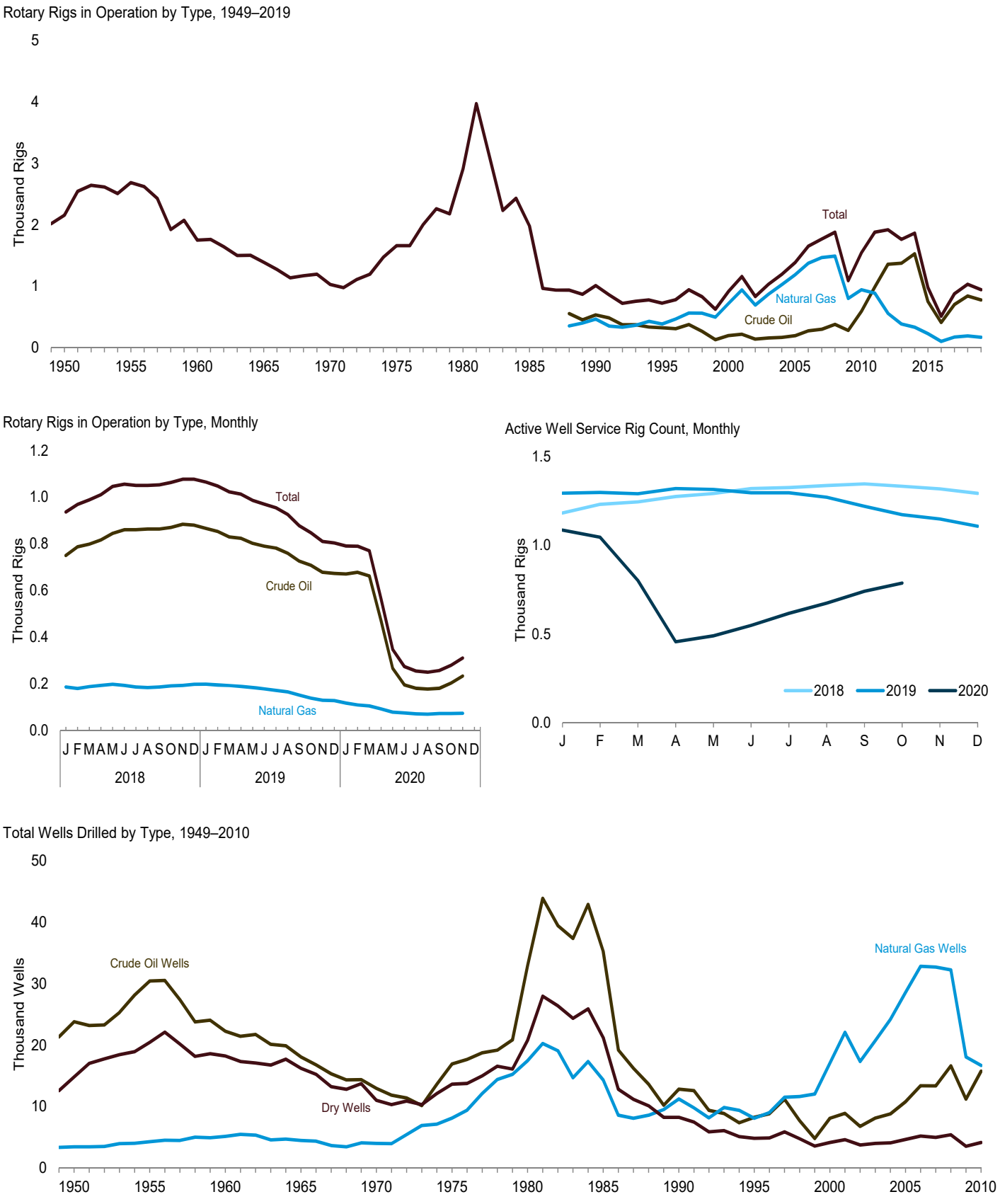
Annual and final monthly data are from the annual EIA Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas," which requires data to be reported by month for the calendar year.

Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see EIA's *Natural Gas Monthly*. Preliminary data are revised after publication of EIA's *U.S. Imports and Exports of Natural Gas*.

THIS PAGE INTENTIONALLY LEFT BLANK

5. Crude Oil and Natural Gas Resource Development

Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators



Web Page: http://www.eia.gov/totalenergy/data/monthly/#crude.
Sources: Tables 5.1 and 5.2.

Table 5.1 Crude Oil and Natural Gas Drilling Activity Measurements

(Number of Rigs)

	Rotary Rigs in Operation[a]					Active Well Service Rig Count[c]
	By Site		By Type			
	Onshore	Offshore	Crude Oil	Natural Gas	Total[b]	
1950 Average	**NA**	**NA**	**NA**	**NA**	**2,154**	**NA**
1955 Average	**NA**	**NA**	**NA**	**NA**	**2,686**	**NA**
1960 Average	**NA**	**NA**	**NA**	**NA**	**1,748**	**NA**
1965 Average	**NA**	**NA**	**NA**	**NA**	**1,388**	**NA**
1970 Average	**NA**	**NA**	**NA**	**NA**	**1,028**	**NA**
1975 Average	**1,554**	**106**	**NA**	**NA**	**1,660**	**2,486**
1980 Average	**2,678**	**231**	**NA**	**NA**	**2,909**	**4,089**
1985 Average	**1,774**	**206**	**NA**	**NA**	**1,980**	**4,716**
1990 Average	**902**	**108**	**532**	**464**	**1,010**	**3,658**
1995 Average	**622**	**101**	**323**	**385**	**723**	**3,041**
2000 Average	**778**	**140**	**197**	**720**	**918**	**2,692**
2001 Average	**1,003**	**153**	**217**	**939**	**1,156**	**2,267**
2002 Average	**717**	**113**	**137**	**691**	**830**	**1,830**
2003 Average	**924**	**108**	**157**	**872**	**1,032**	**1,967**
2004 Average	**1,095**	**97**	**165**	**1,025**	**1,192**	**2,064**
2005 Average	**1,287**	**94**	**194**	**1,184**	**1,381**	**2,222**
2006 Average	**1,559**	**90**	**274**	**1,372**	**1,649**	**2,364**
2007 Average	**1,695**	**72**	**297**	**1,466**	**1,768**	**2,388**
2008 Average	**1,814**	**65**	**379**	**1,491**	**1,879**	**2,515**
2009 Average	**1,046**	**44**	**278**	**801**	**1,089**	**1,722**
2010 Average	**1,514**	**31**	**591**	**943**	**1,546**	**1,854**
2011 Average	**1,846**	**32**	**984**	**887**	**1,879**	**2,075**
2012 Average	**1,871**	**48**	**1,357**	**558**	**1,919**	**2,113**
2013 Average	**1,705**	**56**	**1,373**	**383**	**1,761**	**2,064**
2014 Average	**1,804**	**57**	**1,527**	**333**	**1,862**	**2,024**
2015 Average	**943**	**35**	**750**	**226**	**978**	**1,481**
2016 Average	**486**	**23**	**408**	**100**	**509**	**1,061**
2017 Average	**856**	**20**	**703**	**172**	**876**	**1,187**
2018 January	919	18	750	187	937	1,183
February	952	17	788	180	969	1,232
March	976	13	799	188	989	1,246
April	995	16	817	193	1,011	1,276
May	1,026	20	845	198	1,046	1,293
June	1,037	19	861	193	1,056	1,321
July	1,032	18	861	187	1,050	1,326
August	1,031	19	864	184	1,050	1,338
September	1,033	20	864	187	1,053	1,347
October	1,041	21	870	192	1,063	1,334
November	1,055	22	884	193	1,077	1,319
December	1,054	24	880	198	1,077	1,294
Average	**1,013**	**19**	**841**	**190**	**1,032**	**1,292**
2019 January	1,044	21	866	199	1,065	1,295
February	1,029	20	853	195	1,048	1,299
March	1,001	22	830	193	1,023	1,292
April	990	22	824	189	1,013	1,321
May	965	21	802	184	986	1,316
June	945	24	790	179	970	1,297
July	930	25	782	172	955	1,297
August	900	26	760	166	926	1,272
September	852	26	726	152	878	1,221
October	825	23	708	139	848	1,173
November	788	22	678	130	810	1,149
December	781	23	673	128	804	1,108
Average	**920**	**23**	**774**	**169**	**943**	**1,253**
2020 January	770	21	671	118	791	1,086
February	768	23	678	110	790	1,046
March	752	20	663	106	771	802
April	548	18	471	93	565	456
May	335	13	267	79	348	490
June	262	12	196	76	274	549
July	243	12	181	72	255	617
August	237	13	178	70	250	674
September	242	15	181	73	257	741
October	266	14	204	73	280	[R] 788
November	298	12	234	74	311	NA
11-Month Average	**427**	**16**	**354**	**86**	**443**	**NA**
2019 11-Month Average	**932**	**23**	**782**	**172**	**955**	**1,267**
2018 11-Month Average	**1,010**	**18**	**838**	**189**	**1,028**	**1,292**

[a] Rotary rigs in operation are reported weekly on Fridays. Monthly data are averages of 4- or 5-week reporting periods. Multi-month data are averages of the reported weekly data over the covered months. Annual data are averages of 52- or 53-week reporting periods. Published data are rounded to the nearest whole number.

[b] 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. Therefore, "Total" values may not equal the sum of "Crude Oil" and "Natural Gas." "Total" values may not equal the sum of "Onshore" and "Offshore" due to independent rounding.

[c] The number of rigs doing true workovers (where tubing is pulled from the well), or doing rod string and pump repair operations, and that are, on average, crewed and working every day of the month.

R=Revised. NA=Not available.

Note: Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#crude (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, TX, "North America Rig Count," used with permission. See http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother. • **Active Well Service Rig Count:** Assoc. of Energy Service Companies, Friendswood, TX. See https://www.aesc.net/aesc-rig-counts.html.

Table 5.2 Crude Oil and Natural Gas Exploratory and Development Wells

	Wells Drilled												Total Footage Drilled
	Exploratory				Development				Total				
	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	
	Number												Thousand Feet
1950 Total	**1,583**	**431**	**8,292**	**10,306**	**22,229**	**3,008**	**6,507**	**31,744**	**23,812**	**3,439**	**14,799**	**42,050**	**157,358**
1955 Total	**2,236**	**874**	**11,832**	**14,942**	**28,196**	**3,392**	**8,620**	**40,208**	**30,432**	**4,266**	**20,452**	**55,150**	**226,182**
1960 Total	**1,321**	**868**	**9,515**	**11,704**	**20,937**	**4,281**	**8,697**	**33,915**	**22,258**	**5,149**	**18,212**	**45,619**	**192,176**
1965 Total	**946**	**515**	**8,005**	**9,466**	**17,119**	**3,967**	**8,221**	**29,307**	**18,065**	**4,482**	**16,226**	**38,773**	**174,882**
1970 Total	**757**	**477**	**6,162**	**7,396**	**12,211**	**3,534**	**4,869**	**20,614**	**12,968**	**4,011**	**11,031**	**28,010**	**138,556**
1975 Total	**982**	**1,248**	**7,129**	**9,359**	**15,966**	**6,879**	**6,517**	**29,362**	**16,948**	**8,127**	**13,646**	**38,721**	**180,494**
1980 Total	**1,777**	**2,099**	**9,081**	**12,957**	**31,182**	**15,362**	**11,704**	**58,248**	**32,959**	**17,461**	**20,785**	**71,205**	**316,943**
1985 Total	**1,680**	**1,200**	**8,954**	**11,834**	**33,581**	**13,124**	**12,257**	**58,962**	**35,261**	**14,324**	**21,211**	**70,796**	**314,409**
1990 Total	**778**	**811**	**3,652**	**5,241**	**12,061**	**10,435**	**4,593**	**27,089**	**12,839**	**11,246**	**8,245**	**32,330**	**156,044**
1995 Total	**570**	**558**	**2,024**	**3,152**	**7,678**	**7,524**	**2,790**	**17,992**	**8,248**	**8,082**	**4,814**	**21,144**	**117,156**
2000 Total	**288**	**657**	**1,341**	**2,286**	**7,802**	**16,394**	**2,805**	**27,001**	**8,090**	**17,051**	**4,146**	**29,287**	**144,425**
2001 Total	**357**	**1,052**	**1,733**	**3,142**	**8,531**	**21,020**	**2,865**	**32,416**	**8,888**	**22,072**	**4,598**	**35,558**	**180,141**
2002 Total	**258**	**844**	**1,282**	**2,384**	**6,517**	**16,498**	**2,472**	**25,487**	**6,775**	**17,342**	**3,754**	**27,871**	**145,159**
2003 Total	**350**	**997**	**1,297**	**2,644**	**7,779**	**19,725**	**2,685**	**30,189**	**8,129**	**20,722**	**3,982**	**32,833**	**177,239**
2004 Total	**383**	**1,671**	**1,350**	**3,404**	**8,406**	**22,515**	**2,732**	**33,653**	**8,789**	**24,186**	**4,082**	**37,057**	**204,279**
2005 Total	**539**	**2,141**	**1,462**	**4,142**	**10,240**	**26,449**	**3,191**	**39,880**	**10,779**	**28,590**	**4,653**	**44,022**	**240,307**
2006 Total	**646**	**2,456**	**1,547**	**4,649**	**12,739**	**30,382**	**3,659**	**46,780**	**13,385**	**32,838**	**5,206**	**51,429**	**282,675**
2007 Total	**808**	**2,794**	**1,582**	**5,184**	**12,563**	**29,925**	**3,399**	**45,887**	**13,371**	**32,719**	**4,981**	**51,071**	**301,515**
2008 January	88	208	144	440	1,111	2,321	272	3,704	1,199	2,529	416	4,144	25,306
February	82	230	107	419	1,080	2,261	247	3,588	1,162	2,491	354	4,007	24,958
March	66	216	127	409	1,132	2,363	271	3,766	1,198	2,579	398	4,175	26,226
April	68	189	130	387	1,177	2,415	281	3,873	1,245	2,604	411	4,260	26,920
May	88	206	124	418	1,317	2,449	240	4,006	1,405	2,655	364	4,424	27,947
June	63	195	139	397	1,428	2,540	299	4,267	1,491	2,735	438	4,664	28,739
July	79	163	171	413	1,439	2,695	344	4,478	1,518	2,858	515	4,891	29,140
August	67	165	144	376	1,448	2,735	379	4,562	1,515	2,900	523	4,938	28,942
September	52	166	164	382	1,488	2,667	355	4,510	1,540	2,833	519	4,892	28,960
October	80	243	173	496	1,549	2,841	373	4,763	1,629	3,084	546	5,259	31,505
November	97	192	160	449	1,361	2,418	334	4,113	1,458	2,610	494	4,562	29,276
December	67	172	132	371	1,206	2,196	313	3,715	1,273	2,368	445	4,086	26,222
Total	**897**	**2,345**	**1,715**	**4,957**	**15,736**	**29,901**	**3,708**	**49,345**	**16,633**	**32,246**	**5,423**	**54,302**	**334,141**
2009 January	80	171	99	350	1,192	2,253	250	3,695	1,272	2,424	349	4,045	28,077
February	62	125	88	275	991	1,925	195	3,111	1,053	2,050	283	3,386	25,440
March	59	146	88	293	867	1,771	210	2,848	926	1,917	298	3,141	25,304
April	36	68	93	197	755	1,396	205	2,356	791	1,464	298	2,553	21,406
May	47	90	80	217	584	1,136	156	1,876	631	1,226	236	2,093	20,055
June	44	91	75	210	804	1,297	189	2,290	848	1,388	264	2,500	16,301
July	40	100	101	241	789	1,188	217	2,194	829	1,288	318	2,435	13,543
August	49	84	88	221	867	1,372	207	2,446	916	1,456	295	2,667	15,970
September	61	71	96	228	945	1,170	207	2,322	1,006	1,241	303	2,550	15,547
October	55	79	78	212	966	1,167	222	2,355	1,021	1,246	300	2,567	17,261
November	38	83	85	206	931	1,133	199	2,263	969	1,216	284	2,469	16,236
December	34	98	84	216	894	1,074	213	2,181	928	1,172	297	2,397	16,424
Total	**605**	**1,206**	**1,055**	**2,866**	**10,585**	**16,882**	**2,470**	**29,937**	**11,190**	**18,088**	**3,525**	**32,803**	**231,562**
2010 January	55	91	81	227	898	1,264	169	2,331	953	1,355	250	2,558	15,304
February	44	71	67	182	871	1,096	144	2,111	915	1,167	211	2,293	16,862
March	59	85	88	232	1,062	1,224	216	2,502	1,121	1,309	304	2,734	15,102
April	49	78	77	204	1,173	1,152	249	2,574	1,222	1,230	326	2,778	17,904
May	48	107	86	241	1,282	1,208	255	2,745	1,330	1,315	341	2,986	17,987
June	61	100	90	251	1,385	1,250	302	2,937	1,446	1,350	392	3,188	19,408
July	46	103	105	254	1,386	1,443	390	3,219	1,432	1,546	495	3,473	20,847
August	56	104	94	254	1,434	1,402	314	3,150	1,490	1,506	408	3,404	22,923
September	57	73	88	218	1,374	1,358	268	3,000	1,431	1,431	356	3,218	23,037
October	75	87	117	279	1,502	1,463	283	3,248	1,577	1,550	400	3,527	22,123
November	62	114	103	279	1,400	1,352	263	3,015	1,462	1,466	366	3,294	24,561
December	57	92	70	219	1,317	1,379	243	2,939	1,374	1,471	313	3,158	23,189
Total	**669**	**1,105**	**1,066**	**2,840**	**15,084**	**15,591**	**3,096**	**33,771**	**15,753**	**16,696**	**4,162**	**36,611**	**239,247**

Notes: • Data are estimates. • For 1960–1969, data are for well completion reports received by the American Petroleum Institute during the reporting year; for all other years, data are for well completions in a given year. • Through 1989, these well counts include only the original drilling of a hole intended to discover or further develop already discovered crude oil or natural gas resources. Other drilling activities, such as drilling an old well deeper, drilling of laterals from the original well, drilling of service and injection wells, and drilling for resources other than crude oil or natural gas are excluded. Beginning in 1990, a new well is defined as the first hole in the ground whether it is lateral or not. Due to the methodology used to estimate ultimate well counts from the available partially reported data, the counts shown on this page are frequently revised. See Note, "Crude Oil and Natural Gas Exploratory and Development Wells," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#crude (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

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. • **1970–1989:** U.S. Energy Information Administration (EIA) computations based on well reports submitted to the API. • **1990 forward:** EIA computations based on well reports submitted to IHS, Inc., Denver, CO.

Data for 2011 forward in this table have been removed while EIA evaluates the quality of the data and the estimation methodology.

Note. Crude Oil and Natural Gas Exploratory and Development Wells. Three well types are considered in the *Monthly Energy Review* (MER) drilling statistics: "completed for crude oil," "completed for natural gas," and "dry hole." Wells that productively encounter both crude oil and natural gas are categorized as "completed for crude oil." Both development wells and exploratory wells (new field wildcats, new pool tests, and extension tests) are included in the statistics. All other classes of wells drilled in connection with the search for producible hydrocarbons are excluded. If a lateral is drilled at the same time as the original hole it is not counted separately, but its footage is included.

Prior to the March 1985 MER, drilling statistics consisted of completion data for the above types and classes of wells as reported to the American Petroleum Institute (API) during a given month. Due to time lags between the date of well completion and the date of completion reporting to the API, as-reported well completions proved to be an inaccurate indicator of drilling activity. During 1982, for example, as-reported well completions rose, while the number of actual completions fell. Consequently, the drilling statistics published since the March 1985 MER are U.S. Energy Information Administration (EIA) estimates produced by statistically imputing well counts and footage based on the partial data available from the API. These estimates are subject to continuous revision as new data, some of which pertain to earlier months and years, become available. Additional information about the EIA estimation methodology may be found in "Estimating Well Completions," a feature article published in the March 1985 MER.

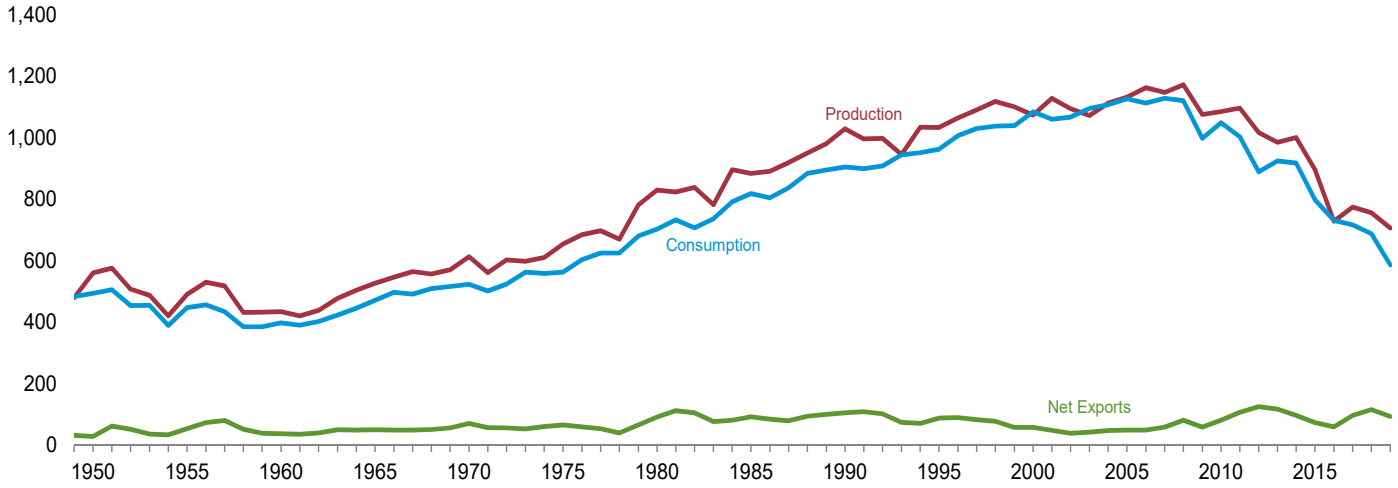
THIS PAGE INTENTIONALLY LEFT BLANK

6. Coal

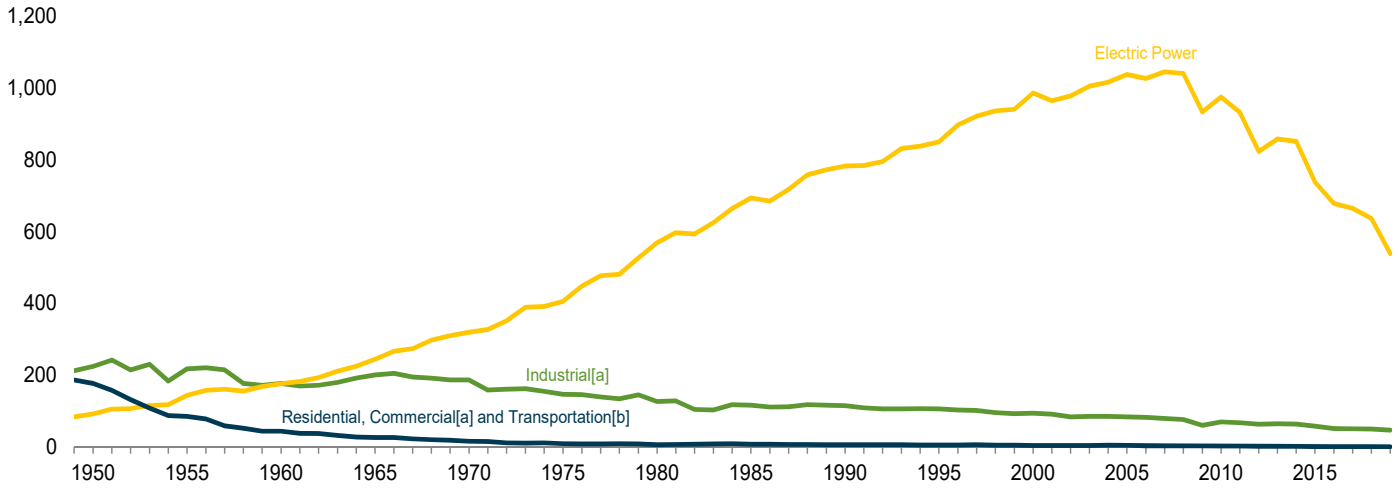
Figure 6.1 Coal

(Million Short Tons)

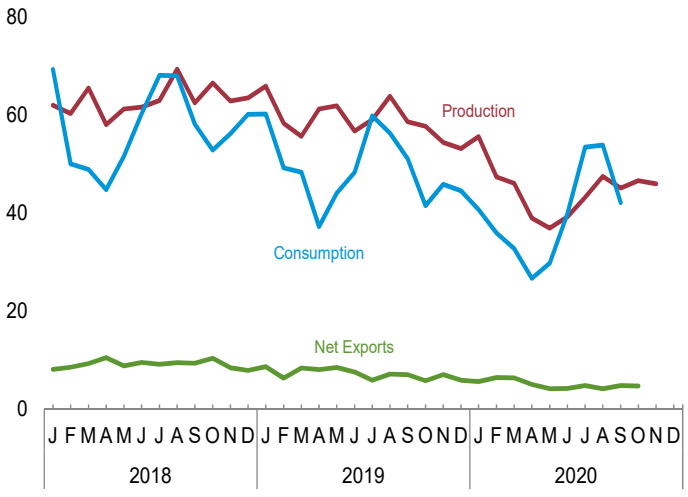
Overview, 1949–2019



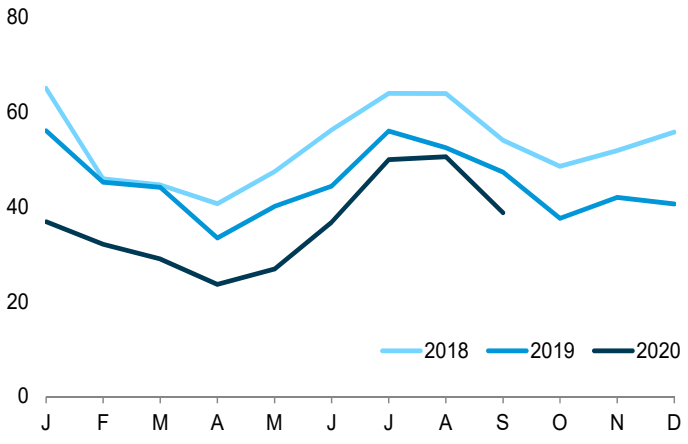
Consumption by Sector, 1949–2019



Overview, Monthly



Electric Power Sector Consumption, Monthly



[a] Includes combined-heat-power (CHP) plants and a small number of electricity-only-plants.

[b] For 1978 forward, small amounts of transportation sector use are included in "Industrial."

Web Page: http://www.eia.gov/totalenergy/data/monthly/#coal.

Sources: Tables 6.1 and 6.2.

Table 6.1 Coal Overview

(Thousand Short Tons)

	Production[a]	Waste Coal Supplied[b]	Trade			Stock Change[d,e]	Losses and Unaccounted for[e,f]	Consumption
			Imports	Exports	Net Imports[c]			
1950 Total	**560,388**	**NA**	**365**	**29,360**	**-28,995**	**27,829**	**9,462**	**494,102**
1955 Total	**490,838**	**NA**	**337**	**54,429**	**-54,092**	**-3,974**	**-6,292**	**447,012**
1960 Total	**434,329**	**NA**	**262**	**37,981**	**-37,719**	**-3,194**	**1,722**	**398,081**
1965 Total	**526,954**	**NA**	**184**	**51,032**	**-50,848**	**1,897**	**2,244**	**471,965**
1970 Total	**612,661**	**NA**	**36**	**71,733**	**-71,697**	**11,100**	**6,633**	**523,231**
1975 Total	**654,641**	**NA**	**940**	**66,309**	**-65,369**	**32,154**	**-5,522**	**562,640**
1980 Total	**829,700**	**NA**	**1,194**	**91,742**	**-90,548**	**25,595**	**10,827**	**702,730**
1985 Total	**883,638**	**NA**	**1,952**	**92,680**	**-90,727**	**-27,934**	**2,796**	**818,049**
1990 Total	**1,029,076**	**3,339**	**2,699**	**105,804**	**-103,104**	**26,542**	**-1,730**	**904,498**
1995 Total	**1,032,974**	**8,561**	**9,473**	**88,547**	**-79,074**	**-275**	**632**	**962,104**
2000 Total	**1,073,612**	**9,089**	**12,513**	**58,489**	**-45,976**	**-48,309**	**938**	**1,084,095**
2001 Total	**1,127,689**	**10,085**	**19,787**	**48,666**	**-28,879**	**41,630**	**7,120**	**1,060,146**
2002 Total	**1,094,283**	**9,052**	**16,875**	**39,601**	**-22,726**	**10,215**	**4,040**	**1,066,355**
2003 Total	**1,071,753**	**10,016**	**25,044**	**43,014**	**-17,970**	**-26,659**	**-4,403**	**1,094,861**
2004 Total	**1,112,099**	**11,299**	**27,280**	**47,998**	**-20,718**	**-11,462**	**6,887**	**1,107,255**
2005 Total	**1,131,498**	**13,352**	**30,460**	**49,942**	**-19,482**	**-9,702**	**9,092**	**1,125,978**
2006 Total	**1,162,750**	**14,409**	**36,246**	**49,647**	**-13,401**	**42,642**	**8,824**	**1,112,292**
2007 Total	**1,146,635**	**14,076**	**36,347**	**59,163**	**-22,816**	**5,812**	**4,085**	**1,127,998**
2008 Total	**1,171,809**	**14,146**	**34,208**	**81,519**	**-47,311**	**12,354**	**5,740**	**1,120,548**
2009 Total	**1,074,923**	**13,666**	**22,639**	**59,097**	**-36,458**	**39,668**	**14,985**	**997,478**
2010 Total	**1,084,368**	**13,651**	**19,353**	**81,716**	**-62,363**	**-13,039**	**182**	**1,048,514**
2011 Total	**1,095,628**	**13,209**	**13,088**	**107,259**	**-94,171**	**211**	**11,506**	**1,002,948**
2012 Total	**1,016,458**	**11,196**	**9,159**	**125,746**	**-116,586**	**6,902**	**14,980**	**889,185**
2013 Total	**984,842**	**11,279**	**8,906**	**117,659**	**-108,753**	**-38,525**	**1,451**	**924,442**
2014 Total	**1,000,049**	**12,090**	**11,350**	**97,257**	**-85,907**	**-2,601**	**11,101**	**917,731**
2015 Total	**896,941**	**9,969**	**11,318**	**73,958**	**-62,640**	**40,704**	**5,452**	**798,115**
2016 Total	**728,364**	**10,138**	**9,850**	**60,271**	**-50,421**	**-45,441**	**2,452**	**731,071**
2017 Total	**774,609**	**9,951**	**7,803**	**96,945**	**-89,142**	**-26,033**	**4,596**	**716,856**
2018 January	61,971	1,090	500	8,659	-8,160	-13,881	-470	69,254
February	60,269	909	349	8,983	-8,633	-2,738	5,258	50,025
March	65,504	997	518	9,886	-9,368	5,081	3,181	48,870
April	58,046	704	494	11,032	-10,538	1,275	2,144	44,793
May	61,211	600	544	9,400	-8,856	-1,134	2,515	51,574
June	61,572	818	509	10,107	-9,598	-6,753	-694	60,240
July	62,967	928	692	9,924	-9,232	-12,556	-863	68,083
August	69,325	949	484	9,995	-9,511	-5,714	-1,499	67,976
September	62,438	818	263	9,683	-9,420	-2,520	-1,803	58,159
October	66,532	723	304	10,768	-10,464	3,885	96	52,811
November	62,857	923	400	8,920	-8,520	-166	-744	56,170
December	63,474	971	898	8,888	-7,990	-1,937	-1,757	60,149
Total	**756,167**	**10,431**	**5,954**	**116,244**	**-110,290**	**-37,160**	**5,363**	**688,105**
2019 January	65,836	976	625	9,329	-8,704	-4,032	1,940	60,199
February	58,315	824	358	6,752	-6,393	1,568	1,978	49,200
March	55,667	850	706	9,132	-8,427	-1,181	926	48,346
April	61,213	598	537	8,642	-8,105	9,904	6,519	37,282
May	61,862	648	408	8,979	-8,572	9,271	607	44,060
June	56,706	700	660	8,308	-7,648	1,561	-71	48,267
July	59,069	574	511	6,469	-5,958	-5,366	-751	59,802
August	63,795	593	519	7,749	-7,230	934	-86	56,310
September	58,597	410	651	7,742	-7,091	1,748	-944	51,113
October	57,674	498	742	6,590	-5,848	9,909	898	41,517
November	54,393	611	466	7,582	-7,116	4,816	-2,796	45,869
December	53,184	723	515	6,491	-5,976	6,411	-3,054	44,574
Total	**706,309**	**8,003**	**6,697**	**93,765**	**-87,068**	**35,542**	**5,164**	**586,539**
2020 January	55,612	674	535	6,234	-5,699	6,092	3,780	40,715
February	47,379	647	343	6,829	-6,486	5,202	357	35,981
March	46,061	524	461	6,914	-6,453	4,812	2,521	32,799
April	39,000	531	365	5,480	-5,115	6,797	917	26,701
May	36,934	509	498	4,719	-4,222	2,621	781	29,819
June	39,259	522	284	4,579	-4,295	-5,690	1,340	39,836
July	R 43,196	652	473	5,359	-4,886	-13,631	R -829	53,422
August	R 47,499	F 763	314	4,522	-4,209	-7,737	R -2,085	53,876
September	R 45,119	RF 763	501	5,371	-4,870	R -1,127	R -13	R 42,152
October	46,599	NA	R 263	R 5,045	R -4,782	NA	NA	NA
November	45,960	NA	NA	NA	NA	NA	NA	NA
11-Month Total	**492,618**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
2019 11-Month Total	**653,126**	**7,281**	**6,182**	**87,274**	**-81,092**	**29,131**	**8,219**	**541,965**
2018 11-Month Total	**692,694**	**9,460**	**5,056**	**107,356**	**-102,300**	**-35,223**	**7,120**	**627,956**

[a] 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).

[b] 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."

[c] Net imports equal imports minus exports. A minus sign indicates exports are greater than imports.

[d] A negative value indicates a decrease in stocks and a positive value indicates an increase. See Table 6.3 for stocks data coverage.

[e] In 1949, stock change is included in "Losses and Unaccounted for."

[f] The difference between calculated coal supply and disposition, due to coal quantities lost or to data reporting problems.

R=Revised. NA=Not available. F=Forecast.

Notes: • For methodology used to calculate production, consumption, and stocks, see Note 1, "Coal Production," Note 2, "Coal Consumption," and Note 3, "Coal Stocks," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 4, "Coal Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#coal (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 6.2 Coal Consumption by Sector

(Thousand Short Tons)

	End-Use Sectors										Electric Power Sector[e,f]	Total
		Commercial			Industrial							
						Other Industrial						
	Resi-dential	CHP[a]	Other[b]	Total	Coke Plants	CHP[c]	Non-CHP[d]	Total	Total	Trans-portation		
1950 Total	51,562	(g)	63,021	63,021	104,014	(h)	120,623	120,623	224,637	63,011	91,871	494,102
1955 Total	35,590	(g)	32,852	32,852	107,743	(h)	110,096	110,096	217,839	16,972	143,759	447,012
1960 Total	24,159	(g)	16,789	16,789	81,385	(h)	96,017	96,017	177,402	3,046	176,685	398,081
1965 Total	14,635	(g)	11,041	11,041	95,286	(h)	105,560	105,560	200,846	655	244,788	471,965
1970 Total	9,024	(g)	7,090	7,090	96,481	(h)	90,156	90,156	186,637	298	320,182	523,231
1975 Total	2,823	(g)	6,587	6,587	83,598	(h)	63,646	63,646	147,244	24	405,962	562,640
1980 Total	1,355	(g)	5,097	5,097	66,657	(h)	60,347	60,347	127,004	(h)	569,274	702,730
1985 Total	1,711	(g)	6,068	6,068	41,056	(h)	75,372	75,372	116,429	(h)	693,841	818,049
1990 Total	1,345	1,191	4,189	5,379	38,877	27,781	48,549	76,330	115,207	(h)	f 782,567	904,498
1995 Total	755	1,419	3,633	5,052	33,011	29,363	43,693	73,055	106,067	(h)	850,230	962,104
2000 Total	454	1,547	2,126	3,673	28,939	28,031	37,177	65,208	94,147	(h)	985,821	1,084,095
2001 Total	481	1,448	2,441	3,888	26,075	25,755	39,514	65,268	91,344	(h)	964,433	1,060,146
2002 Total	533	1,405	2,506	3,912	23,656	26,232	34,515	60,747	84,403	(h)	977,507	1,066,355
2003 Total	551	1,816	1,869	3,685	24,248	24,846	36,415	61,261	85,509	(h)	1,005,116	1,094,861
2004 Total	512	1,917	2,693	4,610	23,670	26,613	35,582	62,195	85,865	(h)	1,016,268	1,107,255
2005 Total	378	1,922	2,420	4,342	23,434	25,875	34,465	60,340	83,774	(h)	1,037,485	1,125,978
2006 Total	290	1,886	1,050	2,936	22,957	25,262	34,210	59,472	82,429	(h)	1,026,636	1,112,292
2007 Total	353	1,927	1,247	3,173	22,715	22,537	34,078	56,615	79,331	(h)	1,045,141	1,127,998
2008 Total	(i)	2,021	1,485	3,506	22,070	21,902	32,491	54,393	76,463	(h)	1,040,580	1,120,548
2009 Total	(i)	1,798	1,412	3,210	15,326	19,766	25,549	45,314	60,641	(h)	933,627	997,478
2010 Total	(i)	1,720	1,361	3,081	21,092	24,638	24,650	49,289	70,381	(h)	975,052	1,048,514
2011 Total	(i)	1,668	1,125	2,793	21,434	22,319	23,919	46,238	67,671	(h)	932,484	1,002,948
2012 Total	(i)	1,450	595	2,045	20,751	20,065	22,773	42,838	63,589	(h)	823,551	889,185
2013 Total	(i)	1,356	595	1,951	21,474	19,761	23,294	43,055	64,529	(h)	857,962	924,442
2014 Total	(i)	1,063	824	1,887	21,297	19,076	23,870	42,946	64,243	(h)	851,602	917,731
2015 Total	(i)	798	706	1,503	19,708	16,984	21,475	38,459	58,167	(h)	738,444	798,115
2016 Total	(i)	683	500	1,183	16,485	14,720	20,129	34,849	51,333	(h)	678,554	731,071
2017 Total	(i)	610	451	1,061	17,538	12,975	20,289	33,264	50,801	(h)	664,993	716,856
2018 January	(i)	76	64	140	1,458	1,242	1,453	2,695	4,153	(h)	64,960	69,254
February	(i)	59	50	110	1,288	1,122	1,608	2,730	4,018	(h)	45,897	50,025
March	(i)	57	48	105	1,482	1,109	1,612	2,721	4,203	(h)	44,562	48,870
April	(i)	47	28	75	1,549	960	1,607	2,567	4,116	(h)	40,603	44,793
May	(i)	39	23	62	1,596	979	1,581	2,561	4,156	(h)	47,356	51,574
June	(i)	36	21	57	1,465	969	1,595	2,564	4,029	(h)	56,154	60,240
July	(i)	40	15	55	1,600	962	1,572	2,534	4,135	(h)	63,894	68,083
August	(i)	42	16	58	1,577	949	1,583	2,532	4,108	(h)	63,810	67,976
September	(i)	45	17	62	1,585	943	1,583	2,525	4,110	(h)	53,987	58,159
October	(i)	42	35	76	1,549	891	1,822	2,713	4,262	(h)	48,474	52,811
November	(i)	47	39	87	1,558	1,015	1,705	2,720	4,278	(h)	51,806	56,170
December	(i)	47	39	86	1,630	1,093	1,627	2,720	4,350	(h)	55,714	60,149
Total	(i)	577	395	972	18,337	12,233	19,347	31,580	49,917	(h)	637,217	688,105
2019 January	(i)	59	51	111	1,515	1,119	1,487	2,606	4,121	(h)	55,967	60,199
February	(i)	54	47	102	1,393	1,005	1,577	2,582	3,974	(h)	45,124	49,200
March	(i)	58	50	108	1,556	932	1,654	2,587	4,142	(h)	44,096	48,346
April	(i)	40	27	67	1,450	893	1,444	2,337	3,786	(h)	33,429	37,282
May	(i)	38	26	64	1,624	873	1,455	2,328	3,952	(h)	40,045	44,060
June	(i)	27	18	45	1,586	845	1,494	2,338	3,925	(h)	44,297	48,267
July	(i)	35	13	48	1,498	846	1,478	2,324	3,822	(h)	55,932	59,802
August	(i)	37	14	51	1,487	854	1,487	2,341	3,829	(h)	52,431	56,310
September	(i)	40	15	55	1,469	814	1,526	2,340	3,810	(h)	47,248	51,113
October	(i)	37	27	65	1,494	856	1,579	2,436	3,930	(h)	37,523	41,517
November	(i)	44	32	76	1,387	904	1,524	2,429	3,816	(h)	41,977	45,869
December	(i)	49	36	86	1,508	950	1,498	2,448	3,956	(h)	40,533	44,574
Total	(i)	519	357	876	17,967	10,892	18,203	29,095	47,062	(h)	538,601	586,539
2020 January	(i)	41	55	96	1,435	984	1,400	2,384	3,818	(h)	36,801	40,715
February	(i)	49	65	114	1,434	939	1,427	2,366	3,801	(h)	32,066	35,981
March	(i)	41	55	96	1,408	886	1,431	2,318	3,725	(h)	28,978	32,799
April	(i)	29	14	43	1,192	773	1,070	1,843	3,035	(h)	23,623	26,701
May	(i)	32	15	47	1,055	749	1,097	1,847	2,902	(h)	26,870	29,819
June	(i)	35	17	52	1,208	699	1,202	1,901	3,109	(h)	36,675	39,836
July	(i)	35	F 19	F 54	F 1,434	761	F 1,261	F 2,022	F 3,455	(h)	49,912	53,422
August	(i)	37	F 19	F 56	F 1,265	735	F 1,307	F 2,042	F 3,307	(h)	50,513	53,876
September	(i)	41	F 20	F 62	F 1,191	775	F 1,392	F 2,167	F 3,358	(h)	38,733	42,152
9-Month Total	(i)	340	E 281	E 621	E 11,620	7,302	E 11,587	E 18,889	E 30,509	(h)	324,172	355,302
2019 9-Month Total	(i)	388	261	649	13,578	8,182	13,602	21,783	35,361	(h)	418,569	454,579
2018 9-Month Total	(i)	441	282	723	13,600	9,235	14,193	23,428	37,028	(h)	481,223	518,975

[a] Commercial combined-heat-and-power (CHP) and a small number of commercial electricity-only plants, such as those at hospitals and universities. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[b] All commercial sector fuel use other than that in "Commercial CHP."

[c] 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 7.

[d] All industrial sector fuel use other than that in "Coke Plants" and "Industrial CHP."

[e] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[f] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

[g] Included in "Commercial Other."

[h] Included in "Industrial Non-CHP."

[i] Beginning in 2008, residential coal consumption data are no longer collected by the U.S. Energy Information Administration (EIA).

E=Estimate. F=Forecast.

Notes: • CHP monthly values are from Table 7.4c; electric power sector monthly values are from Table 7.4b; all other monthly values are estimates derived from collected quarterly and annual data. See Note 2, "Coal Consumption," at end of section. • Data values preceded by "F" are derived from EIA's Short-Term Integrated Forecasting System. See Note 4, "Coal Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#coal (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 6.3 Coal Stocks by Sector

(Thousand Short Tons)

	Producers and Distributors	End-Use Sectors					Electric Power Sector[c,d]	Total
		Residential[a] and Commercial	Industrial			Total		
			Coke Plants	Other[b]	Total			
1950 Year	**NA**	**2,462**	**16,809**	**26,182**	**42,991**	**45,453**	**31,842**	**77,295**
1955 Year	**NA**	**998**	**13,422**	**15,880**	**29,302**	**30,300**	**41,391**	**71,691**
1960 Year	**NA**	**666**	**11,122**	**11,637**	**22,759**	**23,425**	**51,735**	**75,160**
1965 Year	**NA**	**353**	**10,640**	**13,122**	**23,762**	**24,115**	**54,525**	**78,640**
1970 Year	**NA**	**300**	**9,045**	**11,781**	**20,826**	**21,126**	**71,908**	**93,034**
1975 Year	**12,108**	**233**	**8,797**	**8,529**	**17,326**	**17,559**	**110,724**	**140,391**
1980 Year	**24,379**	**NA**	**9,067**	**11,951**	**21,018**	**21,018**	**183,010**	**228,407**
1985 Year	**33,133**	**NA**	**3,420**	**10,438**	**13,857**	**13,857**	**156,376**	**203,367**
1990 Year	**33,418**	**NA**	**3,329**	**8,716**	**12,044**	**12,044**	**156,166**	**201,629**
1995 Year	**34,444**	**NA**	**2,632**	**5,702**	**8,334**	**8,334**	**126,304**	**169,083**
2000 Year	**31,905**	**NA**	**1,494**	**4,587**	**6,081**	**6,081**	**102,296**	**140,282**
2001 Year	**35,900**	**NA**	**1,510**	**6,006**	**7,516**	**7,516**	**138,496**	**181,912**
2002 Year	**43,257**	**NA**	**1,364**	**5,792**	**7,156**	**7,156**	**141,714**	**192,127**
2003 Year	**38,277**	**NA**	**905**	**4,718**	**5,623**	**5,623**	**121,567**	**165,468**
2004 Year	**41,151**	**NA**	**1,344**	**4,842**	**6,186**	**6,186**	**106,669**	**154,006**
2005 Year	**34,971**	**NA**	**2,615**	**5,582**	**8,196**	**8,196**	**101,137**	**144,304**
2006 Year	**36,548**	**NA**	**2,928**	**6,506**	**9,434**	**9,434**	**140,964**	**186,946**
2007 Year	**33,977**	**NA**	**1,936**	**5,624**	**7,560**	**7,560**	**151,221**	**192,758**
2008 Year	**34,688**	**498**	**2,331**	**6,007**	**8,338**	**8,836**	**161,589**	**205,112**
2009 Year	**47,718**	**529**	**1,957**	**5,109**	**7,066**	**7,595**	**189,467**	**244,780**
2010 Year	**49,820**	**552**	**1,925**	**4,525**	**6,451**	**7,003**	**174,917**	**231,740**
2011 Year	**51,897**	**603**	**2,610**	**4,455**	**7,065**	**7,668**	**172,387**	**231,951**
2012 Year	**46,157**	**583**	**2,522**	**4,475**	**6,997**	**7,581**	**185,116**	**238,853**
2013 Year	**45,652**	**495**	**2,200**	**4,097**	**6,297**	**6,792**	**147,884**	**200,328**
2014 Year	**38,894**	**449**	**2,640**	**4,196**	**6,836**	**7,285**	**151,548**	**197,727**
2015 Year	**35,871**	**394**	**2,236**	**4,382**	**6,618**	**7,012**	**195,548**	**238,431**
2016 Year	**25,309**	**360**	**1,675**	**3,637**	**5,312**	**5,672**	**162,009**	**192,990**
2017 Year	**23,999**	**310**	**1,718**	**3,242**	**4,960**	**5,270**	**137,687**	**166,956**
2018 January	24,769	298	1,648	3,125	4,773	5,072	123,235	153,075
February	24,938	287	1,578	3,008	4,586	4,873	120,526	150,337
March	24,736	275	1,508	2,891	4,399	4,674	126,008	155,418
April	23,417	268	1,544	2,893	4,437	4,705	128,571	156,693
May	22,841	262	1,580	2,895	4,474	4,736	127,982	155,559
June	22,997	256	1,616	2,896	4,512	4,768	121,041	148,806
July	21,025	257	1,681	2,939	4,619	4,876	110,348	136,250
August	21,806	259	1,746	2,981	4,727	4,985	103,744	130,535
September	22,537	260	1,811	3,023	4,834	5,094	100,384	128,015
October	21,878	256	1,809	3,102	4,911	5,166	104,855	131,900
November	22,419	251	1,808	3,180	4,988	5,239	104,075	131,733
December	**21,692**	**247**	**1,807**	**3,258**	**5,065**	**5,312**	**102,793**	**129,796**
2019 January	21,391	238	1,873	3,116	4,989	5,227	99,147	125,765
February	23,551	229	1,939	2,974	4,913	5,142	98,639	127,332
March	24,160	221	2,005	2,832	4,837	5,058	96,933	126,151
April	22,767	214	2,102	2,883	4,985	5,199	108,089	136,055
May	24,273	208	2,199	2,934	5,133	5,341	115,712	145,326
June	24,529	201	2,296	2,985	5,281	5,483	116,876	146,887
July	25,240	212	2,352	3,046	5,398	5,609	110,672	141,521
August	26,441	222	2,407	3,107	5,514	5,736	110,278	142,455
September	27,714	232	2,463	3,168	5,631	5,863	110,626	144,203
October	29,683	237	2,420	3,198	5,618	5,855	118,574	154,112
November	30,717	242	2,376	3,228	5,605	5,846	122,364	158,927
December	**31,320**	**246**	**2,333**	**3,258**	**5,591**	**5,838**	**128,180**	**165,338**
2020 January	F 31,382	235	2,271	3,178	5,449	5,684	134,364	171,430
February	F 31,803	223	2,210	3,097	5,307	5,530	139,299	176,632
March	F 30,829	212	2,148	3,017	5,165	5,376	145,238	181,444
April	F 31,168	212	2,106	3,011	5,117	5,329	151,744	188,241
May	F 31,522	212	2,064	3,006	5,070	5,282	154,058	190,862
June	F 29,510	213	2,022	3,000	5,022	5,235	150,427	185,172
July	F 27,716	F 198	F 2,099	F 3,621	F 5,720	F 5,918	137,907	171,541
August	F 28,138	F 197	F 2,145	F 3,636	F 5,781	F 5,978	129,688	163,804
September	F 27,537	F 195	F 2,190	F 3,653	F 5,843	F 6,038	129,102	162,677

[a] Through 1979, data are for the residential and commercial sectors. Beginning in 2008, data are for the commercial sector only.

[b] Through 1979, data are for manufacturing plants and the transportation sector. For 1980–2007, data are for manufacturing plants only. Beginning in 2008, data are for manufacturing plants and coal transformation/processing plants.

[c] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[d] Excludes waste coal. Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

NA=Not available. F=Forecast.

Notes: • Stocks are at end of period. • Electric power sector monthly values are from Table 7.5; producers and distributors monthly values are estimates derived from collected annual data; all other monthly values are estimates derived from collected quarterly values. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 4, "Coal Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#coal (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Note 1. Coal Production. Preliminary monthly estimates of national coal production are the sum of weekly estimates developed by the U.S. Energy Information Administration (EIA) and published in the *Weekly Coal Production* report. When a week extends into a new month, production is allocated on a daily basis and added to the appropriate month. Weekly estimates are based on Association of American Railroads (AAR) data showing the number of railcars loaded with coal during the week by Class I and certain other railroads.

Through 2001, the weekly coal production model converted AAR data into short tons of coal by using the average number of short tons of coal per railcar loaded reported in the "Quarterly Freight Commodity Statistics" from the Surface Transportation Board. If an average coal tonnage per railcar loaded was not available for a specific railroad, the national average was used. To derive the estimate of total weekly production, the total rail tonnage for the week was divided by the ratio of quarterly production shipped by rail and total quarterly production. Data for the corresponding quarter of previous years were used to derive this ratio. This method ensured that the seasonal variations were preserved in the production estimates.

From 2002 through 2014, the weekly coal production model used statistical auto regressive methods to estimate national coal production as a function of railcar loadings of coal, heating degree-days, and cooling degree-days. On Thursday of each week, EIA received from the AAR data for the previous week. The latest weekly national data for heating degree-days and cooling degree-days were obtained from the National Oceanic and Atmospheric Administration's Climate Prediction Center.

Beginning in 2015, the revised weekly coal production model uses statistical auto regressive methods to estimate national coal production as a function of railcar loadings of coal. EIA receives AAR data on Thursday of each week for prior week car loadings. The weekly coal model is run and a national level coal production estimate is obtained. From there, state-level estimates are calculated using historical state production share. The state estimates are then aggregated to various regional-level estimates. The weekly coal model is refit every quarter after preliminary coal data are available.

When preliminary quarterly data become available, the monthly and weekly estimates are adjusted to conform to the quarterly figures. The adjustment procedure uses historical state-level production data, the methodology for which can be seen in the documentation located at http://www.eia.gov/coal/production/weekly/. Initial estimates of annual production published in January of the following year are based on preliminary production data covering the first nine months (three quarters) and weekly/monthly estimates for the fourth quarter. All quarterly, monthly, and weekly production figures are adjusted to conform to the final annual production data published in the *Monthly Energy Review* in the fall of the following year.

Note 2. Coal Consumption. Forecast data (designated by an "F") are derived from forecasted values shown in EIA's *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "U.S. Coal Supply, Consumption, and Inventories." The monthly estimates are based on the quarterly values, which are released in March, June, September, and December. The estimates are revised quarterly as collected data become available from the data sources. Sector-specific information follows.

Residential and Commercial—Through 2007, coal consumption by the residential and commercial sectors is reported to EIA for the two sectors combined; EIA estimates the amount consumed by the sectors individually. To create the estimates, 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 (1973–1981 and subsequent odd-numbered years), residential consumption of coal is estimated using the following steps: a ratio is created of the number of occupied housing units heated by coal to the number of occupied housing units heated by oil; that ratio is then multiplied by the Btu quantity of oil consumed by the residential sector to derive an estimate of the Btu quantity of coal consumed by the residential sector; and, finally, the amount estimated as the residential sector consumption is subtracted from the residential and commercial sectors' combined consumption to derive the commercial sector's estimated consumption. Beginning in 2008, residential coal consumption data are not collected by EIA, and commercial coal consumption data are taken directly from reported data.

Industrial Coke Plants—Through 1979, monthly coke plant consumption data were taken directly from reported data. For 1980–1987, coke plant consumption estimates were derived by proportioning reported quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported. Beginning in 1988, monthly coke plant consumption estimates are derived from the reported quarterly data by using monthly ratios of raw steel production data from the American Iron and Steel Institute. The ratios are the monthly raw steel production from open hearth and basic oxygen process furnaces as a proportion of the quarterly production from those kinds of furnaces. Coal coke consumption values also include the relativity small amount consumed for non-combustion use (See Tables 1.11a and 1.11b).

Industrial Other—Through 1977, monthly consumption data for the other industrial sector (all industrial users minus coke plants) were derived by using reported data to modify baseline consumption figures from the most recent U.S. Census Bureau Annual Survey of Manufactures or Census of Manufactures. For 1978 and 1979, monthly estimates were derived from data reported on Forms EIA-3 and EIA-6. For 1980–1987, monthly figures were estimated by proportioning quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported on Form EIA-3. Beginning in 1988, monthly consumption for the other industrial sector is estimated from reported quarterly data by using ratios derived from industrial production indices published by the Board of Governors of the Federal Reserve System. Indices for six major industry groups are used as the basis for calculating the ratios: food manufacturing, which is North American Industry Classification System (NAICS) code 311; paper manufacturing, NAICS 322; chemical manufacturing, NAICS 325; petroleum and coal products, NAICS 324; non-metallic mineral products manufacturing, NAICS 327; and primary metal manufacturing, NAICS 331. The monthly ratios are computed as the monthly sum of the weighted indices as a proportion of the quarterly sum of the weighted indices by using the 1977 proportion as the weights. Through 2007, quarterly consumption data for the other industrial sector were derived by adding beginning stocks at manufacturing plants to current receipts and subtracting ending stocks at manufacturing plants. In this calculation, current receipts are the greater of either reported receipts from manufacturing plants (Form EIA-3) or reported shipments to the other industrial sector (Form EIA-6), thereby ensuring that agriculture, forestry, fishing, and construction consumption data were included where appropriate. Beginning in 2008, quarterly consumption totals for other industrial coal include data for manufacturing and mining only. Over time, surveyed coal consumption data for agriculture, forestry, fishing, and construction dwindled to about 20–30 thousand short tons annually. Therefore, in 2008, EIA consolidated its programs by eliminating agriculture, forestry, fishing, and construction as surveyed sectors.

Electric Power Sector—Monthly consumption data for electric power plants are taken directly from reported data.

Note 3. Coal Stocks. Coal stocks data are reported by major end-use sector. Forecast data (designated by an "F") are derived from forecasted values shown in EIA's *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "U.S. Coal Supply, Consumption, and Inventories." The monthly estimates are based on the quarterly values (released in March, June, September, and December) or annual values. The estimates are revised as collected data become available from the data sources. Sector-specific information follows.

Producers and Distributors—Through 1997, quarterly stocks at producers and distributors were taken directly from reported data. Monthly data were estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Beginning in 1998, end-of-year stocks are taken from reported data. Monthly stocks are estimated by a model.

Residential and Commercial—Through 1979, stock estimates for the residential and commercial sector were taken directly from reported data. For 1980–2007, stock estimates were not collected. Beginning in 2008, quarterly commercial (excluding residential) stocks data are collected on Form EIA-3 (data for "Commercial and Institutional Coal Users").

Industrial Coke Plants—Through 1979, monthly stocks at coke plants were taken directly from reported data. Beginning

in 1980, coke plant stocks are estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Quarterly stocks are taken directly from data reported on Form EIA-5.

Industrial Other—Through 1977, stocks for the other industrial sector were derived by using reported data to modify baseline figures from a one-time Bureau of Mines survey of consumers. For 1978–1982, monthly estimates were derived by judgmentally proportioning reported quarterly data based on representative seasonal patterns of supply and demand. Beginning in 1983, other industrial coal stocks are estimated as indicated above for coke plants. Quarterly stocks are taken directly from data reported on Form EIA-3 and therefore include only manufacturing industries; data for agriculture, forestry, fishing, mining, and construction stocks are not available.

Electric Power Sector—Monthly stocks data at electric power plants are taken directly from reported data.

Note 4. Coal Forecast Values. Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). The model is driven primarily by data and assumptions about key macroeconomic variables, the world oil price, and weather. The coal forecast relies on other variables as well, such as alternative fuel prices (natural gas and oil) and power generation by sources other than fossil fuels, including nuclear and hydroelectric power. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the coal industry.

The STIFS model results are published monthly in EIA's *Short-Term Energy Outlook*, which is accessible on the Web at http://www.eia.gov/forecasts/steo/.

Table 6.1 Sources

Production

1949–September 1977: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook and Minerals Industry Surveys*.
October 1977 forward: U.S. Energy Information Administration (EIA), *Weekly Coal Production*.

Waste Coal Supplied

1989–1997: 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," and predecessor forms.

2004–2007: 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," and predecessor forms.

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report," and Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, Short-Term Integrated Forecasting System.

Imports and Exports

1949 forward: U.S. Department of Commerce, U.S. Census Bureau, Monthly Reports IM 145 (Imports) and EM 545 (Exports).

Stock Change

1950 forward: Calculated from data in Table 6.3.

Losses and Unaccounted for

1949 forward: Calculated as the sum of production, imports, and waste coal supplied, minus exports, stock change, and consumption.

Consumption
1949 forward: Table 6.2.

Table 6.2 Sources

Residential and Commercial Total
Through 2007, coal consumption by the residential and commercial sectors combined is reported to the U.S. Energy Information Administration (EIA). EIA estimates the sectors individually using the method described in Note 2, "Consumption," at the end of Section 6. Data for the residential and commercial sectors combined are from:
1949–1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook*.
January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks." October 1977–1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

1980–1997: EIA, Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: DOI, Mine Safety and Health Administration, Form 7000-2, "Quarterly Coal Consumption and Quality Report—Coke Plants."

Commercial Total
Beginning in 2008, coal consumption by the commercial (excluding residential) sector is reported to EIA. Data for total commercial consumption are from: 2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, Short-Term Integrated Forecasting System (STIFS).

Commercial CHP
1989 forward: Table 7.4c.

Commercial Other
1949 forward: Calculated as "Commercial Total" minus "Commercial CHP."

Industrial Coke Plants
1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.
October 1977–1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals—Monthly/Annual Supplement."

1981–1984: EIA, Form EIA-5/5A, "Coke Plant Report—Quarterly/Annual Supplement."

1985 forward: EIA, Form EIA–5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; and, for forecast values, EIA, STIFS.

Other Industrial Total
1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.

October 1977–1979: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

1980–1997: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms and Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms, Form EIA-6A, "Coal Distribution Report," annual, and Form EIA-7A, "Coal Production Report," annual.

2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data") and Form EIA-7A, "Coal Production Report," annual; and, for forecast values, EIA, STIFS.

Other Industrial CHP
1989 forward: Table 7.4c.

Other Industrial Non-CHP
1949 forward: Calculated as "Other Industrial Total" minus "Other Industrial CHP."

Transportation
1949–1976: DOI, BOM, Minerals Yearbook.
January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks." October–December 1977: EIA, Form EIA-6, "Coal Distribution Report," quarterly.

Electric Power
1949 forward: Table 7.4b.

Table 6.3 Sources

Producers and Distributors
1973–1979: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Form 6-1419Q, "Distribution of Bituminous Coal and Lignite Shipments."

1980–1997: U.S. Energy Information Administration (EIA), Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: EIA, Form EIA-6A, "Coal Distribution Report," annual.

2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); (data for "Commercial and Institutional Coal Users"); and, for forecast values, EIA, STIFS.

Residential and Commercial
1949–1976: DOI, BOM, *Minerals Yearbook*.

January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

October 1977–1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Coal Data); and, for forecast values, EIA, STIFS.

Industrial Coke Plants
1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.

October 1977–1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals—Monthly/Annual."

1981–1984: EIA, Form EIA-5/5A, "Coke Plant Report—Quarterly/Annual Supplement."

1985 forward: EIA, Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" and, for forecast values, EIA, STIFS.

Industrial Other
1949–September 1977: DOI, BOM, *Minerals Yearbook and Minerals Industry Surveys*.

October 1977–2007: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

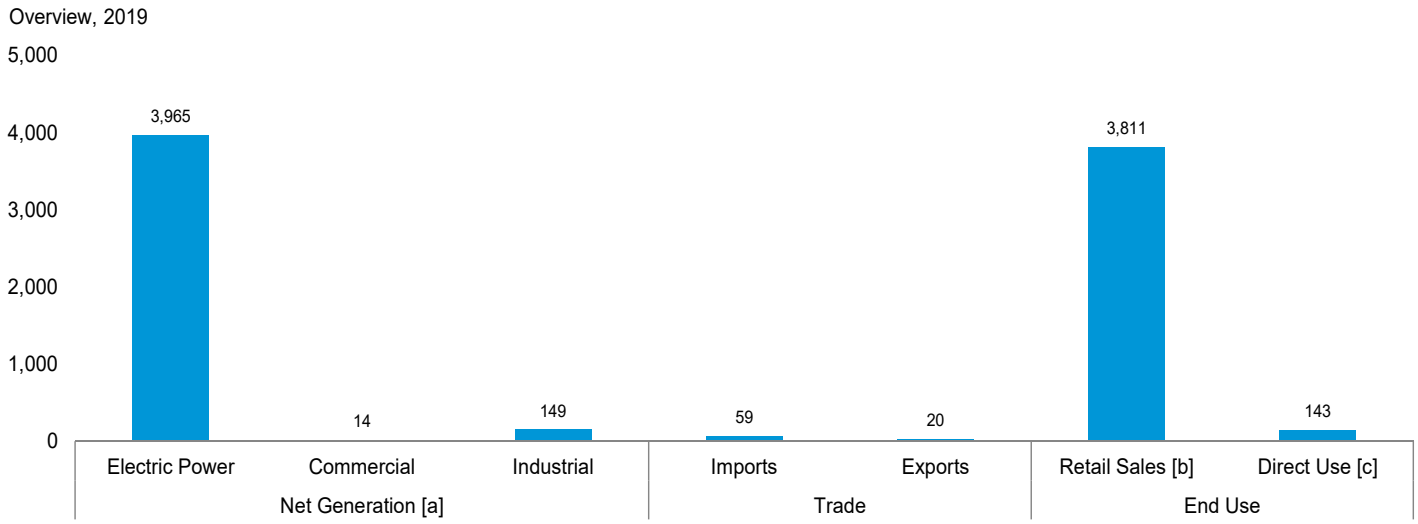
2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, STIFS.

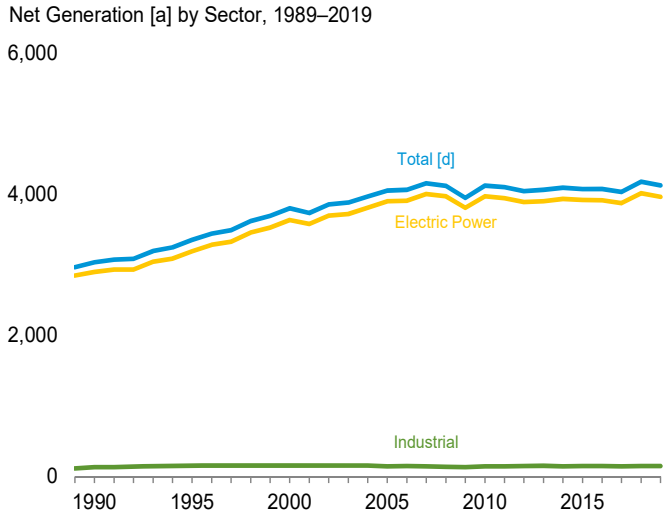
Electric Power
1949 forward: Table 7.5.

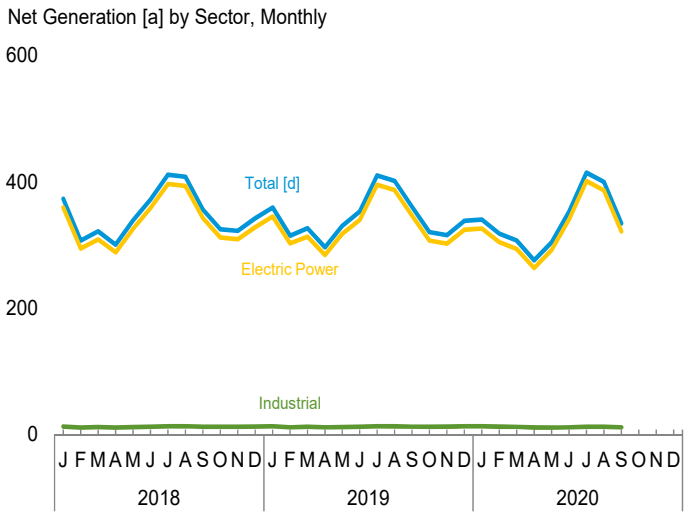
7. Electricity

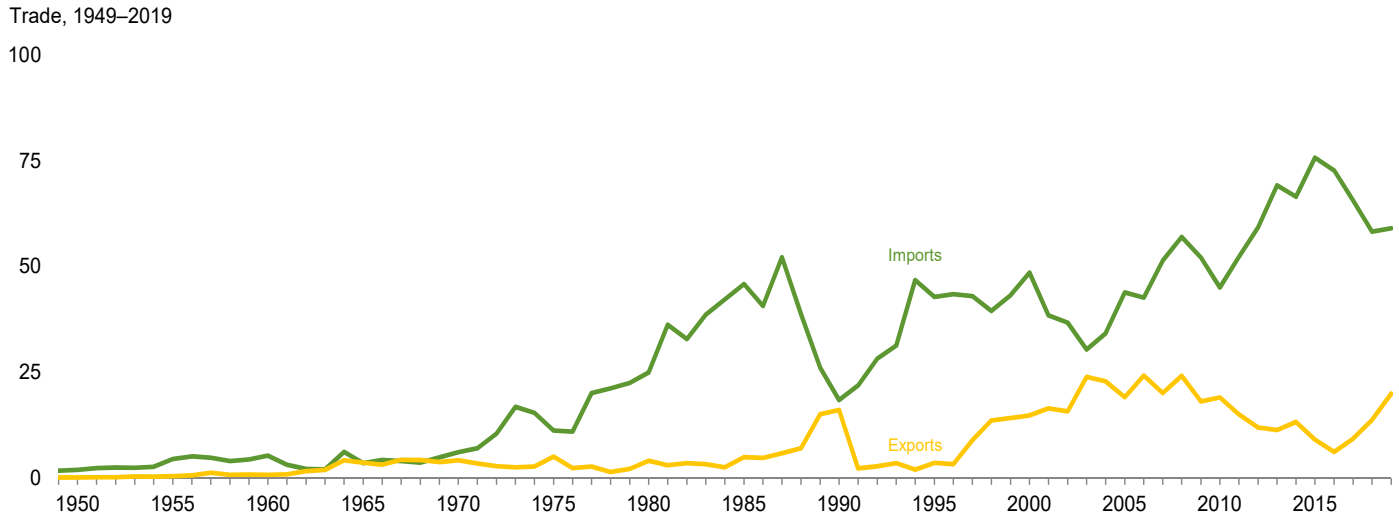
Figure 7.1 Electricity Overview

(Billion Kilowatthours)









[a] Data are for utility-scale facilities.
[b] Electricity retail sales to ultimate customers reported by electric utilities and other energy service providers.
[c] See "Direct Use" in Glossary.
[d] Includes commercial sector.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.1.

Table 7.1 Electricity Overview

(Billion Kilowatthours)

	Net Generation[a]				Trade			T&D Losses[f] and Unaccounted for[g]	End Use		
	Electric Power Sector[b]	Commercial Sector[c]	Industrial Sector[d]	Total	Imports[e]	Exports[e]	Net Imports[e]		Retail Sales[h]	Direct Use[i]	Total
1950 Total	**329**	**NA**	**5**	**334**	**2**	**(s)**	**2**	**44**	**291**	**NA**	**291**
1955 Total	**547**	**NA**	**3**	**550**	**5**	**(s)**	**4**	**58**	**497**	**NA**	**497**
1960 Total	**756**	**NA**	**4**	**759**	**5**	**1**	**5**	**76**	**688**	**NA**	**688**
1965 Total	**1,055**	**NA**	**3**	**1,058**	**4**	**4**	**(s)**	**104**	**954**	**NA**	**954**
1970 Total	**1,532**	**NA**	**3**	**1,535**	**6**	**4**	**2**	**145**	**1,392**	**NA**	**1,392**
1975 Total	**1,918**	**NA**	**3**	**1,921**	**11**	**5**	**6**	**180**	**1,747**	**NA**	**1,747**
1980 Total	**2,286**	**NA**	**3**	**2,290**	**25**	**4**	**21**	**216**	**2,094**	**NA**	**2,094**
1985 Total	**2,470**	**NA**	**3**	**2,473**	**46**	**5**	**41**	**190**	**2,324**	**NA**	**2,324**
1990 Total	**2,901**	**6**	**[d] 131**	**3,038**	**18**	**16**	**2**	**203**	**2,713**	**125**	**2,837**
1995 Total	**3,194**	**8**	**151**	**3,353**	**43**	**4**	**39**	**229**	**3,013**	**151**	**3,164**
2000 Total	**3,638**	**8**	**157**	**3,802**	**49**	**15**	**34**	**244**	**3,421**	**171**	**3,592**
2001 Total	**3,580**	**7**	**149**	**3,737**	**39**	**16**	**22**	**202**	**3,394**	**163**	**3,557**
2002 Total	**3,698**	**7**	**153**	**3,858**	**37**	**16**	**21**	**248**	**3,465**	**166**	**3,632**
2003 Total	**3,721**	**7**	**155**	**3,883**	**30**	**24**	**6**	**228**	**3,494**	**168**	**3,662**
2004 Total	**3,808**	**8**	**154**	**3,971**	**34**	**23**	**11**	**266**	**3,547**	**168**	**3,716**
2005 Total	**3,902**	**8**	**145**	**4,055**	**44**	**19**	**25**	**269**	**3,661**	**150**	**3,811**
2006 Total	**3,908**	**8**	**148**	**4,065**	**43**	**24**	**18**	**266**	**3,670**	**147**	**3,817**
2007 Total	**4,005**	**8**	**143**	**4,157**	**51**	**20**	**31**	**298**	**3,765**	**126**	**3,890**
2008 Total	**3,974**	**8**	**137**	**4,119**	**57**	**24**	**33**	**286**	**3,734**	**132**	**3,866**
2009 Total	**3,810**	**8**	**132**	**3,950**	**52**	**18**	**34**	**261**	**3,597**	**127**	**3,724**
2010 Total	**3,972**	**9**	**144**	**4,125**	**45**	**19**	**26**	**264**	**3,755**	**132**	**3,887**
2011 Total	**3,948**	**10**	**142**	**4,100**	**52**	**15**	**37**	**255**	**3,750**	**133**	**3,883**
2012 Total	**3,890**	**11**	**146**	**4,048**	**59**	**12**	**47**	**263**	**3,695**	**138**	**3,832**
2013 Total	**3,904**	**12**	**150**	**4,066**	**69**	**11**	**58**	**256**	**3,725**	**143**	**3,868**
2014 Total	**3,937**	**13**	**144**	**4,094**	**67**	**13**	**53**	**244**	**3,765**	**139**	**3,903**
2015 Total	**3,919**	**13**	**146**	**4,078**	**76**	**9**	**67**	**244**	**3,759**	**141**	**3,900**
2016 Total	**3,918**	**13**	**146**	**4,077**	**73**	**6**	**67**	**241**	**3,762**	**140**	**3,902**
2017 Total	**3,877**	**13**	**144**	**4,034**	**66**	**9**	**56**	**226**	**3,723**	**141**	**3,864**
2018 January	359	1	13	373	5	1	4	20	344	[E] 12	357
February	295	1	11	307	5	1	4	7	293	[E] 11	304
March	309	1	12	322	6	1	4	17	297	[E] 12	309
April	289	1	11	301	5	2	3	14	278	[E] 11	289
May	326	1	12	339	5	1	4	28	303	[E] 12	315
June	359	1	12	372	5	1	4	26	338	[E] 12	350
July	397	1	13	411	5	1	4	28	375	[E] 13	388
August	393	1	13	408	6	1	5	19	381	[E] 13	394
September	343	1	12	356	4	1	3	10	337	[E] 12	349
October	312	1	12	325	4	1	3	7	309	[E] 12	321
November	309	1	12	322	4	1	3	22	291	[E] 12	302
December	328	1	13	342	4	1	3	21	312	[E] 12	325
Total	**4,018**	**13**	**147**	**4,178**	**58**	**14**	**44**	**219**	**3,859**	**144**	**4,003**
2019 January	345	1	13	359	5	1	3	22	329	[E] 13	341
February	303	1	11	315	5	1	3	11	296	[E] 11	307
March	313	1	12	327	5	3	2	15	302	[E] 12	314
April	284	1	11	297	4	2	2	14	274	[E] 11	285
May	317	1	12	330	5	2	3	25	297	[E] 11	308
June	340	1	12	353	5	2	4	23	321	[E] 12	333
July	395	1	13	410	6	2	4	25	376	[E] 13	389
August	387	1	13	401	6	2	4	20	373	[E] 13	385
September	347	1	12	360	5	2	4	11	340	[E] 12	353
October	307	1	12	320	4	1	2	2	308	[E] 12	320
November	302	1	13	316	5	1	4	22	286	[E] 12	298
December	324	1	13	338	5	1	4	20	310	[E] 13	322
Total	**3,965**	**14**	**149**	**4,127**	**59**	**20**	**39**	**211**	**3,811**	**143**	**3,955**
2020 January	326	1	13	340	5	1	3	19	311	[E] 13	324
February	305	1	12	318	4	2	3	19	290	[E] 12	302
March	294	1	12	307	5	1	4	14	285	[E] 12	297
April	264	1	11	276	5	1	3	10	258	[E] 11	269
May	292	1	11	304	5	2	4	26	270	[E] 11	281
June	340	1	12	353	5	1	4	30	316	[E] 11	327
July	401	1	12	415	[R] 7	1	5	33	375	[E] 12	387
August	386	1	12	400	[R] 7	1	[R] 6	[R] 30	364	[E] 12	376
September	322	1	11	334	5	1	4	9	318	[E] 11	329
9-Month Total	**2,929**	**10**	**108**	**3,047**	**47**	**12**	**36**	**191**	**2,787**	**[E] 104**	**2,891**
2019 9-Month Total	**3,032**	**10**	**111**	**3,153**	**45**	**16**	**29**	**167**	**2,908**	**[E] 107**	**3,015**
2018 9-Month Total	**3,069**	**10**	**110**	**3,189**	**47**	**11**	**36**	**169**	**2,947**	**[E] 108**	**3,055**

[a] Electricity net generation at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic (PV) generation shown on Table 10.6. See Note 1, "Coverage of Electricity Statistics," at end of section.

[b] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[c] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[d] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. Through 1988, data are for industrial hydroelectric power only.

[e] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

[f] Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note 1, "Electrical System Energy Losses," at end of Section 2.

[g] Data collection frame differences and nonsampling error.

[h] Electricity retail sales to ultimate customers by electric utilities and, beginning in 1996, other energy service providers.

[i] 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. E=Estimate. NA=Not available. (s)=Less than 0.5 billion kilowatthours.

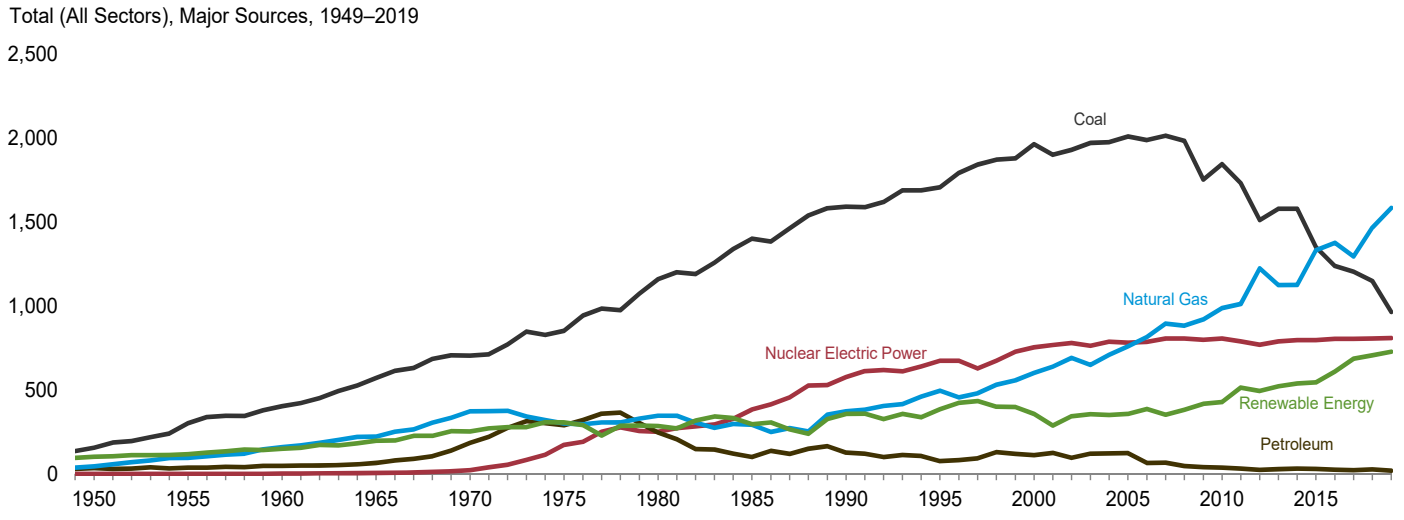
Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 3, "Electricity Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

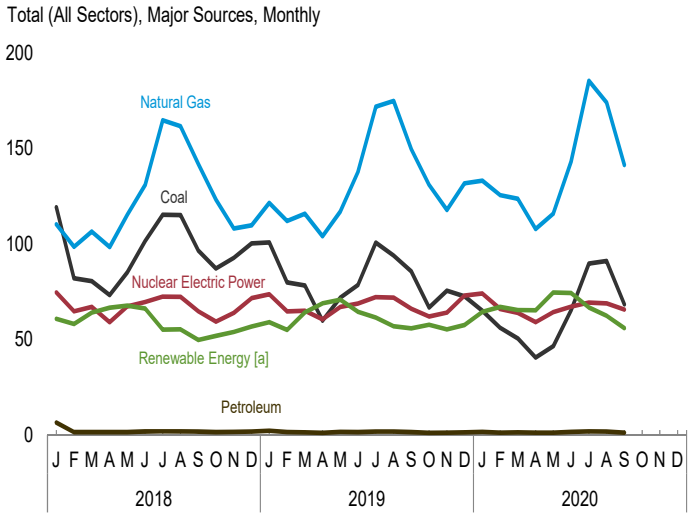
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

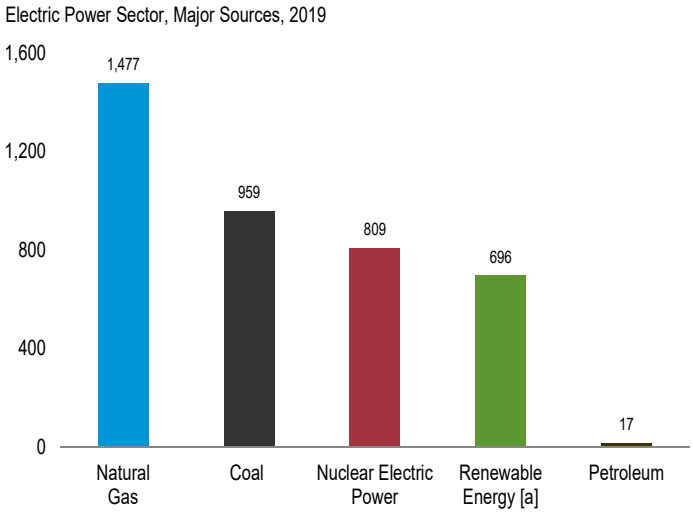
Sources: See end of section.

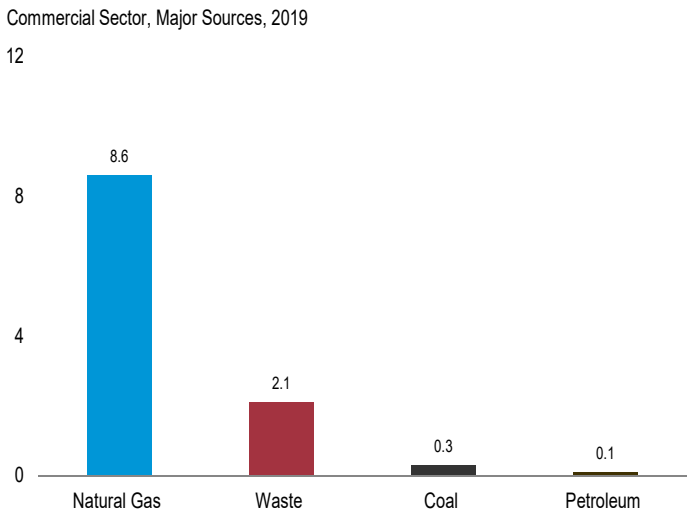
Figure 7.2 Electricity Net Generation

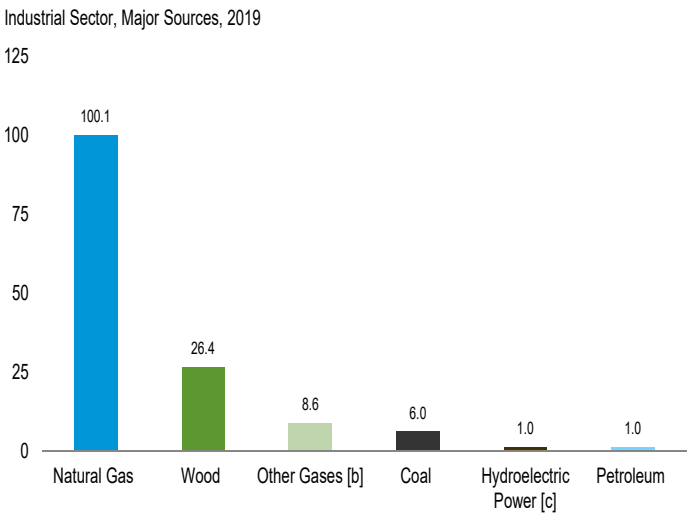
(Billion Kilowatthours)











[a] Conventional hydroelectric power, wood, waste, geothermal, solar, and wind.
[b] Blast furnace gas, and other manufactured and waste derived from fossil fuels.
[c] Conventional hydroelectric power.
Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.2a-7.2c.

Table 7.2a Electricity Net Generation: Total (All Sectors)

(Sum of Tables 7.2b and 7.2c; Million Kilowatthours)

	Fossil Fuels						Renewable Energy						
								Biomass					
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power[f]	Wood[g]	Waste[h]	Geothermal	Solar[i]	Wind	Total[j]
1950 Total	**154,520**	**33,734**	**44,559**	**NA**	**0**	**([f])**	**100,885**	**390**	**NA**	**NA**	**NA**	**NA**	**334,088**
1955 Total	**301,363**	**37,138**	**95,285**	**NA**	**0**	**([f])**	**116,236**	**276**	**NA**	**NA**	**NA**	**NA**	**550,299**
1960 Total	**403,067**	**47,987**	**157,970**	**NA**	**518**	**([f])**	**149,440**	**140**	**NA**	**33**	**NA**	**NA**	**759,156**
1965 Total	**570,926**	**64,801**	**221,559**	**NA**	**3,657**	**([f])**	**196,984**	**269**	**NA**	**189**	**NA**	**NA**	**1,058,386**
1970 Total	**704,394**	**184,183**	**372,890**	**NA**	**21,804**	**([f])**	**250,957**	**136**	**220**	**525**	**NA**	**NA**	**1,535,111**
1975 Total	**852,786**	**289,095**	**299,778**	**NA**	**172,505**	**([f])**	**303,153**	**18**	**174**	**3,246**	**NA**	**NA**	**1,920,755**
1980 Total	**1,161,562**	**245,994**	**346,240**	**NA**	**251,116**	**([f])**	**279,182**	**275**	**158**	**5,073**	**NA**	**NA**	**2,289,600**
1985 Total	**1,402,128**	**100,202**	**291,946**	**NA**	**383,691**	**([f])**	**284,311**	**743**	**640**	**9,325**	**11**	**6**	**2,473,002**
1990 Total[k]	**1,594,011**	**126,460**	**372,765**	**10,383**	**576,862**	**-3,508**	**292,866**	**32,522**	**13,260**	**15,434**	**367**	**2,789**	**3,037,827**
1995 Total	**1,709,426**	**74,554**	**496,058**	**13,870**	**673,402**	**-2,725**	**310,833**	**36,521**	**20,405**	**13,378**	**497**	**3,164**	**3,353,487**
2000 Total	**1,966,265**	**111,221**	**601,038**	**13,955**	**753,893**	**-5,539**	**275,573**	**37,595**	**23,131**	**14,093**	**493**	**5,593**	**3,802,105**
2001 Total	**1,903,956**	**124,880**	**639,129**	**9,039**	**768,826**	**-8,823**	**216,961**	**35,200**	**14,548**	**13,741**	**543**	**6,737**	**3,736,644**
2002 Total	**1,933,130**	**94,567**	**691,006**	**11,463**	**780,064**	**-8,743**	**264,329**	**38,665**	**15,044**	**14,491**	**555**	**10,354**	**3,858,452**
2003 Total	**1,973,737**	**119,406**	**649,908**	**15,600**	**763,733**	**-8,535**	**275,806**	**37,529**	**15,812**	**14,424**	**534**	**11,187**	**3,883,185**
2004 Total	**1,978,301**	**121,145**	**710,100**	**15,252**	**788,528**	**-8,488**	**268,417**	**38,117**	**15,421**	**14,811**	**575**	**14,144**	**3,970,555**
2005 Total	**2,012,873**	**122,225**	**760,960**	**13,464**	**781,986**	**-6,558**	**270,321**	**38,856**	**15,420**	**14,692**	**550**	**17,811**	**4,055,423**
2006 Total	**1,990,511**	**64,166**	**816,441**	**14,177**	**787,219**	**-6,558**	**289,246**	**38,762**	**16,099**	**14,568**	**508**	**26,589**	**4,064,702**
2007 Total	**2,016,456**	**65,739**	**896,590**	**13,453**	**806,425**	**-6,896**	**247,510**	**39,014**	**16,525**	**14,637**	**612**	**34,450**	**4,156,745**
2008 Total	**1,985,801**	**46,243**	**882,981**	**11,707**	**806,208**	**-6,288**	**254,831**	**37,300**	**17,734**	**14,840**	**864**	**55,363**	**4,119,388**
2009 Total	**1,755,904**	**38,937**	**920,979**	**10,632**	**798,855**	**-4,627**	**273,445**	**36,050**	**18,443**	**15,009**	**891**	**73,886**	**3,950,331**
2010 Total	**1,847,290**	**37,061**	**987,697**	**11,313**	**806,968**	**-5,501**	**260,203**	**37,172**	**18,917**	**15,219**	**1,212**	**94,652**	**4,125,060**
2011 Total	**1,733,430**	**30,182**	**1,013,689**	**11,566**	**790,204**	**-6,421**	**319,355**	**37,449**	**19,222**	**15,316**	**1,818**	**120,177**	**4,100,141**
2012 Total	**1,514,043**	**23,190**	**1,225,894**	**11,898**	**769,331**	**-4,950**	**276,240**	**37,799**	**19,823**	**15,562**	**4,327**	**140,822**	**4,047,765**
2013 Total	**1,581,115**	**27,164**	**1,124,836**	**12,853**	**789,016**	**-4,681**	**268,565**	**40,028**	**20,830**	**15,775**	**9,036**	**167,840**	**4,065,964**
2014 Total	**1,581,710**	**30,232**	**1,126,609**	**12,022**	**797,166**	**-6,174**	**259,367**	**42,340**	**21,650**	**15,877**	**17,691**	**181,655**	**4,093,606**
2015 Total	**1,352,398**	**28,249**	**1,333,482**	**13,117**	**797,178**	**-5,091**	**249,080**	**41,929**	**21,703**	**15,918**	**24,893**	**190,719**	**4,077,601**
2016 Total	**1,239,149**	**24,205**	**1,378,307**	**12,807**	**805,694**	**-6,686**	**267,812**	**40,947**	**21,813**	**15,826**	**36,054**	**226,993**	**4,076,675**
2017 Total	**1,205,835**	**21,390**	**1,296,442**	**12,469**	**804,950**	**-6,495**	**300,333**	**41,124**	**21,610**	**15,927**	**53,287**	**254,303**	**4,034,271**
2018 January	119,284	6,520	110,293	1,097	74,649	-547	25,064	3,686	1,817	1,341	3,319	25,599	373,230
February	82,050	1,558	98,512	1,092	64,790	-315	24,902	3,235	1,716	1,274	3,896	23,189	306,894
March	80,626	1,472	106,524	1,158	67,033	-490	25,861	3,547	1,822	1,367	5,056	26,464	321,547
April	73,346	1,538	98,371	1,099	59,133	-377	28,115	3,102	1,726	1,188	6,057	26,431	300,756
May	85,227	1,557	115,284	1,167	67,320	-390	30,444	3,352	1,732	1,383	6,849	23,953	338,948
June	101,503	1,901	130,826	1,091	69,688	-433	27,597	3,471	1,720	1,300	7,415	24,703	371,886
July	115,376	1,901	164,749	1,172	72,456	-644	25,100	3,749	1,750	1,370	6,755	16,447	411,290
August	115,129	1,927	161,676	1,301	72,282	-747	22,017	3,630	1,758	1,367	6,695	19,846	408,028
September	96,544	1,854	141,786	1,104	64,725	-603	19,166	3,281	1,590	1,328	5,961	18,520	356,258
October	87,264	1,577	123,142	1,016	59,397	-492	19,548	3,216	1,743	1,273	4,970	21,194	324,932
November	92,819	1,661	108,168	1,045	63,954	-343	21,913	3,264	1,724	1,331	3,743	22,016	322,369
December	100,319	1,761	109,802	1,120	71,657	-522	22,797	3,404	1,799	1,446	3,110	24,306	342,139
Total	**1,149,487**	**25,226**	**1,469,133**	**13,463**	**807,084**	**-5,905**	**292,524**	**40,936**	**20,896**	**15,967**	**63,825**	**272,667**	**4,178,277**
2019 January	100,905	2,221	121,582	1,025	73,701	-323	24,798	3,465	1,672	1,390	3,580	24,248	359,457
February	79,929	1,514	112,135	948	64,715	-389	22,881	3,042	1,498	1,293	3,836	22,547	314,951
March	78,352	1,401	115,806	1,086	65,080	-409	26,334	3,217	1,625	1,422	5,899	25,677	326,568
April	59,922	1,189	104,053	948	60,581	-103	27,820	2,807	1,510	1,254	6,752	28,854	296,602
May	71,885	1,685	117,053	1,054	67,124	-368	31,982	3,051	1,564	1,342	7,162	25,695	330,343
June	78,540	1,529	137,828	1,009	68,805	-385	28,078	3,159	1,581	1,328	7,971	22,385	352,928
July	100,771	1,800	171,942	1,185	72,199	-622	24,875	3,498	1,617	1,375	8,133	22,043	409,973
August	94,040	1,738	174,955	1,147	71,911	-579	22,579	3,539	1,636	1,393	7,877	19,951	401,397
September	85,707	1,512	149,688	1,112	66,064	-671	18,526	3,211	1,530	1,368	6,817	24,448	360,452
October	66,777	1,151	130,941	924	62,033	-373	18,306	3,063	1,573	1,141	6,093	27,521	320,250
November	75,549	1,240	117,904	1,047	64,125	-509	20,218	3,137	1,525	984	4,364	25,042	315,708
December	72,581	1,459	131,830	1,107	73,074	-529	21,478	3,355	1,633	1,183	3,453	26,496	338,253
Total	**964,957**	**18,438**	**1,585,717**	**12,591**	**809,409**	**-5,261**	**287,874**	**38,543**	**18,964**	**15,473**	**71,937**	**294,906**	**4,126,882**
2020 January	65,100	1,626	133,154	1,104	74,170	-377	25,425	3,345	1,672	1,265	4,690	28,149	340,408
February	56,101	1,266	125,554	1,132	65,950	-247	26,393	3,145	1,515	1,274	5,717	29,092	317,853
March	50,643	1,399	123,654	1,009	63,997	-353	23,423	3,196	1,682	1,517	6,434	29,204	306,887
April	40,593	1,227	107,929	747	59,170	-325	21,957	2,970	1,594	1,450	8,048	29,336	275,763
May	46,529	1,294	115,855	808	64,338	-367	30,559	3,099	1,617	1,449	9,734	28,163	304,167
June	65,274	1,673	143,180	756	67,205	-499	29,138	2,993	1,459	1,369	9,529	29,872	352,967
July	89,845	1,870	185,433	854	69,385	-686	27,753	3,112	1,564	1,431	10,379	22,579	414,610
August	91,165	1,735	174,130	1,002	68,982	-784	24,228	3,302	1,589	1,426	9,370	22,571	399,812
September	68,396	1,252	141,407	947	65,727	-525	19,182	2,938	1,512	1,390	7,757	23,176	334,167
9-Month Total	**573,646**	**13,342**	**1,250,296**	**8,359**	**598,925**	**-4,161**	**228,058**	**28,100**	**14,204**	**12,571**	**71,660**	**242,142**	**3,046,634**
2019 9-Month Total	**750,049**	**14,588**	**1,205,042**	**9,513**	**610,178**	**-3,850**	**227,872**	**28,989**	**14,231**	**12,165**	**58,026**	**215,848**	**3,152,671**
2018 9-Month Total	**869,087**	**20,227**	**1,128,021**	**10,281**	**612,076**	**-4,548**	**228,266**	**31,053**	**15,629**	**11,917**	**52,003**	**205,152**	**3,188,838**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

[h] 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).

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.

[j] Includes 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).

[k] 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.

NA=Not available.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section, "Table 7.2b Sources" and "Table 7.2c Sources."

Table 7.2b Electricity Net Generation: Electric Power Sector

(Subset of Table 7.2a; Million Kilowatthours)

	Fossil Fuels						Renewable Energy							
								Biomass						
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power[f]	Wood[g]	Waste[h]	Geothermal	Solar[i]	Wind	Total[j]
1950 Total	**154,520**	**33,734**	**44,559**	**NA**	**0**	**(f)**	**95,938**	**390**	**NA**	**NA**	**NA**	**NA**	**329,141**
1955 Total	**301,363**	**37,138**	**95,285**	**NA**	**0**	**(f)**	**112,975**	**276**	**NA**	**NA**	**NA**	**NA**	**547,038**
1960 Total	**403,067**	**47,987**	**157,970**	**NA**	**518**	**(f)**	**145,833**	**140**	**NA**	**33**	**NA**	**NA**	**755,549**
1965 Total	**570,926**	**64,801**	**221,559**	**NA**	**3,657**	**(f)**	**193,851**	**269**	**NA**	**189**	**NA**	**NA**	**1,055,252**
1970 Total	**704,394**	**184,183**	**372,890**	**NA**	**21,804**	**(f)**	**247,714**	**136**	**220**	**525**	**NA**	**NA**	**1,531,868**
1975 Total	**852,786**	**289,095**	**299,778**	**NA**	**172,505**	**(f)**	**300,047**	**18**	**174**	**3,246**	**NA**	**NA**	**1,917,649**
1980 Total	**1,161,562**	**245,994**	**346,240**	**NA**	**251,116**	**(f)**	**276,021**	**275**	**158**	**5,073**	**NA**	**NA**	**2,286,439**
1985 Total	**1,402,128**	**100,202**	**291,946**	**NA**	**383,691**	**(f)**	**281,149**	**743**	**640**	**9,325**	**11**	**6**	**2,469,841**
1990 Total[k]	**1,572,109**	**118,864**	**309,486**	**621**	**576,862**	**-3,508**	**289,753**	**7,032**	**11,500**	**15,434**	**367**	**2,789**	**2,901,322**
1995 Total	**1,686,056**	**68,146**	**419,179**	**1,927**	**673,402**	**-2,725**	**305,410**	**7,597**	**17,986**	**13,378**	**497**	**3,164**	**3,194,230**
2000 Total	**1,943,111**	**105,192**	**517,978**	**2,028**	**753,893**	**-5,539**	**271,338**	**8,916**	**20,307**	**14,093**	**493**	**5,593**	**3,637,529**
2001 Total	**1,882,826**	**119,149**	**554,940**	**586**	**768,826**	**-8,823**	**213,749**	**8,294**	**12,944**	**13,741**	**543**	**6,737**	**3,580,053**
2002 Total	**1,910,613**	**89,733**	**607,683**	**1,970**	**780,064**	**-8,743**	**260,491**	**9,009**	**13,145**	**14,491**	**555**	**10,354**	**3,698,458**
2003 Total	**1,952,714**	**113,697**	**567,303**	**2,647**	**763,733**	**-8,535**	**271,512**	**9,528**	**13,808**	**14,424**	**534**	**11,187**	**3,721,159**
2004 Total	**1,957,188**	**114,678**	**627,172**	**3,568**	**788,528**	**-8,488**	**265,064**	**9,736**	**13,062**	**14,811**	**575**	**14,144**	**3,808,360**
2005 Total	**1,992,054**	**116,482**	**683,829**	**3,777**	**781,986**	**-6,558**	**267,040**	**10,570**	**13,031**	**14,692**	**550**	**17,811**	**3,902,192**
2006 Total	**1,969,737**	**59,708**	**734,417**	**4,254**	**787,219**	**-6,558**	**286,254**	**10,341**	**13,927**	**14,568**	**508**	**26,589**	**3,908,077**
2007 Total	**1,998,390**	**61,306**	**814,752**	**4,042**	**806,425**	**-6,896**	**245,843**	**10,711**	**14,294**	**14,637**	**612**	**34,450**	**4,005,343**
2008 Total	**1,968,838**	**42,881**	**802,372**	**3,200**	**806,208**	**-6,288**	**253,096**	**10,638**	**15,379**	**14,840**	**864**	**55,363**	**3,974,349**
2009 Total	**1,741,123**	**35,811**	**841,006**	**3,058**	**798,855**	**-4,627**	**271,506**	**10,738**	**15,954**	**15,009**	**891**	**73,886**	**3,809,837**
2010 Total	**1,827,738**	**34,679**	**901,389**	**2,967**	**806,968**	**-5,501**	**258,455**	**11,446**	**16,376**	**15,219**	**1,206**	**94,636**	**3,972,386**
2011 Total	**1,717,891**	**28,202**	**926,290**	**2,939**	**790,204**	**-6,421**	**317,531**	**10,733**	**15,989**	**15,316**	**1,727**	**120,121**	**3,948,186**
2012 Total	**1,500,557**	**20,072**	**1,132,791**	**2,984**	**769,331**	**-4,950**	**273,859**	**11,050**	**16,555**	**15,562**	**4,164**	**140,749**	**3,890,358**
2013 Total	**1,567,722**	**24,510**	**1,028,949**	**4,322**	**789,016**	**-4,681**	**265,058**	**12,302**	**16,918**	**15,775**	**8,724**	**167,742**	**3,903,715**
2014 Total	**1,568,774**	**28,043**	**1,033,172**	**3,358**	**797,166**	**-6,174**	**258,046**	**15,027**	**17,602**	**15,877**	**17,304**	**181,496**	**3,937,003**
2015 Total	**1,340,993**	**26,505**	**1,237,656**	**3,715**	**797,178**	**-5,091**	**247,636**	**14,563**	**17,823**	**15,918**	**24,456**	**190,547**	**3,919,294**
2016 Total	**1,229,663**	**22,710**	**1,279,380**	**3,912**	**805,694**	**-6,686**	**266,326**	**13,420**	**18,183**	**15,826**	**35,497**	**226,790**	**3,918,078**
2017 Total	**1,197,838**	**20,039**	**1,196,753**	**4,126**	**804,950**	**-6,495**	**298,711**	**13,641**	**18,084**	**15,927**	**52,724**	**254,074**	**3,877,453**
2018 January	118,557	6,348	101,469	344	74,649	-547	24,962	1,320	1,532	1,341	3,288	25,570	359,449
February	81,399	1,451	90,702	337	64,790	-315	24,794	1,137	1,455	1,274	3,863	23,165	294,633
March	79,983	1,368	98,597	348	67,033	-490	25,752	1,200	1,534	1,367	5,009	26,435	308,747
April	72,787	1,446	90,614	354	59,133	-377	27,990	948	1,450	1,188	6,002	26,406	288,509
May	84,634	1,453	107,014	389	67,320	-390	30,319	1,038	1,456	1,383	6,788	23,932	325,905
June	100,894	1,795	122,172	316	69,688	-433	27,502	1,168	1,460	1,300	7,347	24,683	358,523
July	114,749	1,784	155,264	359	72,456	-644	25,003	1,271	1,480	1,370	6,691	16,432	396,854
August	114,516	1,829	152,150	392	72,282	-747	21,908	1,217	1,483	1,367	6,634	19,830	393,497
September	95,962	1,762	132,992	332	64,725	-603	19,060	1,044	1,341	1,328	5,911	18,502	342,917
October	86,736	1,473	114,533	254	59,397	-492	19,426	989	1,465	1,273	4,926	21,170	311,750
November	92,258	1,565	99,419	311	63,954	-343	21,781	1,030	1,453	1,331	3,711	21,991	309,062
December	99,698	1,655	100,896	349	71,657	-522	22,651	1,022	1,514	1,413	3,083	24,282	328,320
Total	**1,142,173**	**23,928**	**1,365,822**	**4,086**	**807,084**	**-5,905**	**291,148**	**13,385**	**17,623**	**15,934**	**63,253**	**272,396**	**4,018,167**
2019 January	100,294	2,112	112,137	360	73,701	-323	24,658	1,141	1,412	1,348	3,546	24,220	345,271
February	79,382	1,427	103,943	351	64,715	-389	22,772	947	1,266	1,252	3,798	22,522	302,559
March	77,819	1,318	107,117	383	65,080	-409	26,208	939	1,364	1,378	5,841	25,651	313,296
April	59,426	1,096	95,855	329	60,581	-103	27,695	769	1,276	1,227	6,690	28,826	284,248
May	71,388	1,607	108,439	324	67,124	-368	31,857	965	1,347	1,304	7,095	25,672	317,418
June	78,043	1,444	128,921	329	68,805	-385	27,965	975	1,346	1,294	7,898	22,365	339,649
July	100,225	1,658	162,237	372	72,199	-622	24,788	1,151	1,383	1,342	8,053	22,027	395,482
August	93,517	1,644	165,127	377	71,911	-579	22,504	1,172	1,393	1,362	7,803	19,936	386,872
September	85,216	1,425	140,473	342	66,064	-671	18,461	1,045	1,303	1,338	6,754	24,428	346,828
October	66,311	1,065	121,927	189	62,033	-373	18,232	899	1,334	1,103	6,040	27,495	306,897
November	75,046	1,153	108,676	326	64,125	-509	20,139	957	1,288	941	4,323	25,017	302,111
December	72,065	1,369	122,189	354	73,074	-529	21,374	1,060	1,380	1,140	3,423	26,468	324,025
Total	**958,732**	**17,318**	**1,477,042**	**4,037**	**809,409**	**-5,261**	**286,652**	**12,020**	**16,091**	**15,031**	**71,265**	**294,628**	**3,964,656**
2020 January	64,547	1,528	123,290	354	74,170	-377	25,315	1,053	1,423	1,229	4,648	28,124	325,954
February	55,577	1,187	116,645	370	65,950	-247	26,282	1,004	1,284	1,233	5,667	29,065	304,601
March	50,143	1,315	114,756	288	63,997	-353	23,311	953	1,437	1,473	6,374	29,177	293,532
April	40,158	1,164	100,045	150	59,170	-325	21,847	826	1,364	1,410	7,975	29,308	263,720
May	46,094	1,217	107,833	161	64,338	-367	30,441	950	1,382	1,410	9,646	28,138	291,868
June	64,860	1,583	134,637	133	67,205	-499	29,029	912	1,247	1,336	9,444	29,795	340,254
July	89,382	1,772	176,303	162	69,385	-686	27,649	997	1,339	1,401	10,287	22,496	401,133
August	90,727	1,642	164,983	303	68,982	-784	24,131	1,159	1,365	1,396	9,290	22,499	386,347
September	67,925	1,173	133,094	297	65,727	-525	19,096	847	1,307	1,357	7,690	23,090	321,674
9-Month Total	**569,413**	**12,581**	**1,171,586**	**2,216**	**598,925**	**-4,161**	**227,102**	**8,700**	**12,147**	**12,245**	**71,021**	**241,691**	**2,929,085**
2019 9-Month Total	**745,309**	**13,730**	**1,124,249**	**3,167**	**610,178**	**-3,850**	**226,908**	**9,104**	**12,089**	**11,846**	**57,478**	**215,648**	**3,031,623**
2018 9-Month Total	**863,481**	**19,236**	**1,050,974**	**3,171**	**612,076**	**-4,548**	**227,290**	**10,344**	**13,191**	**11,917**	**51,533**	**204,954**	**3,069,034**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

[h] 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).

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.

[j] Includes 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).

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilites and independent power producers.

NA=Not available.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 7.2c Electricity Net Generation: Commercial and Industrial Sectors

(Subset of Table 7.2a; Million Kilowatthours)

	Commercial Sector[a]					Industrial Sector[b]							
				Biomass							Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Total[g]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[h]	Hydroelectric Power[i]	Wood[j]	Waste[f]	Total[k]
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**4,946**	**NA**	**NA**	**4,946**
1955 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,261**	**NA**	**NA**	**3,261**
1960 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,607**	**NA**	**NA**	**3,607**
1965 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,134**	**NA**	**NA**	**3,134**
1970 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,244**	**NA**	**NA**	**3,244**
1975 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,106**	**NA**	**NA**	**3,106**
1980 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1990 Total	**796**	**589**	**3,272**	**812**	**5,837**	**21,107**	**7,008**	**60,007**	**9,641**	**2,975**	**25,379**	**949**	**130,830**
1995 Total	**998**	**379**	**5,162**	**1,519**	**8,232**	**22,372**	**6,030**	**71,717**	**11,943**	**5,304**	**28,868**	**900**	**151,025**
2000 Total	**1,097**	**432**	**4,262**	**1,985**	**7,903**	**22,056**	**5,597**	**78,798**	**11,927**	**4,135**	**28,652**	**839**	**156,673**
2001 Total	**995**	**438**	**4,434**	**1,007**	**7,416**	**20,135**	**5,293**	**79,755**	**8,454**	**3,145**	**26,888**	**596**	**149,175**
2002 Total	**992**	**431**	**4,310**	**1,053**	**7,415**	**21,525**	**4,403**	**79,013**	**9,493**	**3,825**	**29,643**	**846**	**152,580**
2003 Total	**1,206**	**423**	**3,899**	**1,289**	**7,496**	**19,817**	**5,285**	**78,705**	**12,953**	**4,222**	**27,988**	**715**	**154,530**
2004 Total	**1,340**	**499**	**3,969**	**1,562**	**8,270**	**19,773**	**5,967**	**78,959**	**11,684**	**3,248**	**28,367**	**797**	**153,925**
2005 Total	**1,353**	**375**	**4,249**	**1,657**	**8,492**	**19,466**	**5,368**	**72,882**	**9,687**	**3,195**	**28,271**	**733**	**144,739**
2006 Total	**1,310**	**235**	**4,355**	**1,599**	**8,371**	**19,464**	**4,223**	**77,669**	**9,923**	**2,899**	**28,400**	**572**	**148,254**
2007 Total	**1,371**	**189**	**4,257**	**1,599**	**8,273**	**16,694**	**4,243**	**77,580**	**9,411**	**1,590**	**28,287**	**631**	**143,128**
2008 Total	**1,261**	**142**	**4,188**	**1,534**	**7,926**	**15,703**	**3,219**	**76,421**	**8,507**	**1,676**	**26,641**	**821**	**137,113**
2009 Total	**1,096**	**163**	**4,225**	**1,748**	**8,165**	**13,686**	**2,963**	**75,748**	**7,574**	**1,868**	**25,292**	**740**	**132,329**
2010 Total	**1,111**	**124**	**4,725**	**1,672**	**8,592**	**18,441**	**2,258**	**81,583**	**8,343**	**1,668**	**25,706**	**869**	**144,082**
2011 Total	**1,049**	**89**	**5,487**	**2,315**	**10,080**	**14,490**	**1,891**	**81,911**	**8,624**	**1,799**	**26,691**	**917**	**141,875**
2012 Total	**883**	**196**	**6,603**	**2,319**	**11,301**	**12,603**	**2,922**	**86,500**	**8,913**	**2,353**	**26,725**	**948**	**146,107**
2013 Total	**839**	**124**	**7,154**	**2,567**	**12,234**	**12,554**	**2,531**	**88,733**	**8,531**	**3,463**	**27,691**	**1,346**	**150,015**
2014 Total	**595**	**255**	**7,227**	**2,681**	**12,520**	**12,341**	**1,934**	**86,209**	**8,664**	**1,282**	**27,239**	**1,367**	**144,083**
2015 Total	**509**	**191**	**7,471**	**2,637**	**12,595**	**10,896**	**1,552**	**88,355**	**9,401**	**1,410**	**27,318**	**1,243**	**145,712**
2016 Total	**383**	**82**	**7,730**	**2,496**	**12,706**	**9,103**	**1,412**	**91,197**	**8,895**	**1,269**	**27,458**	**1,134**	**145,890**
2017 Total	**329**	**112**	**8,042**	**2,515**	**13,060**	**7,669**	**1,239**	**91,647**	**8,343**	**1,382**	**27,412**	**1,012**	**143,758**
2018 January	40	42	671	203	1,114	687	130	8,153	752	83	2,357	81	12,668
February	32	8	626	184	995	619	99	7,184	755	89	2,091	77	11,265
March	27	9	647	204	1,058	616	95	7,280	811	87	2,342	84	11,742
April	24	9	585	199	989	535	83	7,172	744	102	2,151	77	11,258
May	21	7	656	203	1,076	572	97	7,614	778	101	2,310	73	11,967
June	20	7	737	202	1,163	590	98	7,918	775	74	2,294	57	12,199
July	21	11	875	205	1,298	606	106	8,609	813	78	2,470	65	13,138
August	23	9	892	208	1,318	590	89	8,634	909	91	2,402	66	13,212
September	24	8	771	193	1,156	558	85	8,022	773	90	2,228	56	12,185
October	20	7	668	204	1,055	507	97	7,941	762	108	2,223	74	12,127
November	25	13	622	193	993	536	83	8,127	734	116	2,231	78	12,313
December	24	10	669	205	1,095	596	95	8,237	771	130	2,374	80	12,724
Total	**303**	**140**	**8,419**	**2,404**	**13,312**	**7,011**	**1,157**	**94,892**	**9,377**	**1,149**	**27,475**	**868**	**146,798**
2019 January	29	21	706	195	1,160	581	88	8,739	664	124	2,317	65	13,025
February	27	10	654	171	1,057	521	77	7,538	597	94	2,086	61	11,335
March	33	9	711	189	1,173	500	74	7,978	702	108	2,267	71	12,099
April	22	8	646	168	1,053	475	85	7,552	619	106	2,034	65	11,301
May	18	7	663	159	1,072	479	70	7,951	730	104	2,084	58	11,854
June	13	6	711	178	1,133	484	79	8,196	680	95	2,179	57	12,147
July	18	9	869	180	1,313	528	133	8,837	813	71	2,331	55	13,178
August	17	12	852	185	1,290	506	83	8,976	770	59	2,357	57	13,236
September	21	10	731	179	1,150	470	77	8,483	770	52	2,157	48	12,474
October	21	9	666	173	1,072	445	76	8,348	735	63	2,157	67	12,281
November	23	9	667	171	1,066	480	77	8,561	721	67	2,174	67	12,531
December	27	11	735	181	1,151	489	80	8,906	753	91	2,289	72	13,077
Total	**268**	**121**	**8,610**	**2,129**	**13,689**	**5,957**	**1,000**	**100,065**	**8,554**	**1,033**	**26,433**	**743**	**148,537**
2020 January	22	11	748	177	1,164	530	87	9,115	750	93	2,284	72	13,290
February	29	6	672	166	1,080	495	73	8,237	763	92	2,135	65	12,172
March	22	6	648	181	1,078	477	78	8,250	721	96	2,238	65	12,277
April	13	5	550	165	953	422	58	7,334	596	95	2,144	64	11,090
May	14	7	599	174	1,039	422	69	7,423	647	95	2,146	62	11,259
June	17	7	672	163	1,095	398	83	7,871	623	86	2,074	49	11,618
July	17	10	809	173	1,255	447	88	8,322	692	84	2,101	52	12,221
August	15	10	790	172	1,219	423	82	8,357	699	80	2,130	51	12,246
September	24	8	710	162	1,110	446	71	7,602	650	73	2,084	44	11,382
9-Month Total	**173**	**72**	**6,198**	**1,533**	**9,992**	**4,060**	**689**	**72,512**	**6,143**	**794**	**19,336**	**524**	**107,557**
2019 9-Month Total	**197**	**92**	**6,542**	**1,605**	**10,399**	**4,543**	**766**	**74,250**	**6,346**	**813**	**19,813**	**537**	**110,649**
2018 9-Month Total	**233**	**109**	**6,460**	**1,802**	**10,169**	**5,372**	**882**	**70,587**	**7,110**	**796**	**20,646**	**636**	**109,635**

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[e] Natural gas, plus a small amount of supplemental gaseous fuels.

[f] 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).

[g] Includes a small amount of conventional hydroelectric power, geothermal, other gases, solar photovoltaic (PV) energy, wind, wood, and other, which are not separately displayed. Does not include distributed (small-scale) solar photovoltaic generation. shown on Table 10.6.

[h] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[i] Conventional hydroelectric power.

[j] Wood and wood-derived fuels.

[k] Includes photovoltaic (PV) energy, wind, 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). Does not include distributed (small-scale) solar photovoltaic generation shown on Table 10.6.

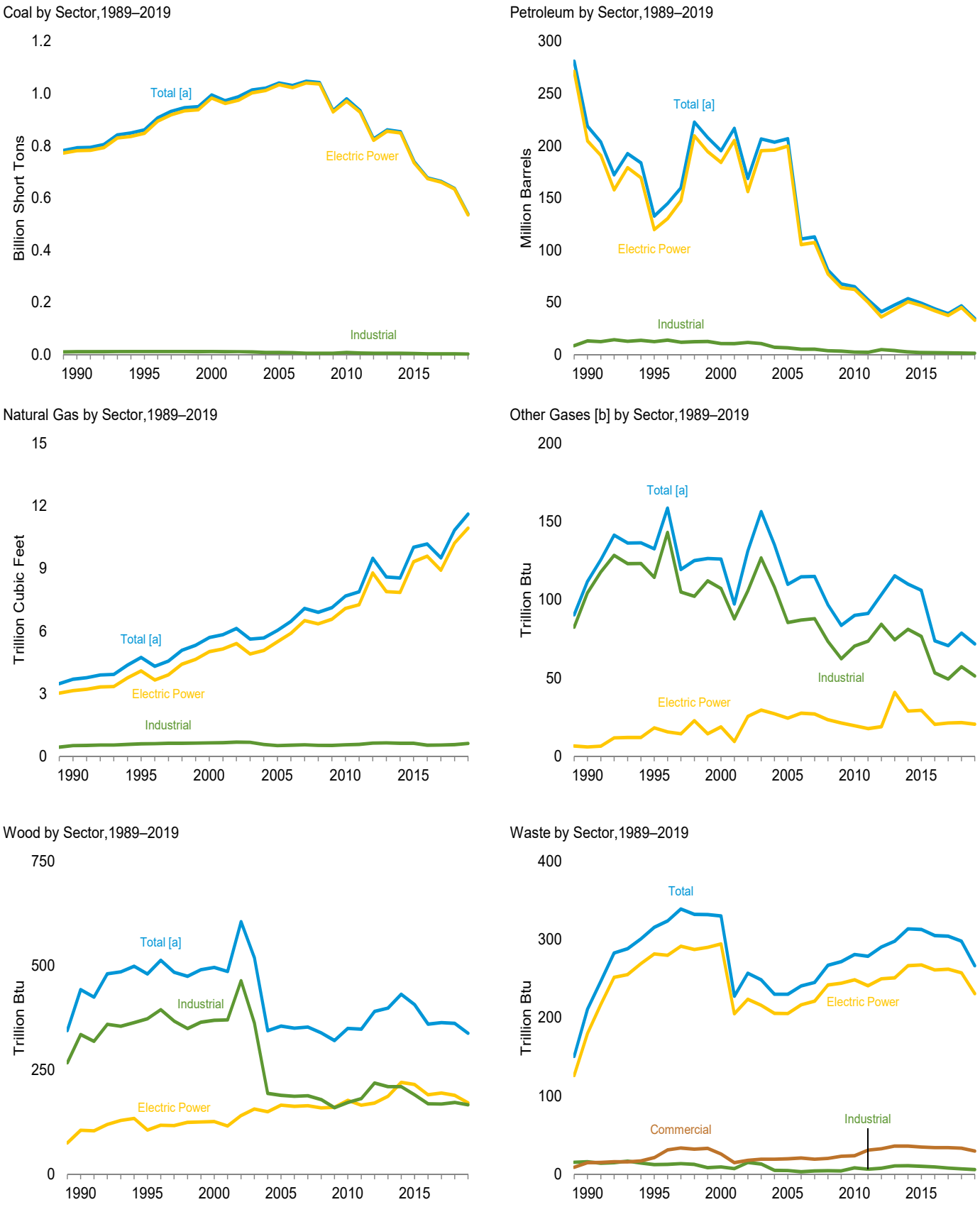
NA=Not available.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See 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. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 7.3 Consumption of Selected Combustible Fuels for Electricity Generation



[a] Includes commercial sector.
[b] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.3a-7.3c.

Table 7.3a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors) (Sum of Tables 7.3b and 7.3c)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**792,457**	**18,143**	**190,652**	**437**	**1,914**	**218,800**	**3,692**	**112**	**442**	**211**	**36**
1995 Total	**860,594**	**19,615**	**95,507**	**680**	**3,355**	**132,578**	**4,738**	**133**	**480**	**316**	**42**
2000 Total	**994,933**	**31,675**	**143,381**	**1,450**	**3,744**	**195,228**	**5,691**	**126**	**496**	**330**	**46**
2001 Total	**972,691**	**31,150**	**165,312**	**855**	**3,871**	**216,672**	**5,832**	**97**	**486**	**228**	**160**
2002 Total	**987,583**	**23,286**	**109,235**	**1,894**	**6,836**	**168,597**	**6,126**	**131**	**605**	**257**	**191**
2003 Total	**1,014,058**	**29,672**	**142,518**	**2,947**	**6,303**	**206,653**	**5,616**	**156**	**519**	**249**	**193**
2004 Total	**1,020,523**	**20,163**	**142,088**	**2,856**	**7,677**	**203,494**	**5,675**	**135**	**344**	**230**	**183**
2005 Total	**1,041,448**	**20,651**	**141,518**	**2,968**	**8,330**	**206,785**	**6,036**	**110**	**355**	**230**	**173**
2006 Total	**1,030,556**	**13,174**	**58,473**	**2,174**	**7,363**	**110,634**	**6,462**	**115**	**350**	**241**	**172**
2007 Total	**1,046,795**	**15,683**	**63,833**	**2,917**	**6,036**	**112,615**	**7,089**	**115**	**353**	**245**	**168**
2008 Total	**1,042,335**	**12,832**	**38,191**	**2,822**	**5,417**	**80,932**	**6,896**	**97**	**339**	**267**	**172**
2009 Total	**934,683**	**12,658**	**28,576**	**2,328**	**4,821**	**67,668**	**7,121**	**84**	**320**	**272**	**170**
2010 Total	**979,684**	**14,050**	**23,997**	**2,056**	**4,994**	**65,071**	**7,680**	**90**	**350**	**281**	**184**
2011 Total	**934,938**	**11,231**	**14,251**	**1,844**	**5,012**	**52,387**	**7,884**	**91**	**348**	**279**	**205**
2012 Total	**825,734**	**9,285**	**11,755**	**1,565**	**3,675**	**40,977**	**9,485**	**103**	**390**	**290**	**204**
2013 Total	**860,729**	**9,784**	**11,766**	**1,681**	**4,852**	**47,492**	**8,596**	**115**	**398**	**298**	**200**
2014 Total	**853,634**	**14,465**	**14,704**	**2,363**	**4,412**	**53,593**	**8,544**	**110**	**431**	**314**	**200**
2015 Total	**739,594**	**12,438**	**14,124**	**2,363**	**4,044**	**49,145**	**10,017**	**106**	**407**	**313**	**204**
2016 Total	**677,371**	**9,662**	**11,195**	**1,548**	**4,253**	**43,671**	**10,170**	**74**	**360**	**305**	**199**
2017 Total	**663,911**	**9,707**	**10,442**	**1,547**	**3,490**	**39,144**	**9,508**	**71**	**364**	**304**	**190**
2018 January	64,845	5,238	3,644	585	377	11,353	806	6	33	26	16
February	45,793	676	658	117	305	2,976	707	6	29	24	15
March	44,474	735	650	112	255	2,770	772	7	31	26	16
April	40,515	794	707	100	271	2,956	723	7	27	25	15
May	47,293	958	786	118	212	2,923	869	7	30	25	16
June	56,078	916	873	106	338	3,583	974	6	31	25	16
July	63,818	754	874	125	367	3,590	1,246	7	33	25	16
August	63,737	803	931	136	352	3,631	1,209	8	32	25	17
September	53,914	752	976	136	325	3,488	1,052	6	29	23	15
October	48,422	798	874	142	229	2,956	909	6	28	24	16
November	51,702	920	754	125	271	3,154	785	6	29	24	16
December	55,624	879	679	182	321	3,347	783	6	30	25	16
Total	**636,213**	**14,223**	**12,407**	**1,985**	**3,623**	**46,727**	**10,833**	**79**	**362**	**298**	**190**
2019 January	55,834	1,206	996	303	326	4,135	873	6	31	23	17
February	45,025	739	580	163	272	2,844	801	5	27	21	15
March	43,974	734	611	131	235	2,651	836	6	28	23	16
April	33,353	648	621	149	155	2,194	763	5	24	21	16
May	40,015	830	735	136	294	3,169	863	6	27	22	17
June	44,218	812	790	145	216	2,828	1,016	6	28	22	17
July	55,863	775	895	148	309	3,363	1,284	7	31	23	17
August	52,348	758	961	150	276	3,251	1,306	6	32	23	18
September	47,188	725	786	157	231	2,824	1,109	6	28	22	17
October	37,431	742	794	172	83	2,123	964	5	26	22	16
November	41,907	779	718	130	129	2,272	847	6	27	22	16
December	40,461	873	763	179	197	2,800	939	6	29	23	17
Total	**537,616**	**9,620**	**9,251**	**1,965**	**2,724**	**34,454**	**11,601**	**72**	**338**	**267**	**199**
2020 January	36,767	859	761	158	261	3,082	958	6	28	23	16
February	32,039	696	616	131	190	2,393	902	6	27	21	14
March	28,988	593	583	192	262	2,678	902	6	27	23	16
April	23,622	504	544	137	221	2,288	783	4	24	21	15
May	26,849	596	588	104	231	2,442	854	5	26	22	16
June	36,637	749	700	120	308	3,111	1,068	5	25	20	15
July	49,838	814	801	131	356	3,526	1,396	5	27	21	16
August	50,430	747	800	128	305	3,199	1,304	6	29	22	16
September	38,701	563	732	115	159	2,206	1,058	6	24	21	15
9-Month Total	**323,871**	**6,122**	**6,126**	**1,216**	**2,292**	**24,924**	**9,225**	**49**	**238**	**193**	**139**
2019 9-Month Total	**417,818**	**7,226**	**6,976**	**1,483**	**2,315**	**27,259**	**8,850**	**54**	**256**	**200**	**149**
2018 9-Month Total	**480,466**	**11,626**	**10,099**	**1,536**	**2,802**	**37,270**	**8,357**	**60**	**275**	**224**	**142**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[b] 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.
[c] 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.
[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.
[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.
[f] Natural gas, plus a small amount of supplemental gaseous fuels.
[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.
[h] Wood and wood-derived fuels.
[i] 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).
[j] 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).
[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • 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. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See "Table 7.3b Sources" at end of section and sources for Table 7.3c.

Table 7.3b Consumption of Combustible Fuels for Electricity Generation: Electric Power Sector (Subset of Table 7.3a)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**781,301**	**16,394**	**183,285**	**25**	**1,008**	**204,745**	**3,147**	**6**	**106**	**180**	**(s)**
1995 Total	**847,854**	**18,066**	**88,895**	**441**	**2,452**	**119,663**	**4,094**	**18**	**106**	**282**	**2**
2000 Total	**982,713**	**29,722**	**138,047**	**403**	**3,155**	**183,946**	**5,014**	**19**	**126**	**294**	**1**
2001 Total	**961,523**	**29,056**	**159,150**	**374**	**3,308**	**205,119**	**5,142**	**9**	**116**	**205**	**109**
2002 Total	**975,251**	**21,810**	**104,577**	**1,243**	**5,705**	**156,154**	**5,408**	**25**	**141**	**224**	**137**
2003 Total	**1,003,036**	**27,441**	**137,361**	**1,937**	**5,719**	**195,336**	**4,909**	**30**	**156**	**216**	**136**
2004 Total	**1,012,459**	**18,793**	**138,831**	**2,511**	**7,135**	**195,809**	**5,075**	**27**	**150**	**206**	**131**
2005 Total	**1,033,567**	**19,450**	**138,337**	**2,591**	**7,877**	**199,760**	**5,485**	**24**	**166**	**205**	**116**
2006 Total	**1,022,802**	**12,578**	**56,347**	**1,783**	**6,905**	**105,235**	**5,891**	**28**	**163**	**216**	**117**
2007 Total	**1,041,346**	**15,135**	**62,072**	**2,496**	**5,523**	**107,316**	**6,502**	**27**	**165**	**221**	**117**
2008 Total	**1,036,891**	**12,318**	**37,222**	**2,608**	**5,000**	**77,149**	**6,342**	**23**	**159**	**242**	**122**
2009 Total	**929,692**	**11,848**	**27,768**	**2,110**	**4,485**	**64,151**	**6,567**	**21**	**160**	**244**	**115**
2010 Total	**971,245**	**13,677**	**23,560**	**1,848**	**4,679**	**62,477**	**7,085**	**20**	**177**	**249**	**116**
2011 Total	**928,857**	**10,961**	**13,861**	**1,655**	**4,726**	**50,105**	**7,265**	**18**	**166**	**241**	**133**
2012 Total	**820,762**	**9,000**	**11,292**	**1,339**	**2,861**	**35,937**	**8,788**	**19**	**171**	**250**	**132**
2013 Total	**855,546**	**9,511**	**11,322**	**1,488**	**4,189**	**43,265**	**7,888**	**41**	**187**	**251**	**130**
2014 Total	**848,803**	**14,052**	**14,132**	**2,157**	**4,039**	**50,537**	**7,849**	**29**	**220**	**266**	**127**
2015 Total	**735,433**	**12,056**	**13,893**	**2,086**	**3,789**	**46,978**	**9,322**	**29**	**215**	**268**	**127**
2016 Total	**674,239**	**9,421**	**11,056**	**1,284**	**4,018**	**41,853**	**9,590**	**20**	**191**	**261**	**126**
2017 Total	**661,033**	**9,398**	**10,299**	**1,332**	**3,273**	**37,394**	**8,917**	**21**	**195**	**262**	**121**
2018 January	64,579	5,148	3,615	566	362	11,142	753	2	19	22	11
February	45,555	654	644	90	294	2,855	660	2	16	21	10
March	44,241	712	637	95	241	2,649	725	2	17	22	11
April	40,315	772	697	83	256	2,834	676	2	14	21	10
May	47,076	928	779	96	197	2,790	819	2	15	22	10
June	55,862	889	864	89	320	3,439	922	2	17	22	11
July	63,599	715	868	87	350	3,423	1,189	2	18	22	11
August	63,526	767	922	122	338	3,500	1,152	2	17	22	11
September	53,708	716	969	127	310	3,359	999	2	15	19	10
October	48,243	772	862	125	212	2,820	858	1	14	21	10
November	51,493	884	739	109	258	3,023	733	1	14	21	10
December	55,397	840	664	168	305	3,198	730	2	15	22	11
Total	**633,593**	**13,795**	**12,259**	**1,757**	**3,444**	**45,030**	**10,215**	**21**	**189**	**257**	**125**
2019 January	55,611	1,160	982	286	313	3,991	815	2	17	20	11
February	44,821	715	570	141	261	2,731	750	2	14	18	10
March	43,797	708	602	113	222	2,531	782	2	14	19	11
April	33,185	623	614	121	139	2,055	712	2	11	18	10
May	39,832	805	731	116	280	3,050	809	2	14	19	11
June	44,040	786	785	126	202	2,708	962	2	14	19	11
July	55,665	742	891	131	285	3,189	1,223	2	16	20	12
August	52,153	725	957	132	261	3,120	1,245	2	17	20	12
September	47,007	688	781	138	216	2,689	1,051	2	15	19	11
October	37,268	709	787	155	68	1,990	908	1	13	19	11
November	41,727	749	710	107	116	2,144	789	2	13	19	11
December	40,273	844	754	159	183	2,670	880	2	15	20	12
Total	**535,378**	**9,254**	**9,163**	**1,724**	**2,545**	**32,868**	**10,927**	**21**	**171**	**231**	**133**
2020 January	36,574	832	754	135	245	2,948	898	2	14	19	11
February	31,853	675	608	114	178	2,285	847	2	14	18	10
March	28,814	569	578	173	249	2,564	847	2	13	20	11
April	23,474	485	540	121	212	2,204	734	1	11	19	11
May	26,703	570	582	84	218	2,326	803	1	13	19	11
June	36,501	721	695	104	294	2,991	1,014	1	12	17	10
July	49,690	779	796	115	341	3,396	1,339	1	13	19	11
August	50,285	715	794	118	289	3,072	1,246	2	16	19	11
September	38,545	530	728	103	146	2,094	1,006	1	11	18	11
9-Month Total	**322,441**	**5,875**	**6,076**	**1,068**	**2,172**	**23,879**	**8,734**	**12**	**116**	**168**	**97**
2019 9-Month Total	**416,110**	**6,952**	**6,912**	**1,303**	**2,179**	**26,064**	**8,350**	**16**	**130**	**173**	**100**
2018 9-Month Total	**478,461**	**11,300**	**9,995**	**1,355**	**2,668**	**35,990**	**7,895**	**17**	**146**	**194**	**94**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] 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.

[c] 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.

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

[i] 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).

[j] 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).

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

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

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • 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 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 7.3c Consumption of Selected Combustible Fuels for Electricity Generation: Commercial and Industrial Sectors (Subset of Table 7.3a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**417**	**953**	**28**	**15**	**10,740**	**13,103**	**517**	**104**	**335**	**16**	**36**
1995 Total	**569**	**649**	**43**	**21**	**12,171**	**12,265**	**601**	**114**	**373**	**13**	**40**
2000 Total	**514**	**823**	**37**	**26**	**11,706**	**10,459**	**640**	**107**	**369**	**10**	**45**
2001 Total	**532**	**1,023**	**36**	**15**	**10,636**	**10,530**	**654**	**88**	**370**	**7**	**44**
2002 Total	**477**	**834**	**33**	**18**	**11,855**	**11,608**	**685**	**106**	**464**	**15**	**43**
2003 Total	**582**	**894**	**38**	**19**	**10,440**	**10,424**	**668**	**127**	**362**	**13**	**46**
2004 Total	**377**	**766**	**33**	**19**	**7,687**	**6,919**	**566**	**108**	**194**	**5**	**41**
2005 Total	**377**	**585**	**34**	**20**	**7,504**	**6,440**	**518**	**85**	**189**	**5**	**46**
2006 Total	**347**	**333**	**35**	**21**	**7,408**	**5,066**	**536**	**87**	**187**	**3**	**45**
2007 Total	**361**	**258**	**34**	**19**	**5,089**	**5,041**	**554**	**88**	**188**	**4**	**41**
2008 Total	**369**	**166**	**33**	**20**	**5,075**	**3,617**	**520**	**73**	**179**	**5**	**39**
2009 Total	**317**	**190**	**34**	**23**	**4,674**	**3,328**	**520**	**62**	**160**	**4**	**42**
2010 Total	**314**	**172**	**39**	**24**	**8,125**	**2,422**	**555**	**70**	**172**	**8**	**55**
2011 Total	**347**	**137**	**47**	**31**	**5,735**	**2,145**	**572**	**74**	**182**	**7**	**57**
2012 Total	**307**	**279**	**63**	**33**	**4,665**	**4,761**	**633**	**84**	**219**	**8**	**54**
2013 Total	**513**	**335**	**67**	**36**	**4,670**	**3,892**	**642**	**74**	**210**	**11**	**50**
2014 Total	**202**	**462**	**72**	**36**	**4,629**	**2,594**	**623**	**81**	**210**	**11**	**54**
2015 Total	**163**	**260**	**70**	**35**	**3,999**	**1,907**	**625**	**77**	**191**	**10**	**58**
2016 Total	**111**	**116**	**46**	**34**	**3,021**	**1,701**	**534**	**53**	**169**	**10**	**53**
2017 Total	**95**	**204**	**50**	**34**	**2,783**	**1,545**	**541**	**49**	**169**	**8**	**49**
2018 January	11	68	4	3	255	144	49	5	15	1	4
February	9	16	4	3	230	105	43	5	13	1	3
March	8	13	4	3	224	108	43	5	15	1	4
April	7	15	4	3	193	107	43	5	13	1	4
May	6	18	4	3	211	115	46	5	15	1	4
June	6	18	5	3	210	126	47	5	15	(s)	4
July	6	27	6	3	212	140	51	5	16	1	4
August	7	24	6	3	204	108	52	6	15	1	4
September	7	19	5	3	199	110	48	5	14	(s)	3
October	6	17	4	3	173	120	47	5	14	1	4
November	7	24	4	3	202	108	48	4	14	1	4
December	7	21	4	3	221	128	49	5	15	1	4
Total	**87**	**279**	**53**	**33**	**2,534**	**1,418**	**565**	**57**	**172**	**7**	**46**
2019 January	8	34	5	3	214	109	54	4	15	1	4
February	8	16	4	2	197	97	46	4	13	1	3
March	9	17	5	3	168	103	49	4	14	1	4
April	6	16	4	2	161	123	46	4	13	1	3
May	6	17	4	2	178	102	50	4	13	(s)	4
June	4	17	5	3	174	104	50	4	14	(s)	4
July	5	24	6	3	193	150	55	5	15	(s)	4
August	5	21	5	3	190	110	56	5	15	(s)	4
September	6	27	5	2	175	108	53	5	13	(s)	4
October	6	23	4	2	157	109	52	4	14	1	4
November	6	23	4	2	173	105	53	4	14	1	4
December	7	23	5	3	180	107	55	5	14	1	4
Total	**76**	**257**	**56**	**30**	**2,161**	**1,329**	**618**	**51**	**167**	**6**	**45**
2020 January	5	24	5	2	187	109	56	4	14	1	3
February	9	13	4	2	177	94	50	5	13	1	3
March	6	17	4	2	168	97	51	4	14	1	3
April	4	12	4	2	144	72	45	4	13	(s)	3
May	4	20	4	2	142	96	47	4	13	(s)	3
June	5	20	4	2	130	101	50	4	13	(s)	3
July	5	25	5	2	143	105	53	4	13	(s)	3
August	4	24	5	2	140	102	53	4	13	(s)	3
September	7	23	4	2	149	89	48	4	13	(s)	3
9-Month Total	**51**	**179**	**39**	**21**	**1,379**	**866**	**452**	**38**	**121**	**4**	**27**
2019 9-Month Total	**57**	**188**	**42**	**22**	**1,651**	**1,007**	**458**	**38**	**125**	**4**	**34**
2018 9-Month Total	**67**	**218**	**41**	**25**	**1,938**	**1,063**	**421**	**43**	**129**	**5**	**34**

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.
[e] Natural gas, plus a small amount of supplemental gaseous fuels.
[f] 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).
[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.
[h] Wood and wood-derived fuels.
[i] 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).

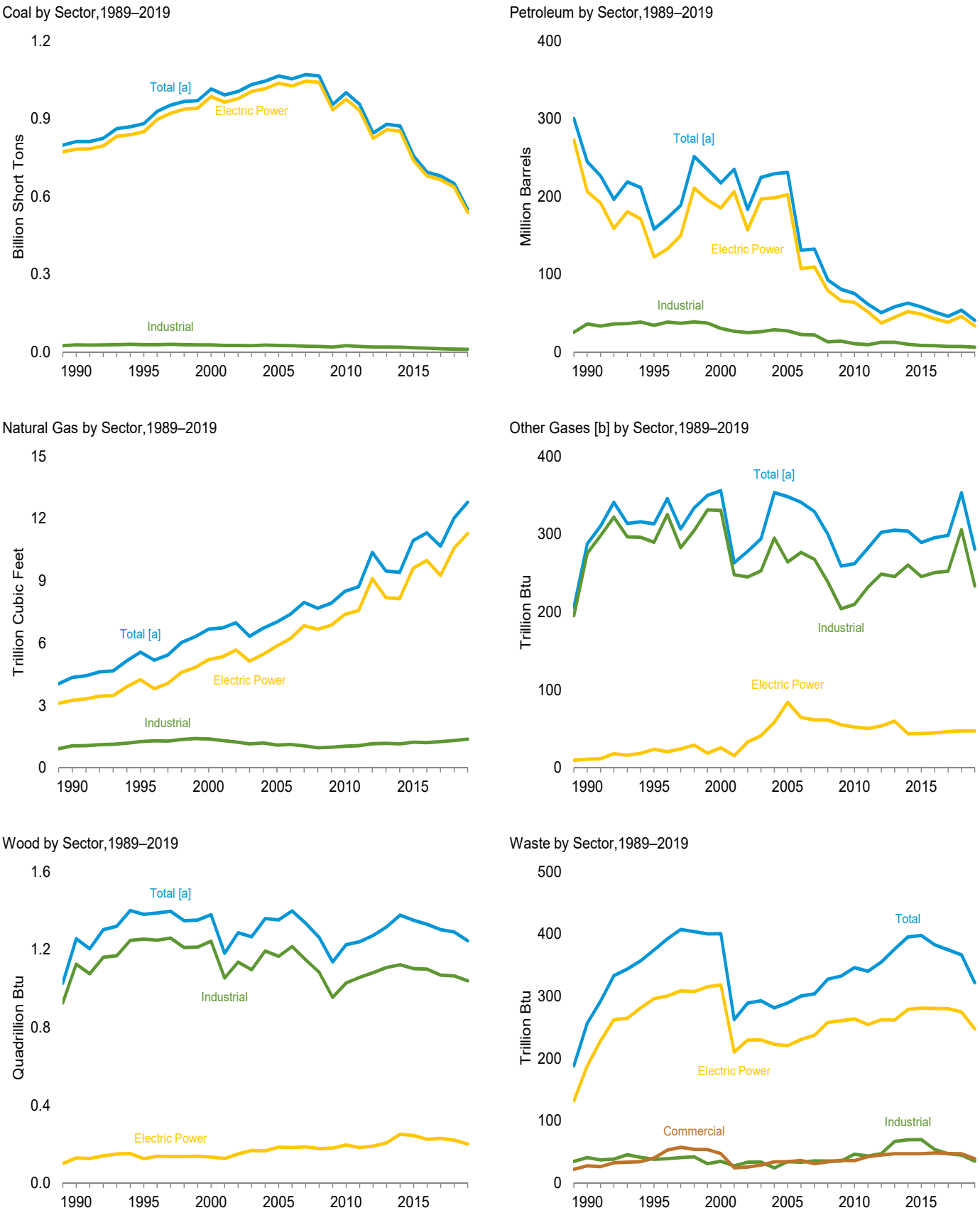
(s)=Less than 0.5 trillion Btu.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data are for fuels consumed to produce electricity. Through 1988, data are not available. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 1989.

Sources: • **1989–1997:** U.S. 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." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

Figure 7.4 Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output



[a] Includes commercial sector.
[b] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.4a-7.4c.

Table 7.4a Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Total (All Sectors) (Sum of Tables 7.4b and 7.4c)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**811,538**	**20,194**	**209,081**	**1,332**	**2,832**	**244,765**	**4,346**	**288**	**1,256**	**257**	**86**
1995 Total	**881,012**	**21,697**	**112,168**	**1,322**	**4,590**	**158,140**	**5,572**	**313**	**1,382**	**374**	**97**
2000 Total	**1,015,398**	**34,572**	**156,673**	**2,904**	**4,669**	**217,494**	**6,677**	**356**	**1,380**	**401**	**109**
2001 Total	**991,635**	**33,724**	**177,137**	**1,418**	**4,532**	**234,940**	**6,731**	**263**	**1,182**	**263**	**229**
2002 Total	**1,005,144**	**24,749**	**118,637**	**3,257**	**7,353**	**183,409**	**6,986**	**278**	**1,287**	**289**	**252**
2003 Total	**1,031,778**	**31,825**	**152,859**	**4,576**	**7,067**	**224,593**	**6,337**	**294**	**1,266**	**293**	**262**
2004 Total	**1,044,798**	**23,520**	**157,478**	**4,764**	**8,721**	**229,364**	**6,727**	**353**	**1,360**	**282**	**254**
2005 Total	**1,065,281**	**24,446**	**156,915**	**4,270**	**9,113**	**231,193**	**7,021**	**348**	**1,353**	**289**	**237**
2006 Total	**1,053,783**	**14,655**	**69,846**	**3,396**	**8,622**	**131,005**	**7,404**	**341**	**1,399**	**300**	**247**
2007 Total	**1,069,606**	**17,042**	**74,616**	**4,237**	**7,299**	**132,389**	**7,962**	**329**	**1,336**	**304**	**239**
2008 Total	**1,064,503**	**14,137**	**43,477**	**3,765**	**6,314**	**92,948**	**7,689**	**300**	**1,263**	**328**	**212**
2009 Total	**955,190**	**14,800**	**33,672**	**3,218**	**5,828**	**80,830**	**7,938**	**259**	**1,137**	**333**	**228**
2010 Total	**1,001,411**	**15,247**	**26,944**	**2,777**	**6,053**	**75,231**	**8,502**	**262**	**1,226**	**346**	**237**
2011 Total	**956,470**	**11,735**	**16,877**	**2,540**	**6,092**	**61,610**	**8,724**	**282**	**1,241**	**340**	**261**
2012 Total	**845,066**	**9,945**	**13,571**	**2,185**	**5,021**	**50,805**	**10,371**	**302**	**1,273**	**355**	**252**
2013 Total	**879,078**	**10,277**	**14,199**	**2,212**	**6,338**	**58,378**	**9,479**	**305**	**1,318**	**376**	**236**
2014 Total	**871,741**	**15,107**	**16,615**	**2,908**	**5,695**	**63,106**	**9,410**	**304**	**1,378**	**395**	**236**
2015 Total	**756,226**	**12,924**	**16,136**	**3,008**	**5,188**	**58,009**	**10,952**	**290**	**1,351**	**398**	**237**
2016 Total	**693,958**	**10,278**	**12,231**	**2,173**	**5,352**	**51,441**	**11,322**	**296**	**1,330**	**383**	**238**
2017 Total	**678,578**	**10,168**	**11,508**	**2,033**	**4,467**	**46,043**	**10,677**	**299**	**1,303**	**375**	**226**
2018 January	66,279	5,607	3,894	668	466	12,497	913	28	114	33	19
February	47,079	707	759	164	382	3,542	801	28	102	31	18
March	45,728	782	723	148	327	3,286	873	30	110	33	19
April	41,610	825	774	138	354	3,508	816	27	101	31	18
May	48,374	998	853	159	281	3,417	963	30	107	31	19
June	57,159	946	962	149	413	4,122	1,071	29	107	29	20
July	64,895	798	927	184	448	4,151	1,353	30	114	29	19
August	64,801	843	1,001	169	429	4,157	1,315	34	112	30	20
September	54,975	800	1,030	163	399	3,988	1,151	29	102	27	17
October	49,406	831	989	183	306	3,532	1,008	31	104	31	19
November	52,868	981	879	167	342	3,739	887	28	105	31	19
December	56,853	947	795	284	404	4,048	889	29	113	32	19
Total	**650,027**	**15,066**	**13,584**	**2,578**	**4,552**	**53,988**	**12,039**	**353**	**1,291**	**367**	**226**
2019 January	57,146	1,427	1,121	362	399	4,905	982	24	112	29	21
February	46,183	802	659	217	338	3,368	898	22	100	26	18
March	45,086	779	685	172	308	3,175	937	24	105	28	19
April	34,362	680	679	201	227	2,693	854	23	96	26	18
May	40,956	967	785	177	364	3,747	957	23	101	26	19
June	45,168	839	840	183	287	3,295	1,112	22	101	26	19
July	56,813	806	942	180	385	3,851	1,386	25	108	26	20
August	53,322	800	1,003	188	346	3,720	1,410	24	109	27	21
September	48,102	768	841	198	310	3,356	1,206	23	101	25	19
October	38,416	776	860	213	146	2,581	1,061	23	101	27	19
November	42,925	821	787	267	186	2,803	947	23	103	27	19
December	41,533	903	847	222	269	3,317	1,045	24	108	29	20
Total	**550,013**	**10,369**	**10,049**	**2,580**	**3,563**	**40,811**	**12,797**	**281**	**1,246**	**322**	**234**
2020 January	37,825	892	817	201	336	3,590	1,068	25	106	29	18
February	33,055	723	676	166	239	2,757	1,003	25	100	26	17
March	29,905	620	630	231	301	2,988	1,005	25	101	28	18
April	24,425	530	589	168	252	2,546	880	20	97	26	18
May	27,652	628	637	143	290	2,858	951	20	103	26	18
June	37,409	783	753	154	379	3,585	1,166	19	93	23	17
July	50,708	850	853	174	425	4,002	1,501	21	98	25	19
August	51,285	785	864	164	383	3,731	1,409	22	99	25	19
September	39,549	607	783	142	228	2,674	1,155	21	95	24	17
9-Month Total	**331,813**	**6,419**	**6,602**	**1,543**	**2,833**	**28,730**	**10,139**	**198**	**892**	**232**	**162**
2019 9-Month Total	**427,138**	**7,869**	**7,555**	**1,878**	**2,962**	**32,110**	**9,743**	**211**	**935**	**239**	**175**
2018 9-Month Total	**490,899**	**12,306**	**10,921**	**1,944**	**3,500**	**42,669**	**9,256**	**266**	**969**	**273**	**169**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] 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.

[c] 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.

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

[i] 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).

[j] 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).

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See "Table 7.4b Sources" at end of section and sources for Table 7.4c.

Table 7.4b Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Electric Power Sector (Subset of Table 7.4a)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	Other[j]
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**782,567**	**16,567**	**184,915**	**26**	**1,008**	**206,550**	**3,245**	**11**	**129**	**188**	**(s)**
1995 Total	**850,230**	**18,553**	**90,023**	**499**	**2,674**	**122,447**	**4,237**	**24**	**125**	**296**	**2**
2000 Total	**985,821**	**30,016**	**138,513**	**454**	**3,275**	**185,358**	**5,206**	**25**	**134**	**318**	**1**
2001 Total	**964,433**	**29,274**	**159,504**	**377**	**3,427**	**206,291**	**5,342**	**15**	**126**	**211**	**113**
2002 Total	**977,507**	**21,876**	**104,773**	**1,267**	**5,816**	**156,996**	**5,672**	**33**	**150**	**230**	**143**
2003 Total	**1,005,116**	**27,632**	**138,279**	**2,026**	**5,799**	**196,932**	**5,135**	**41**	**167**	**230**	**140**
2004 Total	**1,016,268**	**19,107**	**139,816**	**2,713**	**7,372**	**198,498**	**5,464**	**58**	**165**	**223**	**138**
2005 Total	**1,037,485**	**19,675**	**139,409**	**2,685**	**8,083**	**202,184**	**5,869**	**84**	**185**	**221**	**123**
2006 Total	**1,026,636**	**12,646**	**57,345**	**1,870**	**7,101**	**107,365**	**6,222**	**65**	**182**	**231**	**125**
2007 Total	**1,045,141**	**15,327**	**63,086**	**2,594**	**5,685**	**109,431**	**6,841**	**61**	**186**	**237**	**124**
2008 Total	**1,040,580**	**12,547**	**38,241**	**2,670**	**5,119**	**79,056**	**6,668**	**61**	**177**	**258**	**131**
2009 Total	**933,627**	**12,035**	**28,782**	**2,210**	**4,611**	**66,081**	**6,873**	**55**	**180**	**261**	**124**
2010 Total	**975,052**	**13,790**	**24,503**	**1,877**	**4,777**	**64,055**	**7,387**	**52**	**196**	**264**	**124**
2011 Total	**932,484**	**11,021**	**14,803**	**1,658**	**4,837**	**51,667**	**7,574**	**50**	**182**	**255**	**143**
2012 Total	**823,551**	**9,080**	**12,203**	**1,339**	**2,974**	**37,495**	**9,111**	**54**	**190**	**262**	**143**
2013 Total	**857,962**	**9,598**	**12,283**	**1,489**	**4,285**	**44,794**	**8,191**	**60**	**207**	**262**	**139**
2014 Total	**851,602**	**14,235**	**15,132**	**2,208**	**4,132**	**52,235**	**8,146**	**44**	**251**	**279**	**137**
2015 Total	**738,444**	**12,193**	**14,929**	**2,131**	**3,907**	**48,787**	**9,613**	**44**	**244**	**281**	**136**
2016 Total	**678,554**	**9,510**	**11,242**	**1,322**	**4,138**	**42,763**	**9,985**	**45**	**224**	**281**	**139**
2017 Total	**664,993**	**9,481**	**10,464**	**1,375**	**3,399**	**38,318**	**9,266**	**46**	**229**	**280**	**132**
2018 January	64,960	5,254	3,672	594	373	11,385	786	4	21	24	12
February	45,897	659	653	91	302	2,916	690	4	19	23	11
March	44,562	717	647	96	251	2,715	757	4	20	24	12
April	40,603	777	707	84	267	2,904	704	4	16	23	11
May	47,356	937	790	97	204	2,844	848	4	17	23	11
June	56,154	895	875	90	322	3,471	953	4	19	23	12
July	63,894	719	877	88	360	3,486	1,224	4	21	23	12
August	63,810	771	932	123	348	3,566	1,186	4	20	23	12
September	53,987	723	982	128	318	3,422	1,030	4	17	21	10
October	48,474	777	875	127	222	2,888	888	4	17	23	11
November	51,806	893	752	110	267	3,089	763	4	17	23	11
December	55,714	845	683	227	315	3,327	762	4	18	23	11
Total	**637,217**	**13,967**	**12,446**	**1,855**	**3,549**	**46,013**	**10,590**	**47**	**221**	**275**	**136**
2019 January	55,967	1,181	1,009	297	322	4,096	848	4	19	22	12
February	45,124	729	586	142	271	2,809	779	4	16	19	11
March	44,096	714	618	114	231	2,602	813	5	16	21	12
April	33,429	627	629	122	151	2,132	740	4	14	20	11
May	40,045	812	745	117	289	3,117	836	4	16	21	12
June	44,297	790	799	127	210	2,768	990	4	16	20	12
July	55,932	745	902	132	295	3,255	1,255	4	19	21	13
August	52,431	730	967	133	270	3,179	1,278	4	19	21	13
September	47,248	693	799	139	226	2,760	1,081	4	17	20	12
October	37,523	714	804	157	70	2,027	937	3	15	21	12
November	41,977	754	725	109	126	2,218	819	4	16	20	12
December	40,533	849	769	160	194	2,749	911	4	18	22	13
Total	**538,601**	**9,336**	**9,352**	**1,750**	**2,655**	**33,712**	**11,287**	**47**	**201**	**248**	**145**
2020 January	36,801	836	763	137	256	3,016	931	4	17	21	12
February	32,066	679	616	115	188	2,350	879	4	16	20	11
March	28,978	574	587	175	258	2,628	879	4	16	21	12
April	23,623	492	551	122	222	2,277	764	3	13	20	12
May	26,870	575	593	85	229	2,399	834	3	15	20	12
June	36,675	726	705	105	301	3,042	1,045	2	15	18	11
July	49,912	784	809	116	348	3,451	1,373	2	16	20	12
August	50,513	720	806	120	301	3,150	1,281	4	19	20	12
September	38,733	535	741	104	156	2,162	1,037	3	13	19	11
9-Month Total	**324,172**	**5,921**	**6,171**	**1,078**	**2,261**	**24,475**	**9,022**	**29**	**140**	**179**	**106**
2019 9-Month Total	**418,569**	**7,020**	**7,053**	**1,324**	**2,264**	**26,718**	**8,620**	**36**	**153**	**185**	**109**
2018 9-Month Total	**481,223**	**11,452**	**10,136**	**1,391**	**2,746**	**36,708**	**8,177**	**36**	**170**	**206**	**102**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] 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.

[c] 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.

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

[i] 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).

[j] 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).

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

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

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 7.4c Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors (Subset of Table 7.4a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**1,191**	**2,056**	**46**	**28**	**27,781**	**36,159**	**1,055**	**275**	**1,125**	**41**	**86**
1995 Total	**1,419**	**1,245**	**78**	**40**	**29,363**	**34,448**	**1,258**	**290**	**1,255**	**38**	**95**
2000 Total	**1,547**	**1,615**	**85**	**47**	**28,031**	**30,520**	**1,386**	**331**	**1,244**	**35**	**108**
2001 Total	**1,448**	**1,832**	**79**	**25**	**25,755**	**26,817**	**1,310**	**248**	**1,054**	**27**	**101**
2002 Total	**1,405**	**1,250**	**74**	**26**	**26,232**	**25,163**	**1,240**	**245**	**1,136**	**34**	**92**
2003 Total	**1,816**	**1,449**	**58**	**29**	**24,846**	**26,212**	**1,144**	**253**	**1,097**	**34**	**103**
2004 Total	**1,917**	**2,009**	**72**	**34**	**26,613**	**28,857**	**1,191**	**295**	**1,193**	**24**	**94**
2005 Total	**1,922**	**1,630**	**68**	**34**	**25,875**	**27,380**	**1,084**	**264**	**1,166**	**34**	**94**
2006 Total	**1,886**	**935**	**68**	**36**	**25,262**	**22,706**	**1,115**	**277**	**1,216**	**33**	**102**
2007 Total	**1,927**	**752**	**70**	**31**	**22,537**	**22,207**	**1,050**	**268**	**1,148**	**36**	**98**
2008 Total	**2,021**	**671**	**66**	**34**	**21,902**	**13,222**	**955**	**239**	**1,084**	**35**	**60**
2009 Total	**1,798**	**521**	**76**	**36**	**19,766**	**14,228**	**990**	**204**	**955**	**35**	**82**
2010 Total	**1,720**	**437**	**86**	**36**	**24,638**	**10,740**	**1,029**	**210**	**1,029**	**47**	**91**
2011 Total	**1,668**	**333**	**87**	**43**	**22,319**	**9,610**	**1,063**	**232**	**1,057**	**43**	**94**
2012 Total	**1,450**	**457**	**111**	**45**	**20,065**	**12,853**	**1,149**	**249**	**1,082**	**47**	**81**
2013 Total	**1,356**	**887**	**118**	**47**	**19,761**	**12,697**	**1,170**	**246**	**1,109**	**67**	**69**
2014 Total	**1,063**	**758**	**119**	**47**	**19,076**	**10,112**	**1,145**	**260**	**1,122**	**70**	**72**
2015 Total	**798**	**622**	**116**	**47**	**16,984**	**8,600**	**1,222**	**246**	**1,103**	**70**	**73**
2016 Total	**683**	**404**	**127**	**48**	**14,720**	**8,273**	**1,209**	**251**	**1,100**	**54**	**70**
2017 Total	**610**	**516**	**154**	**48**	**12,975**	**7,209**	**1,257**	**253**	**1,069**	**47**	**65**
2018 January	76	186	12	4	1,242	926	115	24	92	5	5
February	59	48	11	4	1,122	578	101	24	83	4	5
March	57	42	11	4	1,109	530	105	26	90	5	5
April	47	36	10	4	960	568	102	23	85	4	5
May	39	34	10	4	979	539	105	25	89	4	5
June	36	33	11	4	969	618	107	26	87	2	5
July	40	55	13	4	962	610	116	26	92	3	5
August	42	46	13	4	949	545	116	30	92	3	6
September	45	39	11	4	943	528	110	25	85	2	5
October	42	36	11	4	891	608	110	27	87	4	5
November	47	62	11	4	1,015	588	113	24	88	4	5
December	47	65	11	4	1,093	656	115	25	95	5	5
Total	**577**	**681**	**135**	**47**	**12,233**	**7,294**	**1,314**	**306**	**1,065**	**45**	**62**
2019 January	59	100	12	4	1,119	708	121	20	92	4	6
February	54	51	11	3	1,005	508	108	18	83	4	5
March	58	53	11	3	932	521	113	20	89	4	5
April	40	39	10	3	893	522	105	19	82	3	5
May	38	137	10	3	873	493	111	19	85	2	5
June	27	29	11	3	845	498	111	19	84	3	5
July	35	48	13	3	846	548	118	21	89	2	5
August	37	44	12	3	854	498	120	20	90	2	5
September	40	54	11	3	814	541	114	20	83	2	5
October	37	44	11	3	856	510	114	19	86	3	5
November	44	55	11	3	904	530	117	19	86	4	5
December	49	52	12	3	950	516	122	20	90	4	5
Total	**519**	**707**	**135**	**39**	**10,892**	**6,393**	**1,374**	**234**	**1,040**	**35**	**61**
2020 January	41	60	12	3	984	514	125	21	88	4	4
February	49	37	11	3	939	370	114	21	84	4	4
March	41	37	11	3	886	323	115	20	85	3	4
April	29	24	9	3	773	245	107	17	83	3	4
May	32	42	10	3	749	417	108	18	87	3	4
June	35	38	10	3	699	505	110	17	78	2	4
July	35	53	12	3	761	498	116	18	82	2	4
August	37	57	12	3	735	524	117	18	80	2	4
September	41	45	11	3	775	466	107	18	81	2	4
9-Month Total	**340**	**393**	**97**	**27**	**7,302**	**3,862**	**1,019**	**168**	**749**	**25**	**37**
2019 9-Month Total	**388**	**555**	**102**	**29**	**8,182**	**4,837**	**1,021**	**175**	**778**	**25**	**46**
2018 9-Month Total	**441**	**518**	**102**	**35**	**9,235**	**5,442**	**977**	**230**	**795**	**31**	**46**

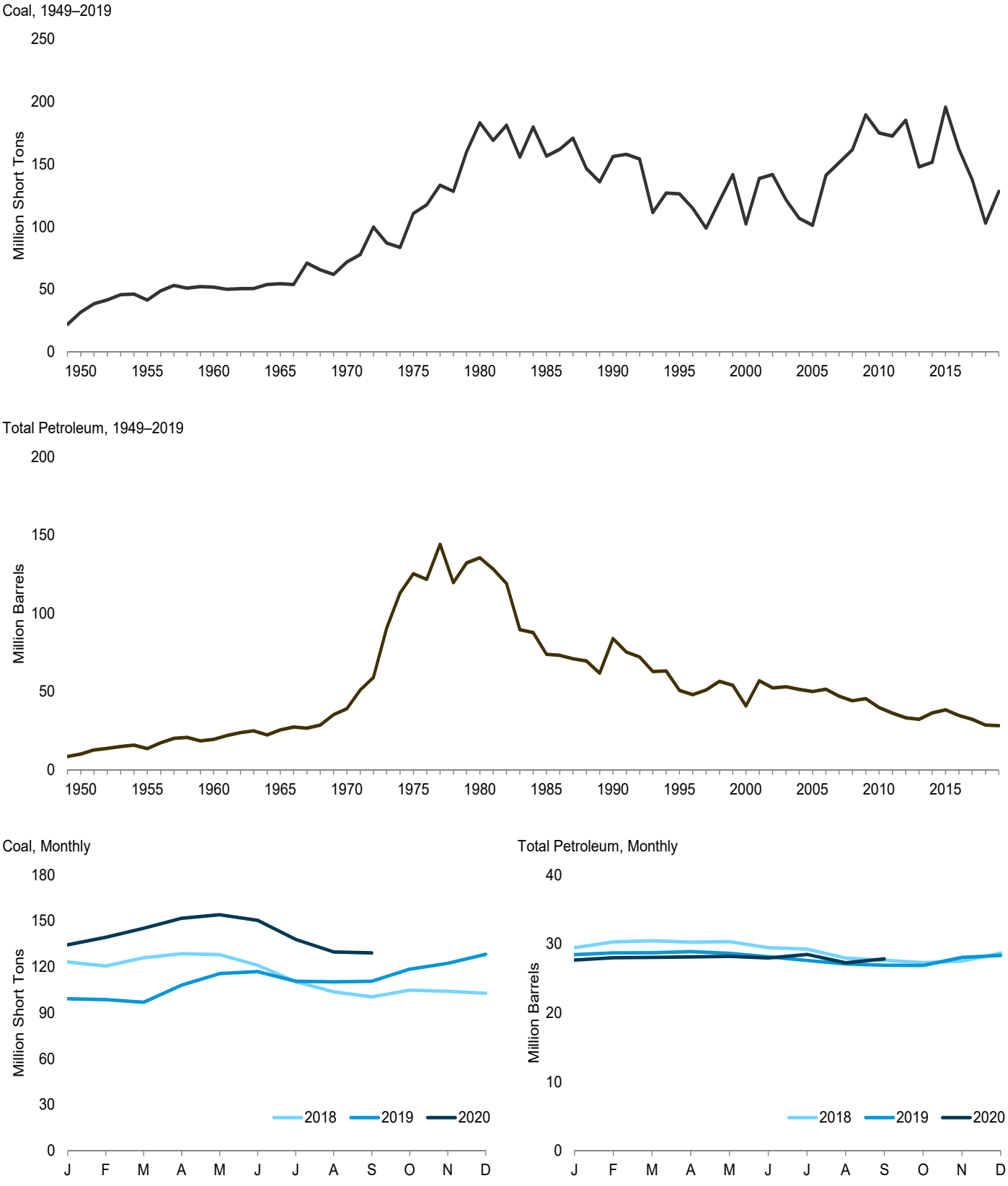
[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.
[e] Natural gas, plus a small amount of supplemental gaseous fuels.
[f] 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).
[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.
[h] Wood and wood-derived fuels.
[i] 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).

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See 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. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 1989.

Sources: • **1989–1997:** U.S. 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." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

Figure 7.5 Stocks of Coal and Petroleum: Electric Power Sector



Note: Data are for utility-sale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.5.

Table 7.5 Stocks of Coal and Petroleum: Electric Power Sector

	Coal[a]	Petroleum				
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e,f]
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels
1950 Year	**31,842**	**NA**	**NA**	**NA**	**NA**	**10,201**
1955 Year	**41,391**	**NA**	**NA**	**NA**	**NA**	**13,671**
1960 Year	**51,735**	**NA**	**NA**	**NA**	**NA**	**19,572**
1965 Year	**54,525**	**NA**	**NA**	**NA**	**NA**	**25,647**
1970 Year	**71,908**	**NA**	**NA**	**NA**	**239**	**39,151**
1975 Year	**110,724**	**16,432**	**108,825**	**NA**	**31**	**125,413**
1980 Year	**183,010**	**30,023**	**105,351**	**NA**	**52**	**135,635**
1985 Year	**156,376**	**16,386**	**57,304**	**NA**	**49**	**73,933**
1990 Year	**156,166**	**16,471**	**67,030**	**NA**	**94**	**83,970**
1995 Year	**126,304**	**15,392**	**35,102**	**NA**	**65**	**50,821**
2000 Year[g]	**102,296**	**15,127**	**24,748**	**NA**	**211**	**40,932**
2001 Year	**138,496**	**20,486**	**34,594**	**NA**	**390**	**57,031**
2002 Year	**141,714**	**17,413**	**25,723**	**800**	**1,711**	**52,490**
2003 Year	**121,567**	**19,153**	**25,820**	**779**	**1,484**	**53,170**
2004 Year	**106,669**	**19,275**	**26,596**	**879**	**937**	**51,434**
2005 Year	**101,137**	**18,778**	**27,624**	**1,012**	**530**	**50,062**
2006 Year	**140,964**	**18,013**	**28,823**	**1,380**	**674**	**51,583**
2007 Year	**151,221**	**18,395**	**24,136**	**1,902**	**554**	**47,203**
2008 Year	**161,589**	**17,761**	**21,088**	**1,634**	**739**	**44,178**
2009 Year	**189,467**	**17,886**	**19,068**	**1,651**	**1,394**	**45,575**
2010 Year	**174,917**	**16,758**	**16,629**	**1,454**	**1,019**	**39,936**
2011 Year	**172,387**	**16,649**	**15,491**	**1,603**	**508**	**36,282**
2012 Year	**185,116**	**16,433**	**12,999**	**1,430**	**495**	**33,336**
2013 Year	**147,884**	**16,068**	**12,926**	**1,393**	**390**	**32,336**
2014 Year	**151,548**	**18,309**	**12,764**	**1,249**	**827**	**36,459**
2015 Year	**195,548**	**17,955**	**12,566**	**1,173**	**1,340**	**38,396**
2016 Year	**162,009**	**17,855**	**11,789**	**949**	**845**	**34,818**
2017 Year	**137,687**	**16,342**	**10,930**	**816**	**864**	**32,407**
2018 January	123,235	15,489	9,763	601	720	29,454
February	120,526	15,844	10,320	667	692	30,293
March	126,008	15,809	10,286	668	736	30,446
April	128,571	15,742	10,194	672	731	30,262
May	127,982	15,911	10,127	756	709	30,337
June	121,041	15,664	10,146	684	591	29,448
July	110,348	15,650	9,583	679	668	29,249
August	103,744	15,210	8,923	682	625	27,939
September	100,384	15,238	8,671	686	608	27,634
October	104,855	15,297	8,665	630	541	27,297
November	104,075	15,581	8,499	640	557	27,504
December	**102,793**	**16,436**	**8,785**	**756**	**539**	**28,674**
2019 January	99,147	16,430	8,672	689	528	28,429
February	98,639	16,462	9,011	680	505	28,680
March	96,933	16,489	9,034	679	503	28,715
April	108,089	16,635	9,007	688	513	28,895
May	115,712	16,716	8,994	697	444	28,625
June	116,876	16,632	8,854	700	388	28,125
July	110,672	16,554	8,570	703	354	27,599
August	110,278	16,413	8,090	706	380	27,109
September	110,626	16,460	8,281	708	292	26,910
October	118,574	16,557	8,156	701	292	26,876
November	122,364	16,434	8,563	722	464	28,038
December	**128,180**	**16,733**	**8,549**	**678**	**471**	**28,317**
2020 January	134,364	16,419	8,076	630	508	27,665
February	139,299	16,251	8,129	620	600	27,999
March	145,238	16,500	8,286	549	541	28,041
April	151,744	16,374	8,480	546	541	28,107
May	154,058	16,593	8,424	536	529	28,196
June	150,427	16,540	8,507	526	480	27,972
July	137,907	17,197	8,561	500	445	28,481
August	129,688	16,951	7,775	518	407	27,278
September	129,102	17,018	8,212	514	415	27,819

[a] Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.

[b] 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.

[c] 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.

[d] Jet fuel and kerosene. Through 2003, data also include a small amount of waste oil.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Distillate fuel oil and residual fuel oil. Beginning in 1970, also includes petroleum coke. Beginning in 2002, also includes other liquids.

[g] Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

NA=Not available.

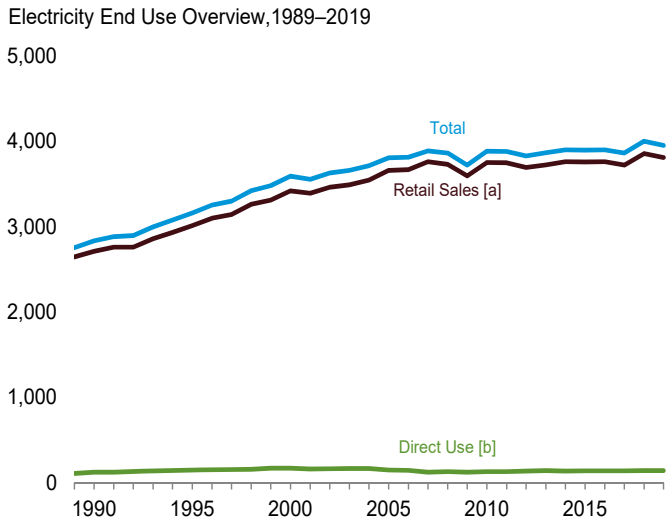
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

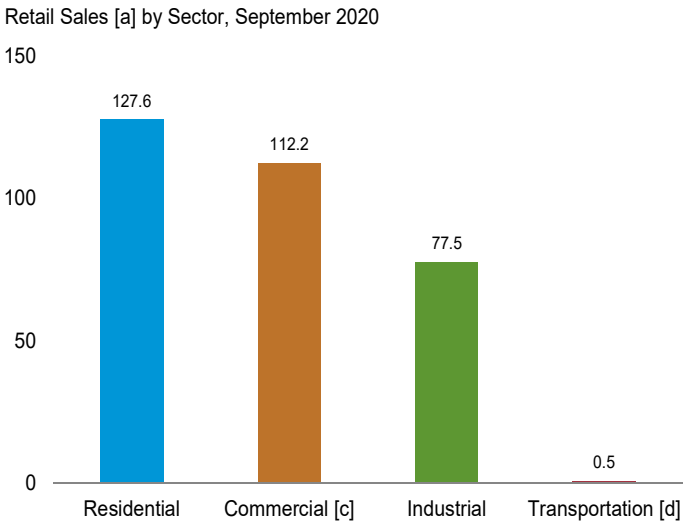
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

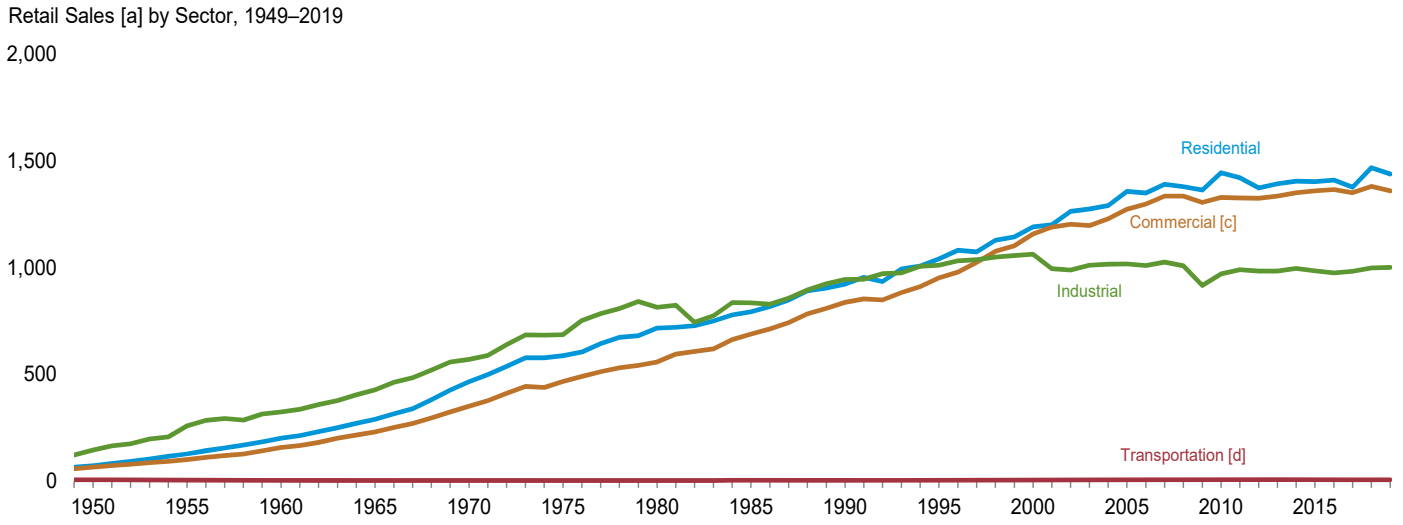
Sources: • **1949–September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977–1981:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1982–1988:** U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power 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." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

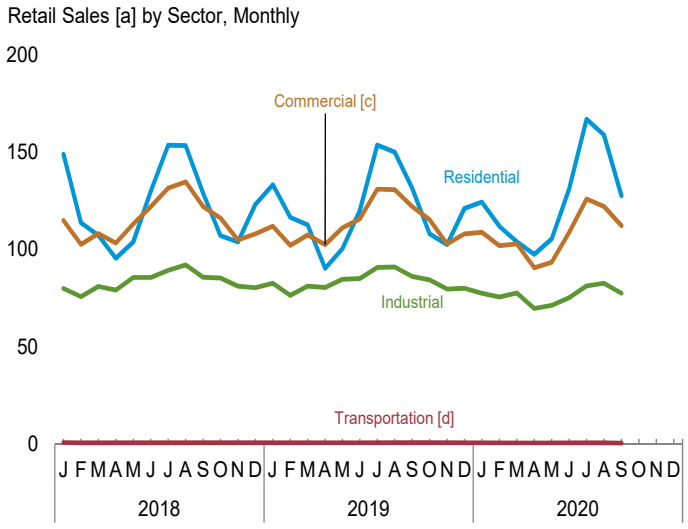
Figure 7.6 Electricity End Use

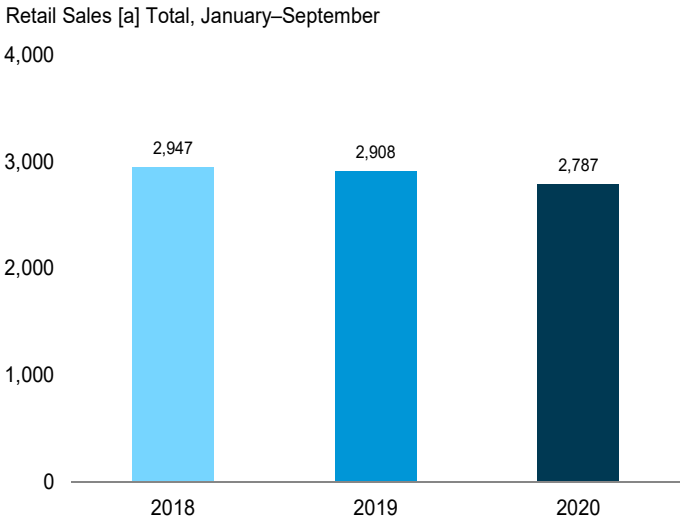
(Billion Kilowatthours)











[a] Electricity retail sales to ultimate customers reported by utilities and other energy service providers.
[b] See "Direct Use" in Glossary.
[c] Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.
[d] Transportation sector, including sales to railroads and railways.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.6.

Table 7.6 Electricity End Use

(Million Kilowatthours)

	Retail Sales[a]						
	Residential	Commercial[b]	Industrial[c]	Transportation[d]	Total Retail Sales[e]	Direct Use[f]	Total End Use[g]
1950 Total	**72,200**	[E] **65,971**	**146,479**	[E] **6,793**	**291,443**	**NA**	**291,443**
1955 Total	**128,401**	[E] **102,547**	**259,974**	[E] **5,826**	**496,748**	**NA**	**496,748**
1960 Total	**201,463**	[E] **159,144**	**324,402**	[E] **3,066**	**688,075**	**NA**	**688,075**
1965 Total	**291,013**	[E] **231,126**	**428,727**	[E] **2,923**	**953,789**	**NA**	**953,789**
1970 Total	**466,291**	[E] **352,041**	**570,854**	[E] **3,115**	**1,392,300**	**NA**	**1,392,300**
1975 Total	**588,140**	[E] **468,296**	**687,680**	[E] **2,974**	**1,747,091**	**NA**	**1,747,091**
1980 Total	**717,495**	**558,643**	**815,067**	**3,244**	**2,094,449**	**NA**	**2,094,449**
1985 Total	**793,934**	**689,121**	**836,772**	**4,147**	**2,323,974**	**NA**	**2,323,974**
1990 Total	**924,019**	**838,263**	**945,522**	**4,751**	**2,712,555**	**124,529**	**2,837,084**
1995 Total	**1,042,501**	**953,117**	**1,012,693**	**4,975**	**3,013,287**	**150,677**	**3,163,963**
2000 Total	**1,192,446**	**1,159,347**	**1,064,239**	**5,382**	**3,421,414**	**170,943**	**3,592,357**
2001 Total	**1,201,607**	**1,190,518**	**996,609**	**5,724**	**3,394,458**	**162,649**	**3,557,107**
2002 Total	**1,265,180**	**1,204,531**	**990,238**	**5,517**	**3,465,466**	**166,184**	**3,631,650**
2003 Total	**1,275,824**	**1,198,728**	**1,012,373**	**6,810**	**3,493,734**	**168,295**	**3,662,029**
2004 Total	**1,291,982**	**1,230,425**	**1,017,850**	**7,224**	**3,547,479**	**168,470**	**3,715,949**
2005 Total	**1,359,227**	**1,275,079**	**1,019,156**	**7,506**	**3,660,969**	**150,016**	**3,810,984**
2006 Total	**1,351,520**	**1,299,744**	**1,011,298**	**7,358**	**3,669,919**	**146,927**	**3,816,845**
2007 Total	**1,392,241**	**1,336,315**	**1,027,832**	**8,173**	**3,764,561**	**125,670**	**3,890,231**
2008 Total	**1,380,662**	**1,336,133**	**1,009,516**	**7,653**	**3,733,965**	**132,197**	**3,866,161**
2009 Total	**1,364,758**	**1,306,853**	**917,416**	**7,768**	**3,596,795**	**126,938**	**3,723,733**
2010 Total	**1,445,708**	**1,330,199**	**971,221**	**7,712**	**3,754,841**	**131,910**	**3,886,752**
2011 Total	**1,422,801**	**1,328,057**	**991,316**	**7,672**	**3,749,846**	**132,754**	**3,882,600**
2012 Total	**1,374,515**	**1,327,101**	**985,714**	**7,320**	**3,694,650**	**137,657**	**3,832,306**
2013 Total	**1,394,812**	**1,337,079**	**985,352**	**7,625**	**3,724,868**	**143,462**	**3,868,330**
2014 Total	**1,407,208**	**1,352,158**	**997,576**	**7,758**	**3,764,700**	**138,574**	**3,903,274**
2015 Total	**1,404,096**	**1,360,752**	**986,508**	**7,637**	**3,758,992**	**141,168**	**3,900,160**
2016 Total	**1,411,058**	**1,367,191**	**976,715**	**7,497**	**3,762,462**	**139,844**	**3,902,306**
2017 Total	**1,378,648**	**1,352,888**	**984,298**	**7,523**	**3,723,356**	**141,114**	**3,864,470**
2018 January	148,917	114,925	79,890	745	344,478	[E] 12,405	356,882
February	113,751	102,685	75,661	634	292,732	[E] 11,036	303,768
March	107,218	108,108	81,053	620	296,999	[E] 11,521	308,521
April	95,454	103,331	79,083	599	278,468	[E] 11,023	289,491
May	103,848	113,175	85,638	587	303,248	[E] 11,740	314,988
June	129,913	122,011	85,536	623	338,083	[E] 12,027	350,110
July	153,566	131,522	89,301	634	375,023	[E] 12,994	388,017
August	153,496	134,848	92,106	680	381,131	[E] 13,079	394,209
September	128,910	122,033	85,679	640	337,263	[E] 12,008	349,271
October	107,049	116,133	85,301	631	309,114	[E] 11,865	320,979
November	103,790	104,983	81,118	616	290,507	[E] 11,977	302,484
December	123,180	107,998	80,306	655	312,140	[E] 12,438	324,578
Total	**1,469,093**	**1,381,755**	**1,000,673**	**7,665**	**3,859,185**	**144,114**	**4,003,299**
2019 January	133,318	112,012	82,610	670	328,609	[E] 12,544	341,154
February	116,608	102,071	76,447	672	295,798	[E] 10,958	306,756
March	112,605	107,468	81,093	686	301,853	[E] 11,737	313,589
April	90,384	102,446	80,460	610	273,900	[E] 10,925	284,825
May	100,331	111,201	84,661	608	296,802	[E] 11,430	308,232
June	120,116	115,745	84,992	608	321,462	[E] 11,743	333,205
July	153,749	130,951	90,752	642	376,095	[E] 12,814	388,909
August	150,083	130,776	91,062	653	372,574	[E] 12,845	385,419
September	131,567	122,059	86,160	677	340,463	[E] 12,048	352,511
October	107,997	115,305	84,396	543	308,241	[E] 11,808	320,050
November	102,453	102,840	79,625	614	285,532	[E] 12,023	297,556
December	121,078	108,001	80,095	648	309,823	[E] 12,582	322,405
Total	**1,440,289**	**1,360,877**	**1,002,353**	**7,632**	**3,811,150**	**143,458**	**3,954,609**
2020 January	124,414	108,857	77,426	664	311,361	[E] 12,782	324,143
February	111,931	101,905	75,650	622	290,109	[E] 11,719	301,827
March	104,006	102,937	77,565	577	285,085	[E] 11,810	296,894
April	97,465	90,631	69,591	458	258,145	[E] 10,649	268,794
May	105,412	93,406	71,220	448	270,486	[E] 10,875	281,361
June	131,242	108,695	75,211	480	315,628	[E] 11,242	326,871
July	166,891	125,994	81,276	555	374,716	[E] 11,918	386,633
August	158,821	122,025	82,582	562	363,990	[E] 11,907	375,897
September	127,584	112,214	77,505	494	317,796	[E] 11,047	328,843
9-Month Total	**1,127,767**	**966,663**	**688,025**	**4,860**	**2,787,315**	[E] **103,950**	**2,891,264**
2019 9-Month Total	**1,108,761**	**1,034,730**	**758,237**	**5,826**	**2,907,555**	[E] **107,045**	**3,014,599**
2018 9-Month Total	**1,135,074**	**1,052,640**	**753,947**	**5,763**	**2,947,425**	[E] **107,834**	**3,055,258**

[a] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

[b] Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.

[c] Industrial sector. Through 2002, excludes agriculture and irrigation; beginning in 2003, includes agriculture and irrigation.

[d] Transportation sector, including sales to railroads and railways.

[e] The sum of "Residential," "Commercial," "Industrial," and "Transportation."

[f] 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.

[g] The sum of "Total Retail Sales" and "Direct Use."

E=Estimate. NA=Not available.

Notes:
- See Note 1, "Coverage of Electricity Statistics," at end of section.
- Totals may not equal sum of components due to independent rounding.
- Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Note 1. Coverage of Electricity Statistics. Data in Section 7 cover the following:

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. Beginning in 1989, data for the commercial sector include institutions and military facilities.

The generation, consumption, and stocks data in Section 7 are for utility-scale facilities—those with a combined generation nameplate capacity of 1 megawatt or more. Data exclude distributed (small-scale) facilities—those with a combined generator nameplate capacity of less than 1 megawatt. For data on distributed solar photovoltaic (PV) generation in the residential, commercial, and industrial sectors, see Table 10.6.

Note 2. Classification of Power Plants into Energy-Use Sectors. The U.S. 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.gov/survey/form/eia_860/instructions.pdf.

Note 3. Electricity Forecast Values. Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). STIFS is driven primarily by data and assumptions about key macroeconomic variables, energy prices, and weather. The electricity forecast relies on additional variables such as alternative fuel prices (natural gas and oil) and power generation by sources other than fossil fuels, including nuclear, renewables, and hydroelectric power. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the electricity industry.

The STIFS model results are published monthly in EIA's Short-Term Energy Outlook, which is accessible on the Web at http://www.eia.gov/forecasts/steo/.

Table 7.1 Sources

Net Generation, Electric Power Sector

1949 forward: Table 7.2b.

Net Generation, Commercial and Industrial Sectors

1949 forward: Table 7.2c.

Trade

1949–September 1977: Unpublished Federal Power Commission data.

October 1977–1980: Unpublished Economic Regulatory Administration (ERA) data.

1981: U.S. 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*.

1984–1986: DOE, ERA, *Electricity Transactions Across International Borders*.

1987 and 1988: DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data."

1989: DOE, Fossil Energy, Form FE-781R, "Annual Report of International Electrical Export/Import Data."

1990–2000: National Energy Board of Canada; and DOE, Office of Electricity Delivery and Energy Reliability, Form FE-781R, "Annual Report of International Electrical Export/Import Data."

2001–May 2011: National Energy Board of Canada; DOE, Office of Electricity Delivery and Energy Reliability, Form OE-781R, "Monthly Electricity Imports and Exports Report," and predecessor form; and California Independent System Operator.

June 2011–2015: National Energy Board of Canada; California Independent System Operator; and EIA estimates for Texas transfers.

2016 forward: EIA, Form EIA-111, "Quarterly Electricity Imports and Exports Report"; and for forecast values, EIA Short-Term Integrated Forecasting System (STIFS).

T&D Losses and Unaccounted for

1949 forward: Calculated as the sum of total net generation and imports minus end use and exports.

End Use

1949 forward: Table 7.6.

Table 7.2b 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: U.S. 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."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.2c Sources

Industrial Sector, Hydroelectric Power, 1949–1988

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 U.S. Energy Information Administration (EIA) estimates for all other plants.

1980–1988: Estimated by EIA as the average generation over the 6-year period of 1974–1979.

All Data, 1989 Forward

1989–1997: 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."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.3b 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: U.S. 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."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.4b 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: U.S. 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."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.6 Sources

Retail Sales, 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: U.S. Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement."

1984–2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, *Electric Power Monthly* (*EPM*) November 2020, Table 5.1.

Retail Sales, Commercial

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM, November 2020, Table 5.1.

Retail Sales, Transportation

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM November 2020, Table 5.1.

Direct Use, Annual

1989–1997: EIA, Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2019: EIA, *Electric Power Annual* 2019, November 2020, Table 2.2.

2020: Sum of monthly estimates.

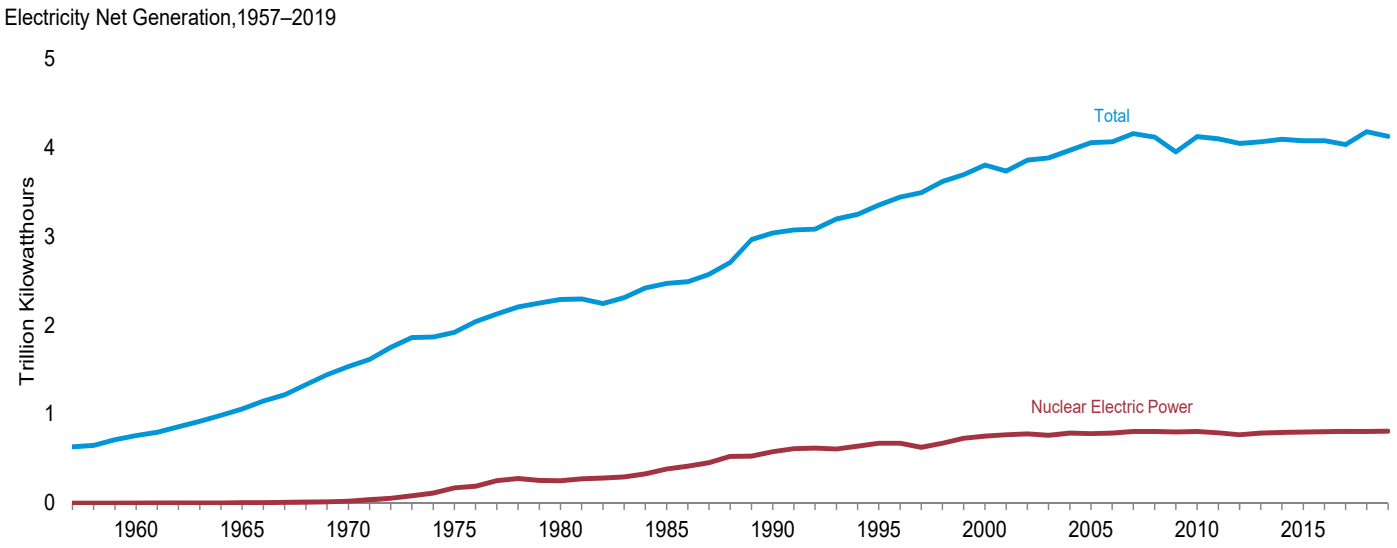
Direct Use, Monthly

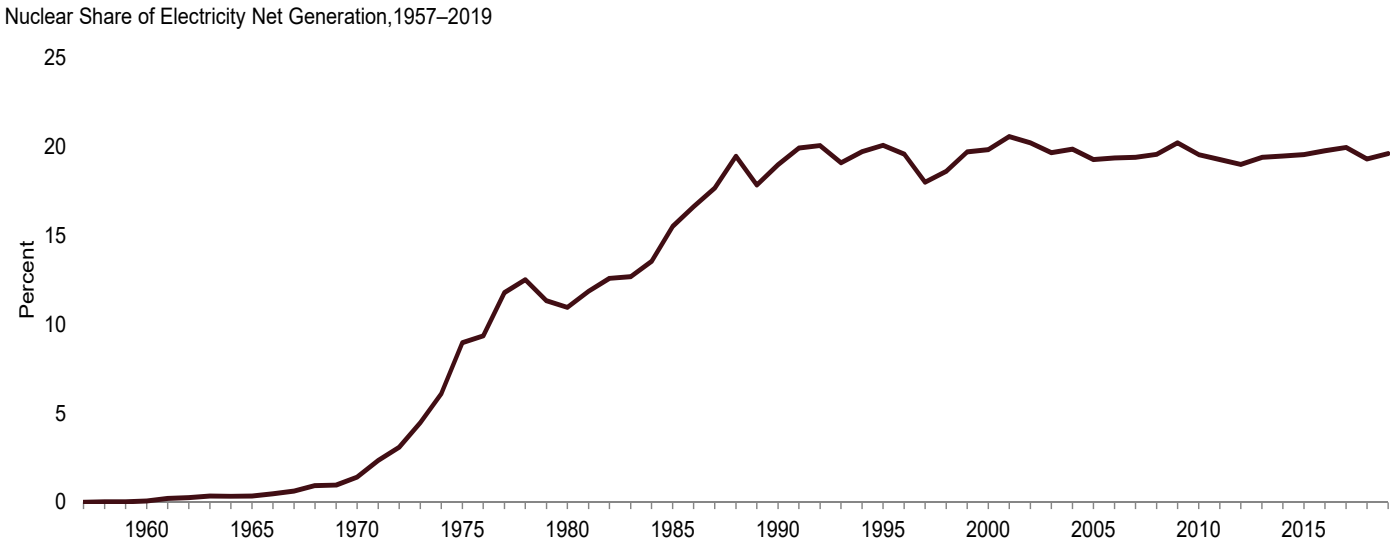
1989 forward: Annual shares are calculated as annual direct use divided by annual commercial and industrial net generation (on Table 7.1). Then monthly direct use estimates are calculated as the annual share multiplied by the monthly commercial and industrial net generation values. For 2020, the 2019 annual share is used.

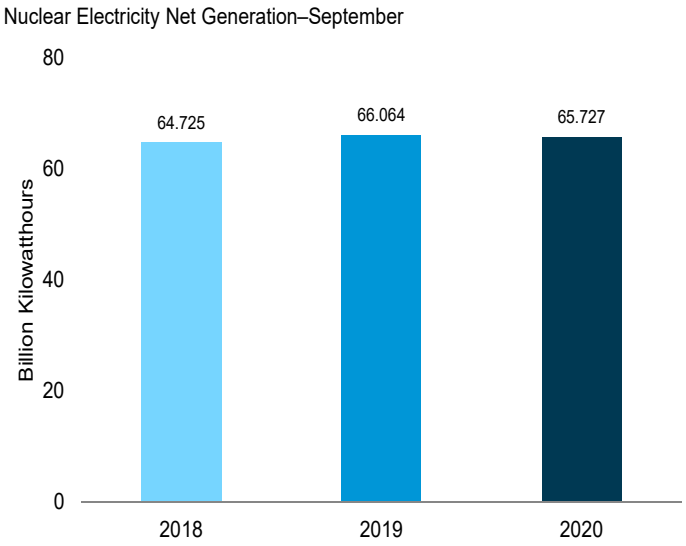
THIS PAGE INTENTIONALLY LEFT BLANK

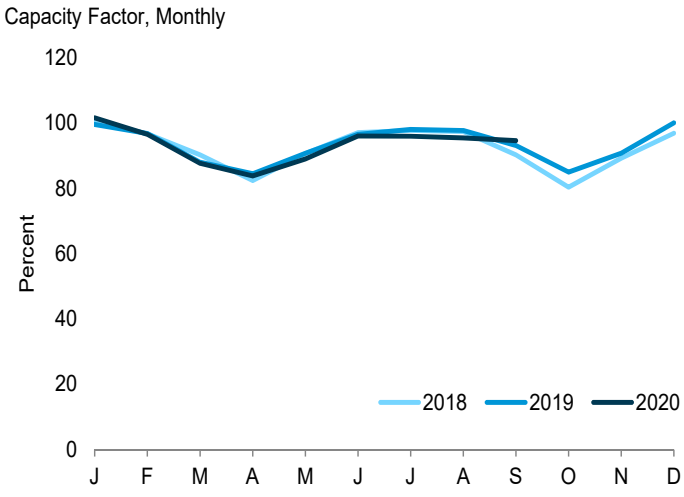
8. Nuclear Energy

Figure 8.1 Nuclear Energy Overview









Web Page: http://www.eia.gov/totalenergy/data/monthly/#nuclear.
Sources: Tables 7.2a and 8.1.

Table 8.1 Nuclear Energy Overview

	Total Operable Units[a,b]	Net Summer Capacity of Operable Units[b,c]	Nuclear Electricity Net Generation	Nuclear Share of Electricity Net Generation	Capacity Factor[d]
	Number	Million Kilowatts	Million Kilowatthours	Percent	
1957 Total	**1**	**0.055**	**10**	**(s)**	**NA**
1960 Total	**3**	**.411**	**518**	**.1**	**NA**
1965 Total	**13**	**.793**	**3,657**	**.3**	**NA**
1970 Total	**20**	**7.004**	**21,804**	**1.4**	**NA**
1975 Total	**57**	**37.267**	**172,505**	**9.0**	**55.9**
1980 Total	**71**	**51.810**	**251,116**	**11.0**	**56.3**
1985 Total	**96**	**79.397**	**383,691**	**15.5**	**58.0**
1990 Total	**112**	**99.624**	**576,862**	**19.0**	**66.0**
1995 Total	**109**	**99.515**	**673,402**	**20.1**	**77.4**
2000 Total	**104**	**97.860**	**753,893**	**19.8**	**88.1**
2001 Total	**104**	**98.159**	**768,826**	**20.6**	**89.4**
2002 Total	**104**	**98.657**	**780,064**	**20.2**	**90.3**
2003 Total	**104**	**99.209**	**763,733**	**19.7**	**87.9**
2004 Total	**104**	**99.628**	**788,528**	**19.9**	**90.1**
2005 Total	**104**	**99.988**	**781,986**	**19.3**	**89.3**
2006 Total	**104**	**100.334**	**787,219**	**19.4**	**89.6**
2007 Total	**104**	**100.266**	**806,425**	**19.4**	**91.8**
2008 Total	**104**	**100.755**	**806,208**	**19.6**	**[d] 91.1**
2009 Total	**104**	**101.004**	**798,855**	**20.2**	**90.3**
2010 Total	**104**	**101.167**	**806,968**	**19.6**	**91.1**
2011 Total	**104**	**[c] 101.419**	**790,204**	**19.3**	**89.1**
2012 Total	**104**	**101.885**	**769,331**	**19.0**	**86.1**
2013 Total	**100**	**99.240**	**789,016**	**19.4**	**89.9**
2014 Total	**99**	**98.569**	**797,166**	**19.5**	**91.7**
2015 Total	**99**	**98.672**	**797,178**	**19.6**	**92.3**
2016 Total	**99**	**99.565**	**805,694**	**19.8**	**92.3**
2017 Total	**99**	**99.629**	**804,950**	**20.0**	**92.3**
2018 January	99	99.731	74,649	20.0	100.6
February	99	99.731	64,790	21.1	96.7
March	99	99.731	67,033	20.8	90.3
April	99	99.731	59,133	19.7	82.4
May	99	99.731	67,320	19.9	90.7
June	99	99.731	69,688	18.7	97.1
July	99	99.731	72,456	17.6	97.7
August	99	99.731	72,282	17.7	97.4
September	98	99.278	64,725	18.2	90.3
October	98	99.278	59,397	18.3	80.4
November	98	99.433	63,954	19.8	89.3
December	98	99.433	71,657	20.9	96.9
Total	**98**	**99.433**	**807,084**	**19.3**	**92.5**
2019 January	98	99.440	73,701	20.5	99.6
February	98	99.440	64,715	20.5	96.8
March	98	99.440	65,080	19.9	88.0
April	98	99.595	60,581	20.4	84.5
May	97	98.922	67,124	20.3	90.8
June	97	98.922	68,805	19.5	96.6
July	97	98.922	72,199	17.6	98.1
August	97	98.922	71,911	17.9	97.7
September	96	98.119	66,064	18.3	93.1
October	96	98.119	62,033	19.4	85.0
November	96	98.119	64,125	20.3	90.8
December	96	98.119	73,074	21.6	100.1
Total	**96**	**98.119**	**809,409**	**19.6**	**93.5**
2020 January	96	[E] 98.137	74,170	21.8	[E] 101.6
February	96	[E] 98.137	65,950	20.7	[E] 96.6
March	96	[E] 98.137	63,997	20.9	[E] 87.7
April	95	[E] 97.121	59,170	21.5	[E] 83.8
May	95	[E] 97.121	64,338	21.2	[E] 89.0
June	95	[E] 97.121	67,205	19.0	[E] 96.1
July	95	[E] 97.121	69,385	16.7	[E] 96.0
August	95	[E] 97.121	68,982	17.3	[E] 95.5
September	94	[E] 96.520	65,727	19.7	[E] 94.6
9-Month Total	**94**	**[E] 96.520**	**598,925**	**19.7**	**[E] 93.4**
2019 9-Month Total	**96**	**98.119**	**610,178**	**19.4**	**93.9**
2018 9-Month Total	**98**	**99.278**	**612,076**	**19.2**	**93.7**

[a] Total of nuclear generating units holding full-power licenses, or equivalent permission to operate, at end of period. See Note 1, "Operable Nuclear Reactors," at end of section.

[b] At end of period.

[c] For the definition of "Net Summer Capacity," see Note 2, "Nuclear Capacity," at end of section. Beginning in 2011, monthly capacity values are estimated in two steps: 1) uprates and derates reported on Form EIA-860M are added to specific months; and 2) the difference between the resulting year-end capacity (from data reported on Form EIA-860M) and final capacity (reported on Form EIA-860) is allocated to the month of January.

[d] Beginning in 2008, capacity factor data are calculated using a new methodology. For an explanation of the method of calculating the capacity factor, see Note 2, "Nuclear Capacity," at end of section.

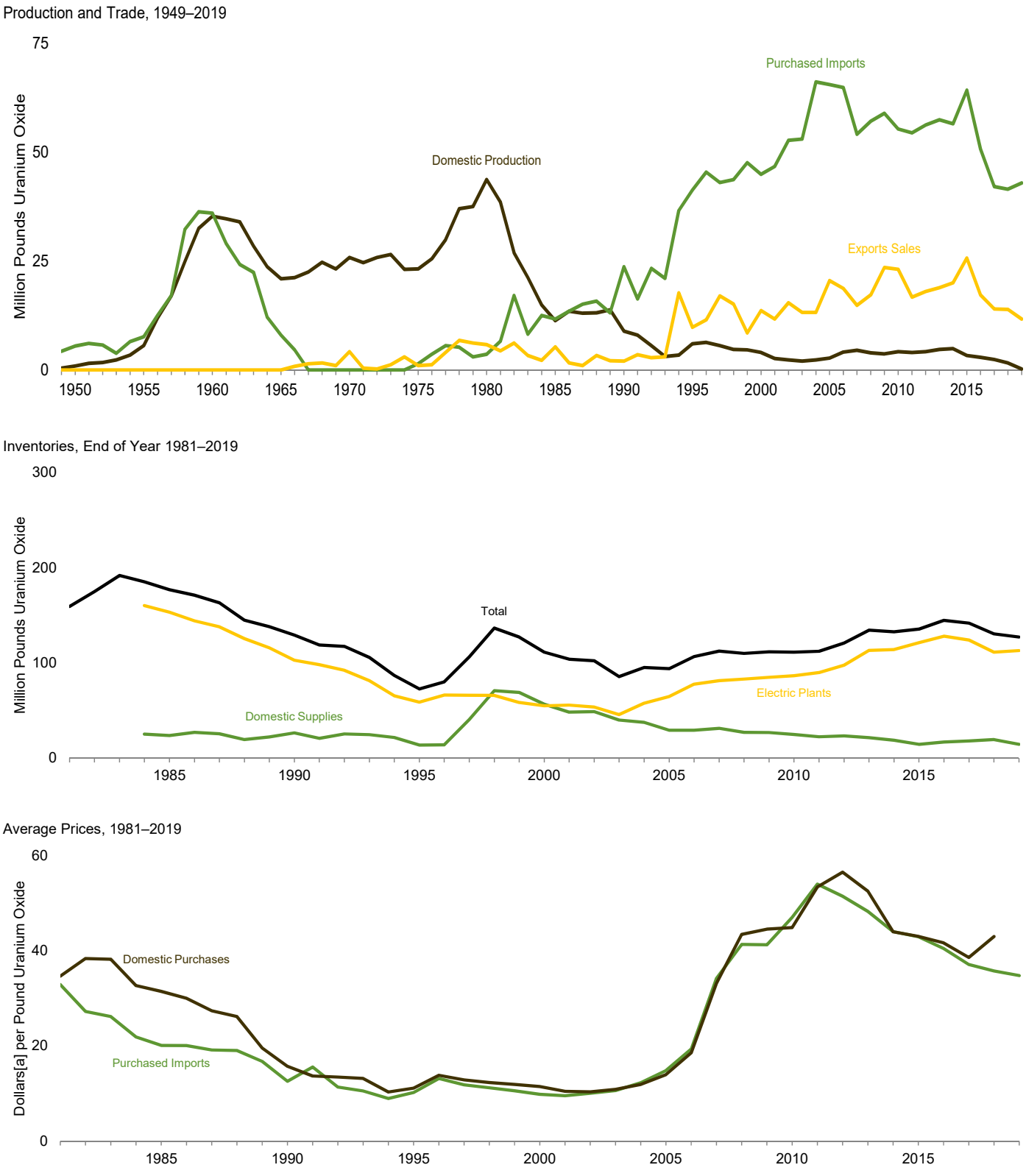
E=Estimate. NA=Not available. (s)=Less than 0.05%.

Notes: • For a discussion of nuclear reactor unit coverage, see Note 1, "Operable Nuclear Reactors," at end of section. • Nuclear electricity net generation totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#nuclear (Excel and CSV files) for all available annual data beginning in 1957 and monthly data beginning in 1973.

Sources: See end of section.

Figure 8.2 Uranium Overview



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
Note: See "Uranium Oxide" in Glossary.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#nuclear.
Source: Table 8.2.

Table 8.2 Uranium Overview

	Domestic Concentrate Production[a]	Purchased Imports[b]	Export[b] Sales	Electric Plant Purchases From Domestic Suppliers	Loaded Into U.S. Nuclear Reactors[c]	Inventories			Average Price	
						Domestic Suppliers	Electric Plants	Total	Purchased Imports	Domestic Purchases
	Million Pounds Uranium Oxide								Dollars[d] per Pound Uranium Oxide	
1950	0.92	5.5	0.0	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
1975	23.20	1.4	1.0	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	NA	159.2	32.90	34.65
1982	26.87	17.1	6.2	27.1	NA	NA	NA	174.8	27.23	38.37
1983	21.16	8.2	3.3	24.2	NA	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	4.70	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	3.98	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	e,E2.34	52.7	15.4	22.7	57.2	48.7	53.5	102.1	10.05	10.35
2003	e,E2.00	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	29.1	64.7	93.8	14.83	13.98
2006	4.11	64.8	18.7	27.9	51.7	29.1	77.5	106.6	19.31	18.54
2007	4.53	54.1	14.8	18.5	45.5	31.2	81.2	112.4	34.18	33.13
2008	3.90	57.1	17.2	20.4	51.3	27.0	83.0	110.0	41.30	43.43
2009	3.71	58.9	23.5	17.6	49.4	26.8	84.8	111.5	41.23	44.53
2010	4.23	55.3	23.1	16.2	44.3	24.7	86.5	111.3	47.01	44.88
2011	3.99	54.4	16.7	19.8	50.9	22.3	89.8	112.1	54.00	53.41
2012	4.15	56.2	18.0	21.5	49.5	23.3	97.6	120.9	51.44	56.51
2013	4.66	57.4	18.9	23.3	42.6	21.3	113.1	134.4	48.27	52.51
2014	4.89	56.5	20.0	20.5	50.5	18.7	114.0	132.7	44.03	43.99
2015	3.34	64.2	25.7	19.6	47.4	14.3	121.1	135.5	42.95	43.03
2016	2.92	50.7	17.2	18.8	41.7	16.7	128.0	144.6	40.45	41.64
2017	2.44	42.1	14.0	14.0	45.5	17.8	123.9	141.7	37.09	38.57
2018	1.65	41.5	13.9	11.1	50.4	19.3	111.2	130.5	35.73	42.98
2019	P.17	42.9	11.7	W	P43.2	P14.3	P112.8	P127.1	34.77	W

[a] See "Uranium Concentrate" in Glossary.

[b] Import quantities through 1970 are reported for fiscal years. Prior to 1968, the Atomic Energy Commission was the sole purchaser of all imported uranium oxide. 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.

[c] Does not include any fuel rods removed from reactors and later reloaded.

[d] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[e] Value has been rounded to avoid disclosure of individual company data.

P=Preliminary. E=Estimate. NA=Not available. W=Value withheld to avoid disclosure of individual company data. – – =Not applicable.

Note: See "Uranium Oxide" in Glossary.

Web Page: See http://www.eia.gov/totalenergy/data/monthly#nuclear (Excel and CSV files) for all available annual data beginning in 1949.

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:** U.S. Energy Information Administration (EIA), *Uranium Industry Annual,* annual reports. • **2003–2017:** EIA, "Domestic Uranium Production Report," annual reports; and EIA, "Uranium Marketing Annual Report," annual reports. • **2018 forward:** EIA, "2019 Domestic Uranium Production Report" (May 2020), Table 3; and EIA, "2019 Uranium Marketing Annual Report" (May 2020), Tables 5, 18, 19, 21, and 22.

Note 1. Operable Nuclear Reactors. A reactor is defined as operable when it possesses 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 or month shown. The definition includes units retaining full-power licenses during long, non-routine shutdowns that for a time rendered them unable to generate electricity.

Note 2. Nuclear Capacity. Nuclear generating units may have more than one type of net capacity rating, including the following:

(a) Net Summer Capacity—The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand. Auxiliary power of a typical nuclear power plant is about 5% of gross generation.

(b) Net Design Capacity or Net Design Electrical Rating (DER)—The nominal net electrical output of a unit, specified by the utility and used for plant design.

Through 2007, the monthly capacity factors are calculated as the monthly nuclear electricity net generation divided by the maximum possible nuclear electricity net generation for that month. The maximum possible nuclear electricity net generation is the number of hours in the month (assuming 24-hour days, with no adjustment for changes to or from Daylight Savings Time) multiplied by the net summer capacity of operable nuclear generating units at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are calculated as the annual nuclear electricity net generation divided by the annual maximum possible nuclear electricity net generation (the sum of the monthly values for maximum possible nuclear electricity net generation). For the methodology used to calculate capacity factors beginning in 2008, see U.S. Energy Information Administration, *Electric Power Monthly*, Appendix C notes on "Average Capacity Factors."

Table 8.1 Sources

Total Operable Units and Net Summer Capacity of Operable Units

1957–1982: Compiled from various sources, primarily U.S. Department of Energy, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones."

1983 forward: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report," and predecessor forms; Form EIA-860M, "Monthly Update to the Annual Electric Generator Report"; and monthly updates as appropriate. See https://www.eia.gov/nuclear/generation/index.html for a list of operable units.

Nuclear Electricity Net Generation and Nuclear Share of Electricity Net Generation

1957 forward: Table 7.2a.

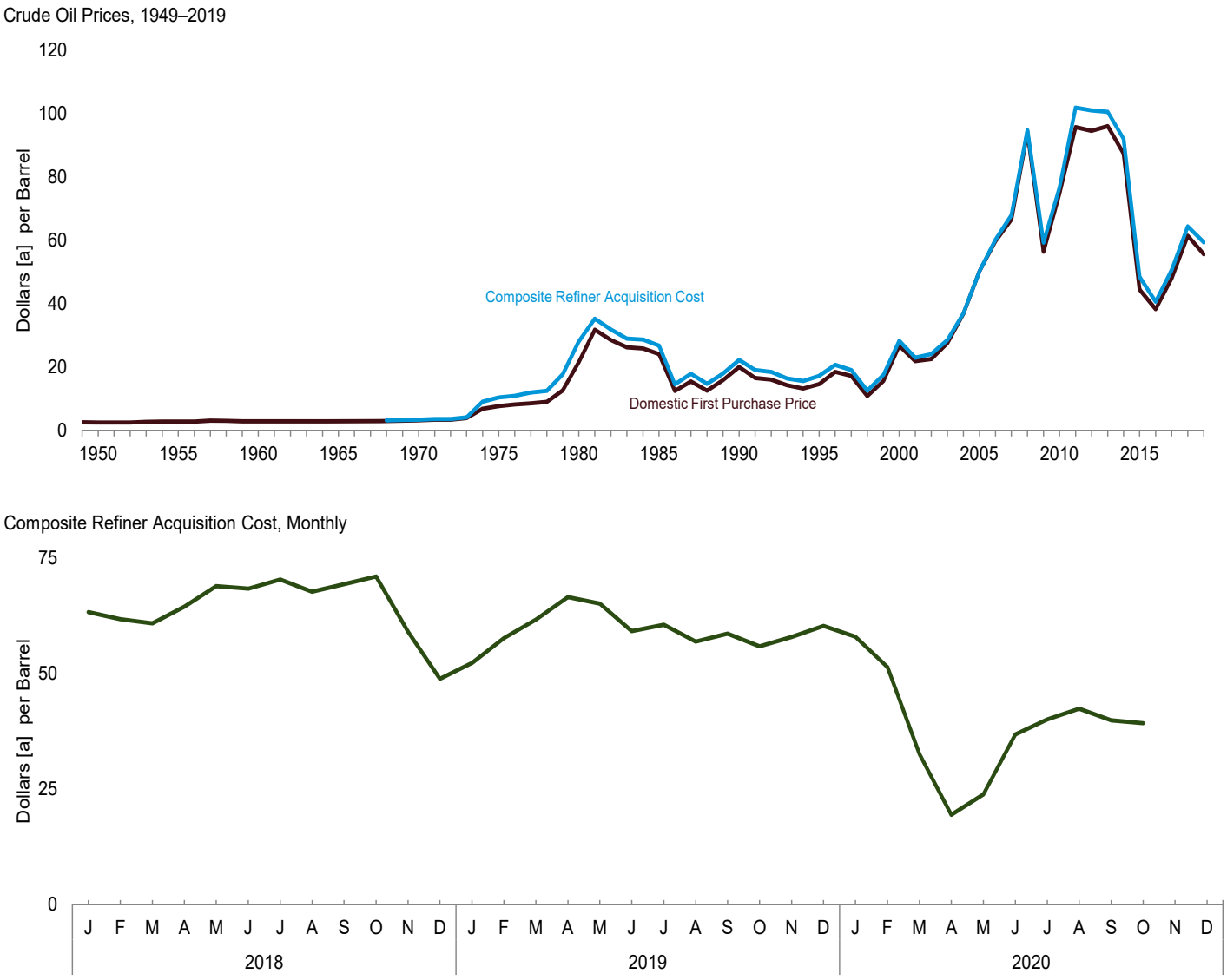
Capacity Factor

1973–2007: Calculated by EIA using the method described above in Note 2.

2008 forward: EIA, Form EIA-860, "Annual Electric Generator Report"; Form EIA-860M, "Monthly Update to the Annual Electric Generator Report"; and Form EIA-923, "Power Plant Operations Report."

9. Energy Prices

Figure 9.1 Petroleum Prices



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Sources: Tables 9.1, 9.5 and 9.7.

Table 9.1 Crude Oil Price Summary

(Dollars[a] per Barrel)

	Domestic First Purchase Price[c]	F.O.B. Cost of Imports[d]	Landed Cost of Imports[e]	Refiner Acquisition Cost[b]		
				Domestic	Imported	Composite
1950 Average	**2.51**	**NA**	**NA**	**NA**	**NA**	**NA**
1955 Average	**2.77**	**NA**	**NA**	**NA**	**NA**	**NA**
1960 Average	**2.88**	**NA**	**NA**	**NA**	**NA**	**NA**
1965 Average	**2.86**	**NA**	**NA**	**NA**	**NA**	**NA**
1970 Average	**3.18**	**NA**	**NA**	E **3.46**	E **2.96**	E **3.40**
1975 Average	**7.67**	**11.18**	**12.70**	**8.39**	**13.93**	**10.38**
1980 Average	**21.59**	**32.37**	**33.67**	**24.23**	**33.89**	**28.07**
1985 Average	**24.09**	**25.84**	**26.67**	**26.66**	**26.99**	**26.75**
1990 Average	**20.03**	**20.37**	**21.13**	**22.59**	**21.76**	**22.22**
1995 Average	**14.62**	**15.69**	**16.78**	**17.33**	**17.14**	**17.23**
2000 Average	**26.72**	**26.27**	**27.53**	**29.11**	**27.70**	**28.26**
2001 Average	**21.84**	**20.46**	**21.82**	**24.33**	**22.00**	**22.95**
2002 Average	**22.51**	**22.63**	**23.91**	**24.65**	**23.71**	**24.10**
2003 Average	**27.56**	**25.86**	**27.69**	**29.82**	**27.71**	**28.53**
2004 Average	**36.77**	**33.75**	**36.07**	**38.97**	**35.90**	**36.98**
2005 Average	**50.28**	**47.60**	**49.29**	**52.94**	**48.86**	**50.24**
2006 Average	**59.69**	**57.03**	**59.11**	**62.62**	**59.02**	**60.24**
2007 Average	**66.52**	**66.36**	**67.97**	**69.65**	**67.04**	**67.94**
2008 Average	**94.04**	**90.32**	**93.33**	**98.47**	**92.77**	**94.74**
2009 Average	**56.35**	**57.78**	**60.23**	**59.49**	**59.17**	**59.29**
2010 Average	**74.71**	**74.19**	**76.50**	**78.01**	**75.86**	**76.69**
2011 Average	**95.73**	**101.66**	**102.92**	**100.71**	**102.63**	**101.87**
2012 Average	**94.52**	**99.78**	**101.00**	**100.72**	**101.09**	**100.93**
2013 Average	**95.99**	**96.56**	**96.99**	**102.91**	**98.11**	**100.49**
2014 Average	**87.39**	**85.65**	**88.16**	**94.05**	**89.56**	**92.02**
2015 Average	**44.39**	**41.91**	**45.38**	**49.94**	**46.38**	**48.39**
2016 Average	**38.29**	**36.37**	**38.56**	**42.41**	**38.75**	**40.66**
2017 Average	**48.05**	**45.58**	**48.50**	**52.05**	**49.12**	**50.68**
2018 January	62.25	55.73	58.25	66.08	59.71	63.25
February	61.18	53.42	56.76	64.68	58.03	61.74
March	60.68	53.35	56.32	64.03	56.82	60.81
April	63.50	58.56	60.62	67.14	61.24	64.41
May	66.16	62.95	65.15	71.29	65.89	68.91
June	62.80	63.09	65.48	69.63	66.82	68.35
July	67.00	62.35	65.44	73.33	66.62	70.29
August	62.64	61.41	64.16	69.45	65.48	67.68
September	63.54	61.56	63.69	71.09	66.70	69.29
October	65.18	60.23	61.78	73.07	67.79	70.99
November	55.65	44.66	47.16	62.47	54.40	59.01
December	47.63	36.91	39.14	53.25	42.80	48.83
Average	**61.40**	**56.31**	**58.89**	**67.05**	**60.95**	**64.38**
2019 January	48.00	48.70	49.25	54.06	49.71	52.29
February	52.60	54.23	56.17	58.24	56.66	57.62
March	57.46	57.54	59.48	61.97	61.14	61.64
April	63.00	61.31	63.62	67.21	65.42	66.51
May	59.73	60.74	63.70	65.17	65.03	65.11
June	54.34	54.56	57.43	59.81	58.16	59.16
July	56.47	54.51	57.00	61.47	59.18	60.53
August	53.63	51.98	54.91	57.88	55.41	56.90
September	55.14	52.68	55.06	59.41	57.31	58.60
October	53.14	50.40	53.74	56.69	54.44	55.85
November	54.96	51.87	54.48	59.42	55.27	57.88
December	58.41	51.57	53.92	62.23	56.85	60.27
Average	**55.59**	**54.27**	**56.60**	**60.31**	**57.94**	**59.38**
2020 January	56.86	46.98	51.03	60.36	53.96	57.94
February	50.03	41.65	44.57	53.98	47.42	51.37
March	31.80	24.10	26.77	34.98	28.50	32.55
April	15.99	13.91	17.18	21.25	16.74	19.41
May	18.09	19.28	22.73	24.97	22.56	23.84
June	33.53	32.41	36.05	37.25	36.14	36.80
July	37.55	R 35.35	R 38.91	40.55	39.33	40.07
August	R 39.42	R 36.02	R 40.13	R 42.82	R 41.72	R 42.41
September	R 36.99	R 33.66	R 37.28	R 40.40	R 38.80	R 39.83
October	NA	NA	NA	E 39.72	E 38.48	E 39.24

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] See Note 1, "Crude Oil Refinery Acquisition Costs," at end of section.
[c] See Note 2, "Crude Oil Domestic First Purchase Prices," at end of section.
[d] See Note 3, "Crude Oil F.O.B. Costs," at end of section.
[e] See Note 4, "Crude Oil Landed Costs," at end of section.

R=Revised. NA=Not available. E=Estimate.

Notes: • Domestic first purchase prices and refinery acquisition costs for the current two months are preliminary. F.O.B. and landed costs for the current three months are preliminary. • Through 1980, F.O.B. and landed costs reflect the period of reporting; beginning in 1981, they reflect the period of loading. • Annual averages are the averages of the monthly prices, weighted by volume. • Geographic coverage is the 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and all U.S. Territories and Possessions.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 9.2 F.O.B. Costs of Crude Oil Imports From Selected Countries

(Dollars[a] per Barrel)

	Selected Countries							Persian Gulf Nations[b]	Total OPEC[c]	Total Non-OPEC[c]
	Angola	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average[d]	**W**	**W**	**–**	**7.81**	**3.25**	**–**	**5.39**	**3.68**	**5.43**	**4.80**
1975 Average	**10.97**	**–**	**11.44**	**11.82**	**10.87**	**–**	**11.04**	**10.88**	**11.34**	**10.62**
1980 Average	**33.45**	**W**	**31.06**	**35.93**	**28.17**	**34.36**	**24.81**	**28.92**	**32.21**	**32.85**
1985 Average	**26.30**	**–**	**25.33**	**28.04**	**22.04**	**27.64**	**23.64**	**23.31**	**25.67**	**25.96**
1990 Average	**20.23**	**20.75**	**19.26**	**22.46**	**20.36**	**23.43**	**19.55**	**18.54**	**20.40**	**20.32**
1995 Average	**16.58**	**16.73**	**15.64**	**17.40**	**W**	**16.94**	**13.86**	**W**	**15.36**	**16.02**
2000 Average	**27.90**	**29.04**	**25.39**	**28.70**	**24.62**	**27.21**	**24.45**	**24.72**	**25.56**	**26.77**
2001 Average	**23.25**	**24.25**	**18.89**	**24.85**	**18.98**	**23.30**	**18.01**	**18.89**	**19.73**	**21.04**
2002 Average	**24.09**	**24.64**	**21.60**	**25.38**	**23.92**	**24.50**	**20.13**	**23.38**	**22.18**	**22.93**
2003 Average	**28.22**	**28.89**	**24.83**	**29.40**	**25.03**	**28.76**	**23.81**	**25.17**	**25.36**	**26.21**
2004 Average	**37.26**	**37.73**	**31.55**	**38.71**	**34.08**	**37.30**	**31.78**	**33.08**	**33.95**	**33.58**
2005 Average	**52.48**	**51.89**	**43.00**	**55.95**	**47.96**	**54.48**	**46.39**	**47.21**	**49.60**	**45.79**
2006 Average	**62.23**	**59.77**	**52.91**	**65.69**	**56.09**	**66.03**	**55.80**	**56.02**	**59.18**	**55.35**
2007 Average	**67.80**	**67.93**	**61.35**	**76.64**	**W**	**69.96**	**64.10**	**69.93**	**69.58**	**62.69**
2008 Average	**95.66**	**91.17**	**84.61**	**102.06**	**93.03**	**96.33**	**88.06**	**91.44**	**93.15**	**87.15**
2009 Average	**57.07**	**57.90**	**56.47**	**64.61**	**57.87**	**65.63**	**55.58**	**59.53**	**58.53**	**57.16**
2010 Average	**78.18**	**72.56**	**72.46**	**80.83**	**76.44**	**W**	**70.30**	**75.65**	**75.23**	**73.24**
2011 Average	**111.82**	**100.21**	**100.90**	**115.35**	**107.08**	**–**	**97.23**	**106.47**	**105.34**	**98.49**
2012 Average	**111.23**	**106.43**	**101.84**	**114.51**	**106.65**	**–**	**100.15**	**105.45**	**104.39**	**95.71**
2013 Average	**107.71**	**101.24**	**98.40**	**110.06**	**101.16**	**W**	**97.52**	**100.62**	**100.57**	**93.67**
2014 Average	**W**	**80.75**	**86.55**	**W**	**95.60**	**–**	**84.51**	**94.03**	**89.76**	**82.95**
2015 Average	**W**	**47.52**	**44.90**	**W**	**47.53**	**–**	**40.73**	**46.95**	**43.25**	**41.19**
2016 Average	**42.68**	**35.28**	**36.22**	**46.20**	**39.30**	**W**	**34.71**	**38.76**	**38.51**	**34.81**
2017 Average	**W**	**48.34**	**46.66**	**54.77**	**51.30**	**W**	**45.60**	**50.16**	**49.55**	**43.30**
2018 January	W	61.24	58.75	W	65.03	W	62.07	63.50	64.12	51.34
February	W	59.66	56.74	W	63.19	W	55.72	61.90	61.07	49.79
March	–	W	56.73	W	65.04	W	56.84	61.90	60.90	49.09
April	W	65.95	57.68	W	68.33	W	63.28	66.05	66.09	53.73
May	–	W	63.32	W	70.57	W	66.56	69.66	70.07	58.99
June	W	W	64.46	W	71.32	W	64.82	70.18	69.44	59.81
July	W	68.32	66.21	–	70.62	–	62.93	70.30	67.64	59.85
August	W	67.29	63.08	W	71.08	W	63.09	70.11	68.40	57.46
September	W	W	68.15	W	72.90	W	68.94	72.05	71.80	56.39
October	W	W	73.91	W	74.73	W	68.44	74.61	73.26	54.18
November	–	64.87	63.76	W	62.34	W	53.25	63.44	60.58	36.18
December	–	50.04	52.70	W	57.79	–	46.46	55.74	53.04	28.95
Average	**74.44**	**62.51**	**62.75**	**71.41**	**68.23**	**71.65**	**61.25**	**66.55**	**65.61**	**51.41**
2019 January	–	53.27	54.81	W	W	W	48.25	58.54	54.94	46.13
February	–	56.59	58.52	W	W	W	W	62.58	63.09	51.63
March	–	61.28	60.66	W	67.34	W	–	65.62	65.95	55.66
April	–	67.09	63.13	W	70.60	70.45	–	68.89	70.54	59.56
May	W	65.40	62.16	70.81	W	69.74	–	65.97	67.80	59.17
June	W	61.09	58.75	W	W	W	–	62.67	63.28	51.82
July	W	W	58.93	W	W	W	–	62.08	63.82	52.32
August	–	59.37	50.72	W	59.24	W	–	57.90	59.51	50.47
September	–	W	56.73	W	60.27	W	–	58.79	59.66	51.05
October	–	W	51.74	W	W	W	–	56.42	58.30	48.81
November	–	59.42	51.24	W	60.69	W	–	58.47	60.86	49.22
December	–	58.95	55.23	–	63.59	W	–	61.63	61.72	50.26
Average	**66.97**	**60.61**	**56.72**	**67.21**	**63.48**	**65.20**	**48.57**	**61.43**	**62.11**	**52.36**
2020 January	–	56.90	53.70	W	49.26	W	–	50.36	53.02	46.47
February	–	W	47.74	W	W	W	–	W	53.00	40.64
March	W	27.34	28.59	W	W	W	–	24.18	28.28	23.56
April	W	19.88	12.25	W	21.44	–	–	21.44	22.79	11.81
May	–	W	22.92	W	W	W	–	29.19	30.80	18.09
June	–	33.32	34.36	W	W	W	–	40.84	41.40	31.38
July	–	W	37.95	W	R 42.86	–	–	R 40.60	R 41.48	34.64
August	–	R 40.34	R 40.16	W	–	–	–	W	W	R 35.84
September	–	37.36	38.63	W	–	–	–	W	W	33.45

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[b] Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

[c] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary for exact years of each country's membership. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; Angola is included in "Total OPEC" 2007 forward; Gabon is included in "Total OPEC" 1974–1995 and July 2016 forward; Ecuador is included in "Total OPEC" 1973–1992 and 2008 forward; Indonesia is included in "Total OPEC" 1973–2008 and 2016.

[d] Based on October, November, and December data only.

R=Revised. – =No data reported. W=Value withheld to avoid disclosure of individual company data.

Notes: • The Free on Board (F.O.B.) cost at the country of origin excludes all costs related to insurance and transportation. See "F.O.B. (Free on Board)" in Glossary, and Note 3, "Crude Oil F.O.B. Costs," at end of section. • Values for the current two months are preliminary. • Through 1980, prices reflect the period of reporting; beginning in 1981, prices reflect the period of loading. • Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Table 9.3 Landed Costs of Crude Oil Imports From Selected Countries

(Dollars[a] per Barrel)

	Selected Countries								Persian Gulf Nations[b]	Total OPEC[c]	Total Non-OPEC[c]
	Angola	Canada	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average[d]	**W**	**5.33**	**W**	**–**	**9.08**	**5.37**	**–**	**5.99**	**5.91**	**6.85**	**5.64**
1975 Average	**11.81**	**12.84**	**–**	**12.61**	**12.70**	**12.50**	**–**	**12.36**	**12.64**	**12.70**	**12.70**
1980 Average	**34.76**	**30.11**	**W**	**31.77**	**37.15**	**29.80**	**35.68**	**25.92**	**30.59**	**33.56**	**33.99**
1985 Average	**27.39**	**25.71**	**–**	**25.63**	**28.96**	**24.72**	**28.36**	**24.43**	**25.50**	**26.86**	**26.53**
1990 Average	**21.51**	**20.48**	**22.34**	**19.64**	**23.33**	**21.82**	**22.65**	**20.31**	**20.55**	**21.23**	**20.98**
1995 Average	**17.66**	**16.65**	**17.45**	**16.19**	**18.25**	**16.84**	**17.91**	**14.81**	**16.78**	**16.61**	**16.95**
2000 Average	**29.57**	**26.69**	**29.68**	**26.03**	**30.04**	**26.58**	**29.26**	**26.05**	**26.77**	**27.29**	**27.80**
2001 Average	**25.13**	**20.72**	**25.88**	**19.37**	**26.55**	**20.98**	**25.32**	**19.81**	**20.73**	**21.52**	**22.17**
2002 Average	**25.43**	**22.98**	**25.28**	**22.09**	**26.45**	**24.77**	**26.35**	**21.93**	**24.13**	**23.83**	**23.97**
2003 Average	**30.14**	**26.76**	**30.55**	**25.48**	**31.07**	**27.50**	**30.62**	**25.70**	**27.54**	**27.70**	**27.68**
2004 Average	**39.62**	**34.51**	**39.03**	**32.25**	**40.95**	**37.11**	**39.28**	**33.79**	**36.53**	**36.84**	**35.29**
2005 Average	**54.31**	**44.73**	**53.42**	**43.47**	**57.55**	**50.31**	**55.28**	**47.87**	**49.68**	**51.36**	**47.31**
2006 Average	**64.85**	**53.90**	**62.13**	**53.76**	**68.26**	**59.19**	**67.44**	**57.37**	**58.92**	**61.21**	**57.14**
2007 Average	**71.27**	**60.38**	**70.91**	**62.31**	**78.01**	**70.78**	**72.47**	**66.13**	**69.83**	**71.14**	**63.96**
2008 Average	**98.18**	**90.00**	**93.43**	**85.97**	**104.83**	**94.75**	**96.95**	**90.76**	**93.59**	**95.49**	**90.59**
2009 Average	**61.32**	**57.60**	**58.50**	**57.35**	**68.01**	**62.14**	**63.87**	**57.78**	**62.15**	**61.90**	**58.58**
2010 Average	**80.61**	**72.80**	**74.25**	**72.86**	**83.14**	**79.29**	**80.29**	**72.43**	**78.60**	**78.28**	**74.68**
2011 Average	**114.05**	**89.92**	**102.57**	**101.21**	**116.43**	**108.83**	**118.45**	**100.14**	**108.01**	**107.84**	**98.64**
2012 Average	**114.95**	**84.24**	**107.07**	**102.45**	**116.88**	**108.15**	**W**	**101.58**	**107.74**	**107.56**	**95.05**
2013 Average	**110.81**	**84.41**	**103.00**	**99.06**	**112.87**	**102.60**	**111.23**	**99.34**	**102.53**	**102.98**	**91.99**
2014 Average	**99.25**	**81.30**	**88.29**	**87.48**	**102.16**	**94.91**	**W**	**86.88**	**95.30**	**93.10**	**84.67**
2015 Average	**51.73**	**41.99**	**49.53**	**45.51**	**54.70**	**49.78**	**W**	**42.87**	**49.43**	**47.44**	**44.09**
2016 Average	**44.65**	**36.27**	**38.86**	**36.64**	**48.11**	**42.14**	**W**	**35.50**	**41.20**	**40.54**	**37.09**
2017 Average	**54.17**	**44.93**	**50.60**	**47.73**	**56.48**	**52.56**	**56.11**	**47.02**	**51.42**	**51.26**	**46.67**
2018 January	66.55	51.17	63.25	59.86	69.15	64.81	W	62.79	63.83	64.78	54.69
February	W	48.27	62.55	57.37	69.60	65.30	68.19	55.98	63.21	62.93	53.05
March	70.27	47.01	63.59	56.99	70.59	66.77	W	57.72	63.72	63.53	51.07
April	W	52.22	66.34	58.62	W	69.44	73.82	63.62	67.09	66.95	56.32
May	W	58.19	70.63	64.03	79.38	71.28	W	67.45	70.85	71.50	61.72
June	76.28	58.57	70.64	65.38	W	72.17	72.88	65.81	71.49	70.65	62.95
July	75.55	59.00	71.20	66.82	W	72.56	–	63.67	71.62	70.54	62.54
August	75.45	56.78	68.79	64.18	W	72.85	72.41	64.12	71.64	70.48	60.79
September	75.83	52.35	73.88	69.79	W	72.56	W	70.73	72.26	72.45	58.76
October	W	47.96	74.22	74.76	W	73.75	W	69.31	72.24	72.19	57.15
November	–	28.06	66.20	64.52	68.03	65.87	W	55.70	64.99	63.30	38.56
December	–	21.62	54.71	53.89	62.21	60.39	W	48.93	58.67	57.11	30.89
Average	**73.42**	**48.34**	**66.75**	**63.48**	**71.93**	**69.40**	**73.28**	**62.46**	**67.55**	**67.22**	**54.27**
2019 January	–	40.33	56.26	56.12	W	61.69	W	51.68	59.80	57.34	45.44
February	–	50.48	59.69	59.72	W	66.37	W	52.72	64.07	62.76	53.82
March	–	54.61	64.65	61.82	W	67.50	W	55.25	65.81	65.30	57.85
April	W	59.01	69.08	64.18	75.99	69.74	73.00	–	68.83	69.89	62.21
May	72.84	58.49	68.17	62.81	72.66	67.93	71.30	W	67.05	68.82	62.19
June	W	50.84	65.87	59.32	69.37	65.06	65.41	–	63.71	65.04	55.30
July	W	51.14	64.10	59.50	67.57	64.14	64.63	–	63.83	64.76	55.02
August	–	50.68	59.22	51.59	65.76	61.59	W	–	60.87	61.75	52.99
September	W	50.64	58.77	57.73	66.34	61.59	64.40	–	61.03	61.58	53.27
October	W	49.64	57.88	53.03	65.73	62.36	63.06	–	59.89	60.99	51.93
November	W	49.20	60.91	52.57	69.20	64.85	W	–	62.06	62.97	51.97
December	–	48.36	62.66	56.78	W	65.83	W	–	63.23	63.52	52.13
Average	**68.58**	**51.10**	**62.83**	**57.96**	**68.78**	**64.86**	**66.65**	**52.36**	**63.27**	**63.41**	**54.65**
2020 January	–	45.70	62.93	55.93	W	53.68	W	–	55.30	57.36	49.70
February	–	39.83	54.16	49.62	62.07	52.48	W	–	52.65	54.24	42.80
March	W	23.47	35.15	29.42	W	23.94	W	–	27.04	29.04	25.97
April	30.93	13.34	23.24	13.73	W	22.33	W	–	22.78	23.66	14.91
May	W	17.45	28.61	24.35	W	28.84	W	–	29.99	30.70	20.75
June	–	34.85	33.13	35.04	W	39.88	W	–	40.56	41.07	35.20
July	–	37.69	R 37.64	R 38.72	W	R 43.68	W	–	R 42.74	R 43.46	R 38.38
August	–	R 38.93	R 41.71	R 40.88	W	W	–	–	R 43.12	R 43.49	R 39.89
September	W	35.49	38.11	39.09	W	W	W	–	40.83	41.21	36.93

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[b] Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

[c] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary for exact years of each country's membership. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; Angola is included in "Total OPEC" 2007 forward; Gabon is included in "Total OPEC" 1974–1995 and July 2016 forward; Ecuador is included in "Total OPEC" 1973–1992 and 2008 forward; Indonesia is included in "Total OPEC" 1973–2008 and 2016.

[d] Based on October, November, and December data only.

R=Revised. – =No data reported. W=Value withheld to avoid disclosure of individual company data.

Notes: • See "Landed Costs" in Glossary, and Note 4, "Crude Oil Landed Costs," at end of section. • Values for the current two months are preliminary. • Through 1980, prices reflect the period of reporting; beginning in 1981, prices reflect the period of loading. • Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: • **October 1973–September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977–December 1977:** U.S. Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978–2007:** EIA, *Petroleum Marketing Annual 2008,* Table 22. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* December 2020, Table 22.

Table 9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices

(Dollars[a] per Gallon, Including Taxes)

	Platt's / Bureau of Labor Statistics Data				U.S. Energy Information Administration Data			
	Motor Gasoline by Grade				Regular Motor Gasoline by Area Type			
	Leaded Regular	Unleaded Regular	Unleaded Premium[b]	All Grades[c]	Conventional Gasoline Areas[d]	Reformulated Gasoline Areas[e]	All Areas	On-Highway Diesel Fuel
1950 Average	**0.268**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1955 Average	**.291**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1960 Average	**.311**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1965 Average	**.312**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1970 Average	**.357**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1975 Average	**.567**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1980 Average	**1.191**	**1.245**	**NA**	**1.221**	**– –**	**– –**	**– –**	**– –**
1985 Average	**1.115**	**1.202**	**1.340**	**1.196**	**– –**	**– –**	**– –**	**– –**
1990 Average	**1.149**	**1.164**	**1.349**	**1.217**	**NA**	**NA**	**NA**	**NA**
1995 Average	**– –**	**1.147**	**1.336**	**1.205**	**1.103**	**1.163**	**1.111**	**1.109**
2000 Average	**– –**	**1.510**	**1.693**	**1.563**	**1.462**	**1.543**	**1.484**	**1.491**
2001 Average	**– –**	**1.461**	**1.657**	**1.531**	**1.384**	**1.498**	**1.420**	**1.401**
2002 Average	**– –**	**1.358**	**1.556**	**1.441**	**1.313**	**1.408**	**1.345**	**1.319**
2003 Average	**– –**	**1.591**	**1.777**	**1.638**	**1.516**	**1.655**	**1.561**	**1.509**
2004 Average	**– –**	**1.880**	**2.068**	**1.923**	**1.812**	**1.937**	**1.852**	**1.810**
2005 Average	**– –**	**2.295**	**2.491**	**2.338**	**2.240**	**2.335**	**2.270**	**2.402**
2006 Average	**– –**	**2.589**	**2.805**	**2.635**	**2.533**	**2.654**	**2.572**	**2.705**
2007 Average	**– –**	**2.801**	**3.033**	**2.849**	**2.767**	**2.857**	**2.796**	**2.885**
2008 Average	**– –**	**3.266**	**3.519**	**3.317**	**3.213**	**3.314**	**3.246**	**3.803**
2009 Average	**– –**	**2.350**	**2.607**	**2.401**	**2.315**	**2.433**	**2.353**	**2.467**
2010 Average	**– –**	**2.788**	**3.047**	**2.836**	**2.742**	**2.864**	**2.782**	**2.992**
2011 Average	**– –**	**3.527**	**3.792**	**3.577**	**3.476**	**3.616**	**3.521**	**3.840**
2012 Average	**– –**	**3.644**	**3.922**	**3.695**	**3.552**	**3.757**	**3.618**	**3.968**
2013 Average	**– –**	**3.526**	**3.843**	**3.584**	**3.443**	**3.635**	**3.505**	**3.922**
2014 Average	**– –**	**3.367**	**3.713**	**3.425**	**3.299**	**3.481**	**3.358**	**3.825**
2015 Average	**– –**	**2.448**	**2.866**	**2.510**	**2.334**	**2.629**	**2.429**	**2.707**
2016 Average	**– –**	**2.142**	**2.610**	**2.204**	**2.070**	**2.296**	**2.143**	**2.304**
2017 Average	**– –**	**2.408**	**2.911**	**2.469**	**2.333**	**2.586**	**2.415**	**2.650**
2018 January	– –	2.539	3.042	2.596	2.467	2.738	2.555	3.018
February	– –	2.575	3.091	2.632	2.488	2.795	2.587	3.046
March	– –	2.572	3.101	2.631	2.488	2.808	2.591	2.988
April	– –	2.737	3.258	2.795	2.652	2.978	2.757	3.096
May	– –	2.907	3.423	2.963	2.808	3.096	2.901	3.244
June	– –	2.914	3.440	2.970	2.802	3.078	2.891	3.253
July	– –	2.873	3.399	2.930	2.770	3.015	2.849	3.233
August	– –	2.862	3.384	2.919	2.768	2.983	2.836	3.218
September	– –	2.873	3.400	2.930	2.769	2.979	2.836	3.262
October	– –	2.887	3.431	2.945	2.785	3.017	2.860	3.365
November	– –	2.671	3.251	2.733	2.561	2.829	2.647	3.300
December	– –	2.414	3.015	2.479	2.263	2.581	2.366	3.123
Average	**– –**	**2.735**	**3.270**	**2.794**	**2.631**	**2.904**	**2.719**	**3.178**
2019 January	– –	2.289	2.874	2.352	2.145	2.464	2.248	2.980
February	– –	2.353	2.901	2.412	2.223	2.495	2.309	2.997
March	– –	2.564	3.079	2.620	2.443	2.673	2.516	3.076
April	– –	2.835	3.382	2.894	2.694	3.023	2.798	3.121
May	– –	2.901	3.471	2.963	2.731	3.136	2.859	3.161
June	– –	2.752	3.328	2.814	2.601	2.963	2.716	3.089
July	– –	2.776	3.327	2.836	2.640	2.954	2.740	3.045
August	– –	2.655	3.222	2.716	2.521	2.836	2.621	3.005
September	– –	2.630	3.214	2.694	2.489	2.814	2.592	3.016
October	– –	2.673	3.297	2.741	2.497	2.907	2.627	3.053
November	– –	2.620	3.254	2.687	2.480	2.853	2.598	3.069
December	– –	2.587	3.190	2.652	2.469	2.744	2.555	3.055
Average	**– –**	**2.636**	**3.212**	**2.698**	**2.501**	**2.827**	**2.604**	**3.056**
2020 January	– –	2.567	3.157	2.631	2.459	2.740	2.548	3.048
February	– –	2.465	3.071	2.530	2.348	2.645	2.442	2.910
March	– –	2.267	2.893	2.334	2.126	2.468	2.234	2.729
April	– –	1.876	2.527	1.946	1.721	2.096	1.841	2.493
May	– –	1.879	2.490	1.946	1.769	2.084	1.870	2.392
June	– –	2.076	2.673	2.141	1.998	2.263	2.082	2.408
July	– –	2.176	2.783	2.243	2.099	2.365	2.183	2.434
August	– –	2.177	2.795	2.245	2.093	2.374	2.182	2.429
September	– –	2.193	2.810	2.260	2.095	2.375	2.183	2.414
October	– –	2.159	2.782	2.228	2.073	2.344	2.158	2.389
November	– –	2.090	2.727	2.159	2.015	2.312	2.108	2.432

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[b] The 1981 average (available in Web file) is based on September through December data only.

[c] Also includes grades of motor gasoline not shown separately.

[d] Any area that does not require the sale of reformulated gasoline.

[e] "Reformulated Gasoline Areas" are ozone nonattainment areas designated by the U.S. Environmental Protection Agency that require the use of reformulated gasoline (RFG). Areas are reclassified each time a shift in or out of an RFG program occurs due to federal or state regulations.

NA=Not available. – – =Not applicable.

Notes: • See Note 5, "Motor Gasoline Prices," at end of section. • See "Motor Gasoline Grades," "Motor Gasoline, Conventional," "Motor Gasoline, Oxygenated," and "Motor Gasoline, Reformulated" in Glossary. • Geographic coverage: for columns 1–4, current coverage is 85 urban areas; for columns 5–7, coverage is the 50 states and the District of Columbia; for column 8, coverage is the 48 contiguous states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Motor Gasoline by Grade, Monthly Data: October 1973 forward**—U.S. Department of Labor, Bureau of Labor Statistics (BLS), *U.S. City Average Gasoline Prices.* • **Motor Gasoline by Grade, Annual Data: 1949–1973**—*Platt's Oil Price Handbook and Oilmanac, 1974,* 51st Edition. **1974 forward**—calculated by the U.S. Energy Information Administration (EIA) as simple averages of the BLS monthly data. • **Regular Motor Gasoline by Area Type:** EIA, calculated as simple averages of weighted weekly estimates from "Weekly U.S. Retail Gasoline Prices, Regular Grade." • **On-Highway Diesel Fuel:** EIA, calculated as simple averages of weighted weekly estimates from "Weekly Retail On-Highway Diesel Prices."

Table 9.5 Refiner Prices of Residual Fuel Oil

(Dollars[a] per Gallon, Excluding Taxes)

	Residual Fuel Oil Sulfur Content Less Than or Equal to 1%		Residual Fuel Oil Sulfur Content Greater Than 1%		Average	
	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users
1978 Average	**0.293**	**0.314**	**0.245**	**0.275**	**0.263**	**0.298**
1980 Average	**.608**	**.675**	**.479**	**.523**	**.528**	**.607**
1985 Average	**.610**	**.644**	**.560**	**.582**	**.577**	**.610**
1990 Average	**.472**	**.505**	**.372**	**.400**	**.413**	**.444**
1995 Average	**.383**	**.436**	**.338**	**.377**	**.363**	**.392**
2000 Average	**.627**	**.708**	**.512**	**.566**	**.566**	**.602**
2001 Average	**.523**	**.642**	**.428**	**.492**	**.476**	**.531**
2002 Average	**.546**	**.640**	**.508**	**.544**	**.530**	**.569**
2003 Average	**.728**	**.804**	**.588**	**.651**	**.661**	**.698**
2004 Average	**.764**	**.835**	**.601**	**.692**	**.681**	**.739**
2005 Average	**1.115**	**1.168**	**.842**	**.974**	**.971**	**1.048**
2006 Average	**1.202**	**1.342**	**1.085**	**1.173**	**1.136**	**1.218**
2007 Average	**1.406**	**1.436**	**1.314**	**1.350**	**1.350**	**1.374**
2008 Average	**1.918**	**2.144**	**1.843**	**1.889**	**1.866**	**1.964**
2009 Average	**1.337**	**1.413**	**1.344**	**1.306**	**1.342**	**1.341**
2010 Average	**1.756**	**1.920**	**1.679**	**1.619**	**1.697**	**1.713**
2011 Average	**2.389**	**2.736**	**2.316**	**2.257**	**2.336**	**2.401**
2012 Average	**2.548**	**3.025**	**2.429**	**2.433**	**2.457**	**2.592**
2013 Average	**2.363**	**2.883**	**2.249**	**2.353**	**2.278**	**2.482**
2014 Average	**2.153**	**2.694**	**1.996**	**2.221**	**2.044**	**2.325**
2015 Average	**.971**	**1.529**	**.999**	**1.227**	**.996**	**1.285**
2016 Average	**.736**	**1.138**	**.746**	**.897**	**.745**	**.945**
2017 Average	**1.112**	**W**	**1.117**	**1.237**	**1.116**	**1.287**
2018 January	1.301	W	1.311	1.476	1.310	1.507
February	1.221	W	1.325	1.415	1.319	1.490
March	1.227	W	1.306	1.386	1.302	1.452
April	1.311	W	1.349	1.438	1.348	1.504
May	1.462	W	1.501	1.615	1.500	1.667
June	1.487	W	1.558	1.643	1.553	1.731
July	1.543	W	1.583	1.709	1.581	1.767
August	1.499	W	1.552	1.680	1.549	1.764
September	1.520	W	1.561	1.696	1.560	1.761
October	1.620	W	1.703	1.816	1.700	1.875
November	1.360	W	1.562	1.731	1.556	1.827
December	1.252	W	1.295	1.467	1.293	1.608
Average	**1.397**	**W**	**1.466**	**1.587**	**1.463**	**1.662**
2019 January	1.626	W	1.326	1.417	1.357	1.425
February	1.808	W	1.458	1.553	1.508	1.568
March	W	W	1.542	1.606	1.581	1.639
April	W	W	1.549	1.648	1.577	1.685
May	W	W	1.502	1.607	1.505	1.635
June	W	W	1.367	1.527	1.372	1.601
July	1.455	W	1.492	1.572	1.489	1.625
August	1.331	W	1.235	1.345	1.247	1.466
September	W	W	1.325	1.511	1.337	1.560
October	1.535	W	1.188	1.393	1.263	1.543
November	1.681	W	1.220	1.364	1.353	1.594
December	1.758	W	1.460	1.543	1.597	1.745
Average	**1.649**	**W**	**1.391**	**1.510**	**1.428**	**1.584**
2020 January	1.788	W	1.526	1.634	1.675	1.939
February	1.673	W	1.336	1.557	1.540	1.735
March	1.188	W	.993	1.146	1.121	1.371
April	.796	W	.639	.942	.733	.976
May	.792	W	NA	.727	.775	.817
June	1.018	W	1.013	.894	1.017	.949
July	1.153	W	1.089	.981	1.137	1.071
August	1.189	W	1.068	1.026	1.135	1.224
September	1.098	W	1.000	1.035	1.066	1.200

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

NA=Not available. W=Value withheld to avoid disclosure of individual company data.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and commercial consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007,* Table 17. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* December 2020, Table 16.

Table 9.6 Refiner Prices of Petroleum Products for Resale

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.434**	**0.537**	**0.386**	**0.404**	**0.369**	**0.365**	**0.237**
1980 Average	**.941**	**1.128**	**.868**	**.864**	**.803**	**.801**	**.415**
1985 Average	**.835**	**1.130**	**.794**	**.874**	**.776**	**.772**	**.398**
1990 Average	**.786**	**1.063**	**.773**	**.839**	**.697**	**.694**	**.386**
1995 Average	**.626**	**.975**	**.539**	**.580**	**.511**	**.538**	**.344**
2000 Average	**.963**	**1.330**	**.880**	**.969**	**.886**	**.898**	**.595**
2001 Average	**.886**	**1.256**	**.763**	**.821**	**.756**	**.784**	**.540**
2002 Average	**.828**	**1.146**	**.716**	**.752**	**.694**	**.724**	**.431**
2003 Average	**1.002**	**1.288**	**.871**	**.955**	**.881**	**.883**	**.607**
2004 Average	**1.288**	**1.627**	**1.208**	**1.271**	**1.125**	**1.187**	**.751**
2005 Average	**1.670**	**2.076**	**1.723**	**1.757**	**1.623**	**1.737**	**.933**
2006 Average	**1.969**	**2.490**	**1.961**	**2.007**	**1.834**	**2.012**	**1.031**
2007 Average	**2.182**	**2.758**	**2.171**	**2.249**	**2.072**	**2.203**	**1.194**
2008 Average	**2.586**	**3.342**	**3.020**	**2.851**	**2.745**	**2.994**	**1.437**
2009 Average	**1.767**	**2.480**	**1.719**	**1.844**	**1.657**	**1.713**	**.921**
2010 Average	**2.165**	**2.874**	**2.185**	**2.299**	**2.147**	**2.214**	**1.212**
2011 Average	**2.867**	**3.739**	**3.014**	**3.065**	**2.907**	**3.034**	**1.467**
2012 Average	**2.929**	**3.919**	**3.080**	**3.163**	**3.031**	**3.109**	**1.033**
2013 Average	**2.812**	**3.869**	**2.953**	**3.084**	**2.966**	**3.028**	**1.048**
2014 Average	**2.618**	**3.687**	**2.763**	**2.882**	**2.741**	**2.812**	**1.165**
2015 Average	**1.726**	**2.764**	**1.592**	**1.735**	**1.565**	**1.667**	**.555**
2016 Average	**1.454**	**2.404**	**1.295**	**1.383**	**1.239**	**1.378**	**.523**
2017 Average	**1.689**	**2.682**	**1.603**	**1.730**	**1.600**	**1.691**	**.800**
2018 January	1.849	2.900	1.969	2.209	1.990	2.042	.990
February	1.823	2.893	1.911	2.088	1.889	1.972	.889
March	1.889	2.904	1.893	1.969	1.848	1.952	.827
April	2.054	3.085	2.032	2.075	1.982	2.099	.792
May	2.205	3.181	2.175	2.205	2.143	2.258	.867
June	2.135	3.138	2.152	2.145	2.089	2.203	.807
July	2.148	3.111	2.140	2.133	2.079	2.192	.854
August	2.118	3.085	2.148	2.169	2.114	2.203	.907
September	2.136	3.124	2.214	2.246	2.214	2.282	.951
October	2.090	3.099	2.296	2.437	2.281	2.379	.948
November	1.732	2.762	2.100	2.206	2.098	2.130	.826
December	1.514	2.463	1.811	1.954	1.796	1.794	.798
Average	**1.980**	**3.006**	**2.073**	**2.160**	**2.002**	**2.130**	**.877**
2019 January	1.483	2.394	1.822	2.021	1.813	1.789	.775
February	1.624	2.527	1.925	2.111	1.907	1.950	.772
March	1.881	2.874	1.960	2.087	1.958	2.020	.754
April	2.138	3.100	2.022	2.073	1.993	2.100	.660
May	2.110	3.021	2.061	2.057	1.989	2.106	.595
June	1.909	2.841	1.879	1.914	1.824	1.874	.493
July	1.984	2.988	1.938	1.969	1.847	1.938	.478
August	1.820	2.854	1.864	1.861	1.795	1.865	.458
September	1.854	2.829	1.898	1.984	1.901	1.955	.477
October	1.871	2.857	1.931	2.003	1.926	1.984	.544
November	1.819	2.783	1.922	2.046	1.884	1.974	.655
December	1.757	2.734	1.932	2.087	1.919	1.943	.632
Average	**1.858**	**2.842**	**1.929**	**2.017**	**1.895**	**1.958**	**.622**
2020 January	1.743	2.752	1.891	2.008	1.863	1.858	.557
February	1.669	2.698	1.613	1.802	1.627	1.671	.530
March	1.127	2.279	1.189	1.115	1.238	1.278	.410
April	.645	1.590	.703	.837	.872	.908	.378
May	1.049	1.869	.690	.848	.795	.878	.454
June	1.311	2.134	1.002	1.099	1.002	1.135	.514
July	1.380	2.253	1.144	1.172	1.152	1.254	.507
August	1.389	2.219	1.162	1.250	1.179	R 1.275	.536
September	1.354	2.246	1.076	1.256	1.091	1.195	.516

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] See Note 5, "Motor Gasoline Prices," at end of section.
R=Revised.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are shown in Table 9.7; they are sales made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007,* Table 4. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* December 2020, Table 4.

Table 9.7 Refiner Prices of Petroleum Products to End Users

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.484**	**0.516**	**0.387**	**0.421**	**0.400**	**0.377**	**0.335**
1980 Average	**1.035**	**1.084**	**.868**	**.902**	**.788**	**.818**	**.482**
1985 Average	**.912**	**1.201**	**.796**	**1.030**	**.849**	**.789**	**.717**
1990 Average	**.883**	**1.120**	**.766**	**.923**	**.734**	**.725**	**.745**
1995 Average	**.765**	**1.005**	**.540**	**.589**	**.562**	**.560**	**.492**
2000 Average	**1.106**	**1.306**	**.899**	**1.123**	**.927**	**.935**	**.603**
2001 Average	**1.032**	**1.323**	**.775**	**1.045**	**.829**	**.842**	**.506**
2002 Average	**.947**	**1.288**	**.721**	**.990**	**.737**	**.762**	**.419**
2003 Average	**1.156**	**1.493**	**.872**	**1.224**	**.933**	**.944**	**.577**
2004 Average	**1.435**	**1.819**	**1.207**	**1.160**	**1.173**	**1.243**	**.839**
2005 Average	**1.829**	**2.231**	**1.735**	**1.957**	**1.705**	**1.786**	**1.089**
2006 Average	**2.128**	**2.682**	**1.998**	**2.244**	**1.982**	**2.096**	**1.358**
2007 Average	**2.345**	**2.849**	**2.165**	**2.263**	**2.241**	**2.267**	**1.489**
2008 Average	**2.775**	**3.273**	**3.052**	**3.283**	**2.986**	**3.150**	**1.892**
2009 Average	**1.888**	**2.442**	**1.704**	**2.675**	**1.962**	**1.834**	**1.220**
2010 Average	**2.301**	**3.028**	**2.201**	**3.063**	**2.462**	**2.314**	**1.481**
2011 Average	**3.050**	**3.803**	**3.054**	**3.616**	**3.193**	**3.117**	**1.709**
2012 Average	**3.154**	**3.971**	**3.104**	**3.843**	**3.358**	**3.202**	**1.139**
2013 Average	**3.049**	**3.932**	**2.979**	**3.842**	**3.335**	**3.122**	**1.028**
2014 Average	**2.855**	**3.986**	**2.772**	**W**	**3.329**	**2.923**	**1.097**
2015 Average	**2.003**	**W**	**1.629**	**W**	**2.016**	**1.819**	**.481**
2016 Average	**1.730**	**W**	**1.319**	**W**	**1.716**	**1.511**	**.498**
2017 Average	**1.976**	**W**	**1.629**	**W**	**2.010**	**1.811**	**.772**
2018 January	2.108	W	2.012	W	2.206	2.144	.971
February	2.127	W	1.970	W	2.365	2.107	.948
March	2.160	W	1.924	W	2.484	2.076	.842
April	2.315	W	2.080	W	2.486	2.201	.839
May	2.494	W	2.221	3.219	2.478	2.368	.916
June	2.469	W	2.196	3.292	2.413	2.340	.883
July	2.442	W	2.176	W	2.436	2.316	.956
August	2.421	W	2.183	3.272	2.499	2.327	.989
September	2.428	W	2.257	3.189	2.612	2.388	1.062
October	2.441	W	2.349	W	2.696	2.500	.988
November	2.205	W	2.162	W	2.431	2.282	.876
December	1.973	W	1.852	W	2.222	1.981	.794
Average	**2.303**	**W**	**2.119**	**3.113**	**2.380**	**2.256**	**.925**
2019 January	1.854	W	1.827	W	2.195	1.960	.756
February	1.949	W	1.956	W	2.367	2.080	.784
March	2.137	W	2.005	W	2.376	2.158	.761
April	2.487	W	2.063	W	2.461	2.259	.686
May	2.520	W	2.141	W	2.389	2.272	.599
June	2.366	W	1.907	3.312	2.156	2.078	.464
July	2.375	W	1.973	3.260	2.206	2.100	.487
August	2.252	W	1.901	W	2.155	2.037	.461
September	2.242	W	1.937	3.203	2.200	2.101	.473
October	2.289	W	1.965	W	2.174	2.134	.516
November	2.229	W	1.979	W	2.321	2.126	.635
December	2.182	W	1.979	W	2.361	2.072	.601
Average	**2.245**	**W**	**1.970**	**W**	**2.269**	**2.114**	**.603**
2020 January	2.150	W	1.958	W	2.328	2.002	.502
February	2.060	W	1.667	W	2.113	1.835	.469
March	1.862	W	1.257	W	1.813	1.486	.378
April	1.490	W	.740	W	1.220	1.137	.368
May	1.598	W	.728	W	1.162	1.130	.421
June	1.768	W	1.046	3.321	1.338	1.354	.515
July	1.806	2.761	1.175	3.059	1.394	1.431	.518
August	1.814	2.805	1.188	3.163	1.464	1.456	.541
September	1.804	2.785	1.110	W	1.411	1.387	.508

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[b] See Note 5, "Motor Gasoline Prices," at end of section.

W=Value withheld to avoid disclosure of individual company data.

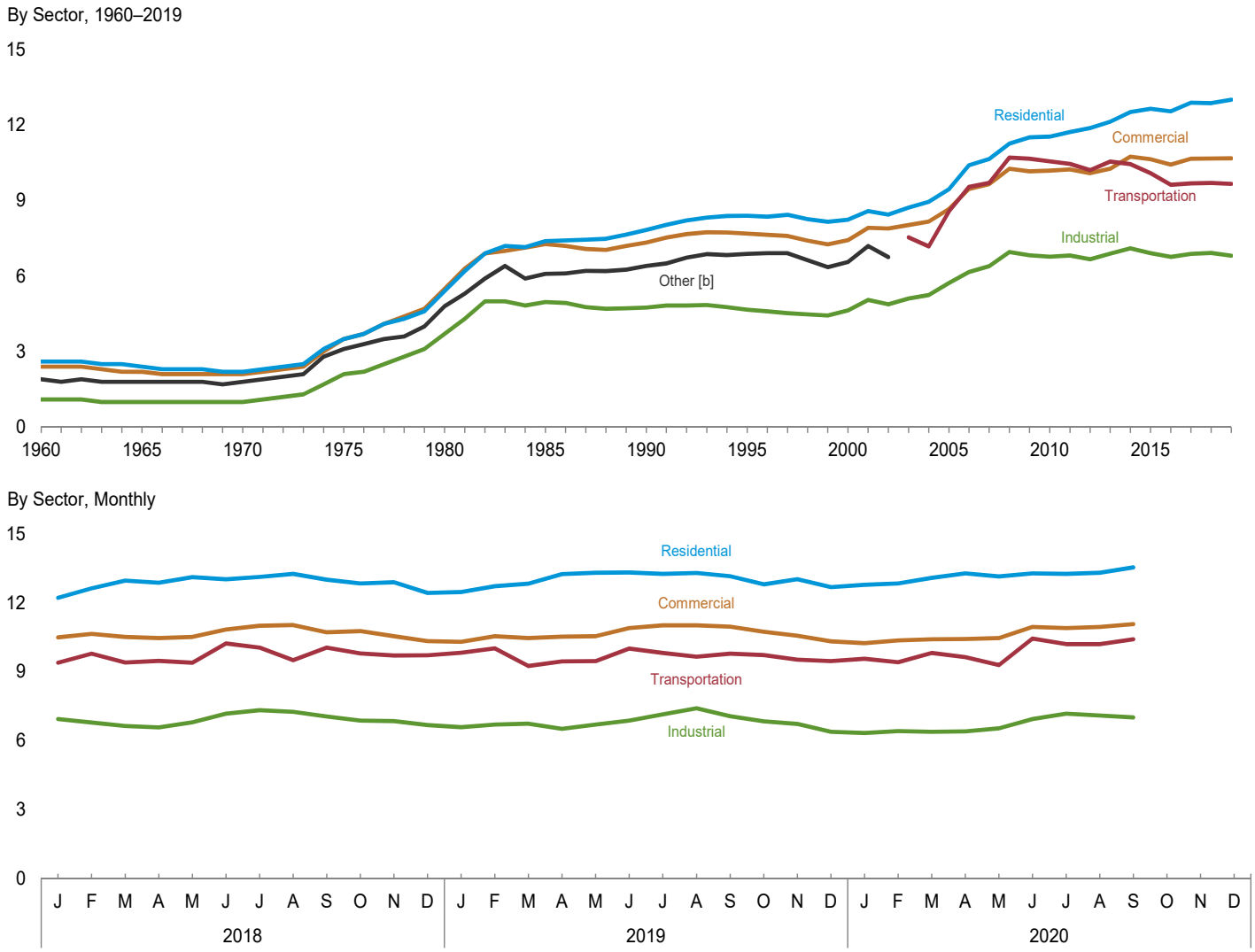
Notes: • Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. Sales for resale are shown in Table 9.6; they are sales made to purchasers other than ultimate consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007*, Table 2. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* December 2020, Table 2.

Figure 9.2 Average Retail Prices of Electricity

(Cents [a] per Kilowatthour)



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] Public street and highway lighting, interdepartmental sales, other sales to public authorities, agricultural and irrigation, and transportation including railroads and railways.

Note: Includes taxes.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.8.

Table 9.8 Average Retail Prices of Electricity

(Cents[a] per Kilowatthour, Including Taxes)

	Residential	Commercial[b]	Industrial[c]	Transportation[d]	Other[e]	Total
1960 Average	**2.60**	**2.40**	**1.10**	**NA**	**1.90**	**1.80**
1965 Average	**2.40**	**2.20**	**1.00**	**NA**	**1.80**	**1.70**
1970 Average	**2.20**	**2.10**	**1.00**	**NA**	**1.80**	**1.70**
1975 Average	**3.50**	**3.50**	**2.10**	**NA**	**3.10**	**2.90**
1980 Average	**5.40**	**5.50**	**3.70**	**NA**	**4.80**	**4.70**
1985 Average	**7.39**	**7.27**	**4.97**	**NA**	**6.09**	**6.44**
1990 Average	**7.83**	**7.34**	**4.74**	**NA**	**6.40**	**6.57**
1995 Average	**8.40**	**7.69**	**4.66**	**NA**	**6.88**	**6.89**
2000 Average	**8.24**	**7.43**	**4.64**	**NA**	**6.56**	**6.81**
2001 Average	**8.58**	**7.92**	**5.05**	**NA**	**7.20**	**7.29**
2002 Average	**8.44**	**7.89**	**4.88**	**NA**	**6.75**	**7.20**
2003 Average	**8.72**	**8.03**	**5.11**	**7.54**	**– –**	**7.44**
2004 Average	**8.95**	**8.17**	**5.25**	**7.18**	**– –**	**7.61**
2005 Average	**9.45**	**8.67**	**5.73**	**8.57**	**– –**	**8.14**
2006 Average	**10.40**	**9.46**	**6.16**	**9.54**	**– –**	**8.90**
2007 Average	**10.65**	**9.65**	**6.39**	**9.70**	**– –**	**9.13**
2008 Average	**11.26**	**10.26**	**6.96**	**10.71**	**– –**	**9.74**
2009 Average	**11.51**	**10.16**	**6.83**	**10.66**	**– –**	**9.82**
2010 Average	**11.54**	**10.19**	**6.77**	**10.56**	**– –**	**9.83**
2011 Average	**11.72**	**10.24**	**6.82**	**10.46**	**– –**	**9.90**
2012 Average	**11.88**	**10.09**	**6.67**	**10.21**	**– –**	**9.84**
2013 Average	**12.13**	**10.26**	**6.89**	**10.55**	**– –**	**10.07**
2014 Average	**12.52**	**10.74**	**7.10**	**10.45**	**– –**	**10.44**
2015 Average	**12.65**	**10.64**	**6.91**	**10.09**	**– –**	**10.41**
2016 Average	**12.55**	**10.43**	**6.76**	**9.63**	**– –**	**10.27**
2017 Average	**12.89**	**10.66**	**6.88**	**9.68**	**– –**	**10.48**
2018 January	12.22	10.49	6.94	9.39	– –	10.41
February	12.63	10.65	6.78	9.78	– –	10.42
March	12.97	10.51	6.63	9.40	– –	10.34
April	12.88	10.46	6.57	9.47	– –	10.18
May	13.12	10.51	6.79	9.39	– –	10.35
June	13.03	10.84	7.17	10.23	– –	10.75
July	13.13	11.00	7.32	10.05	– –	10.99
August	13.26	11.03	7.25	9.50	– –	11.01
September	13.01	10.72	7.05	10.05	– –	10.66
October	12.85	10.77	6.87	9.79	– –	10.41
November	12.90	10.54	6.85	9.70	– –	10.35
December	12.43	10.33	6.67	9.71	– –	10.21
Average	**12.87**	**10.67**	**6.92**	**9.70**	**– –**	**10.53**
2019 January	12.47	10.30	6.58	9.83	– –	10.24
February	12.72	10.54	6.69	10.02	– –	10.40
March	12.84	10.46	6.73	9.25	– –	10.34
April	13.25	10.52	6.51	9.45	– –	10.24
May	13.31	10.54	6.69	9.46	– –	10.38
June	13.32	10.90	6.87	10.01	– –	10.74
July	13.26	11.02	7.14	9.82	– –	11.00
August	13.30	11.02	7.40	9.65	– –	11.05
September	13.16	10.96	7.06	9.78	– –	10.82
October	12.81	10.74	6.84	9.72	– –	10.39
November	13.03	10.57	6.72	9.52	– –	10.38
December	12.68	10.32	6.38	9.46	– –	10.22
Average	**13.01**	**10.68**	**6.81**	**9.66**	**– –**	**10.54**
2020 January	12.79	10.24	6.33	9.56	– –	10.28
February	12.85	10.36	6.41	9.41	– –	10.29
March	13.09	10.41	6.38	9.82	– –	10.29
April	13.28	10.42	6.40	9.63	– –	10.42
May	13.15	10.46	6.53	9.29	– –	10.47
June	13.28	10.95	6.94	10.44	– –	10.96
July	13.26	10.90	7.17	10.20	– –	11.14
August	13.31	10.95	7.09	10.20	– –	11.11
September	13.55	11.07	7.01	10.41	– –	11.07
9-Month Average	**13.19**	**10.66**	**6.71**	**9.87**	**– –**	**10.70**
2019 9-Month Average	**13.07**	**10.72**	**6.86**	**9.70**	**– –**	**10.61**
2018 9-Month Average	**12.91**	**10.71**	**6.96**	**9.69**	**– –**	**10.60**

[a] Prices are not adjusted for inflation. See "Nominal Price" in Glossary.

[b] Commercial sector. For 1960–2002, prices exclude public street and highway lighting, interdepartmental sales, and other sales to public authorities.

[c] Industrial sector. For 1960–2002, prices exclude agriculture and irrigation.

[d] Transportation sector, including railroads and railways.

[e] Public street and highway lighting, interdepartmental sales, other sales to public authorities, agriculture and irrigation, and transportation including railroads and railways.

NA=Not available. – – =Not applicable.

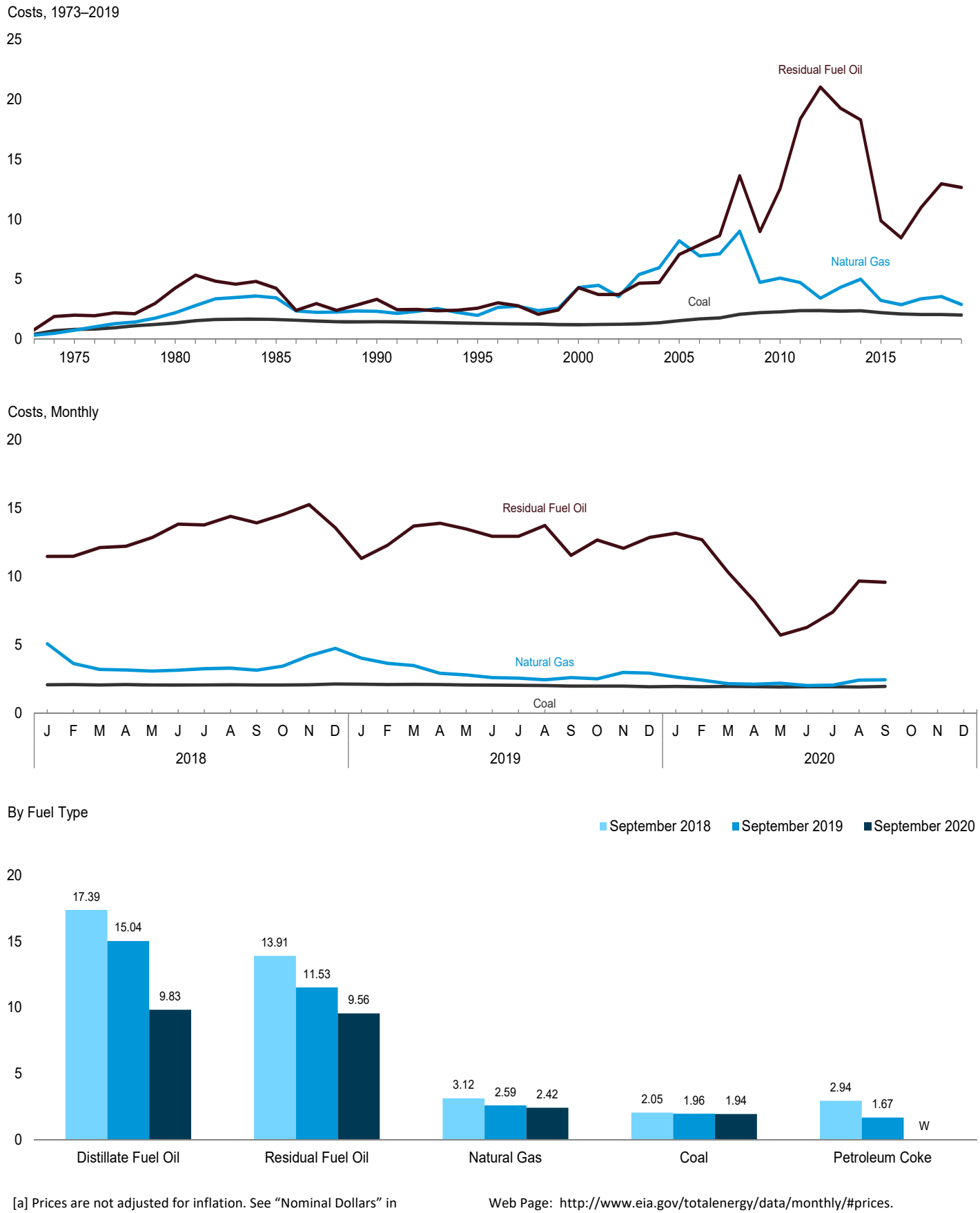
Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of energy service provider billing and accounting procedures. That lack of correspondence could result in uncharacteristic increases or decreases in the monthly prices. • 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. (Class A utilities are those with operating revenues of $2.5 million or more; Class B utilities are those with operating revenues between $1 million and $2.5 million.) 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. • See Note 7, "Electricity Retail Prices," at end of section for plant coverage, and for information on preliminary and final values. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1976.

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:** U.S. Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement." • **1984–2010:** EIA, Form EIA-861, "Annual Electric Power Industry Report." • **2011 forward:** EIA, *Electric Power Monthly,* November 2020, Table 5.3.

Figure 9.3 Cost of Fossil-Fuel Receipts at Electric Generating Plants

(Dollars [a] per Million Btu, Including Taxes)



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

W=Value withheld to avoid disclosure of individual company data.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.

Source: Table 9.9.

Table 9.9 Cost of Fossil-Fuel Receipts at Electric Generating Plants

(Dollars[a] per Million Btu, Including Taxes)

	Coal	Petroleum				Natural Gas[e]	All Fossil Fuels[f]
		Residual Fuel Oil[b]	Distillate Fuel Oil[c]	Petroleum Coke	Total[d]		
1973 Average	**0.41**	**0.79**	**NA**	**NA**	**0.80**	**0.34**	**0.48**
1975 Average	**.81**	**2.01**	**NA**	**NA**	**2.02**	**.75**	**1.04**
1980 Average	**1.35**	**4.27**	**NA**	**NA**	**4.35**	**2.20**	**1.93**
1985 Average	**1.65**	**4.24**	**NA**	**NA**	**4.32**	**3.44**	**2.09**
1990 Average	**1.45**	**3.32**	**5.38**	**.80**	**3.35**	**2.32**	**1.69**
1995 Average	**1.32**	**2.59**	**3.99**	**.65**	**2.57**	**1.98**	**1.45**
2000 Average	**1.20**	**4.29**	**6.65**	**.58**	**4.18**	**4.30**	**1.74**
2001 Average	**1.23**	**3.73**	**6.30**	**.78**	**3.69**	**4.49**	**1.73**
2002 Average[g]	**1.25**	**3.73**	**5.34**	**.78**	**3.34**	**3.56**	**1.86**
2003 Average	**1.28**	**4.66**	**6.82**	**.72**	**4.33**	**5.39**	**2.28**
2004 Average	**1.36**	**4.73**	**8.02**	**.83**	**4.29**	**5.96**	**2.48**
2005 Average	**1.54**	**7.06**	**11.72**	**1.11**	**6.44**	**8.21**	**3.25**
2006 Average	**1.69**	**7.85**	**13.28**	**1.33**	**6.23**	**6.94**	**3.02**
2007 Average	**1.77**	**8.64**	**14.85**	**1.51**	**7.17**	**7.11**	**3.23**
2008 Average	**2.07**	**13.62**	**21.46**	**2.11**	**10.87**	**9.01**	**4.12**
2009 Average	**2.21**	**8.98**	**13.22**	**1.61**	**7.02**	**4.74**	**3.04**
2010 Average	**2.27**	**12.57**	**16.61**	**2.28**	**9.54**	**5.09**	**3.26**
2011 Average	**2.39**	**18.35**	**22.46**	**3.03**	**12.48**	**4.72**	**3.29**
2012 Average	**2.38**	**21.03**	**23.49**	**2.24**	**12.48**	**3.42**	**2.83**
2013 Average	**2.34**	**19.26**	**23.03**	**2.18**	**11.57**	**4.33**	**3.09**
2014 Average	**2.37**	**18.30**	**21.88**	**1.98**	**11.60**	**5.00**	**3.31**
2015 Average	**2.22**	**9.89**	**14.06**	**1.84**	**6.74**	**3.23**	**2.65**
2016 Average	**2.11**	**8.45**	**10.90**	**1.65**	**5.24**	**2.87**	**2.47**
2017 Average	**2.06**	**11.00**	**13.22**	**2.13**	**7.10**	**3.37**	**2.65**
2018 January	2.06	11.45	16.07	2.38	11.95	5.06	3.59
February	2.07	11.46	15.19	2.43	8.61	3.61	2.82
March	2.04	12.10	15.02	2.54	8.00	3.18	2.59
April	2.07	12.20	16.19	2.56	8.35	3.14	2.61
May	2.04	12.83	16.73	2.41	10.61	3.06	2.59
June	2.04	13.81	16.59	2.73	9.50	3.13	2.64
July	2.05	13.76	16.21	2.71	8.40	3.23	2.73
August	2.06	14.38	16.93	2.79	8.48	3.28	2.72
September	2.05	13.91	17.39	2.94	9.06	3.12	2.65
October	2.04	14.52	17.76	2.48	10.61	3.43	2.76
November	2.06	15.25	16.39	2.21	9.91	4.18	3.05
December	2.11	13.56	14.54	2.03	9.51	4.72	3.29
Average	**2.06**	**12.97**	**16.16**	**2.54**	**9.68**	**3.55**	**2.83**
2019 January	2.10	11.30	14.12	2.08	8.53	4.00	3.01
February	2.07	12.28	15.19	2.27	9.60	3.63	2.86
March	2.08	13.68	15.70	2.43	10.52	3.46	2.81
April	2.07	13.89	16.35	2.71	11.12	2.89	2.50
May	2.05	13.47	16.19	2.24	9.52	2.77	2.44
June	2.03	12.92	14.85	2.18	9.64	2.58	2.36
July	2.02	12.93	15.10	2.01	7.99	2.54	2.34
August	2.00	13.72	14.82	1.72	6.94	2.42	2.26
September	1.96	11.53	15.04	1.67	9.23	2.59	2.34
October	1.96	12.65	15.37	1.57	10.58	2.49	2.27
November	1.96	12.05	15.28	1.46	7.75	2.96	2.50
December	1.91	12.85	14.73	1.14	8.68	2.91	2.47
Average	**2.02**	**12.66**	**15.19**	**1.91**	**9.07**	**2.89**	**2.50**
2020 January	1.94	13.15	14.54	1.53	6.32	2.63	2.33
February	1.91	12.68	13.78	1.47	7.12	2.40	2.22
March	1.94	10.29	10.83	1.36	6.61	2.14	2.09
April	1.93	8.19	8.82	1.38	4.55	2.10	2.04
May	1.90	5.69	7.29	1.61	4.26	2.16	2.07
June	1.91	6.25	8.97	1.46	4.61	2.01	1.99
July	1.91	7.38	10.69	1.62	5.45	2.03	2.01
August	1.90	9.66	10.44	1.82	5.17	2.39	2.21
September	1.94	9.56	9.83	W	6.21	2.42	2.23
9-Month Average	**1.92**	**9.15**	**10.53**	**1.57**	**5.62**	**2.25**	**2.13**
2019 9-Month Average	**2.04**	**12.72**	**15.23**	**2.10**	**9.17**	**2.92**	**2.53**
2018 9-Month Average	**2.05**	**12.56**	**16.17**	**2.63**	**9.59**	**3.39**	**2.77**

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

[b] For 1973–2001, electric utility data are for heavy oil (fuel oil nos. 5 and 6, and small amounts of fuel oil no. 4).

[c] For 1973–2001, electric utility data are for light oil (fuel oil nos. 1 and 2).

[d] For all years, includes residual fuel oil and distillate fuel oil. For 1990 forward, also includes petroleum coke. For 1973–2012, also includes jet fuel, kerosene, and waste oil. For 1983–2012, also includes other petroleum, such as propane and refined motor oil.

[e] Natural gas, plus a small amount of supplemental gaseous fuels. For 1973–2000, data also include a small amount of blast furnace gas and other gases derived from fossil fuels.

[f] Weighted average of costs shown under "Coal," "Petroleum," and "Natural Gas."

[g] Through 2001, data are for electric utilities only. Beginning in 2002, data also include independent power producers, and electric generating plants in the commercial and industrial sectors.

NA=Not available. W=Value withheld to avoid disclosure of individual company data.

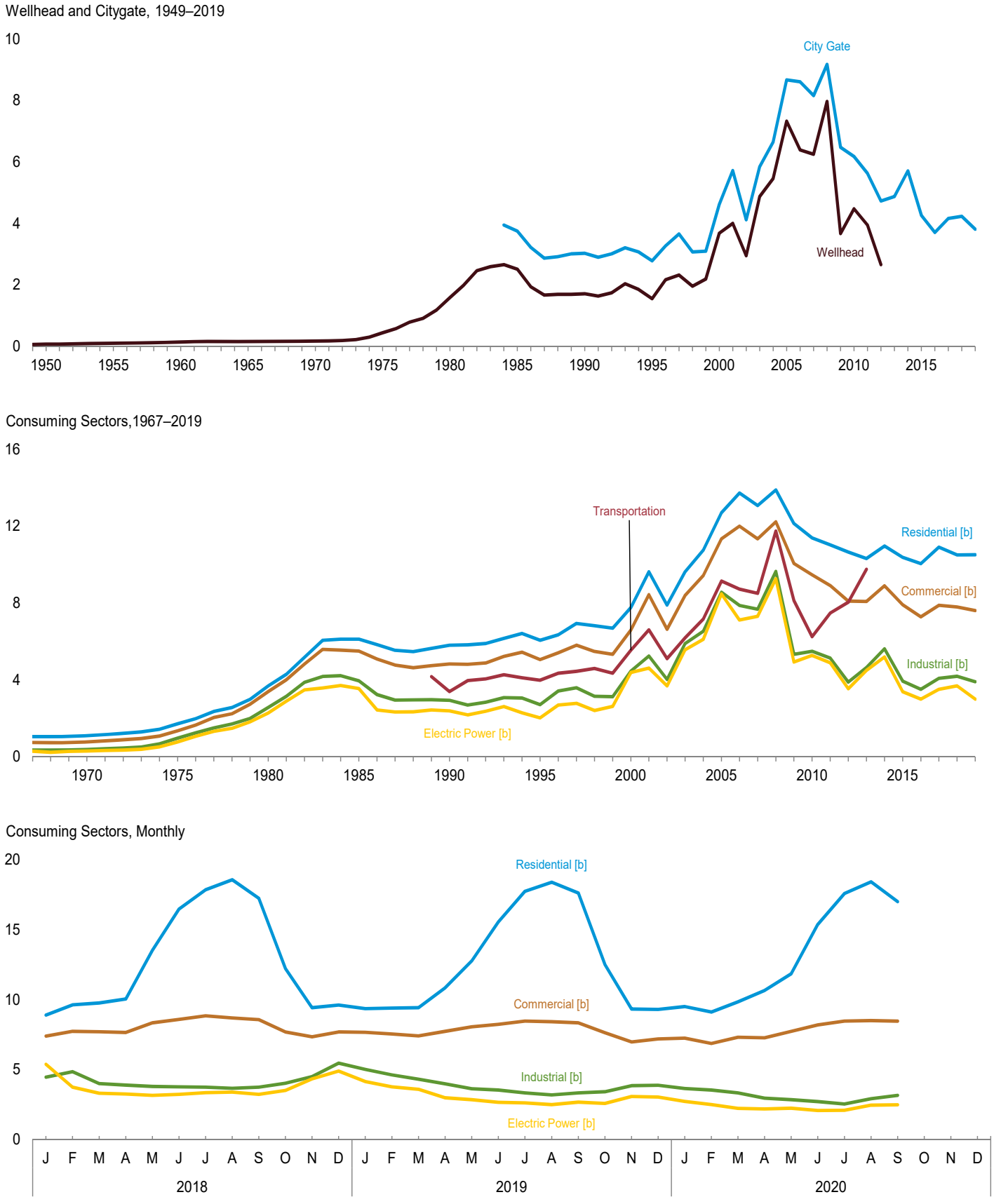
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated plants whose total fossil-fueled nameplate generating capacity is 50 megawatts or more for coal, and 200 megawatts or more for natural gas, residual fuel oil, distillate fuel oil, and petroleum coke. For data coverage before 2013, see EIA, *Electric Power Monthly,* Appendix C, Form EIA-923 notes, "Receipts and cost and quality of fossil fuels" section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Figure 9.4 Natural Gas Prices

(Dollars [a] per Thousand Cubic Feet)



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] Includes taxes.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.10.

Table 9.10 Natural Gas Prices

(Dollars[a] per Thousand Cubic Feet)

	Wellhead Price[f]	City-gate Price[g]	Consuming Sectors[b]								
			Residential		Commercial[c]		Industrial[d]		Transportation	Electric Power[e]	
			Price[h]	Percentage of Sector[i]	Price[h]	Percentage of Sector[i]	Price[h]	Percentage of Sector[i]	Vehicle Fuel[j] Price[h]	Price[h]	Percentage of Sector[i,k]
1950 Average	**0.07**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1955 Average	**.10**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1960 Average	**.14**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1965 Average	**.16**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1970 Average	**.17**	**NA**	**1.09**	**NA**	**.77**	**NA**	**.37**	**NA**	**NA**	**.29**	**NA**
1975 Average	**.44**	**NA**	**1.71**	**NA**	**1.35**	**NA**	**.96**	**NA**	**NA**	**.77**	**96.1**
1980 Average	**1.59**	**NA**	**3.68**	**NA**	**3.39**	**NA**	**2.56**	**NA**	**NA**	**2.27**	**96.9**
1985 Average	**2.51**	**3.75**	**6.12**	**NA**	**5.50**	**NA**	**3.95**	**68.8**	**NA**	**3.55**	**94.0**
1990 Average	**1.71**	**3.03**	**5.80**	**99.2**	**4.83**	**86.6**	**2.93**	**35.2**	**3.39**	**2.38**	**76.8**
1995 Average	**1.55**	**2.78**	**6.06**	**99.0**	**5.05**	**76.7**	**2.71**	**24.5**	**3.98**	**2.02**	**71.4**
2000 Average	**3.68**	**4.62**	**7.76**	**92.6**	**6.59**	**63.9**	**4.45**	**19.8**	**5.54**	**4.38**	**50.5**
2001 Average	**4.00**	**5.72**	**9.63**	**92.4**	**8.43**	**66.0**	**5.24**	**20.8**	**6.60**	**4.61**	**40.2**
2002 Average	**2.95**	**4.12**	**7.89**	**97.9**	**6.63**	**77.4**	**4.02**	**22.7**	**5.10**	**[e] 3.68**	**83.9**
2003 Average	**4.88**	**5.85**	**9.63**	**97.5**	**8.40**	**78.2**	**5.89**	**22.1**	**6.19**	**5.57**	**91.2**
2004 Average	**5.46**	**6.65**	**10.75**	**97.7**	**9.43**	**78.0**	**6.53**	**23.6**	**7.16**	**6.11**	**89.8**
2005 Average	**7.33**	**8.67**	**12.70**	**98.1**	**11.34**	**82.1**	**8.56**	**24.0**	**9.14**	**8.47**	**91.3**
2006 Average	**6.39**	**8.61**	**13.73**	**98.1**	**12.00**	**80.8**	**7.87**	**23.4**	**8.72**	**7.11**	**93.4**
2007 Average	**6.25**	**8.16**	**13.08**	**98.0**	**11.34**	**80.4**	**7.68**	**22.2**	**8.50**	**7.31**	**92.2**
2008 Average	**7.97**	**9.18**	**13.89**	**97.5**	**12.23**	**79.7**	**9.65**	**20.4**	**11.75**	**9.26**	**101.1**
2009 Average	**3.67**	**6.48**	**12.14**	**97.4**	**10.06**	**77.8**	**5.33**	**18.8**	**8.13**	**4.93**	**101.1**
2010 Average	**4.48**	**6.18**	**11.39**	**97.4**	**9.47**	**77.5**	**5.49**	**18.0**	**6.25**	**5.27**	**100.8**
2011 Average	**3.95**	**5.63**	**11.03**	**96.3**	**8.91**	**67.3**	**5.13**	**16.3**	**7.48**	**4.89**	**101.2**
2012 Average	**[E] 2.66**	**4.73**	**10.65**	**95.8**	**8.10**	**65.2**	**3.88**	**16.2**	**8.04**	**3.54**	**95.5**
2013 Average	**NA**	**4.88**	**10.32**	**95.7**	**8.08**	**65.8**	**4.64**	**16.6**	**9.76**	**4.49**	**94.9**
2014 Average	**NA**	**5.71**	**10.97**	**95.5**	**8.90**	**65.8**	**5.62**	**15.9**	**NA**	**5.19**	**94.6**
2015 Average	**NA**	**4.26**	**10.38**	**95.6**	**7.91**	**65.7**	**3.93**	**14.8**	**NA**	**3.38**	**94.6**
2016 Average	**NA**	**3.71**	**10.05**	**95.8**	**7.28**	**64.8**	**3.51**	**14.9**	**NA**	**2.99**	**95.6**
2017 Average	**NA**	**4.16**	**10.91**	**95.9**	**7.88**	**65.4**	**4.08**	**14.8**	**NA**	**3.51**	**95.4**
2018 January	NA	4.36	8.90	96.1	7.40	71.5	4.46	15.2	NA	5.38	94.4
February	NA	3.99	9.63	96.0	7.74	69.3	4.85	14.8	NA	3.75	94.4
March	NA	3.69	9.76	95.9	7.71	68.6	4.00	15.3	NA	3.32	95.1
April	NA	3.65	10.05	95.6	7.65	65.4	3.89	15.0	NA	3.26	95.9
May	NA	4.14	13.52	94.8	8.34	60.0	3.80	14.1	NA	3.16	94.8
June	NA	4.49	16.47	95.7	8.58	57.7	3.77	14.1	NA	3.23	96.3
July	NA	4.50	17.85	95.8	8.84	56.4	3.75	13.9	NA	3.35	95.2
August	NA	5.25	18.56	95.6	8.69	55.1	3.67	14.2	NA	3.39	95.8
September	NA	4.72	17.23	96.2	8.57	56.9	3.75	14.0	NA	3.23	96.2
October	NA	4.10	12.22	96.5	7.69	61.3	4.03	14.3	NA	3.52	96.4
November	NA	4.28	9.42	96.4	7.34	66.6	4.51	14.5	NA	4.34	94.6
December	NA	4.72	9.62	96.2	7.70	69.0	5.47	14.5	NA	4.89	95.6
Average	**NA**	**4.23**	**10.50**	**96.0**	**7.79**	**65.8**	**4.19**	**14.5**	**NA**	**3.68**	**95.4**
2019 January	NA	4.03	9.36	96.4	7.67	70.1	5.02	13.7	NA	4.16	96.4
February	NA	3.91	9.40	96.1	7.55	69.3	4.62	14.1	NA	3.78	95.5
March	NA	4.07	9.42	96.0	7.41	69.1	4.31	13.7	NA	3.60	95.7
April	NA	3.72	10.85	95.6	7.73	64.1	3.99	13.0	NA	2.99	96.2
May	NA	3.66	12.76	95.7	8.06	60.6	3.64	12.6	NA	2.85	97.9
June	NA	4.17	15.55	95.6	8.23	58.1	3.54	12.4	NA	2.66	97.1
July	NA	4.17	17.74	95.9	8.47	56.0	3.34	13.0	NA	2.63	96.7
August	NA	4.15	18.38	96.1	8.42	55.6	3.20	12.3	NA	2.50	96.5
September	NA	4.07	17.61	96.2	8.34	56.2	3.34	12.2	NA	2.68	96.8
October	NA	3.42	12.50	96.8	7.64	60.3	3.42	12.0	NA	2.58	96.5
November	NA	3.46	9.33	96.6	6.98	66.7	3.86	12.7	NA	3.08	96.3
December	NA	3.50	9.30	96.4	7.19	68.8	3.88	12.8	NA	3.04	96.4
Average	**NA**	**3.81**	**10.51**	**96.2**	**7.61**	**65.5**	**3.90**	**12.9**	**NA**	**2.99**	**96.5**
2020 January	NA	3.28	9.51	96.4	7.25	69.4	3.66	13.1	NA	2.74	89.2
February	NA	3.10	9.12	96.3	6.87	68.9	3.54	13.2	NA	2.50	90.4
March	NA	3.23	9.85	96.1	7.32	66.5	3.34	13.0	NA	2.23	89.0
April	NA	3.05	10.66	95.9	7.28	63.7	2.96	12.8	NA	2.20	89.7
May	NA	3.37	11.85	95.7	7.74	59.0	2.86	13.2	NA	2.25	89.6
June	NA	3.85	15.37	95.9	8.19	56.6	2.72	12.9	NA	2.08	88.3
July	NA	3.87	17.57	96.4	8.47	55.7	2.55	12.8	NA	2.10	85.5
August	NA	3.95	18.41	95.9	8.50	54.3	2.92	12.4	NA	2.47	87.2
September	NA	4.10	16.99	96.6	8.47	54.8	3.16	13.2	NA	2.49	87.8
9-Month Average	**NA**	**3.34**	**10.93**	**96.2**	**7.46**	**64.0**	**3.11**	**13.0**	**NA**	**2.34**	**88.3**
2019 9-Month Average	**NA**	**3.97**	**10.79**	**96.0**	**7.77**	**65.2**	**3.96**	**13.0**	**NA**	**3.02**	**96.6**
2018 9-Month Average	**NA**	**4.13**	**10.74**	**95.9**	**7.87**	**65.5**	**4.02**	**14.6**	**NA**	**3.53**	**95.4**

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] See Note 8, "Natural Gas Prices," at end of section.
[c] 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 7.
[d] 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 7.
[e] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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 also include independent power producers.
[f] See "Natural Gas Wellhead Price" in Glossary.
[g] See "Citygate" in Glossary.
[h] Includes taxes.
[i] The percentage of the sector's consumption in Table 4.3 for which price data are available. For details on how the percentages are derived, see Table 9.10 sources at end of section.
[j] 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.
[k] Percentages exceed 100% when reported natural gas receipts are greater than reported natural gas consumption—this can occur when combined-heat-and-power plants report fuel receipts related to non-electric generating activities.

NA=Not available. E=Estimate.

Notes: • Prices are for natural gas, plus a small amount of supplemental gaseous fuels. • Prices are intended to include all taxes. See Note 8, "Natural Gas Prices," at end of section. • Wellhead annual and year-to-date prices are simple averages of the monthly prices; all other annual and year-to-date prices are volume-weighted averages of the monthly prices. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1976.

Sources: See end of section.

Note 1. Crude Oil Refinery Acquisition Costs. Beginning with January 1981, refiner acquisition costs of crude oil are from data collected on U.S. Energy Information Administration (EIA) Form EIA-14, "Refiners' Monthly Cost Report." Those costs were previously published from data collected on Economic Regulatory Administration (ERA) Form ERA-49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report." Form ERA-49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for Form EIA-14 in accordance with conventions used for Form ERA-49. The respondents for the two forms are also essentially the same. However, due to possible different interpretations of the filing requirements and a different method for handling prior period adjustments, care must be taken when comparing the data collected on the two forms.

The refiner acquisition cost of crude oil is the average price paid by refiners for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. Domestic crude oil is that oil produced in the United States or from the outer continental shelf as defined in 43 USC Section 1331. Imported crude oil is either that oil reported on Form ERA-51, "Transfer Pricing Report," or any crude oil that is not domestic oil. The composite cost is the weighted average of domestic and imported crude oil costs.

Crude oil costs and volumes reported on Form ERA-49 excluded unfinished oils but included the Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on Federal Energy Administration (FEA) Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report," included unfinished oils but excluded SPR. Imported averages derived from Form ERA-49 exclude oil purchased for SPR, whereas the composite averages derived from Form ERA-49 include SPR. None of the prices derived from Form EIA-14 include either unfinished oils or SPR.

Note 2. Crude Oil Domestic First Purchase Prices. The average domestic first purchase price represents the average price at which all domestic crude oil is purchased. 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. The data series was previously called "Actual Domestic Wellhead Price."

Note 3. Crude Oil F.O.B. Costs. F.O.B. literally means "Free on Board." It denotes a transaction whereby the seller makes the product available with an agreement on a given port at a given price; it is the responsibility of the buyer to arrange for the transportation and insurance.

Note 4. Crude Oil Landed Costs. The landed cost of imported crude oil from selected countries does not represent the total cost of all imported crude. Prior to April 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude oil from countries that export only small amounts to the United States were also excluded. Beginning in April 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

Note 5. Motor Gasoline Prices. Several different series of motor gasoline prices are published in this section. U.S. city average retail prices of motor gasoline by grade are calculated monthly by the Bureau of Labor Statistics during the development of the Consumer Price Index (CPI). These prices include all federal, state, and local taxes paid at the time of sale. Prior to 1977, prices were collected in 56 urban areas. From 1978 forward, prices are collected from a new sample of service stations in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-serve).

Regular motor gasoline prices by area type are determined by EIA in a weekly survey of retail motor gasoline outlets (Form EIA-878, "Motor Gasoline Price Survey"). Prices include all federal, state, and local taxes paid at the time of sale. A representative sample of outlets by geographic area and size is randomly selected from a sampling frame of approximately 115,000 retail motor gasoline outlets. Monthly and annual prices are simple averages of weighted

weekly estimates from "Weekly U.S. Retail Gasoline Prices, Regular Grade." For more information on the survey methodology, see EIA, *Weekly Petroleum Status Report*, Appendix B, "Weekly Petroleum Price Surveys" section.

Refiner prices of finished motor gasoline for resale and to end users are determined by EIA in a monthly survey of refiners and gas plant operators (Form EIA-782A). The prices do not include any federal, state, or local taxes paid at the time of sale. Estimates of prices prior to January 1983 are based on Form FEA-P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices," and also exclude all federal, state, or local taxes paid at the time of sale. Sales for resale are those made to purchasers who are other-than-ultimate consumers. Sales to end users are sales made directly to the consumer of the product, including bulk consumers (such as agriculture, industry, and utilities) and residential and commercial consumers.

Note 6. Historical Petroleum Prices. Starting in January 1983, Form EIA-782, "Monthly Petroleum Product Sales Report," replaced 10 previous surveys. Every attempt was made to continue the most important price series. However, prices published through December 1982 and those published since January 1983 do not necessarily form continuous data series due to changes in survey forms, definitions, instructions, populations, samples, processing systems, and statistical procedures. To provide historical data, continuous series were generated for annual data 1978–1982 and for monthly data 1981 and 1982 by estimating the prices that would have been published had Form EIA-782 survey and system been in operation at that time. This form of estimation was performed after detailed adjustment was made for product and sales type matching and for discontinuity due to other factors. An important difference between the previous and present prices is the distinction between wholesale and resale and between retail and end user. The resale category continues to include sales among resellers. However, sales to bulk consumers, such as utility, industrial, and commercial accounts previously included in the wholesale category, are now counted as made to end users. The end-user category continues to include retail sales through company-owned and operated outlets but also includes sales to the bulk consumers such as agriculture, industry, and electric utilities. Additional information may be found in "Estimated Historic Time Series for the EIA-782," a feature article by Paula Weir, printed in the December 1983 [3] *Petroleum Marketing Monthly*, published by EIA.

Note 7. Electricity Retail Prices. Average annual retail prices of electricity have the following plant coverage: Through 1979, annual data are for Classes A and B privately owned electric utilities only. For 1980–1982, annual data are for selected Class A utilities whose electric operating revenues were $100 million or more during the previous year. For 1983, annual data are for a selected sample of electric utilities. Beginning in 1984, data are for a census of electric utilities. Beginning in 1996, annual data also include energy service providers selling to retail customers.

Average monthly retail prices of electricity have the following plant coverage: Through 1985, monthly data are derived from selected privately owned electric utilities and, therefore, are not national averages. Beginning in 1986, monthly data are based on a sample of publicly and privately owned electric utilities. Beginning in 1996, monthly data also include energy service providers selling to retail customers.

Preliminary monthly data are from Form EIA-861M (formerly Form EIA-826), "Monthly Electric Power Industry Report," which is a monthly collection of data from approximately 450 of the largest publicly and privately owned electric utilities as well as a census of energy service providers with retail sales in deregulated states; a model is then applied to the collected data to estimate for the entire universe of U.S. electric utilities. Preliminary annual data are the sum of the monthly revenues divided by the sum of the monthly sales. When final annual data become available each year from Form EIA-861, "Annual Electric Power Industry Report," their ratios to the preliminary Form EIA-861M values are used to derive adjusted final monthly values.

Note 8. Natural Gas Prices. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all federal, state, and local taxes, surcharges, and/or adjustments billed to consumers are to be included. However, sales and other taxes itemized on more than 3,000 consumers' bills are sometimes excluded by the reporting utilities. Delivered-to-consumers prices for 1987 forward represent natural gas delivered and sold to residential, commercial, industrial, vehicle fuel, and electric power consumers. They do not include the price of natural

gas delivered on behalf of third parties to residential, commercial, industrial, and vehicle fuel customers except for certain states in the residential and commercial sectors for 2002 forward. Volumes of natural gas delivered on behalf of third parties are included in the consumption data shown in Table 4.3. Additional information is available in EIA, *Natural Gas Monthly*, Appendix C.

Table 9.1 Sources

Domestic First Purchase Price

1949–1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Minerals Yearbook, "Crude Petroleum and Petroleum Products" chapter.

1977: Federal Energy Administration, based on Form FEA-P124, "Domestic Crude Oil Purchaser's Monthly Report."

1978–2009: U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly* December 2020, Table 1.

F.O.B. and Landed Cost of Imports

October 1973–September 1977: Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report."

October–December 1977: EIA, Form FEA-F701-M-0, "Transfer Pricing Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly*, December 2020, Table 1.

Refiner Acquisition Cost

1968–1973: EIA estimates. The cost of domestic crude oil was derived by adding estimated transportation costs to the reported average domestic first purchase price. 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. Census Bureau.

1974–1976: DOI, BOM, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter.

1977: January–September, FEA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report."

1977: October–December, EIA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly*, December 2020, Table 1.

Table 9.2 Sources

October 1973–September 1977: Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report."

October 1977–December 1977: U.S. Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 21.

2010 forward: EIA, *Petroleum Marketing Monthly*, December 2020, Table 21.

Table 9.9 Sources

1973–September 1977: Federal Power Commission, Form FPC-423, "Monthly Report of Cost and Quality of Fuels for

Electric Utility Plants." October 1977–December 1977: Federal Energy Regulatory Commission, Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants."

1978 and 1979: U.S. Energy Information Administration (EIA), Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants."

1980–1989: EIA, *Electric Power Monthly*, June issues.

1990–2000: EIA, *Electric Power Monthly*, March 2003, Table 26.

2001–2007: EIA, *Electric Power Monthly*, October 2008, Table 4.1; 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."

2008 forward: EIA, *Electric Power Monthly*, November 2020, Table 4.1; and Form EIA-923, "Power Plant Operations Report."

Table 9.10 Sources

All Prices Except Vehicle Fuel and Electric Power

1949–2015: U.S. Energy Information Administration (EIA), *Natural Gas Annual* (NGA), annual reports and unpublished revisions.

2016 forward: EIA, *Natural Gas Monthly* (NGM), November 2020, Table 3.

Vehicle Fuel Price

1989–2013: EIA, NGA, annual reports.

Electric Power Sector Price

1967–1972: EIA, NGA, annual reports.

1973–1998: EIA, NGA 2000, Table 96.

1999–2002: EIA, NGM, November 2004, Table 4.

2003–2007: 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."

2008 forward: Form EIA-923, "Power Plant Operations Report."

Percentage of Residential Sector

1989–2013: EIA, Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." Calculated as the total amount of natural gas delivered to residential consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to residential consumers.

2014 forward: EIA, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

Percentage of Commercial Sector

1987–2015: EIA, NGA, annual reports. Calculated as the total amount of natural gas delivered to commercial consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to commercial consumers.

2016 forward: EIA, NGM, November 2020, Table 3.

Percentage of Industrial Sector

1982–2015: EIA, NGA, annual reports. Calculated as the total amount of natural gas delivered to industrial consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to industrial consumers.

2016 forward: EIA, NGM, November 2020, Table 3.

Percentage of Electric Power 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 Quality of Fuels for Electric Utility Plants" (and predecessor forms) divided by the quantity of natural gas consumed by the electric power sector (for 1973 –1988, see *Monthly Energy Review* (*MER*), Table 7.3b; for 1989–2001, see MER, Table 7.4b).

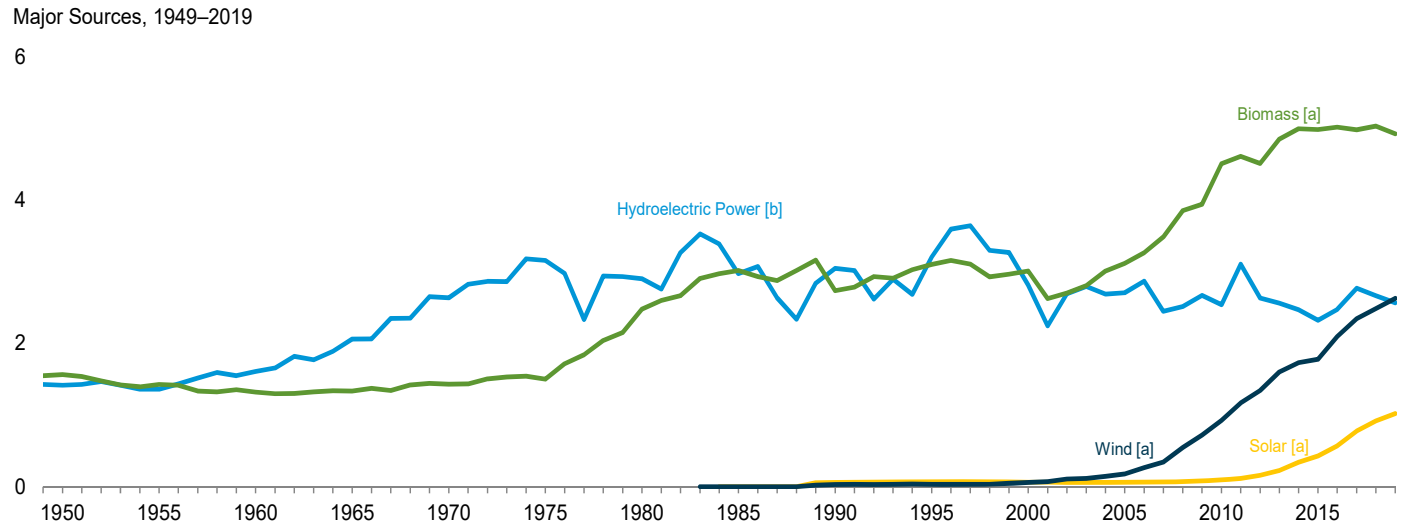
2002–2007: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report," divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

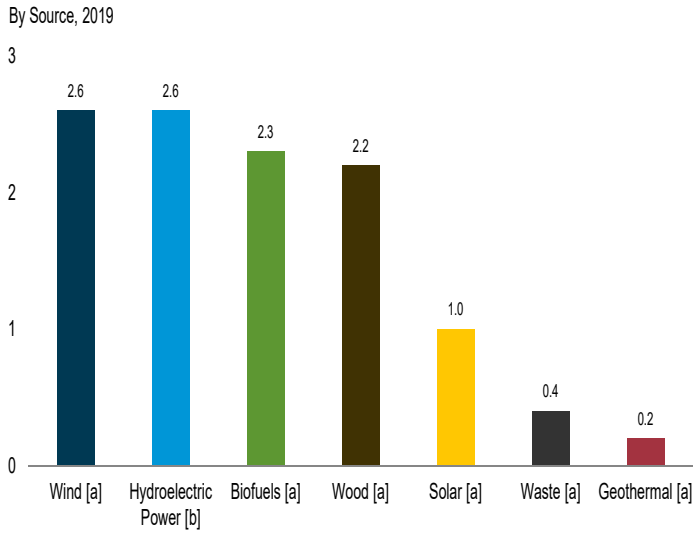
2008 forward: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form EIA-923, "Power Plant Operations Report," divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

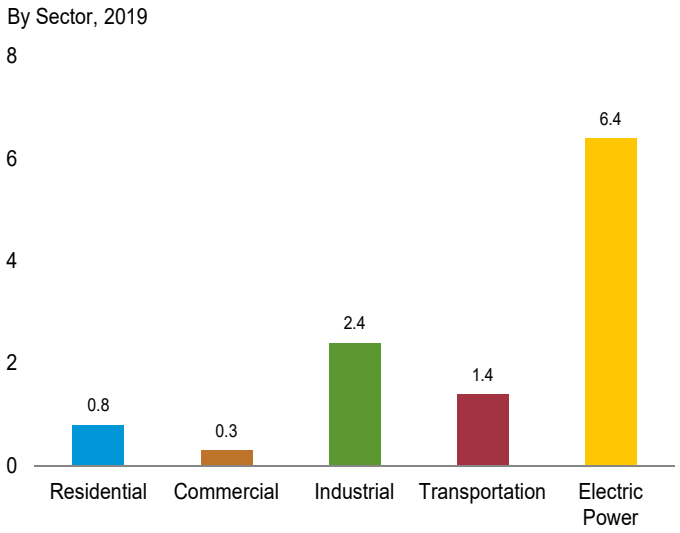
10. Renewable Energy

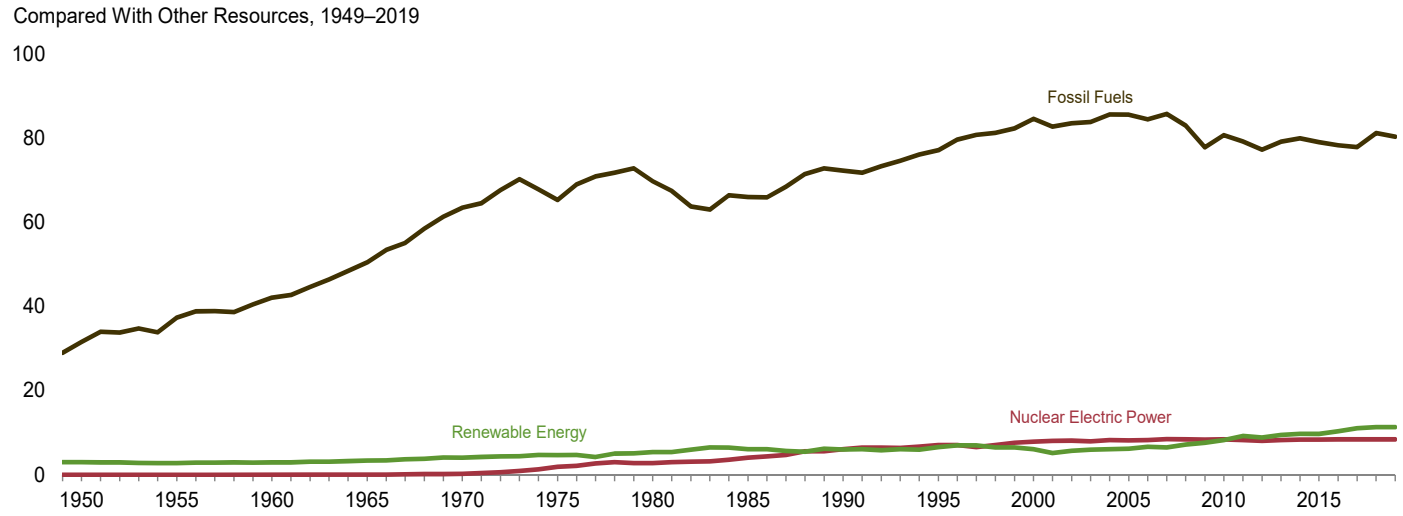
Figure 10.1 Renewable Energy Consumption

(Quadrillion Btu)









[a] See Table 10.1 for definition.
[b] Conventional hydroelectric power.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#renewable.
Sources: Tables 1.3 and 10.1–10.2c.

Table 10.1 Renewable Energy Production and Consumption by Source

(Trillion Btu)

	Production[a]				Consumption								
	Biomass			Total Renewable Energy[e]	Hydroelectric Power[f]	Geothermal[g]	Solar[h]	Wind[i]	Biomass				Total Renewable Energy
	Wood[b]	Biofuels[c]	Total[d]						Wood[j]	Waste[k]	Biofuels[l]	Total	
1950 Total	**1,562**	**NA**	**1,562**	**2,978**	**1,415**	**NA**	**NA**	**NA**	**1,562**	**NA**	**NA**	**1,562**	**2,978**
1955 Total	**1,424**	**NA**	**1,424**	**2,784**	**1,360**	**NA**	**NA**	**NA**	**1,424**	**NA**	**NA**	**1,424**	**2,784**
1960 Total	**1,320**	**NA**	**1,320**	**2,928**	**1,608**	**(s)**	**NA**	**NA**	**1,320**	**NA**	**NA**	**1,320**	**2,928**
1965 Total	**1,335**	**NA**	**1,335**	**3,396**	**2,059**	**2**	**NA**	**NA**	**1,335**	**NA**	**NA**	**1,335**	**3,396**
1970 Total	**1,429**	**NA**	**1,431**	**4,070**	**2,634**	**6**	**NA**	**NA**	**1,429**	**2**	**NA**	**1,431**	**4,070**
1975 Total	**1,497**	**NA**	**1,499**	**4,687**	**3,155**	**34**	**NA**	**NA**	**1,497**	**2**	**NA**	**1,499**	**4,687**
1980 Total	**2,474**	**NA**	**2,475**	**5,428**	**2,900**	**53**	**NA**	**NA**	**2,474**	**2**	**NA**	**2,475**	**5,428**
1985 Total	**2,687**	**93**	**3,016**	**6,084**	**2,970**	**97**	**(s)**	**(s)**	**2,687**	**236**	**93**	**3,016**	**6,084**
1990 Total	**2,216**	**111**	**2,735**	**6,040**	**3,046**	**171**	**59**	**29**	**2,216**	**408**	**111**	**2,735**	**6,040**
1995 Total	**2,370**	**198**	**3,099**	**6,557**	**3,205**	**152**	**68**	**33**	**2,370**	**531**	**200**	**3,101**	**6,559**
2000 Total	**2,262**	**233**	**3,006**	**6,102**	**2,811**	**164**	**63**	**57**	**2,262**	**511**	**236**	**3,008**	**6,104**
2001 Total	**2,006**	**254**	**2,624**	**5,162**	**2,242**	**164**	**62**	**70**	**2,006**	**364**	**253**	**2,622**	**5,160**
2002 Total	**1,995**	**308**	**2,705**	**5,731**	**2,689**	**171**	**60**	**105**	**1,995**	**402**	**303**	**2,701**	**5,726**
2003 Total	**2,002**	**401**	**2,805**	**5,942**	**2,793**	**173**	**58**	**113**	**2,002**	**401**	**403**	**2,806**	**5,944**
2004 Total	**2,121**	**486**	**2,996**	**6,063**	**2,688**	**178**	**58**	**142**	**2,121**	**389**	**498**	**3,008**	**6,075**
2005 Total	**2,137**	**561**	**3,101**	**6,221**	**2,703**	**181**	**58**	**178**	**2,137**	**403**	**574**	**3,114**	**6,234**
2006 Total	**2,099**	**716**	**3,212**	**6,586**	**2,869**	**181**	**61**	**264**	**2,099**	**397**	**766**	**3,262**	**6,637**
2007 Total	**2,089**	**970**	**3,472**	**6,510**	**2,446**	**186**	**66**	**341**	**2,089**	**413**	**983**	**3,485**	**6,523**
2008 Total	**2,059**	**1,374**	**3,868**	**7,192**	**2,511**	**192**	**74**	**546**	**2,059**	**435**	**1,357**	**3,851**	**7,175**
2009 Total	**1,935**	**1,570**	**3,957**	**7,625**	**2,669**	**200**	**78**	**721**	**1,935**	**452**	**1,553**	**3,940**	**7,608**
2010 Total	**2,217**	**1,868**	**4,553**	**8,314**	**2,539**	**208**	**91**	**923**	**2,217**	**468**	**1,821**	**4,506**	**8,267**
2011 Total	**2,213**	**2,029**	**4,704**	**9,300**	**3,103**	**212**	**112**	**1,168**	**2,213**	**462**	**1,934**	**4,609**	**9,204**
2012 Total	**2,151**	**1,929**	**4,547**	**8,886**	**2,629**	**212**	**159**	**1,340**	**2,151**	**467**	**1,890**	**4,508**	**8,847**
2013 Total	**2,338**	**1,981**	**4,816**	**9,418**	**2,562**	**214**	**225**	**1,601**	**2,338**	**496**	**2,014**	**4,848**	**9,451**
2014 Total	**2,401**	**2,103**	**5,020**	**9,767**	**2,467**	**214**	**338**	**1,728**	**2,401**	**516**	**2,077**	**4,994**	**9,740**
2015 Total	**2,312**	**2,161**	**4,992**	**9,729**	**2,321**	**212**	**427**	**1,777**	**2,312**	**518**	**2,153**	**4,983**	**9,721**
2016 Total	**2,297**	**2,275**	**5,075**	**10,423**	**2,472**	**210**	**570**	**2,096**	**2,224**	**503**	**2,287**	**5,015**	**10,363**
2017 Total	**2,259**	**2,344**	**5,099**	**11,196**	**2,767**	**210**	**777**	**2,343**	**2,181**	**495**	**2,304**	**4,979**	**11,077**
2018 January	202	200	445	972	228	18	49	233	197	43	187	426	954
February	184	184	408	918	227	16	55	211	176	40	166	382	892
March	199	202	443	1,011	235	18	74	241	193	43	192	428	996
April	188	191	420	1,018	256	16	86	241	181	41	181	402	1,001
May	197	202	440	1,049	277	18	96	218	189	41	201	430	1,040
June	195	200	435	1,030	251	17	102	225	186	39	194	419	1,015
July	203	210	452	945	229	18	97	150	196	39	199	435	928
August	203	212	455	949	200	18	95	181	194	40	206	440	934
September	190	194	421	865	174	17	85	169	182	37	182	400	845
October	196	204	441	902	178	17	72	193	187	41	196	423	884
November	193	198	432	905	199	17	56	200	185	41	189	414	887
December	205	200	447	943	208	19	48	221	196	42	191	429	925
Total	**2,355**	**2,397**	**5,238**	**11,508**	**2,663**	**209**	**916**	**2,482**	**2,261**	**487**	**2,283**	**5,031**	**11,301**
2019 January	202	195	437	944	221	18	52	216	196	39	177	413	920
February	184	177	396	873	204	16	56	201	175	36	172	383	860
March	196	191	425	990	234	18	84	229	189	38	186	413	978
April	185	193	414	1,030	248	16	95	257	177	36	185	397	1,013
May	193	202	431	1,064	285	17	102	229	185	36	199	420	1,053
June	191	197	424	1,000	250	17	110	199	182	36	194	412	988
July	200	203	439	988	221	18	113	196	192	37	197	425	973
August	203	199	439	945	201	18	109	178	193	37	194	423	929
September	191	182	408	903	165	17	95	218	181	35	179	395	890
October	193	192	422	930	163	16	85	245	184	37	191	412	921
November	193	192	421	901	180	14	63	223	183	37	187	407	887
December	201	203	443	939	191	16	53	236	191	39	194	424	920
Total	**2,330**	**2,328**	**5,100**	**11,509**	**2,563**	**201**	**1,018**	**2,626**	**2,227**	**442**	**2,255**	**4,924**	**11,332**
2020 January	193	203	436	995	226	17	66	251	186	39	187	412	971
February	184	187	407	996	235	16	78	259	176	36	174	386	974
March	192	184	414	995	209	19	93	260	182	38	162	383	963
April	183	113	332	918	196	18	112	261	175	36	112	323	910
May	191	137	364	1,037	272	18	131	251	183	36	146	365	1,038
June	181	164	378	1,051	259	17	130	266	171	33	167	371	1,044
July	185	181	401	1,006	247	18	139	201	178	35	179	392	998
August	R 188	179	403	966	216	18	128	201	180	35	175	390	952
September	181	175	390	894	171	18	109	206	173	33	174	380	883
9-Month Total	**1,679**	**1,523**	**3,524**	**8,857**	**2,031**	**159**	**987**	**2,156**	**1,603**	**322**	**1,476**	**3,401**	**8,733**
2019 9-Month Total	**1,744**	**1,740**	**3,813**	**8,737**	**2,029**	**156**	**817**	**1,922**	**1,668**	**329**	**1,683**	**3,681**	**8,605**
2018 9-Month Total	**1,761**	**1,794**	**3,917**	**8,758**	**2,078**	**156**	**739**	**1,868**	**1,694**	**363**	**1,707**	**3,764**	**8,605**

[a] For hydroelectric power, geothermal, solar, wind, and biomass waste, production equals consumption.

[b] Wood and wood-derived fuels. Through 2015, wood production equals consumption. Beginning in 2016, wood production equals consumption plus densified biomass exports.

[c] Total biomass inputs to the production of fuel ethanol and biodiesel.

[d] Includes biomass waste.

[e] Hydroelectric power, geothermal, solar, wind, and biomass.

[f] Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[g] Geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and geothermal heat pump and direct use energy.

[h] Solar photovoltaic (PV) and solar thermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and solar thermal direct use energy.

[i] Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[j] Wood and wood-derived fuels.

[k] 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).

[l] Fuel ethanol (minus denaturant), biodiesel, other renewable diesel fuel, and other renewable fuels consumption; plus losses and co-products from the production of fuel ethanol and biodiesel.

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

Notes: • Production data are estimates. Consumption data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. • See Note, "Renewable Energy Production and Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Production:** Tables 10.2a–10.4 and U.S. Energy Information Administration, Form EIA-63C, "Densified Biomass Fuel Report." • **Consumption:** Tables 10.2a–10.2c.

Table 10.2a Renewable Energy Consumption: Residential and Commercial Sectors

(Trillion Btu)

	Residential Sector				Commercial Sector[a]								
			Biomass						Biomass				
	Geo-thermal[b]	Solar[c]	Wood[d]	Total	Hydro-electric Power[e]	Geo-thermal[f]	Solar[g]	Wind[h]	Wood[d]	Waste[i]	Fuel Ethanol[j,k]	Total	Total
1950 Total	**NA**	**NA**	**1,006**	**1,006**	**NA**	**NA**	**NA**	**NA**	**19**	**NA**	**NA**	**19**	**19**
1955 Total	**NA**	**NA**	**775**	**775**	**NA**	**NA**	**NA**	**NA**	**15**	**NA**	**NA**	**15**	**15**
1960 Total	**NA**	**NA**	**627**	**627**	**NA**	**NA**	**NA**	**NA**	**12**	**NA**	**NA**	**12**	**12**
1965 Total	**NA**	**NA**	**468**	**468**	**NA**	**NA**	**NA**	**NA**	**9**	**NA**	**NA**	**9**	**9**
1970 Total	**NA**	**NA**	**401**	**401**	**NA**	**NA**	**NA**	**NA**	**8**	**NA**	**NA**	**8**	**8**
1975 Total	**NA**	**NA**	**425**	**425**	**NA**	**NA**	**NA**	**NA**	**8**	**NA**	**NA**	**8**	**8**
1980 Total	**NA**	**NA**	**850**	**850**	**NA**	**NA**	**NA**	**NA**	**21**	**NA**	**NA**	**21**	**21**
1985 Total	**NA**	**NA**	**1,010**	**1,010**	**NA**	**NA**	**NA**	**NA**	**24**	**NA**	**(s)**	**24**	**24**
1990 Total	**6**	**55**	**580**	**640**	**1**	**3**	**(s)**	**–**	**66**	**28**	**(s)**	**94**	**98**
1995 Total	**7**	**63**	**520**	**589**	**1**	**5**	**(s)**	**–**	**72**	**40**	**(s)**	**113**	**119**
2000 Total	**9**	**58**	**420**	**486**	**1**	**8**	**1**	**–**	**71**	**47**	**(s)**	**119**	**128**
2001 Total	**9**	**55**	**370**	**435**	**1**	**8**	**1**	**–**	**67**	**25**	**(s)**	**92**	**101**
2002 Total	**10**	**53**	**380**	**443**	**(s)**	**9**	**1**	**–**	**69**	**26**	**(s)**	**95**	**105**
2003 Total	**13**	**52**	**400**	**465**	**1**	**11**	**1**	**–**	**71**	**29**	**1**	**101**	**114**
2004 Total	**14**	**51**	**410**	**475**	**1**	**12**	**1**	**–**	**70**	**34**	**1**	**105**	**120**
2005 Total	**16**	**50**	**430**	**496**	**1**	**14**	**2**	**–**	**70**	**34**	**1**	**105**	**121**
2006 Total	**18**	**53**	**380**	**451**	**1**	**14**	**3**	**–**	**65**	**36**	**1**	**103**	**120**
2007 Total	**22**	**55**	**420**	**497**	**1**	**14**	**4**	**–**	**70**	**31**	**2**	**103**	**122**
2008 Total	**26**	**58**	**470**	**555**	**1**	**15**	**6**	**–**	**73**	**34**	**2**	**109**	**131**
2009 Total	**33**	**60**	**504**	**597**	**1**	**17**	**8**	**(s)**	**73**	**36**	**3**	**112**	**137**
2010 Total	**37**	**65**	**541**	**642**	**1**	**19**	**12**	**(s)**	**72**	**36**	**3**	**111**	**142**
2011 Total	**40**	**71**	**524**	**635**	**(s)**	**20**	**20**	**(s)**	**69**	**43**	**3**	**115**	**155**
2012 Total	**40**	**79**	**438**	**557**	**(s)**	**20**	**33**	**1**	**61**	**45**	**3**	**108**	**162**
2013 Total	**40**	**91**	**572**	**703**	**(s)**	**20**	**41**	**1**	**70**	**47**	**3**	**120**	**182**
2014 Total	**40**	**110**	**579**	**728**	**(s)**	**20**	**52**	**1**	**76**	**47**	**4**	**127**	**200**
2015 Total	**40**	**128**	**513**	**681**	**(s)**	**20**	**57**	**1**	**79**	**47**	**[k] 26**	**152**	**230**
2016 Total	**40**	**162**	**442**	**643**	**2**	**20**	**62**	**1**	**84**	**48**	**26**	**158**	**242**
2017 Total	**40**	**194**	**425**	**658**	**2**	**20**	**76**	**1**	**84**	**48**	**25**	**156**	**255**
2018 January	3	12	44	59	(s)	2	5	(s)	7	4	2	13	21
February	3	13	40	56	(s)	2	6	(s)	7	4	2	12	20
March	3	18	44	65	(s)	2	8	(s)	7	4	2	13	23
April	3	21	43	66	(s)	2	9	(s)	7	4	2	13	23
May	3	23	44	70	(s)	2	10	(s)	7	4	2	13	25
June	3	23	43	69	(s)	2	10	(s)	7	4	2	13	25
July	3	24	44	71	(s)	2	10	(s)	7	4	2	13	25
August	3	23	44	70	(s)	2	10	(s)	7	4	2	14	25
September	3	20	43	66	(s)	2	9	(s)	7	4	2	12	23
October	3	18	44	65	(s)	2	8	(s)	7	4	2	13	23
November	3	14	43	60	(s)	2	6	(s)	7	4	2	13	21
December	3	13	44	61	(s)	2	6	(s)	7	4	2	13	21
Total	**40**	**221**	**517**	**778**	**2**	**20**	**94**	**2**	**84**	**47**	**25**	**156**	**274**
2019 January	3	13	45	62	(s)	2	6	(s)	7	4	2	13	21
February	3	15	41	58	(s)	2	6	(s)	7	3	2	12	20
March	3	21	45	69	(s)	2	9	(s)	7	3	2	13	24
April	3	23	43	70	(s)	2	10	(s)	7	3	2	12	24
May	3	26	45	74	(s)	2	10	(s)	7	3	2	12	25
June	3	26	43	73	(s)	2	11	(s)	7	3	2	12	25
July	3	27	45	76	(s)	2	11	(s)	7	3	2	13	26
August	3	26	45	75	(s)	2	11	(s)	7	3	2	13	25
September	3	23	43	70	(s)	2	9	(s)	7	3	2	12	24
October	3	20	45	69	(s)	2	8	(s)	7	3	2	13	23
November	3	16	43	63	(s)	2	6	(s)	7	3	2	12	21
December	3	15	45	63	(s)	2	6	(s)	7	3	2	13	21
Total	**40**	**252**	**529**	**821**	**2**	**24**	**103**	**2**	**84**	**39**	**26**	**149**	**279**
2020 January	3	16	42	61	NM	2	7	(s)	7	3	2	13	22
February	3	18	39	61	NM	2	8	(s)	7	3	2	12	22
March	3	24	42	69	NM	2	10	(s)	7	3	2	12	25
April	3	27	41	71	(s)	2	11	(s)	7	3	1	11	24
May	3	30	42	76	NM	2	12	(s)	7	3	2	12	26
June	3	30	41	74	NM	2	12	(s)	7	3	2	12	26
July	3	31	42	77	NM	2	13	(s)	7	3	2	12	27
August	3	30	42	75	NM	2	12	(s)	7	3	2	12	27
September	3	26	41	70	(s)	2	11	(s)	7	3	2	11	25
9-Month Total	**30**	**231**	**373**	**634**	**1**	**18**	**97**	**1**	**62**	**27**	**17**	**106**	**223**
2019 9-Month Total	**30**	**201**	**396**	**626**	**1**	**18**	**82**	**1**	**63**	**29**	**19**	**112**	**214**
2018 9-Month Total	**30**	**176**	**387**	**592**	**2**	**15**	**75**	**1**	**63**	**35**	**19**	**117**	**210**

[a] 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 7.

[b] Geothermal heat pump and direct use energy.

[c] Distributed (small-scale) solar photovoltaic (PV) electricity generation in the residential sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6) and distributed solar thermal energy in the residential, commercial, and industrial sectors. See Table 10.5.

[d] Wood and wood-derived fuels.

[e] Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[f] Geothermal heat pump and direct use energy. Beginning in December 2018, also includes geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[g] Solar photovoltaic (PV) electricity net generation in the commercial sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), both utility-scale and distributed (small-scale). See Table 10.5.

[h] Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[i] 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).

[j] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the commercial sector.

[k] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

NA=Not available. NM=Not meaningful. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Residential sector data are estimates. Commercial sector data are estimates, except for hydroelectric power, wind, and biomass waste. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 10.2b Renewable Energy Consumption: Industrial and Transportation Sectors

(Trillion Btu)

	Industrial Sector[a]										Transportation Sector			
					Biomass						Biomass			
	Hydroelectric Power[b]	Geothermal[c]	Solar[d]	Wind[e]	Wood[f]	Waste[g]	Fuel Ethanol[h,i]	Losses and Co-products[j]	Total	Total	Fuel Ethanol[i,k]	Biodiesel[l]	Other[m]	Total
1950 Total	**69**	**NA**	**NA**	**NA**	**532**	**NA**	**NA**	**NA**	**532**	**602**	**NA**	**NA**	**NA**	**NA**
1955 Total	**38**	**NA**	**NA**	**NA**	**631**	**NA**	**NA**	**NA**	**631**	**669**	**NA**	**NA**	**NA**	**NA**
1960 Total	**39**	**NA**	**NA**	**NA**	**680**	**NA**	**NA**	**NA**	**680**	**719**	**NA**	**NA**	**NA**	**NA**
1965 Total	**33**	**NA**	**NA**	**NA**	**855**	**NA**	**NA**	**NA**	**855**	**888**	**NA**	**NA**	**NA**	**NA**
1970 Total	**34**	**NA**	**NA**	**NA**	**1,019**	**NA**	**NA**	**NA**	**1,019**	**1,053**	**NA**	**NA**	**NA**	**NA**
1975 Total	**32**	**NA**	**NA**	**NA**	**1,063**	**NA**	**NA**	**NA**	**1,063**	**1,096**	**NA**	**NA**	**NA**	**NA**
1980 Total	**33**	**NA**	**NA**	**NA**	**1,600**	**NA**	**NA**	**NA**	**1,600**	**1,633**	**NA**	**NA**	**NA**	**NA**
1985 Total	**33**	**NA**	**NA**	**NA**	**1,645**	**230**	**1**	**42**	**1,918**	**1,951**	**50**	**NA**	**NA**	**50**
1990 Total	**31**	**2**	**(s)**	**–**	**1,442**	**192**	**1**	**49**	**1,684**	**1,717**	**60**	**NA**	**NA**	**60**
1995 Total	**55**	**3**	**(s)**	**–**	**1,652**	**195**	**2**	**86**	**1,934**	**1,992**	**112**	**NA**	**NA**	**112**
2000 Total	**42**	**4**	**(s)**	**–**	**1,636**	**145**	**1**	**99**	**1,881**	**1,928**	**135**	**NA**	**NA**	**135**
2001 Total	**33**	**5**	**(s)**	**–**	**1,443**	**129**	**3**	**108**	**1,681**	**1,719**	**141**	**1**	**NA**	**142**
2002 Total	**39**	**5**	**(s)**	**–**	**1,396**	**146**	**3**	**130**	**1,676**	**1,720**	**168**	**2**	**NA**	**170**
2003 Total	**43**	**3**	**(s)**	**–**	**1,363**	**142**	**4**	**168**	**1,678**	**1,725**	**228**	**2**	**NA**	**230**
2004 Total	**33**	**4**	**(s)**	**–**	**1,476**	**132**	**6**	**201**	**1,815**	**1,852**	**286**	**3**	**NA**	**290**
2005 Total	**32**	**4**	**(s)**	**–**	**1,452**	**148**	**7**	**227**	**1,834**	**1,871**	**327**	**12**	**NA**	**339**
2006 Total	**29**	**4**	**1**	**–**	**1,472**	**130**	**10**	**280**	**1,892**	**1,926**	**442**	**33**	**NA**	**475**
2007 Total	**16**	**5**	**1**	**–**	**1,413**	**145**	**10**	**369**	**1,937**	**1,958**	**557**	**45**	**NA**	**602**
2008 Total	**17**	**5**	**1**	**–**	**1,339**	**143**	**12**	**519**	**2,012**	**2,035**	**786**	**39**	**NA**	**825**
2009 Total	**18**	**4**	**2**	**–**	**1,178**	**154**	**13**	**603**	**1,948**	**1,972**	**894**	**41**	**–**	**935**
2010 Total	**16**	**4**	**3**	**–**	**1,409**	**168**	**17**	**727**	**2,320**	**2,343**	**1,041**	**33**	**(s)**	**1,075**
2011 Total	**17**	**4**	**4**	**(s)**	**1,438**	**165**	**17**	**756**	**2,375**	**2,401**	**1,045**	**113**	**1**	**1,159**
2012 Total	**22**	**4**	**7**	**(s)**	**1,462**	**159**	**17**	**711**	**2,349**	**2,383**	**1,045**	**115**	**1**	**1,160**
2013 Total	**33**	**4**	**9**	**(s)**	**1,489**	**187**	**18**	**709**	**2,403**	**2,449**	**1,072**	**182**	**30**	**1,284**
2014 Total	**12**	**4**	**11**	**1**	**1,495**	**190**	**14**	**757**	**2,456**	**2,484**	**1,093**	**181**	**28**	**1,302**
2015 Total	**13**	**4**	**14**	**(s)**	**1,476**	**190**	**[i]18**	**776**	**2,460**	**2,491**	**[i]1,110**	**191**	**33**	**1,334**
2016 Total	**12**	**4**	**19**	**1**	**1,474**	**174**	**18**	**801**	**2,467**	**2,503**	**1,143**	**266**	**34**	**1,443**
2017 Total	**13**	**4**	**22**	**1**	**1,442**	**168**	**18**	**821**	**2,450**	**2,490**	**1,156**	**253**	**30**	**1,439**
2018 January	1	(s)	1	(s)	124	15	2	70	211	213	96	15	1	113
February	1	(s)	1	(s)	111	14	1	64	190	193	82	15	2	99
March	1	(s)	2	(s)	122	15	2	70	208	211	96	20	3	119
April	1	(s)	2	(s)	115	14	1	66	197	200	90	20	2	112
May	1	(s)	2	(s)	121	14	2	70	206	210	104	21	2	127
June	1	(s)	2	(s)	118	12	2	69	200	204	98	23	1	121
July	1	(s)	3	(s)	124	13	2	72	210	214	101	21	1	124
August	1	(s)	2	(s)	123	13	2	73	211	214	104	24	1	129
September	1	(s)	2	(s)	115	12	1	66	195	199	90	22	1	113
October	1	(s)	2	(s)	119	14	2	70	205	208	99	22	1	122
November	1	(s)	2	(s)	118	14	2	68	202	205	95	20	2	117
December	1	(s)	1	(s)	127	15	2	68	212	215	97	21	2	119
Total	**10**	**4**	**24**	**1**	**1,438**	**165**	**19**	**824**	**2,446**	**2,486**	**1,152**	**243**	**19**	**1,415**
2019 January	1	(s)	2	(s)	124	14	1	67	207	210	89	16	2	107
February	1	(s)	2	(s)	112	13	1	61	187	190	90	17	1	108
March	1	(s)	2	(s)	120	14	2	66	201	205	95	20	1	117
April	1	(s)	3	(s)	113	13	2	66	193	197	94	20	2	115
May	1	(s)	3	(s)	117	13	2	69	200	204	103	22	2	126
June	1	(s)	3	(s)	115	12	2	68	197	201	100	20	2	122
July	1	(s)	3	(s)	121	12	2	69	204	208	100	22	2	124
August	1	(s)	3	(s)	121	12	2	68	203	207	100	21	2	122
September	(s)	(s)	3	(s)	114	12	2	62	189	193	93	19	1	113
October	1	(s)	2	(s)	117	14	2	66	198	202	101	19	1	121
November	1	(s)	2	(s)	117	13	2	67	199	202	99	17	(s)	116
December	1	(s)	2	(s)	122	14	2	71	208	211	98	19	2	119
Total	**9**	**4**	**28**	**1**	**1,413**	**156**	**19**	**800**	**2,387**	**2,429**	**1,162**	**231**	**18**	**1,411**
2020 January	1	(s)	2	(s)	120	14	2	70	206	209	95	17	2	113
February	1	(s)	2	(s)	113	13	1	64	192	195	86	19	1	106
March	1	(s)	3	(s)	117	14	1	62	194	198	78	18	1	97
April	1	(s)	3	(s)	114	13	1	36	164	168	53	19	3	75
May	1	(s)	3	(s)	118	13	1	44	178	182	78	19	1	98
June	1	(s)	3	1	109	12	1	55	177	182	89	19	1	109
July	1	(s)	3	1	113	12	1	60	187	193	91	23	1	115
August	1	(s)	3	1	112	12	1	60	185	190	89	21	2	111
September	1	(s)	3	1	112	12	1	59	183	188	89	22	1	112
9-Month Total	**7**	**3**	**26**	**3**	**1,028**	**116**	**12**	**510**	**1,666**	**1,705**	**747**	**176**	**13**	**937**
2019 9-Month Total	**7**	**3**	**22**	**1**	**1,057**	**115**	**14**	**596**	**1,782**	**1,815**	**864**	**176**	**14**	**1,054**
2018 9-Month Total	**7**	**3**	**19**	**1**	**1,074**	**122**	**14**	**618**	**1,828**	**1,859**	**861**	**181**	**14**	**1,056**

[a] 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 7.

[b] Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[c] Geothermal heat pump and direct use energy.

[d] Solar photovoltaic (PV) electricity net generation in the industrial sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), both utility-scale and distributed (small-scale). See Table 10.5.

[e] Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[f] Wood and wood-derived fuels.

[g] 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).

[h] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the industrial sector.

[i] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

[j] Losses 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.

[k] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10 and E85, consumed by the transportation sector.

[l] Although there is biodiesel use in other sectors, all biodiesel consumption is assigned to the transportation sector.

[m] Other renewable diesel fuel and other renewable fuels consumption. See "Renewable Diesel Fuel (Other)" and "Renewable Fuels (Other)" in Glossary.

NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Industrial sector data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. Transportation sector data are estimates, except for biodiesel beginning in 2012. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Table 10.2c Renewable Energy Consumption: Electric Power Sector

(Trillion Btu)

	Hydro-electric Power[a]	Geo-thermal[b]	Solar[c]	Wind[d]	Biomass			Total
					Wood[e]	Waste[f]	Total	
1950 Total	**1,346**	**NA**	**NA**	**NA**	**5**	**NA**	**5**	**1,351**
1955 Total	**1,322**	**NA**	**NA**	**NA**	**3**	**NA**	**3**	**1,325**
1960 Total	**1,569**	**(s)**	**NA**	**NA**	**2**	**NA**	**2**	**1,571**
1965 Total	**2,026**	**2**	**NA**	**NA**	**3**	**NA**	**3**	**2,031**
1970 Total	**2,600**	**6**	**NA**	**NA**	**1**	**2**	**4**	**2,609**
1975 Total	**3,122**	**34**	**NA**	**NA**	**(s)**	**2**	**2**	**3,158**
1980 Total	**2,867**	**53**	**NA**	**NA**	**3**	**2**	**4**	**2,925**
1985 Total	**2,937**	**97**	**(s)**	**(s)**	**8**	**7**	**14**	**3,049**
1990 Total[g]	**3,014**	**161**	**4**	**29**	**129**	**188**	**317**	**3,524**
1995 Total	**3,149**	**138**	**5**	**33**	**125**	**296**	**422**	**3,747**
2000 Total	**2,768**	**144**	**5**	**57**	**134**	**318**	**453**	**3,427**
2001 Total	**2,209**	**142**	**6**	**70**	**126**	**211**	**337**	**2,763**
2002 Total	**2,650**	**147**	**6**	**105**	**150**	**230**	**380**	**3,288**
2003 Total	**2,749**	**146**	**5**	**113**	**167**	**230**	**397**	**3,411**
2004 Total	**2,655**	**148**	**6**	**142**	**165**	**223**	**388**	**3,339**
2005 Total	**2,670**	**147**	**6**	**178**	**185**	**221**	**406**	**3,406**
2006 Total	**2,839**	**145**	**5**	**264**	**182**	**231**	**412**	**3,665**
2007 Total	**2,430**	**145**	**6**	**341**	**186**	**237**	**423**	**3,345**
2008 Total	**2,494**	**146**	**9**	**546**	**177**	**258**	**435**	**3,630**
2009 Total	**2,650**	**146**	**9**	**721**	**180**	**261**	**441**	**3,967**
2010 Total	**2,521**	**148**	**12**	**923**	**196**	**264**	**459**	**4,064**
2011 Total	**3,085**	**149**	**17**	**1,167**	**182**	**255**	**437**	**4,855**
2012 Total	**2,606**	**148**	**40**	**1,339**	**190**	**262**	**453**	**4,586**
2013 Total	**2,529**	**151**	**83**	**1,600**	**207**	**262**	**470**	**4,833**
2014 Total	**2,454**	**151**	**165**	**1,726**	**251**	**279**	**530**	**5,026**
2015 Total	**2,308**	**148**	**228**	**1,776**	**244**	**281**	**525**	**4,985**
2016 Total	**2,459**	**146**	**328**	**2,094**	**224**	**281**	**505**	**5,531**
2017 Total	**2,752**	**147**	**486**	**2,341**	**229**	**280**	**510**	**6,235**
2018 January	227	12	30	233	21	24	46	548
February	226	12	35	211	19	23	42	525
March	234	12	46	241	20	24	44	577
April	255	11	55	240	16	23	39	599
May	276	13	62	218	17	23	40	608
June	250	12	67	225	19	23	42	596
July	228	12	61	150	21	23	44	494
August	199	12	60	181	20	23	43	496
September	174	12	54	168	17	21	37	445
October	177	12	45	193	17	23	39	465
November	198	12	34	200	17	23	40	484
December	206	13	28	221	18	23	41	509
Total	**2,651**	**145**	**576**	**2,480**	**221**	**275**	**496**	**6,348**
2019 January	220	12	32	216	19	22	41	520
February	203	11	34	201	16	19	36	484
March	233	12	52	228	16	21	37	563
April	247	11	60	257	14	20	34	607
May	284	12	63	229	16	21	37	624
June	249	12	70	199	16	20	37	567
July	221	12	72	196	19	21	40	540
August	200	12	69	178	19	21	40	500
September	164	12	60	218	17	20	37	490
October	162	10	54	245	15	21	35	506
November	179	8	38	223	16	20	36	485
December	190	10	30	236	18	22	39	506
Total	**2,552**	**134**	**635**	**2,623**	**201**	**248**	**448**	**6,392**
2020 January	225	11	41	250	17	21	38	566
February	234	11	50	259	16	20	36	590
March	208	13	57	260	16	21	37	574
April	195	13	71	261	13	20	33	572
May	271	13	86	251	15	20	35	655
June	258	12	84	265	15	18	33	653
July	246	12	92	200	16	20	35	586
August	215	12	83	200	19	20	39	549
September	170	12	68	206	13	19	33	489
9-Month Total	**2,022**	**109**	**632**	**2,152**	**140**	**179**	**319**	**5,235**
2019 9-Month Total	**2,020**	**105**	**512**	**1,920**	**153**	**185**	**338**	**4,896**
2018 9-Month Total	**2,069**	**108**	**469**	**1,866**	**170**	**206**	**376**	**4,889**

[a] Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[b] Geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[c] Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6). See Table 10.5.

[d] Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[e] Wood and wood-derived fuels.

[f] 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).

[g] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

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 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: Tables 7.2b, 7.4b, and A6.

Table 10.3 Fuel Ethanol Overview

	Feedstock[a]	Losses and Co-products[b]	Denaturant[c]	Production[d]			Trade[d] Net Imports[e]	Stocks[d,f]	Stock Change[d,g]	Consumption[d]			Consumption Minus Denaturant[h]
	TBtu	TBtu	Mbbl	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu	*TBtu*
1981 Total	**13**	**6**	**40**	**1,978**	**83**	**7**	**NA**	**NA**	**NA**	**1,978**	**83**	**7**	***7***
1985 Total	**93**	**42**	**294**	**14,693**	**617**	**52**	**NA**	**NA**	**NA**	**14,693**	**617**	**52**	***51***
1990 Total	**111**	**49**	**356**	**17,802**	**748**	**63**	**NA**	**NA**	**NA**	**17,802**	**748**	**63**	***62***
1995 Total	**198**	**86**	**647**	**32,325**	**1,358**	**115**	**387**	**2,186**	**-207**	**32,919**	**1,383**	**117**	***114***
2000 Total	**233**	**99**	**773**	**38,627**	**1,622**	**138**	**116**	**3,400**	**-624**	**39,367**	**1,653**	**140**	***137***
2001 Total	**253**	**108**	**841**	**42,028**	**1,765**	**150**	**315**	**4,298**	**898**	**41,445**	**1,741**	**148**	***144***
2002 Total	**307**	**130**	**1,019**	**50,956**	**2,140**	**182**	**306**	**6,200**	**1,902**	**49,360**	**2,073**	**176**	***171***
2003 Total	**400**	**168**	**1,335**	**66,772**	**2,804**	**238**	**292**	**5,978**	**-222**	**67,286**	**2,826**	**240**	***233***
2004 Total	**482**	**201**	**1,621**	**81,058**	**3,404**	**289**	**3,542**	**6,002**	**24**	**84,576**	**3,552**	**301**	***293***
2005 Total	**550**	**227**	**1,859**	**92,961**	**3,904**	**331**	**3,234**	**5,563**	**-439**	**96,634**	**4,059**	**344**	***335***
2006 Total	**683**	**280**	**2,326**	**116,294**	**4,884**	**414**	**17,408**	**8,760**	**3,197**	**130,505**	**5,481**	**465**	***453***
2007 Total	**907**	**368**	**3,105**	**155,263**	**6,521**	**553**	**10,457**	**10,535**	**1,775**	**163,945**	**6,886**	**584**	***569***
2008 Total	**1,286**	**518**	**4,433**	**221,637**	**9,309**	**790**	**12,610**	**14,226**	**3,691**	**230,556**	**9,683**	**822**	***800***
2009 Total	**1,503**	**602**	**5,688**	**260,424**	**10,938**	**928**	**4,720**	**16,594**	**2,368**	**262,776**	**11,037**	**937**	***910***
2010 Total	**1,823**	**726**	**6,506**	**316,617**	**13,298**	**1,128**	**-9,115**	**17,941**	**1,347**	**306,155**	**12,858**	**1,091**	***1,061***
2011 Total	**1,904**	**754**	**6,649**	**331,646**	**13,929**	**1,181**	**-24,365**	**18,238**	**297**	**306,984**	**12,893**	**1,093**	***1,065***
2012 Total	**1,801**	**709**	**6,264**	**314,714**	**13,218**	**1,120**	**-5,891**	**20,350**	**2,112**	**306,711**	**12,882**	**1,092**	***1,064***
2013 Total	**1,805**	**707**	**6,181**	**316,493**	**13,293**	**1,127**	**-5,761**	**16,424**	**-3,926**	**314,658**	**13,216**	**1,120**	***1,092***
2014 Total	**1,938**	**755**	**6,476**	**340,781**	**14,313**	**1,213**	**-18,371**	**18,739**	**2,315**	**320,095**	**13,444**	**1,139**	***1,111***
2015 Total	**1,998**	**774**	**6,636**	**352,553**	**14,807**	**1,254**	**-17,632**	**21,596**	**2,857**	**332,064**	**13,947**	**1,181**	***1,153***
2016 Total	**2,072**	**798**	**6,920**	**366,981**	**15,413**	**1,306**	**-27,002**	**19,758**	**-1,838**	**341,817**	**14,356**	**1,216**	***1,187***
2017 Total	**2,138**	**819**	**6,657**	**379,435**	**15,936**	**1,349**	**-31,268**	**23,043**	**3,285**	**344,882**	**14,485**	**1,226**	***1,199***
2018 January	183	70	506	32,577	1,368	116	-2,522	24,342	1,299	28,756	1,208	102	*100*
February	167	64	443	29,674	1,246	105	-4,838	24,722	380	24,456	1,027	87	*85*
March	182	69	487	32,390	1,360	115	-5,516	23,084	-1,638	28,512	1,198	101	*99*
April	173	66	465	30,680	1,289	109	-3,675	23,379	295	26,710	1,122	95	*93*
May	182	69	490	32,389	1,360	115	-2,262	22,654	-725	30,852	1,296	110	*108*
June	180	68	473	31,924	1,341	113	-3,585	21,877	-777	29,116	1,223	103	*102*
July	188	72	519	33,430	1,404	119	-2,439	22,668	791	30,200	1,268	107	*105*
August	190	72	527	33,773	1,418	120	-2,494	22,824	156	31,123	1,307	111	*108*
September	173	66	471	30,667	1,288	109	-2,313	24,412	1,588	26,766	1,124	95	*93*
October	182	69	450	32,358	1,359	115	-3,614	23,698	-714	29,458	1,237	105	*103*
November	178	68	470	31,529	1,324	112	-3,229	23,618	-80	28,380	1,192	101	*99*
December	178	68	518	31,736	1,333	113	-2,924	23,418	-200	29,012	1,219	103	*101*
Total	**2,156**	**821**	**5,819**	**383,127**	**16,091**	**1,361**	**-39,410**	**23,418**	**375**	**343,342**	**14,420**	**1,220**	***1,197***
2019 January	177	67	550	31,603	1,327	112	-3,243	25,115	1,697	26,663	1,120	95	*93*
February	160	61	498	28,599	1,201	102	-2,283	24,506	-609	26,925	1,131	96	*94*
March	173	65	504	30,863	1,296	110	-3,653	23,396	-1,110	28,320	1,189	101	*99*
April	174	66	462	30,981	1,301	110	-3,195	23,331	-65	27,851	1,170	99	*97*
May	182	69	471	32,466	1,364	115	-2,355	22,843	-488	30,599	1,285	109	*107*
June	179	68	505	31,898	1,340	113	-2,340	22,583	-260	29,818	1,252	106	*104*
July	182	69	512	32,541	1,367	116	-2,312	22,892	309	29,920	1,257	106	*104*
August	179	68	513	31,921	1,341	113	-2,397	22,727	-165	29,689	1,247	106	*103*
September	164	62	474	29,232	1,228	104	-1,237	23,012	285	27,710	1,164	99	*96*
October	173	66	504	30,941	1,300	110	-1,998	21,784	-1,228	30,171	1,267	107	*105*
November	176	66	536	31,358	1,317	111	-2,029	21,646	-138	29,467	1,238	105	*102*
December	186	71	560	33,275	1,398	118	-3,234	22,352	706	29,335	1,232	104	*102*
Total	**2,104**	**796**	**6,089**	**375,678**	**15,778**	**1,336**	**-30,276**	**22,352**	**-1,066**	**346,468**	**14,552**	**1,232**	***1,206***
2020 January	186	70	543	33,343	1,400	119	-3,426	24,047	[i] 1,698	28,219	1,185	100	*98*
February	170	64	478	30,516	1,282	108	-4,376	24,555	508	25,632	1,077	91	*89*
March	164	62	478	29,406	1,235	105	-3,082	27,501	2,946	23,378	982	83	*81*
April	94	36	311	16,945	712	60	-2,457	26,102	-1,399	15,887	667	56	*55*
May	118	44	382	21,098	886	75	-1,622	22,247	-3,855	23,331	980	83	*81*
June	145	54	472	25,958	1,090	92	-1,883	19,826	-2,421	26,496	1,113	94	*92*
July	160	60	530	28,707	1,206	102	-1,508	19,784	-42	27,241	1,144	97	*95*
August	158	60	512	28,419	1,194	101	-1,563	20,143	359	26,497	1,113	94	*92*
September	155	58	497	27,778	1,167	99	-1,410	20,027	-116	26,484	1,112	94	*92*
9-Month Total	**1,350**	**508**	**4,203**	**242,170**	**10,171**	**861**	**-21,327**	**20,027**	**-2,322**	**223,165**	**9,373**	**793**	***776***
2019 9-Month Total	**1,569**	**594**	**4,489**	**280,104**	**11,764**	**996**	**-23,014**	**23,012**	**-406**	**257,496**	**10,815**	**915**	***897***
2018 9-Month Total	**1,618**	**616**	**4,381**	**287,504**	**12,075**	**1,022**	**-29,643**	**24,412**	**1,369**	**256,492**	**10,773**	**911**	***894***

[a] Total corn and other biomass inputs to the production of undenatured ethanol used for fuel ethanol.

[b] Losses 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.

[c] The amount of denaturant in fuel ethanol produced.

[d] Includes denaturant.

[e] Through 2009, data are for fuel ethanol imports only; data for fuel ethanol exports are not available. Beginning in 2010, data are for fuel ethanol imports minus fuel ethanol (including industrial alcohol) exports.

[f] Stocks are at end of period.

[g] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[h] Consumption of fuel ethanol minus denaturant. Data for fuel ethanol minus denaturant are used to develop data for "Renewable Energy/Biomass" in Tables 10.1–10.2b, as well as in Sections 1 and 2.

[i] Derived from the preliminary 2019 stocks value (22,349 thousand barrels), not the final 2019 value (22,352 thousand barrels) that is shown under "Stocks."

NA=Not available.

Notes: • Mbbl = thousand barrels. MMgal = million U.S. gallons. TBtu = trillion Btu. • Fuel ethanol data in thousand barrels are converted to million gallons by multiplying by 0.042, and are converted to Btu by multiplying by the approximate heat content of fuel ethanol—see Table A3. • Through 1980, data are not available. For 1981–1992, data are estimates. For 1993–2008, only data for feedstock, losses and co-products, and denaturant are estimates. Beginning in 2009, only data for feedstock, and losses and co-products, are estimates. • See "Denaturant," "Ethanol," "Fuel Ethanol," and "Fuel Ethanol Minus Denaturant" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1981.

Sources: See end of section.

Table 10.4 Biodiesel and Other Renewable Fuels Overview

	Biodiesel													Other Renewable Fuels[f]
	Feedstock[a]	Losses and Co-products[b]	Production			Trade			Stocks[d]	Stock Change[e]	Consumption			
						Imports	Exports	Net Imports[c]						
	TBtu	TBtu	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu	TBtu
2001 Total	**1**	**(s)**	**204**	**9**	**1**	**81**	**41**	**40**	**NA**	**NA**	**244**	**10**	**1**	**NA**
2002 Total	**1**	**(s)**	**250**	**10**	**1**	**197**	**57**	**140**	**NA**	**NA**	**390**	**16**	**2**	**NA**
2003 Total	**2**	**(s)**	**338**	**14**	**2**	**97**	**113**	**-17**	**NA**	**NA**	**322**	**14**	**2**	**NA**
2004 Total	**4**	**(s)**	**666**	**28**	**4**	**101**	**128**	**-27**	**NA**	**NA**	**639**	**27**	**3**	**NA**
2005 Total	**12**	**(s)**	**2,162**	**91**	**12**	**214**	**213**	**1**	**NA**	**NA**	**2,163**	**91**	**12**	**NA**
2006 Total	**32**	**(s)**	**5,963**	**250**	**32**	**1,105**	**856**	**250**	**NA**	**NA**	**6,213**	**261**	**33**	**NA**
2007 Total	**63**	**1**	**11,662**	**490**	**62**	**3,455**	**6,696**	**-3,241**	**NA**	**NA**	**8,422**	**354**	**45**	**NA**
2008 Total	**88**	**1**	**16,145**	**678**	**87**	**7,755**	**16,673**	**-8,918**	**NA**	**NA**	**7,228**	**304**	**39**	**NA**
2009 Total	**67**	**1**	**12,281**	**516**	**66**	**1,906**	**6,546**	**-4,640**	**711**	**711**	**[g] 7,663**	**322**	**41**	**–**
2010 Total	**44**	**1**	**8,177**	**343**	**44**	**564**	**2,588**	**-2,024**	**672**	**-39**	**6,192**	**260**	**33**	**(s)**
2011 Total	**125**	**2**	**23,035**	**967**	**123**	**890**	**1,799**	**-908**	**2,005**	**[h] 1,028**	**21,099**	**886**	**113**	**1**
2012 Total	**128**	**2**	**23,588**	**991**	**126**	**853**	**3,056**	**-2,203**	**1,984**	**-20**	**21,406**	**899**	**115**	**1**
2013 Total	**176**	**2**	**32,368**	**1,359**	**173**	**8,152**	**4,675**	**3,477**	**3,810**	**1,825**	**34,020**	**1,429**	**182**	**30**
2014 Total	**165**	**2**	**30,452**	**1,279**	**163**	**4,578**	**1,974**	**2,604**	**3,131**	**-679**	**33,735**	**1,417**	**181**	**28**
2015 Total	**163**	**2**	**30,080**	**1,263**	**161**	**8,399**	**2,091**	**6,308**	**3,943**	**813**	**35,575**	**1,494**	**191**	**33**
2016 Total	**203**	**3**	**37,327**	**1,568**	**200**	**16,879**	**2,098**	**14,781**	**6,398**	**2,454**	**49,653**	**2,085**	**266**	**34**
2017 Total	**206**	**3**	**37,993**	**1,596**	**204**	**9,374**	**2,228**	**7,146**	**4,268**	**-2,130**	**47,269**	**1,985**	**253**	**30**
2018 January	16	(s)	2,989	126	16	246	84	162	4,565	297	2,853	120	15	1
February	17	(s)	3,046	128	16	146	103	43	4,934	369	2,720	114	15	2
March	19	(s)	3,551	149	19	457	257	200	4,925	-9	3,760	158	20	3
April	18	(s)	3,393	143	18	308	217	91	4,716	-209	3,693	155	20	2
May	20	(s)	3,603	151	19	325	396	-71	4,275	-441	3,972	167	21	2
June	21	(s)	3,783	159	20	296	276	20	3,850	-425	4,228	178	23	1
July	22	(s)	3,960	166	21	157	259	-102	3,742	-107	3,966	167	21	1
August	22	(s)	4,102	172	22	281	263	18	3,425	-318	4,437	186	24	1
September	21	(s)	3,914	164	21	277	191	86	3,371	-54	4,054	170	22	1
October	22	(s)	4,070	171	22	467	204	263	3,647	276	4,058	170	22	1
November	21	(s)	3,816	160	20	473	143	330	4,039	392	3,754	158	20	2
December	22	(s)	3,995	168	21	536	77	459	4,662	623	3,831	161	21	2
Total	**240**	**3**	**44,222**	**1,857**	**237**	**3,969**	**2,470**	**1,499**	**4,662**	**394**	**45,326**	**1,904**	**243**	**19**
2019 January	19	(s)	3,427	144	18	308	85	223	5,354	692	2,957	124	16	2
February	17	(s)	3,108	131	17	233	91	142	5,502	148	3,101	130	17	1
March	18	(s)	3,353	141	18	543	226	317	5,389	-113	3,783	159	20	1
April	20	(s)	3,623	152	19	410	370	40	5,330	-59	3,721	156	20	2
May	20	(s)	3,681	155	20	281	440	-159	4,815	-515	4,037	170	22	2
June	18	(s)	3,370	142	18	310	300	10	4,408	-406	3,787	159	20	2
July	21	(s)	3,776	159	20	333	392	-59	4,088	-321	4,039	170	22	2
August	20	(s)	3,712	156	20	216	291	-75	3,860	-228	3,865	162	21	2
September	18	(s)	3,377	142	18	280	238	42	3,706	-154	3,574	150	19	1
October	19	(s)	3,436	144	18	314	158	156	3,738	32	3,560	150	19	1
November	16	(s)	3,034	127	16	417	56	361	3,887	149	3,246	136	17	(s)
December	17	(s)	3,163	133	17	433	83	350	3,907	20	3,493	147	19	2
Total	**223**	**3**	**41,060**	**1,725**	**220**	**4,078**	**2,730**	**1,348**	**3,907**	**-756**	**43,163**	**1,813**	**231**	**18**
2020 January	17	(s)	3,196	134	17	336	31	305	4,312	[i] 394	3,107	130	17	2
February	17	(s)	3,067	129	16	302	76	226	4,046	-266	3,559	149	19	1
March	20	(s)	3,594	151	19	333	215	118	4,419	373	3,339	140	18	1
April	19	(s)	3,407	143	18	611	526	85	4,392	-27	3,519	148	19	3
May	19	(s)	3,505	147	19	475	496	-21	4,340	-51	3,535	148	19	1
June	20	(s)	3,590	151	19	446	494	-48	4,318	-23	3,565	150	19	1
July	21	(s)	3,849	162	21	346	341	5	3,878	-440	4,294	180	23	1
August	21	(s)	3,872	163	21	234	524	-290	3,560	-318	3,900	164	21	2
September	21	(s)	3,790	159	20	360	426	-66	3,220	-340	4,064	171	22	1
9-Month Total	**173**	**2**	**31,870**	**1,339**	**171**	**3,443**	**3,130**	**313**	**3,220**	**-698**	**32,881**	**1,381**	**176**	**13**
2019 9-Month Total	**171**	**2**	**31,427**	**1,320**	**168**	**2,914**	**2,434**	**480**	**3,706**	**-956**	**32,863**	**1,380**	**176**	**14**
2018 9-Month Total	**176**	**2**	**32,341**	**1,358**	**173**	**2,493**	**2,047**	**446**	**3,371**	**-897**	**33,683**	**1,415**	**181**	**14**

[a] Total vegetable oil and other biomass inputs to the production of biodiesel—calculated by multiplying biodiesel production by 5.433 million Btu per barrel. See "Biodiesel Feedstock" entry in the "Thermal Conversion Factor Source Documentation" at the end of Appendix A.

[b] Losses 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.

[c] Net imports equal imports minus exports.

[d] Stocks are at end of period. Includes biodiesel stocks at (or in) refineries, pipelines, and bulk terminals. Beginning in 2011, also includes stocks at biodiesel production plants.

[e] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[f] Other renewable diesel fuel and other renewable fuels consumption. See "Renewable Diesel Fuel (Other)" and "Renewable Fuels (Other)" in Glossary.

[g] In 2009, because of incomplete data coverage and differing data sources, a "Balancing Item" amount of 733 thousand barrels (653 thousand barrels in January 2009; 80 thousand barrels in February 2009) is used to balance biodiesel supply and disposition.

[h] Derived from the final 2010 stocks value for bulk terminals and biodiesel production plants (977 thousand barrels), not the final 2010 value for bulk terminals only (672 thousand barrels) that is shown under "Stocks."

[i] Derived from the preliminary 2019 stocks value (3,919 thousand barrels), not the final 2019 value (3,907 thousand barrels) that is shown under "Stocks."

NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu, or less than 500 barrels and greater than -500 barrels.

Notes: • Mbbl = thousand barrels. MMgal = million U.S. gallons. TBtu = trillion Btu. • Biodiesel data in thousand barrels are converted to million gallons by multiplying by 0.042, and are converted to Btu by multiplying by 5.359 million Btu per barrel (the approximate heat content of biodiesel—see Table A1). • Through 2000, data are not available. Beginning in 2001, data not from U.S. Energy Information Administration (EIA) surveys are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 2001.

Sources: See end of section.

Table 10.5 Solar Energy Consumption

(Trillion Btu)

	Distributed[a] Solar Energy[b]						Utility-Scale[c] Solar Energy[b]				
		Electricity[d]					Electricity[e]				
	Heat[f]	Residential Sector	Commercial Sector	Industrial Sector	Total	Total[g]	Commercial Sector[h]	Industrial Sector[i]	Electric Power Sector[j]	Total	Total[k]
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**(s)**	**(s)**	**(s)**
1990 Total	**55**	**(s)**	**(s)**	**(s)**	**(s)**	**55**	**–**	**–**	**4**	**4**	**59**
1995 Total	**63**	**(s)**	**(s)**	**(s)**	**1**	**63**	**–**	**–**	**5**	**5**	**68**
2000 Total	**57**	**(s)**	**1**	**(s)**	**1**	**58**	**–**	**–**	**5**	**5**	**63**
2001 Total	**55**	**(s)**	**1**	**(s)**	**1**	**56**	**–**	**–**	**6**	**6**	**62**
2002 Total	**53**	**1**	**1**	**(s)**	**2**	**54**	**–**	**–**	**6**	**6**	**60**
2003 Total	**51**	**1**	**1**	**(s)**	**2**	**53**	**–**	**–**	**5**	**5**	**58**
2004 Total	**50**	**1**	**1**	**(s)**	**2**	**53**	**–**	**–**	**6**	**6**	**58**
2005 Total	**49**	**1**	**2**	**(s)**	**3**	**52**	**–**	**–**	**6**	**6**	**58**
2006 Total	**51**	**2**	**3**	**1**	**5**	**56**	**–**	**–**	**5**	**5**	**61**
2007 Total	**53**	**2**	**4**	**1**	**7**	**60**	**–**	**–**	**6**	**6**	**66**
2008 Total	**54**	**4**	**6**	**1**	**11**	**66**	**(s)**	**–**	**9**	**9**	**74**
2009 Total	**55**	**5**	**8**	**2**	**15**	**69**	**(s)**	**–**	**9**	**9**	**78**
2010 Total	**56**	**9**	**12**	**3**	**24**	**79**	**(s)**	**(s)**	**12**	**12**	**91**
2011 Total	**58**	**13**	**20**	**4**	**37**	**95**	**1**	**(s)**	**17**	**18**	**112**
2012 Total	**59**	**20**	**32**	**7**	**59**	**118**	**1**	**(s)**	**40**	**41**	**159**
2013 Total	**61**	**31**	**38**	**9**	**78**	**138**	**3**	**(s)**	**83**	**86**	**225**
2014 Total	**62**	**47**	**49**	**11**	**107**	**169**	**4**	**(s)**	**165**	**168**	**338**
2015 Total	**63**	**65**	**53**	**14**	**132**	**195**	**4**	**(s)**	**228**	**232**	**427**
2016 Total	**64**	**98**	**57**	**19**	**174**	**238**	**5**	**(s)**	**328**	**333**	**570**
2017 Total	**65**	**128**	**71**	**22**	**221**	**286**	**5**	**(s)**	**486**	**491**	**777**
2018 January	4	8	5	1	15	18	(s)	(s)	30	30	49
February	4	9	6	1	16	20	(s)	(s)	35	35	55
March	5	13	7	2	22	28	(s)	(s)	46	46	74
April	6	14	8	2	25	31	(s)	(s)	55	55	86
May	7	16	9	2	27	34	1	(s)	62	62	96
June	7	16	9	2	28	35	1	(s)	67	68	102
July	7	17	9	3	29	36	1	(s)	61	61	97
August	7	16	9	2	27	34	1	(s)	60	61	95
September	6	14	8	2	24	30	(s)	(s)	54	54	85
October	5	13	7	2	22	27	(s)	(s)	45	45	72
November	4	10	6	2	17	22	(s)	(s)	34	34	56
December	4	9	5	1	16	20	(s)	(s)	28	28	48
Total	**66**	**156**	**89**	**24**	**269**	**334**	**5**	**(s)**	**576**	**581**	**916**
2019 January	4	10	6	1	17	21	(s)	(s)	32	32	52
February	4	11	6	2	18	22	(s)	(s)	34	34	56
March	6	15	8	2	26	31	(s)	(s)	52	53	84
April	6	17	9	2	29	35	(s)	(s)	60	60	95
May	7	19	10	3	32	38	1	(s)	63	64	102
June	7	19	10	3	32	39	1	(s)	70	71	110
July	7	20	10	3	33	41	1	(s)	72	72	113
August	7	19	10	3	32	39	1	(s)	69	70	109
September	6	17	9	3	29	35	(s)	(s)	60	61	95
October	5	15	8	2	25	31	(s)	(s)	54	54	85
November	4	12	6	2	20	24	(s)	(s)	38	39	63
December	4	11	6	2	18	22	(s)	(s)	30	31	53
Total	**66**	**186**	**98**	**27**	**311**	**377**	**5**	**1**	**635**	**641**	**1,018**
2020 January	4	12	7	2	21	24	(s)	(s)	41	42	66
February	4	14	7	2	23	27	(s)	(s)	50	51	78
March	6	18	10	3	31	36	(s)	(s)	57	57	93
April	6	21	11	3	34	40	1	(s)	71	72	112
May	7	23	12	3	38	45	1	(s)	86	87	131
June	7	23	12	3	38	45	1	(s)	84	85	130
July	7	24	12	3	40	47	1	(s)	92	92	139
August	7	23	12	3	38	45	1	(s)	83	83	128
September	6	20	11	3	33	40	(s)	(s)	68	69	109
9-Month Total	**53**	**178**	**92**	**25**	**296**	**348**	**5**	**1**	**632**	**638**	**987**
2019 9-Month Total	**53**	**148**	**78**	**21**	**248**	**301**	**4**	**1**	**512**	**517**	**817**
2018 9-Month Total	**52**	**124**	**71**	**19**	**214**	**266**	**4**	**(s)**	**469**	**473**	**739**

[a] Data are estimates for distributed (small-scale) facilities (combined generator nameplate capacity less than 1 megawatt).

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Data are for utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] Solar photovoltaic (PV) electricity generation at distributed (small-scale) facilities connected to the electric power grid (converted to Btu by multiplying by the fossil fuels heat rate factors in Table A6).

[e] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (converted to Btu by multiplying by the fossil fuels heat rate factors in Table A6).

[f] Solar thermal direct use energy in the residential, commercial, and industrial sectors for all end uses, such as pool heating, hot water heating, and space heating.

[g] Data are the sum of "Distributed Solar Energy Heat" and "Distributed Solar Energy Electricity."

[h] 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 7.

[i] 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 7.

[j] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[k] Data are the sum of "Distributed Solar Energy Total" and "Utility-Scale Solar Energy Total."

NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Distributed (small-scale) solar energy data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: See end of section.

Table 10.6 Solar Electricity Net Generation

(Million Kilowatthours)

	Distributed[a] Solar Generation[b]				Utility-Scale[c] Solar Generation[b]				
	Residential Sector	Commercial Sector	Industrial Sector	Total	Commercial Sector[d]	Industrial Sector[e]	Electric Power Sector[f]	Total	Total
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**11**	**11**	**11**
1990 Total	**12**	**18**	**4**	**33**	**–**	**–**	**367**	**367**	**400**
1995 Total	**20**	**30**	**7**	**58**	**–**	**–**	**497**	**497**	**554**
2000 Total	**39**	**59**	**13**	**110**	**–**	**–**	**493**	**493**	**604**
2001 Total	**47**	**71**	**16**	**134**	**–**	**–**	**543**	**543**	**676**
2002 Total	**56**	**84**	**19**	**158**	**–**	**–**	**555**	**555**	**713**
2003 Total	**65**	**98**	**22**	**185**	**–**	**–**	**534**	**534**	**719**
2004 Total	**81**	**121**	**27**	**229**	**–**	**–**	**575**	**575**	**804**
2005 Total	**121**	**182**	**40**	**344**	**–**	**–**	**550**	**550**	**894**
2006 Total	**177**	**266**	**59**	**501**	**–**	**–**	**508**	**508**	**1,009**
2007 Total	**250**	**375**	**83**	**708**	**–**	**–**	**612**	**612**	**1,319**
2008 Total	**401**	**603**	**133**	**1,137**	**(s)**	**–**	**864**	**864**	**2,002**
2009 Total	**539**	**810**	**179**	**1,529**	**(s)**	**–**	**891**	**891**	**2,420**
2010 Total	**900**	**1,237**	**274**	**2,411**	**5**	**2**	**1,206**	**1,212**	**3,623**
2011 Total	**1,358**	**2,020**	**447**	**3,825**	**84**	**7**	**1,727**	**1,818**	**5,643**
2012 Total	**2,058**	**3,351**	**742**	**6,151**	**148**	**14**	**4,164**	**4,327**	**10,478**
2013 Total	**3,217**	**4,024**	**891**	**8,132**	**294**	**17**	**8,724**	**9,036**	**17,167**
2014 Total	**4,947**	**5,146**	**1,139**	**11,233**	**371**	**16**	**17,304**	**17,691**	**28,924**
2015 Total	**6,999**	**5,689**	**1,451**	**14,139**	**416**	**21**	**24,456**	**24,893**	**39,032**
2016 Total	**10,595**	**6,158**	**2,060**	**18,812**	**529**	**27**	**35,497**	**36,054**	**54,866**
2017 Total	**13,942**	**7,685**	**2,364**	**23,990**	**521**	**42**	**52,724**	**53,287**	**77,277**
2018 January	921	552	146	1,619	29	2	3,288	3,319	4,938
February	1,007	605	155	1,766	31	3	3,863	3,896	5,663
March	1,393	820	221	2,434	43	4	5,009	5,056	7,490
April	1,592	907	241	2,740	50	4	6,002	6,057	8,796
May	1,753	992	267	3,011	57	5	6,788	6,849	9,860
June	1,788	1,003	268	3,059	62	5	7,347	7,415	10,474
July	1,834	1,036	277	3,146	59	5	6,691	6,755	9,901
August	1,756	993	268	3,017	56	5	6,634	6,695	9,712
September	1,539	893	242	2,674	46	4	5,911	5,961	8,635
October	1,385	786	220	2,392	39	4	4,926	4,970	7,361
November	1,108	623	174	1,905	29	3	3,711	3,743	5,648
December	1,029	589	157	1,775	25	2	3,083	3,110	4,885
Total	**17,105**	**9,798**	**2,636**	**29,539**	**525**	**47**	**63,253**	**63,825**	**93,365**
2019 January	1,107	629	168	1,903	30	4	3,546	3,580	5,483
February	1,205	676	178	2,059	34	5	3,798	3,836	5,895
March	1,727	933	254	2,914	50	7	5,841	5,899	8,813
April	1,935	1,032	278	3,245	54	8	6,690	6,752	9,997
May	2,130	1,110	309	3,549	58	9	7,095	7,162	10,711
June	2,175	1,118	311	3,604	63	10	7,898	7,971	11,575
July	2,268	1,171	321	3,760	69	10	8,053	8,133	11,893
August	2,184	1,116	311	3,611	64	9	7,803	7,877	11,488
September	1,930	994	281	3,205	55	8	6,754	6,817	10,022
October	1,697	881	255	2,833	46	7	6,040	6,093	8,926
November	1,346	683	198	2,228	36	5	4,323	4,364	6,592
December	1,210	657	179	2,047	26	4	3,423	3,453	5,500
Total	**20,914**	**11,002**	**3,041**	**34,957**	**587**	**85**	**71,265**	**71,937**	**106,894**
2020 January	1,385	736	193	2,314	37	6	4,648	4,690	7,004
February	1,579	835	214	2,627	44	7	5,667	5,717	8,344
March	2,050	1,091	295	3,435	52	8	6,374	6,434	9,869
April	2,312	1,200	318	3,829	64	10	7,975	8,048	11,878
May	2,612	1,313	351	4,277	75	13	9,646	9,734	14,011
June	2,613	1,319	357	4,288	72	13	9,444	9,529	13,817
July	2,691	1,378	372	4,442	78	14	10,287	10,379	14,821
August	2,550	1,330	360	4,240	68	12	9,290	9,370	13,610
September	2,250	1,182	324	3,756	56	11	7,690	7,757	11,514
9-Month Total	**20,042**	**10,384**	**2,782**	**33,208**	**545**	**94**	**71,021**	**71,660**	**104,868**
2019 9-Month Total	**16,661**	**8,780**	**2,409**	**27,851**	**479**	**70**	**57,478**	**58,026**	**85,877**
2018 9-Month Total	**13,583**	**7,800**	**2,085**	**23,467**	**432**	**38**	**51,533**	**52,003**	**75,471**

[a] Data are estimates for solar photovoltaic (PV) electricity generation at small-scale facilities (combined generator nameplate capacity less than 1 megawatt) connected to the electric power grid.

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] 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 7.

[e] 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 7.

[f] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

NA=Not available. – =No data reported. (s)=Less than 0.5 million kilowatthours.

Notes: • Distributed (small-scale) solar generation data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: • **Distributed Solar Generation: 1989–2013—**Calculated as distributed solar energy consumption (see Table 10.5) divided by the total fossil fuels heat rate factors (see Table A6). **2014 forward—**U.S. Energy Information Administration (EIA), *Electric Power Monthly,* monthly reports, Tables 1.1, 1.2.C, 1.2.D, and 1.2.E. • **Utility-Scale Solar Generation: 1984–1988—**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." **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report." • **Total:** Calculated as distributed solar generation plus utility-scale solar generation.

Note. Renewable Energy Production and Consumption. In Tables 1.1, 1.3, and 10.1, renewable energy consumption consists of: conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6); geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and geothermal heat pump and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and solar thermal direct use energy; wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6); 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 (minus denaturant), biodiesel, and other renewable fuels consumption; and losses and co-products from the production of fuel ethanol and biodiesel. In Tables 1.1, 1.2, and 10.1, renewable energy production is assumed to equal consumption for all renewable energy sources except biofuels and wood. Biofuels production comprises biomass inputs to the production of fuel ethanol and biodiesel. Wood production is the sum of wood consumption and densified biomass exports.

Table 10.2a Sources

Residential Sector, Geothermal

1989–2011: Annual estimates by the U.S Energy Information Administration (EIA) based on data from Oregon Institute of Technology, Geo-Heat Center.

2012 forward: Annual estimates assumed by EIA to be equal to that of 2011.

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Residential Sector, Solar

1989 forward: Residential sector solar consumption is the sum of the values for "Distributed Solar Energy Consumption: Heat" (which includes solar thermal direct use energy in the residential, commercial, and industrial sectors) from Table 10.5 and "Distributed Solar Energy Consumption: Electricity, Residential Sector" from Table 10.5.

Residential Sector, Wood

1949–1979: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2.

1980–2008: Annual estimates are based on EIA, Form EIA-457, "Residential Energy Consumption Survey"; and National Oceanic and Atmospheric Administration regional heating degree-day data.

2009 forward: Annual estimates based on EIA, Form EIA-457, “Residential Energy Consumption Survey”; and residential wood consumption growth rates from EIA's *Annual Energy Outlook* data system.

(For 1973 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Residential Sector, Total Renewable Energy

1949–1988: Residential sector total renewable energy consumption is equal to residential sector wood consumption.

1989 forward: Residential sector total renewable energy consumption is the sum of the residential sector consumption values for geothermal, solar, and wood.

Commercial Sector, Hydroelectric Power

1989 forward: Commercial sector conventional hydroelectricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms, are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Commercial Sector, Geothermal Heat Pump and Direct Use Energy
1989–2011: Annual estimates by EIA based on data from Oregon Institute of Technology, Geo-Heat Center.

2012 forward: Annual estimates assumed by EIA to be equal to that of 2011.

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Commercial Sector, Geothermal Electricity Net Generation
December 2018 forward: Commercial sector geothermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Commercial Sector, Geothermal Total
1989–November 2018: Commercial sector geothermal total consumption is equal to commercial sector heat pump and direct use energy.

December 2018 forward: Commercial sector geothermal total consumption is the sum of the commercial sector values for geothermal heat pump and direct use energy, and geothermal electricity net generation.

Commercial Sector, Solar
1989 forward: Commercial sector solar consumption is the sum of the values for "Distributed Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5.

Commercial Sector, Wind
2009 forward: Commercial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Commercial Sector, Wood
1949–1979: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2.

1980–1983: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption 1980 –1983*, Table ES1.

1984: Annual estimate assumed by EIA to be equal to that of 1983.

1985–1988: Annual estimates interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual commercial sector combined-heat-and-power (CHP) wood consumption data are from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms. Annual estimates for commercial sector non-CHP wood consumption are based on EIA, Form EIA-871, "Commercial Buildings Energy Consumption Survey" (for 2014–2016, the annual estimates are based on commercial sector biomass consumption growth rates from EIA's *Annual Energy Outlook* data system; for 2017 forward, annual estimates are assumed by EIA to be equal to that of 2016). For 1989 forward, monthly estimates for commercial sector non-CHP wood consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Commercial sector total wood consumption is the sum of commercial sector CHP and non-CHP wood consumption.

Commercial Sector, Biomass Waste
1989 forward: Table 7.4c.

Commercial Sector, Fuel Ethanol (Minus Denaturant)
1981 forward: The commercial sector share of motor gasoline consumption is equal to commercial sector motor gasoline consumption from Table 3.7a divided by motor gasoline product supplied from Table 3.5. Commercial sector

fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the commercial sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Commercial Sector, Total Biomass

1949–1980: Commercial sector total biomass consumption is equal to commercial sector wood consumption.

1981–1988: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood and fuel ethanol (minus denaturant).

1989 forward: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood, waste, and fuel ethanol (minus denaturant).

Commercial Sector, Total Renewable Energy

1949–1988: Commercial sector total renewable energy consumption is equal to commercial sector total biomass consumption.

1989–2007: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, and total biomass.

2008: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, and total biomass.

2009 forward: Commercial sector total renewable energy is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, wind, and total biomass.

Table 10.2b Sources

Industrial Sector, Hydroelectric Power

1949 forward: Industrial sector conventional hydroelectricity net generation data from Table 7.2c are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Industrial Sector, Geothermal

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on data from Oregon Institute of Technology, Geo-Heat Center.

2010 forward: Annual estimates assumed by EIA to be equal to that of 2009.

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Industrial Sector, Solar

1989 forward: Industrial sector solar consumption is the sum of the values for "Distributed Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.6.

Industrial Sector, Wind

2011 forward: Industrial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Industrial Sector, Wood

1949–1979: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981,* Table A2.

1980–1983: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption 1980 –1983,* Table ES1.

1984: Annual estimate is from EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 1.

1985 and 1986: Annual estimates interpolated by EIA.

1987: Annual estimate is from EIA, *Estimates of Biofuels Consumption in the United States During 1987*, Table 2.

1988: Annual estimate interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual industrial sector combined-heat-and-power (CHP) wood consumption data are from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms. Annual estimates for industrial sector non-CHP wood consumption are based on EIA, Form EIA-846, "Manufacturing Energy Consumption Survey" (for 2015 forward, the annual estimates are assumed by EIA to be equal to that of 2014). For 1989 forward, monthly estimates for industrial sector non-CHP wood consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Industrial sector total wood consumption is the sum of industrial sector CHP and non-CHP wood consumption.

Industrial Sector, Biomass Waste

1981: Annual estimate is calculated as total waste consumption (from EIA, *Estimates of U.S. Biofuels Consumption 199*0, Table 8) minus electric power sector waste consumption (from MER Table 10.2c).

1982 and 1983: Annual estimates are calculated as total waste consumption (based on *Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1984: Annual estimate is calculated as total waste consumption (from EIA*, Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1985 and 1986: Annual estimates interpolated by EIA.

1987: Annual estimate is calculated as total waste consumption (from EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1988: Annual estimate interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual industrial sector combined-heat-and-power (CHP) consumption data are from Table 7.4c. Annual estimates for industrial sector non-CHP waste consumption are 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 (for 2014 forward, the annual estimates are assumed by EIA to be equal to that of 2013). For 1989 forward, monthly estimates for industrial sector non-CHP waste consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Industrial sector total waste consumption is the sum of industrial sector CHP and non-CHP waste consumption.

Industrial Sector, Fuel Ethanol (Minus Denaturant)

1981 forward: The industrial sector share of motor gasoline consumption is equal to industrial sector motor gasoline consumption from Table 3.7b divided by motor gasoline product supplied from Table 3.5. Industrial sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the industrial sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between

2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Industrial Sector, Biomass Losses and Co-products

1981 forward: Calculated as fuel ethanol losses and co-products from Table 10.3 plus biodiesel losses and co-products from Table 10.4.

Industrial Sector, Total Biomass

1949–1980: Industrial sector total biomass consumption is equal to industrial sector wood consumption.

1981 forward: Industrial sector total biomass consumption is the sum of the industrial sector consumption values for wood, waste, fuel ethanol (minus denaturant), and biomass losses and co-products.

Industrial Sector, Total Renewable Energy

1949–1988: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power and total biomass.

1989–2009: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, and total biomass.

2010: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, solar, and total biomass.

2011 forward: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, solar, wind, and total biomass.

Transportation Sector, Fuel Ethanol (Minus Denaturant)

1981 forward: The transportation sector share of motor gasoline consumption is equal to transportation sector motor gasoline consumption from Table 3.7c divided by motor gasoline product supplied from Table 3.5. Transportation sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Transportation Sector, Biodiesel

2001 forward: Table 10.4. Transportation sector biodiesel consumption is assumed to equal total biodiesel consumption.

Transportation Sector, Other Renewable Fuels

2009 forward: Table 10.4.

Transportation Sector, Total Renewable Energy

1981–2000: Transportation sector total renewable energy consumption is equal to transportation sector fuel ethanol (minus denaturant) consumption.

2001–2008: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant) and biodiesel.

2009 forward: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant), biodiesel, and other renewable fuels.

Table 10.3 Sources

Feedstock

1981 forward: Calculated as fuel ethanol production (in thousand barrels) minus denaturant, and then multiplied by the fuel ethanol feedstock factor—see Table A3.

Losses and Co-products

1981 forward: Calculated as fuel ethanol feedstock plus denaturant minus fuel ethanol production.

Denaturant

1981–2008: Data in thousand barrels for petroleum denaturant in fuel ethanol produced are estimated as 2% of fuel ethanol production; these data are converted to Btu by multiplying by 4.661 million Btu per barrel (the estimated quantity-weighted factor of natural gasoline and conventional motor gasoline used as denaturant).

2009–2019: U.S. Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA), annual reports, Table 1. Data in thousand barrels for net production of natural gasoline at renewable fuels and oxygenate plants are multiplied by -1; these data are converted to Btu by multiplying by 4.638 million Btu per barrel (the approximate heat content of natural gasoline). Data in thousand barrels for net production of conventional motor gasoline and motor gasoline blending components at renewable fuels and oxygenate plants are multiplied by -1; these data are converted to Btu by multiplying by 5.222 million Btu per barrel (the approximate heat content of motor gasoline blending components). Total denaturant is the sum of the values for natural gasoline, conventional motor gasoline, and motor gasoline blending components.

2020: EIA, *Petroleum Supply Monthly* (PSM), monthly reports, Table 1. Data in thousand barrels for net production of natural gasoline at renewable fuels and oxygenate plants are multiplied by -1; these data are converted to Btu by multiplying by 4.638 million Btu per barrel (the approximate heat content of natural gasoline). Data in thousand barrels for net production of conventional motor gasoline and motor gasoline blending components at renewable fuels and oxygenate plants are multiplied by -1; these data are converted to Btu by multiplying by 5.222 million Btu per barrel (the approximate heat content of motor gasoline blending components). Total denaturant is the sum of the values for natural gasoline, conventional motor gasoline, and motor gasoline blending components.

Production

1981–1992: Fuel ethanol production is assumed to equal fuel ethanol consumption—see sources for "Consumption."

1993–2004: Calculated as fuel ethanol consumption plus fuel ethanol stock change minus fuel ethanol net imports. These data differ slightly from the original production data from EIA, Form EIA-819, "Monthly Oxygenate Report," and predecessor form, which were not reconciled and updated to be consistent with the final balance.

2005–2008: EIA, Form EIA-819, "Monthly Oxygenate Report."

2009–2019: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

2020: EIA, PSM, monthly reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

Trade, Stocks, and Stock Change

1992–2019: EIA, PSA, annual reports, Table 1.

2020: EIA, PSM, monthly reports, Table 1.

Consumption

1981–1989: EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 10; and interpolated values for 1982, 1983, 1985, 1986, and 1988.

1990–1992: EIA, *Estimates of U.S. Biomass Energy Consumption 1992*, Table D2; and interpolated value for 1991.

1993–2004: EIA, PSA, annual reports, Tables 2 and 16. Calculated as 10% of oxygenated finished motor gasoline field production (Table 2), plus fuel ethanol refinery input (Table 16).

2005–2008: EIA, PSA, annual reports, 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).

2009–2019: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2020: EIA, PSM, monthly reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

Consumption Minus Denaturant

1981 forward: Calculated as fuel ethanol consumption minus the amount of denaturant in fuel ethanol consumed. Denaturant in fuel ethanol consumed is estimated by multiplying denaturant in fuel ethanol produced by the fuel ethanol consumption-to-production ratio.

Table 10.4 Sources

Biodiesel Feedstock

2001 forward: Calculated as biodiesel production in thousand barrels multiplied by 5.433 million Btu per barrel (the biodiesel feedstock factor—see "Biodiesel Feedstock" entry in the "Thermal Conversion Factor Source Documentation" at the end of Appendix A).

Biodiesel Losses and Co-products

2001 forward: Calculated as biodiesel feedstock minus biodiesel production.

Biodiesel Production

2001–2005: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program records. Annual data are derived from quarterly data. Monthly data are estimated by dividing the annual data by the number of days in the year and then multiplying by the number of days in the month.

2006: U.S. Department of Commerce, U.S. Census Bureau, "M311K—Fats and Oils: Production, Consumption, and Stocks," data for soybean oil consumed in methyl esters (biodiesel). In addition, the U.S. Energy Information Administration (EIA) estimates that 14.4 million gallons of yellow grease were consumed in methyl esters (biodiesel).

2007: U.S. Department of Commerce, U.S. Census Bureau, "M311K—Fats and Oils: Production, Consumption, and Stocks," data for all fats and oils consumed in methyl esters (biodiesel).

2008: EIA, *Monthly Biodiesel Production Report*, December 2009 (release date October 2010), Table 11. Monthly data for 2008 are estimated based on U.S. Department of Commerce, U.S. Census Bureau, M311K data, multiplied by the EIA 2008 annual value's share of the M311K 2008 annual value.

2009 and 2010: EIA, *Monthly Biodiesel Production Report*, monthly reports, Table 1.

2011–2019: EIA, *Petroleum Supply Annual* (PSA), annual reports, Table 1, data for renewable fuels except fuel ethanol.

2020: EIA, *Petroleum Supply Monthly* (PSM), monthly reports, Table 1, data for renewable fuels except fuel ethanol.

Biodiesel Trade

2001–2011: For imports, U.S. Department of Agriculture, data for the following Harmonized Tariff Schedule codes: 3824.90.40.20, "Fatty Esters Animal/Vegetable Mixture" (data through June 2010); and 3824.90.40.30,

"Biodiesel/Mixes" (data for July 2010–2011). For exports, U.S. Department of Agriculture, data for the following Schedule B codes: 3824.90.40.00, "Fatty Substances Animal/Vegetable/Mixture" (data through 2010); and 3824.90.40.30, "Biodiesel <70%" (data for 2011). (The data above are converted from pounds to gallons by dividing by 7.4.) Although these categories include products other than biodiesel (such as biodiesel coprocessed with petroleum feedstocks; and products destined for soaps, cosmetics, and other items), biodiesel is the largest component. In the absence of other reliable data for biodiesel trade, EIA sees these data as good substitutes.

2012–2019: EIA, PSA, annual reports, Tables 25 and 31, data for biomass-based diesel fuel.

2020: EIA, PSM, monthly reports, Tables 37 and 49, data for biomass-based diesel fuel.

Biodiesel Stocks and Stock Change

2009 forward: EIA, biodiesel data from EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report."

Biodiesel Consumption

2001–2008: Calculated as biodiesel production plus biodiesel net imports.

January and February 2009: EIA, PSA, Table 1, data for refinery and blender net inputs of renewable fuels except fuel ethanol.

March 2009 forward: Calculated as biodiesel production plus biodiesel net imports minus biodiesel stock change.

Other Renewable Fuels

2009 forward: Consumption data for "Other Renewable Diesel Fuel" are set equal to refinery and blender net inputs data from EIA, EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Consumption data for “Other Renewable Fuels” are set equal to refinery and blender net inputs data from EIA, EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (data are converted to Btu by multiplying by the other renewable fuels heat content factor in Table A1). "Other Renewable Fuels" in Table 10.4 is calculated as other renewable diesel fuel consumption plus other renewable fuels consumption.

Table 10.5 Sources

Distributed Solar Energy Consumption: Heat

Annual Data

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on EIA, Form EIA-63A, "Annual Solar Thermal Collector/Reflector Shipments Report." Solar energy consumption by solar thermal non-electric applications (mainly in the residential sector, but with some in the commercial and industrial sectors) is based on assumptions about the stock of equipment in place and other factors.

2010 forward: Annual estimates based on commercial sector solar thermal growth rates from EIA's *Annual Energy Outlook* (AEO) data system. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: Monthly estimates for each year are obtained by allocating a given year's annual value to the months in that year. Each month's allocator is the average of that month's "Distributed Solar Energy Consumption: Electricity, Total" values in 2014 and 2015. The allocators, when rounded, are as follows: January—5%; February—6%; March—8%; April—9%; May—10%; June—10%; July—10%; August—10%; September—9%; October—9%; November—7%; and December—7%.

2014 forward: Once all 12 months of "Distributed Solar Energy Consumption: Electricity, Total" data are available for a given year, they are used as allocators and applied to the annual estimate in order to derive monthly estimates for that year. Initial monthly estimates for the current year use the previous year's allocators.

Distributed Solar Energy Consumption: Electricity, Residential Sector

Beginning in 2014, monthly and annual data for residential sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.E. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates are calculated based on distributed (small-scale) solar electricity consumption in all sectors. Consumption is estimated using information on shipments of solar panels from EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," and assumptions about the stock of equipment in place and other factors. The growth rates are applied to more recent data to create historical annual estimates.

2004–2008: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

2009–2013: Annual growth rates based on residential sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Commercial Sector

Beginning in 2014, monthly and annual data for commercial sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.C. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Distributed Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Industrial Sector

Beginning in 2014, monthly and annual data for industrial sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.D. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Distributed Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Total

1989 forward: Distributed (small-scale) solar energy consumption for total electricity is the sum of the distributed solar energy consumption (for electricity) values for the residential, commercial, and industrial sectors.

Distributed Solar Energy Consumption: Total

1989 forward: Distributed (small-scale) solar energy consumption total is the sum of distributed solar energy consumption values for heat and total electricity.

Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector

2008 forward: Commercial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector

2010 forward: Industrial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Electric Power Sector

1984 forward: Electric power sector solar photovoltaic and solar thermal electricity net generation data from Table 7.2b are converted to Btu by multiplying the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Total

1984 forward: Utility-scale solar energy consumption for total electricity is the sum of the utility-scale solar energy consumption (for electricity) values for the commercial, industrial, and electric power sectors.

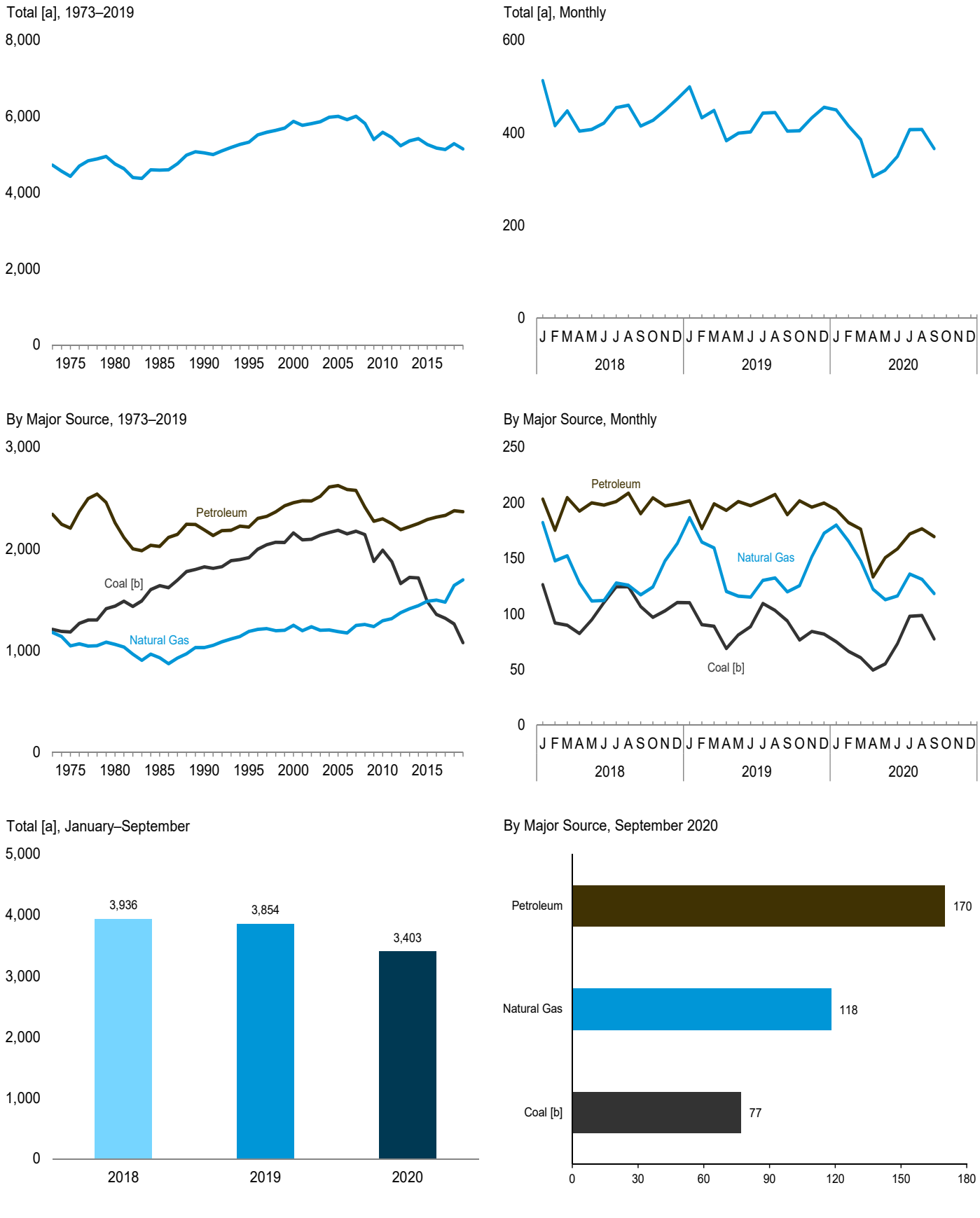
Solar Energy Consumption: Total

1984 forward: Total solar energy consumption is the sum of the values for total distributed solar energy consumption and total utility-scale solar energy consumption.

11. Environment

Figure 11.1 Carbon Dioxide Emissions From Energy Consumption by Source

(Million Metric Tons of Carbon Dioxide)



[a] Excludes emissions from biomass energy consumption.
[b] Includes coal coke net imports.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#environment.
Source: Table 11.1.

Table 11.1 Carbon Dioxide Emissions From Energy Consumption by Source

(Million Metric Tons of Carbon Dioxide[a])

			Petroleum											
	Coal[b]	Natural Gas[c]	Aviation Gasoline	Distillate Fuel Oil[d]	HGL[e]	Jet Fuel	Kero-sene	Lubri-cants	Motor Gasoline[f]	Petroleum Coke	Residual Fuel Oil	Other[g]	Total	Total[h,i]
1973 Total	**1,206**	**1,176**	**6**	**480**	**80**	**155**	**32**	**13**	**911**	**54**	**510**	**99**	**2,340**	**4,722**
1975 Total	**1,181**	**1,044**	**5**	**442**	**73**	**146**	**24**	**11**	**911**	**51**	**445**	**94**	**2,202**	**4,426**
1980 Total	**1,435**	**1,059**	**4**	**446**	**78**	**156**	**24**	**13**	**900**	**49**	**455**	**131**	**2,256**	**4,750**
1985 Total	**1,637**	**927**	**3**	**445**	**82**	**178**	**17**	**12**	**930**	**55**	**217**	**83**	**2,022**	**4,587**
1990 Total	**1,821**	**1,027**	**3**	**470**	**75**	**223**	**6**	**13**	**988**	**70**	**222**	**115**	**2,185**	**5,040**
1995 Total	**1,913**	**1,186**	**3**	**498**	**90**	**222**	**8**	**13**	**1,042**	**77**	**154**	**107**	**2,214**	**5,323**
2000 Total	**2,156**	**1,246**	**3**	**579**	**106**	**254**	**10**	**14**	**1,133**	**84**	**165**	**107**	**2,454**	**5,867**
2001 Total	**2,088**	**1,193**	**2**	**597**	**96**	**243**	**11**	**13**	**1,149**	**90**	**147**	**125**	**2,472**	**5,765**
2002 Total	**2,094**	**1,231**	**2**	**586**	**98**	**237**	**6**	**12**	**1,180**	**100**	**126**	**122**	**2,471**	**5,809**
2003 Total	**2,135**	**1,196**	**2**	**610**	**96**	**231**	**8**	**11**	**1,186**	**99**	**140**	**134**	**2,517**	**5,860**
2004 Total	**2,160**	**1,201**	**2**	**632**	**96**	**240**	**10**	**12**	**1,209**	**113**	**157**	**136**	**2,606**	**5,979**
2005 Total	**2,181**	**1,183**	**2**	**639**	**92**	**246**	**10**	**12**	**1,208**	**111**	**166**	**135**	**2,623**	**5,999**
2006 Total	**2,147**	**1,171**	**2**	**645**	**86**	**240**	**8**	**11**	**1,216**	**104**	**125**	**147**	**2,584**	**5,914**
2007 Total	**2,172**	**1,246**	**2**	**647**	**90**	**238**	**5**	**12**	**1,208**	**98**	**131**	**143**	**2,573**	**6,003**
2008 Total	**2,140**	**1,255**	**2**	**610**	**89**	**226**	**2**	**11**	**1,139**	**92**	**113**	**126**	**2,410**	**5,817**
2009 Total	**1,876**	**1,234**	**2**	**555**	**86**	**204**	**3**	**10**	**1,126**	**85**	**92**	**107**	**2,271**	**5,392**
2010 Total	**1,986**	**1,292**	**2**	**583**	**85**	**210**	**3**	**11**	**1,110**	**82**	**97**	**115**	**2,296**	**5,585**
2011 Total	**1,875**	**1,311**	**2**	**592**	**79**	**209**	**2**	**10**	**1,077**	**79**	**83**	**114**	**2,247**	**5,446**
2012 Total	**1,657**	**1,372**	**2**	**569**	**76**	**206**	**1**	**9**	**1,071**	**79**	**67**	**110**	**2,189**	**5,229**
2013 Total	**1,718**	**1,409**	**2**	**573**	**85**	**210**	**1**	**10**	**1,086**	**77**	**58**	**116**	**2,218**	**5,356**
2014 Total	**1,714**	**1,440**	**2**	**606**	**86**	**216**	**1**	**10**	**1,095**	**78**	**46**	**108**	**2,249**	**5,413**
2015 Total	**1,480**	**1,483**	**1**	**598**	**87**	**227**	**1**	**11**	**1,125**	**79**	**47**	**112**	**2,288**	**5,263**
2016 Total	**1,354**	**1,494**	**1**	**576**	**83**	**237**	**1**	**11**	**1,144**	**78**	**59**	**120**	**2,311**	**5,171**
2017 Total	**1,316**	**1,475**	**1**	**584**	**86**	**247**	**1**	**10**	**1,140**	**72**	**62**	**126**	**2,328**	**5,131**
2018 January	126	182	(s)	57	12	20	(s)	1	91	7	5	11	203	513
February	92	148	(s)	46	9	18	(s)	1	83	3	4	11	175	415
March	90	152	(s)	53	9	21	(s)	1	99	6	4	12	205	447
April	82	128	(s)	51	8	20	(s)	1	93	6	6	9	193	404
May	95	112	(s)	53	6	21	(s)	1	99	6	5	10	200	407
June	110	112	(s)	48	6	22	(s)	1	99	7	4	11	198	421
July	124	128	(s)	50	6	22	(s)	1	100	6	5	10	201	454
August	124	126	(s)	53	7	23	(s)	1	101	8	4	10	209	460
September	107	117	(s)	49	7	21	(s)	1	92	7	5	8	190	415
October	97	124	(s)	55	8	21	(s)	1	96	8	4	11	204	426
November	103	148	(s)	51	10	21	(s)	1	93	5	5	10	197	449
December	110	163	(s)	51	11	21	(s)	1	95	5	6	10	199	473
Total	**1,260**	**1,639**	**2**	**618**	**98**	**250**	**1**	**10**	**1,141**	**74**	**57**	**123**	**2,374**	**5,284**
2019 January	110	187	(s)	55	12	20	(s)	1	91	6	5	11	202	499
February	90	165	(s)	49	10	18	(s)	1	85	2	4	7	177	432
March	89	159	(s)	53	10	21	(s)	1	95	6	3	10	199	448
April	69	120	(s)	50	7	21	(s)	1	95	4	3	11	193	383
May	81	116	(s)	52	7	22	(s)	1	98	6	3	12	201	399
June	89	115	(s)	49	6	22	(s)	1	97	8	5	10	197	402
July	109	130	(s)	49	7	23	(s)	1	99	8	5	10	202	443
August	103	132	(s)	51	7	23	(s)	1	102	6	5	12	207	444
September	94	120	(s)	48	7	21	(s)	1	92	5	5	11	189	404
October	76	125	(s)	54	8	22	(s)	1	96	4	5	11	202	404
November	84	151	(s)	52	10	21	(s)	1	92	6	3	11	196	432
December	82	173	(s)	50	11	23	(s)	1	93	7	4	11	200	455
Total	**1,076**	**1,694**	**2**	**613**	**103**	**256**	**1**	**9**	**1,137**	**69**	**50**	**127**	**2,365**	**5,146**
2020 January	75	180	(s)	51	10	21	(s)	1	91	5	4	11	194	449
February	66	165	(s)	47	9	19	(s)	1	87	5	2	12	182	415
March	61	148	(s)	50	9	17	(s)	(s)	81	5	2	12	176	385
April	49	122	(s)	43	7	8	(s)	1	59	4	2	10	133	306
May	55	113	(s)	45	7	7	(s)	1	74	4	1	11	151	319
June	73	116	(s)	43	6	9	(s)	1	83	4	3	9	158	349
July	98	136	(s)	45	7	12	(s)	1	88	5	5	9	172	407
August	99	131	(s)	46	7	13	(s)	1	88	7	5	10	177	407
September	77	118	(s)	47	7	11	(s)	1	86	5	5	8	170	366
9-Month Total	**653**	**1,229**	**1**	**416**	**69**	**118**	**1**	**6**	**738**	**44**	**29**	**91**	**1,512**	**3,403**
2019 9-Month Total	**834**	**1,244**	**1**	**457**	**74**	**191**	**1**	**7**	**856**	**51**	**37**	**93**	**1,768**	**3,854**
2018 9-Month Total	**950**	**1,204**	**1**	**461**	**69**	**187**	**1**	**7**	**856**	**56**	**42**	**92**	**1,773**	**3,936**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Includes coal coke net imports.
[c] Natural gas, excluding supplemental gaseous fuels.
[d] Distillate fuel oil, excluding biodiesel.
[e] Hydrocarbon gas liquids.
[f] Finished motor gasoline, excluding fuel ethanol.
[g] Aviation gasoline blending components, crude oil, motor gasoline blending components, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.
[h] Includes electric power sector use of geothermal energy and non-biomass waste. See Table 11.6.
[i] Excludes emissions from biomass energy consumption. See Table 11.7.

(s)=Less than 0.5 million metric tons.

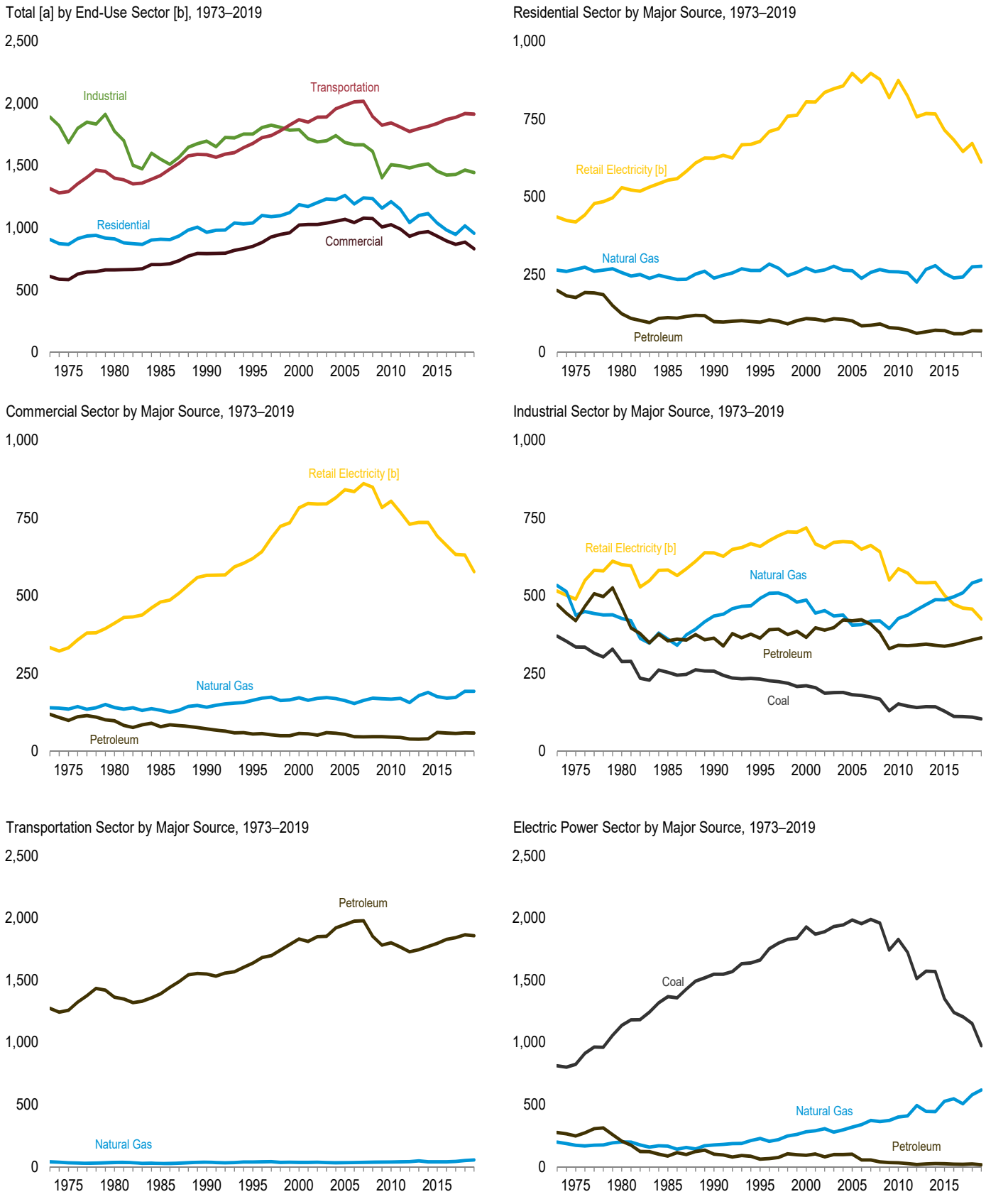
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Figure 11.2 Carbon Dioxide Emissions From Energy Consumption by Sector

(Million Metric Tons of Carbon Dioxide)



[a] Excludes emissions from biomass energy consumption.

[b] 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.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#environment.

Sources: Tables 11.2–11.6.

Table 11.2 Carbon Dioxide Emissions From Energy Consumption: Residential Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum				Retail Electricity[e]	Total[f]
			Distillate Fuel Oil[c]	HGL[d]	Kerosene	Total		
1973 Total	**9**	**264**	**147**	**36**	**16**	**199**	**435**	**907**
1975 Total	**6**	**266**	**132**	**32**	**12**	**176**	**419**	**867**
1980 Total	**3**	**256**	**96**	**20**	**8**	**124**	**529**	**911**
1985 Total	**4**	**241**	**80**	**20**	**11**	**111**	**553**	**909**
1990 Total	**3**	**238**	**72**	**22**	**5**	**98**	**624**	**963**
1995 Total	**2**	**263**	**66**	**25**	**5**	**96**	**678**	**1,039**
2000 Total	**1**	**271**	**66**	**35**	**7**	**108**	**805**	**1,185**
2001 Total	**1**	**259**	**66**	**33**	**7**	**106**	**805**	**1,171**
2002 Total	**1**	**265**	**63**	**34**	**4**	**101**	**835**	**1,203**
2003 Total	**1**	**276**	**68**	**34**	**5**	**108**	**847**	**1,232**
2004 Total	**1**	**264**	**67**	**32**	**6**	**106**	**856**	**1,227**
2005 Total	**1**	**262**	**62**	**32**	**6**	**101**	**897**	**1,261**
2006 Total	**1**	**237**	**52**	**28**	**5**	**85**	**869**	**1,191**
2007 Total	**1**	**257**	**53**	**31**	**3**	**86**	**897**	**1,241**
2008 Total	**NA**	**266**	**55**	**35**	**2**	**91**	**877**	**1,235**
2009 Total	**NA**	**259**	**43**	**35**	**2**	**79**	**819**	**1,157**
2010 Total	**NA**	**259**	**41**	**33**	**2**	**77**	**874**	**1,210**
2011 Total	**NA**	**255**	**38**	**31**	**1**	**71**	**823**	**1,149**
2012 Total	**NA**	**225**	**35**	**25**	**1**	**61**	**757**	**1,043**
2013 Total	**NA**	**267**	**36**	**29**	**1**	**66**	**768**	**1,100**
2014 Total	**NA**	**278**	**39**	**31**	**1**	**71**	**766**	**1,115**
2015 Total	**NA**	**253**	**40**	**28**	**1**	**69**	**714**	**1,037**
2016 Total	**NA**	**239**	**32**	**27**	**1**	**60**	**683**	**982**
2017 Total	**NA**	**242**	**32**	**27**	**1**	**59**	**645**	**947**
2018 January	NA	54	6	5	(s)	12	72	138
February	NA	38	4	4	(s)	8	48	94
March	NA	36	3	4	(s)	7	45	88
April	NA	24	3	3	(s)	6	39	69
May	NA	9	2	1	(s)	3	46	59
June	NA	7	1	1	(s)	2	60	69
July	NA	6	1	1	(s)	2	76	84
August	NA	5	1	1	(s)	2	74	81
September	NA	6	2	1	(s)	3	60	69
October	NA	14	3	2	(s)	6	48	67
November	NA	33	4	4	(s)	8	49	90
December	NA	42	6	5	(s)	10	57	110
Total	**NA**	**275**	**37**	**32**	**1**	**70**	**671**	**1,016**
2019 January	NA	53	5	5	(s)	11	61	124
February	NA	45	4	4	(s)	9	50	103
March	NA	38	4	4	(s)	8	47	93
April	NA	18	3	2	(s)	5	34	57
May	NA	12	2	2	(s)	4	41	56
June	NA	7	2	1	(s)	3	51	61
July	NA	6	2	1	(s)	3	70	79
August	NA	6	2	1	(s)	3	67	76
September	NA	6	1	1	(s)	3	57	65
October	NA	13	2	2	(s)	4	42	59
November	NA	32	4	4	(s)	8	44	84
December	NA	41	5	4	(s)	9	49	100
Total	**NA**	**276**	**37**	**31**	**1**	**69**	**611**	**956**
2020 January	NA	45	4	4	(s)	9	48	102
February	NA	40	3	4	(s)	8	42	90
March	NA	29	3	3	(s)	6	37	73
April	NA	21	3	3	(s)	5	33	59
May	NA	13	3	2	(s)	5	38	55
June	NA	7	2	1	(s)	3	52	63
July	NA	6	1	1	(s)	2	75	84
August	NA	6	1	1	(s)	2	71	80
September	NA	7	2	1	(s)	3	52	62
9-Month Total	**NA**	**175**	**23**	**20**	**1**	**44**	**447**	**666**
2019 9-Month Total	**NA**	**190**	**25**	**21**	**(s)**	**47**	**478**	**715**
2018 9-Month Total	**NA**	**186**	**24**	**21**	**1**	**46**	**519**	**750**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] 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 Tables 7.6 and 11.6.
[f] Excludes emissions from biomass energy consumption. See Table 11.7.
NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.
Sources: See end of section.

Table 11.3 Carbon Dioxide Emissions From Energy Consumption: Commercial Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum							Retail Electricity[f]	Total[g]
			Distillate Fuel Oil[c]	HGL[d]	Kerosene	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Total		
1973 Total	**15**	**141**	**47**	**9**	**5**	**6**	**NA**	**52**	**120**	**334**	**609**
1975 Total	**14**	**136**	**43**	**8**	**4**	**6**	**NA**	**39**	**100**	**333**	**583**
1980 Total	**11**	**141**	**38**	**6**	**3**	**8**	**NA**	**44**	**98**	**412**	**662**
1985 Total	**13**	**132**	**46**	**6**	**2**	**7**	**NA**	**18**	**79**	**480**	**705**
1990 Total	**12**	**142**	**39**	**6**	**1**	**8**	**0**	**18**	**73**	**566**	**793**
1995 Total	**11**	**164**	**35**	**7**	**2**	**1**	**(s)**	**11**	**56**	**620**	**851**
2000 Total	**9**	**173**	**36**	**9**	**2**	**3**	**(s)**	**7**	**58**	**783**	**1,022**
2001 Total	**9**	**164**	**37**	**9**	**2**	**3**	**(s)**	**6**	**57**	**797**	**1,027**
2002 Total	**9**	**170**	**32**	**9**	**1**	**3**	**(s)**	**6**	**52**	**795**	**1,026**
2003 Total	**8**	**173**	**36**	**10**	**1**	**4**	**(s)**	**9**	**60**	**796**	**1,037**
2004 Total	**10**	**170**	**34**	**10**	**1**	**3**	**(s)**	**10**	**58**	**815**	**1,053**
2005 Total	**9**	**163**	**33**	**8**	**2**	**3**	**(s)**	**9**	**55**	**841**	**1,069**
2006 Total	**6**	**154**	**29**	**8**	**1**	**3**	**(s)**	**6**	**47**	**835**	**1,043**
2007 Total	**7**	**164**	**28**	**8**	**1**	**4**	**(s)**	**6**	**46**	**861**	**1,078**
2008 Total	**8**	**171**	**28**	**10**	**(s)**	**3**	**(s)**	**6**	**47**	**849**	**1,075**
2009 Total	**7**	**169**	**29**	**9**	**(s)**	**3**	**(s)**	**6**	**47**	**784**	**1,007**
2010 Total	**7**	**168**	**29**	**9**	**(s)**	**3**	**(s)**	**5**	**46**	**804**	**1,025**
2011 Total	**6**	**171**	**29**	**9**	**(s)**	**3**	**(s)**	**4**	**45**	**768**	**990**
2012 Total	**4**	**157**	**26**	**9**	**(s)**	**3**	**(s)**	**2**	**40**	**731**	**932**
2013 Total	**4**	**179**	**25**	**10**	**(s)**	**3**	**(s)**	**2**	**39**	**736**	**958**
2014 Total	**4**	**190**	**26**	**10**	**(s)**	**4**	**(s)**	**1**	**41**	**736**	**970**
2015 Total	**3**	**176**	**26**	**9**	**(s)**	**25**	**(s)**	**(s)**	**61**	**692**	**932**
2016 Total	**2**	**171**	**24**	**9**	**(s)**	**25**	**(s)**	**(s)**	**59**	**662**	**894**
2017 Total	**2**	**174**	**24**	**10**	**(s)**	**24**	**(s)**	**(s)**	**58**	**633**	**867**
2018 January	(s)	30	4	2	(s)	2	(s)	(s)	7	56	94
February	(s)	23	2	1	(s)	2	(s)	(s)	5	43	72
March	(s)	23	2	1	(s)	2	(s)	(s)	5	45	74
April	(s)	17	2	1	(s)	2	(s)	(s)	5	42	64
May	(s)	9	1	1	(s)	2	0	(s)	4	50	63
June	(s)	8	1	1	(s)	2	0	(s)	4	56	68
July	(s)	8	1	1	(s)	2	0	(s)	4	65	76
August	(s)	8	1	1	(s)	2	0	(s)	3	65	76
September	(s)	8	1	1	(s)	2	(s)	(s)	4	57	68
October	(s)	13	2	1	(s)	2	(s)	(s)	5	52	70
November	(s)	21	3	1	(s)	2	(s)	(s)	6	50	77
December	(s)	25	4	1	(s)	2	(s)	(s)	7	50	83
Total	**2**	**193**	**24**	**11**	**(s)**	**24**	**(s)**	**(s)**	**59**	**632**	**886**
2019 January	(s)	31	3	1	(s)	2	(s)	(s)	7	51	89
February	(s)	26	3	1	(s)	2	(s)	(s)	6	44	76
March	(s)	23	3	1	(s)	2	(s)	(s)	6	45	74
April	(s)	14	2	1	(s)	2	(s)	(s)	4	38	57
May	(s)	10	1	1	(s)	2	0	(s)	4	45	60
June	(s)	8	1	1	(s)	2	0	(s)	4	49	61
July	(s)	8	1	1	(s)	2	0	(s)	4	60	72
August	(s)	8	2	1	(s)	2	0	(s)	4	59	71
September	(s)	8	1	1	(s)	2	0	(s)	3	53	64
October	(s)	12	1	1	(s)	2	0	(s)	4	45	61
November	(s)	21	3	1	(s)	2	0	(s)	6	44	72
December	(s)	25	3	1	(s)	2	(s)	(s)	7	44	76
Total	**2**	**193**	**23**	**11**	**(s)**	**24**	**(s)**	**(s)**	**59**	**578**	**831**
2020 January	(s)	27	3	1	(s)	2	(s)	(s)	6	42	75
February	(s)	24	2	1	(s)	2	(s)	(s)	5	38	68
March	(s)	19	2	1	(s)	2	0	(s)	5	37	61
April	(s)	13	2	1	(s)	1	0	(s)	4	30	47
May	(s)	9	2	1	(s)	2	0	(s)	4	33	47
June	(s)	7	1	1	(s)	2	0	(s)	4	43	54
July	(s)	7	1	1	(s)	2	0	(s)	3	56	67
August	(s)	7	1	1	(s)	2	0	(s)	3	55	65
September	(s)	8	1	1	(s)	2	0	(s)	4	45	57
9-Month Total	**1**	**121**	**15**	**7**	**(s)**	**16**	**(s)**	**(s)**	**38**	**381**	**541**
2019 9-Month Total	**1**	**135**	**16**	**8**	**(s)**	**18**	**(s)**	**(s)**	**42**	**444**	**622**
2018 9-Month Total	**1**	**134**	**15**	**8**	**(s)**	**18**	**(s)**	**(s)**	**41**	**479**	**655**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] 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 Tables 7.6 and 11.6.
[g] Excludes emissions from biomass energy consumption. See Table 11.7.
NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Table 11.4 Carbon Dioxide Emissions From Energy Consumption: Industrial Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Coal Coke Net Imports	Natural Gas[b]	Petroleum									Retail Electricity[g]	Total[h]
				Distillate Fuel Oil[c]	HGL[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total		
1973 Total	**371**	**-1**	**533**	**106**	**31**	**11**	**7**	**18**	**52**	**146**	**99**	**472**	**515**	**1,891**
1975 Total	**335**	**2**	**438**	**97**	**30**	**9**	**6**	**16**	**51**	**119**	**94**	**420**	**490**	**1,685**
1980 Total	**289**	**-4**	**428**	**96**	**52**	**13**	**7**	**11**	**48**	**106**	**131**	**464**	**601**	**1,777**
1985 Total	**255**	**-2**	**361**	**81**	**54**	**3**	**6**	**15**	**54**	**59**	**83**	**356**	**583**	**1,553**
1990 Total	**258**	**1**	**436**	**84**	**45**	**1**	**7**	**13**	**67**	**32**	**115**	**364**	**638**	**1,697**
1995 Total	**233**	**7**	**492**	**82**	**57**	**1**	**7**	**14**	**69**	**27**	**107**	**364**	**659**	**1,754**
2000 Total	**211**	**7**	**486**	**87**	**61**	**1**	**7**	**11**	**74**	**19**	**107**	**366**	**719**	**1,790**
2001 Total	**205**	**3**	**444**	**95**	**53**	**2**	**6**	**21**	**79**	**16**	**125**	**397**	**667**	**1,717**
2002 Total	**187**	**7**	**453**	**88**	**54**	**1**	**6**	**22**	**82**	**15**	**122**	**390**	**654**	**1,691**
2003 Total	**189**	**6**	**435**	**85**	**50**	**2**	**6**	**23**	**81**	**17**	**134**	**398**	**672**	**1,700**
2004 Total	**190**	**16**	**438**	**88**	**53**	**2**	**6**	**26**	**92**	**20**	**136**	**423**	**674**	**1,741**
2005 Total	**182**	**5**	**406**	**92**	**49**	**3**	**6**	**25**	**88**	**22**	**135**	**420**	**672**	**1,685**
2006 Total	**180**	**7**	**408**	**91**	**49**	**2**	**6**	**26**	**84**	**19**	**147**	**423**	**650**	**1,667**
2007 Total	**175**	**3**	**419**	**91**	**50**	**1**	**6**	**21**	**81**	**15**	**143**	**409**	**662**	**1,667**
2008 Total	**168**	**5**	**419**	**98**	**41**	**(s)**	**6**	**17**	**78**	**15**	**126**	**380**	**642**	**1,614**
2009 Total	**131**	**-3**	**395**	**78**	**41**	**(s)**	**5**	**16**	**72**	**10**	**107**	**330**	**550**	**1,403**
2010 Total	**152**	**-1**	**427**	**84**	**42**	**1**	**5**	**17**	**68**	**9**	**115**	**341**	**587**	**1,507**
2011 Total	**146**	**1**	**438**	**90**	**38**	**(s)**	**5**	**17**	**65**	**10**	**114**	**340**	**574**	**1,498**
2012 Total	**141**	**(s)**	**455**	**93**	**42**	**(s)**	**4**	**17**	**70**	**5**	**110**	**342**	**543**	**1,481**
2013 Total	**144**	**-2**	**472**	**92**	**46**	**(s)**	**5**	**17**	**65**	**4**	**116**	**345**	**542**	**1,501**
2014 Total	**143**	**-2**	**488**	**100**	**45**	**(s)**	**5**	**14**	**66**	**3**	**108**	**341**	**543**	**1,513**
2015 Total	**129**	**-2**	**487**	**85**	**49**	**(s)**	**5**	**17**	**67**	**3**	**112**	**338**	**502**	**1,455**
2016 Total	**113**	**-2**	**497**	**84**	**46**	**(s)**	**5**	**17**	**66**	**4**	**120**	**343**	**473**	**1,424**
2017 Total	**112**	**-3**	**510**	**88**	**48**	**(s)**	**5**	**18**	**62**	**4**	**126**	**350**	**461**	**1,430**
2018 January	9	(s)	49	10	5	(s)	(s)	1	5	(s)	11	33	39	129
February	9	(s)	44	7	4	(s)	(s)	1	3	(s)	11	26	32	111
March	9	(s)	47	9	4	(s)	(s)	2	5	(s)	12	33	34	122
April	9	(s)	44	7	4	(s)	(s)	1	5	(s)	9	27	32	113
May	9	(s)	43	9	4	(s)	(s)	2	5	(s)	10	30	38	120
June	9	(s)	42	6	4	(s)	(s)	2	6	(s)	11	29	40	119
July	9	(s)	43	6	5	(s)	(s)	2	5	(s)	10	28	44	125
August	9	(s)	44	8	5	(s)	(s)	2	7	(s)	10	33	44	130
September	9	(s)	43	7	5	(s)	(s)	1	7	(s)	8	29	40	121
October	9	(s)	45	9	5	(s)	(s)	2	7	(s)	11	34	38	126
November	9	(s)	47	7	5	(s)	(s)	1	4	(s)	10	29	38	124
December	10	(s)	49	5	5	(s)	(s)	1	4	(s)	10	26	37	122
Total	**110**	**-3**	**541**	**92**	**54**	**(s)**	**5**	**18**	**64**	**3**	**123**	**358**	**457**	**1,464**
2019 January	9	(s)	51	10	6	(s)	(s)	1	5	(s)	11	34	38	131
February	9	(s)	46	9	5	(s)	(s)	1	1	(s)	7	24	33	111
March	9	(s)	48	9	4	(s)	(s)	1	5	(s)	10	30	34	122
April	8	(s)	44	8	4	(s)	(s)	1	4	(s)	11	30	30	112
May	9	(s)	45	8	4	(s)	(s)	2	5	(s)	12	32	34	119
June	9	(s)	42	7	5	(s)	(s)	2	7	(s)	10	30	36	117
July	8	(s)	43	6	5	(s)	(s)	2	7	(s)	10	30	42	123
August	9	(s)	45	6	5	(s)	(s)	2	6	(s)	12	31	41	125
September	8	(s)	43	7	6	(s)	(s)	1	4	(s)	11	30	37	118
October	9	(s)	45	9	5	(s)	(s)	2	4	(s)	11	32	33	119
November	8	(s)	48	8	5	(s)	(s)	1	6	(s)	11	32	34	122
December	9	(s)	51	6	5	(s)	(s)	1	6	(s)	11	31	32	122
Total	**104**	**-2**	**551**	**92**	**60**	**(s)**	**4**	**18**	**61**	**3**	**127**	**365**	**425**	**1,444**
2020 January	8	(s)	51	9	4	(s)	(s)	1	4	(s)	11	30	30	120
February	8	(s)	47	9	4	(s)	(s)	1	4	(s)	12	30	28	114
March	8	(s)	47	8	5	(s)	(s)	1	4	(s)	12	30	28	113
April	7	(s)	43	3	3	(s)	(s)	1	3	(s)	10	21	23	93
May	6	(s)	42	3	4	(s)	(s)	1	4	(s)	11	23	25	96
June	7	(s)	40	2	4	(s)	(s)	1	3	(s)	9	21	30	98
July	8	(s)	43	4	5	(s)	(s)	1	4	(s)	9	24	36	111
August	7	(s)	43	4	5	(s)	(s)	1	6	(s)	10	28	37	116
September	7	(s)	43	6	5	(s)	(s)	1	5	(s)	8	26	31	108
9-Month Total	**68**	**-1**	**399**	**47**	**41**	**(s)**	**3**	**12**	**37**	**2**	**91**	**233**	**270**	**968**
2019 9-Month Total	**78**	**-2**	**407**	**70**	**45**	**(s)**	**3**	**13**	**44**	**2**	**93**	**270**	**325**	**1,079**
2018 9-Month Total	**82**	**-2**	**400**	**70**	**40**	**(s)**	**3**	**13**	**48**	**2**	**92**	**269**	**342**	**1,091**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] Aviation gasoline blending components, crude oil, motor gasoline blending components, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.
[g] 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 Tables 7.6 and 11.6.
[h] Excludes emissions from biomass energy consumption. See Table 11.7.

(s)=Less than 0.5 million metric tons and greater than -0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Table 11.5 Carbon Dioxide Emissions From Energy Consumption: Transportation Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum								Retail Electricity[f]	Total[g]
			Aviation Gasoline	Distillate Fuel Oil[c]	HGL[d]	Jet Fuel	Lubricants	Motor Gasoline[e]	Residual Fuel Oil	Total		
1973 Total	**(s)**	**39**	**6**	**163**	**3**	**152**	**6**	**886**	**57**	**1,273**	**2**	**1,315**
1975 Total	**(s)**	**32**	**5**	**155**	**3**	**145**	**6**	**889**	**56**	**1,258**	**2**	**1,292**
1980 Total	**(h)**	**34**	**4**	**204**	**1**	**155**	**6**	**881**	**110**	**1,363**	**2**	**1,400**
1985 Total	**(h)**	**28**	**3**	**232**	**2**	**178**	**6**	**908**	**62**	**1,391**	**3**	**1,421**
1990 Total	**(h)**	**36**	**3**	**268**	**1**	**223**	**7**	**967**	**80**	**1,548**	**3**	**1,588**
1995 Total	**(h)**	**38**	**3**	**307**	**1**	**222**	**6**	**1,026**	**72**	**1,637**	**3**	**1,679**
2000 Total	**(h)**	**36**	**3**	**377**	**1**	**254**	**7**	**1,119**	**70**	**1,830**	**4**	**1,870**
2001 Total	**(h)**	**35**	**2**	**387**	**1**	**243**	**6**	**1,125**	**46**	**1,810**	**4**	**1,849**
2002 Total	**(h)**	**37**	**2**	**394**	**1**	**237**	**6**	**1,156**	**53**	**1,849**	**4**	**1,890**
2003 Total	**(h)**	**33**	**2**	**408**	**1**	**231**	**6**	**1,159**	**45**	**1,853**	**5**	**1,891**
2004 Total	**(h)**	**32**	**2**	**433**	**1**	**240**	**6**	**1,180**	**58**	**1,921**	**5**	**1,957**
2005 Total	**(h)**	**33**	**2**	**444**	**2**	**246**	**6**	**1,180**	**66**	**1,946**	**5**	**1,984**
2006 Total	**(h)**	**33**	**2**	**467**	**2**	**240**	**5**	**1,187**	**71**	**1,974**	**5**	**2,012**
2007 Total	**(h)**	**35**	**2**	**469**	**1**	**238**	**6**	**1,183**	**78**	**1,977**	**5**	**2,018**
2008 Total	**(h)**	**37**	**2**	**424**	**3**	**226**	**5**	**1,119**	**73**	**1,852**	**5**	**1,893**
2009 Total	**(h)**	**38**	**2**	**400**	**2**	**204**	**5**	**1,107**	**62**	**1,782**	**5**	**1,825**
2010 Total	**(h)**	**38**	**2**	**423**	**(s)**	**210**	**6**	**1,089**	**70**	**1,800**	**5**	**1,843**
2011 Total	**(h)**	**39**	**2**	**431**	**(s)**	**209**	**6**	**1,057**	**61**	**1,766**	**4**	**1,809**
2012 Total	**(h)**	**41**	**2**	**411**	**(s)**	**206**	**5**	**1,051**	**53**	**1,728**	**4**	**1,773**
2013 Total	**(h)**	**47**	**2**	**416**	**(s)**	**210**	**5**	**1,066**	**46**	**1,745**	**4**	**1,796**
2014 Total	**(h)**	**40**	**2**	**435**	**(s)**	**216**	**6**	**1,077**	**35**	**1,770**	**4**	**1,815**
2015 Total	**(h)**	**40**	**1**	**441**	**(s)**	**227**	**6**	**1,083**	**37**	**1,795**	**4**	**1,839**
2016 Total	**(h)**	**40**	**1**	**431**	**(s)**	**237**	**6**	**1,102**	**49**	**1,827**	**4**	**1,871**
2017 Total	**(h)**	**42**	**1**	**436**	**(s)**	**247**	**5**	**1,099**	**52**	**1,842**	**4**	**1,888**
2018 January	(h)	6	(s)	36	(s)	20	(s)	88	3	146	(s)	152
February	(h)	5	(s)	32	(s)	18	(s)	80	4	134	(s)	139
March	(h)	5	(s)	38	(s)	21	(s)	95	3	158	(s)	163
April	(h)	4	(s)	38	(s)	20	(s)	89	5	153	(s)	157
May	(h)	3	(s)	41	(s)	21	(s)	95	4	161	(s)	165
June	(h)	3	(s)	39	(s)	22	(s)	95	3	161	(s)	165
July	(h)	4	(s)	41	(s)	22	(s)	96	5	165	(s)	169
August	(h)	4	(s)	43	(s)	23	(s)	98	4	168	(s)	172
September	(h)	4	(s)	39	(s)	21	(s)	89	4	153	(s)	157
October	(h)	4	(s)	41	(s)	21	(s)	93	3	158	(s)	163
November	(h)	5	(s)	37	(s)	21	(s)	90	4	153	(s)	158
December	(h)	5	(s)	36	(s)	21	(s)	92	5	154	(s)	159
Total	**(h)**	**51**	**2**	**460**	**(s)**	**250**	**5**	**1,099**	**48**	**1,864**	**4**	**1,919**
2019 January	(h)	6	(s)	36	(s)	20	(s)	88	4	149	(s)	155
February	(h)	5	(s)	33	(s)	18	(s)	82	3	137	(s)	142
March	(h)	5	(s)	37	(s)	21	(s)	92	3	154	(s)	160
April	(h)	4	(s)	38	(s)	21	1	91	2	153	(s)	157
May	(h)	4	(s)	40	(s)	22	(s)	95	2	160	(s)	164
June	(h)	4	(s)	39	(s)	22	(s)	94	4	159	(s)	163
July	(h)	4	(s)	40	(s)	23	(s)	95	4	164	(s)	168
August	(h)	4	(s)	41	(s)	23	(s)	99	4	167	(s)	172
September	(h)	4	(s)	38	(s)	21	(s)	89	4	152	(s)	157
October	(h)	4	(s)	41	(s)	22	(s)	93	4	160	(s)	164
November	(h)	5	(s)	37	(s)	21	(s)	89	3	149	(s)	155
December	(h)	6	(s)	36	(s)	23	(s)	89	4	152	(s)	158
Total	**(h)**	**55**	**2**	**456**	**(s)**	**256**	**5**	**1,095**	**42**	**1,856**	**3**	**1,915**
2020 January	(h)	6	(s)	35	(s)	21	(s)	87	3	147	(s)	153
February	(h)	5	(s)	33	(s)	19	(s)	84	2	138	(s)	144
March	(h)	5	(s)	37	(s)	17	(s)	78	1	134	(s)	139
April	(h)	4	(s)	35	(s)	8	(s)	57	1	102	(s)	106
May	(h)	4	(s)	37	(s)	7	(s)	72	1	117	(s)	121
June	(h)	4	(s)	37	(s)	9	(s)	80	3	129	(s)	133
July	(h)	4	(s)	39	(s)	12	(s)	84	5	141	(s)	145
August	(h)	4	(s)	40	(s)	13	(s)	85	4	142	(s)	146
September	(h)	4	(s)	37	(s)	11	(s)	83	4	136	(s)	140
9-Month Total	**(h)**	**40**	**1**	**329**	**(s)**	**118**	**3**	**710**	**24**	**1,186**	**2**	**1,228**
2019 9-Month Total	**(h)**	**40**	**1**	**343**	**(s)**	**191**	**4**	**824**	**32**	**1,395**	**2**	**1,438**
2018 9-Month Total	**(h)**	**38**	**1**	**347**	**(s)**	**187**	**4**	**824**	**35**	**1,399**	**3**	**1,439**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] 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 Tables 7.6 and 11.6.
[g] Excludes emissions from biomass energy consumption. See Table 11.7.
[h] Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

(s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Table 11.6 Carbon Dioxide Emissions From Energy Consumption: Electric Power Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum				Geo-thermal	Non-Biomass Waste[d]	Total[e]
			Distillate Fuel Oil[c]	Petroleum Coke	Residual Fuel Oil	Total			
1973 Total	**812**	**199**	**20**	**2**	**254**	**276**	**NA**	**NA**	**1,286**
1975 Total	**824**	**172**	**17**	**(s)**	**231**	**248**	**NA**	**NA**	**1,244**
1980 Total	**1,137**	**200**	**12**	**1**	**194**	**207**	**NA**	**NA**	**1,544**
1985 Total	**1,367**	**166**	**6**	**1**	**79**	**86**	**NA**	**NA**	**1,619**
1990 Total	**1,548**	**176**	**7**	**3**	**92**	**102**	**(s)**	**6**	**1,831**
1995 Total	**1,661**	**228**	**8**	**8**	**45**	**61**	**(s)**	**10**	**1,960**
2000 Total	**1,927**	**281**	**13**	**10**	**69**	**91**	**(s)**	**10**	**2,310**
2001 Total	**1,870**	**290**	**12**	**11**	**79**	**102**	**(s)**	**11**	**2,273**
2002 Total	**1,890**	**306**	**9**	**18**	**52**	**79**	**(s)**	**13**	**2,288**
2003 Total	**1,931**	**278**	**12**	**18**	**69**	**98**	**(s)**	**11**	**2,319**
2004 Total	**1,943**	**297**	**8**	**22**	**69**	**99**	**(s)**	**11**	**2,350**
2005 Total	**1,984**	**319**	**8**	**24**	**69**	**101**	**(s)**	**11**	**2,416**
2006 Total	**1,954**	**338**	**5**	**21**	**28**	**55**	**(s)**	**12**	**2,358**
2007 Total	**1,987**	**372**	**6**	**17**	**31**	**54**	**(s)**	**11**	**2,425**
2008 Total	**1,959**	**362**	**5**	**15**	**19**	**39**	**(s)**	**12**	**2,373**
2009 Total	**1,741**	**373**	**5**	**13**	**14**	**33**	**(s)**	**11**	**2,158**
2010 Total	**1,828**	**399**	**6**	**14**	**12**	**32**	**(s)**	**11**	**2,270**
2011 Total	**1,723**	**409**	**5**	**14**	**7**	**26**	**(s)**	**11**	**2,170**
2012 Total	**1,511**	**493**	**4**	**9**	**6**	**19**	**(s)**	**11**	**2,034**
2013 Total	**1,571**	**444**	**4**	**13**	**6**	**23**	**(s)**	**11**	**2,050**
2014 Total	**1,569**	**444**	**6**	**12**	**7**	**26**	**(s)**	**11**	**2,050**
2015 Total	**1,350**	**527**	**5**	**11**	**7**	**24**	**(s)**	**11**	**1,913**
2016 Total	**1,241**	**547**	**4**	**12**	**6**	**22**	**(s)**	**11**	**1,821**
2017 Total	**1,206**	**507**	**4**	**10**	**5**	**19**	**(s)**	**11**	**1,743**
2018 January	117	43	2	1	2	5	(s)	1	166
February	83	38	(s)	1	(s)	1	(s)	1	123
March	81	41	(s)	1	(s)	1	(s)	1	124
April	73	38	(s)	1	(s)	1	(s)	1	114
May	86	46	(s)	1	(s)	1	(s)	1	134
June	101	52	(s)	1	(s)	2	(s)	1	156
July	115	67	(s)	1	(s)	2	(s)	1	185
August	115	65	(s)	1	(s)	2	(s)	1	183
September	98	56	(s)	1	(s)	2	(s)	1	156
October	88	49	(s)	1	(s)	1	(s)	1	138
November	94	42	(s)	1	(s)	2	(s)	1	138
December	101	42	(s)	1	(s)	2	(s)	1	145
Total	**1,151**	**579**	**6**	**10**	**6**	**22**	**(s)**	**11**	**1,764**
2019 January	101	46	(s)	1	1	2	(s)	1	150
February	81	43	(s)	1	(s)	1	(s)	1	126
March	80	45	(s)	1	(s)	1	(s)	1	126
April	60	40	(s)	(s)	(s)	1	(s)	1	103
May	72	46	(s)	1	(s)	2	(s)	1	121
June	80	54	(s)	1	(s)	1	(s)	1	136
July	101	69	(s)	1	(s)	2	(s)	1	172
August	95	70	(s)	1	(s)	2	(s)	1	167
September	85	59	(s)	1	(s)	1	(s)	1	147
October	68	51	(s)	(s)	(s)	1	(s)	1	121
November	76	45	(s)	(s)	(s)	1	(s)	1	123
December	73	50	(s)	1	(s)	1	(s)	1	125
Total	**973**	**618**	**4**	**8**	**5**	**16**	**(s)**	**11**	**1,618**
2020 January	66	51	(s)	1	(s)	1	(s)	1	120
February	58	48	(s)	1	(s)	1	(s)	1	108
March	52	48	(s)	1	(s)	1	(s)	1	103
April	43	42	(s)	1	(s)	1	(s)	1	86
May	49	46	(s)	1	(s)	1	(s)	1	96
June	66	57	(s)	1	(s)	2	(s)	1	126
July	90	75	(s)	1	(s)	2	(s)	1	168
August	91	70	(s)	1	(s)	2	(s)	1	164
September	70	57	(s)	(s)	(s)	1	(s)	1	129
9-Month Total	**585**	**494**	**2**	**7**	**3**	**12**	**(s)**	**8**	**1,100**
2019 9-Month Total	**756**	**472**	**3**	**7**	**3**	**13**	**(s)**	**8**	**1,249**
2018 9-Month Total	**869**	**447**	**5**	**8**	**5**	**18**	**(s)**	**8**	**1,343**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Municipal solid waste from non-biogenic sources, and tire-derived fuels. Through 1994, also includes blast furnace gas, and other manufactured and waste gases derived from fossil fuels.
[e] Excludes emissions from biomass energy consumption. See Table 11.7.

NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Table 11.7 Carbon Dioxide Emissions From Biomass Energy Consumption

(Million Metric Tons of Carbon Dioxide[a])

	By Source					By Sector					
	Wood[b]	Biomass Waste[c]	Fuel Ethanol[d]	Bio-diesel	Total	Resi-dential	Com-mercial[e]	Indus-trial[f]	Trans-portation	Electric Power[g]	Total
1973 Total	**143**	**(s)**	**NA**	**NA**	**143**	**33**	**1**	**109**	**NA**	**(s)**	**143**
1975 Total	**140**	**(s)**	**NA**	**NA**	**141**	**40**	**1**	**100**	**NA**	**(s)**	**141**
1980 Total	**232**	**(s)**	**NA**	**NA**	**232**	**80**	**2**	**150**	**NA**	**(s)**	**232**
1985 Total	**252**	**14**	**3**	**NA**	**270**	**95**	**2**	**168**	**3**	**1**	**270**
1990 Total	**208**	**24**	**4**	**NA**	**237**	**54**	**8**	**147**	**4**	**23**	**237**
1995 Total	**222**	**30**	**8**	**NA**	**260**	**49**	**9**	**166**	**8**	**28**	**260**
2000 Total	**212**	**27**	**9**	**NA**	**248**	**39**	**9**	**161**	**9**	**29**	**248**
2001 Total	**188**	**33**	**10**	**(s)**	**231**	**35**	**9**	**147**	**10**	**31**	**231**
2002 Total	**187**	**36**	**12**	**(s)**	**235**	**36**	**9**	**144**	**12**	**35**	**235**
2003 Total	**188**	**36**	**16**	**(s)**	**240**	**38**	**9**	**141**	**16**	**37**	**240**
2004 Total	**199**	**35**	**20**	**(s)**	**255**	**38**	**10**	**151**	**20**	**36**	**255**
2005 Total	**200**	**37**	**23**	**1**	**261**	**40**	**10**	**150**	**23**	**37**	**261**
2006 Total	**197**	**36**	**31**	**2**	**266**	**36**	**9**	**151**	**33**	**38**	**266**
2007 Total	**196**	**37**	**39**	**3**	**276**	**39**	**9**	**146**	**41**	**39**	**276**
2008 Total	**193**	**39**	**55**	**3**	**290**	**44**	**10**	**139**	**57**	**40**	**290**
2009 Total	**182**	**41**	**62**	**3**	**288**	**47**	**10**	**125**	**64**	**41**	**288**
2010 Total	**208**	**42**	**73**	**2**	**325**	**51**	**10**	**149**	**74**	**42**	**325**
2011 Total	**208**	**42**	**73**	**8**	**331**	**49**	**11**	**151**	**80**	**40**	**331**
2012 Total	**202**	**42**	**73**	**8**	**325**	**41**	**10**	**153**	**80**	**42**	**325**
2013 Total	**219**	**45**	**75**	**13**	**353**	**54**	**11**	**158**	**87**	**43**	**353**
2014 Total	**225**	**47**	**76**	**13**	**361**	**54**	**12**	**158**	**88**	**49**	**361**
2015 Total	**217**	**47**	**79**	**14**	**357**	**48**	**13**	**157**	**90**	**48**	**357**
2016 Total	**209**	**46**	**81**	**20**	**355**	**41**	**14**	**155**	**98**	**47**	**355**
2017 Total	**205**	**45**	**82**	**19**	**350**	**40**	**14**	**152**	**98**	**47**	**350**
2018 January	18	4	7	1	30	4	1	13	8	4	30
February	17	4	6	1	27	4	1	12	7	4	27
March	18	4	7	1	30	4	1	13	8	4	30
April	17	4	6	1	28	4	1	12	8	4	28
May	18	4	7	2	30	4	1	13	9	4	30
June	17	4	7	2	30	4	1	12	8	4	30
July	18	4	7	2	31	4	1	13	9	4	31
August	18	4	7	2	31	4	1	13	9	4	31
September	17	3	6	2	28	4	1	12	8	3	28
October	18	4	7	2	30	4	1	13	8	4	30
November	17	4	7	1	29	4	1	12	8	4	29
December	18	4	7	2	31	4	1	13	8	4	31
Total	**212**	**44**	**82**	**18**	**356**	**49**	**14**	**151**	**97**	**46**	**356**
2019 January	18	4	6	1	29	4	1	13	7	4	29
February	16	3	6	1	27	4	1	12	7	3	27
March	18	3	7	1	29	4	1	13	8	3	29
April	17	3	7	1	28	4	1	12	8	3	28
May	17	3	7	2	29	4	1	12	9	3	29
June	17	3	7	1	29	4	1	12	8	3	29
July	18	3	7	2	30	4	1	13	8	4	30
August	18	3	7	2	30	4	1	13	8	4	30
September	17	3	7	1	28	4	1	12	8	3	28
October	17	3	7	1	29	4	1	12	8	3	29
November	17	3	7	1	29	4	1	12	8	3	29
December	18	4	7	1	30	4	1	13	8	4	30
Total	**209**	**40**	**83**	**17**	**349**	**50**	**13**	**148**	**97**	**41**	**349**
2020 January	17	4	7	1	29	4	1	13	8	4	29
February	16	3	6	1	27	4	1	12	7	3	27
March	17	3	6	1	27	4	1	12	7	3	27
April	16	3	4	1	25	4	1	12	5	3	25
May	17	3	6	1	27	4	1	12	7	3	27
June	16	3	6	1	27	4	1	11	7	3	27
July	17	3	6	2	28	4	1	12	8	3	28
August	17	3	6	2	28	4	1	12	8	4	28
September	16	3	6	2	27	4	1	12	8	3	27
9-Month Total	**150**	**29**	**53**	**13**	**246**	**35**	**9**	**108**	**64**	**29**	**246**
2019 9-Month Total	**156**	**30**	**61**	**13**	**261**	**37**	**10**	**111**	**72**	**31**	**261**
2018 9-Month Total	**159**	**33**	**61**	**13**	**266**	**36**	**10**	**113**	**72**	**35**	**266**

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

[b] Wood and wood-derived fuels.

[c] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.

[d] Fuel ethanol minus denaturant.

[e] Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[f] Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[g] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Carbon dioxide emissions from biomass energy consumption are excluded from the energy-related carbon dioxide emissions reported in Tables 11.1–11.6. See Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Data are estimates. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#environment (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: See end of section.

Note 1. Emissions of Carbon Dioxide and Other Greenhouse Gases. Greenhouse gases are those gases—such as water vapor, carbon dioxide (CO2), methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride—that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

The vast majority of U.S. CO2 emissions come from fossil fuel combustion, with smaller amounts from the non-combustion use of fossil fuels, as well as from electricity generation using geothermal energy and non-biomass waste. Other sources of CO2 emissions include industrial processes, such as cement and limestone production. Data in the U.S. Energy Information Administration's (EIA) *Monthly Energy Review* (MER) Tables 11.1–11.6 are estimates for U.S. CO2 emissions from energy consumption, plus the non-combustion use of fossil fuels (excluded are estimates for CO2 emissions from biomass energy consumption, which appear in MER Table 11.7).

For annual U.S. estimates of CO2 emissions from all sources, as well as emissions for other greenhouse gases, see the U.S. Environmental Protection Agency's *Inventory of U.S. Greenhouse Gas Emissions and Sinks* reports at https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.

Note 2. Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion. Carbon dioxide (CO2) emissions from the combustion of biomass to produce energy are excluded from the energy-related CO2 emissions reported in MER Tables 11.1–11.6, but appear in MER Table 11.7. According to current international convention (see the Intergovernmental Panel on Climate Change's "2006 IPCC Guidelines for National Greenhouse Gas Inventories"), carbon released through biomass combustion is excluded from reported energy-related emissions. The release of carbon from biomass combustion is assumed to be balanced by the uptake of carbon when the feedstock is grown, resulting in zero net emissions over some period of time. (This is not to say that biomass energy is carbon-neutral. Energy inputs are required in order to grow, fertilize, and harvest the feedstock and to produce and process the biomass into fuels.)

However, analysts have debated whether increased use of biomass energy may result in a decline in terrestrial carbon stocks, leading to a net positive release of carbon rather than the zero net release assumed by its exclusion from reported energy-related emissions. For example, the clearing of forests for biofuel crops could result in an initial release of carbon that is not fully recaptured in subsequent use of the land for agriculture.

To reflect the potential net emissions, the international convention for greenhouse gas inventories is to report biomass emissions in the category "agriculture, forestry, and other land use," usually based on estimates of net changes in carbon stocks over time.

This indirect accounting of CO2 emissions from biomass can potentially lead to confusion in accounting for and understanding the flow of CO2 emissions within energy and non-energy systems. In recognition of this issue, reporting of CO2 emissions from biomass combustion alongside other energy-related CO2 emissions offers an alternative accounting treatment. It is important, however, to avoid misinterpreting emissions from fossil energy and biomass energy sources as necessarily additive. Instead, the combined total of direct CO2 emissions from biomass and energy-related CO2 emissions implicitly assumes that none of the carbon emitted was previously or subsequently reabsorbed in terrestrial sinks or that other emissions sources offset any such sequestration.

Section 11 Methodology and Sources

To estimate carbon dioxide emissions from energy consumption for the *Monthly Energy Review* (MER), Tables 11.1–11.7, the U.S. Energy Information Administration (EIA) uses the following methodology and sources:

Step 1. Determine Fuel Consumption

Coal—Coal sectoral (residential, commercial, coke plants, other industrial, transportation, electric power) consumption data in thousand short tons are from MER Table 6.2. Coal sectoral consumption data are converted to trillion Btu by multiplying by the coal heat content factors in MER Table A5.

Coal Coke Net Imports—Coal coke net imports data in trillion Btu are derived from coal coke imports and exports data in MER Tables 1.4a and 1.4b.

Natural Gas (excluding supplemental gaseous fuels)—Natural gas sectoral consumption data in trillion Btu are from MER Tables 2.2–2.6.

Petroleum—Total and sectoral consumption (product supplied) data in thousand barrels per day for asphalt and road oil, aviation gasoline, distillate fuel oil, hydrocarbon gas liquids (HGL), jet fuel, kerosene, lubricants, motor gasoline, petroleum coke, and residual fuel oil are from MER Tables 3.5 and 3.7a–3.7c. For the component products of HGL (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline) and "other petroleum" (aviation gasoline blending components, crude oil, motor gasoline blending components, naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products), consumption (product supplied) data in thousand barrels per day are from EIA's *Petroleum Supply Annual* (PSA), *Petroleum Supply Monthly* (PSM), and earlier publications (see sources for MER Table 3.5). Petroleum consumption data by product are converted to trillion Btu by multiplying by the petroleum heat content factors in MER Tables A1 and A3.

Biomass—Sectoral consumption data in trillion Btu for wood, biomass waste, fuel ethanol (minus denaturant), and biodiesel are from MER Tables 10.2a–10.2c.

Step 2. Remove Biofuels From Petroleum

Distillate Fuel Oil—Beginning in 2009, the distillate fuel oil data (for total and transportation sector) in Step 1 include biodiesel and other renewable diesel fuel, which are non-fossil renewable fuels.

2009–2011: To remove the biodiesel portion from distillate fuel oil, data for biodiesel consumption (calculated using data from EIA, EIA-22M, “Monthly Biodiesel Production Survey”) and biomass-based diesel fuel data (from EIA-810, “Monthly Refinery Report,” EIA-812, “Monthly Product Pipeline Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the biodiesel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values. To remove the other renewable diesel fuel portion from distillate fuel oil, data for refinery and blender net inputs (from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the other renewable diesel fuel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values.

2012 forward: To remove the biodiesel portion from distillate fuel oil, data for biodiesel consumption (from MER Table 10.4) is subtracted from the distillate fuel oil consumption values. To remove the other renewable diesel fuel portion from distillate fuel oil, data for refinery and blender net inputs (from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the other renewable diesel fuel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values.

Motor Gasoline—Beginning in 1993, the motor gasoline data (for total, commercial sector, industrial sector, and transportation sector) in Step 1 include fuel ethanol, a non-fossil renewable fuel. To remove the fuel ethanol portion from motor gasoline, data in trillion Btu for fuel ethanol consumption (from MER Tables 10.2a, 10.2b, and 10.3) are subtracted from the motor gasoline consumption values. (Note that about 2% of fuel ethanol is fossil-based petroleum denaturant, to make the fuel ethanol undrinkable. For 1993–2008, petroleum denaturant is double counted in the PSA product supplied statistics, in both the original product category—e.g., natural gasoline—and also in the finished motor gasoline category; for this time period for MER Section 11, petroleum denaturant is removed along with the fuel ethanol from motor gasoline, but left in the original product. Beginning in 2009, petroleum denaturant is counted only in the PSA/PSM product supplied statistics for motor gasoline; for this time period for MER Section 11, petroleum denaturant is left in motor gasoline.)

Step 3. Remove Carbon Sequestered by Non-Combustion Use

The following fuels have industrial non-combustion uses as chemical feedstocks and other products: coal, natural gas, asphalt and road oil, distillate fuel oil, hydrocarbon gas liquids (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline), lubricants (which have industrial and transportation non-combustion uses), naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, petroleum coke, residual fuel oil, special naphthas, still gas, waxes, and miscellaneous petroleum products. In the non-combustion use of these fuels, some of the carbon is sequestered, and is thus subtracted from the fuel consumption values in Steps 1 and 2.

Estimates of annual non-combustion use and associated carbon sequestration are developed by EIA using the methodology detailed in "Documentation for *Emissions of Greenhouse Gases in the United States 2008*" at https://www.eia.gov/environment/archive/1605/ggrpt/documentation/pdf/0638_2008.pdf.

To obtain monthly estimates of non-combustion use and associated carbon sequestration, monthly patterns for industrial consumption and product supplied data series are used. For coal non-combustion use, the monthly pattern for coke plants coal consumption from MER Table 6.2 is used. For natural gas, the monthly pattern for other industrial non-CHP natural gas consumption from MER Table 4.3 is used. For distillate fuel oil, petroleum coke, and residual fuel oil, the monthly patterns for industrial consumption from MER Table 3.7b are used. For the other petroleum products, the monthly patterns for product supplied from the PSA and PSM are used. See Tables 1.11a and 1.11b for estimates of fossil fuel non-combustion uses.

Step 4. Determine Carbon Dioxide Emissions From Energy Consumption

Carbon dioxide (CO2) emissions data in million metric tons are calculated by multiplying consumption values in trillion Btu from Steps 1 and 2 (minus the carbon sequestered in non-combustion use in Step 3) by the CO2 emissions factors at http://www.eia.gov/environment/archive/1605/ggrpt/excel/CO2_coeffs_09_v2.xls.

Coal—CO2 emissions for coal are calculated for each sector (residential, commercial, coke plants, other industrial, transportation, electric power). Total coal emissions are the sum of the sectoral coal emissions.

Coal Coke Net Imports—CO2 emissions for coal coke net imports are calculated.

Natural Gas—CO2 emissions for natural gas are calculated for each sector (residential, commercial, industrial, transportation, electric power). Total natural gas emissions are the sum of the sectoral natural gas emissions.

Petroleum—CO2 emissions are calculated for each petroleum product. Total petroleum emissions are the sum of the product emissions. Total HGL emissions are the sum of the emissions for the component products (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline); residential, commercial, and transportation sector HGL emissions are estimated by multiplying consumption values in trillion Btu from MER Tables 3.8a and 3.8c by the propane emissions factor; industrial sector HGL emissions are estimated as total HGL emissions minus emissions by the other sectors.

Geothermal and Non-Biomass Waste—Annual CO2 emissions data for geothermal and non-biomass waste are EIA estimates based on Form EIA-923, "Power Plant Operations Report" (and predecessor forms). Monthly estimates are created by dividing the annual data by the number of days in the year and then multiplying by the number of days in the month. (Annual estimates for the current year are set equal to those of the previous year.)

Biomass—CO2 emissions for wood, biomass waste, fuel ethanol (minus denaturant), and biodiesel are calculated for each sector. Total emissions for each biomass fuel are the sum of the sectoral emissions. The following factors, in million metric tons CO2 per quadrillion Btu, are used: wood—93.80; biomass waste—90.70; fuel ethanol—68.44; and biodiesel—73.84. For 1973–1988, the biomass portion of waste in MER Tables 10.2a–10.2c is estimated as 67%; for 1989–2000, the biomass portion of waste is estimated as 67% in 1989 to 58% in 2000, based on the biogenic shares of total municipal solid waste shown in EIA's "Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy," Table 1 at http://www.eia.gov/totalenergy/data/monthly/pdf/historical/msw.pdf.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix A

British Thermal Unit Conversion Factors

British Thermal Unit 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 *Monthly 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% to 10%, depending on the specific fuel and its hydrogen content. Some fuels, such as unseasoned wood, can be more than 40% different in their gross and net heat content rates. See "Heat Content" and "British Thermal Unit (Btu)" in the Glossary for more information.

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 labeled "preliminary." Often, the current year's factors are labeled "estimate," and are set equal to the previous year's values until data become available to calculate the factors. 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 and Other Liquids

(Million Btu per Barrel, Except as Noted)

Commodity	Heat Content	Commodity	Heat Content
Asphalt and Road Oil	6.636	Kerosene	5.670
Aviation Gasoline (Finished)	5.048	Lubricants	6.065
Aviation Gasoline Blending Components	5.048	Motor Gasoline (Finished)–see Tables A2 and A3	
Biodiesel (Biomass-Based Diesel Fuel)	5.359	Motor Gasoline Blending Components (MGBC)	
Crude Oil–see Table A2		Through 2006	5.253
Distillate Fuel Oil–see Table A3 for averages		Beginning in 2007	5.222
15 ppm sulfur and under	5.770	Other Renewable Diesel Fuel	5.494
Greater than 15 ppm to 500 ppm sulfur	5.817	Other Renewable Fuels	5.359
Greater than 500 ppm sulfur	5.825	Oxygenates (excluding Fuel Ethanol)	4.247
Fuel Ethanol–see Table A3		Petrochemical Feedstocks	
Hydrocarbon Gas Liquids		Naphtha Less Than 401°F	5.248
Natural Gas Liquids		Other Oils Equal to or Greater Than 401°F	5.825
Ethane	2.783	Petroleum Coke–see Table A3 for averages	
Propane	3.841	Total, through 2003	6.024
Normal Butane	4.353	Catalyst, beginning in 2004	[a] 6.287
Isobutane	4.183	Marketable, beginning in 2004	5.719
Natural Gasoline (Pentanes Plus)	4.638	Residual Fuel Oil	6.287
Refinery Olefins		Special Naphthas	5.248
Ethylene	2.436	Still Gas	
Propylene	3.835	Through 2015	[b] 6.000
Butylene	4.377	Beginning in 2016	[a] 6.287
Isobutylene	4.355	Unfinished Oils	5.825
Hydrogen	[a] 6.287	Waxes	5.537
Jet Fuel, Kerosene Type	5.670	Miscellaneous Products	5.796
Jet Fuel, Naphtha Type	5.355	Other Hydrocarbons	5.825

[a] Per residual fuel oil equivalent barrel (6.287 million Btu per barrel).
[b] Per fuel oil equivalent barrel (6.000 million Btu per barrel).
Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#appendices.
Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A2. Approximate Heat Content of Petroleum Production, Imports, and Exports

(Million Btu per Barrel)

	Production		Imports				Exports			
				Petroleum Products				Petroleum Products		
	Crude Oil[a]	Natural Gas Plant Liquids[b]	Crude Oil[a]	Motor Gasoline[c]	Total Products[d]	Total[d]	Crude Oil[a]	Motor Gasoline[e]	Total Products[d]	Total[d]
1950	5.800	4.470	5.943	5.253	6.263	6.080	5.800	5.253	5.751	5.766
1955	5.800	4.346	5.924	5.253	6.234	6.040	5.800	5.253	5.765	5.768
1960	5.800	4.253	5.911	5.253	6.161	6.021	5.800	5.253	5.835	5.834
1965	5.800	4.197	5.872	5.253	6.123	5.997	5.800	5.253	5.742	5.743
1970	5.800	4.090	5.822	5.253	6.088	5.985	5.800	5.253	5.811	5.810
1975	5.800	3.923	5.821	5.253	5.935	5.858	5.800	5.253	5.747	5.748
1980	5.800	[b] 3.864	5.812	5.253	5.748	5.796	5.800	5.253	5.841	5.820
1981	5.800	3.860	5.818	5.253	5.659	5.775	5.800	5.253	5.837	5.821
1982	5.800	3.798	5.826	5.253	5.664	5.775	5.800	5.253	5.829	5.820
1983	5.800	3.755	5.825	5.253	5.677	5.774	5.800	5.253	5.800	5.800
1984	5.800	3.745	5.823	5.253	5.613	5.745	5.800	5.253	5.867	5.850
1985	5.800	3.752	5.832	5.253	5.572	5.736	5.800	5.253	5.819	5.814
1986	5.800	3.733	5.903	5.253	5.624	5.808	5.800	5.253	5.839	5.832
1987	5.800	3.742	5.901	5.253	5.599	5.820	5.800	5.253	5.860	5.858
1988	5.800	3.751	5.900	5.253	5.618	5.820	5.800	5.253	5.842	5.840
1989	5.800	3.764	5.906	5.253	5.641	5.833	5.800	5.253	5.869	5.857
1990	5.800	3.758	5.934	5.253	5.614	5.849	5.800	5.253	5.838	5.833
1991	5.800	3.740	5.948	5.253	5.636	5.873	5.800	5.253	5.827	5.823
1992	5.800	3.739	5.953	5.253	5.623	5.877	5.800	5.253	5.774	5.777
1993	5.800	3.735	5.954	5.253	5.539	5.866	5.800	5.253	5.681	5.693
1994	5.800	3.728	5.950	5.253	5.416	5.835	5.800	5.253	5.693	5.704
1995	5.800	3.728	5.938	5.253	5.345	5.830	5.800	5.253	5.692	5.703
1996	5.800	3.703	5.947	5.253	5.373	5.828	5.800	5.253	5.663	5.678
1997	5.800	3.686	5.954	5.253	5.333	5.836	5.800	5.253	5.663	5.678
1998	5.800	3.694	5.953	5.253	5.314	5.833	5.800	5.253	5.505	5.539
1999	5.800	3.663	5.942	5.253	5.291	5.815	5.800	5.253	5.530	5.564
2000	5.800	3.648	5.959	5.253	5.309	5.823	5.800	5.253	5.529	5.542
2001	5.800	3.652	5.976	5.253	5.330	5.838	5.800	5.253	5.637	5.641
2002	5.800	3.646	5.971	5.253	5.362	5.845	5.800	5.253	5.517	5.519
2003	5.800	3.659	5.970	5.253	5.381	5.845	5.800	5.253	5.628	5.630
2004	5.800	3.636	5.981	5.253	5.429	5.853	5.800	5.253	5.532	5.539
2005	5.800	3.638	5.977	5.253	5.436	5.835	5.800	5.253	5.504	5.513
2006	5.800	3.622	5.980	5.253	5.431	5.836	5.800	[e] 5.219	5.415	5.423
2007	5.800	3.609	5.985	5.222	5.483	5.857	5.800	5.188	5.465	5.471
2008	5.800	3.614	5.990	5.222	5.459	5.861	5.800	5.215	5.587	5.591
2009	5.800	3.598	5.988	5.222	5.509	5.878	5.800	5.221	5.674	5.677
2010	5.800	3.573	5.989	5.222	5.545	5.892	5.800	5.214	5.601	5.604
2011	5.800	3.573	6.008	5.222	5.538	5.905	5.800	5.216	5.526	5.530
2012	5.800	3.588	6.165	5.222	5.501	6.035	5.800	5.217	5.520	5.526
2013	5.800	3.629	6.010	5.222	5.497	5.899	5.800	5.216	5.470	5.482
2014	5.800	3.640	6.035	5.222	5.518	5.929	5.800	5.218	5.369	5.406
2015	5.717	3.669	6.065	5.222	5.504	5.941	5.682	5.218	5.279	5.319
2016	5.722	3.632	6.053	5.222	5.491	5.929	5.724	5.218	5.184	5.245
2017	5.723	3.612	6.050	5.222	5.489	5.930	5.738	[e] 5.222	5.151	5.258
2018	5.706	3.591	6.063	5.222	[d] 5.491	[d] 5.938	5.721	5.222	[d] 5.088	[d] 5.259
2019	5.698	3.607	6.061	5.222	5.464	5.908	5.708	5.222	5.022	5.263
2020	[E] 5.698	[E] 3.607	[E] 6.061	[E] 5.222	[E] 5.464	[E] 5.908	[E] 5.708	[E] 5.222	[E] 5.022	[E] 5.263

[a] Includes lease condensate.

[b] Natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[c] Excludes fuel ethanol, methyl tertiary butyl ether (MTBE), and other oxygenates blended into motor gasoline.

[d] Through 2017, the imports and exports factors are developed using old hydrocarbon gas liquids heat content values shown in Table A1 of the September 2019 *Monthly Energy Review* (MER). Beginning in 2018, the factors are developed using heat content values shown in Table A1 of the current MER.

[e] For 2006–2016, includes MTBE blended into motor gasoline; excludes MTBE in other years. For all years, excludes fuel ethanol and other non-MTBE oxygenates blended into motor gasoline.

E=Estimate.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A3. Approximate Heat Content of Petroleum Consumption and Fuel Ethanol

(Million Btu per Barrel)

	Total Petroleum[a] Consumption by Sector						Distillate Fuel Oil Consumption[f]	Hydrocarbon Gas Liquids Consumption[g]	Motor Gasoline (Finished) Consumption[h]	Petroleum Coke Consumption[i]	Fuel Ethanol[j]	*Fuel Ethanol Feedstock Factor*[k]
	Residential	Commercial[b]	Industrial[b]	Transportation[b,c]	Electric Power[d,e]	Total[b,c]						
1950	5.473	5.817	5.927	5.461	6.254	5.642	5.825	3.810	5.253	6.024	NA	*NA*
1955	5.470	5.781	5.847	5.407	6.254	5.581	5.825	3.810	5.253	6.024	NA	*NA*
1960	5.418	5.781	5.772	5.387	6.267	5.542	5.825	3.810	5.253	6.024	NA	*NA*
1965	5.365	5.761	5.695	5.386	6.267	5.517	5.825	[g] 3.810	5.253	6.024	NA	*NA*
1970	5.262	5.709	5.579	5.393	6.252	5.499	5.825	3.731	5.253	6.024	NA	*NA*
1975	5.255	5.649	5.490	5.392	6.250	5.489	5.825	3.671	5.253	6.024	NA	*NA*
1980	5.322	5.752	5.340	5.441	6.254	5.472	5.825	3.669	5.253	6.024	3.564	*6.586*
1981	5.284	5.693	5.268	5.433	6.258	5.440	5.825	3.632	5.253	6.024	3.564	*6.562*
1982	5.267	5.699	5.211	5.423	6.258	5.406	5.825	3.588	5.253	6.024	3.564	*6.539*
1983	5.141	5.592	5.214	5.416	6.255	5.396	5.825	3.535	5.253	6.024	3.564	*6.515*
1984	5.308	5.658	5.167	5.418	6.251	5.385	5.825	3.580	5.253	6.024	3.564	*6.492*
1985	5.264	5.598	5.159	5.423	6.247	5.377	5.825	3.584	5.253	6.024	3.564	*6.469*
1986	5.269	5.632	5.237	5.426	6.257	5.410	5.825	3.631	5.253	6.024	3.564	*6.446*
1987	5.241	5.594	5.203	5.429	6.249	5.395	5.825	3.663	5.253	6.024	3.564	*6.423*
1988	5.259	5.598	5.196	5.433	6.250	5.402	5.825	3.643	5.253	6.024	3.564	*6.400*
1989	5.195	5.549	5.190	5.438	[d] 6.240	5.403	5.825	3.679	5.253	6.024	3.564	*6.377*
1990	5.146	5.554	5.219	5.442	6.244	5.403	5.825	3.630	5.253	6.024	3.564	*6.355*
1991	5.096	5.529	5.130	5.441	6.246	5.375	5.825	3.626	5.253	6.024	3.564	*6.332*
1992	5.126	5.514	5.133	5.443	6.238	5.369	5.825	3.643	5.253	6.024	3.564	*6.309*
1993	5.103	[b] 5.505	[b] 5.140	[b] 5.413	6.230	[b] 5.354	5.825	3.628	[h] 5.217	6.024	3.564	*6.287*
1994	5.097	5.513	5.115	5.413	6.213	5.344	[f] 5.820	3.657	5.214	6.024	3.564	*6.264*
1995	5.062	5.476	5.084	5.409	6.187	5.326	5.820	3.641	5.204	6.024	3.564	*6.242*
1996	4.997	5.431	5.076	5.416	6.194	5.323	5.820	3.629	5.211	6.024	3.564	*6.220*
1997	4.988	5.389	5.083	5.410	6.198	5.322	5.820	3.627	5.205	6.024	3.564	*6.198*
1998	4.974	5.363	5.101	5.406	6.210	5.335	5.819	3.619	5.203	6.024	3.564	*6.176*
1999	4.902	5.289	5.052	5.406	6.204	5.313	5.819	3.628	5.202	6.024	3.564	*6.167*
2000	4.908	5.313	5.015	5.415	6.188	5.311	5.819	3.610	5.201	6.024	3.564	*6.159*
2001	4.936	5.323	5.104	5.405	6.199	5.331	5.819	3.604	5.201	6.024	3.564	*6.151*
2002	4.885	5.291	5.053	5.404	6.172	5.309	5.819	3.588	5.199	6.024	3.564	*6.143*
2003	4.920	5.313	5.108	5.400	6.182	5.326	5.819	3.610	5.197	6.024	3.564	*6.106*
2004	4.952	5.324	5.106	5.407	6.134	5.330	5.818	3.591	5.196	[i] 5.982	3.564	*6.069*
2005	4.915	5.360	5.143	5.408	6.126	5.342	5.818	3.589	5.192	5.982	3.564	*6.032*
2006	4.886	5.296	5.120	5.405	6.038	5.323	5.803	3.551	5.185	5.987	3.564	*5.995*
2007	4.833	5.270	5.079	5.376	6.064	5.293	5.784	3.544	5.142	5.996	3.564	*5.959*
2008	4.772	5.156	5.103	5.342	6.013	5.268	5.780	3.549	5.106	5.992	3.564	*5.922*
2009	4.664	5.217	4.959	[c] 5.320	5.987	[c] 5.218	5.781	3.487	5.090	6.017	3.564	*5.901*
2010	4.664	5.195	4.921	5.316	5.956	5.204	5.778	3.489	5.067	6.059	3.562	*5.880*
2011	4.657	5.176	4.887	5.315	5.900	5.193	5.776	3.423	5.063	6.077	3.561	*5.859*
2012	4.714	5.126	4.844	5.306	5.925	5.176	5.774	3.440	5.062	6.084	3.560	*5.838*
2013	4.648	5.053	4.801	5.302	5.892	5.157	5.774	3.468	5.060	6.089	3.560	*5.817*
2014	4.664	5.016	4.804	5.300	5.906	5.161	5.773	3.439	5.059	6.100	3.559	*5.797*
2015	4.721	5.050	4.767	5.302	5.915	5.154	5.773	3.461	5.057	6.085	3.558	*5.776*
2016	4.631	5.022	4.798	5.303	5.885	5.161	5.773	3.424	5.055	6.104	3.558	*5.755*
2017	4.623	5.006	4.768	5.305	5.893	5.153	5.772	3.400	5.053	6.132	3.556	*5.735*
2018	4.620	4.971	4.664	5.310	5.896	5.122	5.772	3.381	5.054	6.122	3.553	*5.715*
2019	[E] 4.627	[E] 4.973	[E] 4.642	[E] 5.306	5.900	5.111	5.771	3.401	5.052	6.132	3.555	*5.694*
2020	[E] 4.627	[E] 4.973	[E] 4.642	[E] 5.306	[E] 5.900	[E] 5.111	[E] 5.771	[E] 3.401	[E] 5.052	[E] 6.132	[E] 3.555	*5.674*

[a] Petroleum products supplied, including natural gas plant liquids and crude oil burned directly as fuel. Quantity-weighted averages of the petroleum products included in each category are calculated by using heat content values for individual products shown in Tables A1 and A3.

[b] Beginning in 1993, includes fuel ethanol blended into motor gasoline.

[c] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[d] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[e] Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

[f] There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a quantity-weighted factor. Quantity-weighted averages of the sulfur-content categories of distillate fuel oil are calculated by using heat content values shown in Table A1. Excludes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

[g] Quantity-weighted averages of the major components of hydrocarbon gas liquids are calculated by using heat content values shown in Table A1. The factor for 1967 is used as the estimated factor for 1949–1966.

[h] Through 1992, excludes oxygenates. Beginning in 1993, includes fuel ethanol blended into motor gasoline; and for 1993–2006, also includes methyl tertiary butyl ether (MTBE) and other oxygenates blended into motor gasoline.

[i] There is a discontinuity in this time series between 2003 and 2004; beginning in 2004, the single constant factor is replaced by a quantity-weighted factor. Quantity-weighted averages of the two categories of petroleum coke are calculated by using heat content values shown in Table A1.

[j] Includes denaturant (petroleum added to ethanol to make it undrinkable). Fuel ethanol factors are weighted average heat contents for undenatured ethanol (3.539 million Btu per barrel) and products used as denaturant (natural gasoline, finished motor gasoline, and motor gasoline blending components—see Tables A1 and A3 for factors). The factor for 2009 is used as the estimated factor for 1980–2008.

[k] Corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol), used as the factor to estimate total biomass inputs to the production of undenatured ethanol. Observed ethanol yields (gallons undenatured ethanol per bushel of corn) are 2.5 in 1980, 2.666 in 1998, 2.68 in 2002, 2.78 in 2008, and 2.82 in 2012; yields in other years are estimated. Corn is assumed to have a gross heat content of 0.392 million Btu per bushel. Undenatured ethanol is assumed to have a gross heat content of 3.539 million Btu per barrel.

E=Estimate. NA=Not available.

Note: The heat content values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A4. Approximate Heat Content of Natural Gas

(Btu per Cubic Foot)

	Production		Consumption[a]				
	Marketed	Dry	End-Use Sectors[b]	Electric Power Sector[c]	Total	Imports	Exports
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
1975	1,095	1,021	1,020	1,026	1,021	1,026	1,014
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	1,032	[c] 1,028	1,031	1,004	1,019
1990	1,105	1,029	1,029	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	1,027	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	1,028	1,029	1,026	1,028	1,023	1,010
2002	1,103	1,024	1,025	1,020	1,024	1,022	1,008
2003	1,103	1,028	1,029	1,025	1,028	1,025	1,009
2004	1,104	1,026	1,026	1,027	1,026	1,025	1,009
2005	1,104	1,028	1,028	1,028	1,028	1,025	1,009
2006	1,103	1,028	1,028	1,028	1,028	1,025	1,009
2007	1,102	1,027	1,027	1,027	1,027	1,025	1,009
2008	1,100	1,027	1,027	1,027	1,027	1,025	1,009
2009	1,101	1,025	1,025	1,025	1,025	1,025	1,009
2010	1,098	1,023	1,023	1,022	1,023	1,025	1,009
2011	1,142	1,022	1,022	1,021	1,022	1,025	1,009
2012	1,091	1,024	1,025	1,022	1,024	1,025	1,009
2013	1,101	1,027	1,028	1,025	1,027	1,025	1,009
2014	1,116	1,032	1,033	1,029	1,032	1,025	1,009
2015	1,124	1,037	1,038	1,035	1,037	1,025	1,009
2016	1,128	1,037	1,039	1,034	1,037	1,025	1,009
2017	1,129	1,036	1,037	1,034	1,036	1,025	1,009
2018	1,134	1,036	1,038	1,033	1,036	1,025	1,009
2019	1,140	1,038	1,040	1,034	1,038	1,025	1,009
2020	[E] 1,140	[E] 1,038	[E] 1,040	[E] 1,034	[E] 1,038	[E] 1,025	[E] 1,009

[a] Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels.

[b] Residential, commercial, industrial, and transportation sectors.

[c] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

E=Estimate. – – =Not applicable.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A5. Approximate Heat Content of Coal and Coal Coke

(Million Btu per Short Ton)

	Coal									Coal Coke
			Consumption							
	Production[a]	Waste Coal Supplied[b]	Residential and Commercial Sectors[c]	Industrial Sector		Electric Power Sector[e,f]	Total	Imports	Exports	Imports and Exports
				Coke Plants	Other[d]					
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
1975	22.897	NA	22.261	26.782	22.436	21.642	22.506	25.000	26.562	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	[b] 10.391	23.650	26.800	22.347	[e] 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	[a] 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	12.360	22.242	27.425	22.468	20.082	20.387	25.000	25.972	24.800
2004	20.424	12.266	22.324	27.426	22.473	19.980	20.290	25.000	26.108	24.800
2005	20.348	12.093	22.342	26.279	22.178	19.988	20.246	25.000	25.494	24.800
2006	20.310	12.080	22.066	26.271	22.050	19.931	20.181	25.000	25.453	24.800
2007	20.340	12.090	22.069	26.329	22.371	19.909	20.168	25.000	25.466	24.800
2008	20.208	12.121	[c] 23.035	26.281	22.304	19.713	19.979	25.000	25.399	24.800
2009	19.963	12.076	22.852	26.334	21.823	19.521	19.741	25.000	25.633	24.800
2010	20.173	11.960	22.611	26.295	21.846	19.623	19.870	25.000	25.713	24.800
2011	20.142	11.604	22.099	26.299	21.568	19.341	19.600	25.000	25.645	24.800
2012	20.215	11.539	21.300	28.636	21.449	19.211	19.544	23.128	24.551	24.800
2013	20.182	11.103	21.233	28.705	21.600	19.174	19.513	22.379	24.605	24.800
2014	20.146	11.474	21.307	28.458	21.525	19.290	19.611	22.187	25.032	24.800
2015	19.880	11.527	20.699	28.526	21.258	19.146	19.482	22.633	25.048	24.800
2016	19.977	11.496	20.078	28.608	21.055	19.153	19.459	22.327	25.655	24.800
2017	20.025	11.438	19.467	28.673	20.802	18.981	19.303	21.489	24.628	24.800
2018	20.160	11.419	19.269	28.608	20.739	18.915	19.258	20.415	24.294	24.800
2019	20.053	11.513	19.084	28.629	20.721	18.903	19.292	20.558	24.584	24.800
2020	[E] 20.053	[E] 11.513	[E] 19.084	[E] 28.629	[E] 20.721	[E] 18.903	[E] 19.292	[E] 20.558	[E] 24.584	[E] 24.800

[a] 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).

[b] 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."

[c] Through 2007, used as the thermal conversion factor for coal consumption by the residential and commercial sectors. Beginning in 2008, used as the thermal conversion factor for coal consumption by the commercial sector only.

[d] Includes transportation. Excludes coal synfuel plants.

[e] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 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.

[f] Electric power sector factors are for anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and, beginning in 1998, coal synfuel.

E=Estimate. NA=Not available.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A6. Approximate Heat Rates for Electricity, and Heat Content of Electricity

(Btu per Kilowatthour)

	Approximate Heat Rates[a] for Electricity Net Generation						
	Fossil Fuels[b]						
	Coal[c]	Petroleum[d]	Natural Gas[e]	Total Fossil Fuels[f,g]	Nuclear[h]	Noncombustible Renewable Energy[g,i]	Heat Content[j] of Electricity[k]
1950	NA	NA	NA	14,030	– –	14,030	3,412
1955	NA	NA	NA	11,699	– –	11,699	3,412
1960	NA	NA	NA	10,760	11,629	10,760	3,412
1965	NA	NA	NA	10,453	11,804	10,453	3,412
1970	NA	NA	NA	10,494	10,977	10,494	3,412
1975	NA	NA	NA	10,406	11,013	10,406	3,412
1980	NA	NA	NA	10,388	10,908	10,388	3,412
1981	NA	NA	NA	10,453	11,030	10,453	3,412
1982	NA	NA	NA	10,454	11,073	10,454	3,412
1983	NA	NA	NA	10,520	10,905	10,520	3,412
1984	NA	NA	NA	10,440	10,843	10,440	3,412
1985	NA	NA	NA	10,447	10,622	10,447	3,412
1986	NA	NA	NA	10,446	10,579	10,446	3,412
1987	NA	NA	NA	10,419	10,442	10,419	3,412
1988	NA	NA	NA	10,324	10,602	10,324	3,412
1989	NA	NA	NA	10,432	10,583	10,432	3,412
1990	NA	NA	NA	10,402	10,582	10,402	3,412
1991	NA	NA	NA	10,436	10,484	10,436	3,412
1992	NA	NA	NA	10,342	10,471	10,342	3,412
1993	NA	NA	NA	10,309	10,504	10,309	3,412
1994	NA	NA	NA	10,316	10,452	10,316	3,412
1995	NA	NA	NA	10,312	10,507	10,312	3,412
1996	NA	NA	NA	10,340	10,503	10,340	3,412
1997	NA	NA	NA	10,213	10,494	10,213	3,412
1998	NA	NA	NA	10,197	10,491	10,197	3,412
1999	NA	NA	NA	10,226	10,450	10,226	3,412
2000	NA	NA	NA	10,201	10,429	10,201	3,412
2001	10,378	10,742	10,051	[b] 10,333	10,443	10,333	3,412
2002	10,314	10,641	9,533	10,173	10,442	10,173	3,412
2003	10,297	10,610	9,207	10,125	10,422	10,125	3,412
2004	10,331	10,571	8,647	10,016	10,428	10,016	3,412
2005	10,373	10,631	8,551	9,999	10,436	9,999	3,412
2006	10,351	10,809	8,471	9,919	10,435	9,919	3,412
2007	10,375	10,794	8,403	9,884	10,489	9,884	3,412
2008	10,378	11,015	8,305	9,854	10,452	9,854	3,412
2009	10,414	10,923	8,160	9,760	10,459	9,760	3,412
2010	10,415	10,984	8,185	9,756	10,452	9,756	3,412
2011	10,444	10,829	8,152	9,716	10,464	9,716	3,412
2012	10,498	10,991	8,039	9,516	10,479	9,516	3,412
2013	10,459	10,713	7,948	9,541	10,449	9,541	3,412
2014	10,428	10,814	7,907	9,510	10,459	9,510	3,412
2015	10,495	10,687	7,878	9,319	10,458	9,319	3,412
2016	10,493	10,811	7,870	9,232	10,459	9,232	3,412
2017	10,465	10,834	7,812	9,213	10,459	9,213	3,412
2018	10,481	11,095	7,821	9,104	10,455	9,104	3,412
2019	10,551	11,135	7,732	8,904	10,442	8,904	3,412
2020	[E] 10,551	[E] 11,135	[E] 7,732	[E] 8,904	[E] 10,442	[E] 8,904	3,412

[a] The values in columns 1–6 of this table are for net heat rates. See "Heat Rate" in Glossary.

[b] 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 electricity-only independent power producers.

[c] Includes anthracite, bituminous coal, subbituminous coal, lignite, and, beginning in 2002, waste coal and coal synfuel.

[d] Includes distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

[e] Includes natural gas and supplemental gaseous fuels.

[f] Includes coal, petroleum, natural gas, and, beginning in 2001, other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

[g] The fossil-fuels heat rate is used as the thermal conversion factor for electricity net generation from noncombustible renewable energy (hydro, geothermal, solar thermal, photovoltaic, and wind) to approximate the quantity of fossil fuels replaced by these sources. Through 2000, also used as the thermal conversion factor for wood and waste electricity net generation at electric utilities; beginning in 2001, Btu data for wood and waste at electric utilities are available from surveys.

[h] Used as the thermal conversion factor for nuclear electricity net generation.

[i] Technology-based geothermal heat rates are no longer used in Btu calculations in this report. For technology-based geothermal heat rates for 1960–2010, see the *Annual Energy Review 2010,* Table A6.

[j] See "Heat Content" in Glossary.

[k] 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.

E=Estimate. NA=Not available. – – =Not applicable.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of Petroleum and Natural Gas Liquids

Asphalt. The U.S. 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 Blending Components. Assumed by EIA to be 5.048 million Btu per barrel or equal to the thermal conversion factor for **Aviation Gasoline (Finished)**.

Aviation Gasoline (Finished). 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.

Butylene. EIA estimated the thermal conversion factor to be 4.377 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Crude Oil Exports. • 1949–2014: 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**. • 2015 forward: Calculated annually by EIA based on conversion of American Petroleum Institute (API) gravity ranges of crude oil exports as reported in trade data from the U.S. Census Bureau. Specific gravity (SG) = 141.5 / (131.5 + API gravity). The higher heating value (HHV) in million Btu per barrel = SG * (7.801796 - 1.3213 * SG^2).

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. • 1949–2014: 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." • 2015 forward: Calculated annually by EIA based on conversion of American Petroleum Institute (API) gravity ranges of crude oil production as reported on Form EIA-914, "Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report." Specific gravity (SG) = 141.5 / (131.5 + API gravity). The higher heating value (HHV) in million Btu per barrel = SG * (7.801796 - 1.3213 * SG^2).

Distillate Fuel Oil Consumption. • 1949–1993: 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." • 1994 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for **Distillate Fuel Oil, 15 ppm Sulfur and Under** (5.770 million Btu per barrel), **Distillate Fuel Oil, Greater Than 15 ppm to 500 ppm Sulfur** (5.817 million Btu per barrel), and **Distillate Fuel Oil, Greater Than 500 ppm Sulfur** (5.825 million Btu per barrel).

Distillate Fuel Oil, 15 ppm Sulfur and Under. EIA adopted the thermal conversion factor of 5.770 million Btu per barrel (137,380 Btu per gallon) for U.S. conventional diesel from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

Distillate Fuel Oil, Greater Than 15 ppm to 500 ppm Sulfur. EIA adopted the thermal conversion factor of 5.817 million Btu per barrel (138,490 Btu per gallon) for low-sulfur diesel from U.S. Department of Energy, Argonne Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

Distillate Fuel Oil, Greater Than 500 ppm Sulfur. 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 estimated the thermal conversion factor to be 2.783 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Ethylene. EIA adopted the thermal conversion factor of 2.436 million Btu per barrel (0.058 million Btu per gallon) as published in the Federal Register EPA; 40 CFR part 98; e-CRF; Table C1; April 5, 2019. The ethylene higher heating value is determined at 41 degrees Fahrenheit at saturation pressure.

Hydrocarbon Gas Liquids. • 1949–1966: EIA used the 1967 factor. • 1967 forward: Calculated annually by EIA as the average of the thermal conversion factors for all hydrocarbon gas liquids consumed (see Table A1) weighted by the quantities consumed. The component products of hydrocarbon gas liquids are ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). For 1967–1980, quantities consumed are from EIA, Energy Data Reports, "Petroleum Statement, Annual." For 1981 forward, quantities consumed are from EIA, *Petroleum Supply Annual.*

Hydrogen. Assumed by EIA to be 6.287 million Btu per barrel or equal to the thermal conversion factor for **Residual Fuel Oil**.

Isobutane. EIA estimated the thermal conversion factor to be 4.183 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Isobutylene. EIA estimated the thermal conversion factor to be 4.355 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

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."

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 Blending Components. • 1949–2006: 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 Markets 1947-1985,* a 1968 release of historical and projected statistics. • 2007 forward: EIA adopted the thermal conversion factor of 5.222 million Btu per barrel (124,340 Btu per gallon) for gasoline blendstock from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

Motor Gasoline Exports. • 1949–2005: 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. • 2006 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and the methyl tertiary butyl ether (MTBE) blended into motor gasoline exports. The factor for gasoline blendstock is 5.253 million Btu per barrel in 2006 and 5.222 million Btu per barrel beginning in 2007 (see **Motor Gasoline Blending Components**). For MTBE, EIA adopted the thermal conversion factor of 4.247 million Btu per barrel

(101,130 Btu per gallon) from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

Motor Gasoline (Finished) Consumption. • 1949–1992: 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 Markets 1947-1985,* a 1968 release of historical and projected statistics. • 1993–2006: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and the oxygenates blended into motor gasoline. The factor for gasoline blendstock is 5.253 million Btu per barrel (the motor gasoline factor used for previous years). The factors for fuel ethanol are shown in Table A3 (see **Fuel Ethanol, Denatured**). The following factors for other oxygenates are from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013—methyl tertiary butyl ether (MTBE): 4.247 million Btu per barrel (101,130 Btu per gallon); tertiary amyl methyl ether (TAME): 4.560 million Btu per barrel (108,570 Btu per gallon); ethyl tertiary butyl ether (ETBE): 4.390 million Btu per barrel (104,530 Btu per gallon); methanol: 2.738 million Btu per barrel (65,200 Btu per gallon); and butanol: 4.555 million Btu per barrel (108,458 Btu per gallon). • 2007 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and fuel ethanol blended into motor gasoline. The factor for gasoline blendstock is 5.222 million Btu per barrel (124,340 Btu per gallon), which is from the GREET model (see above). The factors for fuel ethanol are shown in Table A3 (see **Fuel Ethanol, Denatured**).

Motor Gasoline Imports. • 1949–2006: 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. • 2007 forward: EIA adopted the thermal conversion factor of 5.222 million Btu per barrel (124,340 Btu per gallon) for gasoline blendstock from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

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 estimated the thermal conversion factor to be 4.638 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute. EIA assumes a natural gasoline ratio of 29% isopentane, 29% neopentane, 20% normal pentane, 13% normal hexane, 4% cyclohexane, 3% benzene, and 2% toluene in these calculations.

Normal Butane. EIA estimated the thermal conversion factor to be 4.353 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Other Hydrocarbons. Assumed by EIA to be 5.825 million Btu per barrel or equal to the thermal conversion factor for **Unfinished Oils**.

Oxygenates (Excluding Fuel Ethanol). EIA adopted the thermal conversion factor of 4.247 million Btu per barrel (101,130 Btu per gallon) for methyl tertiary butyl ether (MTBE) from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

Petrochemical Feedstocks, Naphtha Less Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.248 million Btu per barrel or equal to the thermal conversion factor for **Special Naphthas**.

Petrochemical Feedstocks, Other Oils Equal to or Greater Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.825 million Btu per barrel or equal to the thermal conversion factor for **Distillate Fuel Oil**.

Petrochemical Feedstocks, Still Gas. Assumed by EIA to be equal to the thermal conversion factor for **Still Gas**.

Petroleum Coke, Catalyst. Assumed by EIA to be 6.287 million Btu per barrel or equal to the thermal conversion factor for **Residual Fuel Oil**.

Petroleum Coke, Marketable. EIA adopted the thermal conversion factor of 5.719 million Btu per barrel, calculated by dividing 28,595,925 Btu per short ton for petroleum coke (from U.S. Department of Energy, Argonne National

Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_October 2013) by 5.0 barrels per short ton (as given in the Bureau of Mines Form 6-1300-M and successor EIA forms).

Petroleum Coke, Total. • 1949–2003: 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. • 2004 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for **Petroleum Coke, Catalyst** (6.287 million Btu per barrel) and **Petroleum Coke, Marketable** (5.719 million Btu per barrel).

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.gov/state/seds/sep_use/notes/use_petrol.pdf.

Petroleum Consumption, Electric Power Sector. Calculated annually by EIA as the average of the thermal conversion factors for distillate fuel oil, petroleum coke, and residual fuel oil consumed by the electric power sector weighted by the quantities consumed by the electric power sector. Data are from Form EIA-923, "Power Plant Operations 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.gov/state/seds/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.gov/state/seds/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.gov/state/seds/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. • 1973–1983: Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. EIA estimated the thermal conversion factor to be 3.841 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Propylene. EIA estimated the thermal conversion factor to be 3.835 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Renewable Fuels Except Fuel Ethanol. For "Biomass-Based Diesel Fuel" and "Other Renewable Fuels," EIA assumed the thermal conversion factor to be 5.359 million Btu per barrel or equal to the thermal conversion factor for **Biodiesel**. For "Other Renewable Diesel Fuel," EIA adopted the thermal conversion factor of 5.494 million Btu per barrel (130,817 Btu per gallon) for renewable diesel II (UOP-HDO) from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2013, October 2013.

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** 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. • 1949–2015: 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*. • 2016 forward: Assumed by EIA to be 6.287 million Btu per barrel or equal to the thermal conversion factor for **Residual Fuel Oil.**

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, the average of all natural gas or equal to that for **Distillate Fuel Oil** and first published it in EIA's *Annual Report to Congress, Volume 3, 1977*.

Unfractionated Stream. • 1979–1982: EIA assumed the thermal conversion factor to be 3.800 million Btu per barrel, the average of all natural gas plant liquids calculated on their contribution to total barrels produced.

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 thermal conversion factor for biodiesel to be 5.359 million Btu per barrel, or 17,253 Btu per pound.

Biodiesel Feedstock. EIA used soybean oil input to the production of biodiesel (million Btu soybean oil per barrel biodiesel) as the factor to estimate total biomass inputs to the production of biodiesel. EIA assumed that 7.65 pounds of soybean oil are needed to produce one gallon of biodiesel, and 5.433 million Btu of soybean oil are needed to produce one barrel of biodiesel. EIA also assumed that soybean oil has a gross heat content of 16,909 Btu per pound, or 5.483 million Btu per barrel.

Ethanol (Undenatured). 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, DC, October 1991.

Fuel Ethanol (Denatured). • 1981–2008: EIA used the 2009 factor. • 2009 forward: Calculated by EIA as the annual quantity-weighted average of the thermal conversion factors for undenatured ethanol (3.539 million Btu per barrel), natural gasoline used as denaturant (4.638 million Btu per barrel), and conventional motor gasoline and motor gasoline blending components used as denaturant (5.253 million Btu per barrel). The quantity of ethanol consumed is from EIA's *Petroleum Supply Annual* (PSA) and *Petroleum Supply Monthly* (PSM), Table 1, data for renewable fuels and oxygenate plant net production of fuel ethanol. The quantity of natural gasoline used as denaturant is from PSA/PSM, Table 1, data for renewable fuels and oxygenate plant net production of natural gasoline, multiplied by -1. The

quantity of conventional motor gasoline and motor gasoline blending components used as denaturant is from PSA/PSM, Table 1, data for renewable fuels and oxygenate plant net production of conventional motor gasoline and motor gasoline blending components, multiplied by -1.

Fuel Ethanol Feedstock. EIA used corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol) as the annual factor to estimate total biomass inputs to the production of undenatured ethanol. EIA used the following observed ethanol yields (in gallons undenatured ethanol per bushel of corn) from U.S. Department of Agriculture: 2.5 in 1980, 2.666 in 1998, 2.68 in 2002; and from University of Illinois at Chicago, Energy Resources Center, "2012 Corn Ethanol: Emerging Plant Energy and Environmental Technologies": 2.78 in 2008, and 2.82 in 2012. EIA estimated the ethanol yields in other years. EIA also assumed that corn has a gross heat content of 0.392 million Btu per bushel.

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-923, "Power Plant Operations 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. The heat content of natural gas consumed by the end-use sectors is calculated as the total heat content of natural gas consumed minus the heat content of natural gas consumed by the electric power sector. The quantity of natural gas consumed by the end-use sectors is calculated as the total quantity of natural gas consumed minus the quantity of natural gas consumed by the electric power sector. Data are from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; and Form EIA-923, "Power Plant Operations Report," and predecessor forms.

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 natural gas liquids produced (see **Natural Gas 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-923, "Power Plant Operations Report," and predecessor forms.

Coal Consumption, Industrial Sector, Coke Plants. • 1949–2011: Calculated annually by EIA based on the reported volatility (low, medium, or high) of coal received by coke plants. (For 2011, EIA used the following volatility factors, in million Btu per short ton: low volatile—26.680; medium volatile—27.506; and high volatile—25.652.) Data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal received by coke plants by the quantity received. Through June 2014, data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Industrial Sector, Other. • 1949–2007: Calculated annually by EIA by dividing the heat content of coal received by manufacturing plants by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by manufacturing, gasification, and liquefaction plants by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Residential and Commercial Sectors. • 1949–1999: Calculated annually by EIA by dividing the heat content of coal received by the residential and commercial sectors by the quantity received. Data are from Form EIA-6, "Coal Distribution Report," and predecessor forms. • 2000–2007: Calculated annually by EIA by dividing the heat content of coal consumed by commercial combined-heat-and-power (CHP) plants by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by commercial and institutional users by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

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. • 1949–2011: 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, U.S. Census Bureau, "Monthly Report EM 545," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. The average heat content of steam coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"), and Form EIA-923, "Power Plant Operations Report." Through June 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"). Data for export quantities are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report EM 545."

Coal Imports. • 1949–1963: Calculated annually by EIA by dividing the heat content of coal imported by the quantity imported. Data are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report IM 145," and predecessor forms. • 1964–2011: Assumed by EIA to be 25.000 million Btu per short ton. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal imported (received) by the quantity imported (received). Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); and Form EIA-923, "Power Plant Operations Report."

Coal Production. • 1949–2011: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users"; Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; Form EIA-923, "Power Plant Operations Report"; and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received and exported by the quantity received and exported. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); Form EIA-

923, “Power Plant Operations Report”; U.S. Department of Commerce, U.S. Census Bureau, “Monthly Report EM 545”; and predecessor forms.

Waste Coal Supplied. • 1989–2000: Calculated annually by EIA by dividing the heat content of waste coal consumed by the quantity consumed. Data are from Form EIA-860B, “Annual Electric Generator Report—Nonutility,” and predecessor form. • 2001 forward: Calculated by EIA by dividing the heat content of waste coal received (or consumed) by the quantity received (or consumed). Receipts data are from Form EIA-3, “Quarterly Survey of Industrial, Commercial, and Institutional Coal Users” (formerly called “Quarterly Survey of Non-Electric Sector Coal Data”), and predecessor forms. Consumption data are from Form EIA-923, “Power Plant Operations Report,” and predecessor forms.

Approximate Heat Rates for Electricity

Electricity Net Generation, Coal. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using anthracite, bituminous coal, subbituminous coal, lignite, and beginning in 2002, waste coal and coal synfuel.

Electricity Net Generation, Natural Gas. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using natural gas and supplemental gaseous fuels.

Electricity Net Generation, Noncombustible Renewable Energy. There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydro, geothermal, solar thermal, photovoltaic, and wind 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 (see “Electricity Net Generation, Total Fossil Fuels”). By using that factor it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption, such as droughts. See Appendix E for more information.

Electricity Net Generation, Nuclear. • 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 data reported on Form EIA-860, “Annual Electric Generator Report,” and predecessor forms.

Electricity Net Generation, Petroleum. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

Electricity Net Generation, Total Fossil Fuels. • 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-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using coal, petroleum, natural gas, and other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix B

Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

Data presented in the *Monthly Energy Review* and in other U.S. 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. 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 short tons x 0.9071847 metric tons/short ton = 453.6 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 barrels x 42 gallons/barrel = 420 gallons).

Table B1. Metric Conversion Factors

Type of Unit	U.S. Unit		Equivalent in	Metric Units
Mass	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[a]	kilograms (kg)
	1 pound uranium oxide (lb U_3O_8)	=	0.384 647[b]	kilograms uranium (kgU)
	1 ounce, avoirdupois (avdp oz)	=	28.349 52	grams (g)
Volume	1 barrel of oil (bbl)	=	0.158 987 3	cubic meters (m^3)
	1 cubic yard (yd^3)	=	0.764 555	cubic meters (m^3)
	1 cubic foot (ft^3)	=	0.028 316 85	cubic meters (m^3)
	1 U.S. gallon (gal)	=	3.785 412	liters (L)
	1 ounce, fluid (fl oz)	=	29.573 53	milliliters (mL)
	1 cubic inch (in^3)	=	16.387 06	milliliters (mL)
Length	1 mile (mi)	=	1.609 344[a]	kilometers (km)
	1 yard (yd)	=	0.914 4[a]	meters (m)
	1 foot (ft)	=	0.304 8[a]	meters (m)
	1 inch (in)	=	2.54[a]	centimeters (cm)
Area	1 acre	=	0.404 69	hectares (ha)
	1 square mile (mi^2)	=	2.589 988	square kilometers (km^2)
	1 square yard (yd^2)	=	0.836 127 4	square meters (m^2)
	1 square foot (ft^2)	=	0.092 903 04[a]	square meters (m^2)
	1 square inch (in^2)	=	6.451 6[a]	square centimeters (cm^2)
Energy	1 British thermal unit (Btu)[c]	=	1,055.055 852 62[a]	joules (J)
	1 calorie (cal)	=	4.186 8[a]	joules (J)
	1 kilowatthour (kWh)	=	3.6[a]	megajoules (MJ)
Temperature[d]	32 degrees Fahrenheit (°F)	=	0[a]	degrees Celsius (°C)
	212 degrees Fahrenheit (°F)	=	100[a]	degrees Celsius (°C)

[a] Exact conversion.
[b] Calculated by the U.S. Energy Information Administration.
[c] The Btu used in this table is the International Table Btu adopted by the Fifth International Conference on Properties of Steam, London, 1956.
[d] 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: http://www.eia.gov/totalenergy/data/monthly/#appendices.

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 Std268-1992, pp. 28 and 29.

Table B2. Metric Prefixes

Unit Multiple	Prefix	Symbol	Unit Subdivision	Prefix	Symbol
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	μ
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: http://www.eia.gov/totalenergy/data/monthly/#appendices.
Sources: 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

Energy Source	Original Unit		Equivalent in Final Units	
Petroleum	1 barrel (bbl)	=	42[a]	U.S. gallons (gal)
Coal	1 short ton	=	2,000[a]	pounds (lb)
	1 long ton	=	2,240[a]	pounds (lb)
	1 metric ton (t)	=	1,000[a]	kilograms (kg)
Wood	1 cord (cd)	=	1.25[b]	shorts tons
	1 cord (cd)	=	128[a]	cubic feet (ft^3)

[a] Exact conversion.
[b] Calculated by the U.S. Energy Information Administration.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#appendices.
Sources: 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

Population, U.S. Gross Domestic Product, and U.S. Gross Output

Table C1. Population, U.S. Gross Domestic Product, and U.S. Gross Output

	Population			U.S. Gross Domestic Product			U.S. Gross Output[a]
	United States[b]	World	United States as Share of World	Billion Nominal Dollars[d]	Billion Chained (2012) Dollars[e]	Implicit Price Deflator[c] (2012 = 1.00000)	Billion Nominal Dollars[d]
	Million People		Percent				
1950	152.3	2,557.6	6.0	299.8	2,289.5	0.13095	577.8
1955	165.9	2,782.1	6.0	425.5	2,871.2	.14819	802.6
1960	180.7	3,043.0	5.9	542.4	3,260.0	.16638	1,006.0
1965	194.3	3,350.8	5.8	742.3	4,170.8	.17798	1,356.0
1970	205.1	3,713.5	5.5	1,073.3	4,951.3	.21677	1,903.0
1975	216.0	4,089.1	5.3	1,684.9	5,644.8	.29849	3,055.3
1980	227.2	4,445.4	5.1	2,857.3	6,759.2	.42273	5,462.0
1981	229.5	4,526.8	5.1	3,207.0	6,930.7	.46273	6,033.5
1982	231.7	4,607.0	5.0	3,343.8	6,805.8	.49132	6,175.0
1983	233.8	4,688.3	5.0	3,634.0	7,117.7	.51056	6,631.0
1984	235.8	4,767.2	4.9	4,037.6	7,632.8	.52898	7,313.8
1985	237.9	4,849.3	4.9	4,339.0	7,951.1	.54571	7,775.7
1986	240.1	4,933.6	4.9	4,579.6	8,226.4	.55670	8,031.0
1987	242.3	5,020.1	4.8	4,855.2	8,511.0	.57046	8,707.5
1988	244.5	5,107.4	4.8	5,236.4	8,866.5	.59059	9,434.2
1989	246.8	5,197.5	4.7	5,641.6	9,192.1	.61374	10,069.8
1990	249.6	5,285.7	4.7	5,963.1	9,365.5	.63671	10,624.6
1991	253.0	5,368.7	4.7	6,158.1	9,355.4	.65825	10,808.0
1992	256.5	5,452.6	4.7	6,520.3	9,684.9	.67325	11,381.0
1993	259.9	5,533.9	4.7	6,858.6	9,951.5	.68920	12,024.4
1994	263.1	5,613.6	4.7	7,287.2	10,352.4	.70392	12,826.8
1995	266.3	5,691.9	4.7	7,639.7	10,630.3	.71868	13,653.2
1996	269.4	5,772.1	4.7	8,073.1	11,031.4	.73183	14,463.4
1997	272.6	5,850.7	4.7	8,577.6	11,521.9	.74445	15,393.3
1998	275.9	5,928.2	4.6	9,062.8	12,038.3	.75283	16,216.8
1999	279.0	6,005.2	4.6	9,630.7	12,610.5	.76370	17,272.3
2000	282.2	6,081.8	4.6	10,252.3	13,131.0	.78078	18,623.9
2001	285.0	6,158.7	4.6	10,581.8	13,262.1	.79790	18,888.3
2002	287.6	6,236.0	4.6	10,936.4	13,493.1	.81052	19,178.3
2003	290.1	6,313.8	4.6	11,458.2	13,879.1	.82557	20,141.2
2004	292.8	6,390.9	4.6	12,213.7	14,406.4	.84780	21,690.2
2005	295.5	6,468.7	4.6	13,036.6	14,912.5	.87421	23,512.9
2006	298.4	6,548.4	4.6	13,814.6	15,338.3	.90066	24,931.4
2007	301.2	6,630.2	4.5	14,451.9	15,626.0	.92486	26,238.5
2008	304.1	6,713.3	4.5	14,712.8	15,604.7	.94285	26,989.2
2009	306.8	6,796.3	4.5	14,448.9	15,208.8	.95004	24,919.5
2010	309.3	6,877.8	4.5	14,992.1	15,598.8	.96111	26,422.4
2011	311.6	6,958.9	4.5	15,542.6	15,840.7	.98118	27,999.5
2012	313.8	7,040.1	4.5	16,197.0	16,197.0	1.00000	29,186.8
2013	316.0	7,122.3	4.4	16,784.9	16,495.4	1.01755	30,291.3
2014	318.3	7,204.2	4.4	17,527.3	16,912.0	1.03638	31,740.0
2015	320.6	7,285.2	4.4	18,238.3	17,432.2	1.04624	R 32,222.3
2016	322.9	7,365.7	4.4	18,745.1	17,730.5	1.05722	R 32,882.2
2017	325.0	7,445.4	4.4	19,543.0	18,144.1	1.07710	R 34,474.7
2018	326.7	7,524.5	4.3	20,611.9	18,687.8	1.10296	R 36,603.4
2019	328.2	7,604.7	4.3	21,433.2	19,091.7	1.12265	R 37,817.0

[a] Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.
[b] Resident population of the 50 states and the District of Columbia estimated for July 1 of each year.
[c] The gross domestic product implicit price deflator is used to convert nominal dollars to chained (2012) dollars.
[d] See "Nominal Dollars" in Glossary.
[e] See "Chained Dollars" in Glossary.
R=Revised.

Notes: • Data are estimates. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: • **United States Population: 1949–1989—**U.S. Department of Commerce (DOC), U.S. Census Bureau, Current Population Reports Series P-25 (June 2000). **1990–1999—**DOC, U.S. Census Bureau, "Time Series of Intercensal State Population Estimates" (April 2002). **2000–2009—**DOC, U.S. Census Bureau, "Intercensal Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico" (September 2011). **2010 forward—**DOC, U.S. Census Bureau, "Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico" (January 2020). • **World Population: 1950 forward—**DOC, U.S. Census Bureau, International Database (December 2019). • **United States as Share of World Population:** Calculated as U.S. population divided by world population. • **U.S. Gross Domestic Product: 1949 forward—**DOC, Bureau of Economic Analysis (BEA), National Income and Product Accounts (August 2020), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1949–1996—**DOC, BEA, GDP by industry (Historical) data (October 2019). **1997 forward—**DOC, BEA, GDP by Industry data (September 2020).

Appendix D

Estimated Primary Energy Consumption in the United States, Selected Years, 1635-1945

Estimated Primary Energy Consumption in the United States, Selected Years, 1635-1945

Table D1. Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945 (Quadrillion Btu)

	Fossil Fuels				Renewable Energy				
					Conventional Hydroelectric Power	Biomass		Electricity Net Imports[b]	Total
	Coal	Natural Gas	Petroleum	Total		Wood [a]	Total		
1635	NA	– –	– –	NA	– –	(s)	(s)	– –	(s)
1645	NA	– –	– –	NA	– –	0.001	0.001	– –	0.001
1655	NA	– –	– –	NA	– –	.002	.002	– –	.002
1665	NA	– –	– –	NA	– –	.005	.005	– –	.005
1675	NA	– –	– –	NA	– –	.007	.007	– –	.007
1685	NA	– –	– –	NA	– –	.009	.009	– –	.009
1695	NA	– –	– –	NA	– –	.014	.014	– –	.014
1705	NA	– –	– –	NA	– –	.022	.022	– –	.022
1715	NA	– –	– –	NA	– –	.037	.037	– –	.037
1725	NA	– –	– –	NA	– –	.056	.056	– –	.056
1735	NA	– –	– –	NA	– –	.080	.080	– –	.080
1745	NA	– –	– –	NA	– –	.112	.112	– –	.112
1755	NA	– –	– –	NA	– –	.155	.155	– –	.155
1765	NA	– –	– –	NA	– –	.200	.200	– –	.200
1775	NA	– –	– –	NA	– –	.249	.249	– –	.249
1785	NA	– –	– –	NA	– –	.310	.310	– –	.310
1795	NA	– –	– –	NA	– –	.402	.402	– –	.402
1805	NA	– –	– –	NA	– –	.537	.537	– –	.537
1815	NA	– –	– –	NA	– –	.714	.714	– –	.714
1825	NA	– –	– –	NA	– –	.960	.960	– –	.960
1835	NA	– –	– –	NA	– –	1.305	1.305	– –	1.305
1845	NA	– –	– –	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	[a]1.261	2.703	.009	32.665

[a] There is a discontinuity in the "Wood" time series between 1945 (in this table) and 1949 (in Table 10.1). Through 1945, data are for fuelwood only; beginning in 1949, data are for wood and wood-derived fuels.

[b] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

NA=Not available. – – =Not applicable. (s)=Less than 0.5 trillion Btu.

Notes: • For years not shown, data are not available. • See Tables 1.3 and 10.1 for continuation of these data series beginning in 1949. • See Note, "Geographic Coverage of Statistics for 1635–1945," at end of section.

Sources: • **Fossil Fuels:** *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. Electricity net imports are assumed to equal hydroelectric consumption minus hydroelectric production (data are converted to Btu by multiplying by 3,412 Btu per kilowatthour).

Note. Geographic Coverage of Statistics for 1635–1945.
Table D1 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, although 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 D1 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 1900–1945 is the 48 contiguous states, and the District of Columbia. • Wood—All 48 contiguous states and the District of Columbia by 1810.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix E

Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables

Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables

EIA compiles data on most energy sources in physical units, such as barrels and cubic feet, in order to calculate total primary energy consumption. To sum data for different energy sources, EIA converts the data to the common unit of British thermal units (Btu), a measure that is based on the thermal conversion of energy resources to heat and power.

Noncombustible renewables are resources from which energy is extracted without burning or combusting fuel. They include hydroelectric, geothermal, solar, and wind energy. When noncombustible renewables are used to generate electricity, there is no fuel combustion and, therefore, no set Btu conversion factors for the energy sources.[1] However, there are several possible approaches for converting that electricity to Btu. Three of these approaches are described below.

Fossil Fuel Equivalency Approach

In Sections 1, 2, and 10 of the *Monthly Energy Review*, EIA calculates total primary energy consumption for noncombustible renewable electricity in Btu by applying a fossil fuel equivalency factor. Under that approach, the primary energy consumption of noncombustible renewable electricity can be viewed as the sum of captured energy "transformed into electricity" and an "adjustment for fossil fuel equivalency."

The adjustment for fossil fuel equivalency is equal to the difference between total primary consumption of noncombustible renewables for electricity generation in Btu (calculated using the fossil fuels heat rate in Table A6) and the captured energy of that electricity (calculated using the constant conversion factor of 3,412 Btu per kWh). The fossil fuels heat rate is equal to the thermal efficiency across fossil fuel-fired generating stations based on net generation. The fossil fuel equivalency adjustment represents the energy that would have been consumed if electricity had been generated by fossil fuels. By using that factor, it is possible, for example, to evaluate fossil fuel requirements for replacing electricity generation during periods of interruptions, such as droughts.

Captured Energy Approach

Captured energy (Tables E1a and E1b) reflects the primary energy captured for economic use and does not include losses. Thus, it is the net energy available for direct consumption after transformation of a noncombustible renewable into electricity. In other words, captured energy is the energy measured as the "output" of a generating unit, such as electricity from a wind turbine or solar plant. The captured energy approach is often used to show the economically significant energy transformations in the United States. There is no market for the resource-specific energy apart from its immediate, site-specific energy conversion, and there is no substantive opportunity cost to its continued exploitation.[2]

Incident Energy Approach

Incident energy is the mechanical, radiation, or thermal energy that is measurable as the "input" of the device. EIA defines "incident energy" for noncombustible renewables as the gross energy that first strikes an energy conversion device:

- For hydroelectric, the energy contained in the water passing through the penstock (a closed conduit for carrying water to the turbines)
- For geothermal, the energy contained in the hot fluid at the surface of the wellbore
- For wind, the energy contained in the wind that passes through the rotor disc
- For solar, the energy contained in the sunlight that strikes the panel or collector mirror

The incident energy approach to converting noncombustible renewable electricity to Btu could, in theory, be used to account for "losses" that are due to the inability to convert 100% of incident energy to a useful form of energy. EIA does not publish total primary energy consumption estimates based on the incident energy approach because it would be difficult to obtain accurate estimates of input energy without creating undue burden on survey respondents. Few renewable electricity power plants track cumulative input energy due to its lack of economic significance or other purpose. In addition, estimated energy efficiencies of renewable conversion technologies vary significantly across technologies, site-specific configurations, and environmental factors.[3]

---

[1]Direct use of noncombustible renewables in the form of heat (e.g., solar thermal heating) is estimated separately and is measured in Btu.
[2]There is an initial opportunity cost when a facility is first built: water behind a dam might flood land that could have been used for other purposes, or a solar panel might shade an area that could have used the sunlight. But that is a "fixed" opportunity cost that does not change during the operation of the plant.
[3]Based on EIA research conducted in 2016, engineering estimates of conversion efficiencies for noncombustible renewables range from less than 20% for solar photovoltaics and geothermal to 90% for large-scale hydroelectricity plants. Those estimates are notional indications of the energy output as a percent of energy input at each technology based on typical equipment operating within the normal operating range for that technology.

Table E1a. Noncombustible Renewable Primary Energy Consumption: Conventional Hydroelectric Power, Geothermal, and Wind (Trillion Btu)

	Conventional Hydroelectric Power[a]			Geothermal[b]				Wind[c]		
	Transformed Into Electricity[d,e]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[g]	Direct Consumption[h]	Transformed Into Electricity[d,i]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[j]	Transformed Into Electricity[d,i]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[g]
1950	344	1,071	1,415	NA	NA	NA	NA	NA	NA	NA
1955	397	963	1,360	NA	NA	NA	NA	NA	NA	NA
1960	510	1,098	1,608	NA	(s)	(s)	(s)	NA	NA	NA
1965	672	1,387	2,059	NA	1	1	2	NA	NA	NA
1970	856	1,777	2,634	NA	2	4	6	NA	NA	NA
1975	1,034	2,120	3,155	NA	11	23	34	NA	NA	NA
1980	953	1,948	2,900	NA	17	35	53	NA	NA	NA
1981	900	1,858	2,758	NA	19	40	59	NA	NA	NA
1982	1,066	2,200	3,266	NA	17	34	51	NA	NA	NA
1983	1,144	2,383	3,527	NA	21	43	64	(s)	(s)	(s)
1984	1,107	2,279	3,386	NA	26	54	81	(s)	(s)	(s)
1985	970	2,000	2,970	NA	32	66	97	(s)	(s)	(s)
1986	1,003	2,068	3,071	NA	35	73	108	(s)	(s)	(s)
1987	863	1,772	2,635	NA	37	76	112	(s)	(s)	(s)
1988	771	1,563	2,334	NA	35	71	106	(s)	(s)	(s)
1989	[e] 928	1,909	2,837	9	[i] 50	102	162	[i] 7	15	22
1990	999	2,047	3,046	10	53	108	171	10	19	29
1991	986	2,030	3,016	11	54	112	178	10	21	31
1992	864	1,754	2,617	12	55	112	179	10	20	30
1993	957	1,935	2,892	13	57	116	186	10	21	31
1994	888	1,796	2,683	13	53	107	173	12	24	36
1995	1,061	2,145	3,205	14	46	92	152	11	22	33
1996	1,185	2,405	3,590	15	49	99	163	11	22	33
1997	1,216	2,424	3,640	16	50	100	167	11	22	34
1998	1,103	2,194	3,297	18	50	100	168	10	21	31
1999	1,090	2,177	3,268	19	51	101	171	15	31	46
2000	940	1,871	2,811	21	48	96	164	19	38	57
2001	740	1,502	2,242	22	47	95	164	23	47	70
2002	902	1,787	2,689	24	49	98	171	35	70	105
2003	941	1,851	2,793	27	49	97	173	38	75	113
2004	916	1,773	2,688	30	51	98	178	48	93	142
2005	922	1,781	2,703	34	50	97	181	61	117	178
2006	987	1,882	2,869	37	50	95	181	91	173	264
2007	845	1,602	2,446	41	50	95	186	118	223	341
2008	869	1,642	2,511	46	51	96	192	189	357	546
2009	933	1,736	2,669	54	51	95	200	252	469	721
2010	888	1,651	2,539	60	52	97	208	323	600	923
2011	1,090	2,013	3,103	64	52	97	212	410	758	1,168
2012	943	1,686	2,629	64	53	95	212	480	860	1,340
2013	916	1,646	2,562	64	54	97	214	573	1,029	1,601
2014	885	1,582	2,467	64	54	97	214	620	1,108	1,728
2015	850	1,471	2,321	64	54	94	212	651	1,127	1,777
2016	914	1,559	2,472	64	54	92	210	774	1,321	2,096
2017	1,025	1,742	2,767	64	54	92	210	868	1,475	2,343
2018	998	1,665	2,663	64	54	91	209	930	1,552	2,482
2019	982	1,581	2,563	64	53	85	201	1,006	1,620	2,626

[a] Conventional hydroelectricity net generation. Through 1989, also includes hydroelectric pumped storage.

[b] Geothermal heat pump and direct use energy; and geothermal electricity net generation.

[c] Wind electricity net generation.

[d] Electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[e] 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.

[f] Equals the difference between the fossil-fuel equivalent value of electricity and the captured energy consumed as electricity. The fossil-fuel equivalent value of electricity equals electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6). The captured energy consumed as electricity equals electricity net generation in kilowatthours multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[g] Electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

[h] Geothermal heat pump and direct use energy.

[i] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

[j] Direct consumption of energy; and energy used to generate electricity, calculated as electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

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

Notes: • Geothermal direct consumption data are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: • **Conventional Hydroelectric Power** and **Wind:** Tables 7.2a, 10.1, and A6. • **Geothermal:** Tables 7.2a, 10.1, 10.2a, 10.2b, and A6.

Table E1b. Noncombustible Renewable Primary Energy Consumption: Solar and Total

(Trillion Btu)

	Solar[a]						Total[b]		
	Distributed[c]			Utility-Scale[d]					
	Direct Consumption[e]	Transformed Into Electricity[f]	Adjustment for Fossil Fuel Equivalence[g]	Transformed Into Electricity[f,h]	Adjustment for Fossil Fuel Equivalence[g]	Total Primary Energy[i]	Captured Energy[j]	Adjustment for Fossil Fuel Equivalence[g]	Total Primary Energy[i]
1950	NA	NA	NA	NA	NA	NA	344	1,071	1,415
1955	NA	NA	NA	NA	NA	NA	397	963	1,360
1960	NA	NA	NA	NA	NA	NA	510	1,098	1,608
1965	NA	NA	NA	NA	NA	NA	673	1,388	2,061
1970	NA	NA	NA	NA	NA	NA	858	1,781	2,639
1975	NA	NA	NA	NA	NA	NA	1,045	2,143	3,188
1980	NA	NA	NA	NA	NA	NA	970	1,983	2,953
1981	NA	NA	NA	NA	NA	NA	920	1,898	2,817
1982	NA	NA	NA	NA	NA	NA	1,082	2,234	3,316
1983	NA	NA	NA	NA	NA	NA	1,165	2,426	3,591
1984	NA	NA	NA	(s)	(s)	(s)	1,133	2,334	3,467
1985	NA	NA	NA	(s)	(s)	(s)	1,002	2,066	3,068
1986	NA	NA	NA	(s)	(s)	(s)	1,038	2,141	3,179
1987	NA	NA	NA	(s)	(s)	(s)	900	1,847	2,747
1988	NA	NA	NA	(s)	(s)	(s)	807	1,634	2,441
1989	52	(s)	(s)	[h] 1	2	54	1,047	2,029	3,075
1990	55	(s)	(s)	1	3	59	1,128	2,177	3,305
1991	56	(s)	(s)	2	3	62	1,120	2,166	3,286
1992	58	(s)	(s)	1	3	63	1,000	1,889	2,889
1993	60	(s)	(s)	2	3	65	1,099	2,075	3,173
1994	62	(s)	(s)	2	3	67	1,029	1,931	2,960
1995	63	(s)	(s)	2	3	68	1,196	2,263	3,458
1996	63	(s)	(s)	2	4	69	1,325	2,531	3,856
1997	62	(s)	1	2	3	68	1,358	2,551	3,909
1998	61	(s)	1	2	3	67	1,245	2,319	3,564
1999	60	(s)	1	2	3	66	1,237	2,313	3,550
2000	57	(s)	1	2	3	63	1,087	2,009	3,096
2001	55	(s)	1	2	4	62	890	1,648	2,538
2002	53	1	1	2	4	60	1,066	1,960	3,025
2003	51	1	1	2	4	58	1,109	2,028	3,138
2004	50	1	2	2	4	58	1,097	1,969	3,067
2005	49	1	2	2	4	58	1,119	2,001	3,120
2006	51	2	3	2	3	61	1,218	2,157	3,375
2007	53	2	5	2	4	66	1,110	1,928	3,038
2008	54	4	7	3	6	74	1,217	2,107	3,323
2009	55	5	10	3	6	78	1,353	2,315	3,668
2010	56	8	15	4	8	91	1,390	2,371	3,761
2011	58	13	24	6	11	112	1,692	2,903	4,595
2012	59	21	38	15	26	159	1,635	2,705	4,339
2013	61	28	50	31	55	225	1,726	2,877	4,602
2014	62	38	68	60	108	338	1,784	2,963	4,746
2015	63	48	84	85	147	427	1,815	2,922	4,737
2016	64	64	109	123	210	570	2,057	3,291	5,348
2017	65	82	139	182	309	777	2,339	3,758	6,097
2018	66	101	168	218	363	916	2,430	3,839	6,270
2019	66	119	192	245	395	1,018	2,536	3,873	6,408

[a] Solar thermal direct use energy; and solar photovoltaic (PV) and solar thermal electricity net generation.

[b] Conventional hydroelectricity net generation; geothermal heat pump and direct use energy; geothermal electricity net generation; wind electricity net generation; solar thermal direct use energy; and solar photovoltaic (PV) and solar thermal electricity net generation.

[c] Distributed (small-scale) facilities (electric generators have a combined generator nameplate capacity of less than 1 megawatt).

[d] Utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[e] Solar thermal direct use energy.

[f] Electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[g] Equals the difference between the fossil-fuel equivalent value of electricity and the captured energy consumed as electricity. The fossil-fuel equivalent value of electricity equals electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6). The captured energy consumed as electricity equals electricity net generation in kilowatthours multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[h] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

[i] Direct consumption of energy; and energy used to generate electricity, calculated as electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

[j] Direct consumption of energy plus captured energy consumed as electricity, which is calculated as electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

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

Notes: • Beginning in 1989, data for distributed solar and total captured energy are estimates. For the current year, data for utility-scale solar are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.

Sources: • **Solar:** Tables 10.5, 10.6, and A6. • **Total:** Tables 7.2a, 10.1, 10.2a, 10.2b, 10.5, 10.6, and A6.

THIS PAGE INTENTIONALLY LEFT BLANK

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(3)-(CH(2))n-OH (e.g., **methanol**, **ethanol**, and tertiary butyl alcohol). See **Fuel ethanol**.

Alternative fuel: Alternative fuels, for transportation applications, include the following: **methanol**; denatured **ethanol**, and other **alcohols**; fuel mixtures containing 85 percent or more by volume of methanol, denatured ethanol, and other alcohols with **motor gasoline** or other fuels; **natural gas**; **liquefied petroleum gas** (**propane**); **hydrogen**; **coal**-derived liquid fuels; fuels (other than alcohol) derived from biological materials (**biofuels** such as soy **diesel fuel**); **electricity** (including electricity from **solar energy**); and "... any other fuel the Secretary determines, by rule, is substantially not **petroleum** and would yield substantial energy security benefits and substantial environmental benefits." The term "alternative fuel" does not include alcohol or other blended portions of primarily petroleum-based fuels used as **oxygenates** or extenders, i.e., **MTBE**, ETBE, other ethers, and the 10-percent ethanol portion of **gasohol**.

Alternative-fuel vehicle (AFV): A vehicle designed to operate on an **alternative fuel** (e.g., compressed **natural gas**, **methane** blend, or **electricity**). The vehicle could be either a dedicated vehicle designed to operate exclusively on alternative fuel or a nondedicated vehicle designed to operate on alternative fuel and/or a traditional fuel.

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 coal 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 ton or less.

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.

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 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, reformate, benzene, toluene, and xylene). Excludes **oxygenates** (**alcohols**, **ethers**), **butane**, and **natural gasoline**. Oxygenates are reported as **other hydrocarbons**, **hydrogen**, and oxygenates. See **Aviation gasoline**, **finished**.

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 D 910 and Military Specification MIL-G-5572. ***Note:*** Data on blending components are not counted in data on finished aviation gasoline.

Barrel (petroleum): A unit of volume equal to 42 U.S. Gallons.

Base gas: The quantity of **natural gas** needed to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas usually is not withdrawn and remains in the reservoir. All natural gas native to a depleted reservoir is included in the base gas volume.

Biodiesel: A fuel typically made from soybean, canola, or other vegetable oils; animal fats; and recycled grease. It can serve as a substitute for **petroleum**-derived **diesel fuel** or **distillate fuel oil**. For U.S. Energy Information Administration

reporting, it is a fuel composed of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM (American Society for Testing & Materials) D 6751.

Biofuels: Liquid fuels and blending components produced from **biomass** (plant) feedstocks, used primarily for transportation. See **Biodiesel** and **Fuel ethanol**.

Biogenic: Produced by biological processes of living organisms. ***Note:*** EIA uses the term "biogenic" to refer only to organic nonfossil material of biological origin.

Biomass: Organic nonfossil material of biological origin constituting a renewable energy source. See **Biodiesel**, **Biofuels**, **Biomass waste**, **Densified biomass**, **Fuel ethanol**, and **Wood and wood-derived fuels**.

Biomass-based diesel fuel: Biodiesel and other renewable **diesel fuel** or diesel fuel blending components derived from **biomass**, but excluding renewable diesel fuel coprocessed with petroleum feedstocks. See **Renewable diesel fuel (other)**.

Biomass waste: Organic non-fossil material of biological origin that is a byproduct or a discarded product. "Biomass waste" includes municipal solid waste from **biogenic** sources, landfill gas, sludge waste, agricultural crop byproducts, straw, and other **biomass** solids, liquids, and gases; but excludes **wood and wood-derived fuels** (including **black liquor**), **biofuels** feedstock, **biodiesel**, and **fuel ethanol**. ***Note:*** EIA "biomass waste" data also include energy crops grown specifically for energy production, which would not normally constitute waste.

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 to make **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).

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**.

Btu conversion factor: A factor for converting **energy** data between one unit of measurement and **British thermal units (Btu)**. Btu conversion factors are generally used to convert energy data from physical units of measure (such as **barrels**, **cubic feet**, or **short tons**) into the energy-equivalent measure of Btu. (See http://www.eia.gov/totalenergy/data/monthly/#appendices for further information on Btu conversion factors.)

Butane (C_4H_{10}): A straight-chain or branch-chain **hydrocarbon** extracted from **natural gas** or **refinery gas** streams, which is gaseous at standard temperature and pressure. It includes **isobutane** and **normal butane** and is designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial butane.

Butylene (C_4H_8): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Butylene is used in the production of gasoline and various petrochemical products. See **Olefinic hydrocarbons (olefins)**.

Capacity factor: The ratio of the electrical energy produced by a generating unit for a given period of time to the electrical energy that could have been produced at continuous full-power operation during the same period.

Carbon dioxide (CO_2): A colorless, odorless, non-poisonous gas 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).

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 and is therefore subject to less distortion over time.

CIF: See **Cost**, **insurance**, **freight**.

Citygate: 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 inclusive of natural changes in climate, including 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 **Anthracite**, **Bituminous coal**, **Lignite**, **Subbituminous coal**, **Waste coal**, and **Coal synfuel**.

Coal coke: 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 grey, hard, and porous and has a heating value of 24.8 million Btu per ton.

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 the 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: See **Coal coke** and **Petroleum coke**.

Coking coal: Bituminous coal suitable for making coke. See **Coal coke**.

Combined heat and power (CHP) plant: A plant designed to produce both heat and electricity from a single heat source. ***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).

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. See **End-use sectors** and **Energy-use sectors**.

Completion: The installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a well (classified as an oil well or gas well) and the definition of a completion are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a well is not synonymous with a completion.

Conventional hydroelectric power: Hydroelectric power generated from flowing water that is not created by **hydroelectric pumped storage**.

Conventional motor gasoline: See **Motor gasoline conventional**.

Conversion factor: A factor for converting data between one unit of measurement and another (such as between **short tons** and **British thermal units**, or between **barrels** and gallons).
(See http://www.eia.gov/totalenergy/data/monthly/#appendices. See **Btu conversion factor** and **Thermal conversion factor**.

Cost, insurance, freight (CIF): A sales transaction in which the seller pays for the transportation and insurance of the goods to the port of destination specified by the buyer.

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 (casing head) 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 f.o.b. price: The crude oil price actually charged at the oil-producing country's port of loading. Includes deductions for any rebates and discounts or additions of premiums, where applicable. It is the actual price paid with no adjustment for credit terms.

Crude oil (including lease condensate): A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Where identifiable, liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded.

Crude oil landed cost: The price of crude oil at the port of discharge, including charges associated with the purchase, transporting, and insuring of 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 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 pipelines, at pipeline terminals, and on leases.

Crude oil used directly: Crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Crude oil well: A well completed for the production of crude oil from one or more oil zones or reservoirs. Wells producing both crude oil and natural gas are classified as 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 1961–1990). 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.

Denaturant: Petroleum, typically **natural gasoline** or **conventional motor gasoline**, added to **fuel ethanol** to make it unfit for human consumption. Fuel ethanol is denatured, usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent denaturant. See **Fuel ethanol** and **Fuel ethanol minus denaturant**.

Densified biomass fuel: Raw biomass, primarily wood, that has been condensed into a homogenously sized, energy-dense product, such as wood pellets, intended for use as fuel. It is mainly used for residential and commercial space heating and electricity generation.

Design electrical rating, net: The nominal net electrical output of a nuclear unit as specified by the electric utility for the purpose of plant design.

Development well: A well drilled within the proved area of an oil or 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 in trucks and automobiles, 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**.

Dry hole: An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Dry natural gas production: See **Natural gas (dry) production**.

E85: A fuel containing a mixture of 85 percent **ethanol** and 15 percent **motor gasoline**.

Electric power plant: A station containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

Electric power sector: An energy-consuming sector that consists of electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public-i.e., North American Industry Classification System 22 plants. See also **Combined heat and power (CHP) plant**, **Electricity-only plant**, **Electric utility**, and **Independent power producer**.

Electric utility: Any entity that generates, transmits, or distributes **electricity** and 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 these entities include: investor-owned entities, public power districts, public utility districts, municipalities, rural electric cooperatives, and state and federal agencies. Electric utilities may have Federal Energy Regulatory Commission approval for interconnection agreements and wholesale trade tariffs covering either cost-of-service and/or market-based rates under the authority of the Federal Power Act. 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).

Electricity generation, gross: The total amount of electric energy produced by generating units and measured at the generating terminal in **kilowatthours** (kWh) or megawatthours (MWh).

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 only plant: A plant designed to produce electricity only. See also **Combined heat and power (CHP) plant**.

Electricity retail sales: The amount of electricity sold to customers purchasing electricity for their own use and not for resale.

End use sectors: The **residential**, **commercial**, **industrial**, and **transportation** sectors of the economy.

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. Electrical 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 service provider: An energy entity that provides service to a retail or end-use customer.

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 (C_2H_6): A straight-chain saturated (paraffinic) **hydrocarbon** extracted predominantly from the natural gas stream, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -127 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Ethanol (C_2H_5OH): A clear, colorless, flammable **alcohol**. Ethanol is typically produced biologically from **biomass** feedstocks such as agricultural crops and cellulosic residues from agricultural crops or wood. Ethanol can also be produced chemically from **ethylene**. See **Biomass**, **Fuel ethanol**, and **Fuel ethanol minus denaturant**.

Ether: A generic term applied to a group of organic chemical compounds composed of carbon, **hydrogen**, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., **methyl tertiary butyl ether**).

Ethylene (C_2H_4): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Ethylene is used as a petrochemical feedstock for many chemical applications and the production of consumer goods. See **Olefinic hydrocarbons (olefins)**.

Exploratory well: A well drilled to find and produce oil or gas in an area previously considered an unproductive area, to find a new reservoir in a known field (i.e., one previously found to be producing oil or gas in another reservoir), or to extend the limit of a known oil or 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.

Federal Energy Administration (FEA): A predecessor of the U.S. 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, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the U.S. 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 U.S. Department of Energy was created. Its functions were divided between the U.S. Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

First purchase price: The price for domestic crude oil reported by the company that owns the crude oil the first time it is removed from the lease boundary.

Flared natural gas: Natural gas burned in flares on the base site or at gas processing plants.

F.O.B. (free on board): 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.

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 **Union of Soviet Socialist Republics (U.S.S.R.)**.

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 electricity generation plant in which the prime mover is a turbine rotated by high-pressure steam produced in a boiler by heat from burning fossil fuels.

Fuel ethanol: Ethanol intended for fuel use. Fuel ethanol in the United States must be anhydrous (less than 1 percent water). Fuel ethanol is denatured (made unfit for human consumption), usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent petroleum, typically **natural gasoline** or **conventional motor gasoline**. Fuel ethanol is used principally for blending in low concentrations with **motor gasoline** as an **oxygenate** or octane enhancer. In high concentrations, it is used to fuel **alternative-fuel vehicles** specially designed for its use. See **Alternative-fuel vehicle**, **Denaturant**, **E85**, **Ethanol**, **Fuel ethanol minus denaturant**, and **Oxygenates**.

Fuel ethanol minus denaturant: An unobserved quantity of anhydrous, **biomass**-derived, undenatured **ethanol** for fuel use. The quantity is obtained by subtracting the estimated **denaturant** volume from **fuel ethanol** volume. Fuel ethanol minus denaturant is counted as **renewable energy**, while denaturant is counted as **nonrenewable fuel**. See **Denaturant**, **Ethanol**, **Fuel ethanol**, **Nonrenewable fuels**, **Oxygenates**, and **Renewable energy**.

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 **Motor gasoline, oxygenated**.

Gas well: A well completed for production of natural gas from one or more gas zones or reservoirs. Such wells contain no completions for the production of crude oil.

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 fixed 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 (infrared) radiation, thus preventing long-wave radiant energy from leaving 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.

GT/IC: Gas turbine and internal combustion plants.

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 U.S. 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.

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, the primary constituent of **natural gas**) to the very heavy and very complex.

Hydrocarbon gas liquids (HGL): A group of **hydrocarbons** including **ethane**, **propane**, **normal butane**, **isobutane**, and **natural gasoline**, and their associated **olefins**, including **ethylene**, **propylene**, **butylene**, and **isobutylene**. As marketed products, HGL represents all **natural gas liquids** (NGL) and olefins. EIA reports production of HGL from refineries (**liquefied refinery gases**, or LRG) and natural gas plants (**natural gas plant liquids**, or NGPL). Excludes liquefied natural gas (LNG). See **Olefinic hydrocarbons (olefins)**.

Hydroelectric power: The production of electricity from the kinetic energy of falling water.

Hydroelectric power plant: A plant in which the turbine generators are driven by falling water.

Hydroelectric pumped storage: Hydroelectricity 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 a power plant at a lower level.

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**.

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**.

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. See **End use sectors** and **Energy use sectors**.

Injections (natural gas): **Natural gas** injected into storage reservoirs.

Isobutane (C_4H_{10}): A branch-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 11 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Isobutylene (C_4H_8): A branch-chain olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Isobutylene is used in the production of gasoline and various petrochemical products. See **Olefinic hydrocarbons (olefins)**.

Isopentane (C_5H_{12}): 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 having 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 D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbo jet and turbo prop aircraft engines.

Jet fuel, naphtha-type: A fuel in the heavy **naphtha** boiling range having an average gravity of 52.8 degrees API, 20% to 90% distillation temperatures of 290 degrees 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 D 3699 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**.

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 costs: The dollar-per-barrel price of crude oil at the port of discharge. Included are the charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. Not included are charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage charges).

Lease and plant fuel: **Natural gas** used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and used as fuel in natural gas processing plants.

Lease condensate: Light liquid **hydrocarbons** recovered from lease separators or field facilities at associated and non-associated **natural gas** wells. Mostly pentanes and heavier hydrocarbons. Normally enters the **crude oil** stream after production.

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).

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** gases, primarily **propane**, **normal butane**, and **isobutane**, derived from crude oil refining or **natural gas** processing. These gases may be marketed individually or mixed. They can be liquefied through pressurization (without requiring cryogenic refrigeration) for convenience of transportation or storage. Excludes **ethane** and **olefins**. ***Note:*** In some EIA publications, LPG includes ethane and marketed refinery olefin streams, in accordance with definitions used prior to January 2014.

Liquefied refinery gases (LRG): **Hydrocarbon gas liquids** produced in refineries from processing of **crude oil** and **unfinished oils**. They are retained in the liquid state through pressurization and/or refrigeration. The reported categories include **ethane**, **propane**, **normal butane**, **isobutane**, and refinery **olefins** (**ethylene**, **propylene**, **butylene**, and **isobutylene**).

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 as process materials either incorporated into other materials used as processing aids in the manufacturing of other products or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Excluded are byproducts of lubricating oil refining, such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. Included are all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Lubricant categories are paraffinic and naphthenic.

Marketed production (natural gas): See **Natural gas marketed production**.

Methane (CH_4): A colorless, flammable, odorless **hydrocarbon** gas which is the major component of **natural gas**. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas. See **Greenhouse gases**.

Methanol (CH_3OH): A light, volatile alcohol eligible for gasoline blending. See **Motor gasoline blending** and **Oxygenates**.

Methyl tertiary butyl ether (MTBE) ($(CH_3)_3COCH_3$): An **ether** intended for gasoline blending. See **Motor gasoline blending** and **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 components: Naphtha (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 (RBOB) but exclude oxygenates (alcohols, ethers), butane, and natural gasoline. ***Note:*** Oxygenates are reported as individual components and are included in the total for other hydrocarbons, hydrogens, 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 engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. Motor gasoline includes conventional gasoline; all types of oxygenated gasoline, including **gasohol**; and reformulated gasoline, but excludes aviation gasoline. ***Note:*** Volumetric data on blending components, such as **oxygenates**, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline. See **Motor gasoline**, **conventional**; **Motor gasoline**, **oxygenated**; and **Motor gasoline**, **reformulated**.

Motor gasoline grades: The classification of gasoline by octane ratings. Each type of gasoline (conventional, oxygenated, and reformulated) is classified by three grades: regular, midgrade, and premium. ***Note:*** 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**. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Midgrade Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to **88** and less than or equal to 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Premium Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.

Motor gasoline, oxygenated: Finished motor gasoline, other than reformulated 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 oxygenated fuels program reformulated gasoline (OPRG) and reformulated gasoline blendstock for oxygenate blending (RBOB). Data on gasohol that has at least 2.7 percent oxygen, by weight, and is intended for sale inside CO nonattainment areas are included in data on oxygenated gasoline. Other data on gasohol are included in data on conventional gasoline.

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).

Motor gasoline retail prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers-about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service).

Motor gasoline (total): For stock level data, a sum including finished motor gasoline stocks plus stocks of motor gasoline blending components but excluding stocks of oxygenates.

MTBE: See **Methyl tertiary butyl ether**.

NAICS (North American Industry Classification System): 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. For additional information on NAICS, go to http://www.census.gov/eos/www/naics/.

Naphtha: A generic term applied to a refined or partially refined **petroleum** fraction with an approximate boiling range between 122 degrees and 400 degrees Fahrenheit.

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 **natural gas plant liquids** production.

Natural gas liquids (NGL): A group of **hydrocarbons** including **ethane**, **propane**, **normal butane**, **isobutane**, and **natural gasoline**. Generally include **natural gas plant liquids** and all **liquefied refinery gases** except **olefins**. See **Paraffinic hydrocarbons**.

Natural gas marketed production: Gross withdrawals of **natural gas** from production reservoirs, less gas used for reservoir **repressuring**; **nonhydrocarbon gases** removed in treating and processing operations; and quantities of **vented natural gas** and **flared natural gas**.

Natural gas plant liquids (NGPL): Those **hydrocarbons** in **natural gas** that are separated as liquids at natural gas processing, fractionating, and cycling plants. Products obtained include **ethane**, **liquefied petroleum gases** (**propane**, **normal butane** and **isobutane**), and **natural gasoline**. Component products may be fractionated or mixed. **Lease condensate** and **plant condensate** are excluded. ***Note:*** Some EIA publications categorize NGPL production as field production, in accordance with definitions used prior to January 2014.

Natural gas wellhead price: The **wellhead price** of **natural gas** is 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. Minerals 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 commodity product commonly traded in **natural gas liquids** (NGL) markets that comprises liquid **hydrocarbons** (mostly pentanes and hexanes) and generally remains liquid at ambient temperatures and atmospheric pressure. Natural gasoline is equivalent to **pentanes plus**.

Net summer capacity: The maximum output, commonly expressed in **kilowatts** (kW) or 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.

Neutral zone: A 6,200 square-mile area shared equally between Kuwait and Saudi Arabia under a 1992 agreement. The Neutral zone contains an estimated 5 billion barrels of oil and 8 trillion cubic feet of natural gas.

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.

Non-biomass waste: Material of non-biological origin that is a byproduct or a discarded product. "Non-biomass waste" includes municipal solid waste from non-biogenic sources, such as plastics, and tire-derived fuels.

Non-combustion use: Fossil fuels (coal, natural gas, and petroleum products) that are not burned to release energy and instead used directly as construction materials, chemical, feedstocks, lubricants, solvents, waxes, and other products.

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

Nonrenewable fuels: Fuels that cannot be easily made or "renewed," such as **crude oil**, **natural gas**, and **coal**.

Normal butane (C_4H_{10}): A straight-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 31 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

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.

Oil: See **Crude oil**.

Olefinic hydrocarbons (olefins): Unsaturated **hydrocarbon** compounds with the general formula CnH2n containing at least one carbon-to-carbon double-bond. Olefins are produced at crude oil refineries and petrochemical plants and are

not naturally occurring constituents of oil and natural gas. Sometimes referred to as alkenes or unsaturated hydrocarbons. Excludes aromatics.

Olefins: See **Olefinic hydrocarbons (olefins)**.

OPEC: See **Organization of the Petroleum Exporting Countries**.

Operable unit (nuclear): In the United States, a nuclear generating unit that has completed low-power testing and been issued a full-power operating license by the Nuclear Regulatory Commission, or equivalent permission to operate.

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 intergovernmental organization whose stated objective is to "coordinate and unify the petroleum policies of member countries." It was created at the Baghdad Conference on September 10–14, 1960. Current and former members (with years of membership) include Algeria (1969 forward), Angola (2007 forward), Congo-Brazzaville (2018 forward), Ecuador (1973–1992 and 2007–2019), Equatorial Guinea (2017 forward), Gabon (1974–1994 and 2016 forward), Indonesia (1962–2008 and 2016), Iran (1960 forward), Iraq (1960 forward), Kuwait (1960 forward), Libya (1962 forward), Nigeria (1971 forward), Qatar (1961–2018), Saudi Arabia (1960 forward), United Arab Emirates (1967 forward), and Venezuela (1960 forward).

Other energy losses: Energy losses throughout the energy system as they are consumed, usually in the form of heat, that are not separately identified by U.S. Energy Information Administration. Examples include heat lost in the process of burning motor gasoline to move vehicles or in electricity used to power a lightbulb.

Other hydrocarbons: Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite. Excludes **natural gas** used for fuel or **hydrogen** feedstock.

Oxygenates: Substances which, when added to 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.

PAD Districts or PADD: 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.

Petroleum Administration for Defense District (PADD): The 50 U.S. states and the District of Columbia are divided into five districts, with PADD 1 further split into three subdistricts. PADDs 6 and 7 encompass U.S. territories. The PADDs include the states and territories listed below:

PADD 1 (East Coast).
PADD 1A (New England): Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
PADD 1B (Central Atlantic): Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.
PADD 1C (Lower Atlantic): Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.
PADD 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.
PADD 3 (Gulf Coast): Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas.
PADD 4 (Rocky Mountain): Colorado, Idaho, Montana, Utah, and Wyoming.
PADD 5 (West Coast): Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington.
PADD 6: U.S. Virgin Islands and Puerto Rico.
PADD 7: Guam, American Samoa and the Northern Mariana Islands Territory.

Paraffinic hydrocarbons: Saturated **hydrocarbon** compounds with the general formula C_nH_{2n+2} containing only single bonds. Sometimes referred to as alkanes or **natural gas liquids**.

Pentanes plus: A mixture of liquid **hydrocarbons**, mostly pentanes and heavier, extracted from **natural gas** in a gas processing plant. Pentanes plus is equivalent to **natural gasoline**.

Petrochemical feedstocks: Chemical feedstocks derived from refined or partially refined **petroleum** fractions, principally for use in the manufacturing 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: 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. See **Petroleum coke**, **Catalyst** and **Petroleum coke, marketable**.

Petroleum coke, catalyst: The carbonaceous residue that is deposited on the catalyst used in many catalytic operations (e.g., catalytic cracking). Carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated

by burning off the carbon producing heat and **carbon dioxide** (**CO2**). The carbonaceous residue is not recoverable as a product. See **Petroleum coke**.

Petroleum coke, marketable: Those grades of coke produced in delayed or fluid cokers that may be recovered as relatively pure carbon. Marketable petroleum coke may be sold as is or further purified by calcining. See **Petroleum coke**.

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 products: Products obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, hydrocarbon gas liquids, 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 products.

Petroleum stocks, primary: For individual products, quantities that are held at refineries, in 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 oils estimates and total.

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

Plant condensate: Liquid **hydrocarbons** recovered at inlet separators or scrubbers in **natural gas** processing plants at atmospheric pressure and ambient temperatures. Mostly pentanes and heavier hydrocarbons.

Primary energy: **Energy** in the form that it is first accounted for in a statistical energy balance, before any transformation to secondary or tertiary forms of energy. For example, **coal** can be converted to synthetic gas, which can be converted to **electricity**; in this example, coal is primary energy, synthetic gas is secondary energy, and electricity is tertiary energy. See **Primary energy production** and **Primary energy consumption**.

Primary energy consumption: Consumption of **primary energy**. The U.S. Energy Information Administration includes the following in U.S. primary energy consumption: coal consumption; coal coke net imports; **petroleum consumption** (**petroleum products supplied**); **dry 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 average heat rate of fossil-fuel fired plants); **geothermal** electricity net generation (converted to Btu using the average annual heat rate of fossil-fueled fired plants), geothermal heat pump energy and geothermal direct-use energy; **solar thermal** and **photovoltaic** electricity net generation (converted to Btu

using the average annual heat rate of fossil-fueled fired plants), and solar thermal direct-use energy; wind electricity net generation (converted to Btu using the average annual heat rate of fossil-fueled fired plants); **wood and wood-derived fuels** consumption; **biomass waste** 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). Primary energy consumption includes all non-combustion use of fossil fuels. Primary energy consumption also includes **other energy losses** throughout the energy system. See **Total energy consumption**. Energy sources produced from other energy sources—e.g. Coal coke from coal—are included in primary energy consumption only if their energy content has not already been included as part of the original energy source. As a result, U.S. primary energy consumption does include net imports of coal coke, but it does not include the coal coke produced from domestic coal.

Primary energy production: Production of **primary energy**. The U.S. Energy Information Administration includes the following in U.S. primary energy production: **coal** production, **waste coal** supplied, and coal refuse recovery; **crude oil** and **lease condensate** production; **natural gas plant liquids** production; **dry natural gas**—excluding **supplemental gaseous fuels**— 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 fossil-fueled plants heat rate), and 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** production; **biomass waste** consumption; and **biofuels** feedstock.

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.

Product 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 (C_3H_8): A straight-chain saturated (paraffinic) **hydrocarbon** extracted from **natural gas** or **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -44 degrees Fahrenheit. It includes all products designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial (HD-5) propane. See **Paraffinic hydrocarbons**.

Propylene (C_3H_6): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Propylene is an important petrochemical feedstock. See **Olefinic hydrocarbons (olefins)**.

Real dollars: These are dollars that have been adjusted for inflation.

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.

Refiner acquisition cost of crude oil: The cost of crude oil to the refiner, including transportation and fees. The composite cost is the weighted average of domestic and imported crude oil costs.

Refinery and blender net inputs: Raw materials, **unfinished oils**, and blending components processed at refineries, or blended at refineries or petroleum storage terminals to produce finished **petroleum products**. Included are gross inputs of **crude oil**, **natural gas liquids**, other **hydrocarbon** raw materials, **hydrogen**, **oxygenates** (excluding **fuel ethanol**), and renewable fuels (including fuel ethanol). Also included are net inputs of unfinished oils, **motor gasoline blending components**, and **aviation gasoline blending components**. Net inputs are calculated as gross inputs minus gross production. Negative net inputs indicate gross inputs are less than gross production. Examples of negative net inputs include reformulated gasoline blendstock for oxygenate blending (RBOB) produced at refineries for shipment to

blending terminals, and unfinished oils produced and added to inventory in advance of scheduled maintenance of a refinery crude oil distillation unit.

Refinery and blender net production: Liquefied refinery gases, and finished **petroleum products** produced at a **refinery** or petroleum storage terminal blending facility. Net production equals gross production minus gross inputs. Negative net production indicates gross production is less than gross inputs for a finished petroleum product. Examples of negative net production include reclassification of one finished product to another finished product, or reclassification of a finished product to **unfinished oils** or blending components.

Refinery gas: **Still gas** consumed as refinery fuel.

Refinery (petroleum): An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Refuse mine: A surface site 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 diesel fuel: See **Biomass-based diesel fuel** and **Renewable diesel fuel (other)**.

Renewable diesel fuel (other): **Diesel fuel** and diesel fuel blending components produced from renewable sources that are coprocessed with **petroleum** feedstocks and meet requirements of advanced biofuels. ***Note:*** This category "other" pertains to the petroleum supply data system. See **Biomass-based diesel fuel**.

Renewable energy: Energy obtained from sources that are essentially inexhaustible (unlike, for example, the **fossil fuels**, of which there is a finite supply). Renewable sources of energy include **conventional hydroelectric powe**r, **biomass**, **geothermal**, **solar**, and **wind**.

Renewable fuels except fuel ethanol: See **Biomass-based diesel fuel**, **Renewable diesel fuel (other)**, and **Renewable fuels (other)**.

Renewable fuels (other): Fuels and fuel blending components, except **biomass-based diesel fuel**, **renewable** diesel fuel (other), and **fuel ethanol**, produced from renewable biomass. ***Note:*** This category "other" pertains to the petroleum supply data system.

Repressuring: The injection of a pressurized fluid (such as air, gas, or water) into oil and gas reservoir 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, and lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters. See **End-use sectors** and **Energy-use sectors**.

Residual fuel oil: A general classification for 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 D 396 and D 975 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 power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric power, 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.

Short ton (coal): A unit of weight equal to 2,000 pounds.

SIC (Standard Industrial Classification): A set of codes developed by the U.S. Office of Management and Budget which categorizes industries into groups with similar economic activities. Replaced by **NAICS (North American Industry Classification System)**.

Small-scale: Generators at a site that has a total generating nameplate capacity of less than 1 megawatt (MW).

Solar energy: See **Solar photovoltaic (PV) energy** and **Solar thermal energy**.

Solar photovoltaic (PV) energy: **Energy**, radiated by the sun that is converted into direct-current electricity by solar photovoltaic cells. Examples of solar PV technologies include solar panels on residential and commercial rooftops (generally small-scale solar PV energy) and mirrors or dishes that concentrate solar rays onto solar PV panels (concentrating PV or CPV). Utility-scale solar PV electric generation typically relies on installations of solar PV panels on or near the ground (solar farms).

Solar thermal energy: Energy, radiated by the sun that is converted into electricity or heat by means of solar concentrating collectors. Examples of solar thermal energy technologies include pool heaters, dark water bladders, or thermal panels (generally small-scale solar thermal energy). Utility-scale solar thermal electric generation typically relies on a large array of mirrors to heat fluids and turn a turbine, which generates electricity.

Special naphthas: All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

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 coal: All nonmetallurgical coal.

Steam-electric power plant: A 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: Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are **methane** and **ethane**. May contain **hydrogen** and small/trace amounts of other gases. Still gas is typically consumed as refinery fuel or used as petrochemical feedstock. Still gas burned for refinery fuel may differ in composition from marketed still gas sold to other users. See **Refinery gas**.

Stocks: See **Coal stocks**, **Crude oil stocks**, or **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** whose properties range 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 ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Supplemental gaseous fuels: Synthetic **natural gas**, **propane**-air, coke oven gas, **still gas** (**refinery gas**), **biomass** gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

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: A factor for converting data between physical units of measure (such as **barrels**, **cubic feet**, or **short tons**) and thermal units of measure (such as **British thermal units**, calories, or joules); or for converting data between different thermal units of measure. See **Btu conversion factor**.

Total energy consumption: **Primary energy consumption** in the **end-use sectors**, plus **electricity retail sales** and **electrical system energy losses**. Also includes **other energy losses** throughout the energy system.

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. See **End-use sectors** and **Energy-use sectors**.

Underground storage: The storage of **natural gas** in underground reservoirs at a different location from which it was produced.

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 streams: Mixtures of unsegregated **natural gas liquids** components, excluding those in **plant condensate**. This product is extracted from **natural gas**.

Union of Soviet Socialist Republics (U.S.S.R.): A political entity that consisted of 15 constituent republics: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The U.S.S.R. ceased to exist as of December 31, 1991.

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. Uranium238 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 uranium oxide (U3O8) per ton or 0.05 percent to 0.2 percent U3O8.

Uranium oxide (U3O8): **Uranium concentrate** or **yellowcake**.

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 electrical generation.

U.S.S.R.: See **Union of Soviet Socialist Republics (U.S.S.R.)**.

Utility-scale: Generators at a site that has a total generating nameplate capacity of 1 megawatt (MW) or more.

Vented natural gas: **Natural gas** released into the air on the production site or at processing plants.

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: See **Biomass waste** and **Non-biomass waste**.

Waste coal: Usable material that is a byproduct of previous **coal** processing operations. Waste coal is usually composed of mixed coal, soil, and rock (mine waste). Most waste coal is burned as-is in unconventional fluidized-bed combustors. For some uses, waste coal may be partially cleaned by removing some extraneous noncombustible constituents. Examples of waste coal include fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste.

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 electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour.

Wax: A solid or semi-solid material consisting of a mixture of **hydrocarbons** obtained or derived from **petroleum** fractions, or through a Fischer-Tropsch type process, in which the straight-chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point (ASTM D 938) between 100 and 200 degrees Fahrenheit and a maximum oil content (ASTM D 3235) of 50 weight percent.

Wellhead price: The value of **crude oil** or **natural gas** at the mouth of the well.

Wind energy: Kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.

Wood and wood-derived fuels: Wood and products derived from wood that are used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, paper pellets, railroad ties, utility poles, **black liquor**, red liquor, sludge wood, spent sulfite liquor, **densified biomass** (including wood pellets), and other wood- based solids and liquids.

Working gas: The quantity of **natural 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. Volumes of working gas are reported in thousand cubic feet at standard temperature and pressure.

THIS PAGE INTENTIONALLY LEFT BLANK