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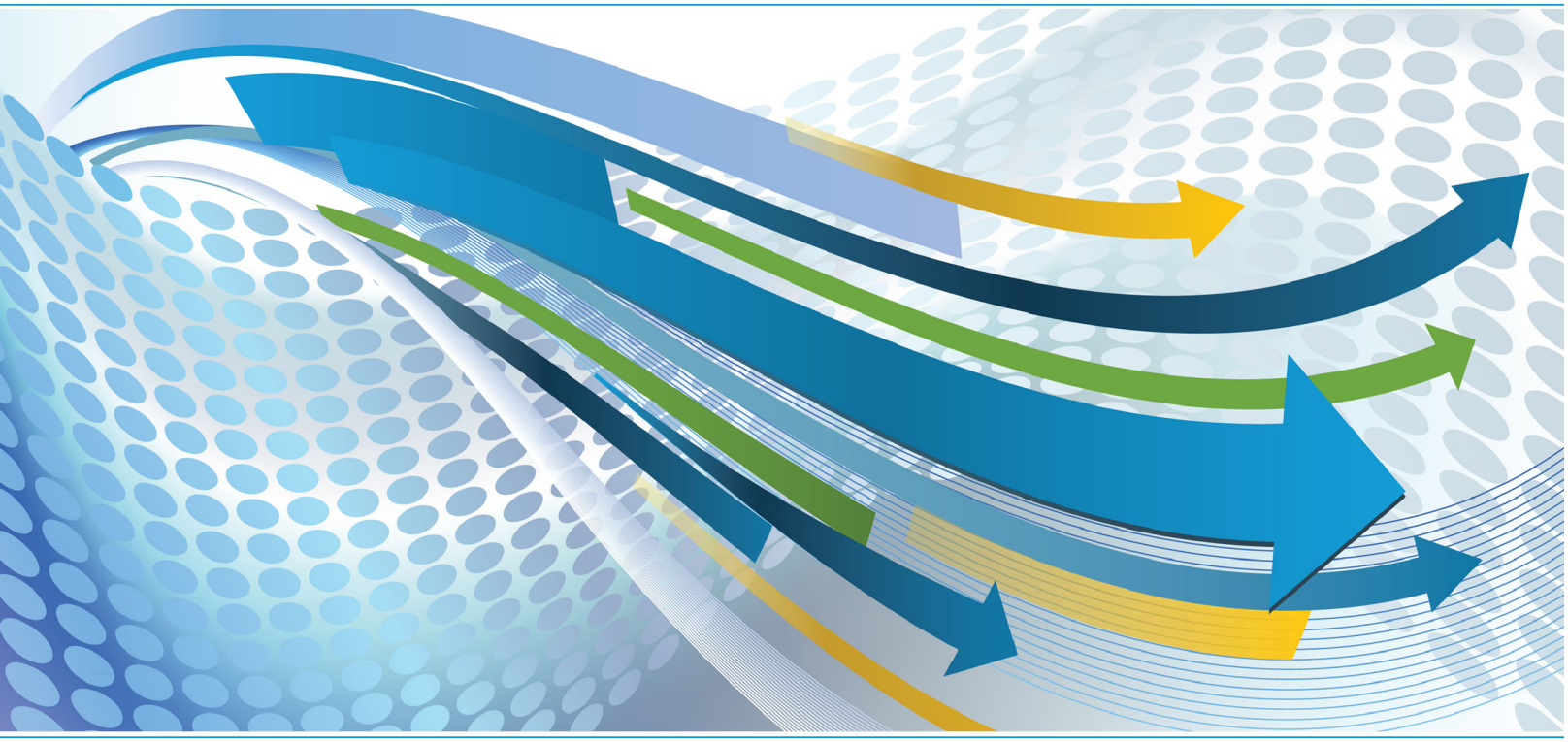
December 2019

Monthly Energy Review



Independent Statistics & Analysis
U.S. Energy Information Administration

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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.

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Monthly Energy Review

December 2019

U.S. Energy Information Administration
Office of Energy Statistics
U.S. Department of Energy
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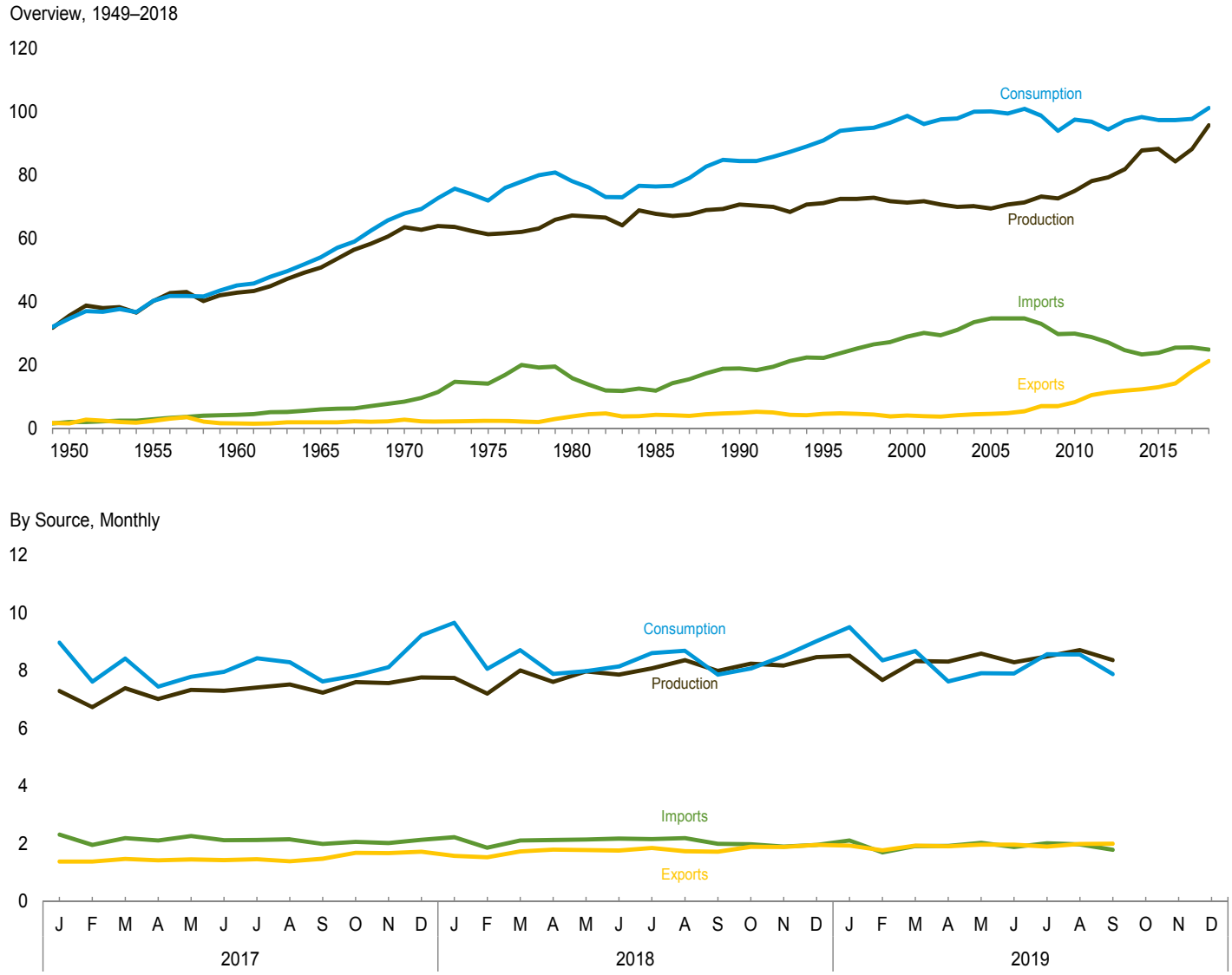
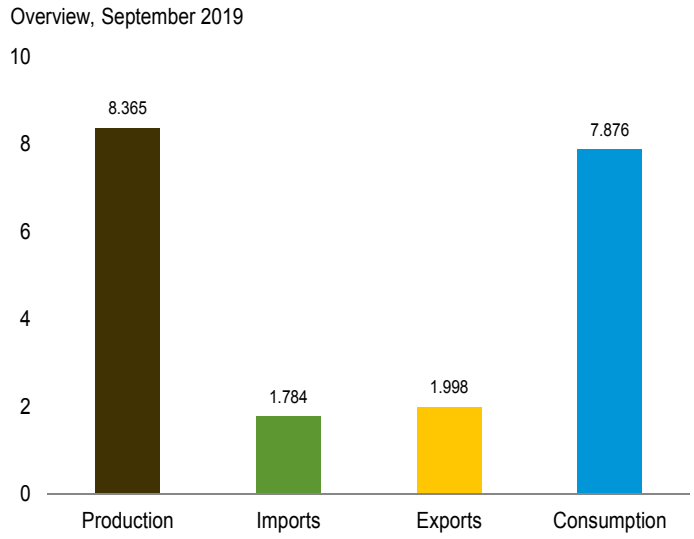
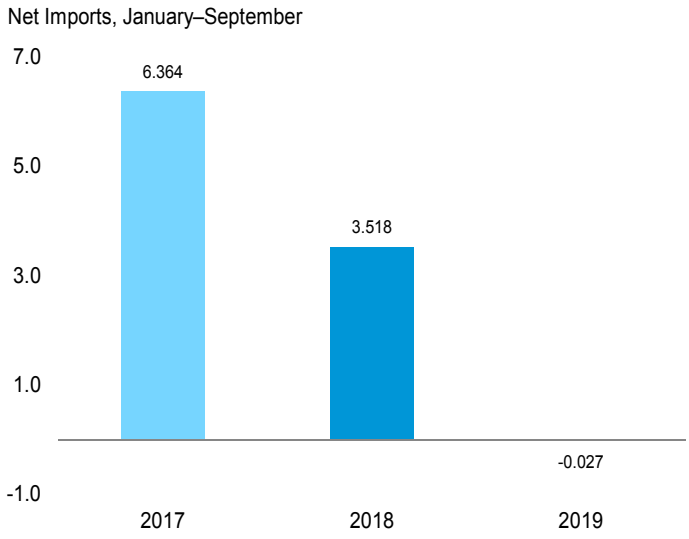
1. Energy Overview

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	**32.565**	**0.000**	**2.978**	**35.543**	**1.913**	**1.465**	**0.448**	**-1.392**	**31.615**	**0.000**	**2.978**	**34.599**
1955 Total	**37.366**	**.000**	**2.784**	**40.150**	**2.790**	**2.286**	**.504**	**-.476**	**37.380**	**.000**	**2.784**	**40.178**
1960 Total	**39.871**	**.006**	**2.928**	**42.805**	**4.188**	**1.477**	**2.710**	**-.475**	**42.091**	**.006**	**2.928**	**45.041**
1965 Total	**47.235**	**.043**	**3.396**	**50.674**	**5.892**	**1.829**	**4.063**	**-.784**	**50.515**	**.043**	**3.396**	**53.953**
1970 Total	**59.178**	**.239**	**4.070**	**63.487**	**8.342**	**2.632**	**5.709**	**-1.380**	**63.501**	**.239**	**4.070**	**67.817**
1975 Total	**54.709**	**1.900**	**4.687**	**61.296**	**14.032**	**2.323**	**11.709**	**-1.074**	**65.323**	**1.900**	**4.687**	**71.931**
1980 Total	**58.978**	**2.739**	**5.428**	**67.145**	**15.796**	**3.695**	**12.101**	**-1.226**	**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**	**.920**	**80.727**	**8.434**	**8.267**	**97.517**
2011 Total	**60.513**	**8.269**	**9.300**	**78.082**	**28.748**	**10.373**	**18.375**	**.393**	**79.250**	**8.269**	**9.204**	**96.850**
2012 Total	**62.286**	**8.062**	**8.886**	**79.234**	**27.068**	**11.267**	**15.801**	**-.655**	**77.310**	**8.062**	**8.847**	**94.380**
2013 Total	**64.174**	**8.244**	**9.418**	**81.837**	**24.623**	**11.788**	**12.835**	**2.446**	**79.225**	**8.244**	**9.451**	**97.117**
2014 Total	**69.611**	**8.338**	**9.766**	**87.715**	**23.241**	**12.270**	**10.971**	**-.410**	**80.016**	**8.338**	**9.740**	**98.276**
2015 Total	**70.185**	**8.337**	**9.729**	**88.250**	**23.794**	**12.902**	**10.892**	**-1.764**	**79.093**	**8.337**	**9.720**	**97.378**
2016 Total	**65.420**	**8.427**	**10.428**	**84.275**	**25.378**	**14.119**	**11.259**	**1.800**	**78.312**	**8.427**	**10.368**	**97.334**
2017 January	5.601	.765	.926	7.292	2.315	1.380	.935	R .747	R 7.283	.765	.904	R 8.974
February	5.201	.665	.867	6.734	1.959	1.385	.574	R .308	R 6.081	.665	.852	R 7.615
March	5.687	.681	1.023	7.391	2.195	1.469	.726	R .304	R 6.714	.681	1.010	R 8.421
April	5.422	.593	.997	7.013	2.112	1.424	.688	-.256	5.843	.593	.993	7.444
May	5.656	.641	1.035	7.332	2.264	1.454	.810	R -.351	R 6.101	.641	1.034	R 7.791
June	5.610	.701	.991	7.302	2.117	1.430	.688	R -.033	R 6.246	.701	.992	R 7.956
July	5.738	.746	.932	7.415	2.129	1.459	.670	R .339	R 6.734	.746	.927	R 8.424
August	5.885	.757	.874	7.516	2.153	1.393	.760	R .014	R 6.643	.757	.869	R 8.289
September	5.668	.712	.852	7.232	1.993	1.480	.514	R -.123	R 6.052	.712	.842	R 7.622
October	5.983	.690	.924	7.597	2.065	1.684	.381	R -.148	6.215	.690	.914	R 7.830
November	5.949	.697	.921	7.566	2.023	1.670	.353	.202	R 6.509	.697	.905	8.122
December	6.037	.771	.959	7.767	2.132	1.719	.414	R 1.038	R 7.494	.771	.940	R 9.219
Total	**68.437**	**8.419**	**11.301**	**88.156**	**25.457**	**17.946**	**7.512**	**2.040**	**77.915**	**8.419**	**11.181**	**97.708**
2018 January	5.984	.780	.982	7.746	2.228	1.575	.652	R 1.262	R 7.903	.780	.963	R 9.660
February	5.603	.677	.926	7.206	1.861	1.526	.335	R .518	R 6.469	.677	.900	R 8.059
March	6.283	.701	1.020	8.004	2.114	1.731	.383	R .321	R 6.988	.701	1.004	R 8.708
April	5.966	.618	1.028	7.612	2.125	1.793	.332	R -.058	R 6.247	.618	1.011	7.885
May	6.213	.704	1.058	7.975	2.142	1.781	.361	R -.355	R 6.214	.704	1.049	R 7.981
June	6.094	.729	1.039	7.862	2.176	1.763	.413	R -.131	R 6.377	.729	1.024	R 8.145
July	6.365	.758	.955	8.077	2.161	1.854	.308	R .223	R 6.898	.758	.938	R 8.608
August	6.647	.756	.959	8.362	2.192	1.738	.453	R -.128	R 6.970	.756	.945	R 8.687
September	6.436	.677	.874	7.987	1.999	1.718	.280	R -.409	R 6.317	.677	.854	R 7.858
October	6.713	.621	.910	8.244	1.982	1.892	.090	-.261	R 6.551	.621	.892	R 8.074
November	6.594	.669	.916	8.178	1.896	1.882	.014	R .317	R 6.934	.669	.898	R 8.509
December	6.768	.749	.949	8.466	1.958	1.955	.003	R .549	R 7.327	.749	.931	R 9.018
Total	**75.667**	**8.438**	**11.617**	**95.722**	**24.833**	**21.208**	**3.625**	**1.846**	**81.194**	**8.438**	**11.409**	**101.193**
2019 January	R 6.785	.771	.965	R 8.521	2.111	1.936	.174	R .808	R 7.779	.771	.942	R 9.503
February	R 6.114	.677	.885	R 7.676	1.695	1.767	-.072	R .748	6.793	.677	.871	8.352
March	R 6.648	.680	1.004	R 8.332	1.915	1.931	-.017	R .361	6.994	.680	.994	8.677
April	R 6.638	.633	1.040	R 8.311	1.924	1.909	.016	R -.704	5.959	.633	1.023	7.624
May	R 6.820	.702	1.072	8.593	2.033	1.962	.071	R -.754	6.139	.702	1.060	R 7.911
June	6.563	.719	1.010	8.293	1.882	1.966	-.084	-.306	6.174	.719	.997	R 7.902
July	R 6.744	.755	.993	R 8.492	2.015	1.899	R .115	R -.038	R 6.826	.755	.976	R 8.569
August	R 7.014	.752	R .946	R 8.711	1.973	R 1.990	R -.017	R -.136	R 6.860	.752	.933	R 8.559
September	6.780	.689	.896	8.365	1.784	1.998	-.214	-.275	6.291	.689	.884	7.876
9-Month Total	**60.106**	**6.378**	**8.811**	**75.295**	**17.332**	**17.359**	**-.027**	**-.295**	**59.814**	**6.378**	**8.681**	**74.973**
2018 9-Month Total	**55.592**	**6.399**	**8.841**	**70.833**	**18.998**	**15.480**	**3.518**	**1.241**	**60.382**	**6.399**	**8.688**	**75.592**
2017 9-Month Total	**50.468**	**6.261**	**8.497**	**65.226**	**19.237**	**12.873**	**6.364**	**.948**	**57.697**	**6.261**	**8.423**	**72.538**

[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.

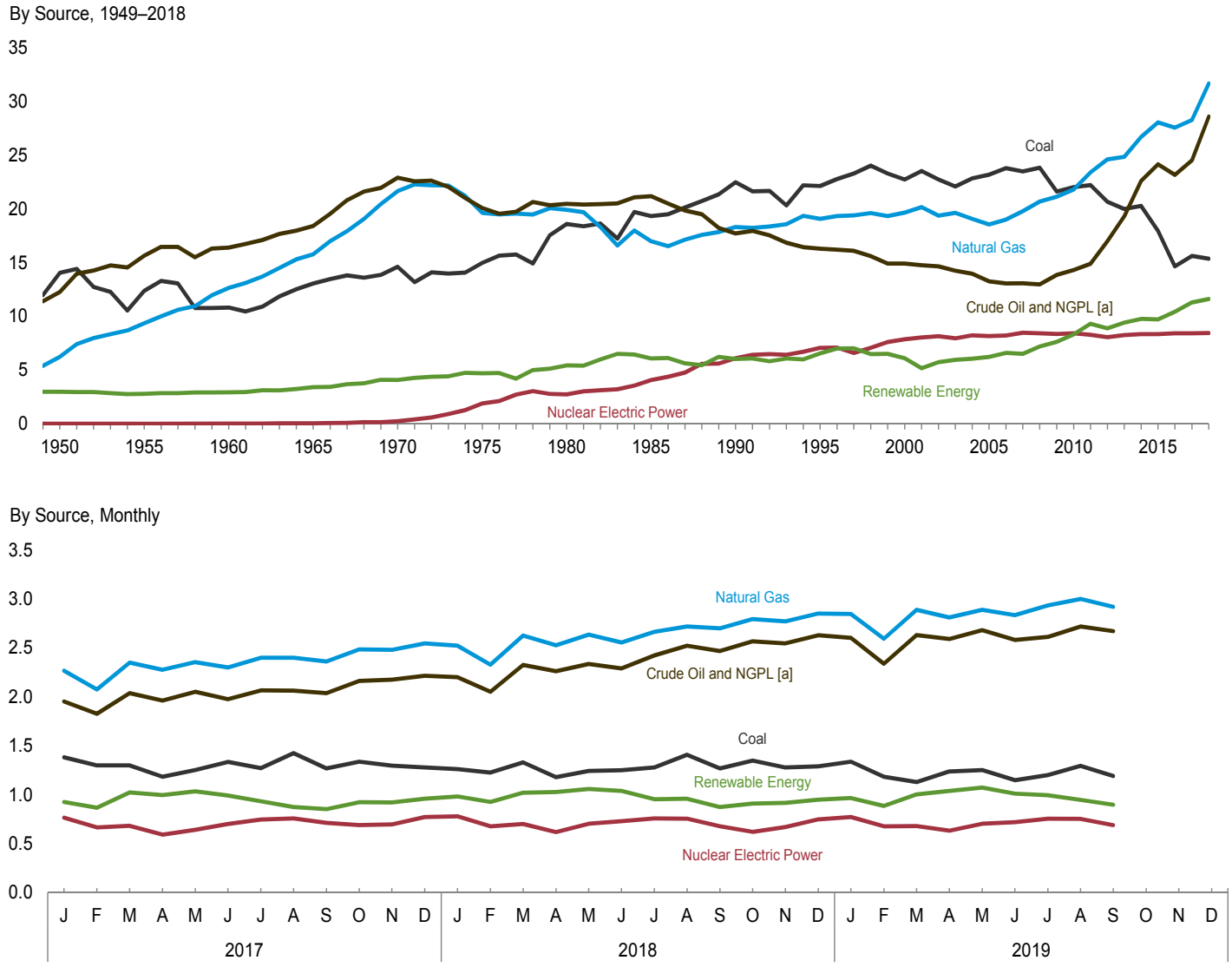
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

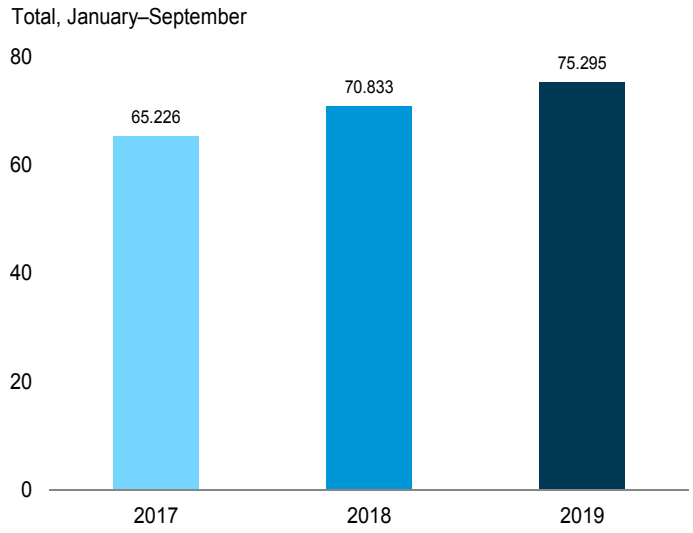
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

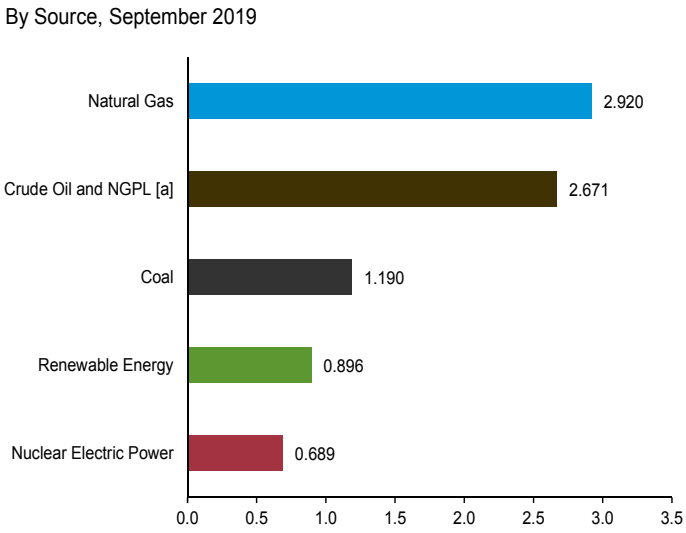
Sources: • **Production:** Table 1.2. • **Trade:** Tables 1.4a and 1.4b. • **Stock Change and Other:** Calculated as consumption minus production and net imports. • **Consumption:** Table 1.3.

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						Renewable Energy[a]						
	Coal[b]	Natural Gas (Dry)	Crude Oil[c]	NGPL[d]	Total	Nuclear Electric Power	Hydro-electric Power[e]	Geo-thermal	Solar	Wind	Bio-mass	Total	Total
1950 Total	**14.060**	**6.233**	**11.447**	**0.825**	**32.565**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**35.543**
1955 Total	**12.370**	**9.345**	**14.410**	**1.242**	**37.366**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.150**
1960 Total	**10.817**	**12.656**	**14.935**	**1.463**	**39.871**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**42.805**
1965 Total	**13.055**	**15.775**	**16.521**	**1.883**	**47.235**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**50.674**
1970 Total	**14.607**	**21.666**	**20.401**	**2.504**	**59.178**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**63.487**
1975 Total	**14.989**	**19.640**	**17.729**	**2.350**	**54.709**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**61.296**
1980 Total	**18.598**	**19.908**	**18.249**	**2.224**	**58.978**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**67.145**
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**	**11.996**	**2.890**	**60.513**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.704**	**9.300**	**78.082**
2012 Total	**20.677**	**24.610**	**13.837**	**3.162**	**62.286**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.547**	**8.886**	**79.234**
2013 Total	**20.001**	**24.859**	**15.862**	**3.451**	**64.174**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.816**	**9.418**	**81.837**
2014 Total	**20.286**	**26.718**	**18.602**	**4.005**	**69.611**	**8.338**	**2.467**	**.214**	**.337**	**1.728**	**5.020**	**9.766**	**87.715**
2015 Total	**17.946**	**28.067**	**19.696**	**4.476**	**70.185**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.992**	**9.729**	**88.250**
2016 Total	**14.667**	**27.576**	**18.512**	**4.665**	**65.420**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.081**	**10.428**	**84.275**
2017 January	1.382	2.266	1.572	.380	5.601	.765	.247	.018	.034	.183	.445	.926	7.292
February	1.300	2.076	1.459	.367	5.201	.665	.218	.016	.040	.195	.398	.867	6.734
March	1.299	2.350	1.625	.413	5.687	.681	.270	.018	.063	.230	.442	1.023	7.391
April	1.184	2.277	1.562	.399	5.422	.593	.271	.018	.069	.227	.412	.997	7.013
May	1.252	2.353	1.629	.422	5.656	.641	.298	.017	.081	.207	.432	1.035	7.332
June	1.335	2.299	1.564	.413	5.610	.701	.278	.016	.087	.183	.427	.991	7.302
July	1.271	2.400	1.638	.428	5.738	.746	.244	.018	.083	.147	.439	.932	7.415
August	1.424	2.399	1.641	.421	5.885	.757	.201	.018	.080	.125	.450	.874	7.516
September	1.269	2.362	1.633	.404	5.668	.712	.176	.017	.074	.164	.421	.852	7.232
October	1.336	2.484	1.713	.450	5.983	.690	.168	.017	.068	.233	.438	.924	7.597
November	1.296	2.479	1.729	.445	5.949	.697	.189	.017	.050	.222	.443	.921	7.566
December	1.277	2.546	1.769	.444	6.037	.771	.206	.020	.049	.226	.458	.959	7.767
Total	**15.625**	**28.289**	**19.535**	**4.987**	**68.437**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.204**	**11.301**	**88.156**
2018 January	1.261	2.522	1.772	.429	5.984	.780	.229	.018	.049	.233	.454	.982	7.746
February	1.225	2.327	1.643	.408	5.603	.677	.227	.016	.056	.211	.415	.926	7.206
March	1.331	2.627	1.858	.468	6.283	.701	.236	.018	.074	.241	.451	1.020	8.004
April	1.178	2.527	1.799	.462	5.966	.618	.256	.016	.086	.241	.428	1.028	7.612
May	1.243	2.635	1.850	.484	6.213	.704	.278	.018	.097	.218	.448	1.058	7.975
June	1.250	2.554	1.823	.467	6.094	.729	.252	.017	.102	.225	.443	1.039	7.862
July	1.279	2.664	1.926	.496	6.365	.758	.229	.018	.097	.150	.461	.955	8.077
August	1.408	2.718	2.010	.512	6.647	.756	.201	.018	.095	.181	.465	.959	8.362
September	1.268	2.700	1.968	.500	6.436	.677	.175	.017	.085	.169	.429	.874	7.987
October	1.349	2.795	2.057	.511	6.713	.621	.178	.017	.072	.193	.450	.910	8.244
November	1.277	2.771	2.054	.492	6.594	.669	.200	.017	.056	.201	.442	.916	8.178
December	1.290	2.850	2.129	.499	6.768	.749	.208	.019	.048	.222	.453	.949	8.466
Total	**15.360**	**31.690**	**22.890**	**5.727**	**75.667**	**8.438**	**2.667**	**.209**	**.917**	**2.486**	**5.337**	**11.617**	**95.722**
2019 January	1.336	RE 2.846	E 2.097	.506	R 6.785	.771	.221	.018	.054	.229	.443	.965	R 8.521
February	1.183	RE 2.594	E 1.864	.473	R 6.114	.677	.199	.017	.057	.210	.402	.885	R 7.676
March	1.130	RE 2.888	E 2.103	.526	R 6.648	.680	.233	.018	.086	.238	.429	1.004	R 8.332
April	1.237	RE 2.810	E 2.075	.516	R 6.638	.633	.232	.017	.098	.271	.423	1.040	R 8.311
May	1.251	RE 2.888	E 2.143	.539	R 6.820	.702	.274	.018	.104	.237	.438	1.072	8.593
June	1.148	E 2.834	E 2.064	.516	6.563	.719	.241	.018	.112	.209	.429	1.010	8.293
July	R 1.199	RE 2.933	RE 2.091	.521	R 6.744	.755	.216	.018	.116	.201	.442	.993	R 8.492
August	R 1.294	RE 3.000	RE 2.193	.526	R 7.014	.752	.190	.018	.111	.181	R .446	R .946	R 8.711
September	1.190	E 2.920	E 2.133	.537	6.780	.689	.149	.018	.097	.222	.411	.896	8.365
9-Month Total	**10.967**	**E 25.713**	**E 18.765**	**4.660**	**60.106**	**6.378**	**1.956**	**.160**	**.836**	**1.997**	**3.863**	**8.811**	**75.295**
2018 9-Month Total	**11.444**	**23.274**	**16.649**	**4.226**	**55.592**	**6.399**	**2.081**	**.156**	**.740**	**1.870**	**3.993**	**8.841**	**70.833**
2017 9-Month Total	**11.716**	**20.781**	**14.324**	**3.648**	**50.468**	**6.261**	**2.203**	**.157**	**.610**	**1.661**	**3.866**	**8.497**	**65.226**

[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 plant liquids.
[e] Conventional hydroelectric power.

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

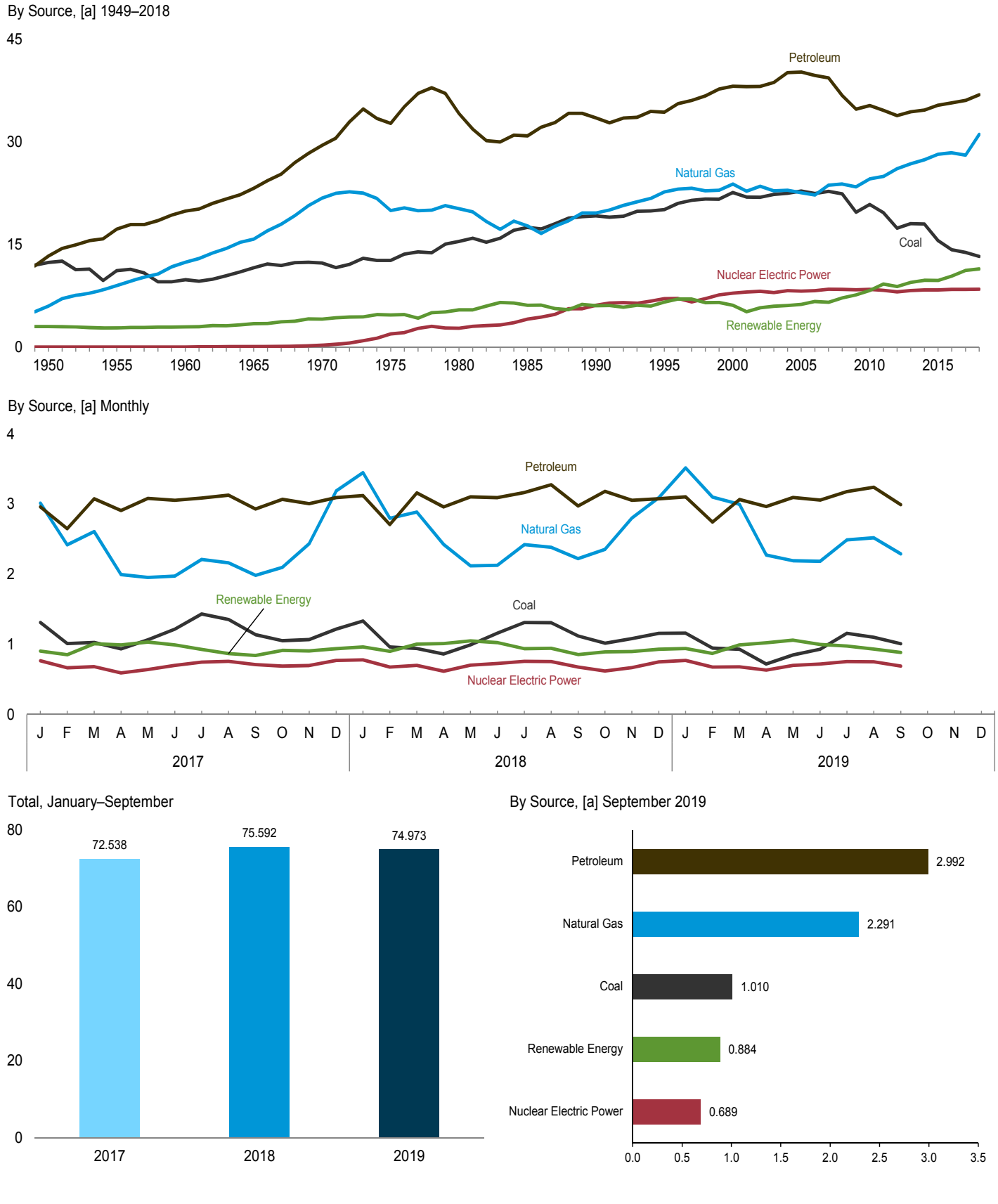
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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**	**35.324**	**80.727**	**8.434**	**2.539**	**.208**	**.091**	**.923**	**4.506**	**8.267**	**97.517**
2011 Total	**19.658**	**24.955**	**34.627**	**79.250**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.609**	**9.204**	**96.850**
2012 Total	**17.378**	**26.089**	**33.839**	**77.310**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.508**	**8.847**	**94.380**
2013 Total	**18.039**	**26.805**	**34.398**	**79.225**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.848**	**9.451**	**97.117**
2014 Total	**17.998**	**27.383**	**34.657**	**80.016**	**8.338**	**2.467**	**.214**	**.337**	**1.728**	**4.994**	**9.740**	**98.276**
2015 Total	**15.549**	**28.191**	**35.371**	**79.093**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.983**	**9.720**	**97.378**
2016 Total	**14.226**	**28.400**	**35.705**	**78.312**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.020**	**10.368**	**97.334**
2017 January	1.313	R 3.014	2.960	R 7.283	.765	.247	.018	.034	.183	.422	.904	R 8.974
February	1.011	R 2.420	2.651	R 6.081	.665	.218	.016	.040	.195	.383	.852	R 7.615
March	1.029	R 2.609	3.077	R 6.714	.681	.270	.018	.063	.230	.429	1.010	R 8.421
April	.937	R 1.997	2.910	5.843	.593	.271	.018	.069	.227	.408	.993	7.444
May	1.066	R 1.955	3.082	R 6.101	.641	.298	.017	.081	.207	.431	1.034	R 7.791
June	1.218	R 1.974	3.056	R 6.246	.701	.278	.016	.087	.183	.428	.992	R 7.956
July	1.433	R 2.213	3.089	R 6.734	.746	.244	.018	.083	.147	.434	.927	R 8.424
August	1.356	R 2.164	3.127	R 6.643	.757	.201	.018	.080	.125	.445	.869	R 8.289
September	1.140	R 1.984	2.930	R 6.052	.712	.176	.017	.074	.164	.411	.842	R 7.622
October	1.051	2.099	3.069	6.215	.690	.168	.017	.068	.233	.427	.914	R 7.830
November	1.069	2.437	3.007	R 6.509	.697	.189	.017	.050	.222	.426	.905	8.122
December	1.216	R 3.189	3.092	R 7.494	.771	.206	.020	.049	.226	.439	.940	R 9.219
Total	**13.837**	**28.055**	**36.051**	**77.915**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.084**	**11.181**	**97.708**
2018 January	1.334	R 3.449	3.124	R 7.903	.780	.229	.018	.049	.233	.435	.963	R 9.660
February	.963	R 2.798	2.709	R 6.469	.677	.227	.016	.056	.211	.390	.900	R 8.059
March	.941	R 2.887	3.162	R 6.988	.701	.236	.018	.074	.241	.436	1.004	R 8.708
April	.863	2.425	2.961	R 6.247	.618	.256	.016	.086	.241	.411	1.011	7.885
May	.993	R 2.119	3.104	R 6.214	.704	.278	.018	.097	.218	.439	1.049	R 7.981
June	1.160	R 2.127	3.092	R 6.377	.729	.252	.017	.102	.225	.428	1.024	R 8.145
July	1.311	R 2.423	3.166	R 6.898	.758	.229	.018	.097	.150	.444	.938	R 8.608
August	1.309	R 2.385	3.277	R 6.970	.756	.201	.018	.095	.181	.450	.945	R 8.687
September	1.120	R 2.223	2.975	R 6.317	.677	.175	.017	.085	.169	.409	.854	R 7.858
October	1.017	R 2.355	3.181	R 6.551	.621	.178	.017	.072	.193	.431	.892	R 8.074
November	1.082	R 2.801	3.054	R 6.934	.669	.200	.017	.056	.201	.424	.898	R 8.509
December	1.158	R 3.094	3.077	R 7.327	.749	.208	.019	.048	.222	.435	.931	R 9.018
Total	**13.252**	**31.086**	**36.882**	**81.194**	**8.438**	**2.667**	**.209**	**.917**	**2.486**	**5.130**	**11.409**	**101.193**
2019 January	1.160	R 3.517	3.105	R 7.779	.771	.221	.018	.054	.229	.420	.942	R 9.503
February	.948	3.101	2.745	6.793	.677	.199	.017	.057	.210	.388	.871	8.352
March	.932	2.998	3.065	6.994	.680	.233	.018	.086	.238	.419	.994	8.677
April	.720	2.275	2.965	5.959	.633	.232	.017	.098	.271	.406	1.023	7.624
May	.850	2.194	3.097	6.139	.702	.274	.018	.104	.237	.427	1.060	R 7.911
June	.931	2.186	3.058	6.174	.719	.241	.018	.112	.209	.416	.997	R 7.902
July	1.159	R 2.489	3.180	R 6.826	.755	.216	.018	.116	.201	.425	.976	R 8.569
August	1.100	R 2.520	3.241	R 6.860	.752	.190	.018	.111	.181	.433	.933	R 8.559
September	1.010	2.291	2.992	6.291	.689	.149	.018	.097	.222	.399	.884	7.876
9-Month Total	**8.811**	**23.570**	**27.448**	**59.814**	**6.378**	**1.956**	**.160**	**.836**	**1.997**	**3.732**	**8.681**	**74.973**
2018 9-Month Total	**9.994**	**22.836**	**27.570**	**60.382**	**6.399**	**2.081**	**.156**	**.740**	**1.870**	**3.840**	**8.688**	**75.592**
2017 9-Month Total	**10.502**	**20.330**	**26.883**	**57.697**	**6.261**	**2.203**	**.157**	**.610**	**1.661**	**3.792**	**8.423**	**72.538**

[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 1.4a and 1.4b.
[f] Conventional hydroelectric power.
[g] Includes coal coke net imports and electricity net imports, which are not separately displayed. See Tables 1.4a and 1.4b.

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

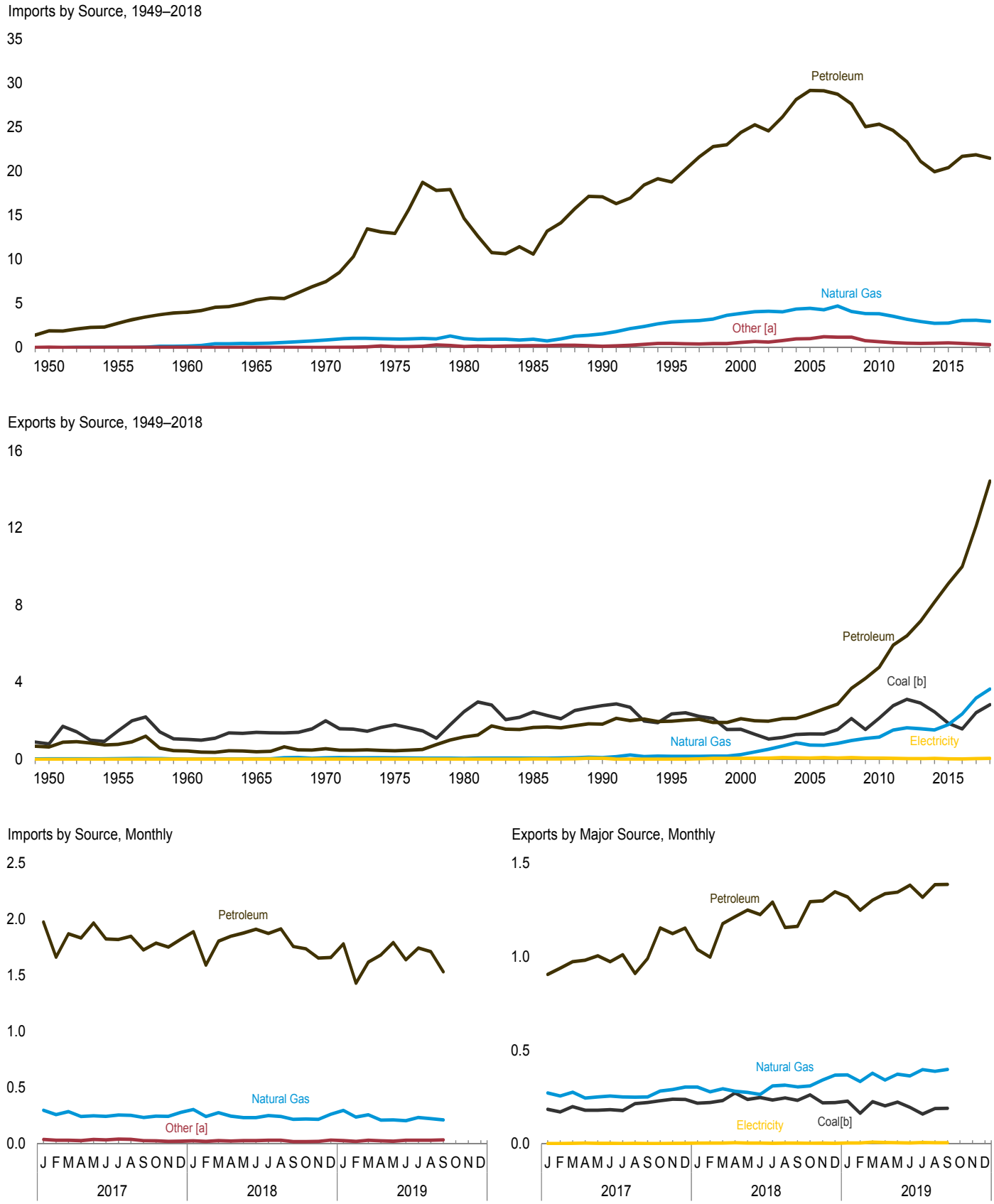
Notes: • See "Primary Energy Consumption" in Glossary. • See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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 and Exports

(Quadrillion Btu)

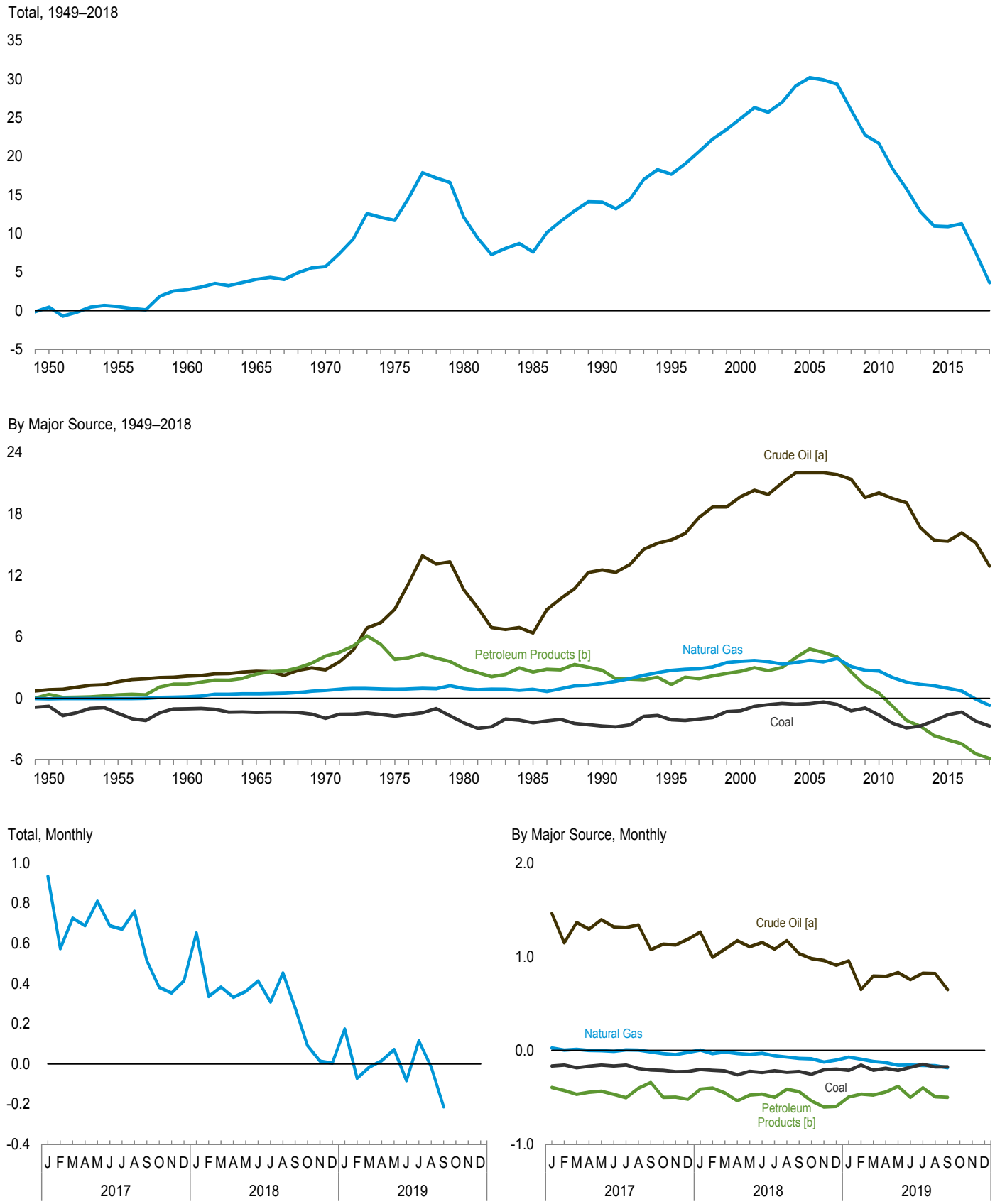


[a] Coal, coal coke, biomass, and electricity.
[b] Includes coal coke.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Sources: Tables 1.4a and 1.4b.

Figure 1.4b 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.

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

Sources: Tables 1.4a and 1.4b.

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 January	.016	(s)	.299	1.590	.383	1.973	.003	.024	2.315
February	.013	(s)	.261	1.334	.327	1.661	.004	.019	1.959
March	.012	(s)	.288	1.531	.337	1.869	.006	.021	2.195
April	.011	(s)	.244	1.489	.342	1.831	.006	.019	2.112
May	.023	(s)	.250	1.592	.374	1.965	.008	.017	2.264
June	.014	.001	.246	1.468	.355	1.824	.013	.020	2.117
July	.021	(s)	.257	1.484	.335	1.819	.012	.020	2.129
August	.018	(s)	.254	1.486	.361	1.847	.011	.022	2.153
September	.011	(s)	.235	1.329	.396	1.725	.004	.018	1.993
October	.012	(s)	.247	1.441	.346	1.787	.004	.013	2.065
November	.008	(s)	.246	1.393	.358	1.751	.005	.013	2.023
December	.009	(s)	.281	1.460	.362	1.822	.004	.016	2.132
Total	**.167**	**.001**	**3.109**	**17.597**	**4.277**	**21.874**	**.081**	**.224**	**25.457**
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	1.413	.365	1.779	.005	.016	2.111
February	.007	(s)	.239	1.129	.301	1.430	.003	.016	1.695
March	.014	(s)	.259	1.270	.348	1.618	.006	.017	1.915
April	.011	.001	.212	1.278	.403	1.681	.006	.015	1.924
May	.008	(s)	.213	1.345	.445	1.791	.005	.016	2.033
June	.013	(s)	.206	1.299	.339	1.637	.007	.018	1.882
July	.010	(s)	.236	1.303	.439	1.742	.007	.019	2.015
August	.011	.001	.226	1.305	.406	1.711	.005	.020	1.973
September	.013	(s)	.213	1.178	.353	1.531	.007	.018	1.784
9-Month Total	**.102**	**.002**	**2.103**	**11.522**	**3.398**	**14.920**	**.051**	**.155**	**17.332**
2018 9-Month Total	**.089**	**.002**	**2.259**	**13.104**	**3.352**	**16.456**	**.033**	**.159**	**18.998**
2017 9-Month Total	**.138**	**.001**	**2.334**	**13.304**	**3.211**	**16.515**	**.068**	**.181**	**19.237**

[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.

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.

Table 1.4b Primary Energy Exports by Source and Total Net Imports

(Quadrillion Btu)

	Exports									Net Imports[a]
				Petroleum						
	Coal	Coal Coke	Natural Gas	Crude Oil[b]	Petroleum Products[c]	Total	Biomass[d]	Electricity	Total	Total
1950 Total	**0.786**	**0.010**	**0.027**	**0.202**	**0.440**	**0.642**	**NA**	**0.001**	**1.465**	**0.448**
1955 Total	**1.465**	**.013**	**.032**	**.067**	**.707**	**.774**	**NA**	**.002**	**2.286**	**.504**
1960 Total	**1.023**	**.009**	**.012**	**.018**	**.413**	**.431**	**NA**	**.003**	**1.477**	**2.710**
1965 Total	**1.376**	**.021**	**.027**	**.006**	**.386**	**.392**	**NA**	**.013**	**1.829**	**4.063**
1970 Total	**1.936**	**.061**	**.072**	**.029**	**.520**	**.549**	**NA**	**.014**	**2.632**	**5.709**
1975 Total	**1.761**	**.032**	**.074**	**.012**	**.427**	**.439**	**NA**	**.017**	**2.323**	**11.709**
1980 Total	**2.421**	**.051**	**.049**	**.609**	**.551**	**1.160**	**NA**	**.014**	**3.695**	**12.101**
1985 Total	**2.438**	**.028**	**.056**	**.432**	**1.225**	**1.657**	**NA**	**.017**	**4.196**	**7.584**
1990 Total	**2.772**	**.014**	**.087**	**.230**	**1.594**	**1.824**	**NA**	**.055**	**4.752**	**14.065**
1995 Total	**2.318**	**.034**	**.156**	**.200**	**1.776**	**1.976**	**NA**	**.012**	**4.496**	**17.684**
2000 Total	**1.528**	**.028**	**.245**	**.106**	**2.003**	**2.110**	**NA**	**.051**	**3.962**	**24.904**
2001 Total	**1.265**	**.033**	**.377**	**.043**	**1.956**	**1.999**	**(s)**	**.056**	**3.731**	**26.321**
2002 Total	**1.032**	**.020**	**.520**	**.019**	**1.963**	**1.982**	**(s)**	**.054**	**3.608**	**25.722**
2003 Total	**1.117**	**.018**	**.686**	**.026**	**2.083**	**2.110**	**.001**	**.082**	**4.013**	**26.994**
2004 Total	**1.253**	**.033**	**.862**	**.057**	**2.068**	**2.125**	**.001**	**.078**	**4.351**	**29.141**
2005 Total	**1.273**	**.043**	**.735**	**.067**	**2.276**	**2.344**	**.001**	**.065**	**4.462**	**30.197**
2006 Total	**1.264**	**.040**	**.730**	**.052**	**2.554**	**2.606**	**.005**	**.083**	**4.727**	**29.921**
2007 Total	**1.507**	**.036**	**.830**	**.058**	**2.803**	**2.861**	**.036**	**.069**	**5.338**	**29.341**
2008 Total	**2.071**	**.049**	**.972**	**.061**	**3.626**	**3.686**	**.089**	**.083**	**6.949**	**26.021**
2009 Total	**1.515**	**.032**	**1.082**	**.093**	**4.101**	**4.194**	**.035**	**.062**	**6.920**	**22.770**
2010 Total	**2.101**	**.036**	**1.147**	**.088**	**4.691**	**4.780**	**.047**	**.065**	**8.176**	**21.690**
2011 Total	**2.751**	**.024**	**1.519**	**.100**	**5.820**	**5.919**	**.108**	**.051**	**10.373**	**18.375**
2012 Total	**3.087**	**.024**	**1.633**	**.143**	**6.261**	**6.404**	**.078**	**.041**	**11.267**	**15.801**
2013 Total	**2.895**	**.021**	**1.587**	**.284**	**6.886**	**7.170**	**.076**	**.039**	**11.788**	**12.835**
2014 Total	**2.435**	**.023**	**1.528**	**.744**	**7.414**	**8.158**	**.081**	**.045**	**12.270**	**10.971**
2015 Total	**1.852**	**.021**	**1.800**	**.964**	**8.153**	**9.118**	**.080**	**.031**	**12.902**	**10.892**
2016 Total	**1.546**	**.025**	**2.356**	**1.238**	**8.752**	**9.990**	.181	**.021**	**14.119**	**11.259**
2017 January	.182	.003	.272	.126	.778	.904	.017	.002	1.380	.935
February	.170	.001	.256	.184	.754	.938	.018	.002	1.385	.574
March	.197	.002	.276	.165	.807	.972	.018	.003	1.469	.726
April	.178	.001	.245	.194	.787	.981	.015	.004	1.424	.688
May	.178	.001	.251	.195	.808	1.004	.017	.003	1.454	.810
June	.180	.003	.256	.149	.823	.972	.016	.003	1.430	.688
July	.177	.001	.251	.170	.840	1.010	.018	.002	1.459	.670
August	.211	.004	.250	.145	.764	.910	.017	.003	1.393	.760
September	.219	.002	.251	.252	.738	.990	.015	.002	1.480	.514
October	.226	.005	.282	.306	.847	1.153	.016	.002	1.684	.381
November	.235	.003	.290	.266	.856	1.122	.016	.003	1.670	.353
December	.234	.003	.303	.271	.882	1.152	.024	.003	1.719	.414
Total	**2.388**	**.030**	**3.182**	**2.424**	**9.684**	**12.108**	**.206**	**.032**	**17.946**	**7.512**
2018 January	.213	.004	.303	.242	.795	1.037	.015	.004	1.575	.652
February	.219	.001	.278	.278	.719	.997	.025	.004	1.526	.335
March	.229	.002	.294	.349	.826	1.175	.026	.004	1.731	.383
April	.269	.003	.281	.329	.883	1.213	.021	.006	1.793	.332
May	.234	.002	.275	.367	.881	1.248	.018	.004	1.781	.361
June	.246	.002	.264	.391	.832	1.224	.023	.004	1.763	.413
July	.232	.002	.309	.409	.882	1.291	.017	.003	1.854	.308
August	.244	.001	.314	.330	.826	1.155	.019	.004	1.738	.453
September	.230	.001	.304	.346	.815	1.161	.018	.004	1.718	.280
October	.259	.002	.309	.400	.892	1.293	.025	.003	1.892	.090
November	.216	.003	.341	.412	.885	1.297	.022	.004	1.882	.014
December	.217	.003	.367	.424	.921	1.345	.021	.003	1.955	.003
Total	**2.809**	**.029**	**3.640**	**4.277**	**10.158**	**14.434**	**.249**	**.047**	**21.208**	**3.625**
2019 January	.226	.003	.368	.457	.861	1.318	.017	.005	1.936	.174
February	.163	.001	.333	.479	.768	1.247	.018	.005	1.767	-.072
March	.224	.001	.377	.476	.825	1.301	.020	.009	1.931	-.017
April	.201	.002	.341	.488	.847	1.335	.023	.007	1.909	.016
May	.221	.002	.372	.514	.829	1.343	.018	.006	1.962	.071
June	.193	.002	.363	.542	.838	1.381	.022	.005	1.966	-.084
July	.158	.002	R .397	.478	.838	1.316	.020	.007	1.899	R .115
August	.187	.002	.388	.484	.901	1.384	R .022	.006	R 1.990	R -.017
September	.188	.003	.398	.531	.855	1.385	.019	.006	1.998	-.214
9-Month Total	**1.760**	**.016**	**3.338**	**4.448**	**7.562**	**12.010**	**.179**	**.055**	**17.359**	**-.027**
2018 9-Month Total	**2.118**	**.020**	**2.623**	**3.041**	**7.460**	**10.500**	**.182**	**.037**	**15.480**	**3.518**
2017 9-Month Total	**1.693**	**.019**	**2.307**	**1.582**	**7.099**	**8.681**	**.150**	**.024**	**12.873**	**6.364**

[a] Net imports equal imports minus exports.
[b] Crude oil and lease condensate.
[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.

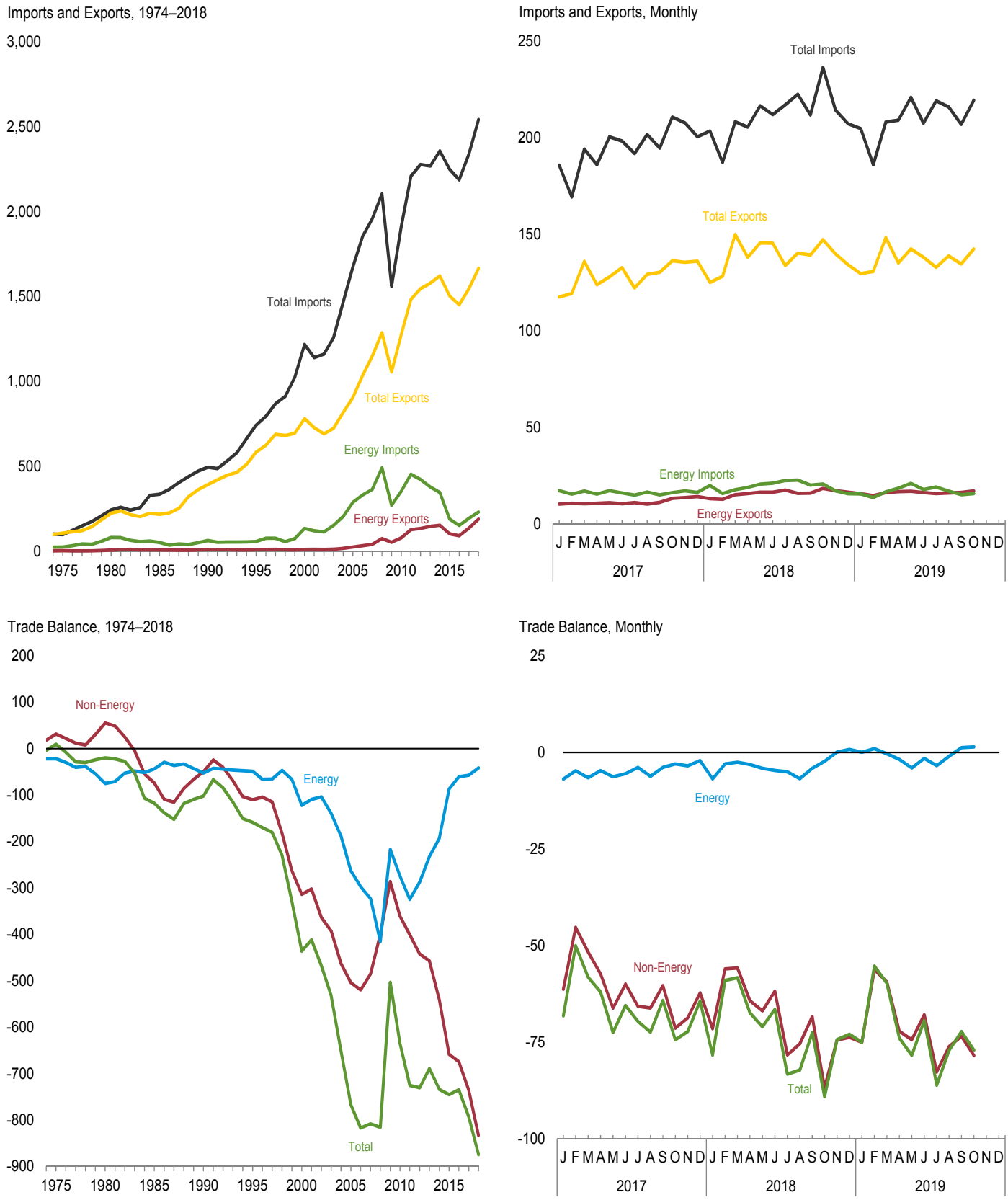
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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: See end of section.

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.

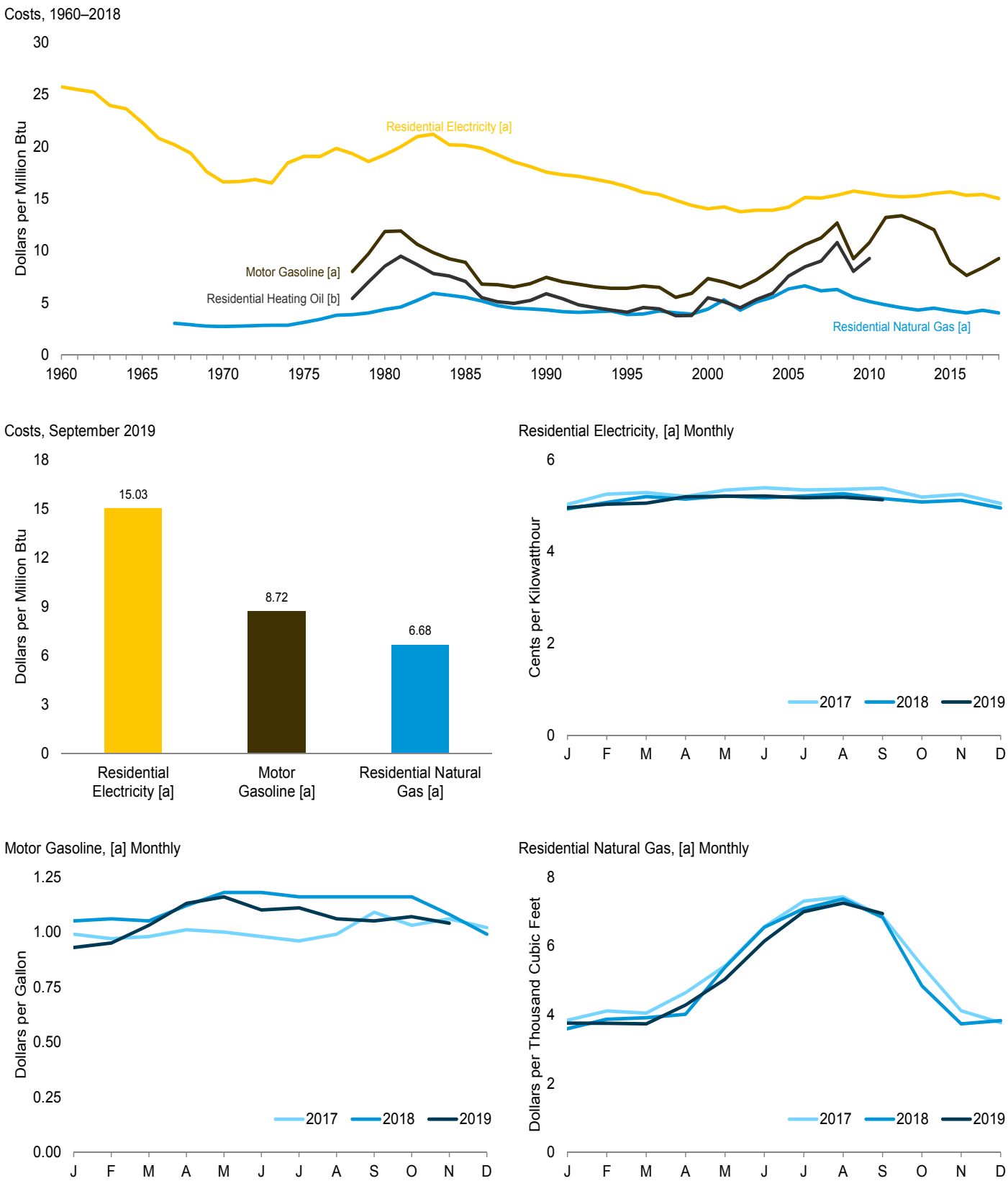
Table 1.5 Merchandise Trade Value

(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 January	7,474	15,772	-8,298	10,344	17,258	-6,914	-61,285	117,469	185,669	-68,199
February	7,822	14,235	-6,413	10,664	15,417	-4,753	-45,271	119,226	169,250	-50,024
March	7,731	15,878	-8,147	10,478	17,018	-6,540	-51,616	135,910	194,067	-58,156
April	8,104	14,420	-6,316	10,730	15,429	-4,699	-57,298	123,881	185,878	-61,997
May	8,400	16,247	-7,847	10,974	17,278	-6,304	-66,194	127,866	200,364	-72,498
June	8,253	15,094	-6,841	10,538	16,074	-5,536	-59,953	132,705	198,194	-65,489
July	8,821	13,954	-5,133	11,066	14,949	-3,883	-65,712	122,173	191,768	-69,595
August	7,771	15,485	-7,714	10,281	16,506	-6,225	-66,141	129,199	201,565	-72,366
September	8,400	14,083	-5,683	11,156	15,034	-3,878	-60,335	130,294	194,507	-64,213
October	10,239	15,338	-5,099	13,305	16,299	-2,994	-71,357	136,266	210,617	-74,351
November	10,619	16,138	-5,519	13,706	17,190	-3,484	-68,682	135,437	207,603	-72,166
December	10,976	15,023	-4,047	14,189	16,332	-2,143	-62,214	136,046	200,403	-64,357
Total	**104,611**	**181,667**	**-77,056**	**137,431**	**194,786**	**-57,355**	**-736,056**	**1,546,473**	**2,339,884**	**-793,411**
2018 January	10,003	18,108	-8,105	13,059	19,892	-6,833	-71,491	125,012	203,335	-78,324
February	9,769	14,674	-4,905	12,828	15,797	-2,969	-56,020	128,190	187,179	-58,989
March	11,899	16,673	-4,774	15,196	17,728	-2,532	-55,780	149,852	208,164	-58,312
April	12,541	18,023	-5,482	15,765	18,893	-3,128	-64,240	138,038	205,407	-67,368
May	13,060	19,803	-6,743	16,488	20,609	-4,121	-66,895	145,424	216,440	-71,016
June	13,339	20,349	-7,010	16,445	21,136	-4,691	-61,785	145,370	211,846	-66,476
July	13,818	21,483	-7,665	17,504	22,502	-4,998	-78,272	133,712	216,981	-83,270
August	12,298	21,640	-9,342	15,877	22,664	-6,787	-75,434	140,146	222,367	-82,221
September	12,657	19,242	-6,585	15,966	20,082	-4,116	-68,373	139,182	211,671	-72,489
October	14,677	19,712	-5,035	18,404	20,713	-2,309	-86,788	147,125	236,222	-89,097
November	13,574	15,828	-2,254	17,221	17,131	90	-74,422	139,784	214,116	-74,332
December	12,570	14,012	-1,442	16,459	15,654	805	-73,725	134,157	207,077	-72,920
Total	**150,206**	**219,548**	**-69,342**	**191,213**	**232,801**	**-41,588**	**-833,226**	**1,665,992**	**2,540,806**	**-874,814**
2019 January	12,021	14,017	-1,996	15,619	15,589	30	-75,022	129,608	204,600	-74,992
February	11,734	12,260	-526	14,687	13,704	983	-56,249	130,634	185,900	-55,266
March	12,812	15,294	-2,482	16,289	16,630	-341	-59,385	148,267	207,993	-59,726
April	13,050	17,696	-4,646	16,719	18,498	-1,779	-72,135	135,118	209,032	-73,914
May	13,339	20,142	-6,803	16,978	20,979	-4,001	-74,371	142,409	220,781	-78,372
June	12,891	17,122	-4,231	16,299	17,838	-1,539	-67,862	138,060	207,461	-69,401
July	12,662	18,345	-5,683	15,759	19,178	-3,419	-82,678	132,872	218,969	-86,097
August	13,227	16,235	-3,008	16,044	17,044	-1,000	-76,123	138,728	215,850	-77,123
September	12,981	14,379	-1,398	16,356	15,133	1,223	R -73,485	R 134,510	206,772	R -72,262
October	13,695	15,006	-1,311	17,182	15,770	1,412	-78,437	142,278	219,303	-77,025
10-Month Total	**128,414**	**160,496**	**-32,084**	**161,931**	**170,363**	**-8,431**	**-715,747**	**1,372,485**	**2,096,661**	**-724,176**
2018 10-Month Total	**124,061**	**189,708**	**-65,646**	**157,533**	**200,016**	**-42,484**	**-685,078**	**1,392,051**	**2,119,613**	**-727,562**
2017 10-Month Total	**83,015**	**150,506**	**-67,491**	**109,536**	**161,262**	**-51,726**	**-605,162**	**1,274,990**	**1,931,878**	**-656,888**

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

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 January	242.839	0.992	8.25	NA	NA	3.84	3.70	5.03	14.74
February	243.603	0.969	8.05	NA	NA	4.11	3.96	5.25	15.39
March	243.801	0.979	8.13	NA	NA	4.04	3.90	5.29	15.50
April	244.524	1.014	8.43	NA	NA	4.64	4.47	5.20	15.25
May	244.733	1.000	8.31	NA	NA	5.41	5.22	5.34	15.65
June	244.955	0.980	8.14	NA	NA	6.56	6.32	5.39	15.79
July	244.786	0.958	7.96	NA	NA	7.30	7.04	5.34	15.66
August	245.519	0.992	8.25	NA	NA	7.42	7.16	5.36	15.70
September	246.819	1.089	9.05	NA	NA	6.86	6.61	5.38	15.77
October	246.663	1.032	8.58	NA	NA	5.43	5.23	5.19	15.21
November	246.669	1.057	8.79	NA	NA	4.11	3.96	5.25	15.37
December	246.524	1.023	8.50	NA	NA	3.77	3.63	5.05	14.80
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	4.84	4.66	5.08	14.89
November	252.038	1.084	9.01	NA	NA	3.73	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	3.75	3.62	4.95	14.52
February	252.776	0.954	7.93	NA	NA	3.75	3.61	5.03	14.75
March	254.202	1.031	8.57	NA	NA	3.73	3.60	5.06	14.82
April	255.548	1.132	9.41	NA	NA	4.28	4.12	5.19	15.22
May	256.092	1.157	9.62	NA	NA	5.03	4.85	5.21	15.26
June	256.143	1.099	9.13	NA	NA	6.14	5.91	5.21	15.26
July	256.571	1.105	9.19	NA	NA	6.99	6.74	5.17	15.16
August	256.558	1.059	8.80	NA	NA	7.24	6.98	5.18	15.19
September	256.759	1.049	8.72	NA	NA	R 6.94	R 6.68	R 5.13	R 15.03
October	257.346	1.065	8.85	NA	NA	NA	NA	NA	NA
November	257.208	1.045	8.68	NA	NA	NA	NA	NA	NA

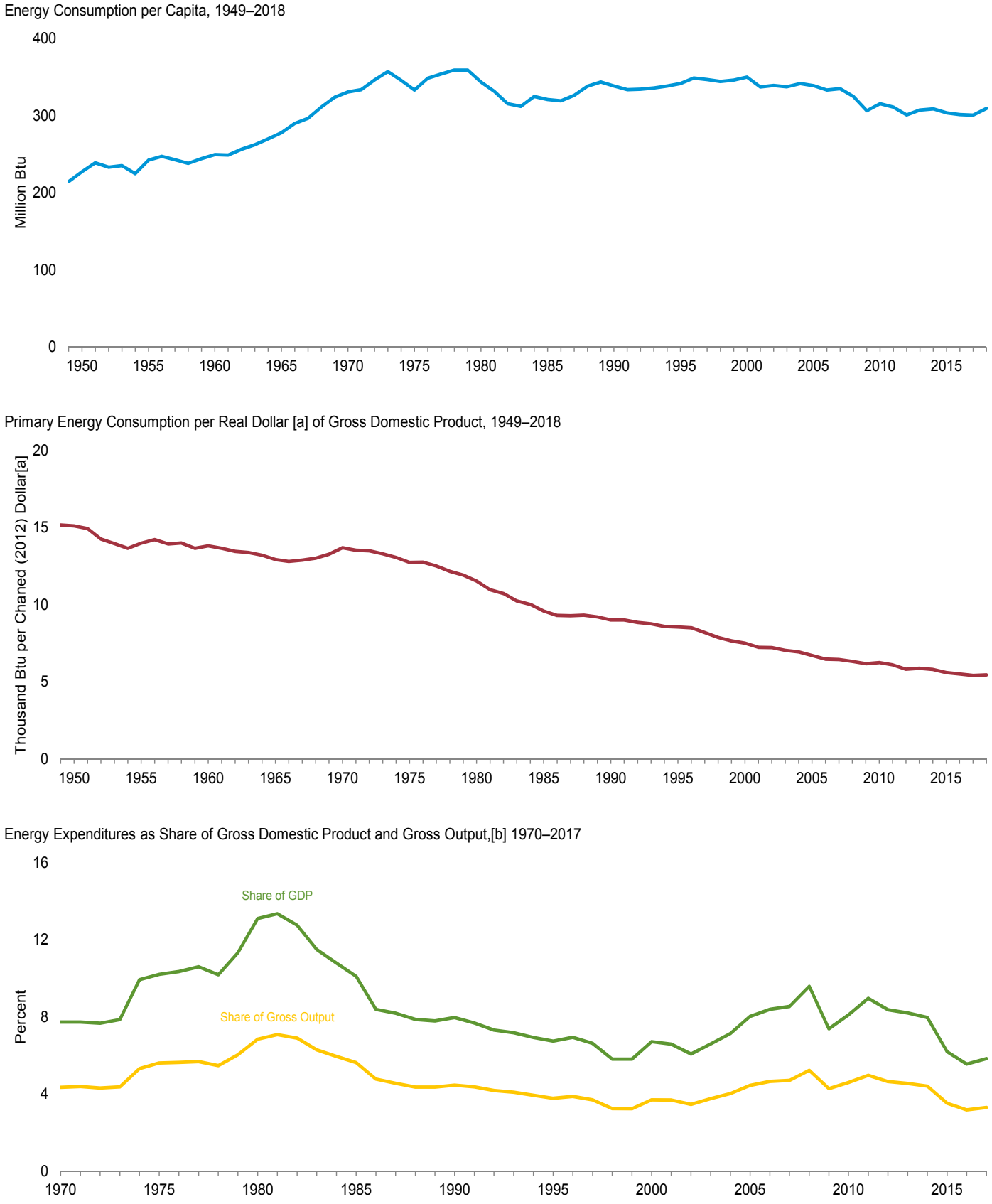
[a] Data are U.S. city averages for all items, and are not seasonally adjusted.
[b] Includes taxes.
[c] Excludes taxes.
R=Revised. NA=Not available.

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. Through 1996, data have been adjusted by EIA based on BEA's 2012 comprehensive revision.
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	4.3	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	6.8	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	5.9	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	97.517	315	6.25	1,214,034	3,925	8.1	4.6	5,585	18.1	358
2011	96.850	311	6.11	1,391,696	4,467	9.0	5.0	5,446	17.5	344
2012	94.380	301	5.83	1,355,024	4,317	8.4	4.6	5,229	16.7	323
2013	97.117	307	5.89	1,376,134	4,354	8.2	4.5	5,356	16.9	325
2014	98.276	309	5.82	1,394,918	4,381	8.0	4.4	5,413	17.0	320
2015	97.378	304	5.60	1,128,062	3,517	6.2	3.5	5,263	16.4	303
2016	97.334	301	5.51	1,038,120	3,213	5.5	3.2	5,170	16.0	293
2017	97.708	301	5.41	1,136,496	3,495	5.8	3.3	5,131	15.8	284
2018	101.193	309	5.45	NA	NA	NA	NA	5,280	16.1	284

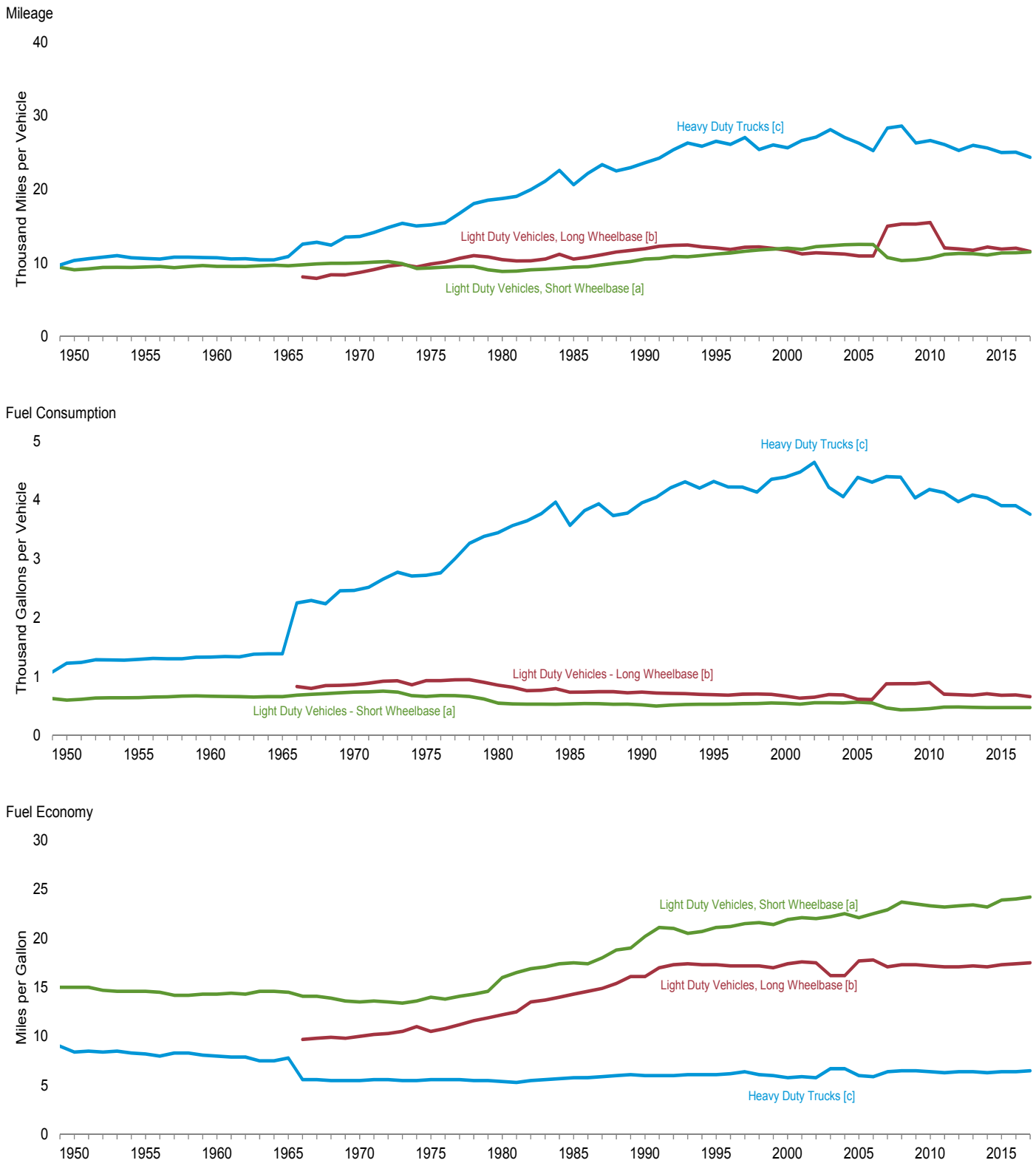
[a] See "Primary Energy Consumption" in Glossary.
[b] Expenditures include taxes where data are available.
[c] Carbon dioxide emissions from energy consumption. See Table 11.1.
[d] See "Chained Dollars" and "Real Dollars" in Glossary.
[e] See "Gross Domestic Product (GDP)" in Glossary.
[f] Gross output 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 2017" (June 2019), 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, 1949-2017



[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

[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 January	1,038	971	1,082	1,212	476	579	417	962	666	766
February	906	780	776	818	323	409	208	627	496	547
March	1,037	908	834	783	346	387	147	467	392	543
April	451	341	349	401	76	94	52	404	309	248
May	303	233	249	224	47	57	14	235	171	154
June	45	25	27	37	2	3	0	59	50	25
July	9	3	6	10	0	0	0	6	14	5
August	26	18	34	50	1	1	0	27	8	15
September	57	53	64	78	14	24	3	120	45	45
October	237	215	291	363	89	146	59	358	178	193
November	743	699	773	805	322	407	180	489	351	490
December	1,186	1,087	1,197	1,218	535	729	501	815	507	798
Total	**6,038**	**5,332**	**5,684**	**5,997**	**2,231**	**2,835**	**1,582**	**4,568**	**3,187**	**3,828**
2018 January	1,257	1,216	1,308	1,374	701	929	659	771	459	896
February	869	812	981	1,178	307	412	347	746	496	625
March	926	911	922	869	435	475	186	604	486	608
April	674	617	703	715	206	313	141	380	300	410
May	168	109	99	89	12	13	0	163	177	86
June	62	29	24	23	1	0	0	57	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	64	34	48	90	2	3	3	89	62	38
October	456	355	420	494	99	138	69	384	186	253
November	817	767	914	1,003	380	567	371	677	353	593
December	1,026	929	1,003	1,103	488	635	472	895	562	731
Total	**6,322**	**5,780**	**6,434**	**6,969**	**2,630**	**3,484**	**2,248**	**4,800**	**3,168**	**4,278**
2019 January	1,219	1,153	1,303	1,360	582	749	547	893	544	859
February	1,027	942	1,064	1,284	377	460	356	867	655	719
March	974	890	962	1,002	376	506	305	669	491	632
April	526	412	476	454	110	166	78	375	276	288
May	313	187	237	273	16	25	11	315	241	158
June	55	31	49	46	2	3	0	97	60	34
July	2	1	1	8	0	0	0	14	20	5
August	16	10	21	32	0	0	0	17	12	10
September	113	55	42	66	2	1	0	93	63	40
9-Month Total	**4,245**	**3,682**	**4,154**	**4,523**	**1,465**	**1,911**	**1,299**	**3,340**	**2,362**	**2,747**
2018 9-Month Total	**4,024**	**3,730**	**4,097**	**4,369**	**1,664**	**2,144**	**1,336**	**2,844**	**2,067**	**2,700**
2017 9-Month Total	**3,872**	**3,332**	**3,422**	**3,611**	**1,285**	**1,553**	**843**	**2,906**	**2,151**	**2,347**

[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.

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 the same year the degree days are measured. See methodology at http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf.

Table 1.10 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 January	0	0	0	0	50	20	36	0	7	17
February	0	0	0	3	55	18	67	5	7	22
March	0	0	1	6	56	28	111	32	17	32
April	0	2	7	9	124	74	141	51	25	56
May	3	14	37	51	213	135	240	109	46	106
June	72	123	167	206	337	272	445	308	150	241
July	170	251	242	331	469	430	582	414	283	363
August	128	162	148	166	406	341	508	329	281	292
September	66	87	92	127	282	194	368	178	139	184
October	11	22	16	14	159	66	145	92	68	78
November	0	0	0	0	66	6	67	29	21	27
December	0	0	0	0	38	1	6	1	10	10
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	7
February	0	0	0	0	81	21	33	3	8	23
March	0	0	0	2	34	14	87	14	9	21
April	0	0	0	0	79	7	58	71	25	33
May	25	64	140	168	265	268	397	138	39	174
June	57	111	192	272	385	376	550	299	118	270
July	253	287	258	304	441	431	609	415	320	376
August	266	299	258	258	437	392	566	344	256	351
September	65	122	123	124	390	337	392	238	144	231
October	0	4	4	6	175	77	144	45	47	70
November	0	0	0	0	66	1	13	5	17	18
December	0	0	0	0	39	2	9	0	9	11
Total	**666**	**887**	**975**	**1,134**	**2,413**	**1,928**	**2,862**	**1,576**	**1,006**	**1,586**
2019 January	0	0	0	0	30	5	12	0	8	9
February	0	0	0	0	67	13	24	0	5	18
March	0	0	0	0	57	10	36	10	7	18
April	0	0	1	6	102	31	91	52	26	42
May	3	32	47	42	294	218	291	57	24	129
June	63	114	126	175	361	297	438	232	116	227
July	270	327	319	321	481	426	548	393	209	373
August	166	218	194	225	443	407	624	385	247	336
September	31	91	136	182	377	379	522	210	131	244
9-Month Total	**534**	**782**	**823**	**951**	**2,210**	**1,788**	**2,586**	**1,339**	**774**	**1,397**
2018 9-Month Total	**666**	**884**	**971**	**1,128**	**2,132**	**1,848**	**2,696**	**1,526**	**933**	**1,488**
2017 9-Month Total	**440**	**639**	**693**	**897**	**1,991**	**1,512**	**2,499**	**1,426**	**954**	**1,313**

[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.

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**	**1,600**	**131**	**539**	**36**	**14**	**89**	**2,770**
2011 Total	**730**	**680**	**355**	**1,630**	**125**	**520**	**34**	**12**	**91**	**2,766**
2012 Total	**707**	**706**	**340**	**1,751**	**114**	**444**	**37**	**8**	**88**	**2,783**
2013 Total	**732**	**721**	**323**	**1,871**	**121**	**448**	**34**	**52**	**93**	**2,943**
2014 Total	**562**	**725**	**327**	**1,780**	**126**	**410**	**10**	**55**	**97**	**2,806**
2015 Total	**520**	**703**	**343**	**1,920**	**138**	**378**	**10**	**52**	**99**	**2,940**
2016 Total	**435**	**727**	**351**	**1,939**	**130**	**371**	**10**	**49**	**100**	**2,951**
2017 January	38	70	183	2,060	136	367	13	55	101	2,914
February	36	62	242	1,876	128	404	6	55	102	2,814
March	38	66	260	1,964	143	430	5	53	105	2,960
April	38	59	316	1,962	128	424	9	41	100	2,980
May	39	59	367	1,997	131	433	10	48	106	3,093
June	37	57	475	2,129	120	434	8	56	107	3,328
July	39	57	443	2,193	116	398	14	49	105	3,318
August	40	59	543	1,875	92	378	9	55	102	3,054
September	39	57	444	1,894	114	351	11	45	93	2,952
October	39	62	411	2,067	123	368	5	58	96	3,127
November	38	66	308	2,149	122	368	12	59	111	3,129
December	41	72	209	2,169	94	376	12	55	102	3,017
Total	**463**	**746**	**351**	**2,029**	**121**	**394**	**9**	**52**	**103**	**3,059**
2018 January	39	73	158	2,382	105	351	10	56	101	3,163
February	34	66	203	2,183	135	352	5	52	102	3,032
March	39	70	278	2,274	132	377	9	53	99	3,223
April	41	65	225	2,174	122	400	9	57	105	3,092
May	42	62	385	2,152	103	383	10	54	105	3,192
June	39	60	476	2,244	131	401	10	45	106	3,413
July	42	61	460	2,417	128	414	9	49	105	3,582
August	42	61	507	2,455	134	432	13	39	105	3,685
September	42	60	385	2,399	99	407	12	45	104	3,451
October	41	63	410	2,289	107	427	13	48	95	3,390
November	41	68	247	2,388	118	376	8	37	106	3,280
December	43	72	182	2,353	91	389	8	41	106	3,170
Total	**484**	**780**	**327**	**2,310**	**117**	**393**	**10**	**48**	**103**	**3,308**
2019 January	40	75	206	2,507	113	366	8	39	103	3,342
February	37	67	193	2,523	97	353	3	51	93	3,313
March	41	70	238	2,310	67	336	10	42	92	3,095
April	38	63	314	2,274	168	369	7	44	91	3,268
May	43	62	369	2,237	109	358	10	46	89	3,218
June	42	58	409	2,277	105	368	12	50	91	3,313
July	47	59	512	2,514	131	362	12	63	97	3,692
August	58	61	505	2,315	111	400	11	51	R 96	3,489
September	59	59	488	2,507	100	377	9	50	90	3,621
9-Month Total	**405**	**574**	**361**	**2,384**	**111**	**365**	**9**	**49**	**94**	**3,373**
2018 9-Month Total	**359**	**577**	**343**	**2,299**	**121**	**391**	**10**	**50**	**104**	**3,318**
2017 9-Month Total	**345**	**547**	**364**	**1,996**	**123**	**402**	**9**	**51**	**102**	**3,048**

[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**	**1.935**	**.291**	**1.096**	**.074**	**.026**	**.188**	**4.487**	**5.178**	**5.3**
2011 Total	**.023**	**.695**	**.859**	**1.935**	**.276**	**1.057**	**.070**	**.023**	**.193**	**4.413**	**5.131**	**5.3**
2012 Total	**.023**	**.724**	**.827**	**2.115**	**.254**	**.901**	**.077**	**.015**	**.187**	**4.375**	**5.121**	**5.4**
2013 Total	**.023**	**.741**	**.783**	**2.270**	**.268**	**.901**	**.070**	**.100**	**.197**	**4.590**	**5.355**	**5.5**
2014 Total	**.018**	**.749**	**.793**	**2.125**	**.280**	**.827**	**.021**	**.106**	**.205**	**4.357**	**5.124**	**5.2**
2015 Total	**.017**	**.730**	**.832**	**2.319**	**.305**	**.760**	**.022**	**.099**	**.208**	**4.545**	**5.291**	**5.4**
2016 Total	**.014**	**.755**	**.853**	**2.323**	**.289**	**.754**	**.021**	**.094**	**.212**	**4.547**	**5.316**	**5.5**
2017 January	.001	.073	.038	.209	.026	.063	.002	.009	.018	.364	.438	4.9
February	.001	.064	.045	.167	.022	.062	.001	.008	.017	.322	.387	5.1
March	.001	.069	.053	.198	.027	.074	.001	.009	.019	.380	.450	5.3
April	.001	.062	.063	.192	.023	.071	.002	.006	.017	.375	.438	5.9
May	.001	.061	.075	.200	.025	.075	.002	.008	.019	.404	.466	6.0
June	.001	.059	.095	.206	.022	.072	.001	.009	.019	.424	.484	6.1
July	.001	.059	.091	.224	.022	.069	.002	.008	.019	.434	.495	5.9
August	.001	.061	.112	.189	.017	.065	.002	.009	.018	.412	.474	5.7
September	.001	.059	.088	.187	.021	.059	.002	.007	.016	.380	.441	5.8
October	.001	.064	.085	.209	.023	.063	.001	.009	.017	.407	.473	6.0
November	.001	.069	.061	.206	.022	.061	.002	.009	.019	.381	.451	5.6
December	.001	.075	.043	.213	.018	.064	.002	.009	.018	.368	.444	4.8
Total	**.015**	**.774**	**.849**	**2.401**	**.267**	**.797**	**.020**	**.100**	**.217**	**4.651**	**5.440**	**5.6**
2018 January	.001	.076	.032	.238	.020	.060	.002	.009	.018	.379	.457	4.7
February	.001	.068	.038	.199	.023	.054	.001	.008	.016	.339	.408	5.1
March	.001	.072	.057	.222	.025	.065	.002	.009	.018	.397	.471	5.4
April	.001	.068	.045	.205	.022	.067	.002	.009	.018	.367	.436	5.5
May	.001	.065	.079	.213	.019	.066	.002	.009	.019	.407	.473	5.9
June	.001	.062	.095	.215	.024	.067	.002	.007	.018	.428	.491	6.0
July	.001	.063	.095	.242	.024	.071	.002	.008	.019	.460	.524	6.1
August	.001	.063	.104	.247	.025	.074	.002	.006	.019	.478	.542	6.2
September	.001	.062	.077	.233	.018	.067	.002	.007	.018	.422	.486	6.2
October	.001	.066	.084	.230	.020	.073	.002	.008	.017	.435	.501	6.2
November	.001	.071	.049	.231	.021	.062	.001	.006	.018	.390	.462	5.4
December	.001	.074	.037	.235	.017	.067	.001	.007	.019	.384	.459	5.1
Total	**.015**	**.810**	**.793**	**2.710**	**.259**	**.794**	**.020**	**.092**	**.218**	**4.886**	**5.711**	**5.6**
2019 January	.001	.078	.042	.252	.021	.063	.001	.006	.018	.405	.484	5.1
February	.001	.070	.036	.225	.016	.055	(s)	.008	.015	.355	.426	5.1
March	.001	.073	.049	.228	.013	.058	.002	.007	.016	.372	.446	5.1
April	.001	.065	.063	.216	.031	.061	.001	.007	.016	.394	.461	6.0
May	.001	.065	.076	.222	.021	.062	.002	.007	.016	.405	.471	6.0
June	.001	.060	.081	.222	.019	.061	.002	.008	.016	.410	.471	6.0
July	.002	.061	.105	.256	.025	.062	.002	.010	.017	.478	.541	6.3
August	.002	R .064	.104	.236	.021	.069	.002	.008	.017	.457	R .523	6.1
September	.002	.061	.097	.247	.018	.063	.001	.008	.016	.450	.513	6.5
9-Month Total	**.013**	**.596**	**.653**	**2.103**	**.184**	**.553**	**.014**	**.070**	**.148**	**3.726**	**4.335**	**5.8**
2018 9-Month Total	**.011**	**.599**	**.622**	**2.014**	**.200**	**.591**	**.015**	**.072**	**.164**	**3.678**	**4.288**	**5.7**
2017 9-Month Total	**.011**	**.567**	**.660**	**1.772**	**.204**	**.609**	**.015**	**.073**	**.162**	**3.494**	**4.072**	**5.6**

[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: 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: 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: 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: 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 forward: 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.

Total Primary Energy Net Imports
1949 forward: Total primary energy net imports are equal to total primary energy imports from Table 1.4a minus total primary energy exports.

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.

1993–2015: "U.S. International Trade in Goods and Services," Annual Revisions.

2016–2018: "U.S. International Trade in Goods and Services," 2018 Annual Revisions.

2019: "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.

1994–2015: "U.S. International Trade in Goods and Services," Annual Revisions.

2016–2018: "U.S. International Trade in Goods and Services," 2018 Annual Revisions.

2019: "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.

1993–2015: "U.S. International Trade in Goods and Services," Annual Revisions.

2016–2018: "U.S. International Trade in Goods and Services," 2018 Annual Revisions.

2019: "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.

1992–2015: "U.S. International Trade in Goods and Services," Annual Revisions.

2016–2018: "U.S. International Trade in Goods and Services," 2018 Annual Revisions.

2019: "U.S. International Trade in Goods and Services," FT-900, monthly.

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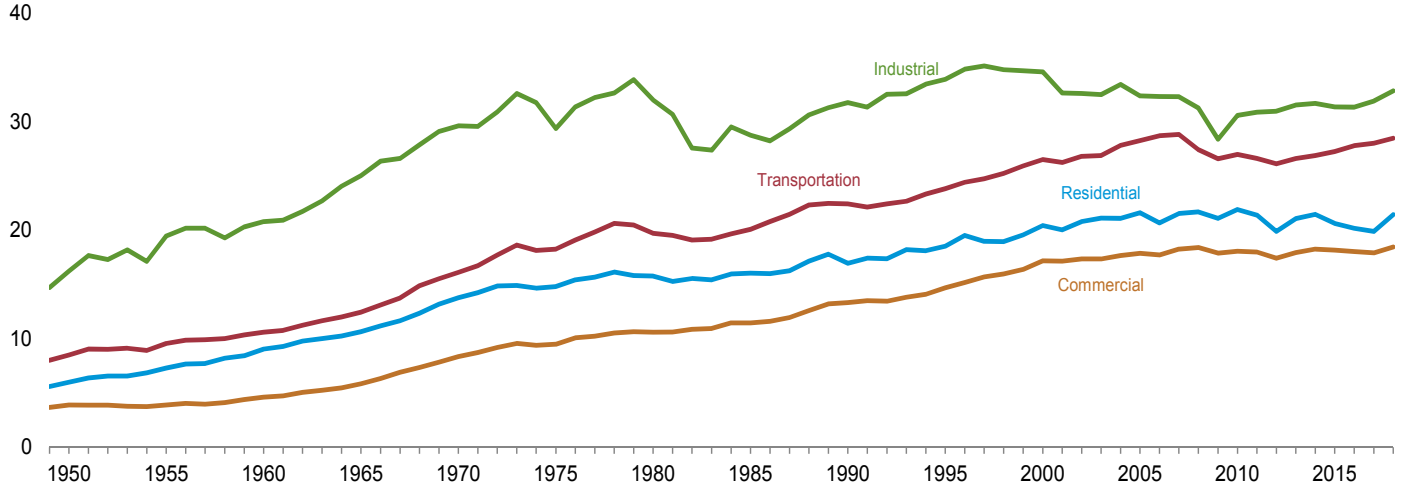
2. Energy Consumption By Sector

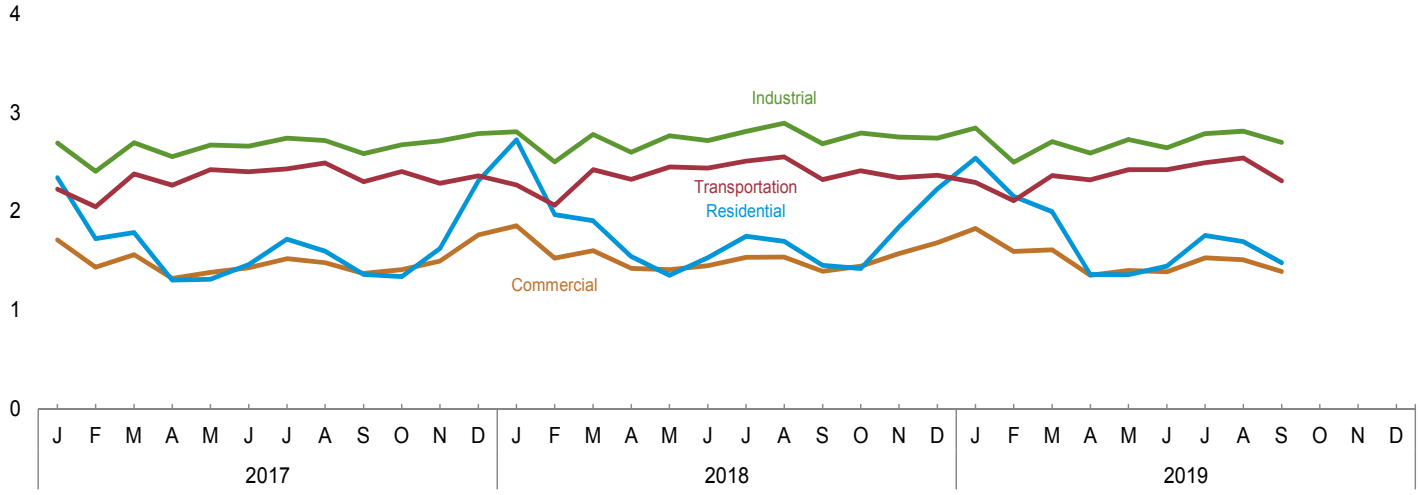
Figure 2.1 Energy Consumption by Sector

(Quadrillion Btu)

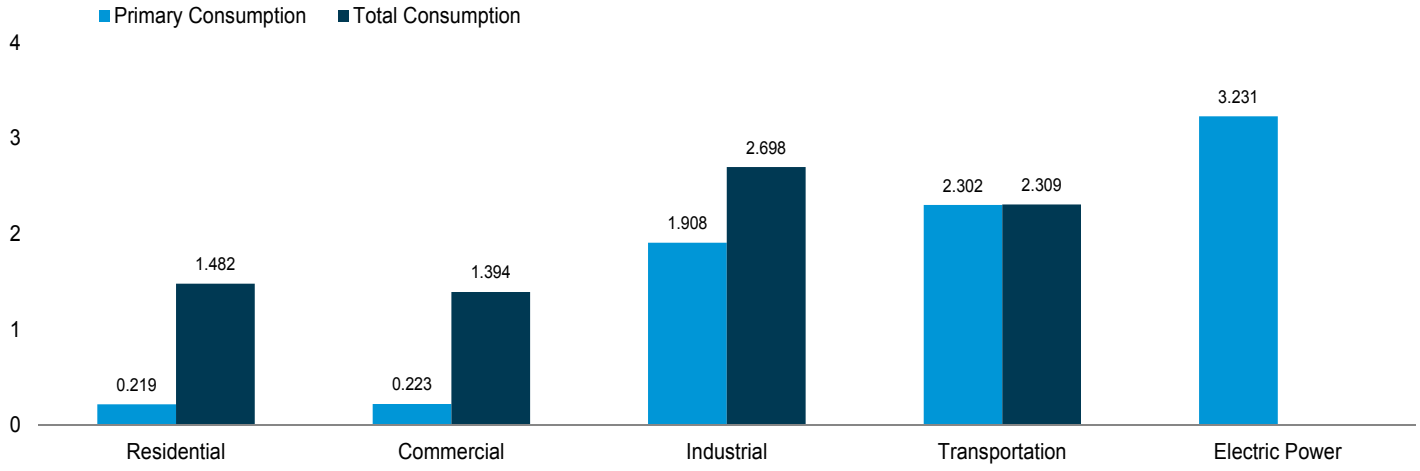
Total Consumption by End-Use Sector, 1949–2018



Total Consumption by End-Use Sector, Monthly



By Sector, September 2019



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**	**20,330**	**30,578**	**26,897**	**26,978**	**39,619**	**7**	**97,517**
2011 Total	**6,473**	**21,382**	**4,066**	**17,982**	**20,493**	**30,881**	**26,518**	**26,599**	**39,293**	**8**	**96,850**
2012 Total	**5,684**	**19,870**	**3,725**	**17,422**	**20,787**	**30,961**	**26,050**	**26,126**	**38,131**	**2**	**94,380**
2013 Total	**6,689**	**21,052**	**4,161**	**17,930**	**21,379**	**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**	**20,617**	**4,441**	**18,157**	**21,420**	**31,364**	**27,161**	**27,238**	**37,890**	**1**	**97,378**
2016 Total	**6,033**	**20,182**	**4,321**	**18,030**	**21,547**	**31,341**	**27,710**	**27,786**	**37,727**	**-4**	**97,334**
2017 January	1,041	2,341	611	1,713	1,899	2,692	R 2,219	R 2,226	3,201	2	R 8,974
February	744	1,726	467	1,437	1,682	2,407	R 2,041	R 2,047	2,684	-2	R 7,615
March	750	1,787	485	1,563	1,884	2,695	R 2,372	R 2,379	2,932	-2	R 8,421
April	409	1,307	306	1,322	1,773	2,554	R 2,260	2,265	2,700	-3	7,444
May	314	1,314	266	1,384	1,825	2,672	R 2,416	R 2,422	2,971	-1	R 7,791
June	230	1,462	224	1,431	1,801	2,660	R 2,395	R 2,401	3,303	2	R 7,956
July	203	1,721	213	1,522	1,854	2,743	R 2,426	R 2,432	3,722	5	R 8,424
August	205	1,597	221	1,481	1,844	2,718	R 2,484	R 2,490	3,531	4	R 8,289
September	216	1,363	226	1,373	1,778	2,585	R 2,295	R 2,301	3,108	(s)	R 7,622
October	325	1,341	292	1,412	1,857	2,675	R 2,397	2,403	2,960	-2	R 7,830
November	629	1,626	432	1,497	1,908	2,714	R 2,280	R 2,286	2,874	-2	8,122
December	1,036	2,308	624	1,763	1,951	2,787	R 2,354	R 2,361	3,255	-1	R 9,219
Total	**6,101**	**19,890**	**4,368**	**17,900**	**22,058**	**31,903**	**27,939**	**28,014**	**37,241**	**(s)**	**97,708**
2018 January	1,236	2,725	706	1,856	2,007	2,807	R 2,263	R 2,270	3,446	2	R 9,660
February	878	1,970	541	1,527	1,775	2,502	R 2,056	R 2,062	2,811	-2	R 8,059
March	848	1,906	537	1,604	1,979	2,779	R 2,417	R 2,423	2,932	-4	R 8,708
April	604	1,543	408	1,424	1,820	2,598	2,320	2,326	2,738	-6	7,885
May	289	1,355	252	1,413	1,887	2,767	R 2,443	R 2,449	3,112	-2	R 7,981
June	226	1,533	224	1,452	1,856	2,717	R 2,434	R 2,440	3,403	2	R 8,145
July	212	1,750	219	1,536	1,914	2,809	R 2,502	R 2,508	3,756	5	R 8,608
August	202	1,699	223	1,538	1,993	2,892	R 2,546	R 2,553	3,717	5	R 8,687
September	218	1,454	226	1,396	1,862	2,685	R 2,317	R 2,323	3,235	1	R 7,858
October	403	1,423	342	1,448	1,980	2,793	R 2,407	R 2,413	2,944	-2	R 8,074
November	791	1,843	509	1,573	1,930	2,753	R 2,336	R 2,342	2,946	-2	R 8,509
December	994	2,228	603	1,685	1,935	2,741	R 2,360	R 2,367	3,128	-2	R 9,018
Total	**6,901**	**21,428**	**4,788**	**18,451**	**22,940**	**32,844**	**28,401**	**28,477**	**38,170**	**-7**	**101,193**
2019 January	1,196	2,538	702	1,828	2,057	2,845	R 2,286	2,293	3,264	-1	R 9,503
February	1,016	2,152	600	1,595	1,791	2,498	R 2,103	R 2,110	2,846	-3	8,352
March	891	1,999	553	1,611	1,946	2,707	R 2,357	R 2,364	2,935	-5	8,677
April	476	1,364	347	1,355	R 1,837	2,591	R 2,314	R 2,320	2,655	-6	7,624
May	345	1,361	277	1,405	1,909	2,729	2,416	2,422	2,970	-5	R 7,911
June	244	1,448	229	1,389	1,836	2,645	R 2,416	2,423	3,180	-2	R 7,902
July	228	1,759	228	1,530	1,925	2,787	2,486	R 2,492	3,701	1	R 8,569
August	R 226	R 1,695	R 235	R 1,513	R 1,964	R 2,813	R 2,537	R 2,543	3,601	-4	R 8,559
September	219	1,482	223	1,394	1,908	2,698	2,302	2,309	3,231	-7	7,876
9-Month Total	**4,840**	**15,798**	**3,394**	**13,620**	**17,171**	**24,313**	**21,218**	**21,276**	**28,383**	**-34**	**74,973**
2018 9-Month Total	**4,714**	**15,936**	**3,335**	**13,745**	**17,094**	**24,557**	**21,298**	**21,355**	**29,152**	**(s)**	**75,592**
2017 9-Month Total	**4,112**	**14,619**	**3,021**	**13,225**	**16,342**	**23,725**	**20,908**	**20,964**	**28,151**	**4**	**72,538**

[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.

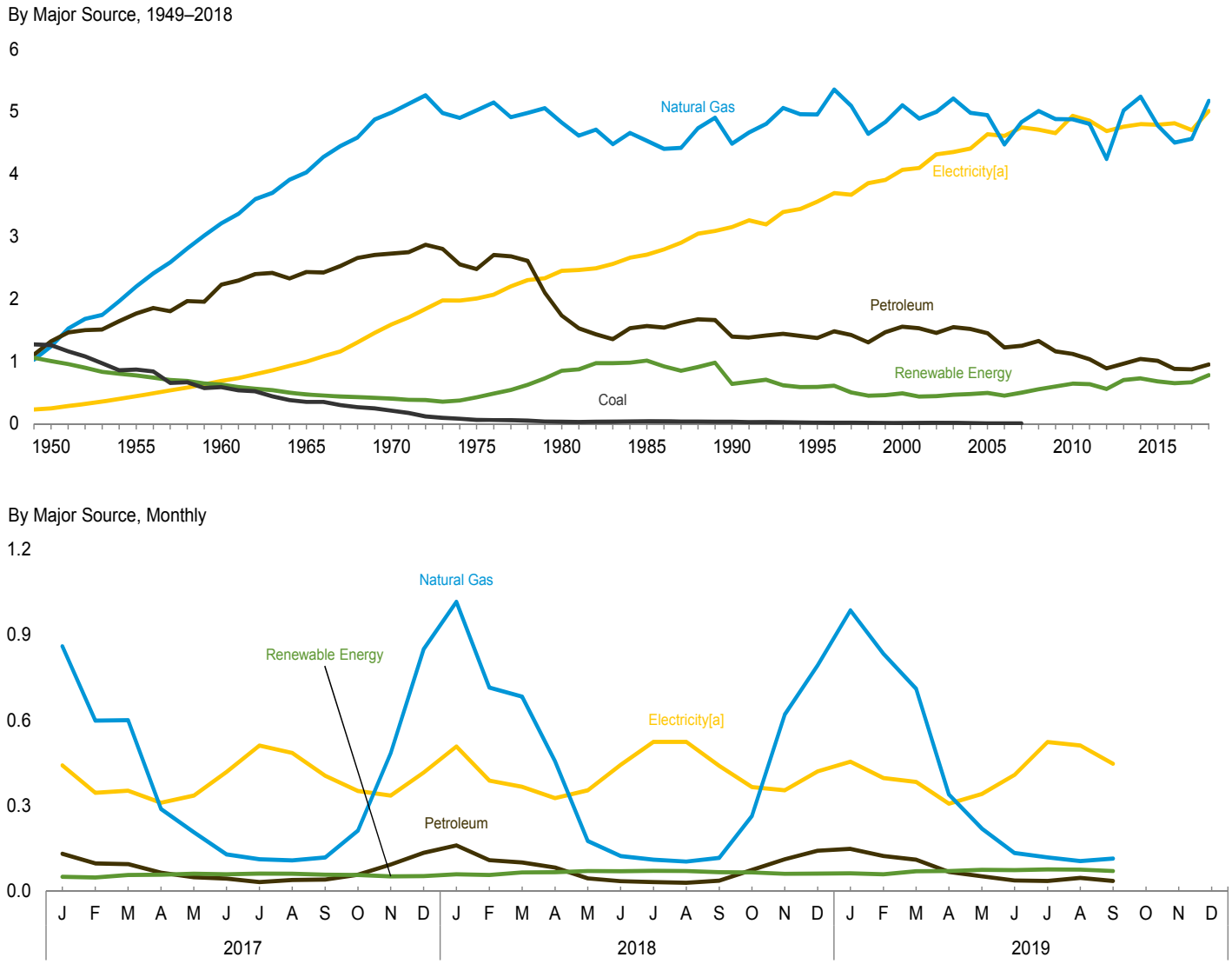
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding.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

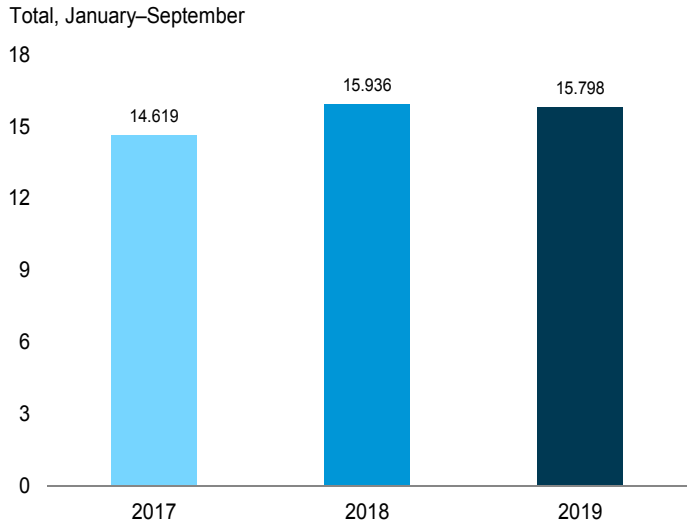
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

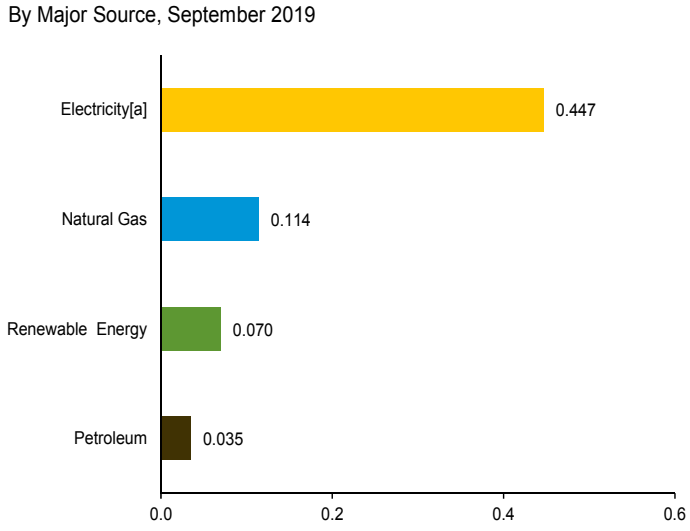
Sources: • **End-Use Sectors:** Tables 2.2–2.5. • **Electric Power Sector:** Table 2.6. • **Balancing Item:** Calculated as primary energy total consumption minus the sum of total energy consumption in the four end-use sectors. • **Primary Total:** Table 1.3.

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**	**109**	**579**	**728**	**7,006**	**4,801**	**9,638**	**21,446**
2015 Total	**NA**	**4,777**	**1,007**	**5,784**	**40**	**128**	**513**	**680**	**6,465**	**4,791**	**9,362**	**20,617**
2016 Total	**NA**	**4,506**	**878**	**5,384**	**40**	**161**	**448**	**649**	**6,033**	**4,815**	**9,334**	**20,182**
2017 January	NA	860	131	991	3	10	37	50	1,041	441	859	2,341
February	NA	599	97	696	3	11	33	47	744	345	638	1,726
March	NA	600	94	694	3	16	37	56	750	352	685	1,787
April	NA	288	64	352	3	18	36	57	409	310	588	1,307
May	NA	206	48	254	3	20	37	60	314	335	665	1,314
June	NA	128	43	171	3	20	36	59	230	418	814	1,462
July	NA	111	31	142	3	21	37	61	203	511	1,006	1,721
August	NA	107	38	145	3	20	37	60	205	485	907	1,597
September	NA	118	40	159	3	18	36	57	216	405	742	1,363
October	NA	212	57	269	3	16	37	56	325	351	665	1,341
November	NA	484	93	577	3	13	36	51	629	335	662	1,626
December	NA	850	134	984	3	12	37	52	1,036	416	856	2,308
Total	**NA**	**4,563**	**871**	**5,435**	**40**	**193**	**433**	**666**	**6,101**	**4,704**	**9,085**	**19,890**
2018 January	NA	1,016	160	1,177	3	12	44	59	1,236	508	981	2,725
February	NA	715	108	822	3	13	40	56	878	388	704	1,970
March	NA	683	100	783	3	18	44	65	848	366	692	1,906
April	NA	456	82	538	3	21	43	66	604	326	613	1,543
May	NA	175	44	219	3	23	44	70	289	354	711	1,355
June	NA	123	34	157	3	23	43	69	226	443	864	1,533
July	NA	110	31	141	3	24	44	71	212	524	1,014	1,750
August	NA	103	29	132	3	23	44	70	202	524	973	1,699
September	NA	116	36	152	3	20	43	66	218	440	796	1,454
October	NA	264	74	338	3	18	44	65	403	365	654	1,423
November	NA	620	111	731	3	14	43	60	791	354	698	1,843
December	NA	793	141	934	3	13	44	61	994	420	814	2,228
Total	**NA**	**5,173**	**950**	**6,123**	**40**	**222**	**517**	**778**	**6,901**	**5,013**	**9,514**	**21,428**
2019 January	NA	986	148	1,134	3	14	45	62	1,196	454	888	2,538
February	NA	834	123	957	3	15	41	59	1,016	397	740	2,152
March	NA	711	110	821	3	21	45	69	891	383	726	1,999
April	NA	339	67	406	3	24	44	70	476	307	581	1,364
May	NA	219	51	270	3	26	45	74	345	341	676	1,361
June	NA	133	37	170	3	27	44	73	244	408	796	1,448
July	NA	118	35	152	3	28	45	76	228	523	1,008	1,759
August	NA	105	R 46	R 151	3	27	45	75	R 226	511	958	R 1,695
September	NA	114	35	149	3	24	44	70	219	447	816	1,482
9-Month Total	**NA**	**3,559**	**652**	**4,211**	**30**	**204**	**396**	**630**	**4,840**	**3,768**	**7,189**	**15,798**
2018 9-Month Total	**NA**	**3,498**	**624**	**4,121**	**30**	**176**	**387**	**592**	**4,714**	**3,873**	**7,349**	**15,936**
2017 9-Month Total	**NA**	**3,019**	**587**	**3,606**	**30**	**153**	**324**	**507**	**4,112**	**3,601**	**6,905**	**14,619**

[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.

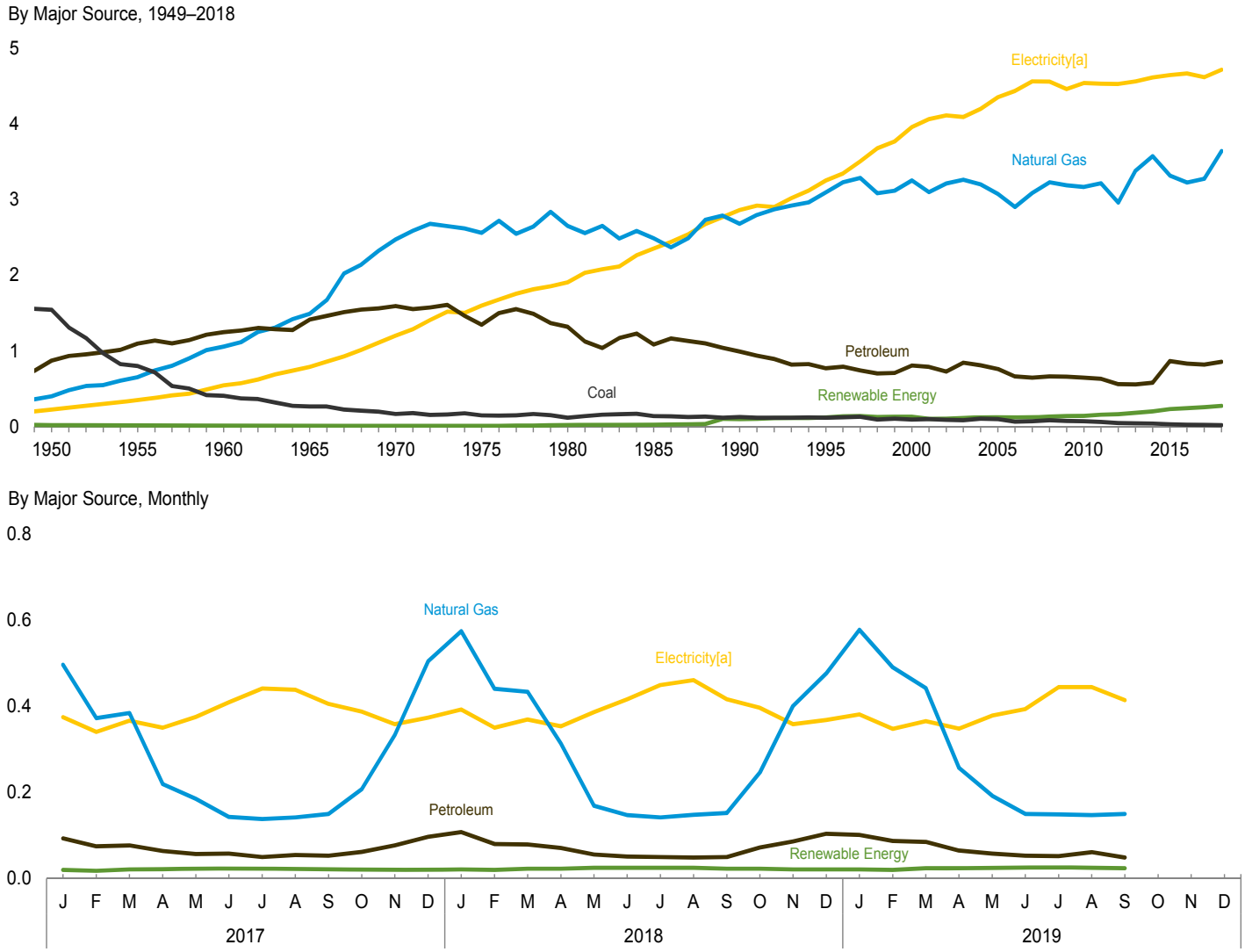
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states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

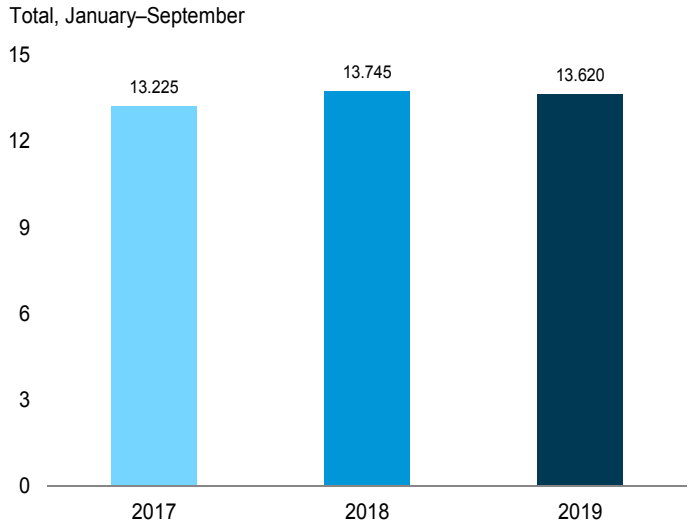
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

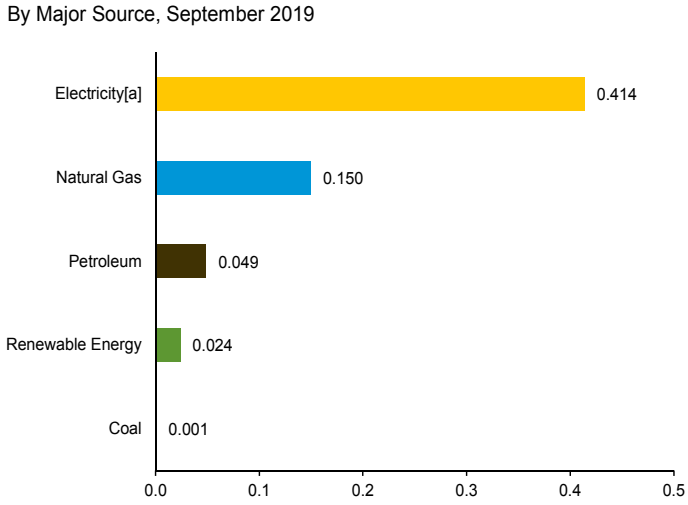
Sources: See end of section.

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 January	3	496	93	591	(s)	2	4	(s)	14	20	611	374	728	1,713
February	2	372	75	449	(s)	2	4	(s)	12	18	467	340	630	1,437
March	2	384	77	464	(s)	2	6	(s)	13	21	485	366	712	1,563
April	1	219	64	285	(s)	2	7	(s)	13	22	306	350	665	1,322
May	1	185	57	243	(s)	2	8	(s)	13	23	266	375	743	1,384
June	1	143	58	202	(s)	2	8	(s)	13	23	224	409	797	1,431
July	1	138	50	190	(s)	2	8	(s)	13	23	213	441	868	1,522
August	1	142	55	198	(s)	2	8	(s)	13	23	221	438	821	1,481
September	1	150	53	204	(s)	2	7	(s)	12	21	226	405	742	1,373
October	1	207	62	271	(s)	2	6	(s)	13	21	292	387	733	1,412
November	2	333	77	412	(s)	2	5	(s)	13	20	432	358	707	1,497
December	2	504	97	604	(s)	2	5	(s)	13	20	624	373	767	1,763
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	108	685	(s)	2	5	(s)	13	21	706	392	757	1,856
February	2	440	80	521	(s)	2	6	(s)	12	20	541	350	636	1,527
March	2	433	79	514	(s)	2	8	(s)	13	23	537	369	698	1,604
April	1	313	71	385	(s)	2	9	(s)	13	23	408	353	663	1,424
May	1	169	56	227	(s)	2	10	(s)	13	25	252	386	775	1,413
June	1	147	51	199	(s)	2	10	(s)	13	25	224	416	811	1,452
July	1	142	50	194	(s)	2	10	(s)	13	25	219	449	868	1,536
August	1	148	49	198	(s)	2	10	(s)	13	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	72	319	(s)	2	8	(s)	13	23	342	396	710	1,448
November	2	400	86	488	(s)	2	6	(s)	13	21	509	358	706	1,573
December	2	476	104	582	(s)	2	6	(s)	13	21	603	368	713	1,685
Total	**19**	**3,640**	**856**	**4,514**	**2**	**20**	**94**	**2**	**156**	**274**	**4,788**	**4,715**	**8,949**	**18,451**
2019 January	2	577	101	680	NM	2	6	(s)	13	21	702	381	746	1,828
February	2	490	87	580	NM	2	7	(s)	12	20	600	347	647	1,595
March	2	442	85	529	NM	2	9	(s)	13	24	553	365	693	1,611
April	1	257	65	323	NM	2	10	(s)	12	24	347	348	660	1,355
May	1	192	58	252	NM	2	11	(s)	12	25	277	378	750	1,405
June	1	150	53	204	(s)	2	11	(s)	12	25	229	393	767	1,389
July	1	149	52	202	NM	2	11	(s)	12	26	228	444	857	1,530
August	1	147	R 61	R 210	NM	2	11	(s)	12	25	R 235	444	833	R 1,513
September	1	150	49	200	NM	2	10	(s)	12	24	223	414	756	1,394
9-Month Total	**13**	**2,555**	**611**	**3,179**	**2**	**18**	**85**	**1**	**109**	**215**	**3,394**	**3,515**	**6,710**	**13,620**
2018 9-Month Total	**14**	**2,519**	**593**	**3,126**	**2**	**15**	**75**	**1**	**117**	**209**	**3,335**	**3,592**	**6,818**	**13,745**
2017 9-Month Total	**15**	**2,229**	**583**	**2,827**	**2**	**15**	**60**	**1**	**117**	**194**	**3,021**	**3,498**	**6,706**	**13,225**

[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.

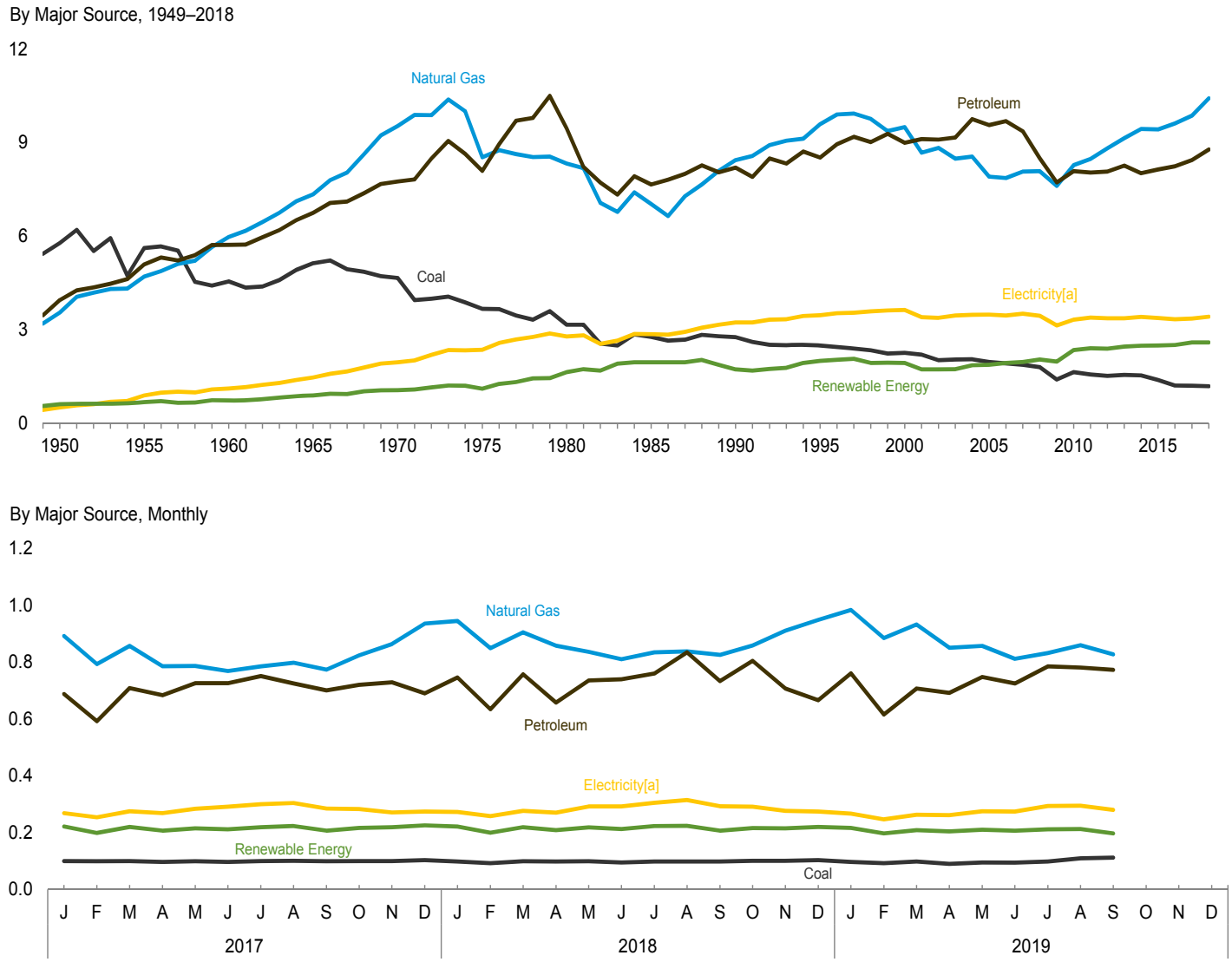
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity retail sales beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power 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.

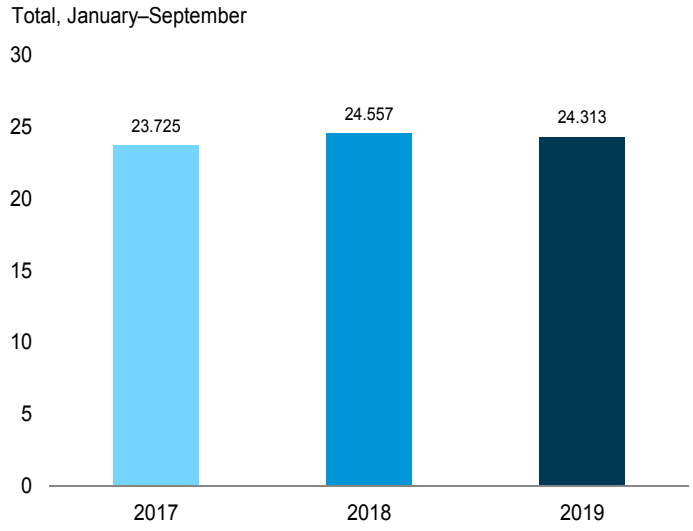
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

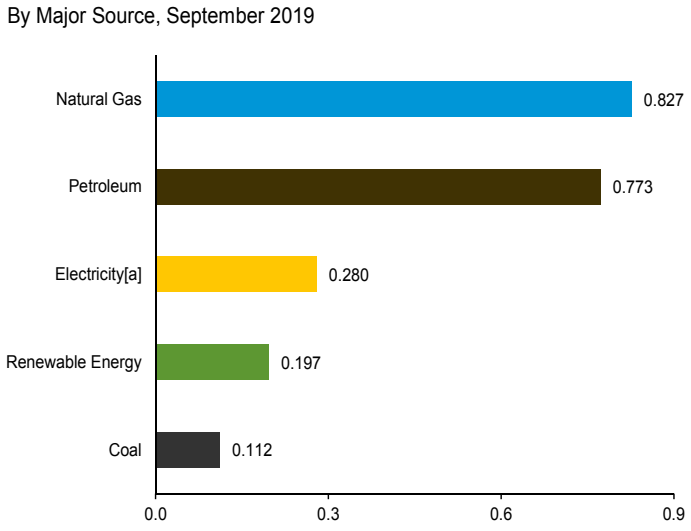
Sources: See end of section.

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**	**8,084**	**17,987**	**16**	**4**	**3**	**–**	**2,320**	**2,343**	**20,330**	**3,314**	**6,934**	**30,578**
2011 Total	**1,561**	**8,481**	**8,040**	**18,092**	**17**	**4**	**4**	**(s)**	**2,375**	**2,401**	**20,493**	**3,382**	**7,005**	**30,881**
2012 Total	**1,513**	**8,819**	**8,069**	**18,405**	**22**	**4**	**7**	**(s)**	**2,349**	**2,383**	**20,787**	**3,363**	**6,810**	**30,961**
2013 Total	**1,546**	**9,140**	**8,260**	**18,930**	**33**	**4**	**9**	**(s)**	**2,403**	**2,449**	**21,379**	**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**	**8,141**	**18,929**	**13**	**4**	**14**	**(s)**	**2,460**	**2,491**	**21,420**	**3,366**	**6,578**	**31,364**
2016 Total	**1,205**	**9,617**	**8,241**	**19,044**	**12**	**4**	**19**	**1**	**2,467**	**2,503**	**21,547**	**3,333**	**6,461**	**31,341**
2017 January	100	892	688	1,677	1	(s)	1	(s)	220	222	1,899	269	524	2,692
February	99	793	592	1,483	1	(s)	1	(s)	196	199	1,682	254	471	2,407
March	100	857	709	1,665	1	(s)	2	(s)	216	220	1,884	275	535	2,695
April	97	786	684	1,566	1	(s)	2	(s)	203	207	1,773	269	512	2,554
May	99	787	726	1,610	1	(s)	2	(s)	211	215	1,825	284	562	2,672
June	97	769	726	1,589	1	(s)	2	(s)	208	212	1,801	291	567	2,660
July	100	785	751	1,635	1	(s)	2	(s)	216	219	1,854	300	590	2,743
August	101	798	725	1,621	1	(s)	2	(s)	220	223	1,844	304	569	2,718
September	99	774	701	1,571	1	(s)	2	(s)	204	207	1,778	285	522	2,585
October	100	824	720	1,640	1	(s)	2	(s)	214	217	1,857	283	536	2,675
November	100	864	729	1,689	1	(s)	1	(s)	216	219	1,908	271	535	2,714
December	103	936	690	1,725	1	(s)	1	(s)	223	226	1,951	274	563	2,787
Total	**1,195**	**9,864**	**8,441**	**19,471**	**13**	**4**	**22**	**1**	**2,547**	**2,587**	**22,058**	**3,358**	**6,487**	**31,903**
2018 January	98	945	746	1,786	1	(s)	1	(s)	219	222	2,007	273	527	2,807
February	93	849	634	1,575	1	(s)	1	(s)	197	200	1,775	258	469	2,502
March	99	905	758	1,760	1	(s)	2	(s)	216	219	1,979	277	524	2,779
April	98	858	658	1,611	1	(s)	2	(s)	205	209	1,820	270	508	2,598
May	99	836	736	1,669	1	(s)	2	(s)	214	218	1,887	292	587	2,767
June	95	810	740	1,643	1	(s)	2	(s)	209	213	1,856	292	569	2,717
July	98	835	760	1,691	1	(s)	3	(s)	219	223	1,914	305	590	2,809
August	98	838	835	1,769	1	(s)	2	(s)	220	224	1,993	315	584	2,892
September	98	826	733	1,655	1	(s)	2	(s)	204	207	1,862	293	530	2,685
October	101	859	805	1,764	1	(s)	2	(s)	213	216	1,980	291	522	2,793
November	101	911	707	1,716	1	(s)	2	(s)	212	215	1,930	277	546	2,753
December	103	949	666	1,715	1	(s)	1	(s)	217	220	1,935	274	531	2,741
Total	**1,180**	**10,422**	**8,779**	**20,355**	**10**	**4**	**24**	**1**	**2,545**	**2,585**	**22,940**	**3,417**	**6,487**	**32,844**
2019 January	97	984	761	1,840	1	(s)	2	(s)	214	217	2,057	267	522	2,845
February	93	885	616	1,594	1	(s)	2	(s)	194	197	1,791	247	461	2,498
March	98	933	707	1,737	1	(s)	2	(s)	205	209	1,946	263	498	2,707
April	90	851	692	1,632	1	(s)	3	(s)	201	205	R 1,837	261	494	2,591
May	95	857	748	1,698	1	(s)	3	(s)	206	210	1,909	275	545	2,729
June	94	812	725	1,629	1	(s)	3	(s)	202	207	1,836	274	535	2,645
July	98	832	785	1,713	1	(s)	3	(s)	207	212	1,925	294	568	2,787
August	110	R 860	R 781	R 1,751	1	(s)	3	(s)	209	213	R 1,964	295	554	R 2,813
September	112	827	773	1,710	1	(s)	3	(s)	194	197	1,908	280	511	2,698
9-Month Total	**888**	**7,842**	**6,588**	**15,304**	**8**	**3**	**22**	**1**	**1,833**	**1,867**	**17,171**	**2,455**	**4,687**	**24,313**
2018 9-Month Total	**875**	**7,702**	**6,600**	**15,160**	**7**	**3**	**19**	**1**	**1,904**	**1,934**	**17,094**	**2,575**	**4,888**	**24,557**
2017 9-Month Total	**892**	**7,241**	**6,302**	**14,417**	**10**	**3**	**18**	**1**	**1,894**	**1,925**	**16,342**	**2,531**	**4,852**	**23,725**

[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.

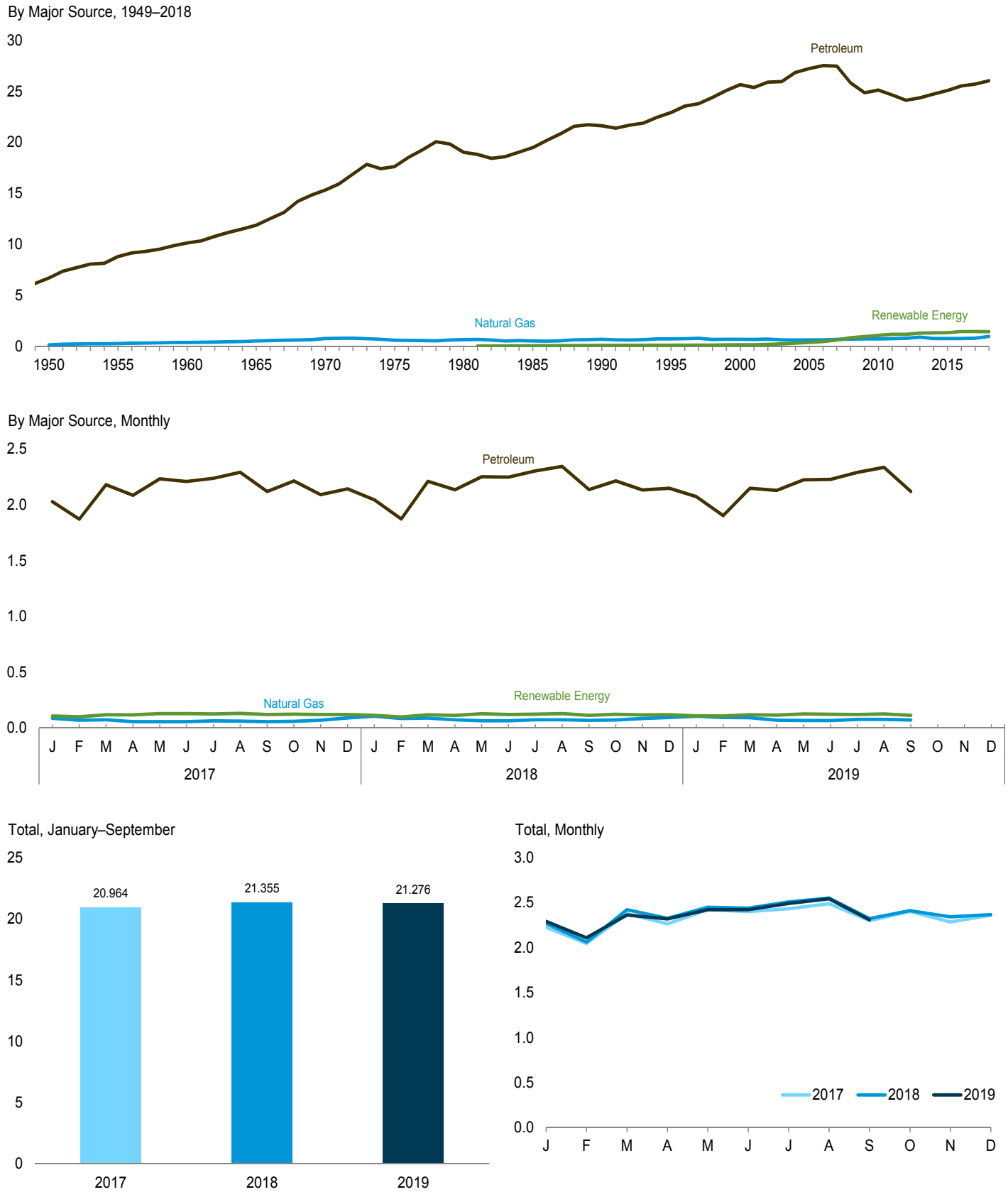
Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants 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.

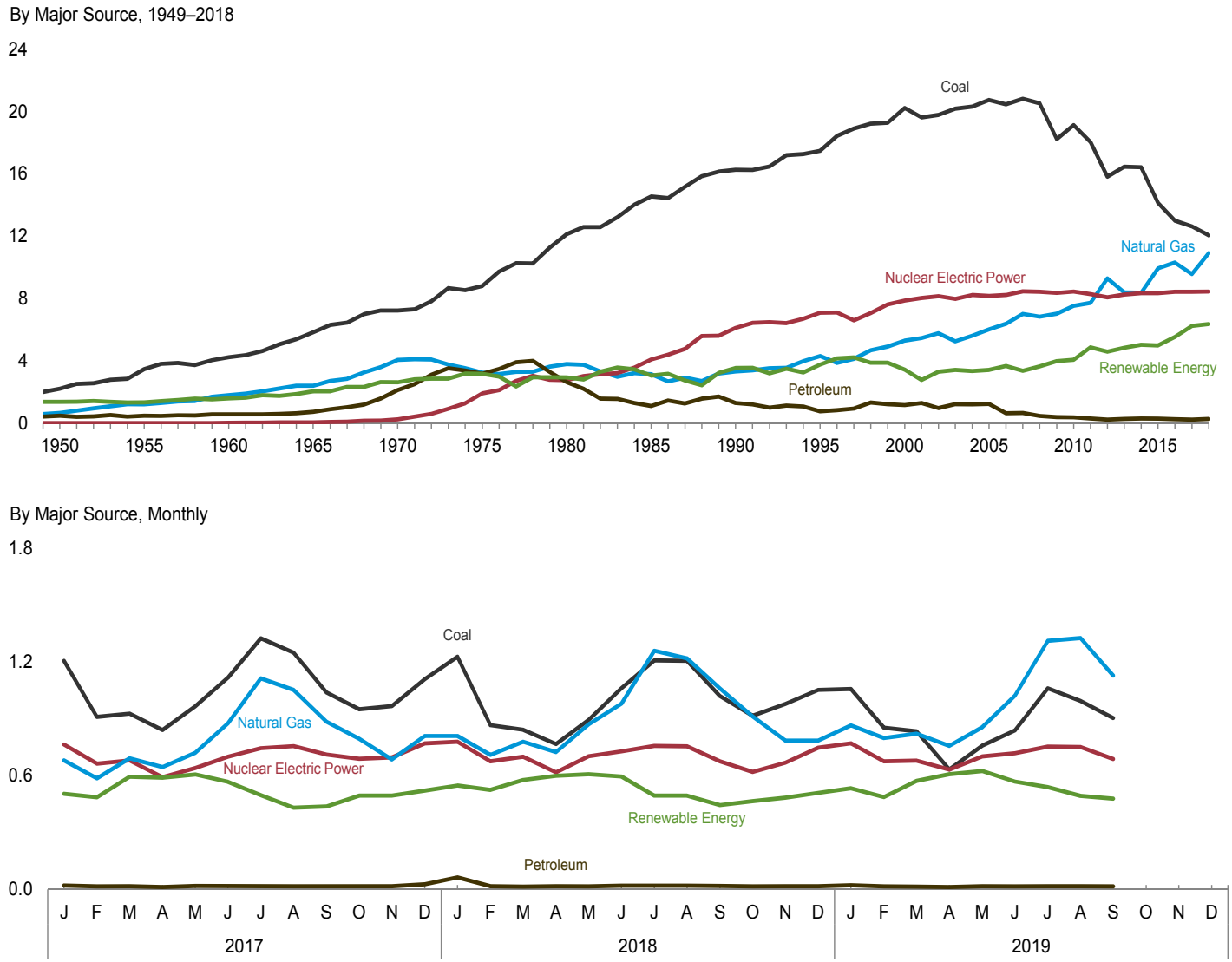
Table 2.5 Transportation Sector Energy Consumption
(Trillion Btu)

	Primary Consumption[a]								
	Fossil Fuels				Renewable Energy[b]				
	Coal	Natural Gas[c]	Petroleum[d]	Total	Biomass	Total Primary	Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
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 January	(g)	R 86	2,027	R 2,113	107	R 2,219	2	4	R 2,226
February	(g)	R 69	1,871	R 1,940	101	R 2,041	2	4	R 2,047
March	(g)	R 74	2,180	R 2,255	118	R 2,372	2	4	R 2,379
April	(g)	57	2,085	2,142	117	R 2,260	2	4	2,265
May	(g)	R 56	2,232	R 2,288	129	R 2,416	2	4	R 2,422
June	(g)	R 56	2,209	R 2,266	129	R 2,395	2	4	R 2,401
July	(g)	R 63	2,238	R 2,301	125	R 2,426	2	4	R 2,432
August	(g)	R 62	2,292	R 2,353	131	R 2,484	2	4	R 2,490
September	(g)	R 56	2,119	R 2,175	120	R 2,295	2	4	R 2,301
October	(g)	R 60	2,214	R 2,274	123	R 2,397	2	4	2,403
November	(g)	R 69	2,091	R 2,160	120	R 2,280	2	4	R 2,286
December	(g)	R 90	2,143	R 2,234	120	R 2,354	2	5	R 2,361
Total	**(g)**	**799**	**25,702**	**26,500**	**1,439**	**27,939**	**26**	**50**	**28,014**
2018 January	(g)	R 105	2,045	R 2,150	113	R 2,263	3	5	R 2,270
February	(g)	R 85	1,872	R 1,957	99	R 2,056	2	4	R 2,062
March	(g)	R 88	2,210	R 2,298	119	R 2,417	2	4	R 2,423
April	(g)	74	2,134	2,208	112	2,320	2	4	2,326
May	(g)	R 65	2,251	R 2,316	127	R 2,443	2	4	R 2,449
June	(g)	R 65	2,248	R 2,313	121	R 2,434	2	4	R 2,440
July	(g)	R 74	2,304	R 2,378	124	R 2,502	2	4	R 2,508
August	(g)	R 73	2,344	R 2,417	129	R 2,546	2	4	R 2,553
September	(g)	R 68	2,136	R 2,204	113	R 2,317	2	4	R 2,323
October	(g)	R 72	2,213	R 2,285	122	R 2,407	2	4	R 2,413
November	(g)	R 85	2,133	R 2,218	117	R 2,336	2	4	R 2,342
December	(g)	R 94	2,147	R 2,241	119	R 2,360	2	4	R 2,367
Total	**(g)**	**948**	**26,037**	**26,985**	**1,415**	**28,401**	**26**	**50**	**28,477**
2019 January	(g)	106	2,073	R 2,178	108	R 2,286	2	4	2,293
February	(g)	R 93	1,903	R 1,996	107	R 2,103	2	4	R 2,110
March	(g)	91	2,148	R 2,238	119	R 2,357	2	4	R 2,364
April	(g)	70	2,129	R 2,199	115	R 2,314	2	4	R 2,320
May	(g)	R 67	2,223	R 2,290	126	2,416	2	4	2,422
June	(g)	R 67	2,228	2,295	122	R 2,416	2	4	2,423
July	(g)	R 76	2,289	2,365	121	2,486	2	4	R 2,492
August	(g)	77	R 2,335	R 2,412	125	R 2,537	2	4	R 2,543
September	(g)	71	2,119	2,189	113	2,302	2	4	2,309
9-Month Total	**(g)**	**718**	**19,445**	**20,163**	**1,055**	**21,218**	**20**	**38**	**21,276**
2018 9-Month Total	**(g)**	**697**	**19,544**	**20,242**	**1,056**	**21,298**	**20**	**37**	**21,355**
2017 9-Month Total	**(g)**	**579**	**19,253**	**19,832**	**1,076**	**20,908**	**19**	**37**	**20,964**

[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.
R=Revised. 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					Renewable Energy[b]							
	Coal	Natural Gas[c]	Petro-leum	Total	Nuclear Electric Power	Hydro-electric Power[d]	Geo-thermal	Solar[e]	Wind	Bio-mass	Total	Elec-tricity Net Imports[f]	Total Primary
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 January	1,207	681	21	1,909	765	245	13	19	183	46	505	22	3,201
February	912	587	16	1,515	665	217	11	23	195	41	487	17	2,684
March	929	693	17	1,639	681	268	13	39	230	45	595	17	2,932
April	842	646	13	1,501	593	269	12	43	227	39	590	15	2,700
May	967	722	19	1,708	641	297	12	52	207	40	607	15	2,971
June	1,118	877	19	2,015	701	277	11	56	182	42	569	18	3,303
July	1,326	1,115	18	2,460	746	243	12	52	147	44	498	18	3,722
August	1,251	1,054	18	2,322	757	200	12	50	125	45	432	20	3,531
September	1,040	886	17	1,942	712	175	12	47	164	40	438	15	3,108
October	951	796	16	1,763	690	167	11	44	233	40	496	11	2,960
November	968	687	17	1,672	697	188	12	31	222	42	495	11	2,874
December	1,111	810	27	1,948	771	205	14	31	226	45	522	14	3,255
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	810	64	2,103	780	228	12	30	233	46	549	14	3,446
February	868	711	17	1,596	677	226	12	35	211	42	526	12	2,811
March	843	780	15	1,638	701	235	12	46	241	44	578	15	2,932
April	768	725	17	1,510	618	255	11	55	241	39	600	10	2,738
May	896	873	16	1,785	704	276	13	62	218	40	609	14	3,112
June	1,062	981	20	2,063	729	251	12	67	225	42	597	15	3,403
July	1,209	1,260	20	2,489	758	228	12	61	150	44	495	15	3,756
August	1,207	1,221	20	2,448	756	200	12	60	181	43	496	17	3,717
September	1,021	1,061	19	2,101	677	174	12	54	169	37	446	11	3,235
October	917	914	16	1,848	621	177	12	45	193	39	466	10	2,944
November	980	786	18	1,784	669	199	12	34	201	40	485	9	2,946
December	1,054	786	18	1,858	749	207	13	28	221	41	510	11	3,128
Total	**12,053**	**10,911**	**260**	**23,224**	**8,438**	**2,655**	**145**	**577**	**2,484**	**496**	**6,356**	**152**	**38,170**
2019 January	1,059	867	22	1,948	771	220	13	33	229	40	534	11	3,264
February	854	800	16	1,670	677	198	12	34	209	35	488	11	2,846
March	835	823	15	1,673	680	232	13	53	238	37	573	8	2,935
April	634	758	12	1,405	633	231	11	62	271	35	609	8	2,655
May	759	857	17	1,633	702	273	12	65	237	39	625	10	2,970
June	840	1,023	16	1,878	719	240	12	72	209	37	570	12	3,180
July	1,062	1,313	18	2,393	755	215	13	73	201	39	541	13	3,701
August	995	1,328	18	2,341	752	189	13	71	181	41	494	14	3,601
September	905	1,129	16	2,050	689	148	12	61	221	37	480	12	3,231
9-Month Total	**7,942**	**8,898**	**151**	**16,991**	**6,378**	**1,947**	**109**	**524**	**1,995**	**340**	**4,915**	**100**	**28,383**
2018 9-Month Total	**9,102**	**8,423**	**208**	**17,734**	**6,399**	**2,072**	**109**	**470**	**1,869**	**376**	**4,896**	**123**	**29,152**
2017 9-Month Total	**9,592**	**7,261**	**158**	**17,011**	**6,261**	**2,191**	**109**	**380**	**1,660**	**382**	**4,722**	**157**	**28,151**

[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.
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	15.4	10.0	6.1	16.2	8.4	45.5	5.8	29.7	18.8	896.8

[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]	Elec-tricity	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	558.4	3.0	179.8	23.6	896.8

[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 renewables 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 renewables 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.

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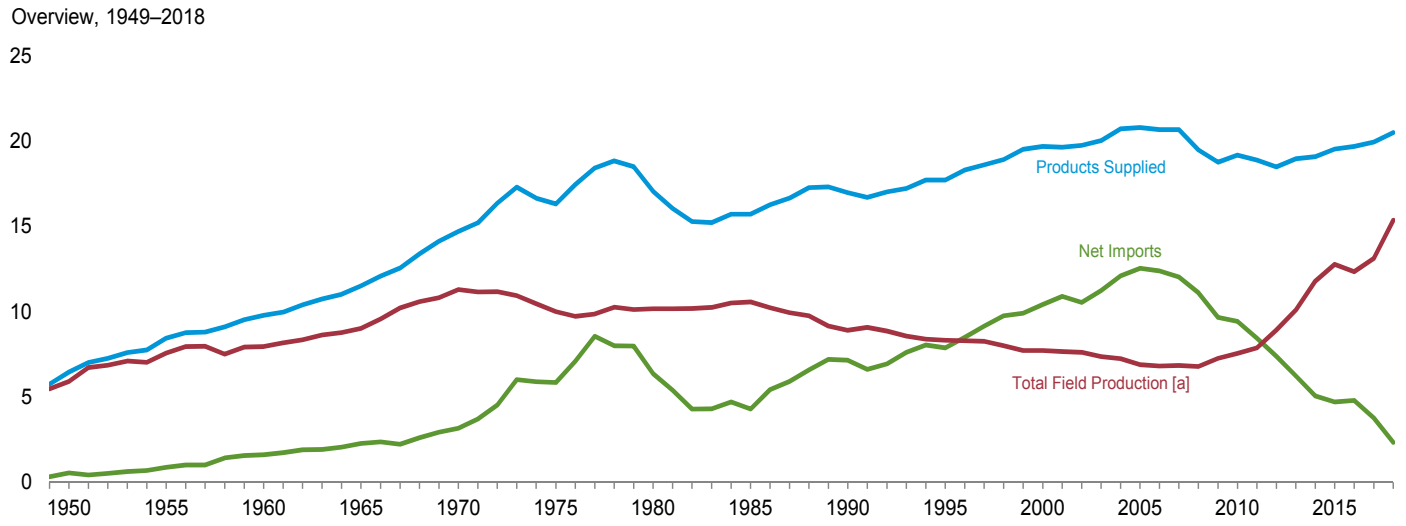
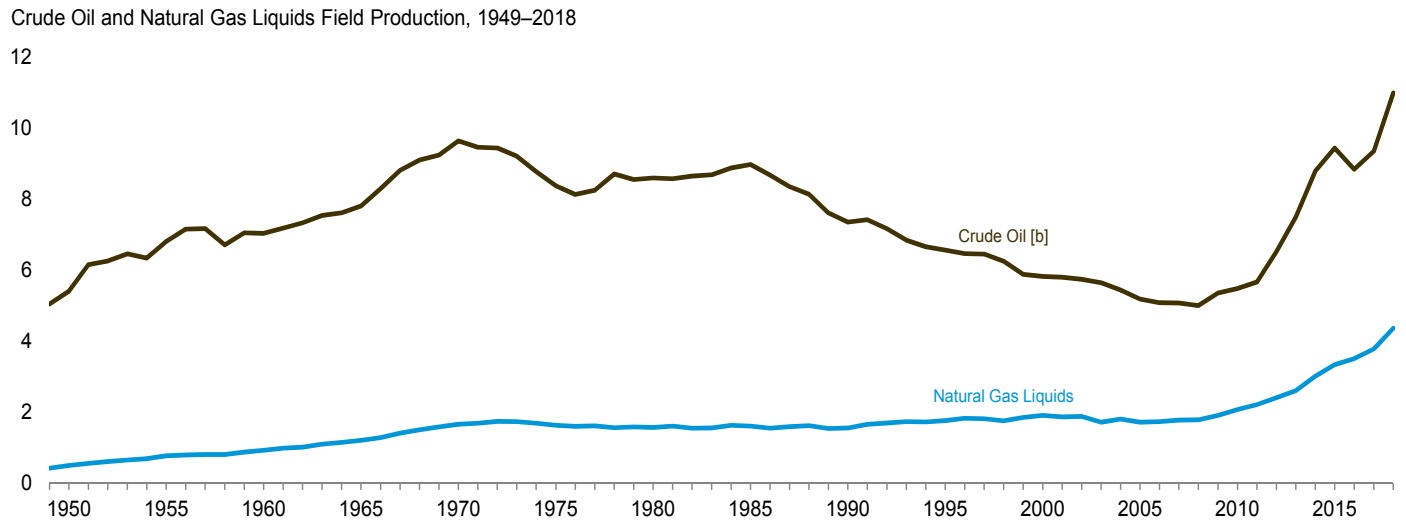
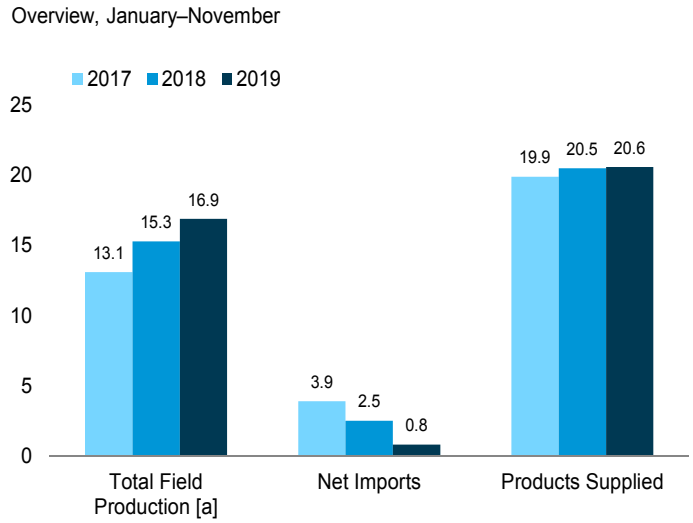
3. Petroleum

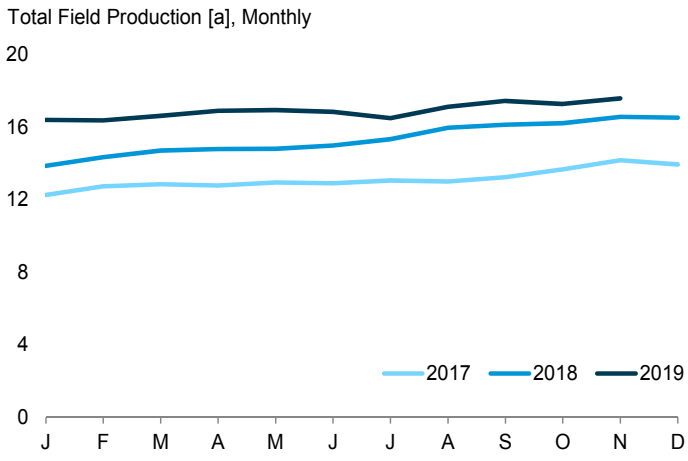
Figure 3.1 Petroleum Overview

(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**	**39**	**246**	**19,180**
2011 Average	**5,105**	**561**	**5,667**	**2,216**	**7,883**	**1,016**	**1,076**	**11,436**	**2,986**	**8,450**	**-129**	**333**	**18,887**
2012 Average	**5,993**	**526**	**6,518**	**2,408**	**8,926**	**964**	**1,059**	**10,598**	**3,205**	**7,393**	**147**	**291**	**18,487**
2013 Average	**6,978**	**515**	**7,493**	**2,606**	**10,099**	**1,002**	**1,087**	**9,859**	**3,621**	**6,237**	**-139**	**403**	**18,967**
2014 Average	**8,291**	**496**	**8,787**	**3,015**	**11,801**	**1,055**	**1,081**	**9,241**	**4,176**	**5,065**	**267**	**366**	**19,100**
2015 Average	**8,956**	**483**	**9,439**	**3,342**	**12,781**	**1,095**	**1,062**	**9,449**	**4,738**	**4,711**	**429**	**314**	**19,534**
2016 Average	**8,349**	**490**	**8,839**	**3,509**	**12,348**	**1,158**	**1,118**	**10,055**	**5,261**	**4,795**	**130**	**398**	**19,687**
2017 January	8,345	518	8,863	3,395	12,258	1,187	1,139	10,745	5,645	5,101	746	384	19,323
February	8,587	515	9,103	3,633	12,735	1,173	1,063	10,033	6,461	3,573	-128	519	19,190
March	8,636	526	9,162	3,685	12,847	1,179	1,112	10,184	6,054	4,130	-602	189	20,060
April	8,575	525	9,100	3,682	12,783	1,142	1,146	10,322	6,277	4,045	-70	410	19,595
May	8,675	508	9,183	3,771	12,954	1,179	1,135	10,729	6,232	4,498	181	481	20,066
June	8,645	461	9,107	3,807	12,914	1,191	1,159	10,325	6,252	4,073	-802	422	20,561
July	8,812	423	9,235	3,822	13,057	1,193	1,101	9,954	6,291	3,663	-369	736	20,119
August	8,798	451	9,248	3,764	13,012	1,222	1,113	10,112	5,665	4,447	-363	95	20,251
September	9,030	482	9,512	3,731	13,243	1,180	1,010	9,752	6,289	3,464	-315	430	19,641
October	9,147	507	9,653	4,020	13,673	1,214	1,081	9,741	7,086	2,655	-1,180	186	19,990
November	9,561	510	10,071	4,106	14,176	1,268	1,146	9,876	7,144	2,732	-596	389	20,307
December	9,461	512	9,973	3,969	13,942	1,240	1,126	9,935	7,136	2,799	-927	289	20,323
Average	**8,857**	**495**	**9,352**	**3,783**	**13,135**	**1,198**	**1,111**	**10,144**	**6,376**	**3,768**	**-370**	**376**	**19,958**
2018 January	9,510	508	10,018	3,853	13,871	1,210	1,102	10,280	6,461	3,819	-386	157	20,545
February	9,768	513	10,281	4,061	14,342	1,228	1,097	9,586	6,907	2,679	-128	206	19,679
March	9,992	512	10,504	4,200	14,704	1,214	1,096	9,822	7,337	2,485	-482	776	20,756
April	10,013	497	10,510	4,286	14,796	1,205	1,113	10,375	7,797	2,578	120	464	20,037
May	9,964	496	10,460	4,352	14,811	1,230	1,141	10,227	7,717	2,510	173	728	20,247
June	10,198	451	10,649	4,337	14,986	1,260	1,133	10,726	7,824	2,902	-129	381	20,790
July	10,496	395	10,891	4,452	15,343	1,273	1,169	10,193	7,963	2,231	175	842	20,682
August	10,933	428	11,361	4,602	15,962	1,289	1,185	10,434	7,164	3,270	619	271	21,358
September	11,026	471	11,498	4,638	16,136	1,214	1,141	9,889	7,415	2,474	1,312	431	20,083
October	11,145	487	11,631	4,588	16,219	1,220	1,116	9,468	8,011	1,457	-469	254	20,734
November	11,502	497	11,999	4,563	16,562	1,240	1,149	9,272	8,281	991	-230	574	20,747
December	11,542	496	12,038	4,483	16,521	1,222	1,210	9,021	8,301	720	48	678	20,303
Average	**10,512**	**479**	**10,990**	**4,369**	**15,360**	**1,234**	**1,138**	**9,943**	**7,601**	**2,341**	**51**	**483**	**20,504**
2019 January	[E] 11,360	[E] 496	[E] 11,856	4,545	[E] 16,401	1,190	1,110	9,693	8,104	1,589	260	423	20,452
February	[E] 11,181	[E] 488	[E] 11,669	4,706	[E] 16,375	1,198	1,020	8,628	8,453	176	-616	809	20,194
March	[E] 11,411	[E] 481	[E] 11,892	4,728	[E] 16,620	1,163	1,042	8,837	7,996	842	-136	402	20,204
April	[E] 11,647	[E] 475	[E] 12,123	4,787	[E] 16,909	1,215	1,060	9,506	8,488	1,017	591	501	20,112
May	[E] 11,639	[E] 474	[E] 12,113	4,838	[E] 16,951	1,231	1,064	9,803	8,220	1,583	1,328	759	20,259
June	[E] 11,605	[E] 455	[E] 12,060	4,793	[E] 16,853	1,244	1,089	9,239	8,732	506	-71	840	20,604
July	[RE] 11,375	[E] 448	[RE] 11,823	4,679	[RE] 16,502	1,246	1,078	9,551	8,085	1,466	147	[R] 597	20,742
August	[RE] 12,015	[E] 382	[RE] 12,397	4,727	[RE] 17,124	1,220	1,112	9,360	8,511	849	-243	[R] 515	21,062
September	[RE] 12,014	[RE] 449	[RE] 12,463	[R] 4,989	[RE] 17,452	[R] 1,158	[R] 1,030	[R] 8,668	[R] 8,757	[R] -89	[R] -87	[R] 584	[R] 20,221
October	[E] 12,123	[E] 477	[E] 12,600	[E] 4,679	[E] 17,279	[E] 1,096	[E] 1,044	[E] 8,478	[E] 8,129	[E] 349	[E] -525	[E] 926	[E] 21,220
November	[E] 12,361	[E] 486	[E] 12,847	[E] 4,744	[E] 17,591	[E] 1,130	[E] 1,083	[E] 8,403	[E] 8,351	[E] 52	[E] -551	[E] 634	[E] 21,040
11-Month Average	**[E] 11,705**	**[E] 464**	**[E] 12,170**	**[E] 4,746**	**[E] 16,916**	**[E] 1,190**	**[E] 1,067**	**[E] 9,112**	**[E] 8,344**	**[E] 768**	**[E] 15**	**[E] 634**	**[E] 20,559**
2018 11-Month Average	**10,416**	**477**	**10,893**	**4,359**	**15,252**	**1,235**	**1,131**	**10,028**	**7,536**	**2,492**	**51**	**464**	**20,523**
2017 11-Month Average	**8,801**	**493**	**9,294**	**3,765**	**13,060**	**1,194**	**1,110**	**10,164**	**6,305**	**3,858**	**-318**	**384**	**19,924**

[a] Crude oil production on leases, and natural gas liquids (hydrocarbon gas liquids and a small amount of finished petroleum products) production at natural gas processing plants. Excludes what was previously classified as "Field Production" of finished motor gasoline, motor gasoline blending components, and other hydrocarbons and oxygenates; these are now included in "Adjustments."

[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.

[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.

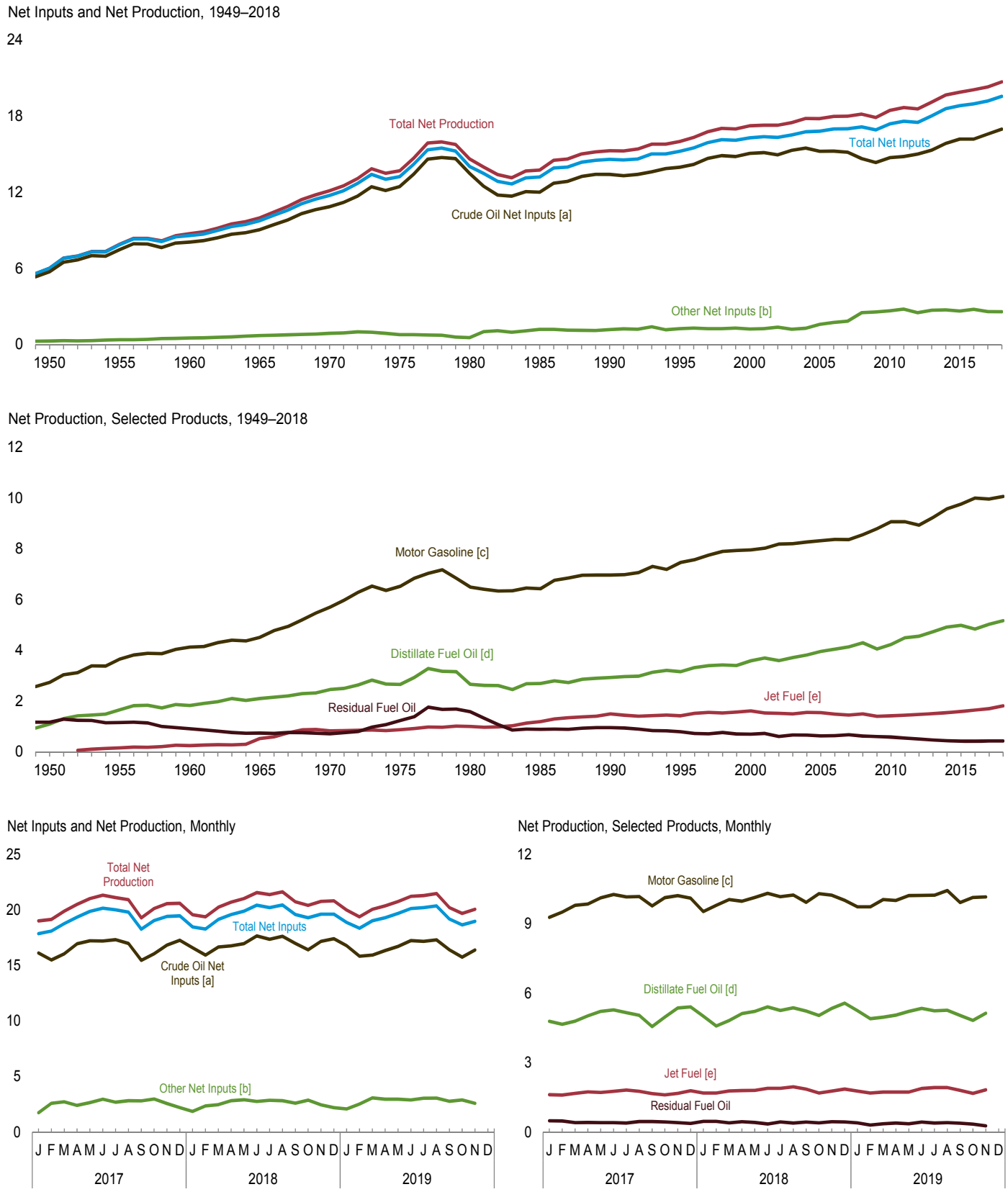
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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 January	16,118	649	1,102	17,870	4,785	298	266	564	355	1,614	9,281	485	2,488	19,009
February	15,493	587	2,011	18,091	4,657	282	262	544	413	1,603	9,507	482	2,492	19,154
March	16,048	519	2,213	18,780	4,793	295	291	586	678	1,674	9,802	406	2,539	19,892
April	16,954	478	1,918	19,351	5,019	298	303	601	857	1,735	9,855	417	2,614	20,497
May	17,222	484	2,173	19,879	5,216	324	298	622	908	1,713	10,126	408	2,644	21,014
June	17,204	473	2,491	20,168	5,284	333	282	615	915	1,764	10,270	406	2,689	21,328
July	17,317	446	2,241	20,005	5,162	312	295	607	877	1,817	10,164	390	2,695	21,106
August	16,981	480	2,340	19,801	5,044	309	280	589	834	1,764	10,176	453	2,644	20,914
September	15,460	606	2,201	18,267	4,560	278	235	513	477	1,665	9,778	459	2,338	19,277
October	16,061	593	2,391	19,045	4,972	303	291	594	520	1,611	10,129	442	2,454	20,126
November	16,840	731	1,848	19,418	5,362	315	301	616	348	1,671	10,220	408	2,556	20,564
December	17,274	750	1,450	19,475	5,408	332	311	642	341	1,784	10,104	373	2,590	20,600
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	16,785	681	1,407	18,873	5,252	297	292	589	374	1,771	9,735	398	2,452	19,983
February	15,837	590	1,930	18,357	4,902	257	289	545	427	1,689	9,730	306	2,321	19,376
March	15,939	509	2,575	19,023	4,968	288	261	549	629	1,728	10,051	357	2,331	20,065
April	16,338	484	2,478	19,300	5,054	295	272	567	805	1,728	10,010	388	2,376	20,360
May	16,719	460	2,509	19,688	5,213	295	283	577	867	1,729	10,217	363	2,362	20,752
June	17,233	431	2,463	20,127	5,349	300	290	591	859	1,883	10,231	430	2,464	21,216
July	17,175	448	2,591	20,214	5,243	292	286	579	852	1,922	10,240	390	2,644	21,291
August	17,300	481	2,577	20,358	5,266	295	284	579	807	1,924	10,435	410	2,628	21,470
September	R 16,404	R 601	R 2,183	R 19,188	R 5,035	R 272	R 282	553	R 613	R 1,799	R 9,922	R 383	R 2,465	R 20,217
October	E 15,754	RF 626	RE 2,267	RF 18,648	E 4,825	NA	NA	RE 426	F 454	E 1,677	E 10,138	E 345	RE 2,252	RE 19,692
November	E 16,386	F 727	E 1,864	F 18,977	E 5,132	NA	NA	E 517	F 332	E 1,828	E 10,160	E 273	E 2,335	E 20,060
11-Month Average	**E 16,539**	**E 548**	**E 2,262**	**E 19,349**	**E 5,114**	**NA**	**NA**	**E 552**	**E 640**	**E 1,789**	**E 10,082**	**E 368**	**E 2,422**	**E 20,416**
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**
2017 11-Month Average	**16,526**	**549**	**2,085**	**19,160**	**4,989**	**304**	**282**	**587**	**655**	**1,694**	**9,940**	**432**	**2,560**	**20,270**

[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), other hydrocarbons, and hydrogen. Beginning in 1981, also includes aviation and motor gasoline blending components (net). Beginning in 1993, also includes oxygenates (net), including fuel ethanol. Beginning in 2009, also includes renewable diesel fuel (including biodiesel).
[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.

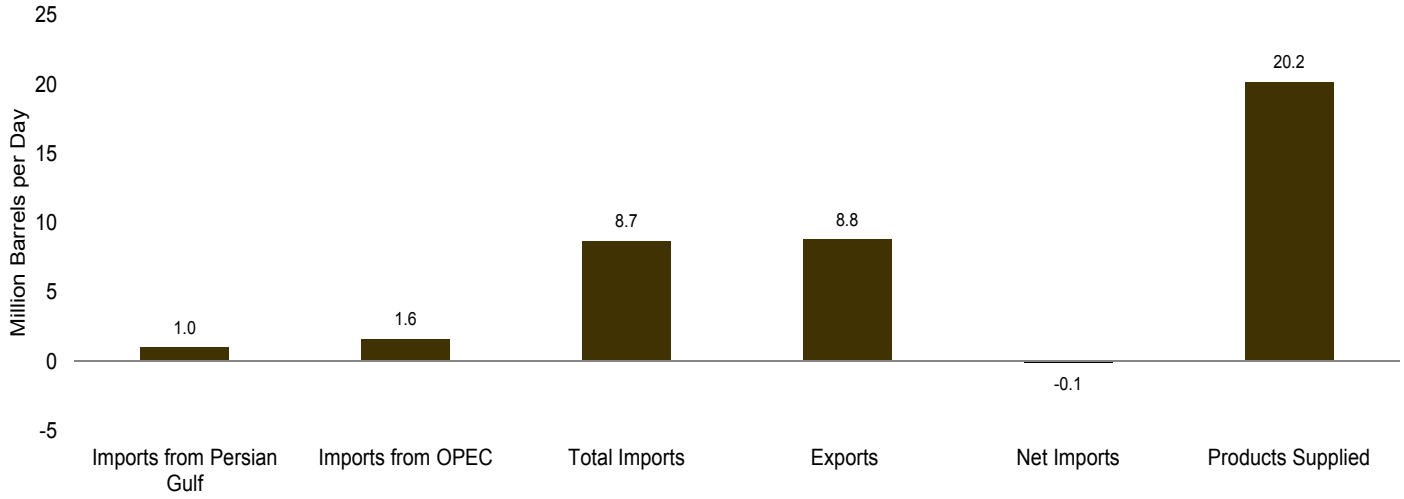
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

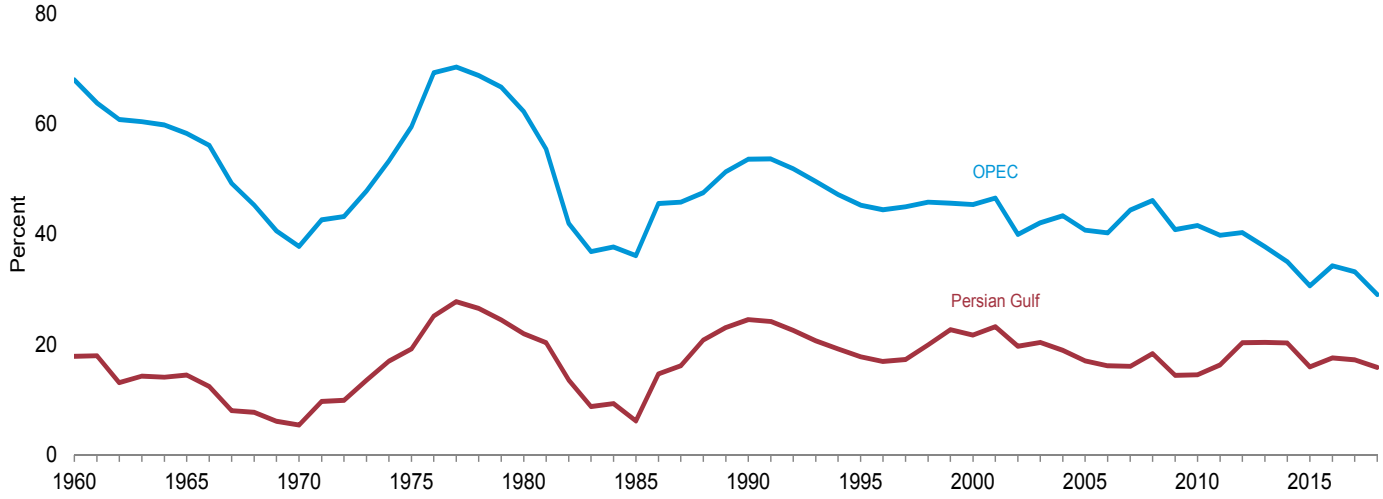
Sources: See end of section.

Figure 3.3a Petroleum Trade: Overview

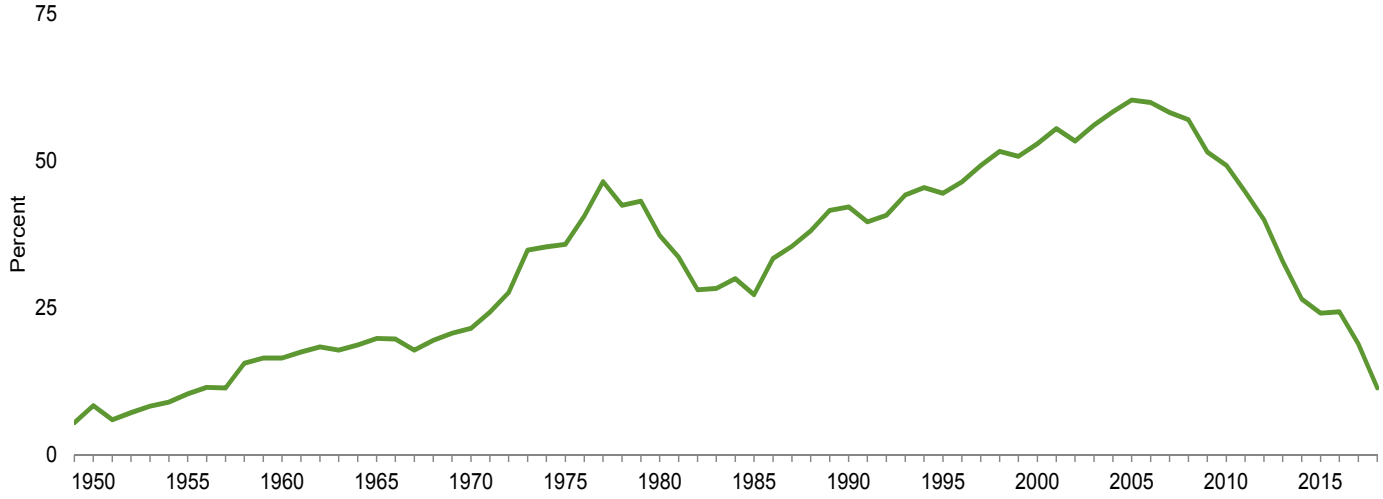
Overview, September 2019



Imports From OPEC and Persian Gulf as Share of Total Imports, 1960–2018



Net Imports as Share of Products Supplied, 1949–2018



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

	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Exports	Net Imports	Products Supplied	As Share of Products Supplied: Imports From Persian Gulf[a]	As Share of Products Supplied: Imports From OPEC[b]	As Share of Products Supplied: Imports	As Share of Products Supplied: Net Imports	As Share of Total Imports: Imports From Persian Gulf[a]	As Share of Total Imports: Imports From OPEC[b]
	Thousand Barrels per Day						Percent					
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**	**19,180**	**8.9**	**25.6**	**61.5**	**49.2**	**14.5**	**41.6**
2011 Average	**1,861**	**4,555**	**11,436**	**2,986**	**8,450**	**18,887**	**9.9**	**24.1**	**60.6**	**44.7**	**16.3**	**39.8**
2012 Average	**2,156**	**4,271**	**10,598**	**3,205**	**7,393**	**18,487**	**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**	**19,534**	**7.7**	**14.8**	**48.4**	**24.1**	**15.9**	**30.6**
2016 Average	**1,766**	**3,446**	**10,055**	**5,261**	**4,795**	**19,687**	**9.0**	**17.5**	**51.1**	**24.4**	**17.6**	**34.3**
2017 January	2,085	3,793	10,745	5,645	5,101	19,323	10.8	19.6	55.6	26.4	19.4	35.3
February	2,013	3,445	10,033	6,461	3,573	19,190	10.5	18.0	52.3	18.6	20.1	34.3
March	1,956	3,593	10,184	6,054	4,130	20,060	9.8	17.9	50.8	20.6	19.2	35.3
April	2,100	3,743	10,322	6,277	4,045	19,595	10.7	19.1	52.7	20.6	20.3	36.3
May	1,968	3,669	10,729	6,232	4,498	20,066	9.8	18.3	53.5	22.4	18.3	34.2
June	1,836	3,567	10,325	6,252	4,073	20,561	8.9	17.3	50.2	19.8	17.8	34.5
July	1,796	3,399	9,954	6,291	3,663	20,119	8.9	16.9	49.5	18.2	18.0	34.1
August	1,345	3,163	10,112	5,665	4,447	20,251	6.6	15.6	49.9	22.0	13.3	31.3
September	1,370	2,880	9,752	6,289	3,464	19,641	7.0	14.7	49.7	17.6	14.1	29.5
October	1,491	3,154	9,741	7,086	2,655	19,990	7.5	15.8	48.7	13.3	15.3	32.4
November	1,555	3,044	9,876	7,144	2,732	20,307	7.7	15.0	48.6	13.5	15.7	30.8
December	1,460	2,939	9,935	7,136	2,799	20,323	7.2	14.5	48.9	13.8	14.7	29.6
Average	**1,746**	**3,366**	**10,144**	**6,376**	**3,768**	**19,958**	**8.7**	**16.9**	**50.8**	**18.9**	**17.2**	**33.2**
2018 January	1,591	3,009	10,280	6,461	3,819	20,545	7.7	14.6	50.0	18.6	15.5	29.3
February	1,554	2,740	9,586	6,907	2,679	19,679	7.9	13.9	48.7	13.6	16.2	28.6
March	1,738	2,845	9,822	7,337	2,485	20,756	8.4	13.7	47.3	12.0	17.7	29.0
April	1,899	3,523	10,375	7,797	2,578	20,037	9.5	17.6	51.8	12.9	18.3	34.0
May	1,567	2,731	10,227	7,717	2,510	20,247	7.7	13.5	50.5	12.4	15.3	26.7
June	1,487	3,041	10,726	7,824	2,902	20,790	7.2	14.6	51.6	14.0	13.9	28.3
July	1,489	2,971	10,193	7,963	2,231	20,682	7.2	14.4	49.3	10.8	14.6	29.1
August	1,599	2,857	10,434	7,164	3,270	21,358	7.5	13.4	48.9	15.3	15.3	27.4
September	1,645	2,996	9,889	7,415	2,474	20,083	8.2	14.9	49.2	12.3	16.6	30.3
October	1,563	2,729	9,468	8,011	1,457	20,734	7.5	13.2	45.7	7.0	16.5	28.8
November	1,567	2,703	9,272	8,281	991	20,747	7.6	13.0	44.7	4.8	16.9	29.2
December	1,237	2,516	9,021	8,301	720	20,303	6.1	12.4	44.4	3.5	13.7	27.9
Average	**1,578**	**2,888**	**9,943**	**7,601**	**2,341**	**20,504**	**7.7**	**14.1**	**48.5**	**11.4**	**15.9**	**29.0**
2019 January	1,298	2,542	9,693	8,104	1,589	20,452	6.3	12.4	47.4	7.8	13.4	26.2
February	1,272	1,803	8,628	8,453	176	20,194	6.3	8.9	42.7	0.9	14.7	20.9
March	1,096	1,643	8,837	7,996	842	20,204	5.4	8.1	43.7	4.2	12.4	18.6
April	947	1,566	9,506	8,488	1,017	20,112	4.7	7.8	47.3	5.1	10.0	16.5
May	912	1,693	9,803	8,220	1,583	20,259	4.5	8.4	48.4	7.8	9.3	17.3
June	995	1,699	9,239	8,732	506	20,604	4.8	8.2	44.8	2.5	10.8	18.4
July	890	1,420	9,551	8,085	1,466	20,742	4.3	6.8	46.0	7.1	9.3	14.9
August	794	1,660	9,360	8,511	849	21,062	3.8	7.9	44.4	4.0	8.5	17.7
September	R 980	R 1,601	R 8,668	R 8,757	R -89	R 20,221	R 4.8	R 7.9	R 42.9	R -0.4	R 11.3	R 18.5
October	NA	NA	E 8,478	E 8,129	E 349	E 21,220	NA	NA	E 40.0	E 1.6	NA	NA
November	NA	NA	E 8,403	E 8,351	E 52	E 21,040	NA	NA	E 39.9	E 0.2	NA	NA
11-Month Average	**NA**	**NA**	**E 9,112**	**E 8,344**	**E 768**	**E 20,559**	**NA**	**NA**	**E 44.3**	**E 3.7**	**NA**	**NA**
2018 11-Month Average	**1,609**	**2,922**	**10,028**	**7,536**	**2,492**	**20,523**	**7.8**	**14.2**	**48.9**	**12.1**	**16.0**	**29.1**
2017 11-Month Average	**1,773**	**3,405**	**10,164**	**6,305**	**3,858**	**19,924**	**8.9**	**17.1**	**51.0**	**19.4**	**17.4**	**33.5**

[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.

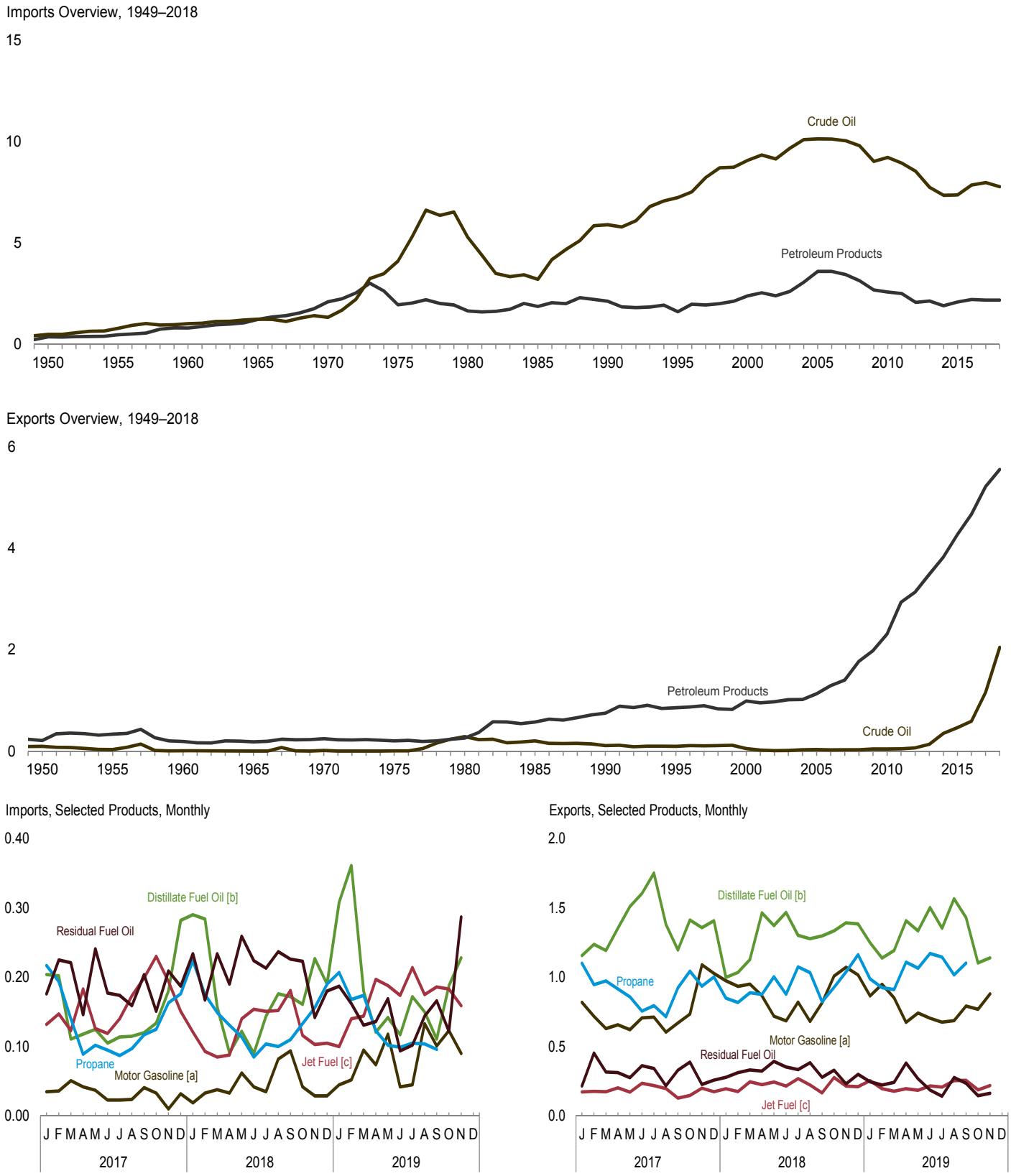
Notes: • For the feature article "Measuring Dependence on Imported Oil," published in the August 1995 *Monthly Energy Review,* see http://www.eia.gov/totalenergy/data/monthly/pdf/historical/imported_oil.pdf. • Beginning in October 1977, data include Strategic Petroleum Reserve imports. See Table 3.3b. • 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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2019:** 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 January	–	8,478	204	217	28	245	287	132	35	176	1,433	10,745
February	–	7,877	202	194	24	218	257	147	36	225	1,289	10,033
March	–	8,165	111	140	29	169	198	123	51	221	1,314	10,184
April	–	8,204	118	89	24	113	154	183	42	146	1,475	10,322
May	–	8,487	125	102	21	123	169	126	37	241	1,545	10,729
June	–	8,089	105	95	23	119	155	119	23	177	1,657	10,325
July	–	7,915	114	87	26	113	152	140	23	174	1,436	9,954
August	–	7,923	115	97	25	122	161	173	24	159	1,558	10,112
September	–	7,324	120	117	19	136	170	199	41	204	1,694	9,752
October	–	7,681	134	125	15	139	186	230	33	151	1,327	9,741
November	–	7,674	180	163	20	183	223	194	10	209	1,385	9,876
December	–	7,782	282	176	23	198	240	151	32	187	1,261	9,935
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	–	7,520	308	207	15	223	290	100	45	187	1,241	9,693
February	–	6,652	361	169	13	182	242	140	52	162	1,020	8,628
March	–	6,759	180	174	10	185	252	144	95	131	1,274	8,837
April	–	7,025	121	123	18	142	204	197	74	136	1,748	9,506
May	–	7,158	142	102	21	123	176	188	118	169	1,852	9,803
June	–	7,141	117	99	13	112	157	174	43	94	1,513	9,239
July	–	6,935	172	105	16	121	179	214	45	102	1,903	9,551
August	–	6,944	150	104	17	121	177	175	133	144	1,635	9,360
September	–	R 6,478	R 111	R 96	R 12	R 107	R 165	R 186	R 101	R 166	R 1,461	R 8,668
October	–	E 6,231	E 188	NA	NA	E 117	NA	E 183	E 123	E 122	NA	E 8,478
November	–	E 6,036	E 228	NA	NA	E 137	NA	E 159	E 90	E 287	NA	E 8,403
11-Month Average	**–**	**E 6,810**	**E 188**	**NA**	**NA**	**E 142**	**NA**	**E 169**	**E 84**	**E 154**	**NA**	**E 9,112**
2018 11-Month Average	**–**	**7,831**	**173**	**134**	**18**	**152**	**191**	**126**	**46**	**214**	**1,447**	**10,028**
2017 11-Month Average	**–**	**7,986**	**138**	**129**	**23**	**152**	**192**	**160**	**32**	**189**	**1,465**	**10,164**

[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.
[g] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, other hydrocarbons and oxygenates, 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.

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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2019:** 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]	Ecuador[c]	Iraq	Kuwait[d]	Libya[e]	Nigeria[f]	Saudi Arabia[d]	Vene-zuela	Other[g]	Total OPEC
1960 Average	([a])	([b])	([c])	**22**	**182**	([e])	([f])	**84**	**911**	**34**	**1,233**
1965 Average	([a])	([b])	([c])	**16**	**74**	**42**	([f])	**158**	**994**	**155**	**1,439**
1970 Average	**8**	([b])	([c])	**–**	**48**	**47**	([f])	**30**	**989**	**172**	**1,294**
1975 Average	**282**	([b])	**57**	**2**	**16**	**232**	**762**	**715**	**702**	**832**	**3,601**
1980 Average	**488**	([b])	**27**	**28**	**27**	**554**	**857**	**1,261**	**481**	**577**	**4,300**
1985 Average	**187**	([b])	**67**	**46**	**21**	**4**	**293**	**168**	**605**	**439**	**1,830**
1990 Average	**280**	([b])	**49**	**518**	**86**	**–**	**800**	**1,339**	**1,025**	**199**	**4,296**
1995 Average	**234**	([b])	([c])	**–**	**218**	**–**	**627**	**1,344**	**1,480**	**98**	**4,002**
2000 Average	**225**	([b])	([c])	**620**	**272**	**–**	**896**	**1,572**	**1,546**	**72**	**5,203**
2001 Average	**278**	([b])	([c])	**795**	**250**	**–**	**885**	**1,662**	**1,553**	**105**	**5,528**
2002 Average	**264**	([b])	([c])	**459**	**228**	**–**	**621**	**1,552**	**1,398**	**83**	**4,605**
2003 Average	**382**	([b])	([c])	**481**	**220**	**–**	**867**	**1,774**	**1,376**	**61**	**5,162**
2004 Average	**452**	([b])	([c])	**656**	**250**	**20**	**1,140**	**1,558**	**1,554**	**70**	**5,701**
2005 Average	**478**	([b])	([c])	**531**	**243**	**56**	**1,166**	**1,537**	**1,529**	**47**	**5,587**
2006 Average	**657**	([b])	([c])	**553**	**185**	**87**	**1,114**	**1,463**	**1,419**	**38**	**5,517**
2007 Average	**670**	**508**	([c])	**484**	**181**	**117**	**1,134**	**1,485**	**1,361**	**39**	**5,980**
2008 Average	**548**	**513**	**221**	**627**	**210**	**103**	**988**	**1,529**	**1,189**	**26**	**5,954**
2009 Average	**493**	**460**	**185**	**450**	**182**	**79**	**809**	**1,004**	**1,063**	**50**	**4,776**
2010 Average	**510**	**393**	**212**	**415**	**197**	**70**	**1,023**	**1,096**	**988**	**3**	**4,906**
2011 Average	**358**	**346**	**206**	**459**	**191**	**15**	**818**	**1,195**	**951**	**16**	**4,555**
2012 Average	**242**	**233**	**180**	**476**	**305**	**61**	**441**	**1,365**	**960**	**9**	**4,271**
2013 Average	**115**	**216**	**236**	**341**	**328**	**59**	**281**	**1,329**	**806**	**10**	**3,720**
2014 Average	**110**	**154**	**215**	**369**	**311**	**6**	**92**	**1,166**	**789**	**23**	**3,237**
2015 Average	**108**	**136**	**231**	**229**	**204**	**7**	**81**	**1,059**	**827**	**12**	**2,894**
2016 Average	**182**	**168**	**239**	**424**	**210**	**16**	**235**	**1,106**	**796**	**69**	**3,446**
2017 January	232	118	247	622	105	31	332	1,345	749	10	3,793
February	234	64	141	413	251	22	223	1,338	751	9	3,445
March	193	30	278	544	219	30	342	1,173	764	21	3,593
April	153	84	180	811	101	45	332	1,160	857	21	3,743
May	196	105	230	619	174	87	294	1,132	767	66	3,669
June	254	178	212	587	162	38	320	1,045	663	108	3,567
July	215	189	166	756	206	108	241	795	686	37	3,399
August	229	296	193	456	87	35	397	739	606	125	3,163
September	145	171	223	502	127	59	292	676	620	65	2,880
October	144	124	163	708	119	176	441	591	562	127	3,154
November	120	77	193	611	117	72	470	780	558	47	3,044
December	149	172	253	605	78	73	323	719	513	55	2,939
Average	**189**	**135**	**207**	**604**	**145**	**65**	**334**	**955**	**674**	**58**	**3,366**
2018 January	234	71	161	699	100	76	349	744	528	46	3,009
February	119	34	123	617	177	38	386	667	472	107	2,740
March	107	10	136	721	131	79	153	760	561	187	2,845
April	208	169	225	834	107	87	275	904	632	84	3,523
May	134	118	162	583	49	40	102	872	559	112	2,731
June	147	193	173	421	92	75	267	847	643	182	3,041
July	243	188	288	485	63	44	43	876	625	117	2,971
August	198	146	183	421	83	19	66	1,039	592	109	2,857
September	200	73	172	485	36	61	113	1,043	708	106	2,996
October	178	94	111	377	–	32	182	1,108	570	76	2,729
November	162	28	196	392	101	(s)	180	1,001	563	81	2,703
December	183	–	192	226	16	121	177	930	576	95	2,516
Average	**176**	**94**	**177**	**521**	**79**	**56**	**189**	**901**	**586**	**108**	**2,888**
2019 January	98	8	238	429	21	60	181	770	631	106	2,542
February	51	–	154	422	106	36	33	663	289	49	1,803
March	136	10	124	275	129	25	142	666	69	65	1,643
April	125	43	128	265	61	88	137	583	114	22	1,566
May	142	46	183	366	57	111	243	462	11	72	1,693
June	122	123	154	355	26	55	251	579	(s)	33	1,699
July	75	–	198	360	20	39	193	454	–	82	1,420
August	63	47	329	249	46	66	380	461	–	19	1,660
September	49	71	187	400	–	69	245	458	–	123	1,601
9-Month Average	**96**	**39**	**189**	**346**	**51**	**61**	**202**	**565**	**123**	**64**	**1,737**
2018 9-Month Average	**177**	**112**	**181**	**585**	**92**	**58**	**193**	**863**	**592**	**117**	**2,968**
2017 9-Month Average	**206**	**138**	**209**	**591**	**158**	**51**	**309**	**1,042**	**718**	**52**	**3,474**

[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] Ecuador was a member of OPEC from 1973–1992, and rejoined OPEC in November 2007. For 1960–1972 and 1993–2007, Ecuador is included in "Total Non-OPEC" on Table 3.3d.

[d] 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.

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

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

[g] Includes these countries for the dates indicated: Congo-Brazzaville (June 2018 forward), Equatorial Guinea (May 2017 forward), Gabon (1975–1994 and July 2016 forward), Indonesia (1962–2008 and January–November 2016), Iran (1960 forward), Qatar (1961–2018), and United Arab Emirates (1967 forward).

– =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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports. • **2019:** EIA, *Petroleum Supply Monthly,* monthly reports.

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

(Thousand Barrels per Day)

	Brazil	Canada	Colombia	Mexico	Nether-lands	Norway	Russia[a]	United Kingdom	U.S. Virgin Islands	Other	Total Non-OPEC
1960 Average	**1**	**120**	**42**	**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**	**71**	**19**	**17**	**14**	**14**	**406**	**1,052**	**2,454**
1980 Average	**3**	**455**	**4**	**533**	**2**	**144**	**1**	**176**	**388**	**903**	**2,609**
1985 Average	**61**	**770**	**23**	**816**	**58**	**32**	**8**	**310**	**247**	**913**	**3,237**
1990 Average	**49**	**934**	**182**	**755**	**55**	**102**	**45**	**189**	**282**	**1,128**	**3,721**
1995 Average	**8**	**1,332**	**219**	**1,068**	**15**	**273**	**25**	**383**	**278**	**1,233**	**4,833**
2000 Average	**51**	**1,807**	**342**	**1,373**	**30**	**343**	**72**	**366**	**291**	**1,581**	**6,257**
2001 Average	**82**	**1,828**	**296**	**1,440**	**43**	**341**	**90**	**324**	**268**	**1,631**	**6,343**
2002 Average	**116**	**1,971**	**260**	**1,547**	**66**	**393**	**210**	**478**	**236**	**1,649**	**6,925**
2003 Average	**108**	**2,072**	**195**	**1,623**	**87**	**270**	**254**	**440**	**288**	**1,766**	**7,103**
2004 Average	**104**	**2,138**	**176**	**1,665**	**101**	**244**	**298**	**380**	**330**	**2,008**	**7,444**
2005 Average	**156**	**2,181**	**196**	**1,662**	**151**	**233**	**410**	**396**	**328**	**2,413**	**8,127**
2006 Average	**193**	**2,353**	**155**	**1,705**	**174**	**196**	**369**	**272**	**328**	**2,446**	**8,190**
2007 Average	**200**	**2,455**	**155**	**1,532**	**128**	**142**	**414**	**277**	**346**	**1,839**	**7,489**
2008 Average	**258**	**2,493**	**200**	**1,302**	**168**	**102**	**465**	**236**	**320**	**1,416**	**6,961**
2009 Average	**309**	**2,479**	**276**	**1,210**	**140**	**108**	**563**	**245**	**277**	**1,307**	**6,915**
2010 Average	**272**	**2,535**	**365**	**1,284**	**108**	**89**	**612**	**256**	**253**	**1,112**	**6,887**
2011 Average	**253**	**2,729**	**433**	**1,206**	**100**	**113**	**624**	**159**	**186**	**1,077**	**6,881**
2012 Average	**226**	**2,946**	**433**	**1,035**	**99**	**75**	**477**	**149**	**12**	**874**	**6,327**
2013 Average	**151**	**3,142**	**389**	**919**	**89**	**54**	**460**	**147**	**–**	**786**	**6,138**
2014 Average	**160**	**3,388**	**318**	**842**	**85**	**45**	**330**	**117**	**–**	**720**	**6,004**
2015 Average	**215**	**3,765**	**395**	**758**	**57**	**61**	**371**	**123**	**–**	**811**	**6,554**
2016 Average	**167**	**3,780**	**483**	**669**	**60**	**76**	**441**	**122**	**(s)**	**812**	**6,610**
2017 January	206	4,285	345	730	75	134	361	143	–	673	6,952
February	240	4,098	401	607	80	34	331	96	–	700	6,588
March	229	4,147	338	630	48	12	379	120	–	689	6,590
April	168	3,892	417	680	62	86	308	123	–	844	6,579
May	132	4,159	424	810	49	73	401	167	–	847	7,061
June	202	3,837	334	784	72	122	503	126	–	779	6,759
July	376	3,824	357	668	45	64	358	113	–	752	6,555
August	258	4,023	388	581	74	186	448	67	–	924	6,950
September	250	3,984	374	430	93	118	450	149	–	1,024	6,872
October	230	3,976	270	654	51	71	355	83	–	897	6,587
November	228	4,046	337	841	43	38	384	61	–	854	6,832
December	166	4,373	363	767	59	7	389	88	–	784	6,995
Average	**224**	**4,054**	**362**	**682**	**62**	**79**	**389**	**111**	**–**	**814**	**6,778**
2018 January	272	4,442	512	669	68	57	386	79	–	786	7,271
February	187	4,263	477	713	50	56	297	110	–	692	6,846
March	84	4,195	364	784	91	91	356	84	–	929	6,977
April	184	4,278	282	632	64	122	243	205	–	843	6,852
May	123	4,467	437	608	78	72	491	180	–	1,039	7,496
June	283	4,553	240	886	53	85	439	152	–	995	7,685
July	179	4,173	319	681	43	166	454	164	–	1,042	7,222
August	249	4,239	319	935	68	39	515	175	–	1,038	7,577
September	77	4,038	229	771	44	74	519	207	–	935	6,893
October	230	4,193	229	718	89	138	271	106	–	765	6,739
November	93	4,384	259	601	49	136	254	155	–	640	6,569
December	92	4,277	333	635	49	94	271	132	–	620	6,505
Average	**171**	**4,292**	**333**	**719**	**62**	**94**	**375**	**146**	**–**	**862**	**7,055**
2019 January	142	4,628	380	569	100	88	321	122	–	800	7,150
February	91	4,298	420	720	97	69	221	47	–	861	6,825
March	162	4,404	412	712	60	80	361	118	–	884	7,194
April	155	4,435	472	680	115	111	566	182	–	1,223	7,939
May	261	4,425	459	656	195	134	562	266	–	1,152	8,110
June	217	4,375	395	571	73	186	534	156	–	1,034	7,540
July	341	4,660	377	670	117	35	491	182	–	1,258	8,131
August	201	4,376	383	744	133	84	614	146	–	1,018	7,699
September	186	4,259	283	589	120	123	474	179	–	853	7,067
9-Month Average	**197**	**4,431**	**398**	**657**	**112**	**101**	**462**	**156**	**–**	**1,011**	**7,525**
2018 9-Month Average	**182**	**4,295**	**353**	**742**	**63**	**85**	**412**	**151**	**–**	**925**	**7,207**
2017 9-Month Average	**229**	**4,028**	**375**	**659**	**66**	**92**	**394**	**123**	**–**	**804**	**6,770**

[a] 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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports. • **2019:** 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 January	711	1,156	1,100	1,456	174	820	217	1,111	5,645
February	1,146	1,237	947	1,441	178	718	453	1,288	6,461
March	930	1,192	973	1,486	175	630	317	1,323	6,054
April	1,128	1,355	916	1,478	203	657	313	1,144	6,277
May	1,098	1,510	859	1,347	172	622	276	1,206	6,232
June	865	1,604	756	1,249	235	707	363	1,229	6,252
July	956	1,750	795	1,282	220	712	342	1,029	6,291
August	817	1,380	716	1,232	198	605	218	1,215	5,665
September	1,463	1,196	923	1,442	129	671	330	1,057	6,289
October	1,720	1,413	1,044	1,431	148	734	388	1,251	7,086
November	1,544	1,358	936	1,495	201	1,090	228	1,227	7,144
December	1,522	1,408	1,002	1,515	175	1,027	259	1,230	7,136
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	2,575	1,249	988	1,572	254	866	247	1,340	8,104
February	2,990	1,139	925	1,560	197	949	223	1,394	8,453
March	2,684	1,192	911	1,628	179	852	243	1,219	7,996
April	2,843	1,408	1,108	1,854	197	675	381	1,131	8,488
May	2,900	1,334	1,065	1,778	185	743	268	1,011	8,220
June	3,159	1,502	1,171	1,867	217	705	187	1,096	8,732
July	2,694	1,353	1,145	1,843	209	676	142	1,167	8,085
August	2,727	1,566	1,017	1,813	254	687	277	1,187	8,511
September	R 3,092	R 1,430	R 1,102	R 1,859	R 257	R 792	R 236	R 1,092	R 8,757
October	E 3,181	E 1,103	NA	NA	E 188	E 770	E 146	NA	E 8,129
November	E 3,091	E 1,140	NA	NA	E 219	E 880	E 165	NA	E 8,351
11-Month Average	**E 2,901**	**E 1,311**	**NA**	**NA**	**E 214**	**E 780**	**E 228**	**NA**	**E 8,344**
2018 11-Month Average	**2,016**	**1,280**	**929**	**1,595**	**224**	**866**	**323**	**1,232**	**7,536**
2017 11-Month Average	**1,124**	**1,379**	**906**	**1,394**	**185**	**723**	**312**	**1,189**	**6,305**

[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, other hydrocarbons and oxygenates, 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.

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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2019:** 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 January	270	809	333	102	323	1,120	155	252	124	89	2,067	5,645
February	317	827	611	249	379	980	306	306	159	93	2,233	6,461
March	312	794	387	193	323	883	268	291	128	187	2,288	6,054
April	405	885	452	191	377	909	152	192	251	167	2,297	6,277
May	393	957	384	166	249	887	320	125	197	170	2,383	6,232
June	414	936	272	211	256	1,087	292	237	175	184	2,188	6,252
July	410	980	208	140	316	1,125	269	188	137	195	2,324	6,291
August	415	824	354	239	264	1,022	167	162	179	152	1,889	5,665
September	476	872	531	235	463	1,074	261	174	240	175	1,789	6,289
October	492	655	773	264	393	1,133	312	278	150	211	2,426	7,086
November	444	999	499	217	390	1,377	194	143	257	316	2,308	7,144
December	391	918	576	200	468	1,365	322	182	116	288	2,309	7,136
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	465	871	147	446	645	1,187	619	48	309	365	3,001	8,104
February	339	1,143	171	458	333	1,251	455	208	604	345	3,147	8,453
March	567	925	150	694	523	1,294	349	140	515	284	2,556	7,996
April	422	1,135	75	599	553	1,231	464	136	458	293	3,123	8,488
May	465	959	291	463	614	994	312	133	508	370	3,111	8,220
June	575	841	361	438	527	1,042	509	94	760	274	3,311	8,732
July	461	926	287	263	628	[a] 1,205	365	80	734	269	2,868	8,085
August	460	1,019	325	422	617	1,072	370	51	615	383	3,177	8,511
September	585	1,009	291	386	664	1,073	478	178	630	300	3,163	8,757
9-Month Average	**483**	**979**	**234**	**463**	**569**	**1,149**	**435**	**117**	**570**	**321**	**3,048**	**8,368**
2018 9-Month Average	**373**	**1,050**	**458**	**280**	**393**	**1,161**	**298**	**194**	**311**	**258**	**2,626**	**7,401**
2017 9-Month Average	**379**	**876**	**390**	**191**	**327**	**1,010**	**243**	**213**	**176**	**157**	**2,162**	**6,124**

[a] The July 2019 value for U.S. petroleum exports to Mexico incorrectly includes 17 thousand barrels per day of crude oil, which should be 0. The U.S. Energy Information Administration will revise the incorrect data in the 2019 *Petroleum Supply Annual* (currently scheduled for release in August 2020) and in the following month's *Monthly Energy Review.* See "Notice about petroleum export data from Census" at https://www.eia.gov/petroleum/supply/monthly/notice.php.

NA=Not available. – =No data reported.

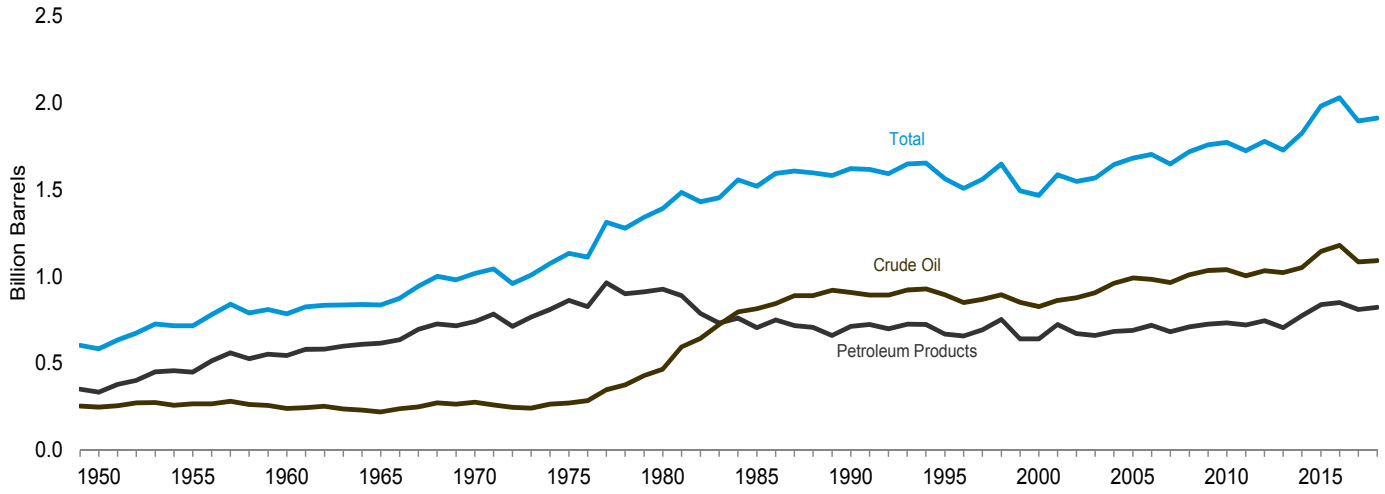
Notes: • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

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.

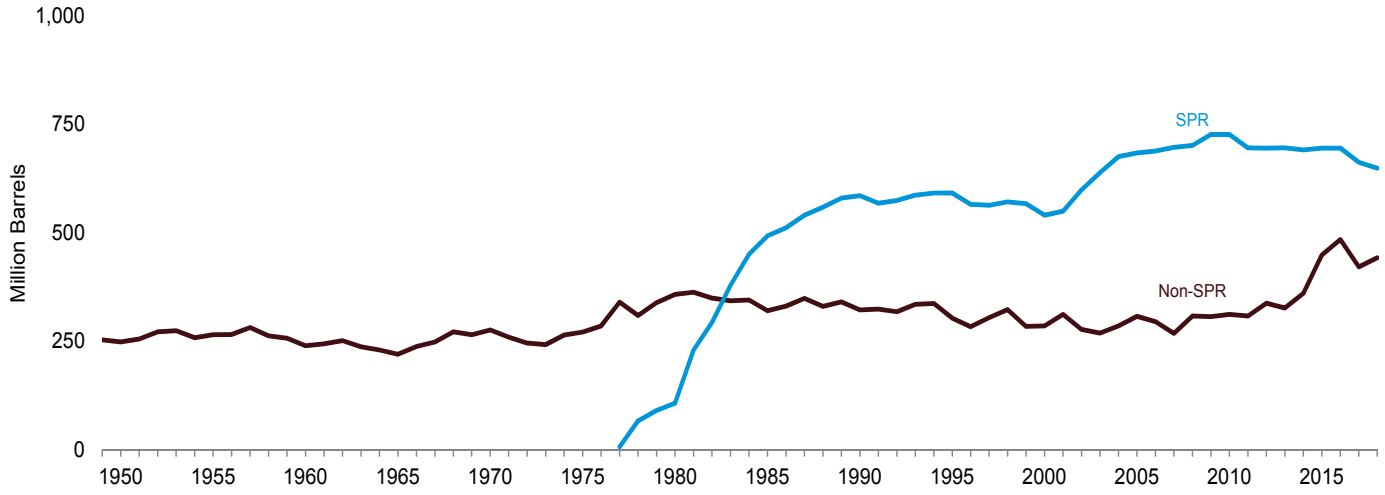
Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports. • **2019:** EIA, *Petroleum Supply Monthly,* monthly reports.

Figure 3.4 Petroleum Stocks

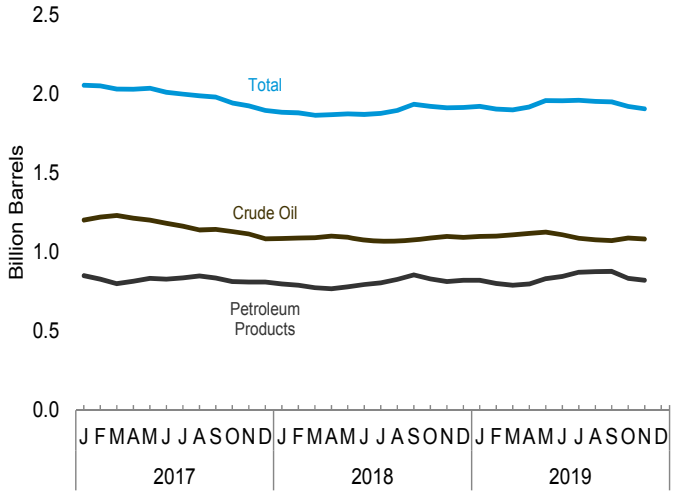
Overview, 1949–2018



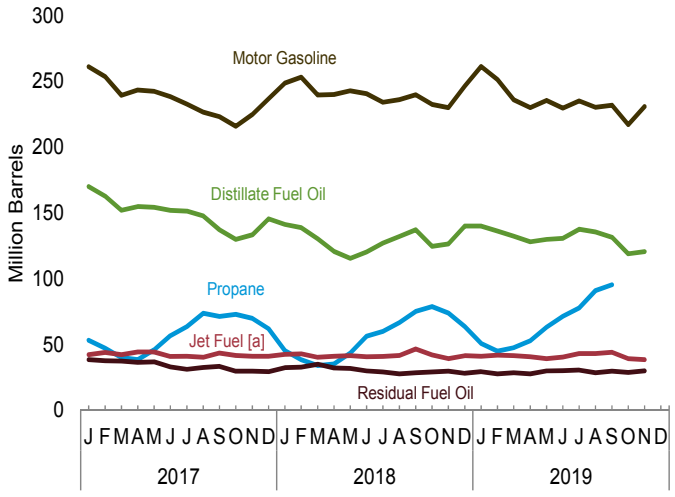
SPR and Non-SPR Crude Oil Stocks, 1949–2018



Overview, Monthly



Selected Products, Monthly



[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]			Distillate Fuel Oil[e]	Hydrocarbon Gas Liquids				Jet Fuel[h]	Motor Gasoline[i]	Residual Fuel Oil	Other[j]	Total
					Propane/Propylene								
	SPR[b]	Non-SPR[c,d]	Total[d]		Propane	Propy-lene	Total[f]	Total[g]					
1950 Year	**– –**	**248**	**248**	**72**	**NA**	**NA**	**NA**	**2**	**([h])**	**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**	**4**	**49**	**120**	**43**	**219**	**41**	**145**	**1,772**
2011 Year	**696**	**308**	**1,004**	**149**	**48**	**7**	**55**	**127**	**41**	**223**	**34**	**146**	**1,725**
2012 Year	**695**	**338**	**1,033**	**135**	**63**	**5**	**68**	**152**	**40**	**231**	**34**	**154**	**1,779**
2013 Year	**696**	**327**	**1,023**	**128**	**40**	**5**	**45**	**125**	**37**	**228**	**38**	**149**	**1,728**
2014 Year	**691**	**361**	**1,052**	**136**	**72**	**6**	**78**	**174**	**38**	**240**	**34**	**151**	**1,825**
2015 Year	**695**	**449**	**1,144**	**161**	**91**	**5**	**96**	**194**	**40**	**235**	**42**	**164**	**1,982**
2016 Year	**695**	**485**	**1,180**	**166**	**77**	**7**	**84**	**200**	**43**	**239**	**41**	**161**	**2,030**
2017 January	695	507	1,202	170	53	6	59	165	43	261	39	174	2,053
February	695	525	1,220	163	47	3	51	154	44	254	38	177	2,049
March	692	539	1,230	152	40	4	44	148	42	240	38	181	2,030
April	689	524	1,213	155	38	4	43	153	45	244	37	182	2,028
May	684	517	1,201	154	46	4	50	170	44	242	37	184	2,034
June	679	502	1,181	152	57	4	61	190	41	238	33	175	2,010
July	679	483	1,162	151	64	5	68	206	41	233	31	174	1,998
August	679	460	1,139	148	74	5	79	230	40	227	33	171	1,987
September	674	470	1,143	137	71	5	76	229	44	223	34	168	1,978
October	669	460	1,129	130	73	5	78	231	42	216	30	164	1,941
November	661	453	1,114	133	70	5	75	216	41	225	30	163	1,923
December	**663**	**422**	**1,084**	**146**	**62**	**5**	**67**	**190**	**41**	**237**	**29**	**167**	**1,895**
2018 January	664	421	1,085	141	45	5	50	156	43	249	32	177	1,883
February	665	424	1,089	139	39	5	43	141	43	253	33	181	1,879
March	665	425	1,090	130	34	4	38	139	40	240	35	190	1,864
April	664	437	1,101	121	35	4	39	145	41	240	32	188	1,868
May	660	434	1,094	116	44	4	48	162	42	243	32	185	1,873
June	660	415	1,075	121	57	4	60	181	41	241	30	181	1,869
July	660	410	1,070	127	60	4	64	196	41	234	29	177	1,875
August	660	408	1,068	132	67	4	70	214	42	236	28	174	1,894
September	660	417	1,077	137	75	4	79	225	47	240	29	178	1,933
October	655	434	1,089	125	79	5	84	225	42	233	29	176	1,919
November	650	449	1,099	127	74	6	80	209	39	230	30	178	1,912
December	**649**	**443**	**1,092**	**140**	**64**	**7**	**71**	**189**	**42**	**247**	**28**	**176**	**1,913**
2019 January	649	449	1,098	140	51	7	58	166	41	261	29	184	1,920
February	649	452	1,101	136	45	8	53	155	42	251	28	189	1,902
March	649	459	1,108	132	48	8	56	163	42	236	29	188	1,898
April	649	469	1,117	128	53	8	61	179	41	230	28	192	1,916
May	645	480	1,125	130	63	7	70	206	39	236	30	191	1,957
June	645	464	1,109	131	72	7	78	229	41	230	30	186	1,955
July	645	442	1,087	138	78	6	84	241	43	235	31	185	1,959
August	645	431	1,076	136	91	6	97	260	43	230	29	178	1,952
September	645	R 426	R 1,071	R 132	R 96	R 7	R 103	R 267	44	R 232	30	R 173	R 1,949
October	E 641	E 447	E 1,088	E 119	NA	NA	E 100	F 259	E 39	E 217	E 29	E 169	E 1,920
November	E 635	E 447	E 1,082	E 121	NA	NA	E 92	F 238	E 39	E 231	E 30	E 163	E 1,904

[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] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."
[g] 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.
[h] 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.")
[i] Includes finished motor gasoline and motor gasoline blending components; excludes oxygenates. Through 1963, also includes aviation gasoline and special naphthas.
[j] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, miscellaneous products, oxygenates, renewable fuels, and other hydrocarbons. 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. – – =Not applicable.

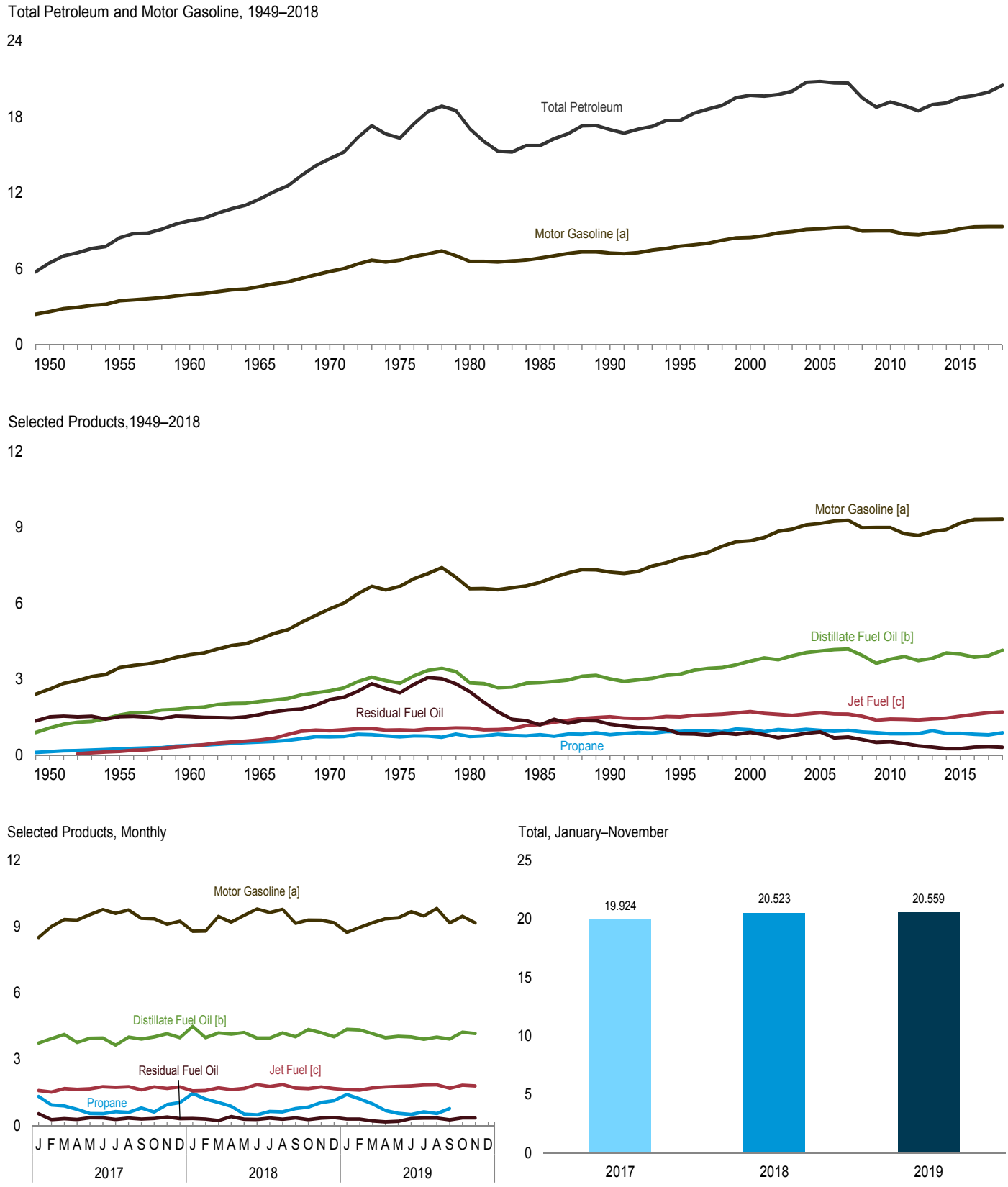
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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. • **1981–2018:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2019:** 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: Propane/Propylene: Propane	Propylene	Total[b]	Total[c]	Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
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**	**308**	**1,160**	**2,265**	**1,432**	**20**	**131**	**8,993**	**376**	**535**	**1,251**	**19,180**
2011 Average	**355**	**15**	**3,899**	**851**	**301**	**1,153**	**2,241**	**1,425**	**12**	**125**	**8,753**	**361**	**461**	**1,240**	**18,887**
2012 Average	**340**	**14**	**3,741**	**862**	**312**	**1,175**	**2,297**	**1,398**	**5**	**114**	**8,682**	**360**	**369**	**1,165**	**18,487**
2013 Average	**323**	**12**	**3,827**	**969**	**307**	**1,275**	**2,501**	**1,434**	**5**	**121**	**8,843**	**354**	**319**	**1,227**	**18,967**
2014 Average	**327**	**12**	**4,037**	**870**	**297**	**1,167**	**2,442**	**1,470**	**9**	**126**	**8,921**	**347**	**257**	**1,151**	**19,100**
2015 Average	**343**	**11**	**3,995**	**865**	**297**	**1,162**	**2,552**	**1,548**	**6**	**138**	**9,178**	**349**	**259**	**1,153**	**19,534**
2016 Average	**351**	**11**	**3,877**	**833**	**297**	**1,130**	**2,536**	**1,614**	**9**	**130**	**9,317**	**345**	**326**	**1,170**	**19,687**
2017 January	183	9	3,736	1,320	333	1,653	3,049	1,588	24	136	8,507	419	540	1,133	19,323
February	242	9	3,935	935	371	1,306	2,655	1,517	9	128	9,008	229	279	1,180	19,190
March	260	10	4,127	892	313	1,205	2,729	1,676	2	143	9,325	180	319	1,288	20,060
April	316	11	3,763	737	308	1,044	2,524	1,644	2	128	9,295	292	283	1,338	19,595
May	367	12	3,955	548	331	879	2,451	1,669	3	131	9,550	345	357	1,227	20,066
June	475	17	3,964	544	306	850	2,479	1,762	2	120	9,772	278	349	1,345	20,561
July	443	13	3,642	637	298	935	2,588	1,734	1	116	9,595	451	287	1,251	20,119
August	543	14	4,004	604	278	882	2,249	1,762	1	92	9,752	294	346	1,195	20,251
September	444	10	3,921	802	269	1,071	2,347	1,627	14	114	9,378	346	302	1,137	19,641
October	411	9	4,011	618	315	933	2,614	1,751	1	123	9,357	174	323	1,214	19,990
November	308	11	4,157	956	317	1,273	2,902	1,685	3	122	9,110	395	394	1,219	20,307
December	209	12	3,975	1,048	338	1,385	3,118	1,756	1	94	9,247	384	314	1,214	20,323
Average	**351**	**11**	**3,932**	**803**	**314**	**1,117**	**2,643**	**1,682**	**5**	**121**	**9,327**	**316**	**342**	**1,228**	**19,958**
2018 January	158	10	4,491	1,461	312	1,773	3,517	1,568	35	105	8,788	339	323	1,211	20,545
February	203	7	3,979	1,207	298	1,505	3,143	1,590	3	135	8,796	198	299	1,326	19,679
March	278	13	4,196	1,049	331	1,380	3,119	1,706	6	132	9,465	292	236	1,313	20,756
April	225	12	4,139	879	286	1,165	2,861	1,630	3	122	9,206	304	408	1,126	20,037
May	385	12	4,209	524	307	831	2,578	1,685	8	103	9,515	305	296	1,153	20,247
June	476	14	3,959	488	328	816	2,624	1,857	2	131	9,797	353	280	1,295	20,790
July	460	16	3,963	648	305	953	2,854	1,773	2	128	9,640	323	346	1,177	20,682
August	507	15	4,196	625	316	941	2,905	1,858	2	134	9,778	440	292	1,232	21,358
September	385	9	4,022	771	301	1,072	2,900	1,704	(s)	99	9,153	402	349	1,060	20,083
October	410	16	4,348	838	263	1,101	2,925	1,675	1	107	9,294	414	273	1,271	20,734
November	247	7	4,204	1,047	300	1,348	3,297	1,756	1	118	9,290	270	342	1,213	20,747
December	182	12	4,019	1,137	301	1,438	3,356	1,676	1	91	9,179	269	367	1,150	20,303
Average	**327**	**12**	**4,146**	**888**	**304**	**1,192**	**3,007**	**1,707**	**5**	**117**	**9,329**	**327**	**318**	**1,210**	**20,504**
2019 January	206	11	4,355	1,405	300	1,705	3,671	1,629	26	113	8,743	286	304	1,109	20,452
February	193	9	4,331	1,215	269	1,484	3,582	1,603	16	97	8,963	126	301	973	20,194
March	238	12	4,155	985	280	1,265	3,202	1,709	4	67	9,174	323	217	1,103	20,204
April	314	11	3,980	689	300	989	2,893	1,750	2	168	9,356	237	169	1,231	20,112
May	369	16	4,041	559	332	891	2,748	1,781	1	109	9,401	326	196	1,271	20,259
June	409	15	4,011	504	306	810	2,738	1,799	(s)	105	9,674	392	326	1,134	20,604
July	512	19	3,907	625	323	948	3,003	1,840	1	131	9,484	404	341	1,099	20,742
August	505	12	4,002	548	291	839	2,790	1,847	(s)	111	9,821	347	341	1,286	21,062
September	R 488	R 14	R 3,915	R 776	R 270	R 1,047	R 3,050	R 1,690	5	R 100	R 9,169	R 289	R 270	R 1,232	R 20,221
October	F 411	RF 12	E 4,229	NA	NA	E 1,107	RF 3,286	E 1,829	RF 6	RF 126	E 9,468	F 266	E 353	RE 1,234	E 21,220
November	F 300	F 6	E 4,170	NA	NA	E 1,425	F 3,648	E 1,794	F 4	F 128	E 9,167	F 279	E 353	E 1,190	E 21,040
11-Month Average	**E 360**	**E 13**	**E 4,098**	**NA**	**NA**	**E 1,135**	**E 3,143**	**E 1,753**	**E 6**	**E 114**	**E 9,314**	**E 299**	**E 288**	**E 1,171**	**E 20,559**
2018 11-Month Average	**341**	**12**	**4,158**	**865**	**304**	**1,169**	**2,974**	**1,710**	**6**	**119**	**9,343**	**332**	**313**	**1,215**	**20,523**
2017 11-Month Average	**364**	**11**	**3,928**	**780**	**312**	**1,092**	**2,599**	**1,675**	**6**	**123**	**9,334**	**310**	**344**	**1,230**	**19,924**

[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.

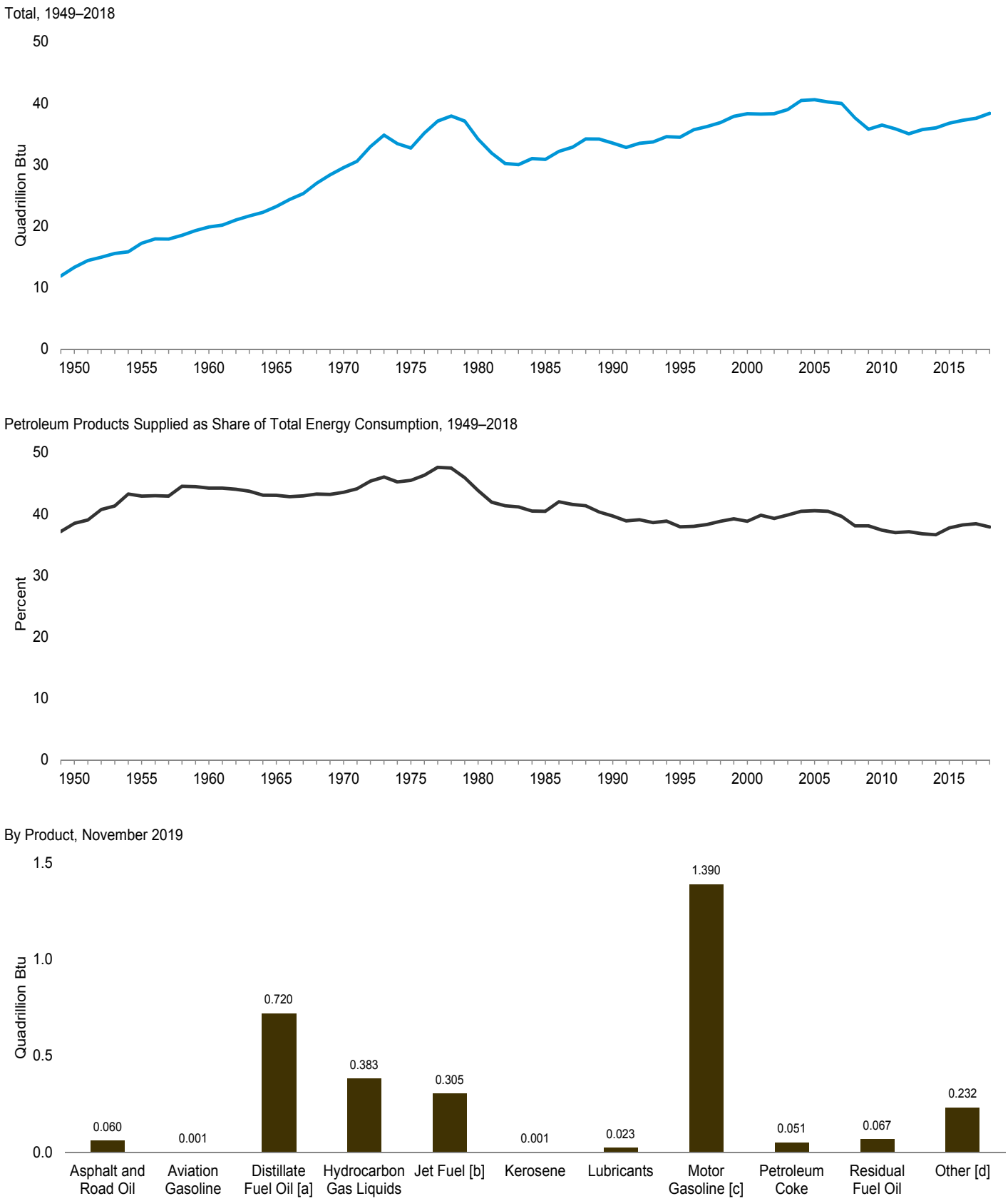
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

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**	**431**	**1,625**	**2,885**	**2,963**	**41**	**291**	**16,632**	**831**	**1,228**	**2,645**	**36,431**
2011 Total	**859**	**27**	**8,211**	**1,194**	**422**	**1,615**	**2,799**	**2,950**	**25**	**276**	**16,175**	**801**	**1,058**	**2,621**	**35,803**
2012 Total	**827**	**25**	**7,898**	**1,212**	**438**	**1,651**	**2,893**	**2,901**	**11**	**254**	**16,085**	**802**	**849**	**2,474**	**35,018**
2013 Total	**783**	**22**	**8,051**	**1,358**	**429**	**1,787**	**3,166**	**2,969**	**11**	**268**	**16,332**	**786**	**731**	**2,583**	**35,703**
2014 Total	**793**	**22**	**8,492**	**1,219**	**416**	**1,635**	**3,066**	**3,042**	**19**	**280**	**16,473**	**772**	**590**	**2,430**	**35,977**
2015 Total	**832**	**21**	**8,402**	**1,212**	**416**	**1,628**	**3,224**	**3,204**	**13**	**305**	**16,941**	**776**	**595**	**2,435**	**36,748**
2016 Total	**853**	**20**	**8,170**	**1,171**	**417**	**1,588**	**3,178**	**3,350**	**18**	**289**	**17,238**	**771**	**751**	**2,553**	**37,192**
2017 January	38	1	667	157	40	197	328	279	4	26	1,333	80	105	209	3,070
February	45	1	635	101	40	140	252	241	1	22	1,274	39	49	196	2,756
March	53	2	737	106	37	143	291	295	(s)	27	1,461	34	62	237	3,198
April	63	2	650	85	35	120	259	280	(s)	23	1,409	54	53	239	3,031
May	75	2	706	65	39	105	256	293	1	25	1,496	66	69	226	3,215
June	95	3	684	63	35	98	247	300	(s)	22	1,481	51	66	240	3,188
July	91	2	650	76	35	111	272	305	(s)	22	1,503	86	56	231	3,218
August	112	2	714	72	33	105	235	310	(s)	17	1,528	56	67	221	3,262
September	88	1	677	92	31	123	241	277	2	21	1,422	64	57	204	3,054
October	85	1	716	74	37	111	277	308	(s)	23	1,466	33	63	224	3,196
November	61	2	718	110	36	147	295	287	1	22	1,381	73	74	217	3,131
December	43	2	710	125	40	165	328	309	(s)	18	1,448	73	61	224	3,216
Total	**849**	**21**	**8,263**	**1,126**	**440**	**1,566**	**3,280**	**3,481**	**11**	**267**	**17,201**	**708**	**784**	**2,667**	**37,533**
2018 January	32	1	802	174	37	211	375	276	6	20	1,377	64	63	223	3,240
February	38	1	642	130	32	162	303	252	(s)	23	1,245	34	53	220	2,811
March	57	2	749	125	39	164	324	300	1	25	1,483	55	46	242	3,284
April	45	2	715	101	33	134	285	277	1	22	1,396	56	77	201	3,077
May	79	2	751	62	36	99	266	296	1	19	1,491	58	58	213	3,235
June	95	2	684	56	38	94	261	316	(s)	24	1,485	65	53	232	3,217
July	95	3	707	77	36	113	296	312	(s)	24	1,510	61	67	218	3,293
August	104	2	749	74	38	112	303	327	(s)	25	1,532	84	57	228	3,410
September	77	1	695	89	35	123	293	290	(s)	18	1,388	74	66	190	3,091
October	84	3	776	100	31	131	308	294	(s)	20	1,456	79	53	233	3,307
November	49	1	726	121	35	155	339	299	(s)	21	1,409	50	65	217	3,175
December	37	2	718	135	36	171	357	295	(s)	17	1,438	51	72	213	3,200
Total	**793**	**22**	**8,715**	**1,245**	**426**	**1,670**	**3,710**	**3,533**	**11**	**259**	**17,209**	**730**	**729**	**2,630**	**38,341**
2019 January	42	2	778	167	36	203	394	286	5	21	1,370	54	59	205	3,216
February	36	1	699	131	29	160	341	255	3	16	1,268	22	53	163	2,856
March	49	2	742	117	33	151	336	300	1	13	1,437	61	42	204	3,188
April	63	2	688	79	35	114	290	298	(s)	31	1,419	44	32	220	3,084
May	76	2	721	67	39	106	285	313	(s)	21	1,473	62	38	234	3,226
June	81	2	693	58	35	93	279	306	(s)	19	1,467	72	62	203	3,184
July	105	3	697	74	38	113	318	323	(s)	25	1,486	77	66	204	3,304
August	104	2	714	65	35	100	296	325	(s)	21	1,539	66	66	237	3,370
September	R 97	R 2	R 676	R 89	R 31	R 121	R 312	R 287	1	R 18	R 1,390	R 53	R 51	R 219	R 3,108
October	F 85	F 2	E 755	NA	NA	E 132	RF 359	E 321	F 1	RF 24	E 1,483	F 50	E 69	RE 221	E 3,370
November	F 60	F 1	E 720	NA	NA	E 164	F 383	E 305	F 1	F 23	E 1,390	F 51	E 67	E 232	E 3,234
11-Month Total	E **798**	E **21**	E **7,883**	**NA**	**NA**	E **1,456**	E **3,593**	E **3,320**	E **11**	E **231**	E **15,722**	E **612**	E **605**	E **2,342**	E **35,139**
2018 11-Month Total	**755**	**20**	**7,997**	**1,109**	**390**	**1,499**	**3,352**	**3,238**	**11**	**242**	**15,771**	**679**	**657**	**2,417**	**35,141**
2017 11-Month Total	**806**	**19**	**7,554**	**1,001**	**400**	**1,401**	**2,952**	**3,173**	**11**	**249**	**15,753**	**635**	**723**	**2,443**	**34,318**

[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.

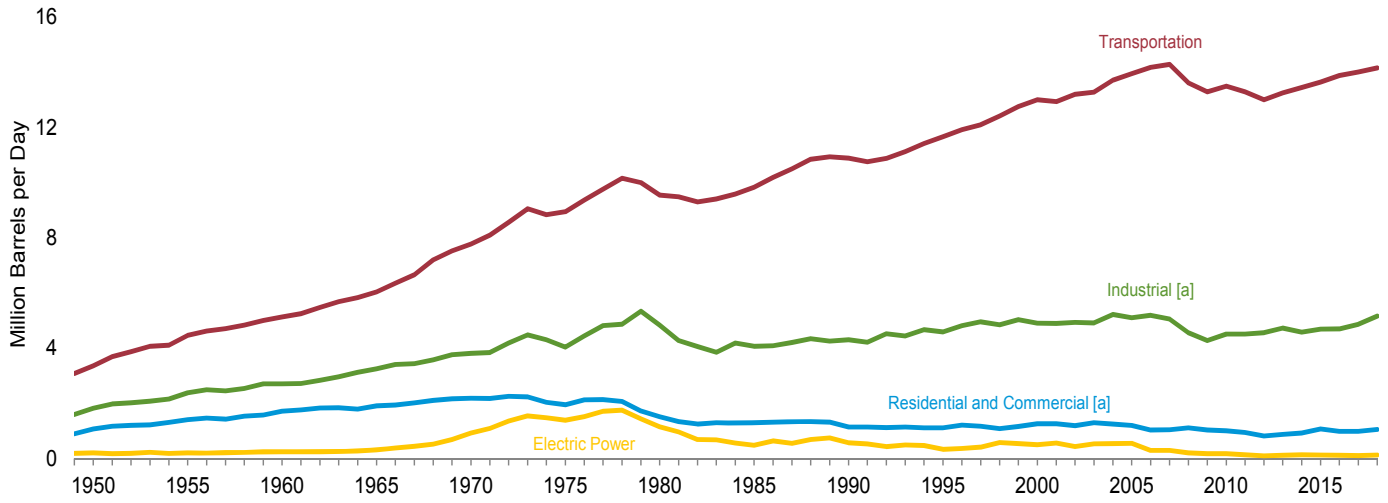
Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent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

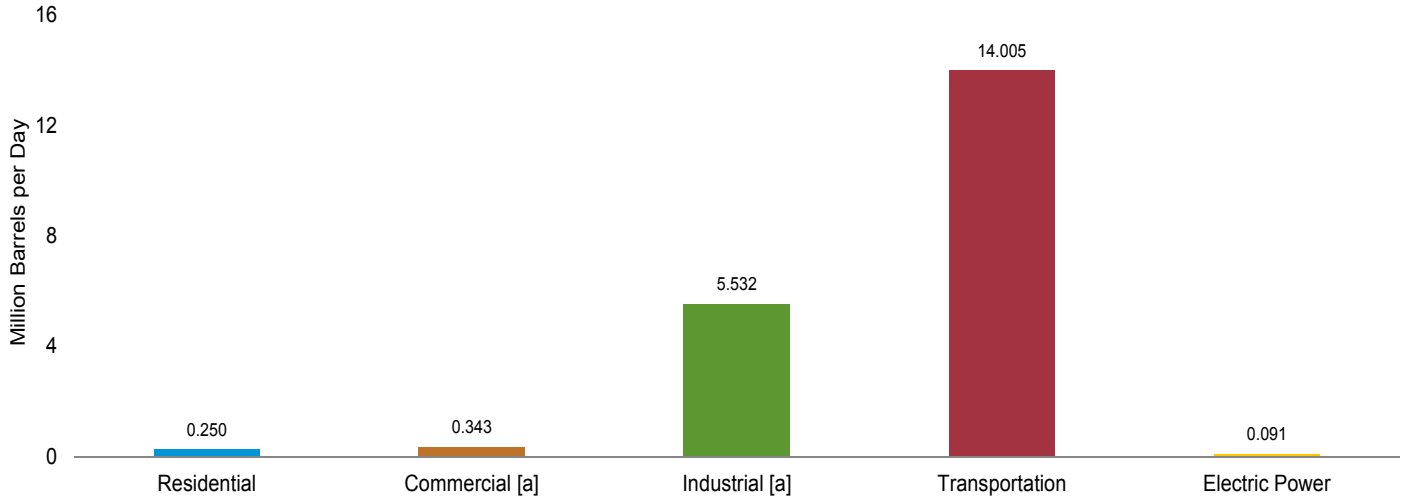
Sources: See end of section.

Figure 3.7 Petroleum Consumption by Sector

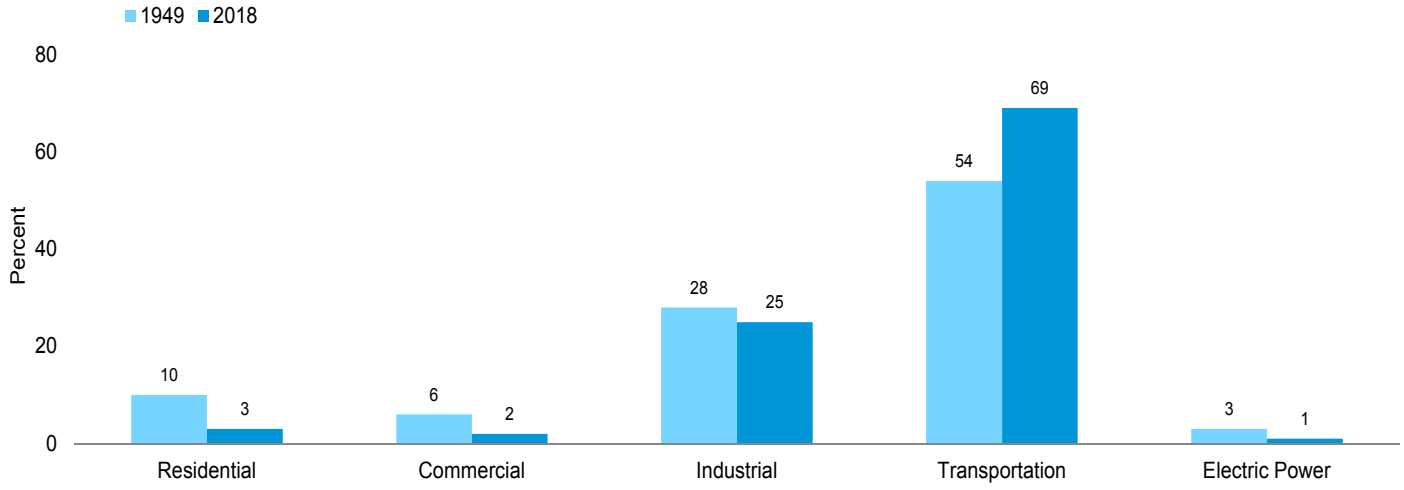
By Sector, 1949–2018



By Sector, September 2019



Sector Shares, 1949 and 2018



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

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 January	332	578	19	929	248	179	3	178	(s)	3	611
February	273	480	7	760	204	154	1	189	(s)	2	550
March	232	441	2	674	173	144	(s)	196	(s)	2	516
April	192	265	2	458	143	100	(s)	195	(s)	2	440
May	133	202	2	337	99	85	(s)	200	(s)	1	386
June	165	123	1	289	123	65	(s)	205	(s)	1	394
July	101	111	(s)	212	76	62	(s)	201	(s)	1	340
August	132	117	1	249	98	63	(s)	205	(s)	1	368
September	132	136	11	279	99	68	2	197	(s)	1	367
October	168	226	1	395	125	91	(s)	196	(s)	1	414
November	259	419	3	680	193	139	(s)	191	(s)	2	526
December	350	598	1	948	261	184	(s)	194	(s)	3	642
Average	**205**	**307**	**4**	**517**	**153**	**111**	**1**	**196**	**(s)**	**2**	**462**
2018 January	416	679	27	1,122	310	209	4	184	(s)	3	711
February	296	552	2	850	221	177	(s)	184	(s)	2	585
March	222	500	5	727	166	164	1	199	(s)	2	531
April	212	385	2	600	158	135	(s)	193	(s)	2	489
May	126	175	6	307	94	82	1	200	0	1	378
June	101	139	1	241	75	73	(s)	205	0	1	355
July	91	124	2	217	68	70	(s)	202	0	1	341
August	77	126	2	205	58	70	(s)	205	0	1	334
September	110	146	(s)	256	82	75	(s)	192	(s)	1	350
October	228	279	1	508	170	108	(s)	195	(s)	2	476
November	304	503	1	808	227	164	(s)	195	(s)	2	589
December	403	576	1	980	301	183	(s)	193	(s)	3	679
Average	**215**	**348**	**4**	**567**	**161**	**126**	**1**	**196**	**(s)**	**2**	**484**
2019 January	369	656	20	1,045	275	203	3	183	(s)	3	667
February	340	617	13	970	254	193	2	188	(s)	2	639
March	272	514	3	789	203	167	(s)	192	(s)	2	565
April	180	307	1	488	135	115	(s)	196	(s)	1	448
May	137	220	1	358	102	94	(s)	197	0	1	394
June	119	144	(s)	263	89	75	(s)	203	0	1	367
July	111	125	1	237	83	70	(s)	199	0	1	353
August	R 170	128	(s)	R 298	R 127	71	(s)	206	0	1	R 405
September	99	147	4	250	74	76	1	192	0	1	343
9-Month Average	**199**	**316**	**5**	**519**	**148**	**118**	**1**	**195**	**(s)**	**1**	**464**
2018 9-Month Average	**183**	**312**	**5**	**501**	**136**	**117**	**1**	**196**	**(s)**	**1**	**452**
2017 9-Month Average	**187**	**271**	**5**	**463**	**140**	**102**	**1**	**196**	**(s)**	**2**	**440**

[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**	**308**	**677**	**1,782**	**4**	**61**	**140**	**310**	**52**	**1,251**	**4,510**
2011 Average	**355**	**586**	**393**	**301**	**694**	**1,783**	**2**	**58**	**138**	**295**	**59**	**1,240**	**4,515**
2012 Average	**340**	**602**	**480**	**312**	**792**	**1,915**	**1**	**53**	**136**	**319**	**30**	**1,165**	**4,562**
2013 Average	**323**	**601**	**525**	**307**	**831**	**2,058**	**1**	**57**	**142**	**295**	**21**	**1,227**	**4,724**
2014 Average	**327**	**648**	**401**	**297**	**698**	**1,974**	**1**	**59**	**114**	**290**	**18**	**1,151**	**4,582**
2015 Average	**343**	**555**	**437**	**297**	**734**	**2,124**	**1**	**64**	[e] **140**	**295**	**15**	**1,153**	**4,689**
2016 Average	**351**	**548**	**416**	**297**	**712**	**2,119**	**1**	**61**	**142**	**289**	**23**	**1,170**	**4,702**
2017 January	183	539	558	333	891	2,286	2	64	131	360	34	1,133	4,732
February	242	652	297	371	667	2,017	1	60	138	180	17	1,180	4,486
March	260	748	302	313	615	2,139	(s)	67	143	139	21	1,288	4,804
April	316	477	367	308	674	2,154	(s)	60	143	265	18	1,338	4,771
May	367	610	256	331	588	2,160	(s)	61	147	293	22	1,227	4,887
June	475	519	351	306	657	2,286	(s)	56	150	221	22	1,345	5,074
July	443	370	460	298	758	2,410	(s)	54	147	397	18	1,251	5,090
August	543	547	418	278	697	2,064	(s)	43	150	247	21	1,195	4,811
September	444	590	593	269	862	2,138	1	54	144	301	19	1,137	4,829
October	411	616	296	315	611	2,292	(s)	58	144	138	20	1,214	4,894
November	308	695	393	317	710	2,339	(s)	57	140	347	28	1,219	5,134
December	209	509	262	338	599	2,331	(s)	44	142	337	21	1,214	4,808
Average	**351**	**572**	**380**	**314**	**694**	**2,220**	**1**	**56**	**143**	**269**	**22**	**1,228**	**4,862**
2018 January	158	758	568	312	880	2,624	4	49	135	279	18	1,211	5,235
February	203	584	473	298	771	2,409	(s)	63	135	144	19	1,326	4,883
March	278	727	380	331	711	2,450	1	62	145	252	15	1,313	5,242
April	225	603	353	286	639	2,335	(s)	57	141	259	25	1,126	4,772
May	385	688	261	307	568	2,315	1	48	146	272	18	1,153	5,025
June	476	496	271	328	599	2,407	(s)	61	151	300	17	1,295	5,204
July	460	490	449	305	754	2,655	(s)	60	148	265	20	1,177	5,274
August	507	634	423	316	739	2,703	(s)	63	150	384	18	1,232	5,690
September	385	593	544	301	845	2,674	(s)	46	141	349	20	1,060	5,267
October	410	675	444	263	708	2,531	(s)	50	143	378	18	1,271	5,477
November	247	596	374	300	675	2,624	(s)	55	143	226	22	1,213	5,126
December	182	418	372	301	673	2,592	(s)	43	141	218	23	1,150	4,766
Average	**327**	**606**	**409**	**304**	**713**	**2,528**	**1**	**55**	**143**	**278**	**19**	**1,210**	**5,167**
2019 January	206	807	541	300	841	2,807	3	53	134	233	18	1,109	5,370
February	193	752	399	269	668	2,767	2	45	138	76	18	973	4,963
March	238	650	298	280	578	2,515	(s)	32	141	280	14	1,103	4,972
April	314	543	262	300	561	2,466	(s)	79	144	207	11	1,231	4,994
May	369	577	239	332	571	2,429	(s)	51	144	279	12	1,271	5,133
June	409	511	281	306	587	2,514	(s)	49	149	356	20	1,134	5,142
July	512	434	424	323	747	2,802	(s)	61	146	356	20	1,099	5,431
August	505	R 417	344	291	635	2,586	(s)	52	151	303	20	1,286	R 5,321
September	488	540	548	270	818	2,821	(s)	47	141	247	16	1,232	5,532
9-Month Average	**361**	**580**	**370**	**297**	**667**	**2,633**	**1**	**52**	**143**	**262**	**16**	**1,161**	**5,209**
2018 9-Month Average	**343**	**620**	**413**	**310**	**723**	**2,509**	**1**	**57**	**144**	**279**	**19**	**1,209**	**5,181**
2017 9-Month Average	**364**	**561**	**401**	**311**	**712**	**2,186**	**1**	**58**	**144**	**268**	**21**	**1,233**	**4,835**

[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 January	9	2,588	5	1,588	72	8,198	476	12,936	30	58	28	116
February	9	2,781	5	1,517	68	8,680	234	13,295	25	49	26	99
March	10	2,948	5	1,676	76	8,986	273	13,975	26	41	24	91
April	11	2,930	5	1,644	68	8,957	239	13,853	21	27	24	72
May	12	3,088	5	1,669	70	9,203	307	14,353	25	52	26	104
June	17	3,134	5	1,762	64	9,417	296	14,694	23	57	30	110
July	13	3,074	5	1,734	62	9,247	242	14,375	22	54	26	101
August	14	3,206	5	1,762	49	9,397	294	14,727	20	47	30	97
September	10	3,078	5	1,627	61	9,037	254	14,071	22	45	27	95
October	9	3,079	5	1,751	65	9,017	274	14,201	23	36	27	86
November	11	2,985	5	1,685	65	8,779	341	13,872	24	47	24	96
December	12	2,806	5	1,756	50	8,911	239	13,779	50	46	51	147
Average	**11**	**2,976**	**5**	**1,682**	**64**	**8,988**	**290**	**14,016**	**26**	**47**	**29**	**101**
2018 January	10	2,837	6	1,568	56	8,468	184	13,129	169	60	118	348
February	7	2,854	6	1,590	72	8,477	254	13,259	24	54	23	101
March	13	3,057	6	1,706	70	9,121	199	14,172	23	40	21	84
April	12	3,139	6	1,630	65	8,871	359	14,082	26	45	24	94
May	12	3,271	6	1,685	55	9,169	251	14,449	30	33	25	89
June	14	3,257	6	1,857	70	9,441	233	14,878	30	54	29	113
July	16	3,290	6	1,773	68	9,290	297	14,740	23	58	28	110
August	15	3,402	6	1,858	71	9,423	244	15,018	25	56	30	111
September	9	3,213	6	1,704	53	8,820	295	14,099	24	53	33	110
October	16	3,249	6	1,675	57	8,956	226	14,185	25	36	28	89
November	7	3,047	6	1,756	63	8,953	293	14,125	30	44	25	99
December	12	2,871	6	1,676	49	8,845	319	13,778	27	51	22	100
Average	**12**	**3,126**	**6**	**1,707**	**62**	**8,990**	**263**	**14,165**	**38**	**49**	**34**	**121**
2019 January	11	2,868	6	1,629	60	8,425	250	13,249	36	52	34	122
February	9	2,961	6	1,603	51	8,637	259	13,527	24	50	21	95
March	12	3,008	6	1,709	36	8,841	181	13,793	22	42	20	84
April	11	3,101	6	1,750	90	9,016	137	14,111	20	30	21	71
May	16	3,201	6	1,781	58	9,059	159	14,279	24	47	24	96
June	15	3,267	6	1,799	56	9,323	279	14,744	25	35	27	88
July	19	3,255	6	1,840	70	9,139	291	14,620	24	48	29	101
August	12	R 3,264	6	1,847	59	9,464	288	R 14,939	24	44	31	99
September	14	3,180	6	1,690	53	8,836	226	14,005	22	42	27	91
9-Month Average	**13**	**3,124**	**6**	**1,740**	**59**	**8,974**	**230**	**14,146**	**25**	**43**	**26**	**94**
2018 9-Month Average	**12**	**3,149**	**6**	**1,709**	**64**	**9,014**	**257**	**14,212**	**42**	**50**	**37**	**129**
2017 9-Month Average	**12**	**2,982**	**5**	**1,666**	**65**	**9,016**	**292**	**14,037**	**24**	**48**	**27**	**98**

[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.

R=Revised. NA=Not available.

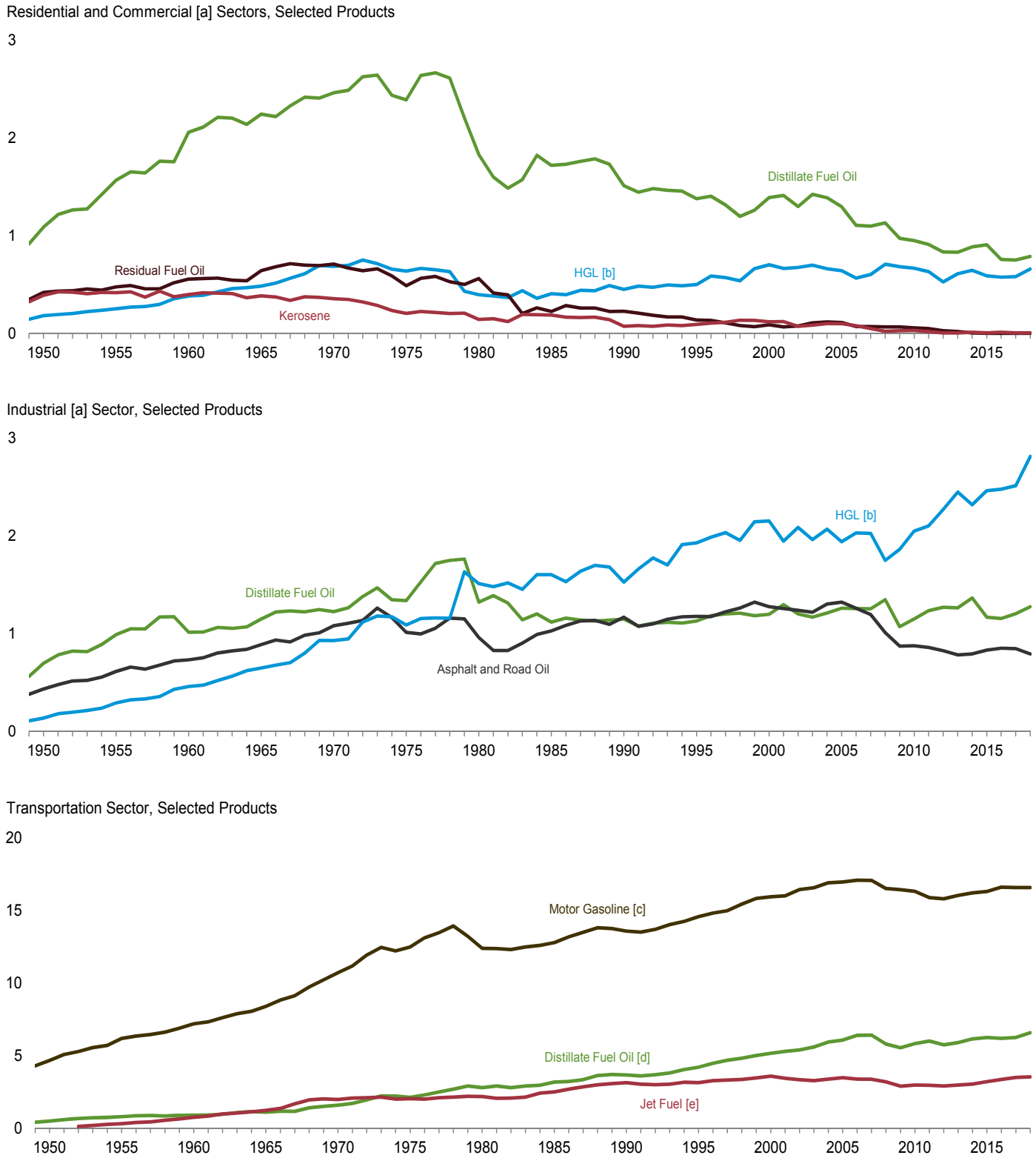
Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. 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, 1949-2018

(Quadrillion Btu)

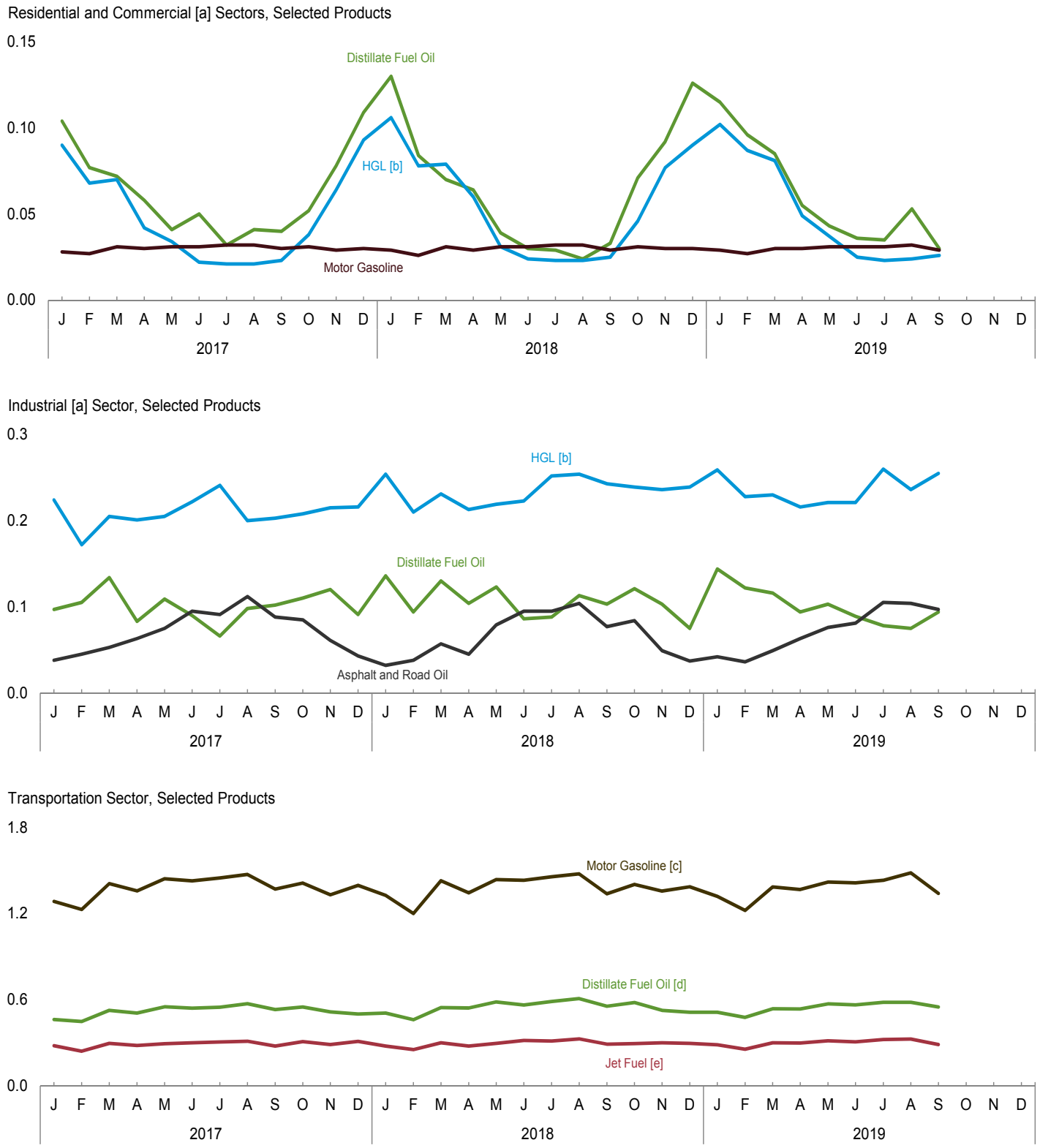


[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[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 January	59	69	3	131	44	21	(s)	28	(s)	1	95
February	44	52	1	97	33	17	(s)	27	(s)	(s)	77
March	41	52	(s)	94	31	17	(s)	31	(s)	(s)	79
April	33	31	(s)	64	25	12	(s)	30	(s)	(s)	66
May	24	24	(s)	48	18	10	(s)	31	(s)	(s)	59
June	29	14	(s)	43	21	7	(s)	31	(s)	(s)	60
July	18	13	(s)	31	14	7	(s)	32	(s)	(s)	53
August	24	14	(s)	38	18	8	(s)	32	(s)	(s)	57
September	23	16	2	40	17	8	(s)	30	(s)	(s)	55
October	30	27	(s)	57	22	11	(s)	31	(s)	(s)	64
November	45	48	(s)	93	33	16	(s)	29	(s)	(s)	79
December	63	71	(s)	134	47	22	(s)	30	(s)	1	100
Total	**432**	**431**	**8**	**871**	**323**	**156**	**1**	**361**	**(s)**	**4**	**845**
2018 January	74	81	5	160	56	25	1	29	(s)	1	111
February	48	59	(s)	108	36	19	(s)	26	(s)	(s)	81
March	40	60	1	100	30	19	(s)	31	(s)	(s)	81
April	37	44	(s)	82	27	16	(s)	29	(s)	(s)	73
May	22	21	1	44	17	10	(s)	31	0	(s)	58
June	17	16	(s)	34	13	8	(s)	31	0	(s)	53
July	16	15	(s)	31	12	8	(s)	32	0	(s)	52
August	14	15	(s)	29	10	8	(s)	32	0	(s)	51
September	19	17	(s)	36	14	9	(s)	29	(s)	(s)	52
October	41	33	(s)	74	30	13	(s)	31	(s)	(s)	74
November	53	58	(s)	111	39	19	(s)	30	(s)	(s)	88
December	72	69	(s)	141	54	22	(s)	30	(s)	1	106
Total	**454**	**487**	**9**	**950**	**339**	**176**	**1**	**361**	**(s)**	**4**	**881**
2019 January	66	78	4	148	49	24	1	29	(s)	1	103
February	55	66	2	123	41	21	(s)	27	(s)	(s)	89
March	49	61	1	110	36	20	(s)	30	(s)	(s)	87
April	31	35	(s)	67	23	13	(s)	30	(s)	(s)	67
May	24	26	(s)	51	18	11	(s)	31	0	(s)	61
June	21	17	(s)	37	15	9	(s)	31	0	(s)	55
July	20	15	(s)	35	15	8	(s)	31	0	(s)	55
August	[R] 30	15	(s)	[R] 46	[R] 23	8	(s)	32	0	(s)	[R] 64
September	17	17	1	35	13	9	(s)	29	0	(s)	51
9-Month Total	**313**	**331**	**7**	**652**	**234**	**123**	**1**	**269**	**(s)**	**2**	**630**
2018 9-Month Total	**288**	**327**	**8**	**624**	**215**	**122**	**1**	**271**	**(s)**	**2**	**612**
2017 9-Month Total	**295**	**284**	**8**	**587**	**220**	**107**	**1**	**271**	**(s)**	**3**	**602**

[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 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	Distil-late Fuel Oil	Pro-pane	Propy-lene	Total[b]	Total[c]	Kero-sene	Lubri-cants	Motor Gaso-line[d,e]	Petro-leum Coke	Resid-ual 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**	**431**	**948**	**2,208**	**7**	**136**	**260**	**694**	**120**	**2,645**	**8,100**
2011 Total	**859**	**1,236**	**551**	**422**	**973**	**2,157**	**4**	**127**	**254**	**663**	**135**	**2,621**	**8,056**
2012 Total	**827**	**1,271**	**674**	**438**	**1,113**	**2,355**	**2**	**118**	**252**	**717**	**70**	**2,474**	**8,086**
2013 Total	**783**	**1,266**	**736**	**429**	**1,165**	**2,544**	**1**	**125**	**263**	**663**	**48**	**2,583**	**8,278**
2014 Total	**793**	**1,366**	**562**	**416**	**978**	**2,409**	**3**	**131**	**210**	**653**	**41**	**2,430**	**8,035**
2015 Total	**832**	**1,170**	**612**	**416**	**1,028**	**2,624**	**2**	**142**	[e] **258**	**663**	**34**	**2,435**	**8,159**
2016 Total	**853**	**1,157**	**584**	**417**	**1,001**	**2,591**	**2**	**135**	**262**	**653**	**52**	**2,553**	**8,259**
2017 January	38	97	66	40	106	237	(s)	12	20	69	7	209	689
February	45	105	32	40	72	183	(s)	10	20	32	3	196	594
March	53	134	36	37	73	221	(s)	13	22	27	4	237	710
April	63	83	42	35	78	216	(s)	11	22	49	3	239	685
May	75	109	31	39	70	221	(s)	12	23	56	4	226	727
June	95	90	40	35	76	225	(s)	10	23	41	4	240	728
July	91	66	55	35	90	251	(s)	10	23	76	3	231	753
August	112	98	50	33	83	213	(s)	8	23	48	4	221	726
September	88	102	68	31	99	217	(s)	10	22	56	4	204	702
October	85	110	35	37	73	239	(s)	11	23	27	4	224	722
November	61	120	45	36	82	230	(s)	10	21	64	5	217	730
December	43	91	31	40	71	234	(s)	8	22	65	4	224	692
Total	**849**	**1,205**	**532**	**440**	**972**	**2,687**	**1**	**125**	**264**	**610**	**50**	**2,667**	**8,459**
2018 January	32	136	68	37	105	268	1	9	21	54	4	223	748
February	38	94	51	32	83	224	(s)	11	19	25	3	220	635
March	57	130	45	39	85	244	(s)	12	23	48	3	242	759
April	45	104	41	33	74	224	(s)	10	21	48	5	201	660
May	79	123	31	36	68	234	(s)	9	23	52	3	213	738
June	95	86	31	38	69	236	(s)	11	23	56	3	232	741
July	95	88	53	36	90	272	(s)	11	23	51	4	218	762
August	104	113	50	38	88	279	(s)	12	24	74	3	228	836
September	77	103	63	35	97	267	(s)	8	21	65	4	190	734
October	84	121	53	31	84	261	(s)	9	22	72	3	233	807
November	49	103	43	35	78	261	(s)	10	22	42	4	217	708
December	37	75	44	36	80	266	(s)	8	22	42	5	213	668
Total	**793**	**1,276**	**573**	**426**	**999**	**3,038**	**1**	**121**	**264**	**629**	**45**	**2,630**	**8,797**
2019 January	42	144	64	36	100	291	(s)	10	21	45	4	205	763
February	36	122	43	29	72	253	(s)	8	19	14	3	163	618
March	49	116	35	33	69	255	(s)	6	22	54	3	204	708
April	63	94	30	35	65	241	(s)	14	22	38	2	220	693
May	76	103	28	39	68	247	(s)	10	23	54	2	234	749
June	81	89	32	35	68	253	(s)	9	23	66	4	203	727
July	105	78	51	38	89	294	(s)	12	23	68	4	204	787
August	104	[R] 75	41	35	76	272	(s)	10	24	58	4	237	[R] 783
September	97	94	63	31	94	286	(s)	9	21	46	3	219	775
9-Month Total	**653**	**914**	**388**	**311**	**699**	**2,391**	**1**	**86**	**197**	**442**	**28**	**1,889**	**6,602**
2018 9-Month Total	**622**	**977**	**433**	**324**	**757**	**2,250**	**1**	**94**	**198**	**472**	**32**	**1,967**	**6,614**
2017 9-Month Total	**660**	**884**	**420**	**326**	**747**	**1,984**	**1**	**95**	**198**	**454**	**37**	**2,002**	**6,315**

[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 January	1	462	1	279	14	1,284	93	2,133	5	10	5	21
February	1	448	1	241	12	1,228	41	1,972	4	8	5	16
March	2	526	1	295	14	1,408	53	2,298	5	7	5	17
April	2	506	1	280	12	1,358	45	2,203	4	5	4	13
May	2	550	1	293	13	1,442	60	2,361	5	9	5	19
June	3	541	1	300	12	1,428	56	2,338	4	10	6	19
July	2	548	1	305	12	1,448	47	2,363	4	10	5	18
August	2	572	1	310	9	1,472	57	2,422	4	8	6	18
September	1	531	1	277	11	1,370	48	2,239	4	8	5	17
October	1	549	1	308	12	1,412	53	2,337	4	6	5	16
November	2	515	1	287	12	1,331	64	2,211	4	8	4	17
December	2	500	1	309	9	1,396	47	2,263	9	8	10	27
Total	**21**	**6,248**	**7**	**3,481**	**142**	**16,576**	**665**	**27,140**	**55**	**97**	**66**	**218**
2018 January	1	506	1	276	11	1,327	36	2,157	30	11	23	64
February	1	460	1	252	12	1,200	45	1,970	4	9	4	17
March	2	545	1	300	13	1,429	39	2,329	4	7	4	15
April	2	542	1	277	12	1,345	68	2,246	4	8	4	17
May	2	584	1	296	10	1,437	49	2,378	5	6	5	16
June	2	562	1	316	13	1,431	44	2,369	5	9	6	20
July	3	587	1	312	13	1,456	58	2,428	4	10	6	20
August	2	607	1	327	13	1,476	48	2,474	4	10	6	20
September	1	555	1	290	10	1,337	56	2,249	4	9	6	19
October	3	580	1	294	11	1,403	44	2,335	4	6	6	16
November	1	526	1	299	11	1,357	55	2,251	5	8	5	18
December	2	512	1	295	9	1,386	62	2,266	5	9	4	18
Total	**22**	**6,566**	**8**	**3,533**	**138**	**16,584**	**602**	**27,453**	**81**	**101**	**78**	**260**
2019 January	2	512	1	286	11	1,320	49	2,181	6	9	7	22
February	1	477	1	255	9	1,222	46	2,010	4	8	4	16
March	2	537	1	300	7	1,385	35	2,267	4	8	4	15
April	2	535	1	298	16	1,367	26	2,245	3	5	4	12
May	2	571	1	313	11	1,419	31	2,348	4	8	5	17
June	2	564	1	306	10	1,414	53	2,349	4	6	5	16
July	3	581	1	323	13	1,432	57	2,410	4	9	6	18
August	2	R 582	1	325	11	1,483	56	R 2,459	4	8	6	18
September	2	549	1	287	10	1,340	43	2,231	4	7	5	16
9-Month Total	**18**	**4,908**	**6**	**2,693**	**98**	**12,382**	**394**	**20,500**	**39**	**68**	**45**	**151**
2018 9-Month Total	**17**	**4,948**	**6**	**2,645**	**107**	**12,438**	**441**	**20,601**	**66**	**79**	**64**	**208**
2017 9-Month Total	**16**	**4,683**	**5**	**2,578**	**108**	**12,437**	**500**	**20,329**	**38**	**75**	**46**	**158**

[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.

R=Revised. 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.)

1981–2018: 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.)

2019: 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.)

1981–2018: 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.)

2019: 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.

1981–2018: EIA, *Petroleum Supply Annual* (PSA), annual reports, and unpublished revisions.

2019: 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.

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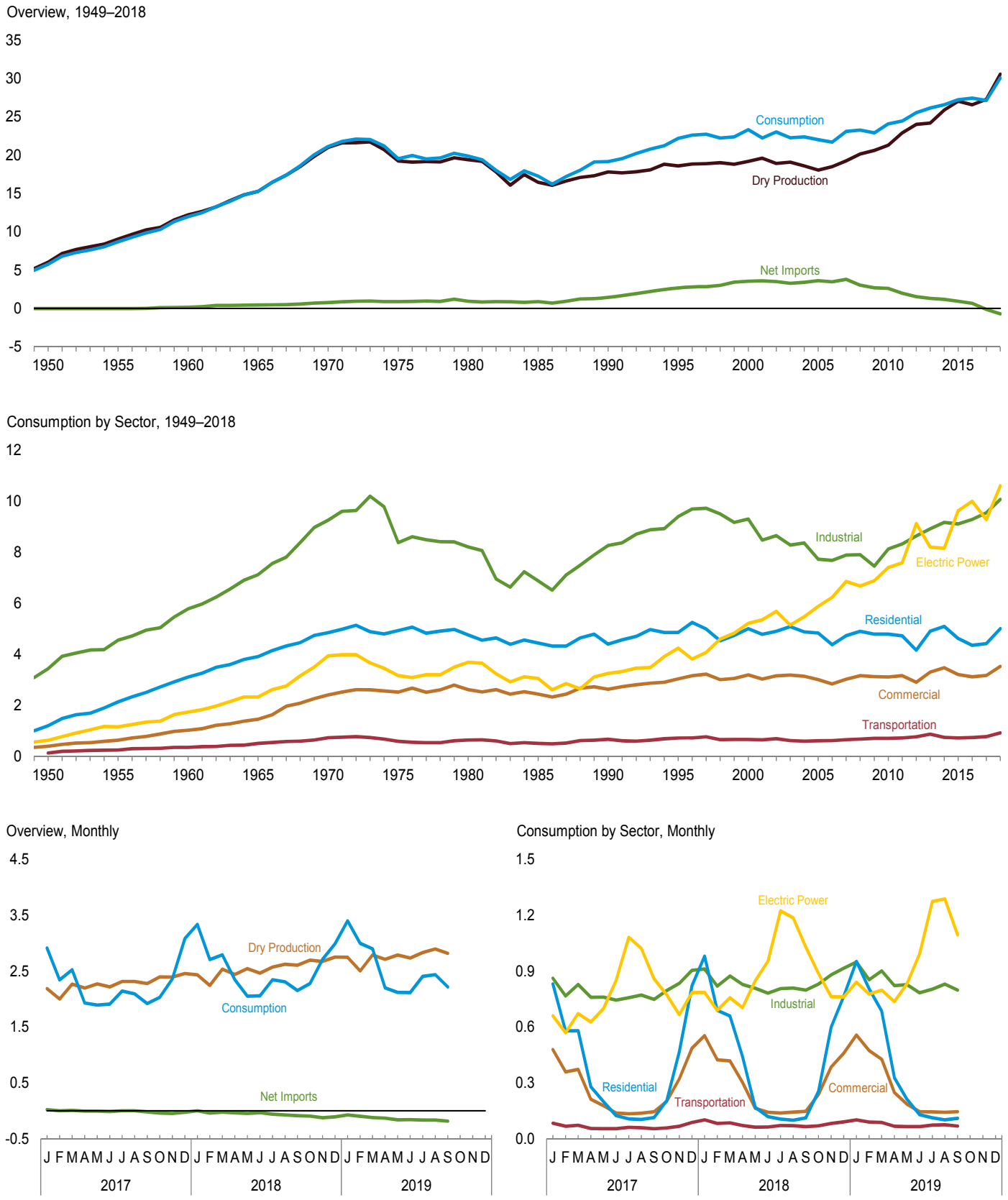
4. Natural Gas

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: Imports	Trade: Exports	Trade: Net Imports	Net Storage Withdrawals[f]	Balancing Item[g]	Consumption[h]
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 January	2,724	2,339	152	2,187	5	292	270	22	687	[R] 12	[R] 2,914
February	2,493	2,143	139	2,003	5	255	253	1	292	[R] 39	[R] 2,341
March	2,797	2,426	158	2,268	5	281	273	7	281	[R] -39	[R] 2,524
April	2,690	2,350	153	2,198	5	238	242	-4	-236	[R] -30	1,932
May	2,779	2,429	158	2,271	5	244	249	-5	-348	[R] -32	[R] 1,892
June	2,688	2,373	154	2,219	5	240	253	-14	-287	[R] -13	[R] 1,911
July	2,754	2,478	161	2,317	6	251	249	2	-155	[R] -27	[R] 2,142
August	2,770	2,476	161	2,315	6	248	247	1	-201	[R] -26	[R] 2,094
September	2,763	2,438	158	2,280	5	229	249	-19	-323	[R] -22	[R] 1,921
October	2,911	2,564	167	2,398	6	241	280	-38	-254	[R] -79	[R] 2,032
November	2,897	2,559	166	2,393	6	240	288	-47	90	[R] -84	[R] 2,358
December	3,025	2,628	171	2,458	6	274	300	-26	707	[R] -60	[R] 3,084
Total	**33,292**	**29,204**	**1,897**	**27,306**	**66**	**3,033**	**3,154**	**-121**	**254**	**-360**	**27,146**
2018 January	2,986	2,612	178	2,435	6	300	300	(s)	913	[R] -18	[R] 3,335
February	2,746	2,410	164	2,246	5	237	276	-38	477	[R] 16	[R] 2,706
March	3,085	2,721	185	2,535	6	271	291	-21	292	[R] -20	[R] 2,793
April	2,979	2,617	178	2,439	6	242	279	-37	-37	-24	2,346
May	3,097	2,730	186	2,544	6	227	272	-45	-433	[R] -20	[R] 2,051
June	2,961	2,645	180	2,465	6	228	262	-34	-358	[R] -21	[R] 2,059
July	3,097	2,759	188	2,571	6	247	306	-59	-194	[R] 21	[R] 2,345
August	3,165	2,815	192	2,623	6	237	311	-74	-244	[R] -3	[R] 2,308
September	3,142	2,797	190	2,607	6	214	302	-88	-344	[R] -29	[R] 2,152
October	3,270	2,895	197	2,698	6	215	307	-92	-299	[R] -34	2,279
November	3,235	2,870	195	2,675	6	212	338	-125	212	[R] -57	[R] 2,710
December	3,365	2,952	201	2,751	6	257	363	-106	329	[R] 14	[R] 2,993
Total	**37,129**	**32,823**	**2,235**	**30,589**	**69**	**2,889**	**3,607**	**-719**	**312**	**-176**	**30,075**
2019 January	[RE] 3,357	[RE] 2,952	205	[RE] 2,747	5	291	365	-74	709	[R] 13	3,400
February	[RE] 3,051	[E] 2,694	191	[RE] 2,504	6	233	330	-97	568	[R] 18	[R] 2,999
March	[RE] 3,387	[RE] 3,001	213	[RE] 2,788	6	253	374	-121	245	[R] -19	2,900
April	[RE] 3,307	[RE] 2,920	208	[RE] 2,712	5	207	338	-132	-382	[R] -3	[R] 2,201
May	[RE] 3,392	[RE] 3,004	216	[RE] 2,788	4	208	369	-161	-472	[R] -37	[R] 2,121
June	[E] 3,299	[E] 2,943	208	[E] 2,736	6	201	360	-159	-431	[R] -36	[R] 2,115
July	[E] 3,384	[RE] 3,040	209	[RE] 2,831	5	230	[R] 393	[R] -163	-254	[R] -12	2,408
August	[RE] 3,446	[RE] 3,107	211	[RE] 2,896	5	220	[R] 385	[R] -165	-286	[R] -13	[R] 2,437
September	[E] 3,386	[E] 3,034	215	[E] 2,819	4	208	395	-186	-419	-2	2,216
9-Month Total	[E] **30,010**	[E] **26,695**	**1,875**	[E] **24,820**	**46**	**2,051**	**3,308**	**-1,257**	**-722**	**-90**	**22,797**
2018 9-Month Total	**27,259**	**24,106**	**1,641**	**22,465**	**51**	**2,204**	**2,600**	**-396**	**72**	**-99**	**22,093**
2017 9-Month Total	**24,458**	**21,452**	**1,394**	**20,058**	**48**	**2,277**	**2,286**	**-9**	**-290**	**-136**	**19,672**

[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: 1949–2018—**U.S. Energy Information Administration (EIA), *Natural Gas Annual,* annual reports. **2019 forward—**EIA, *Natural Gas Monthly,* November 2019, 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 January	0	279	0	(s)	3	0	10	0	292	99	11	134	27	270
February	0	246	0	(s)	0	0	8	0	255	88	4	128	34	253
March	0	276	0	(s)	0	0	5	0	281	100	0	141	33	273
April	0	233	0	(s)	0	0	5	0	238	81	7	125	29	242
May	0	239	0	(s)	0	0	5	0	244	64	4	134	47	249
June	0	234	0	(s)	0	0	5	0	240	67	4	159	24	253
July	0	245	0	(s)	0	0	5	0	251	60	0	150	39	249
August	0	240	0	(s)	0	0	8	0	248	66	4	142	35	247
September	0	227	0	(s)	0	0	2	0	229	70	0	135	44	249
October	0	239	0	(s)	0	0	2	0	241	68	7	139	66	280
November	0	234	0	(s)	0	0	6	0	240	74	0	145	69	288
December	0	263	0	1	3	0	8	0	274	81	14	140	65	300
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	151	98	363
Total	**0**	**2,811**	**0**	**3**	**3**	**0**	**66**	**6**	**2,889**	**836**	**126**	**1,871**	**775**	**3,607**
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	11	150	106	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	R 192	111	R 393
August	0	217	0	(s)	0	0	3	0	220	78	21	R 182	104	R 385
September	0	208	0	(s)	0	0	0	0	208	72	28	173	122	395
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**
2017 9-Month Total	**0**	**2,219**	**0**	**1**	**3**	**0**	**54**	**0**	**2,277**	**694**	**33**	**1,248**	**312**	**2,286**

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

R=Revised. (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." • **1988–2018:** EIA, *Natural Gas Annual,* annual reports. • **2019 forward:** EIA, *Natural Gas Monthly,* November 2019, 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 January	831	479	127	107	628	735	862	79	[R] 4	[R] 83	660	[R] 2,914
February	579	359	116	97	554	650	767	63	[R] 4	[R] 67	569	[R] 2,341
March	580	372	132	103	594	697	828	68	[R] 4	[R] 72	672	[R] 2,524
April	279	212	127	99	533	632	760	51	4	55	627	1,932
May	199	178	132	102	527	629	761	50	[R] 4	[R] 54	700	[R] 1,892
June	124	138	129	104	510	615	744	50	[R] 4	[R] 54	851	[R] 1,911
July	107	134	134	112	512	624	758	57	[R] 4	[R] 61	1,082	[R] 2,142
August	104	137	134	108	529	637	772	55	[R] 4	[R] 59	1,022	[R] 2,094
September	114	145	132	103	513	616	748	[R] 51	[R] 4	[R] 54	859	[R] 1,921
October	205	201	139	104	553	657	796	53	4	[R] 58	773	[R] 2,032
November	468	322	139	104	592	696	835	63	[R] 4	67	666	[R] 2,358
December	822	487	143	115	647	761	904	83	[R] 4	[R] 87	785	[R] 3,084
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	663	778	912	97	[R] 4	[R] 102	786	[R] 3,335
February	690	424	124	101	595	696	819	[R] 78	[R] 4	[R] 82	690	[R] 2,706
March	659	418	140	105	629	734	874	81	[R] 4	[R] 85	757	[R] 2,793
April	441	302	134	102	592	694	828	67	4	71	704	2,346
May	169	164	140	105	563	668	808	58	[R] 4	[R] 62	848	[R] 2,051
June	119	142	136	107	539	646	782	58	[R] 4	[R] 63	953	[R] 2,059
July	106	138	142	116	549	665	806	67	[R] 4	[R] 71	1,224	[R] 2,345
August	100	143	144	116	549	665	809	66	[R] 4	[R] 70	1,186	[R] 2,308
September	112	147	144	110	544	654	798	61	[R] 4	[R] 65	1,030	[R] 2,152
October	255	237	149	110	572	681	830	65	4	[R] 69	888	2,279
November	599	386	147	113	620	732	880	78	[R] 4	[R] 82	763	[R] 2,710
December	765	459	151	115	649	764	916	86	[R] 4	[R] 91	762	[R] 2,993
Total	**4,996**	**3,515**	**1,684**	**1,314**	**7,063**	**8,377**	**10,062**	**863**	**50**	**913**	**10,589**	**30,075**
2019 January	952	557	[E] 151	121	677	797	949	[E] 98	[RE] 4	[E] 102	841	3,400
February	805	474	[E] 138	106	610	716	854	[E] 86	[E] 4	[E] 90	777	[R] 2,999
March	686	427	[E] 154	111	636	747	901	[E] 83	[RE] 4	[RE] 87	798	2,900
April	328	249	[E] 150	106	566	672	822	[E] 63	[E] 4	[RE] 67	736	[R] 2,201
May	212	186	[E] 154	109	564	673	827	[E] 61	[RE] 4	[RE] 65	831	[R] 2,121
June	129	145	[E] 151	108	524	633	784	[E] 61	[E] 4	[E] 65	993	[R] 2,115
July	113	144	[E] 156	114	533	647	803	[E] 69	[RE] 4	[RE] 73	1,274	2,408
August	102	142	[RE] 159	115	[R] 556	[R] 671	[R] 830	[E] 70	[E] 5	[RE] 75	1,288	[R] 2,437
September	110	145	[E] 156	110	533	642	798	[E] 64	[E] 4	[E] 68	1,095	2,216
9-Month Total	**3,436**	**2,467**	[E] **1,370**	**1,000**	**5,199**	**6,199**	**7,569**	[E] **654**	[E] **37**	[E] **691**	**8,633**	**22,797**
2018 9-Month Total	**3,377**	**2,432**	**1,237**	**977**	**5,223**	**6,200**	**7,436**	**634**	**38**	**672**	**8,176**	**22,093**
2017 9-Month Total	**2,918**	**2,155**	**1,164**	**935**	**4,900**	**5,835**	**6,999**	**523**	**36**	**559**	**7,042**	**19,672**

[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: 1949–2018—**U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA),* annual reports and unpublished revisions. **2019 forward—**EIA, *Natural Gas Monthly (NGM),* November 2019, 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). **1999–2018—**EIA, NGA, annual reports. **2019 forward—**EIA, NGM, November 2019, 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 January	4,378	2,622	7,000	-316	-10.8	787	113	675
February	4,377	2,337	6,715	-197	-7.8	422	137	285
March	4,378	2,063	6,440	-424	-17.0	449	175	274
April	4,379	2,291	6,670	-354	-13.4	122	352	-230
May	4,385	2,627	7,011	-340	-11.5	90	430	-341
June	4,354	2,907	7,261	-279	-8.8	105	386	-281
July	4,356	3,054	7,410	-264	-8.0	154	303	-150
August	4,355	3,250	7,605	-191	-5.6	158	353	-196
September	4,355	3,567	7,923	-138	-3.7	103	419	-317
October	4,354	3,816	8,170	-196	-4.9	131	378	-247
November	4,353	3,709	8,062	-267	-6.7	285	199	86
December	4,360	3,033	7,392	-264	-8.0	785	91	695
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	R 1,994	R 6,360	-147	R -6.8	804	95	709
February	4,366	1,426	R 5,792	R -246	R -14.7	672	104	568
March	R 4,361	1,185	5,545	R -205	-14.8	435	190	245
April	4,367	1,559	R 5,927	R 133	9.3	104	486	-382
May	R 4,372	2,031	R 6,403	R 184	9.9	85	557	-472
June	R 4,375	R 2,461	6,835	R 266	12.1	92	523	-431
July	4,374	2,714	R 7,088	R 333	14.0	162	415	-254
August	R 4,377	2,997	R 7,374	R 381	14.5	168	453	-286
September	4,378	3,415	7,793	464	15.7	109	528	-419
9-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**2,630**	**3,352**	**-722**
2018 9-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**2,940**	**2,851**	**89**
2017 9-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**2,389**	**2,669**	**-279**

[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.

R=Revised. – – =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, November 2019, 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." **1996–2018—**EIA, NGA, annual reports. **2019 forward—**EIA, NGM, November 2019, 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	

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), and 2019 (222 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, Barbados, Brazil, Chile, China, Columbia, Dominican Republic, Egypt, India, Israel, Italy, Japan, Jordan, Kuwait, Lithuania, Malta, Netherlands, Pakistan, Panama, Poland, Portugal, Russia, 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*.

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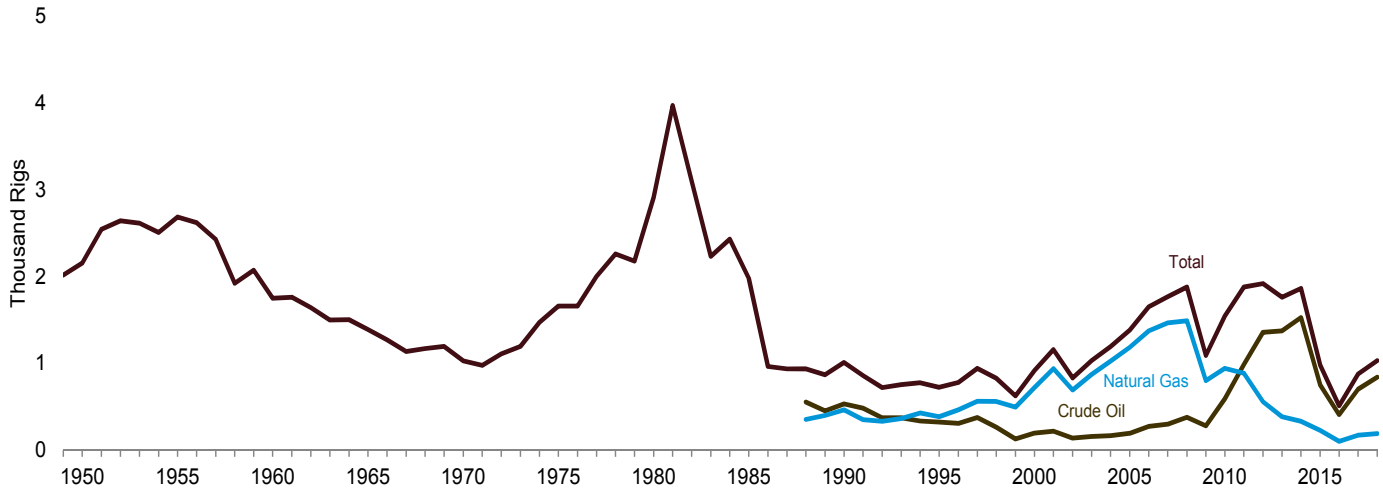
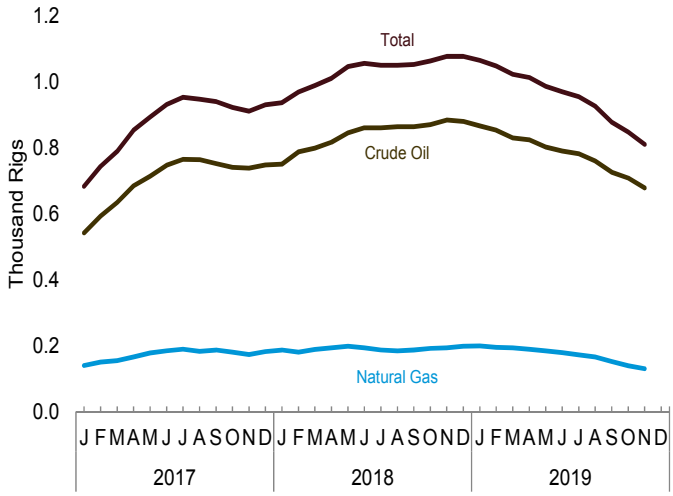
5. Crude Oil and Natural Gas Resource Development

Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators

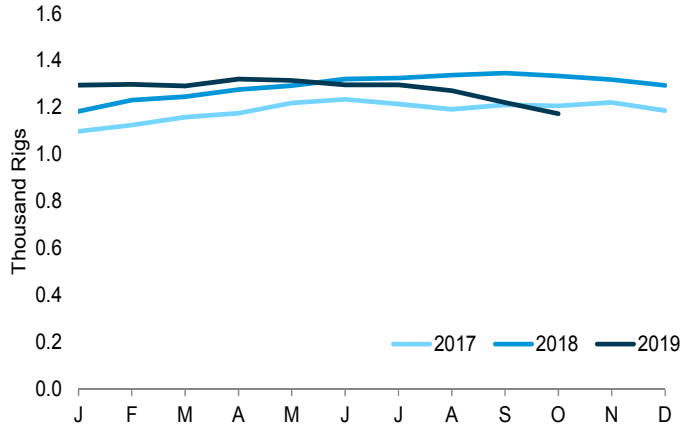
Rotary Rigs in Operation by Type, 1949–2018



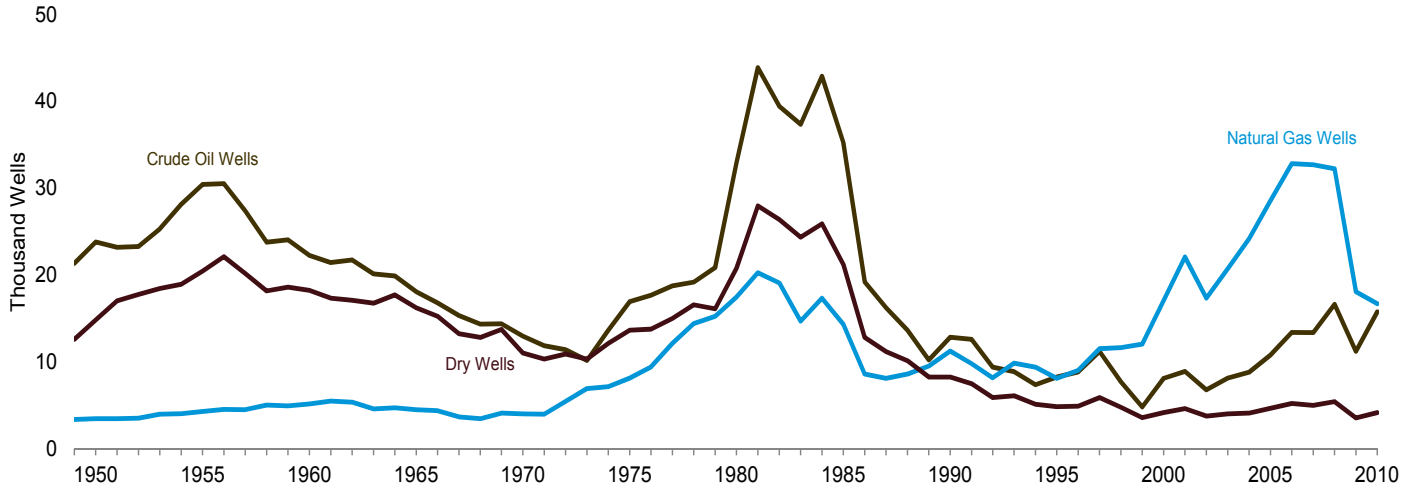
Rotary Rigs in Operation by Type, Monthly



Active Well Service Rig Count, Monthly



Total Wells Drilled by Type, 1949–2010



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 January	659	24	542	140	683	1,099
February	724	20	593	150	744	1,125
March	770	19	634	154	789	1,159
April	833	20	685	166	853	1,176
May	871	22	714	178	893	1,219
June	909	22	747	184	931	1,235
July	931	22	765	189	953	1,215
August	930	17	764	183	947	1,192
September	922	18	752	187	940	1,212
October	901	21	741	180	922	1,207
November	891	20	738	173	911	1,222
December	911	19	748	182	930	1,187
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	R 1,173
November	788	22	678	130	810	NA
11-Month Average	**932**	**23**	**782**	**172**	**955**	**NA**
2018 11-Month Average	**1,010**	**18**	**838**	**189**	**1,028**	**1,292**
2017 11-Month Average	**850**	**20**	**699**	**171**	**871**	**1,187**

[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.

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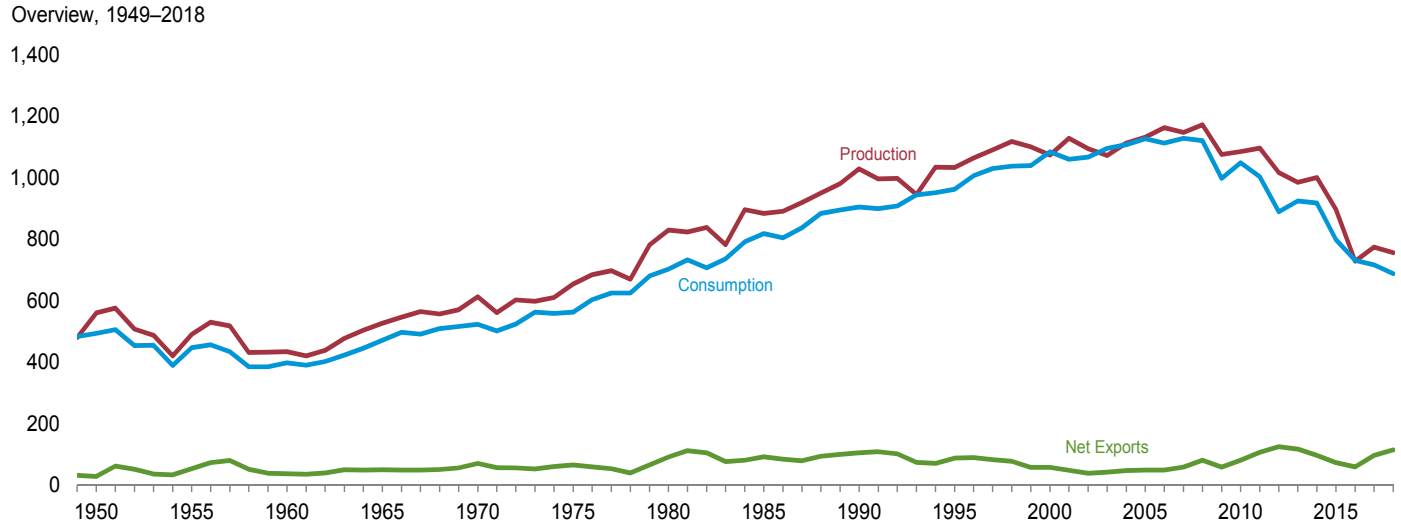
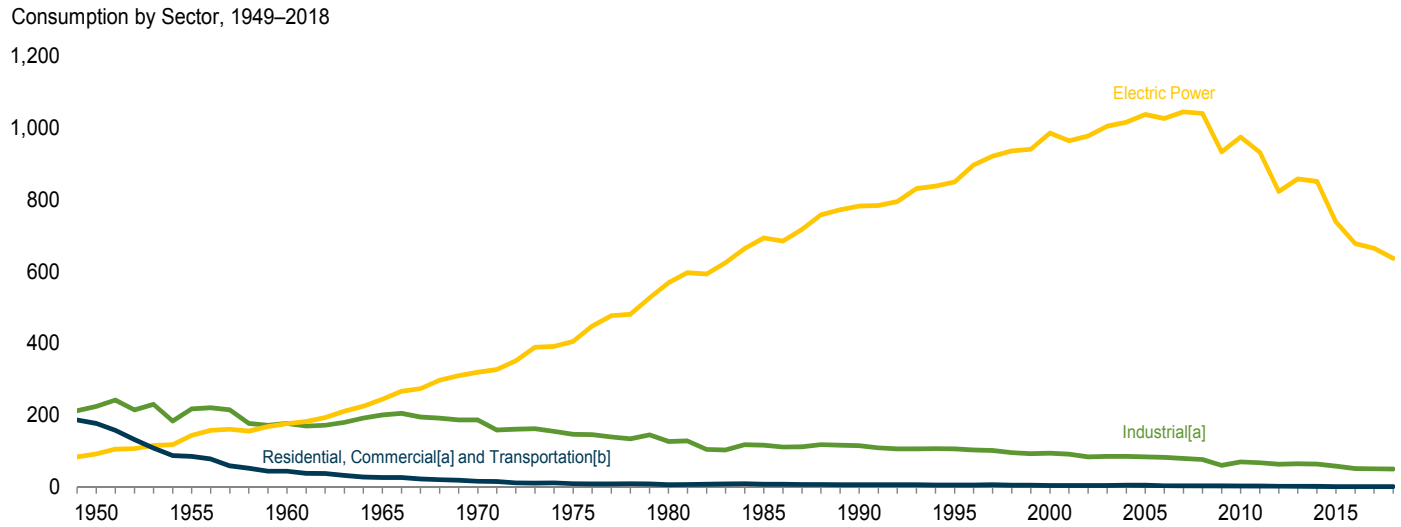
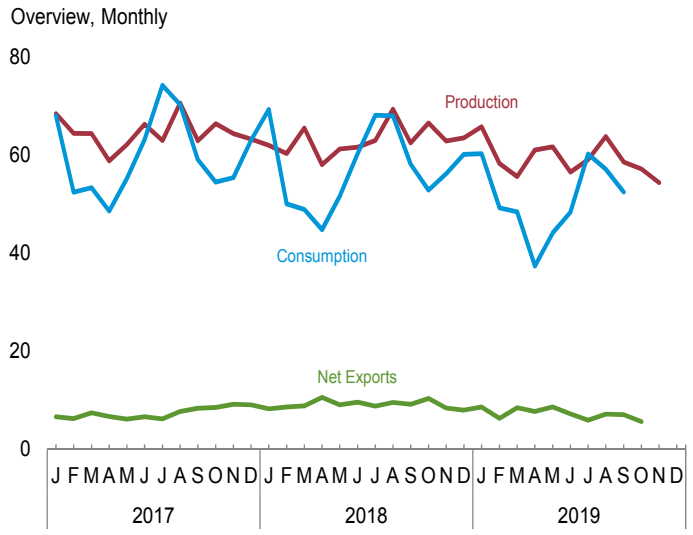
6. Coal

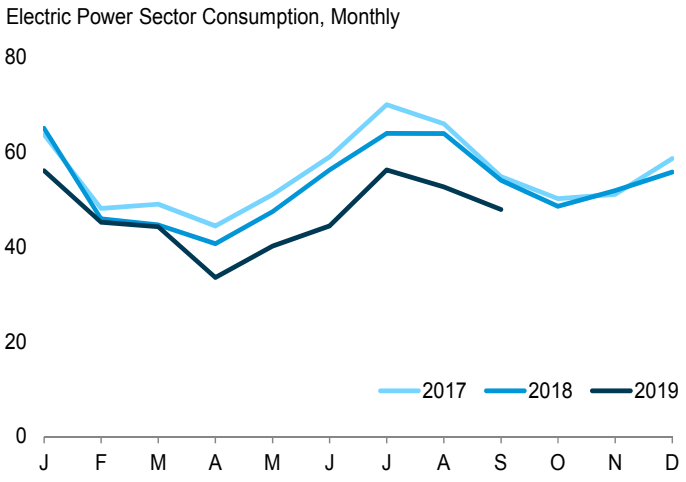
Figure 6.1 Coal

(Million Short Tons)









[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 January	68,414	1,027	743	7,385	-6,642	-6,368	1,161	68,006
February	64,389	916	612	6,908	-6,296	4,246	2,383	52,381
March	64,335	975	560	8,013	-7,453	1,096	3,436	53,325
April	58,754	651	493	7,236	-6,744	2,198	1,898	48,565
May	62,115	696	1,053	7,243	-6,190	-2,116	3,536	55,202
June	66,229	777	651	7,317	-6,666	-5,351	2,592	63,099
July	62,966	907	956	7,177	-6,221	-10,088	-6,473	74,214
August	70,582	901	839	8,573	-7,734	-5,767	-713	70,229
September	62,891	801	513	8,894	-8,381	-2,349	-1,378	59,039
October	66,368	630	582	9,159	-8,577	1,847	2,137	54,436
November	64,345	668	368	9,552	-9,185	2,135	-1,663	55,357
December	63,220	1,003	408	9,495	-9,087	-5,516	-2,352	63,003
Total	**774,609**	**9,951**	**7,777**	**96,953**	**-89,176**	**-26,033**	**4,562**	**716,856**
2018 January	61,971	1,033	500	8,772	-8,273	-13,423	-1,100	69,255
February	60,269	854	349	9,022	-8,673	-2,777	5,202	50,025
March	65,504	929	518	9,426	-8,908	5,076	3,580	48,869
April	58,046	714	494	11,092	-10,598	1,256	2,119	44,788
May	61,211	772	544	9,645	-9,102	-1,154	2,462	51,573
June	61,572	790	509	10,138	-9,629	-6,774	-739	60,246
July	62,967	878	692	9,532	-8,840	-12,580	-498	68,084
August	69,325	908	484	10,052	-9,569	-5,740	-1,572	67,977
September	62,438	808	263	9,483	-9,220	-2,528	-1,603	58,158
October	66,532	719	304	10,681	-10,377	3,868	195	52,811
November	62,857	887	400	8,872	-8,472	-185	-714	56,171
December	63,474	871	898	8,916	-8,018	-1,947	-1,875	60,148
Total	**756,167**	**10,162**	**5,954**	**115,632**	**-109,678**	**-36,910**	**5,455**	**688,105**
2019 January	65,733	914	625	9,285	-8,661	-4,050	1,818	60,218
February	58,224	769	358	6,707	-6,349	1,032	2,390	49,222
March	55,580	836	706	9,217	-8,512	-1,711	1,198	48,417
April	61,007	632	537	8,285	-7,749	10,072	6,444	37,375
May	61,653	706	408	9,085	-8,678	8,024	1,517	44,140
June	56,515	741	660	7,945	-7,285	1,645	-42	48,367
July	R 59,035	F 778	511	6,489	-5,978	-6,527	R 155	60,207
August	R 63,758	F 778	519	7,706	-7,187	240	R -11	57,120
September	R 58,564	RF 778	651	7,723	-7,072	R 1,355	R -1,557	R 52,471
October	57,143	NA	R 742	R 6,426	R -5,684	NA	NA	NA
November	54,361	NA	NA	NA	NA	NA	NA	NA
11-Month Total	**651,572**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
2018 11-Month Total	**692,694**	**9,291**	**5,056**	**106,716**	**-101,660**	**-34,963**	**7,330**	**627,957**
2017 11-Month Total	**711,390**	**8,949**	**7,369**	**87,459**	**-80,089**	**-20,518**	**6,914**	**653,853**

[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											
		Commercial			Industrial							
						Other Industrial						
	Residential	CHP[a]	Other[b]	Total	Coke Plants	CHP[c]	Non-CHP[d]	Total	Total	Transportation	Electric Power Sector[e,f]	Total
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 January	(i)	71	65	136	1,431	1,264	1,579	2,844	4,274	(h)	63,595	68,006
February	(i)	58	53	111	1,368	1,077	1,778	2,854	4,222	(h)	48,048	52,381
March	(i)	66	61	126	1,438	1,141	1,695	2,836	4,274	(h)	48,925	53,325
April	(i)	42	29	71	1,441	1,008	1,688	2,696	4,137	(h)	44,358	48,565
May	(i)	39	27	66	1,482	1,043	1,658	2,702	4,184	(h)	50,952	55,202
June	(i)	40	27	67	1,402	1,045	1,665	2,710	4,111	(h)	58,920	63,099
July	(i)	47	21	68	1,494	1,042	1,728	2,769	4,264	(h)	69,882	74,214
August	(i)	43	19	62	1,528	1,050	1,707	2,757	4,285	(h)	65,883	70,229
September	(i)	45	20	65	1,469	991	1,734	2,725	4,194	(h)	54,780	59,039
October	(i)	42	34	76	1,470	1,098	1,694	2,791	4,261	(h)	50,099	54,436
November	(i)	52	43	95	1,457	1,077	1,716	2,793	4,250	(h)	51,013	55,357
December	(i)	66	54	119	1,559	1,139	1,647	2,787	4,346	(h)	58,538	63,003
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	65	142	1,458	1,242	1,453	2,695	4,153	(h)	64,960	69,255
February	(i)	59	50	109	1,288	1,122	1,608	2,730	4,018	(h)	45,897	50,025
March	(i)	57	47	104	1,482	1,109	1,612	2,721	4,203	(h)	44,562	48,869
April	(i)	47	22	69	1,549	960	1,607	2,567	4,116	(h)	40,603	44,788
May	(i)	39	23	62	1,596	979	1,581	2,561	4,156	(h)	47,356	51,573
June	(i)	36	27	63	1,465	969	1,595	2,564	4,029	(h)	56,154	60,246
July	(i)	40	16	56	1,600	962	1,572	2,534	4,135	(h)	63,894	68,084
August	(i)	42	17	59	1,577	949	1,583	2,532	4,108	(h)	63,810	67,977
September	(i)	45	15	60	1,585	943	1,583	2,525	4,110	(h)	53,987	58,158
October	(i)	42	34	76	1,549	891	1,822	2,713	4,262	(h)	48,474	52,811
November	(i)	47	40	87	1,558	1,015	1,705	2,720	4,278	(h)	51,806	56,171
December	(i)	47	38	85	1,630	1,093	1,627	2,720	4,350	(h)	55,714	60,148
Total	**(i)**	**577**	**395**	**972**	**18,337**	**12,233**	**19,347**	**31,580**	**49,917**	**(h)**	**637,217**	**688,105**
2019 January	(i)	58	54	112	1,515	1,095	1,514	2,609	4,124	(h)	55,983	60,218
February	(i)	53	49	102	1,393	1,001	1,584	2,584	3,977	(h)	45,142	49,222
March	(i)	54	51	105	1,556	944	1,645	2,589	4,145	(h)	44,167	48,417
April	(i)	39	23	62	1,450	918	1,426	2,343	3,793	(h)	33,520	37,375
May	(i)	40	24	64	1,624	913	1,421	2,334	3,958	(h)	40,118	44,140
June	(i)	31	20	50	1,586	881	1,463	2,345	3,931	(h)	44,386	48,367
July	(i)	40	[F] 11	[F] 51	[F] 1,794	866	[F] 1,364	[F] 2,230	[F] 4,024	(h)	56,131	60,207
August	(i)	42	[F] 13	[F] 55	[F] 2,193	883	[F] 1,397	[F] 2,280	[F] 4,473	(h)	52,592	57,120
September	(i)	42	[F] 12	[F] 54	[F] 2,237	844	[F] 1,486	[F] 2,330	[F] 4,567	(h)	47,849	52,471
9-Month Total	**(i)**	**399**	**[E] 257**	**[E] 656**	**[E] 15,347**	**8,344**	**[E] 13,301**	**[E] 21,645**	**[E] 36,992**	**(h)**	**419,888**	**457,536**
2018 9-Month Total	**(i)**	**441**	**282**	**723**	**13,600**	**9,235**	**14,193**	**23,428**	**37,028**	**(h)**	**481,223**	**518,975**
2017 9-Month Total	**(i)**	**451**	**321**	**771**	**13,052**	**9,661**	**15,232**	**24,893**	**37,945**	**(h)**	**505,344**	**544,060**

[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 January	24,974	352	1,579	3,503	5,082	5,434	156,214	186,622
February	25,170	343	1,483	3,370	4,853	5,196	160,502	190,868
March	25,190	335	1,388	3,236	4,624	4,959	161,815	191,964
April	25,169	333	1,467	3,256	4,723	5,056	163,937	194,162
May	24,350	331	1,547	3,275	4,822	5,153	162,542	192,045
June	23,430	329	1,626	3,295	4,921	5,250	158,014	186,694
July	25,465	332	1,641	3,357	4,998	5,330	145,811	176,606
August	24,226	335	1,655	3,419	5,075	5,409	141,204	170,839
September	23,430	337	1,670	3,482	5,152	5,489	139,571	168,490
October	23,459	328	1,686	3,402	5,088	5,416	141,463	170,338
November	23,705	319	1,702	3,322	5,024	5,343	143,424	172,472
December	**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	123,692	153,533
February	24,938	287	1,578	3,008	4,586	4,873	120,945	150,756
March	24,736	275	1,508	2,891	4,399	4,674	126,422	155,832
April	23,417	268	1,544	2,893	4,437	4,705	128,965	157,088
May	22,841	262	1,580	2,895	4,474	4,736	128,356	155,933
June	22,997	256	1,616	2,896	4,512	4,768	121,394	149,159
July	21,025	257	1,681	2,939	4,619	4,876	110,677	136,579
August	21,806	259	1,746	2,981	4,727	4,985	104,048	130,839
September	22,537	260	1,811	3,023	4,834	5,094	100,680	128,311
October	21,878	256	1,809	3,102	4,911	5,166	105,134	132,179
November	22,419	251	1,808	3,180	4,988	5,239	104,336	131,994
December	**21,692**	**247**	**1,807**	**3,258**	**5,065**	**5,312**	**103,043**	**130,047**
2019 January	F 21,391	238	1,873	3,116	4,989	5,227	99,378	125,996
February	F 23,051	229	1,939	2,974	4,913	5,142	98,835	127,029
March	F 23,158	221	2,005	2,832	4,837	5,058	97,102	125,318
April	F 21,343	214	2,102	2,879	4,981	5,196	108,852	135,390
May	F 22,193	208	2,199	2,926	5,126	5,333	115,888	143,414
June	F 21,878	201	2,296	2,974	5,270	5,471	117,710	145,060
July	F 21,977	F 222	F 1,881	F 3,521	F 5,402	F 5,623	110,932	138,532
August	F 22,500	F 222	F 1,951	F 3,539	F 5,490	F 5,712	110,560	138,772
September	F 23,073	F 222	F 2,027	F 3,558	F 5,585	F 5,807	111,204	140,084

[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.

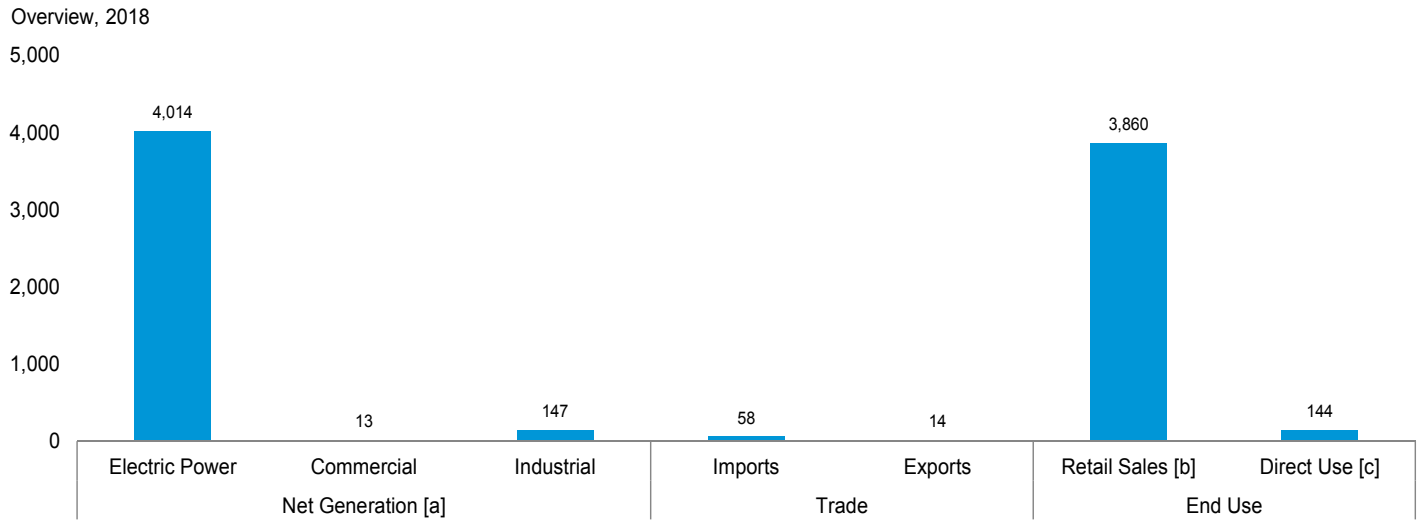
2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, STIFS.

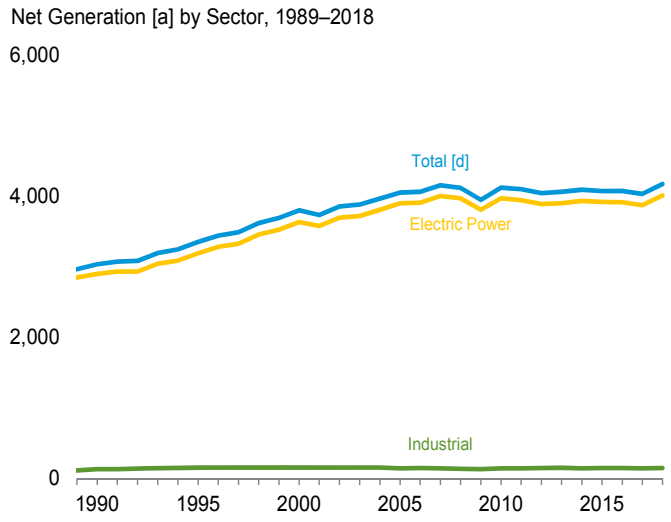
Electric Power
1949 forward: Table 7.5.

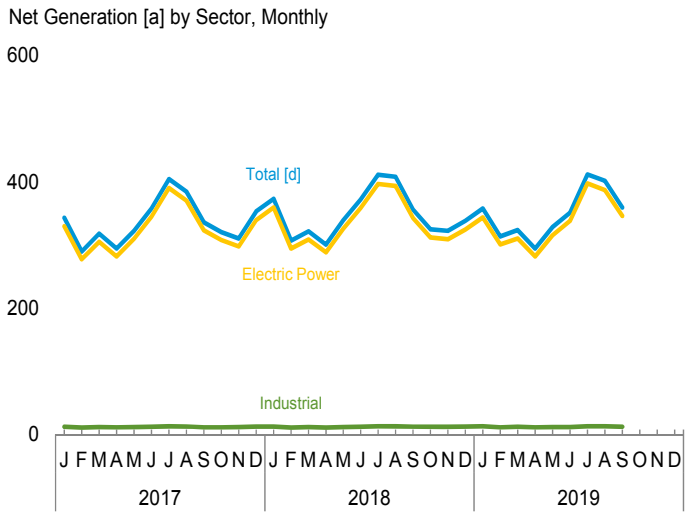
7. Electricity

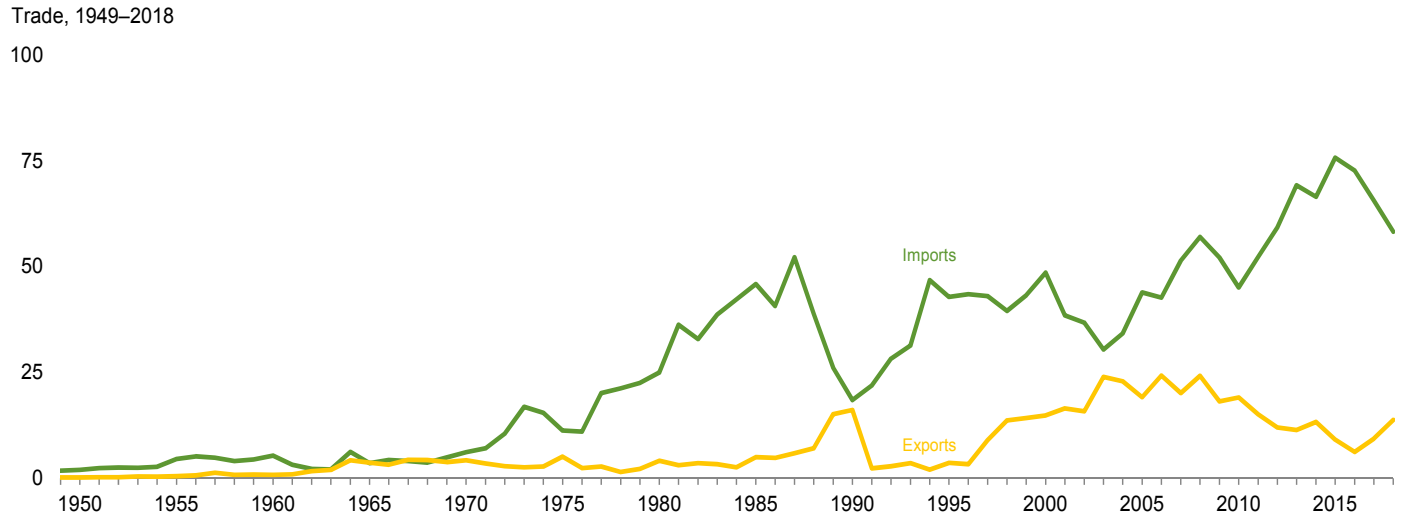
Figure 7.1 Electricity Overview

(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 January	330	1	12	343	7	(s)	7	19	318	[E] 12	330
February	278	1	11	290	6	1	5	8	276	[E] 11	287
March	305	1	12	318	6	1	5	20	291	[E] 12	303
April	282	1	11	294	6	1	4	15	273	[E] 11	284
May	310	1	12	323	5	1	4	23	292	[E] 11	303
June	345	1	12	358	6	1	5	23	329	[E] 12	341
July	390	1	13	404	6	1	5	29	368	[E] 13	380
August	370	1	13	384	7	1	6	17	360	[E] 13	373
September	323	1	11	336	5	1	5	7	322	[E] 11	333
October	308	1	12	320	4	1	3	13	300	[E] 11	311
November	298	1	12	310	4	1	3	19	283	[E] 11	295
December	340	1	13	353	5	1	4	33	312	[E] 13	325
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	345	[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	288	1	11	301	5	2	3	14	279	[E] 11	290
May	[R] 326	1	12	[R] 339	5	1	4	[R] 28	303	[E] 12	315
June	[R] 359	1	12	[R] 372	5	1	4	[R] 26	338	[E] 12	350
July	[R] 397	1	13	[R] 411	5	1	4	[R] 28	375	[E] 13	388
August	393	1	13	[R] 408	6	1	5	[R] 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	303
December	325	1	13	338	4	1	3	17	312	[E] 12	325
Total	**[R] 4,014**	**13**	**147**	**[R] 4,174**	**58**	**14**	**44**	**[R] 215**	**3,860**	**144**	**4,004**
2019 January	344	1	13	358	5	1	3	25	324	[E] 13	336
February	301	1	11	314	5	1	3	14	291	[E] 11	302
March	310	1	12	324	5	3	2	17	297	[E] 12	309
April	282	1	12	295	4	2	2	17	269	[E] 11	280
May	315	1	12	328	5	2	3	28	292	[E] 12	303
June	338	1	12	351	5	2	4	27	316	[E] 12	328
July	397	1	13	412	6	2	4	32	370	[E] 13	383
August	387	1	13	401	6	2	4	26	367	[E] 13	380
September	346	1	12	359	5	2	4	16	335	[E] 12	347
9-Month Total	**3,021**	**10**	**111**	**3,142**	**45**	**16**	**29**	**202**	**2,860**	**[E] 109**	**2,969**
2018 9-Month Total	**3,069**	**10**	**110**	**3,189**	**47**	**11**	**36**	**169**	**2,948**	**[E] 108**	**3,056**
2017 9-Month Total	**2,933**	**10**	**108**	**3,050**	**53**	**7**	**46**	**162**	**2,828**	**[E] 106**	**2,934**

[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.

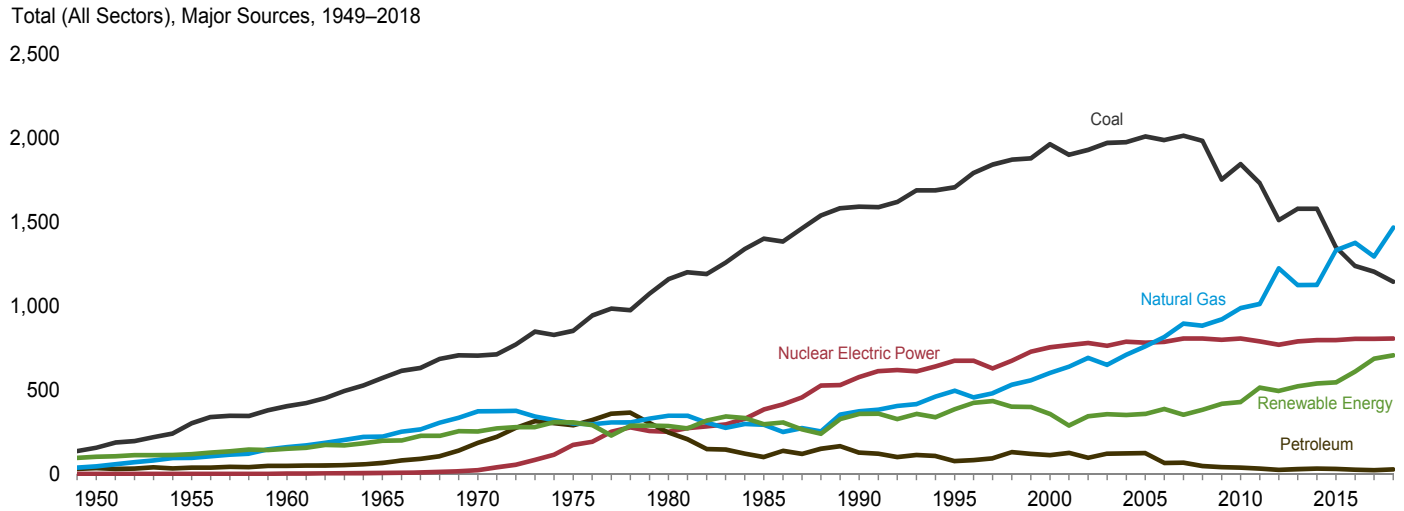
Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 3, "Electricity 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.

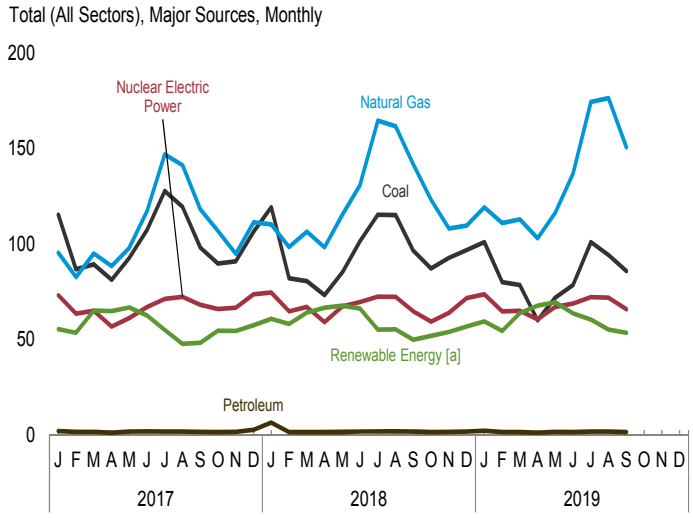
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

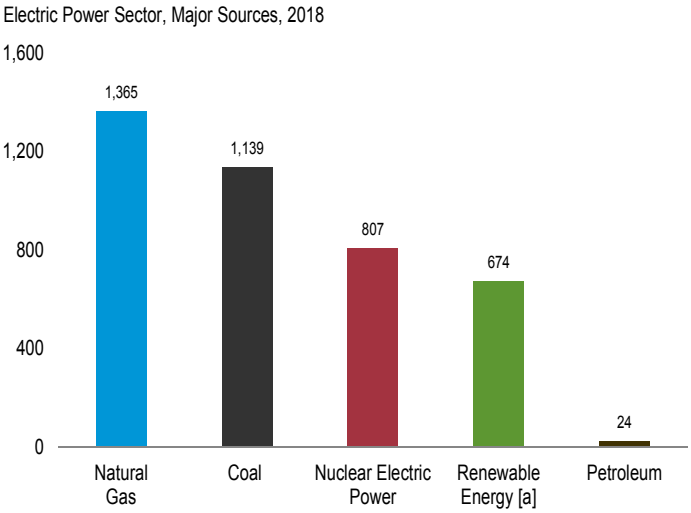
Sources: See end of section.

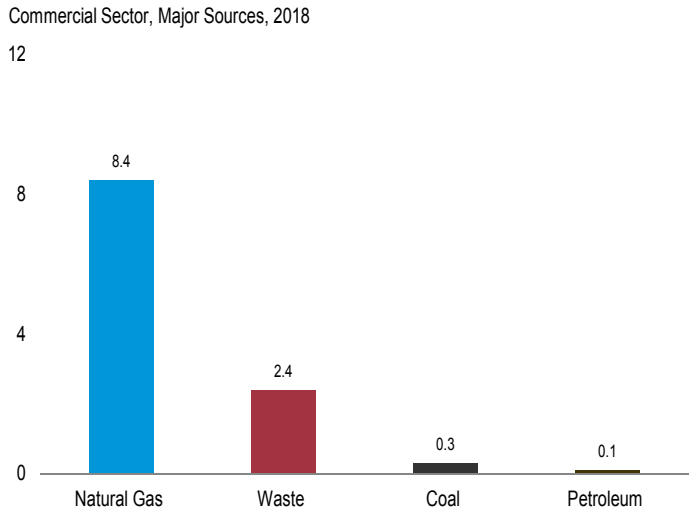
Figure 7.2 Electricity Net Generation

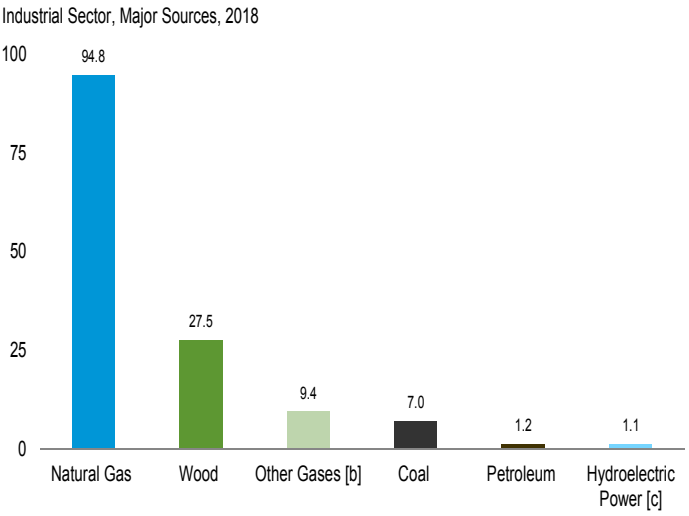
(Billion Kilowatthours)











[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 January	115,333	2,065	95,473	1,046	73,121	-435	26,788	3,505	1,948	1,383	2,030	19,840	343,190
February	86,822	1,597	82,694	977	63,560	-508	23,643	3,186	1,694	1,239	2,555	21,198	289,653
March	89,365	1,649	95,022	1,060	65,093	-521	29,272	3,457	1,854	1,385	4,245	24,993	317,935
April	81,335	1,277	88,418	1,001	56,743	-439	29,390	3,149	1,755	1,337	4,696	24,613	294,325
May	92,777	1,818	98,067	1,055	61,313	-423	32,384	3,189	1,859	1,283	5,663	22,450	322,518
June	107,508	1,902	117,317	992	67,011	-568	30,222	3,439	1,795	1,214	6,175	19,809	357,916
July	127,697	1,806	146,994	1,048	71,314	-759	26,491	3,703	1,813	1,355	5,753	15,960	404,387
August	119,488	1,734	141,209	1,134	72,384	-638	21,851	3,753	1,808	1,345	5,434	13,621	384,342
September	98,203	1,637	118,112	1,060	68,098	-606	19,067	3,294	1,696	1,297	5,115	17,855	335,861
October	89,775	1,528	106,852	999	65,995	-463	18,284	3,306	1,717	1,229	4,821	25,306	320,376
November	90,986	1,658	94,883	1,001	66,618	-478	20,565	3,430	1,795	1,289	3,409	24,082	310,315
December	106,546	2,719	111,373	1,096	73,700	-656	22,377	3,738	1,877	1,571	3,389	24,575	353,452
Total	**1,205,835**	**21,390**	**1,296,415**	**12,469**	**804,950**	**-6,495**	**300,333**	**41,152**	**21,610**	**15,927**	**53,286**	**254,303**	**4,034,271**
2018 January	119,284	6,520	110,265	1,097	74,649	-547	25,064	3,698	1,817	1,341	3,319	25,597	373,212
February	82,050	1,558	98,492	1,092	64,790	-315	24,902	3,241	1,716	1,274	3,896	23,188	306,879
March	80,626	1,472	106,503	1,158	67,033	-490	25,861	3,554	1,822	1,367	5,056	26,462	321,530
April	73,346	1,538	98,354	1,099	59,133	-377	28,115	3,108	1,726	1,188	6,057	26,429	300,743
May	85,227	1,557	115,268	1,167	67,320	-390	30,444	3,358	R 1,732	1,383	6,849	23,952	R 338,936
June	101,503	1,901	130,808	1,091	69,688	-433	27,597	3,476	R 1,720	1,300	7,415	24,701	R 371,870
July	115,376	1,901	164,722	1,172	72,456	-644	25,100	3,753	R 1,750	1,370	6,755	16,445	R 411,265
August	115,129	1,927	161,650	1,301	72,282	-747	22,017	3,634	R 1,758	1,367	6,695	19,845	R 408,004
September	96,544	1,854	141,762	1,104	64,725	-603	19,166	3,286	1,590	1,328	5,961	18,518	356,239
October	87,264	1,577	123,116	1,016	59,397	-492	19,548	3,223	1,743	1,273	4,970	21,193	324,911
November	92,819	1,661	108,142	1,045	63,954	-343	21,913	3,271	1,724	1,331	3,743	22,014	322,349
December	96,793	1,761	109,647	1,120	71,657	-522	22,797	3,405	1,799	1,446	3,110	24,305	338,458
Total	**1,145,962**	**25,226**	**1,468,727**	**13,463**	**807,084**	**-5,905**	**292,524**	**41,005**	**R 20,896**	**15,967**	**63,825**	**272,650**	**R 4,174,398**
2019 January	101,008	2,198	119,306	1,115	73,701	-323	24,215	3,533	1,604	1,420	3,641	25,137	357,750
February	80,104	1,553	111,009	1,110	64,715	-389	21,829	3,164	1,446	1,307	3,811	22,994	313,655
March	78,516	1,462	112,948	1,251	65,080	-409	25,550	3,252	1,585	1,435	5,885	26,102	323,739
April	60,054	1,234	103,004	1,071	60,581	-103	25,486	3,022	1,464	1,237	6,806	29,706	294,584
May	71,883	1,690	116,366	1,101	67,124	-368	30,063	3,365	1,542	1,346	7,161	25,971	328,367
June	78,609	1,531	136,995	1,040	68,805	-385	26,471	3,342	1,554	1,361	7,971	22,942	351,343
July	100,981	1,775	174,345	1,290	72,199	-622	23,733	3,571	1,587	1,411	8,132	22,020	411,584
August	94,176	1,771	176,454	1,202	71,911	-579	20,792	3,717	1,602	1,408	7,844	19,867	401,363
September	85,918	1,580	150,742	1,139	65,892	-671	16,372	3,287	1,505	1,383	6,726	24,299	359,301
9-Month Total	**751,249**	**14,794**	**1,201,170**	**10,320**	**610,006**	**-3,850**	**214,512**	**30,253**	**13,888**	**12,309**	**57,976**	**219,038**	**3,141,685**
2018 9-Month Total	**869,087**	**20,227**	**1,127,822**	**10,281**	**612,076**	**-4,548**	**228,266**	**31,107**	**15,629**	**11,917**	**52,003**	**205,138**	**3,188,680**
2017 9-Month Total	**918,528**	**15,485**	**983,306**	**9,372**	**598,637**	**-4,898**	**239,108**	**30,678**	**16,221**	**11,838**	**41,667**	**180,340**	**3,050,127**

[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.

R=Revised. 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 January	114,572	1,947	86,885	349	73,121	-435	26,635	1,189	1,646	1,383	2,011	19,822	329,751
February	86,158	1,491	75,045	308	63,560	-508	23,513	1,061	1,423	1,239	2,526	21,179	277,548
March	88,688	1,519	86,855	358	65,093	-521	29,126	1,216	1,544	1,385	4,200	24,968	304,996
April	80,743	1,179	80,578	300	56,743	-439	29,221	975	1,465	1,337	4,646	24,591	281,892
May	92,141	1,720	90,021	350	61,313	-423	32,205	977	1,554	1,283	5,605	22,429	309,762
June	106,825	1,793	108,833	324	67,011	-568	30,083	1,093	1,515	1,214	6,109	19,791	344,618
July	127,019	1,687	137,841	369	71,314	-759	26,363	1,239	1,513	1,355	5,690	15,948	390,204
August	118,810	1,610	132,376	360	72,384	-638	21,741	1,271	1,508	1,345	5,374	13,611	370,387
September	97,560	1,543	110,219	346	68,098	-606	18,978	1,088	1,422	1,297	5,059	17,840	323,400
October	89,114	1,427	98,826	326	65,995	-463	18,171	1,083	1,436	1,229	4,771	25,283	307,760
November	90,347	1,543	86,819	352	66,618	-478	20,421	1,163	1,496	1,289	3,372	24,059	297,585
December	105,860	2,582	102,457	383	73,700	-656	22,255	1,286	1,564	1,571	3,358	24,552	339,548
Total	**1,197,838**	**20,039**	**1,196,754**	**4,126**	**804,950**	**-6,495**	**298,711**	**13,641**	**18,084**	**15,927**	**52,723**	**254,074**	**3,877,452**
2018 January	118,557	6,348	101,453	344	74,649	-547	24,962	1,320	1,532	1,341	3,288	25,568	359,431
February	81,399	1,451	90,688	337	64,790	-315	24,794	1,137	1,455	1,274	3,863	23,164	294,618
March	79,983	1,368	98,582	348	67,033	-490	25,752	1,200	1,534	1,367	5,009	26,433	308,730
April	72,787	1,446	90,603	354	59,133	-377	27,990	948	1,450	1,188	6,002	26,404	288,497
May	84,634	1,453	107,003	389	67,320	-390	30,319	1,038	R 1,456	1,383	6,788	23,930	R 325,893
June	100,894	1,795	122,158	316	69,688	-433	27,502	1,168	R 1,460	1,300	7,347	24,681	R 358,508
July	114,749	1,784	155,240	359	72,456	-644	25,003	1,271	R 1,480	1,370	6,691	16,430	R 396,829
August	114,516	1,829	152,128	392	72,282	-747	21,908	1,217	R 1,483	1,367	6,634	19,829	R 393,474
September	95,962	1,762	132,974	332	64,725	-603	19,060	1,044	1,341	1,328	5,911	18,501	342,898
October	86,736	1,473	114,513	254	59,397	-492	19,426	989	1,465	1,273	4,926	21,168	311,728
November	92,258	1,565	99,401	311	63,954	-343	21,781	1,030	1,453	1,331	3,711	21,990	309,043
December	96,173	1,656	100,742	349	71,657	-522	22,651	1,022	1,514	1,413	3,083	24,280	324,639
Total	**1,138,648**	**23,928**	**1,365,485**	**4,086**	**807,084**	**-5,905**	**291,148**	**13,385**	**R 17,623**	**15,934**	**63,253**	**272,379**	**R 4,014,287**
2019 January	100,368	2,088	109,919	381	73,701	-323	24,094	1,233	1,343	1,378	3,608	25,112	343,572
February	79,537	1,461	102,847	377	64,715	-389	21,726	1,070	1,214	1,266	3,779	22,971	301,152
March	77,959	1,372	104,343	381	65,080	-409	25,429	996	1,324	1,391	5,833	26,076	310,388
April	59,536	1,138	94,710	338	60,581	-103	25,372	873	1,235	1,210	6,748	29,676	281,904
May	71,364	1,596	107,893	338	67,124	-368	29,936	1,170	1,334	1,309	7,099	25,946	315,415
June	78,092	1,435	128,379	348	68,805	-385	26,353	1,080	1,325	1,327	7,903	22,919	338,239
July	100,394	NM	164,978	408	72,199	-622	23,622	1,199	1,361	1,377	8,061	22,000	397,275
August	93,604	1,665	166,963	404	71,911	-579	20,689	1,301	1,368	1,377	7,776	19,849	387,025
September	85,373	1,474	141,809	358	65,892	-671	16,279	1,121	1,289	1,353	6,668	24,277	345,863
9-Month Total	**746,228**	**13,845**	**1,121,842**	**3,334**	**610,006**	**-3,850**	**213,500**	**10,043**	**11,793**	**11,990**	**57,475**	**218,826**	**3,020,834**
2018 9-Month Total	**863,481**	**19,236**	**1,050,830**	**3,171**	**612,076**	**-4,548**	**227,290**	**10,344**	**13,191**	**11,917**	**51,533**	**204,941**	**3,068,877**
2017 9-Month Total	**912,516**	**14,488**	**908,652**	**3,064**	**598,637**	**-4,898**	**237,864**	**10,110**	**13,588**	**11,838**	**41,222**	**180,180**	**2,932,559**

[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.

R=Revised. NA=Not available. NM=Not meaningful.

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 January	41	14	681	213	1,098	720	104	7,907	696	126	2,308	89	12,341
February	32	8	597	188	963	632	98	7,052	668	115	2,118	83	11,142
March	33	10	652	214	1,071	644	120	7,515	702	131	2,239	95	11,868
April	20	5	574	202	976	573	93	7,266	701	146	2,169	88	11,457
May	19	7	619	225	1,069	616	91	7,428	704	155	2,205	80	11,686
June	21	6	718	207	1,135	662	104	7,765	668	124	2,340	73	12,164
July	25	7	786	222	1,227	653	112	8,367	679	115	2,457	79	12,956
August	23	9	766	218	1,202	655	116	8,067	774	93	2,475	82	12,754
September	27	7	701	202	1,107	615	86	7,191	715	75	2,204	72	11,354
October	24	6	661	197	1,079	637	94	7,366	673	84	2,217	85	11,537
November	29	8	611	207	1,020	610	108	7,453	649	121	2,261	91	11,710
December	35	24	674	218	1,114	651	113	8,242	713	99	2,446	95	12,790
Total	**329**	**112**	**8,042**	**2,515**	**13,060**	**7,669**	**1,239**	**91,619**	**8,343**	**1,383**	**27,440**	**1,012**	**143,758**
2018 January	40	42	671	203	1,114	687	130	8,141	752	83	2,369	81	12,667
February	32	8	626	184	995	619	99	7,178	755	89	2,097	77	11,265
March	27	9	647	204	1,058	616	95	7,274	811	87	2,349	84	11,742
April	24	9	585	199	989	535	83	7,166	744	102	2,158	77	11,258
May	21	7	656	203	1,076	572	97	7,608	778	101	2,316	73	11,967
June	20	7	737	202	1,163	590	98	7,913	775	74	2,299	57	12,199
July	21	11	875	205	1,298	606	106	8,606	813	78	2,473	65	13,138
August	23	9	892	208	1,318	590	89	8,630	909	91	2,406	66	13,213
September	24	8	771	193	1,156	558	85	8,017	773	90	2,234	56	12,185
October	20	7	668	204	1,055	507	97	7,935	762	108	2,230	74	12,127
November	25	13	622	193	993	536	83	8,120	734	116	2,238	78	12,313
December	24	10	669	205	1,095	596	95	8,236	771	130	2,375	80	12,724
Total	**303**	**140**	**8,419**	**2,404**	**13,312**	**7,011**	**1,157**	**94,823**	**9,377**	**1,149**	**27,544**	**868**	**146,798**
2019 January	33	14	719	188	1,164	606	96	8,668	734	102	2,292	73	13,013
February	28	9	670	163	1,061	539	82	7,492	734	87	2,085	69	11,442
March	32	9	702	181	1,152	525	81	7,903	870	101	2,245	80	12,199
April	21	8	644	157	1,040	497	88	7,650	733	94	2,146	72	11,639
May	19	8	682	145	1,079	500	86	7,791	764	102	2,192	63	11,872
June	14	7	690	165	1,100	504	89	7,926	692	97	2,258	64	12,004
July	NM	10	813	164	1,241	565	149	8,554	882	94	2,356	61	13,068
August	18	13	842	168	1,261	554	93	8,649	798	87	2,406	65	13,077
September	21	11	738	161	1,135	524	95	8,195	781	81	2,158	56	12,303
9-Month Total	**207**	**88**	**6,499**	**1,492**	**10,234**	**4,814**	**861**	**72,829**	**6,987**	**844**	**20,138**	**603**	**110,617**
2018 9-Month Total	**233**	**109**	**6,460**	**1,802**	**10,169**	**5,372**	**882**	**70,532**	**7,110**	**796**	**20,701**	**636**	**109,635**
2017 9-Month Total	**241**	**73**	**6,096**	**1,893**	**9,847**	**5,771**	**923**	**68,558**	**6,308**	**1,079**	**20,515**	**740**	**107,721**

[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.

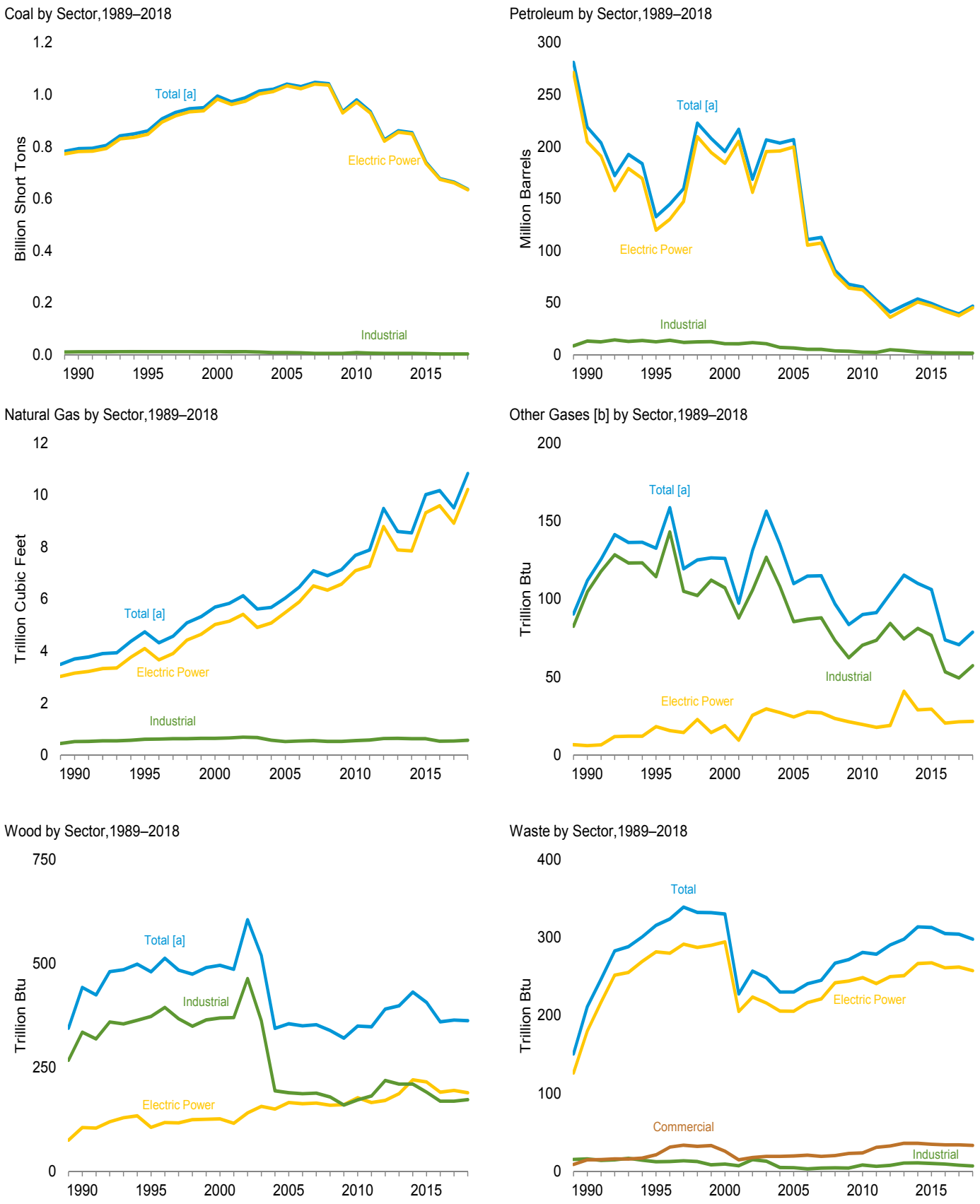
NA=Not available. NM=Not meaningful.

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 January	63,460	940	846	151	368	3,775	679	6	31	27	16
February	47,985	714	724	104	277	2,928	587	6	28	24	14
March	48,840	814	738	105	265	2,984	690	6	31	26	16
April	44,279	658	718	103	168	2,317	647	6	27	25	15
May	50,898	808	811	94	329	3,357	720	6	28	26	16
June	58,852	707	908	148	350	3,512	873	6	30	26	16
July	69,769	689	811	93	344	3,312	1,105	6	33	26	17
August	65,761	655	930	124	300	3,211	1,043	6	33	26	17
September	54,713	692	820	110	276	3,004	878	6	29	24	15
October	50,015	731	844	100	228	2,816	792	6	29	24	15
November	50,882	751	711	129	293	3,054	686	6	30	25	15
December	58,457	1,548	1,581	285	292	4,875	806	6	33	26	16
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	706	6	29	24	15
March	44,474	735	650	112	255	2,770	772	7	32	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	868	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	1,245	7	34	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	784	6	29	24	16
December	55,624	879	679	182	321	3,347	782	6	30	25	16
Total	**636,213**	**14,223**	**12,407**	**1,985**	**3,623**	**46,727**	**10,831**	**79**	**362**	**298**	**190**
2019 January	55,831	1,124	1,025	274	329	4,066	860	6	31	21	17
February	45,056	668	591	152	283	2,829	794	6	27	19	14
March	44,038	697	614	138	266	2,780	816	7	28	22	16
April	33,432	618	618	161	182	2,308	755	6	26	20	15
May	40,061	771	744	138	298	3,140	853	6	30	21	16
June	44,274	775	808	148	218	2,822	1,013	6	28	21	16
July	56,061	767	900	152	314	3,390	1,295	7	31	22	17
August	52,512	762	967	163	278	3,281	1,309	7	33	22	17
September	47,802	702	800	159	259	2,958	1,115	7	29	21	16
9-Month Total	**419,067**	**6,886**	**7,066**	**1,484**	**2,428**	**27,574**	**8,810**	**59**	**264**	**190**	**144**
2018 9-Month Total	**480,466**	**11,626**	**10,099**	**1,536**	**2,802**	**37,270**	**8,355**	**60**	**276**	**224**	**143**
2017 9-Month Total	**504,557**	**6,677**	**7,307**	**1,033**	**2,677**	**28,399**	**7,223**	**53**	**271**	**229**	**143**

[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 January	63,179	907	832	131	352	3,629	629	2	17	24	11
February	47,731	693	714	81	262	2,797	542	2	16	21	9
March	48,581	789	726	89	245	2,830	642	2	18	22	10
April	44,059	637	707	90	152	2,192	600	2	14	21	9
May	50,667	784	802	77	313	3,227	673	2	14	22	10
June	58,625	686	899	131	330	3,366	823	2	16	22	10
July	69,531	663	804	76	322	3,151	1,051	2	17	22	11
August	65,528	627	922	107	278	3,047	991	2	18	22	11
September	54,487	665	812	94	260	2,870	831	2	15	21	10
October	49,781	709	833	81	210	2,675	744	2	15	21	10
November	50,652	729	691	112	274	2,904	638	2	16	21	10
December	58,212	1,509	1,557	265	275	4,707	754	2	18	22	11
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	729	2	15	22	11
Total	**633,593**	**13,795**	**12,259**	**1,757**	**3,444**	**45,030**	**10,214**	**21**	**189**	**257**	**125**
2019 January	55,603	1,088	1,011	257	315	3,929	805	2	17	18	11
February	44,849	646	581	129	272	2,717	746	2	14	17	10
March	43,857	671	604	120	253	2,660	765	2	14	19	11
April	33,261	593	610	133	167	2,171	706	2	13	18	10
May	39,874	743	737	117	283	3,011	802	2	16	19	11
June	44,093	746	801	129	204	2,696	961	2	15	19	11
July	55,851	731	896	135	289	3,205	1,240	2	16	19	11
August	52,305	727	960	144	263	3,144	1,253	2	18	19	12
September	47,607	664	794	140	243	2,810	1,063	2	15	18	11
9-Month Total	**417,301**	**6,609**	**6,993**	**1,304**	**2,287**	**26,343**	**8,340**	**17**	**139**	**164**	**99**
2018 9-Month Total	**478,461**	**11,300**	**9,995**	**1,355**	**2,668**	**35,990**	**7,894**	**17**	**146**	**194**	**94**
2017 9-Month Total	**502,388**	**6,452**	**7,218**	**874**	**2,513**	**27,109**	**6,781**	**16**	**145**	**198**	**91**

[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 January	11	22	4	3	270	124	47	4	14	1	4
February	9	14	4	3	245	117	42	4	13	1	4
March	9	16	4	3	250	139	45	4	14	1	4
April	6	10	4	3	214	115	43	4	13	1	4
May	6	16	4	3	224	114	44	4	14	1	4
June	6	14	4	3	221	132	46	4	14	1	4
July	7	16	5	3	230	145	49	4	15	1	5
August	7	20	5	3	227	143	47	5	15	1	5
September	8	15	4	3	218	119	42	4	13	1	4
October	7	14	4	3	227	127	43	4	14	1	4
November	8	16	4	3	222	135	44	4	14	1	4
December	9	33	4	3	236	134	49	4	15	1	4
Total	**95**	**204**	**50**	**34**	**2,783**	**1,545**	**541**	**49**	**169**	**8**	**49**
2018 January	11	68	4	3	255	144	48	5	15	1	4
February	9	16	4	3	230	105	42	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**	**173**	**7**	**46**
2019 January	10	25	5	3	218	112	51	4	14	1	4
February	8	15	4	2	198	97	44	4	13	1	3
March	9	17	4	2	172	103	47	5	14	1	3
April	6	16	4	2	165	121	45	4	13	1	3
May	6	18	4	2	182	112	47	5	14	(s)	3
June	4	18	4	2	176	109	47	4	14	(s)	3
July	6	25	5	2	205	160	50	5	15	(s)	3
August	5	22	5	2	202	115	51	5	15	1	4
September	6	27	5	2	189	120	48	5	13	(s)	4
9-Month Total	**59**	**182**	**40**	**21**	**1,707**	**1,049**	**430**	**42**	**125**	**5**	**30**
2018 9-Month Total	**67**	**218**	**41**	**25**	**1,938**	**1,063**	**420**	**43**	**130**	**5**	**35**
2017 9-Month Total	**70**	**142**	**38**	**26**	**2,098**	**1,149**	**405**	**37**	**126**	**6**	**38**

[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).

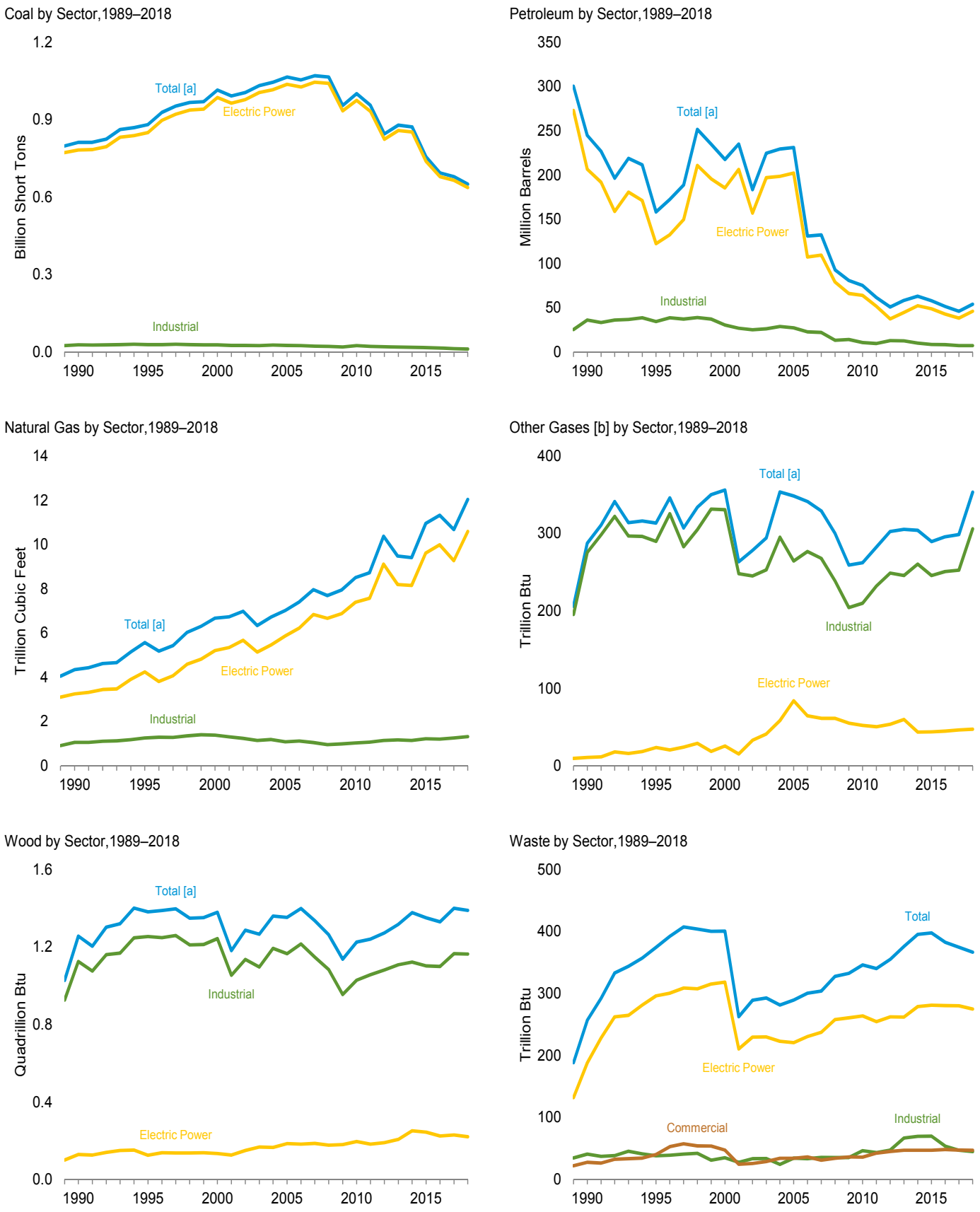
(s)=Less than 0.5 trillion Btu.

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 January	64,930	987	943	207	449	4,381	781	26	121	35	19
February	49,183	741	790	148	347	3,412	678	23	108	30	17
March	50,132	846	825	139	355	3,584	787	25	119	33	19
April	45,408	687	787	146	242	2,829	736	24	110	31	18
May	52,034	836	878	136	406	3,881	813	26	112	31	19
June	60,005	726	973	183	441	4,087	968	24	116	30	19
July	70,971	710	870	129	430	3,861	1,209	25	122	31	21
August	66,975	678	988	163	390	3,780	1,145	25	124	31	21
September	55,817	723	894	139	352	3,517	975	24	111	28	18
October	51,238	758	919	139	314	3,386	889	25	115	30	18
November	52,142	797	873	164	373	3,696	782	25	118	32	18
December	59,743	1,678	1,769	340	368	5,629	913	26	125	33	19
Total	**678,578**	**10,168**	**11,508**	**2,033**	**4,467**	**46,043**	**10,677**	**299**	**1,400**	**375**	**226**
2018 January	66,279	5,607	3,894	668	466	12,497	913	28	123	33	19
February	47,079	707	759	164	382	3,542	801	28	109	31	18
March	45,728	782	723	148	327	3,286	873	30	118	33	19
April	41,610	825	774	138	354	3,508	816	27	109	31	18
May	48,374	998	853	159	281	3,417	963	30	115	31	19
June	57,159	946	962	149	413	4,122	1,071	29	115	29	20
July	64,895	798	927	184	448	4,151	1,352	30	123	29	19
August	64,801	843	1,001	169	429	4,157	1,315	34	122	30	20
September	54,975	800	1,030	163	399	3,988	1,151	29	110	27	17
October	49,406	831	989	183	306	3,532	1,008	31	112	31	19
November	52,868	981	879	167	342	3,739	886	28	115	31	19
December	56,853	947	795	284	404	4,048	888	29	119	32	19
Total	**650,027**	**15,066**	**13,584**	**2,578**	**4,552**	**53,988**	**12,038**	**353**	**1,390**	**367**	**226**
2019 January	57,135	1,329	1,139	330	402	4,810	973	30	120	28	20
February	46,196	728	668	202	349	3,342	894	29	107	26	17
March	45,165	745	698	178	343	3,337	921	31	109	28	18
April	34,476	654	690	213	257	2,844	852	28	106	25	18
May	41,070	912	820	188	376	3,799	951	27	110	25	19
June	45,298	807	878	189	291	3,330	1,112	27	107	25	19
July	57,038	804	950	185	393	3,906	1,399	30	112	25	19
August	53,517	805	1,035	202	349	3,788	1,415	29	117	26	20
September	48,736	749	870	200	350	3,570	1,215	28	106	24	18
9-Month Total	**428,630**	**7,532**	**7,748**	**1,887**	**3,112**	**32,727**	**9,733**	**258**	**993**	**231**	**168**
2018 9-Month Total	**490,899**	**12,306**	**10,921**	**1,944**	**3,500**	**42,669**	**9,255**	**266**	**1,044**	**273**	**169**
2017 9-Month Total	**515,455**	**6,936**	**7,946**	**1,390**	**3,412**	**33,332**	**8,092**	**223**	**1,042**	**280**	**171**

[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		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]	**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 January	63,595	916	856	147	362	3,728	660	4	20	26	12
February	48,048	697	730	87	272	2,872	569	3	18	22	10
March	48,925	794	733	90	256	2,898	672	4	21	24	11
April	44,358	640	716	90	162	2,255	627	4	17	22	10
May	50,952	789	812	78	324	3,297	700	4	17	24	11
June	58,920	690	910	133	340	3,435	851	4	18	24	11
July	69,882	667	815	77	332	3,220	1,082	4	20	24	12
August	65,883	630	932	109	289	3,118	1,022	4	21	23	12
September	54,780	675	822	95	270	2,942	859	4	18	22	11
October	50,099	713	847	82	221	2,746	773	4	18	22	10
November	51,013	734	707	113	285	2,979	666	4	19	23	11
December	58,538	1,536	1,585	276	286	4,828	785	4	21	24	12
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**	**10,589**	**47**	**221**	**275**	**136**
2019 January	55,983	1,111	1,039	270	324	4,038	841	4	20	20	12
February	45,142	659	597	130	282	2,794	777	5	17	18	11
March	44,167	680	620	120	263	2,733	798	5	17	21	12
April	33,520	600	625	134	178	2,250	736	4	16	19	11
May	40,118	752	751	118	292	3,080	831	4	19	20	13
June	44,386	752	815	130	212	2,758	993	4	17	19	12
July	56,131	737	907	137	299	3,274	1,274	5	19	20	13
August	52,592	735	970	146	271	3,206	1,288	4	21	20	13
September	47,849	670	812	141	252	2,883	1,095	4	18	19	12
9-Month Total	**419,888**	**6,696**	**7,135**	**1,326**	**2,372**	**27,016**	**8,633**	**38**	**164**	**176**	**108**
2018 9-Month Total	**481,223**	**11,452**	**10,136**	**1,391**	**2,746**	**36,708**	**8,176**	**36**	**170**	**206**	**102**
2017 9-Month Total	**505,344**	**6,498**	**7,325**	**905**	**2,607**	**27,765**	**7,042**	**34**	**171**	**211**	**100**

[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 January	71	68	14	4	1,264	584	107	22	100	5	5
February	58	43	12	4	1,077	496	97	20	89	4	5
March	66	50	12	4	1,141	637	103	21	98	5	5
April	42	24	10	4	1,008	550	99	20	93	4	5
May	39	34	11	4	1,043	550	102	22	95	3	5
June	40	27	13	4	1,045	625	104	20	97	3	6
July	47	30	15	4	1,042	611	112	21	101	3	6
August	43	45	15	4	1,050	618	108	22	102	3	6
September	45	35	13	4	991	539	103	20	92	3	5
October	42	33	13	4	1,098	607	104	21	97	4	5
November	52	38	12	4	1,077	679	104	21	98	5	5
December	66	88	14	4	1,139	713	115	22	103	5	5
Total	**610**	**516**	**154**	**48**	**12,975**	**7,209**	**1,257**	**253**	**1,166**	**47**	**65**
2018 January	76	186	12	4	1,242	926	115	24	101	5	5
February	59	48	11	4	1,122	578	101	24	90	4	5
March	57	42	11	4	1,109	530	105	26	98	5	5
April	47	36	10	4	960	568	102	23	93	4	5
May	39	34	10	4	979	539	105	25	97	4	5
June	36	33	11	4	969	618	107	26	96	2	5
July	40	55	13	4	962	610	116	26	101	3	5
August	42	46	13	4	949	545	116	30	102	3	6
September	45	39	11	4	943	528	110	25	93	2	5
October	42	36	11	4	891	608	110	27	95	4	5
November	47	62	11	4	1,015	588	113	24	97	4	5
December	47	65	11	4	1,093	656	115	25	100	5	5
Total	**577**	**681**	**135**	**47**	**12,233**	**7,294**	**1,314**	**306**	**1,164**	**45**	**62**
2019 January	58	78	12	4	1,095	693	121	26	99	4	5
February	53	47	11	3	1,001	501	106	24	90	4	4
March	54	53	11	3	944	551	111	26	92	4	5
April	39	40	10	3	918	553	106	24	90	3	4
May	40	138	10	3	913	581	109	23	91	2	4
June	31	31	11	3	881	541	108	23	89	3	4
July	40	50	12	3	866	583	114	26	92	2	5
August	42	45	12	3	883	537	115	24	95	2	5
September	42	56	11	3	844	632	110	24	87	2	5
9-Month Total	**399**	**537**	**100**	**27**	**8,344**	**5,173**	**1,000**	**220**	**826**	**28**	**41**
2018 9-Month Total	**441**	**518**	**102**	**35**	**9,235**	**5,442**	**977**	**230**	**871**	**31**	**46**
2017 9-Month Total	**451**	**356**	**116**	**36**	**9,661**	**5,211**	**935**	**189**	**868**	**33**	**49**

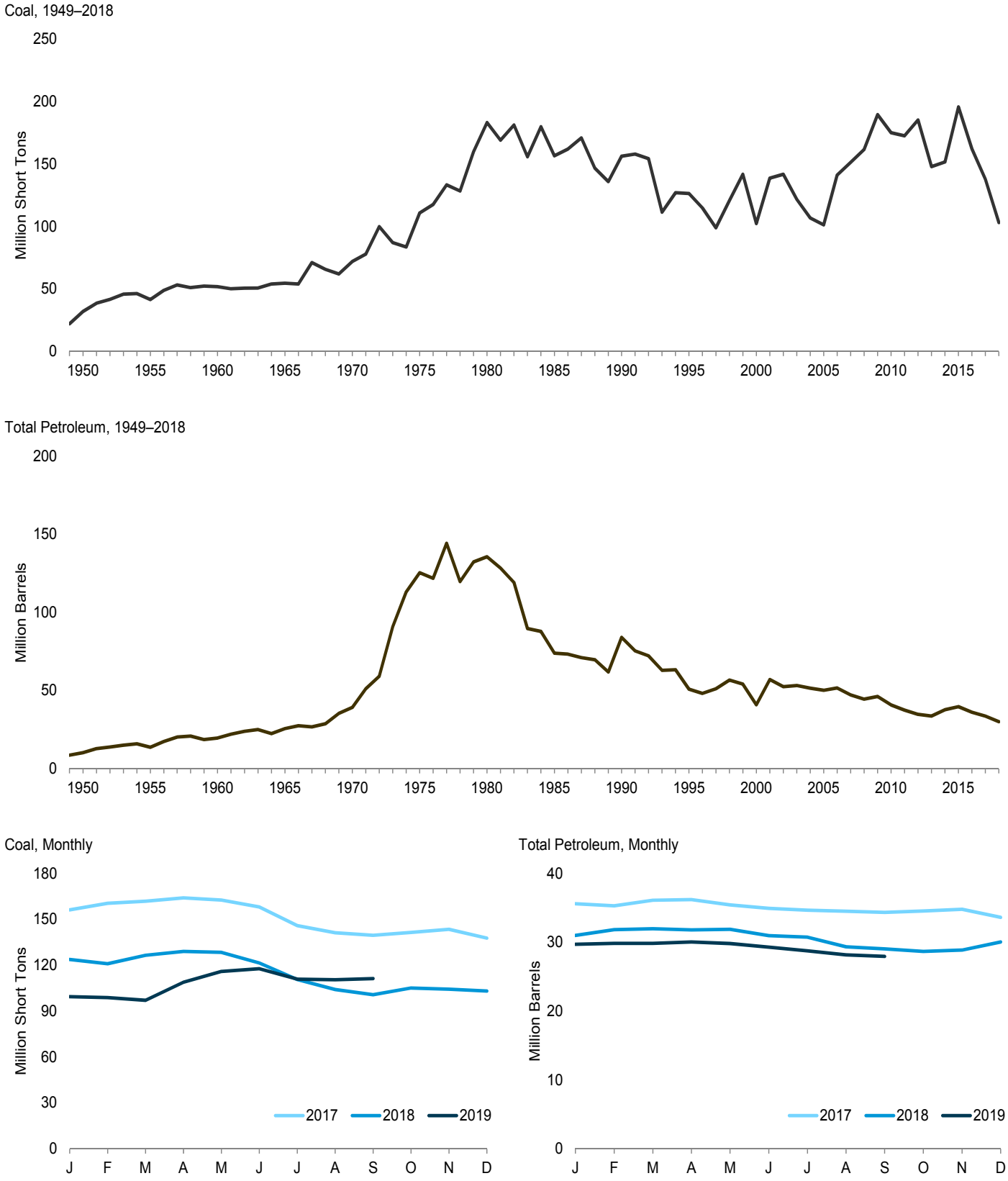
[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[d] Distillate fuel oil, residual fuel 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.

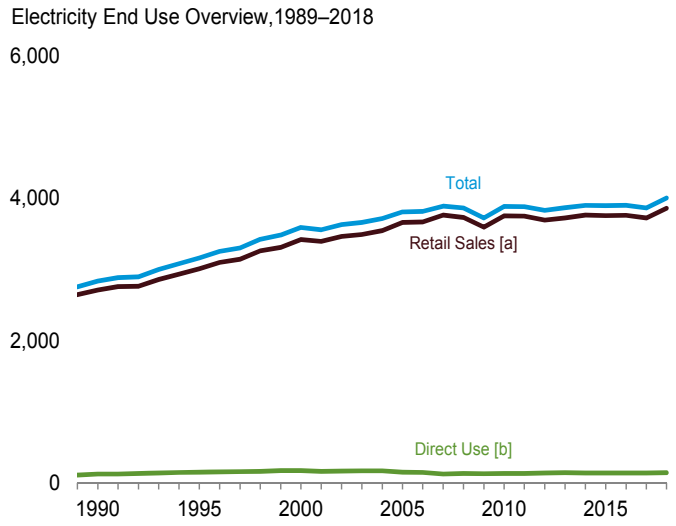
Table 7.5 Stocks of Coal and Petroleum: Electric Power Sector

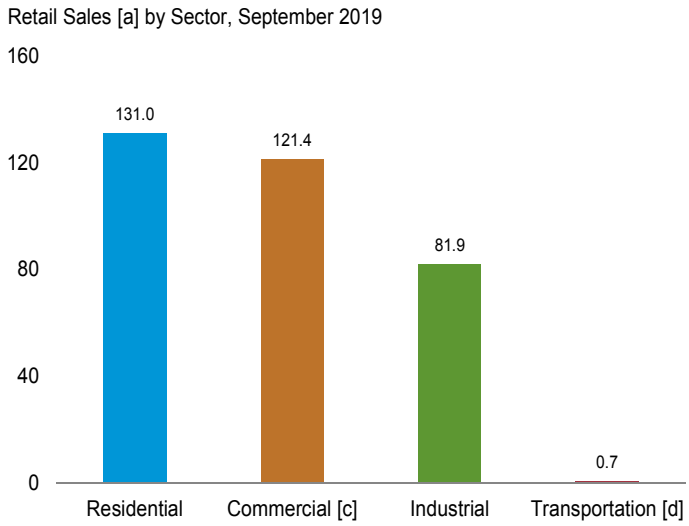
	Coal[a]	Petroleum				
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e,f]
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels
1950 Year	**31,842**	**NA**	**NA**	**NA**	**NA**	**10,201**
1955 Year	**41,391**	**NA**	**NA**	**NA**	**NA**	**13,671**
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**	**1,955**	**739**	**44,498**
2009 Year	**189,467**	**17,886**	**19,068**	**2,257**	**1,394**	**46,181**
2010 Year	**174,917**	**16,758**	**16,629**	**2,319**	**1,019**	**40,800**
2011 Year	**172,387**	**16,649**	**15,491**	**2,707**	**508**	**37,387**
2012 Year	**185,116**	**16,433**	**12,999**	**2,792**	**495**	**34,698**
2013 Year	**147,884**	**16,068**	**12,926**	**2,679**	**390**	**33,622**
2014 Year	**151,548**	**18,309**	**12,764**	**2,432**	**827**	**37,643**
2015 Year	**195,548**	**17,955**	**12,566**	**2,363**	**1,340**	**39,586**
2016 Year	**162,009**	**17,855**	**11,789**	**2,195**	**845**	**36,064**
2017 January	156,214	17,718	11,858	2,186	768	35,601
February	160,502	17,588	11,744	2,168	756	35,277
March	161,815	17,336	12,681	2,157	785	36,099
April	163,937	17,362	12,439	2,168	844	36,187
May	162,542	17,265	12,170	2,143	772	35,439
June	158,014	17,082	11,993	2,133	742	34,916
July	145,811	17,150	11,740	2,143	724	34,655
August	141,204	17,091	11,531	2,129	749	34,497
September	139,571	16,844	11,382	2,120	798	34,334
October	141,463	16,806	11,292	2,128	862	34,537
November	143,424	16,980	11,381	2,140	859	34,796
December	**137,687**	**16,356**	**10,930**	**2,008**	**864**	**33,612**
2018 January	123,692	15,728	9,786	1,884	720	30,999
February	120,945	16,080	10,343	1,937	692	31,823
March	126,422	16,041	10,309	1,945	736	31,977
April	128,965	15,970	10,217	1,956	731	31,798
May	128,356	16,138	10,151	2,038	709	31,870
June	121,394	15,885	10,169	1,946	591	30,955
July	110,677	15,869	9,605	1,911	668	30,723
August	104,048	15,422	8,944	1,847	625	29,338
September	100,680	15,449	8,692	1,848	608	29,028
October	105,134	15,505	8,685	1,759	541	28,654
November	104,336	15,787	8,520	1,767	557	28,857
December	**103,043**	**16,645**	**8,805**	**1,887**	**539**	**30,035**
2019 January	99,378	16,570	8,637	1,852	528	29,698
February	98,835	16,526	8,961	1,830	506	29,847
March	97,102	16,510	8,997	1,828	498	29,827
April	108,852	16,647	8,989	1,837	510	30,025
May	115,888	16,719	8,996	1,869	445	29,806
June	117,710	16,626	8,872	1,852	389	29,294
July	110,932	16,511	8,620	1,830	355	28,736
August	110,560	16,291	8,167	1,802	381	28,167
September	111,204	16,323	8,355	1,794	293	27,939

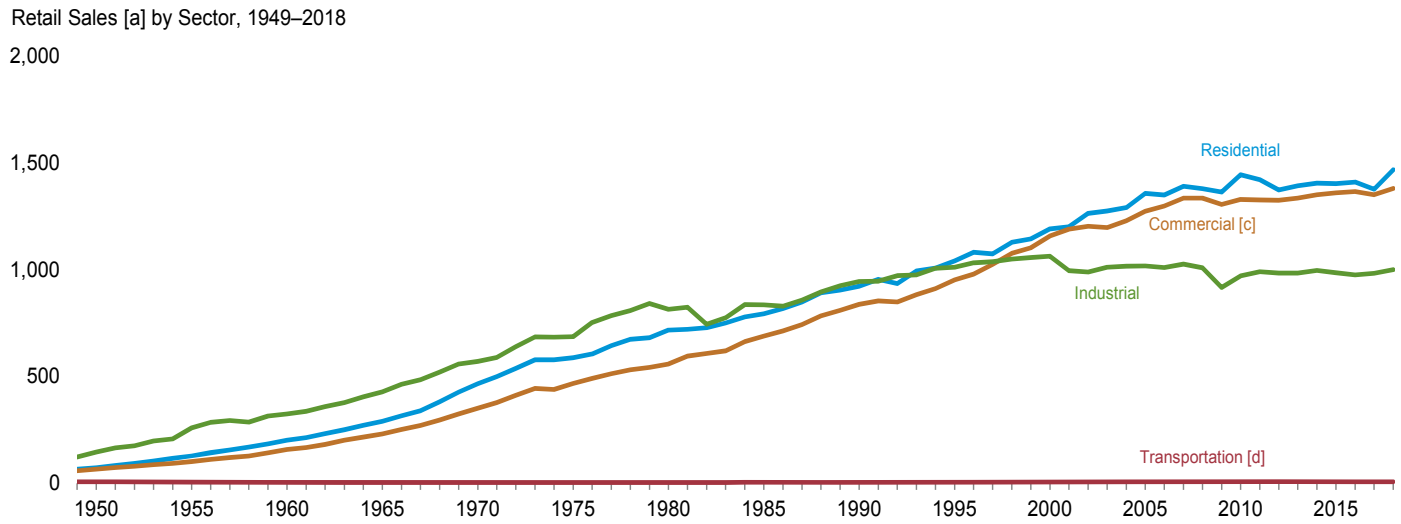
[a] Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.
[b] Fuel oil nos. 1, 2 and 4. For 1973–1979, data are for gas turbine and internal combustion plant stocks of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.
[c] 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."

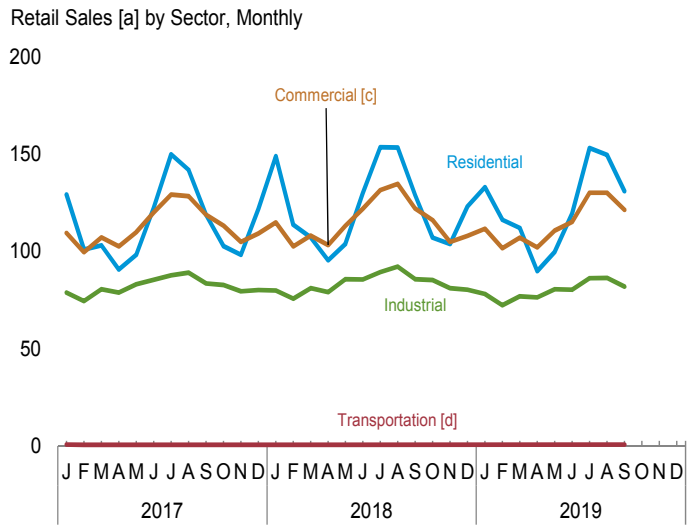
Figure 7.6 Electricity End Use

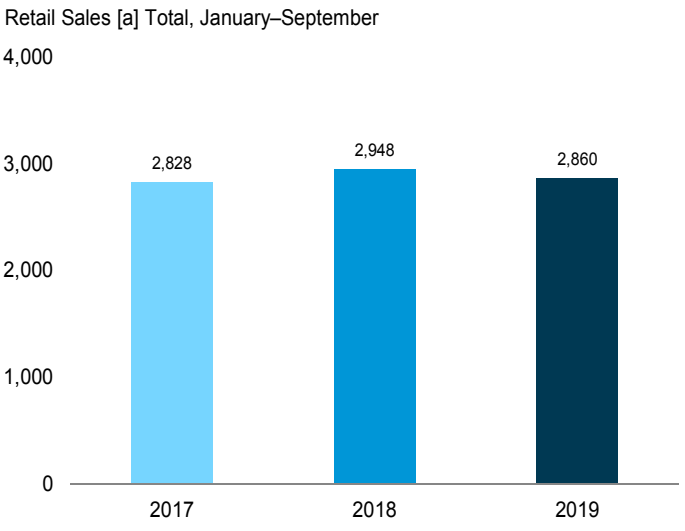
(Billion Kilowatthours)











[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, inter-departmental 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]	Transpor-tation[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 January	129,212	109,488	78,809	667	318,177	E 12,093	330,270
February	100,968	99,640	74,534	635	275,777	E 10,892	286,669
March	103,096	107,173	80,530	645	291,444	E 11,643	303,087
April	90,725	102,589	78,899	589	272,801	E 11,188	283,989
May	98,281	109,872	83,134	583	291,871	E 11,478	303,348
June	122,543	120,013	85,399	628	328,583	E 11,967	340,550
July	149,900	129,277	87,806	630	367,613	E 12,763	380,376
August	142,007	128,481	89,134	640	360,263	E 12,558	372,820
September	118,779	118,789	83,540	618	321,726	E 11,213	332,939
October	102,811	113,287	82,815	626	299,539	E 11,353	310,892
November	98,321	104,973	79,456	598	283,347	E 11,455	294,802
December	122,005	109,306	80,242	664	312,216	E 12,512	324,728
Total	**1,378,648**	**1,352,888**	**984,298**	**7,523**	**3,723,356**	**141,114**	**3,864,470**
2018 January	148,918	114,926	79,964	745	344,552	E 12,404	356,957
February	113,752	102,686	75,730	634	292,802	E 11,036	303,838
March	107,219	108,109	81,127	620	297,074	E 11,521	308,596
April	95,454	103,332	79,157	599	278,543	E 11,023	289,566
May	103,848	113,176	85,717	587	303,328	E 11,740	315,068
June	129,913	122,012	85,615	623	338,163	E 12,027	350,190
July	153,566	131,522	89,384	634	375,107	E 12,994	388,101
August	153,497	134,849	92,189	680	381,215	E 13,079	394,294
September	128,910	122,034	85,758	640	337,342	E 12,008	349,351
October	107,049	116,134	85,380	631	309,194	E 11,865	321,059
November	103,790	104,984	81,195	616	290,584	E 11,977	302,561
December	123,181	107,999	80,380	655	312,215	E 12,439	324,653
Total	**1,469,096**	**1,381,761**	**1,001,597**	**7,665**	**3,860,119**	**144,114**	**4,004,233**
2019 January	133,010	111,645	78,179	671	323,506	E 12,761	336,267
February	116,248	101,740	72,375	704	291,068	E 11,254	302,322
March	112,139	107,086	76,985	689	296,899	E 12,017	308,916
April	89,863	102,076	76,383	614	268,936	E 11,413	280,349
May	99,809	110,759	80,549	608	291,725	E 11,658	303,383
June	119,518	115,243	80,378	614	315,753	E 11,795	327,548
July	153,139	130,253	86,270	645	370,306	E 12,879	383,185
August	149,660	130,136	86,457	658	366,910	E 12,906	379,816
September	131,038	121,379	81,940	682	335,038	E 12,095	347,133
9-Month Total	**1,104,423**	**1,030,316**	**719,516**	**5,885**	**2,860,141**	**E 108,777**	**2,968,918**
2018 9-Month Total	**1,135,076**	**1,052,645**	**754,642**	**5,763**	**2,948,126**	**E 107,833**	**3,055,960**
2017 9-Month Total	**1,055,512**	**1,025,322**	**741,785**	**5,635**	**2,828,254**	**E 105,795**	**2,934,048**

[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 2019, 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 2019, 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 2019, 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."

2001–2018: EIA, *Electric Power Annual* 2018, October 2019, Table 2.2.

2019: 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 2019, the 2018 annual share is used.

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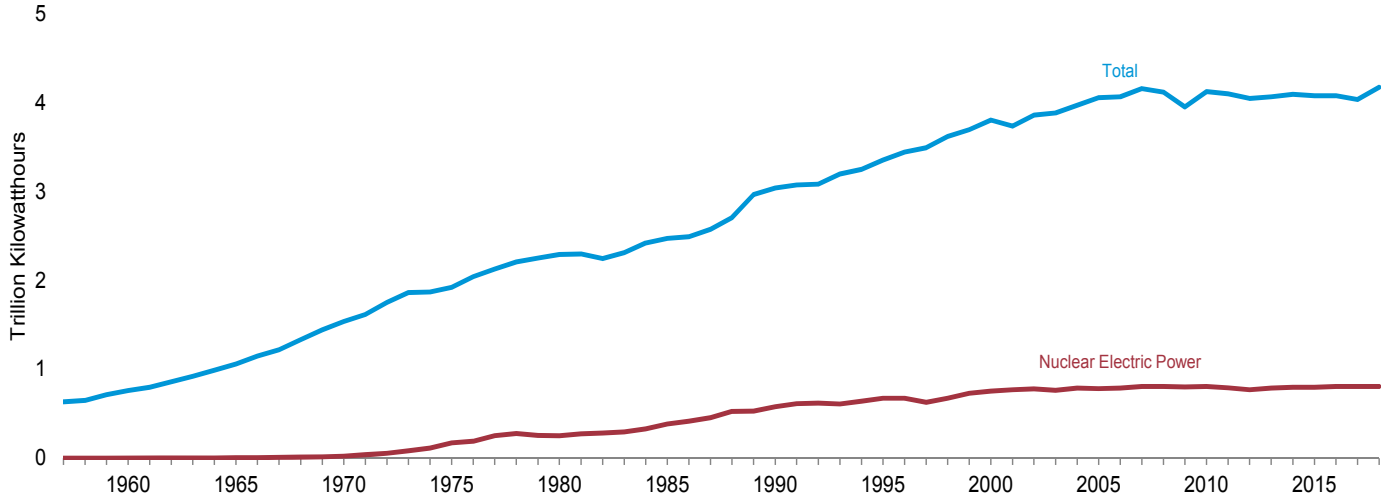
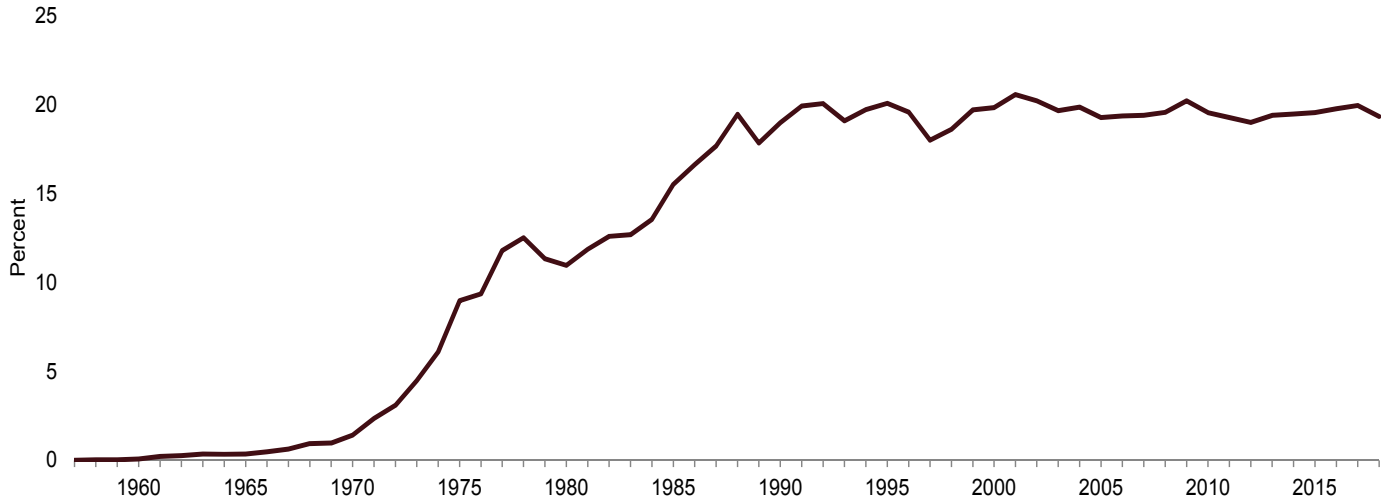
8. Nuclear Energy

Figure 8.1 Nuclear Energy Overview

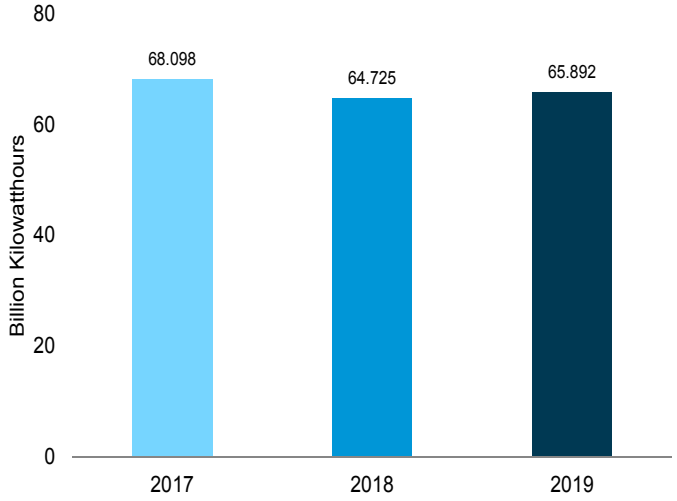
Electricity Net Generation,1957–2018



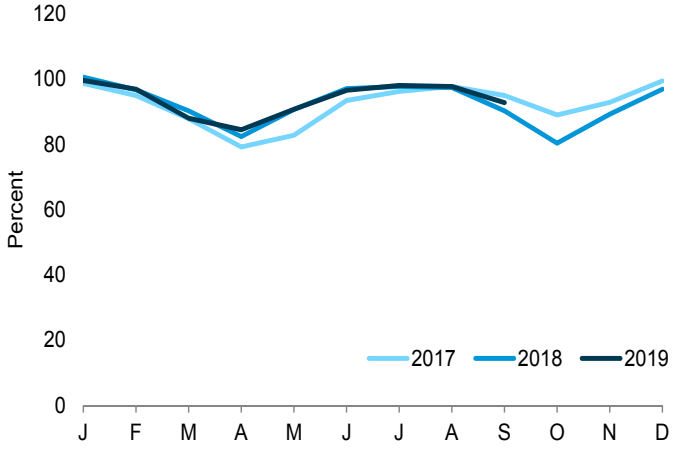
Nuclear Share of Electricity Net Generation,1957–2018



Nuclear Electricity Net Generation–September



Capacity Factor, Monthly



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 January	99	99.610	73,121	21.3	98.7
February	99	99.610	63,560	21.9	95.0
March	99	99.610	65,093	20.5	87.8
April	99	99.610	56,743	19.3	[R] 79.2
May	99	99.610	61,313	19.0	[R] 82.8
June	99	99.610	67,011	18.7	[R] 93.5
July	99	99.629	71,314	17.6	96.2
August	99	99.629	72,384	18.8	97.7
September	99	99.629	68,098	20.3	[R] 95.0
October	99	99.629	65,995	20.6	89.0
November	99	99.629	66,618	21.5	92.9
December	99	99.629	73,700	20.9	99.4
Total	**99**	**99.629**	**804,950**	**20.0**	**[R] 92.3**
2018 January	99	[R] 99.731	74,649	20.0	100.6
February	99	[R] 99.731	64,790	21.1	96.7
March	99	[R] 99.731	67,033	20.8	90.3
April	99	[R] 99.731	59,133	19.7	82.4
May	99	[R] 99.731	67,320	19.9	90.7
June	99	[R] 99.731	69,688	[R] 18.7	[R] 97.1
July	99	[R] 99.731	72,456	[R] 17.6	97.7
August	99	[R] 99.731	72,282	17.7	97.4
September	98	[R] 99.278	64,725	18.2	90.3
October	98	[R] 99.278	59,397	18.3	80.4
November	98	[R] 99.433	63,954	19.8	89.3
December	98	[R] 99.433	71,657	21.2	96.9
Total	**98**	**[R] 99.433**	**807,084**	**[R] 19.3**	**92.5**
2019 January	98	[E] 99.431	73,701	20.6	[E] 99.6
February	98	[E] 99.431	64,715	20.6	[E] 96.9
March	98	[E] 99.431	65,080	20.1	[E] 88.0
April	98	[E] 99.586	60,581	20.6	[E] 84.5
May	97	[E] 98.909	67,124	20.4	[E] 90.8
June	97	[E] 98.909	68,805	19.6	[E] 96.6
July	97	[E] 98.909	72,199	17.5	[E] 98.1
August	97	[E] 98.909	71,911	17.9	[E] 97.7
September	96	[E] 98.106	65,892	18.3	[E] 92.8
9-Month Total	**96**	**[E] 98.106**	**610,006**	**19.4**	**[E] 93.9**
2018 9-Month Total	**98**	**99.278**	**612,076**	**19.2**	**93.7**
2017 9-Month Total	**99**	**99.629**	**598,637**	**19.6**	**91.7**

[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.

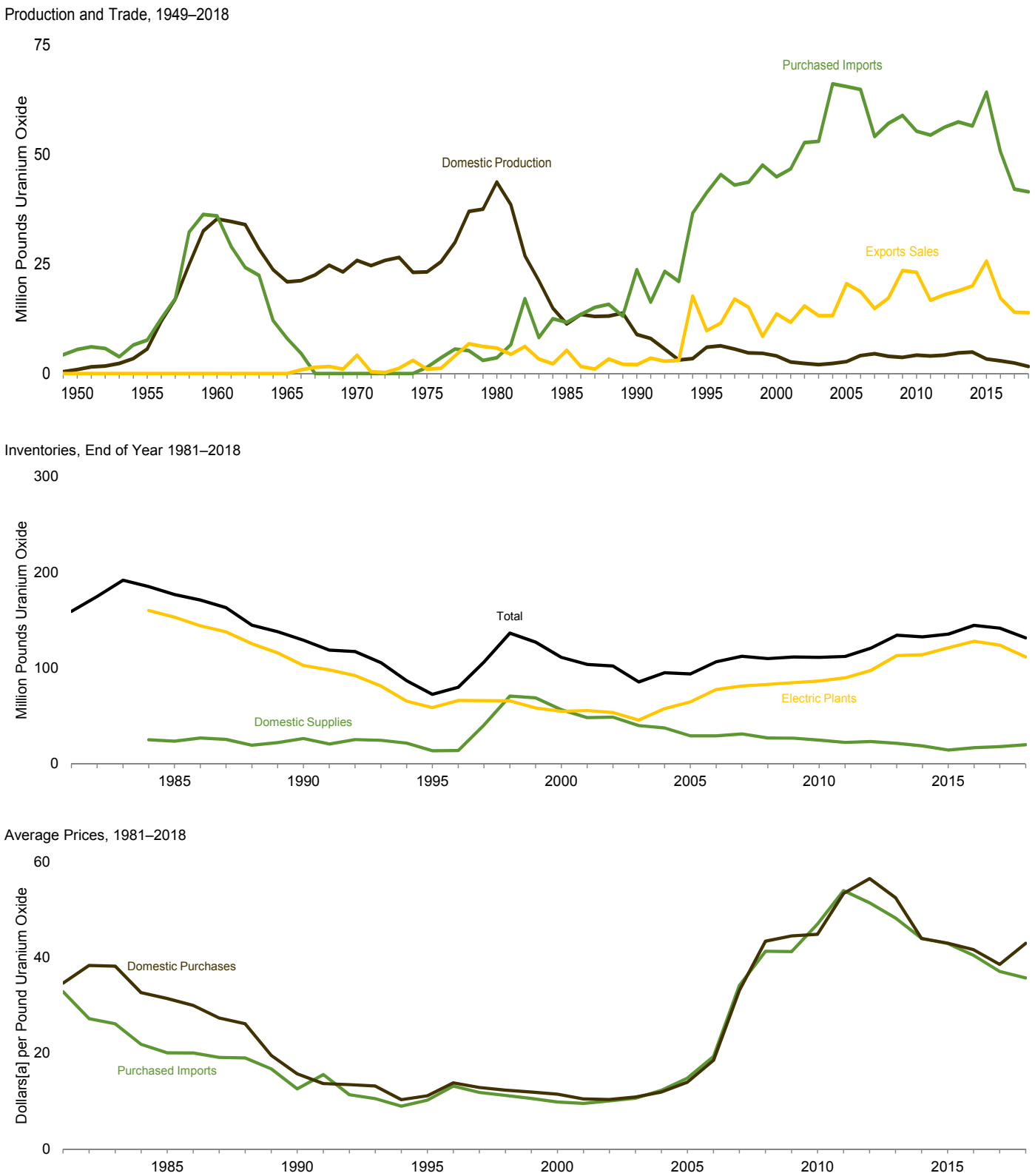
R=Revised. E=Estimate. NA=Not available. (s)=Less than 0.05%.

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,E]2.34	52.7	15.4	22.7	57.2	48.7	53.5	102.1	10.05	10.35
2003	[e,E]2.00	53.0	13.2	21.7	62.3	39.9	45.6	85.5	10.59	10.84
2004	2.28	66.1	13.2	28.2	50.1	37.5	57.7	95.2	12.25	11.91
2005	2.69	65.5	20.5	27.3	58.3	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	[P]50.2	[P]19.9	[P]111.6	[P]131.5	35.73	42.98

[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. – – =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. • **2003–2015:** EIA, "Domestic Uranium Production Report," annual reports; and EIA, "Uranium Marketing Annual Report," annual reports. • **2016 forward:** EIA, "2018 Domestic Uranium Production Report" (May 2019), Table 3; and EIA, "2018 Uranium Marketing Annual Report" (May 2019), 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.

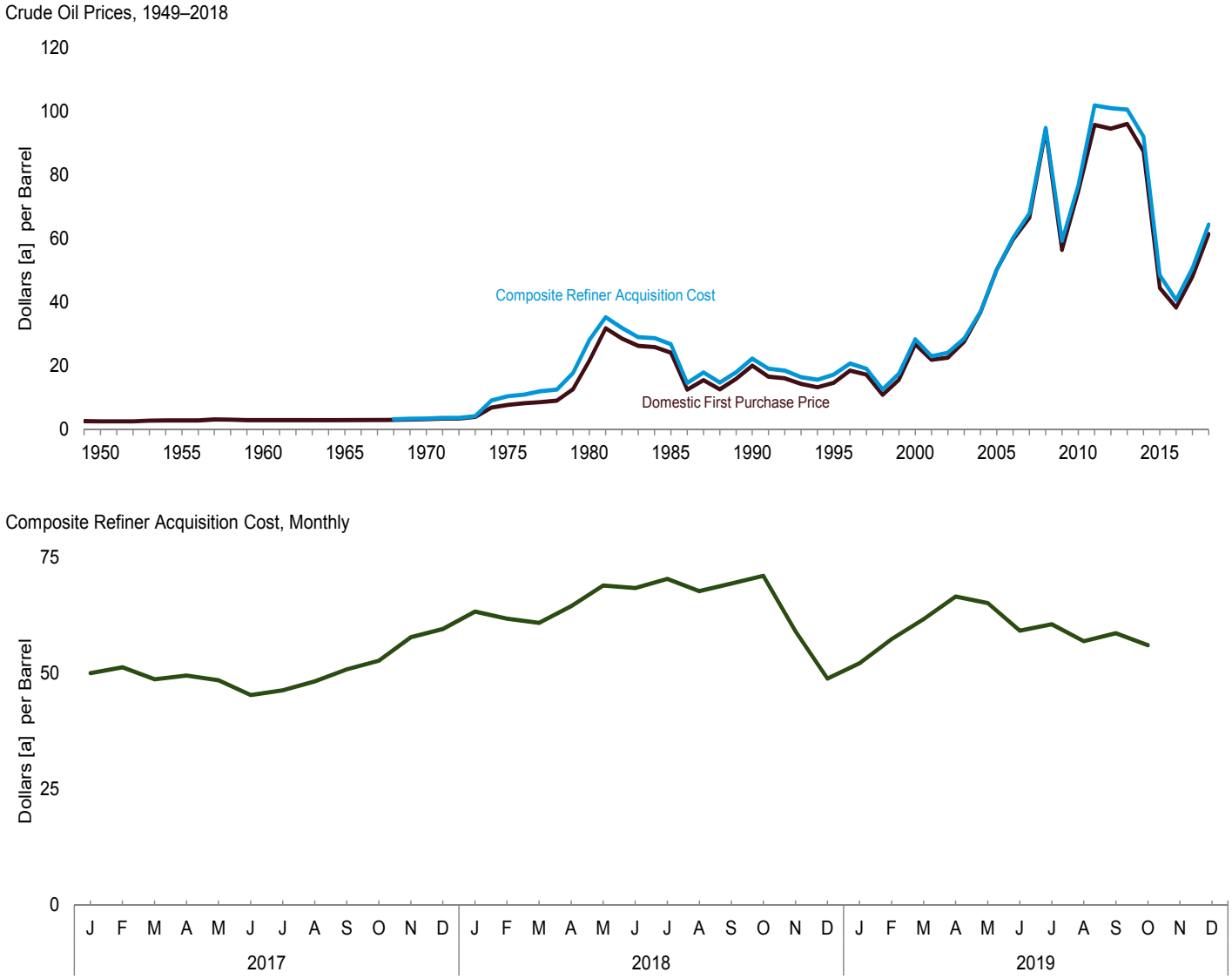
Capacity Factor

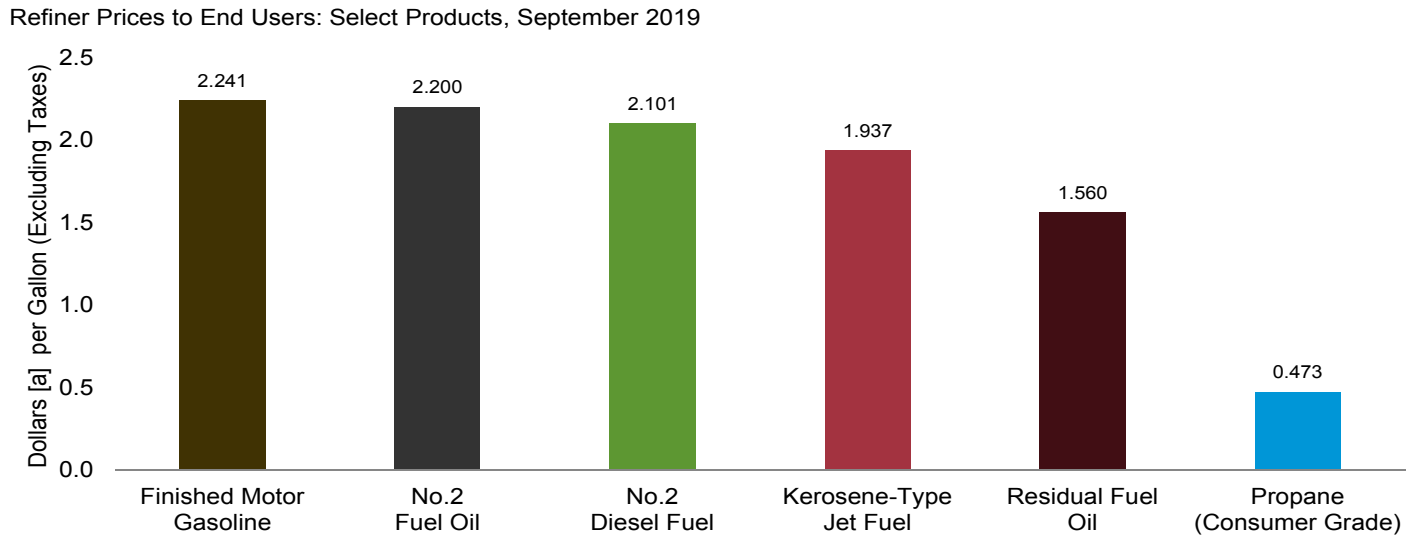
1973–2007: Calculated by EIA using the method described above in Note 2.

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 January	48.19	44.62	47.05	51.81	48.12	49.99
February	49.41	45.91	48.08	53.15	49.38	51.24
March	46.39	44.09	46.26	50.60	46.53	48.65
April	47.23	43.60	46.00	51.34	47.47	49.47
May	45.19	43.92	46.15	49.58	47.21	48.47
June	42.17	41.34	43.85	46.26	44.03	45.25
July	43.42	42.09	44.82	47.59	44.76	46.27
August	44.96	44.18	46.93	48.76	47.62	48.22
September	47.17	46.50	49.80	51.07	50.46	50.78
October	49.12	47.22	51.11	53.71	51.40	52.67
November	55.19	52.11	56.10	58.92	56.30	57.75
December	56.98	53.68	56.96	61.10	57.44	59.53
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	47.85	48.72	49.25	53.86	49.57	52.11
February	52.51	54.14	56.12	57.89	56.50	57.35
March	57.47	57.54	59.48	61.97	61.14	61.64
April	63.01	61.31	63.62	67.24	65.42	66.52
May	59.68	60.70	63.69	65.17	65.03	65.11
June	54.22	54.50	57.40	59.81	58.16	59.16
July	56.47	R 54.51	R 56.97	61.47	59.18	60.53
August	53.63	R 51.88	R 54.73	R 57.88	R 55.41	R 56.90
September	R 55.07	R 52.62	R 54.85	R 59.38	R 57.34	R 58.60
October	NA	NA	NA	E 57.75	E 53.80	E 56.04

[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 January	–	47.92	45.50	W	W	–	45.94	47.61	47.30	43.25
February	W	46.97	45.91	W	51.03	–	45.69	50.01	49.11	43.63
March	W	46.05	42.10	W	48.54	–	42.47	47.78	46.83	41.73
April	W	46.76	44.32	W	50.00	W	43.71	48.93	47.16	41.46
May	W	44.70	44.85	W	47.95	–	42.27	47.14	46.08	42.66
June	W	41.30	41.86	48.88	45.41	–	39.16	44.45	43.52	40.28
July	W	44.44	44.33	50.26	46.94	–	41.72	45.95	45.40	40.39
August	W	47.16	46.33	52.18	49.33	–	45.41	48.06	48.32	41.38
September	–	W	48.06	W	53.41	–	49.22	51.74	52.36	43.26
October	–	52.69	49.01	58.58	55.44	–	52.51	50.92	53.93	44.21
November	–	W	54.66	W	60.22	W	55.88	59.12	58.89	48.57
December	–	W	55.32	W	62.09	–	58.27	60.36	61.52	49.87
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	48.38	58.54	55.22	46.13
February	–	56.59	58.52	W	W	W	W	62.58	63.09	51.47
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	–	66.11	67.97	59.17
June	W	61.09	58.75	W	W	W	–	62.67	63.47	51.82
July	–	W	58.93	W	W	R W	–	R 62.08	R 63.82	R 52.32
August	–	R 59.37	R 50.72	W	R 59.81	W	–	R 58.17	R 59.92	R 50.47
September	–	–	56.73	W	W	W	–	57.58	59.76	51.66

[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 January	–	44.70	49.17	46.35	54.74	50.40	W	47.53	49.35	49.22	45.76
February	W	44.97	49.66	46.57	54.42	52.27	–	46.28	50.92	50.48	46.26
March	W	43.00	48.29	42.97	W	50.36	W	43.91	49.58	48.91	44.03
April	W	43.05	48.38	44.65	W	50.18	W	44.53	49.03	48.47	44.31
May	W	44.24	45.92	45.51	51.83	49.17	W	43.50	47.37	47.36	45.23
June	50.74	41.76	44.89	42.36	50.36	47.97	W	40.88	46.86	45.77	42.67
July	50.20	41.60	46.72	45.17	50.89	48.22	–	42.25	47.48	46.91	43.36
August	52.23	43.18	48.56	46.86	53.18	51.43	W	46.16	49.71	49.55	45.41
September	56.59	45.14	52.43	49.63	57.99	55.03	W	50.98	52.93	53.53	47.42
October	W	45.68	53.95	50.28	59.35	58.34	W	53.05	55.14	55.71	48.21
November	61.03	51.16	59.52	55.47	64.27	61.66	62.24	57.19	59.63	59.83	53.67
December	W	51.15	61.58	56.01	67.20	63.52	–	58.80	61.48	62.13	53.90
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	51.82	59.80	57.46	45.44
February	–	50.24	59.69	59.72	W	66.37	W	52.72	64.07	62.76	53.71
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	68.10	71.30	W	67.11	68.90	62.19
June	W	50.84	65.87	59.32	69.41	65.06	65.41	–	63.71	65.12	55.30
July	W	R 51.14	64.10	59.50	67.57	R 64.14	R 64.63	–	63.83	R 64.76	R 54.97
August	–	R 50.68	R 59.22	51.59	R 65.76	R 61.49	W	–	R 60.40	R 61.58	R 52.97
September	W	50.68	59.90	57.70	65.93	60.89	W	–	60.20	61.08	53.25

[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 2019, 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 January	– –	2.351	2.815	2.409	2.285	2.482	2.349	2.580
February	– –	2.299	2.793	2.360	2.227	2.467	2.304	2.568
March	– –	2.323	2.827	2.386	2.243	2.498	2.325	2.554
April	– –	2.418	2.909	2.479	2.340	2.579	2.417	2.583
May	– –	2.386	2.894	2.448	2.303	2.577	2.391	2.560
June	– –	2.337	2.859	2.400	2.257	2.536	2.347	2.511
July	– –	2.281	2.800	2.344	2.211	2.486	2.300	2.496
August	– –	2.374	2.883	2.436	2.297	2.557	2.380	2.595
September	– –	2.630	3.120	2.688	2.570	2.802	2.645	2.785
October	– –	2.484	2.996	2.545	2.430	2.663	2.505	2.794
November	– –	2.548	3.056	2.608	2.474	2.751	2.564	2.909
December	– –	2.459	2.985	2.521	2.388	2.663	2.477	2.909
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

[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 January	1.099	W	1.121	1.249	1.119	1.309
February	1.174	W	1.115	1.243	1.121	1.291
March	1.103	W	1.075	1.186	1.077	1.239
April	1.038	W	1.039	1.147	1.039	1.201
May	.986	W	1.047	1.153	1.043	1.213
June	.937	W	.995	1.129	.991	1.195
July	1.026	W	1.040	1.154	1.039	1.211
August	1.042	W	1.081	1.142	1.079	1.204
September	1.150	W	1.137	1.295	1.138	1.314
October	1.153	W	1.178	1.249	1.176	1.304
November	1.302	W	1.277	1.384	1.279	1.413
December	1.254	W	1.249	1.447	1.249	1.484
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	1.326	1.511	1.337	1.560

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

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 2019, 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 January	1.627	2.614	1.561	1.761	1.560	1.636	.788
February	1.625	2.592	1.592	1.657	1.553	1.641	.792
March	1.634	2.618	1.520	1.580	1.495	1.581	.671
April	1.723	2.724	1.545	1.572	1.499	1.627	.641
May	1.668	2.620	1.459	1.481	1.447	1.552	.631
June	1.574	2.552	1.378	1.360	1.375	1.465	.585
July	1.621	2.608	1.436	1.468	1.392	1.533	.634
August	1.711	2.710	1.587	1.630	1.522	1.681	.742
September	1.826	2.893	1.771	1.809	1.668	1.847	.864
October	1.730	2.716	1.704	1.805	1.695	1.852	.942
November	1.806	2.841	1.795	1.961	1.781	1.936	.997
December	1.720	2.691	1.846	2.034	1.841	1.918	.991
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	R 1.795	1.865	R .458
September	1.854	2.829	1.898	1.984	1.901	1.955	.477

[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 2019, 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 January	1.900	W	1.584	W	NA	1.747	.774
February	1.862	W	1.615	W	2.033	1.755	.814
March	1.904	W	1.554	W	1.909	1.699	.657
April	1.997	W	1.595	W	2.081	1.747	.652
May	1.963	W	1.492	2.637	NA	1.693	.650
June	1.906	W	1.434	2.600	1.739	1.618	.611
July	1.871	W	1.478	2.621	1.728	1.665	.667
August	1.952	W	1.613	2.579	1.904	1.792	.768
September	2.154	W	1.795	2.703	2.044	1.959	.895
October	2.042	W	1.743	W	2.048	1.982	.972
November	2.122	W	1.831	W	2.134	2.047	1.011
December	2.034	W	1.869	W	2.263	2.037	1.028
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	2.241	W	1.937	3.203	2.200	2.101	.473

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] See Note 5, "Motor Gasoline Prices," at end of section.

NA=Not available. W=Value withheld to avoid disclosure of individual company data.

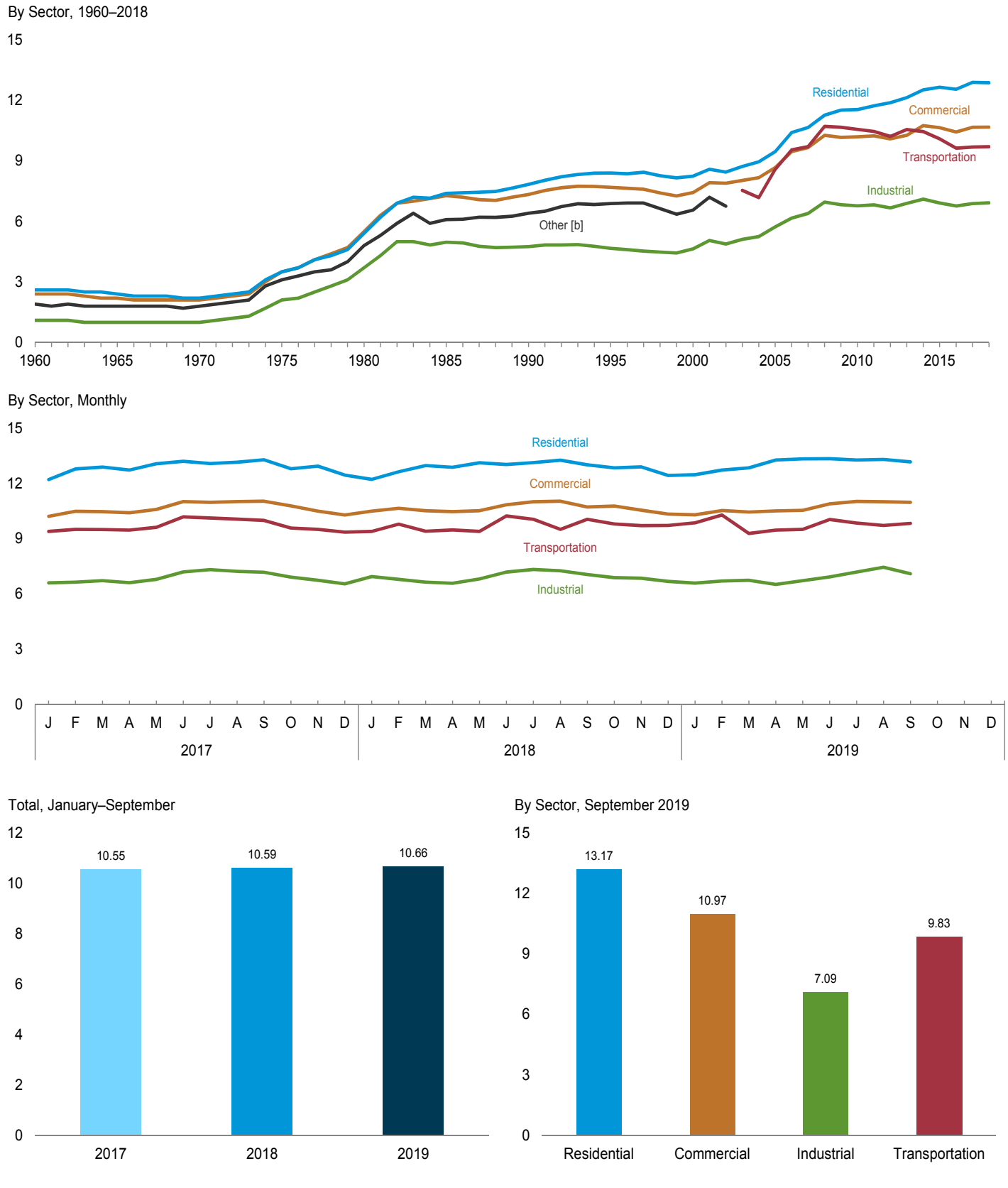
Notes: • Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. Sales for resale are shown in Table 9.6; they are sales made to purchasers other than ultimate consumers. • 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 2019, 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 January	12.21	10.21	6.59	9.39	– –	10.13
February	12.79	10.48	6.63	9.50	– –	10.28
March	12.89	10.46	6.71	9.49	– –	10.28
April	12.72	10.40	6.60	9.46	– –	10.07
May	13.07	10.59	6.78	9.61	– –	10.34
June	13.20	11.01	7.19	10.18	– –	10.83
July	13.08	10.97	7.31	10.12	– –	10.95
August	13.15	11.01	7.22	10.06	– –	10.91
September	13.28	11.03	7.17	9.99	– –	10.86
October	12.80	10.78	6.91	9.57	– –	10.40
November	12.94	10.49	6.73	9.50	– –	10.28
December	12.45	10.28	6.54	9.35	– –	10.17
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	6.80	9.39	– –	10.35
June	13.03	10.84	7.18	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	6.88	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	10.29	6.58	9.86	– –	10.29
February	12.72	10.52	6.69	10.28	– –	10.45
March	12.85	10.44	6.73	9.28	– –	10.38
April	13.27	10.50	6.51	9.46	– –	10.29
May	13.33	10.53	6.71	9.50	– –	10.43
June	13.34	10.89	6.92	10.04	– –	10.81
July	13.27	11.02	7.18	9.85	– –	11.05
August	13.30	11.00	7.44	9.71	– –	11.10
September	13.17	10.97	7.09	9.83	– –	10.88
9-Month Average	**13.08**	**10.71**	**6.89**	**9.76**	**– –**	**10.66**
2018 9-Month Average	**12.91**	**10.71**	**6.96**	**9.69**	**– –**	**10.59**
2017 9-Month Average	**12.94**	**10.71**	**6.93**	**9.76**	**– –**	**10.55**

[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.

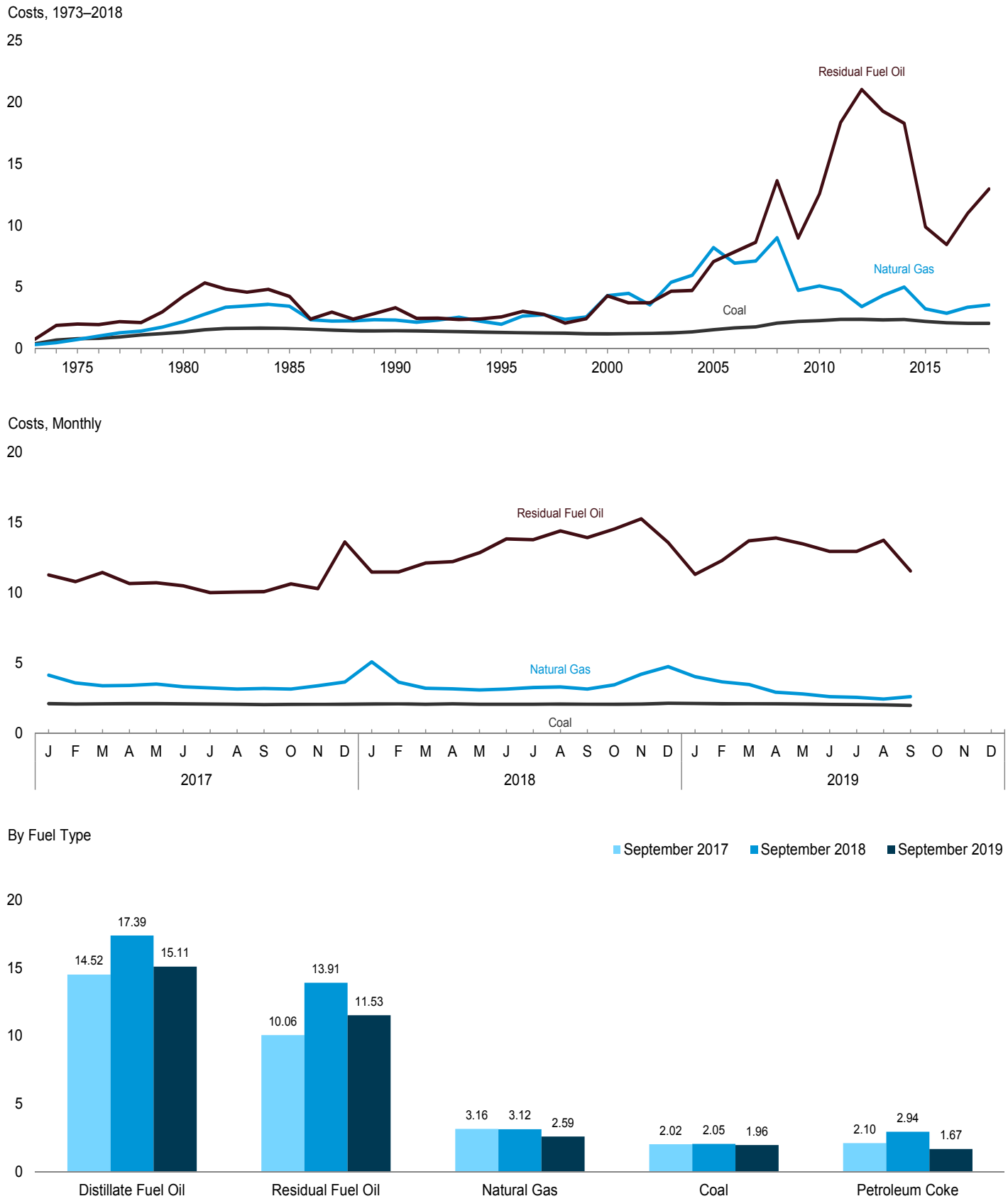
Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of energy service provider 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 2019, 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.

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 January	2.09	11.25	13.02	2.14	7.80	4.11	2.88
February	2.06	10.77	12.98	2.00	6.37	3.56	2.63
March	2.07	11.42	12.35	2.06	7.66	3.35	2.66
April	2.08	10.64	13.00	2.00	7.01	3.38	2.65
May	2.09	10.69	12.22	2.05	6.69	3.48	2.70
June	2.07	10.48	11.56	2.11	6.18	3.29	2.64
July	2.06	9.99	11.82	2.09	5.97	3.21	2.64
August	2.05	10.03	12.95	2.08	6.31	3.13	2.56
September	2.02	10.06	14.52	2.10	6.42	3.16	2.56
October	2.03	10.61	14.11	2.31	6.88	3.13	2.54
November	2.04	10.28	14.61	2.49	8.04	3.35	2.62
December	2.04	13.60	14.63	2.17	8.90	3.63	2.80
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	11.29	14.12	2.08	8.40	4.01	2.99
February	2.07	12.27	15.31	2.27	9.37	3.64	2.85
March	2.08	13.68	15.69	2.43	10.43	3.45	2.79
April	2.07	13.89	16.32	2.71	11.04	2.89	2.49
May	2.06	13.47	16.18	2.24	9.42	2.77	2.43
June	2.03	12.92	14.86	2.18	9.57	2.59	2.36
July	2.02	12.93	15.10	2.01	7.94	2.53	2.33
August	2.00	13.72	14.83	1.72	6.88	2.41	2.25
September	1.96	11.53	15.11	1.67	9.15	2.59	2.33
9-Month Average	**2.04**	**12.72**	**15.25**	**2.10**	**9.06**	**2.92**	**2.52**
2018 9-Month Average	**2.05**	**12.56**	**16.17**	**2.63**	**9.59**	**3.39**	**2.77**
2017 9-Month Average	**2.06**	**10.72**	**12.66**	**2.07**	**6.76**	**3.37**	**2.65**

[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.

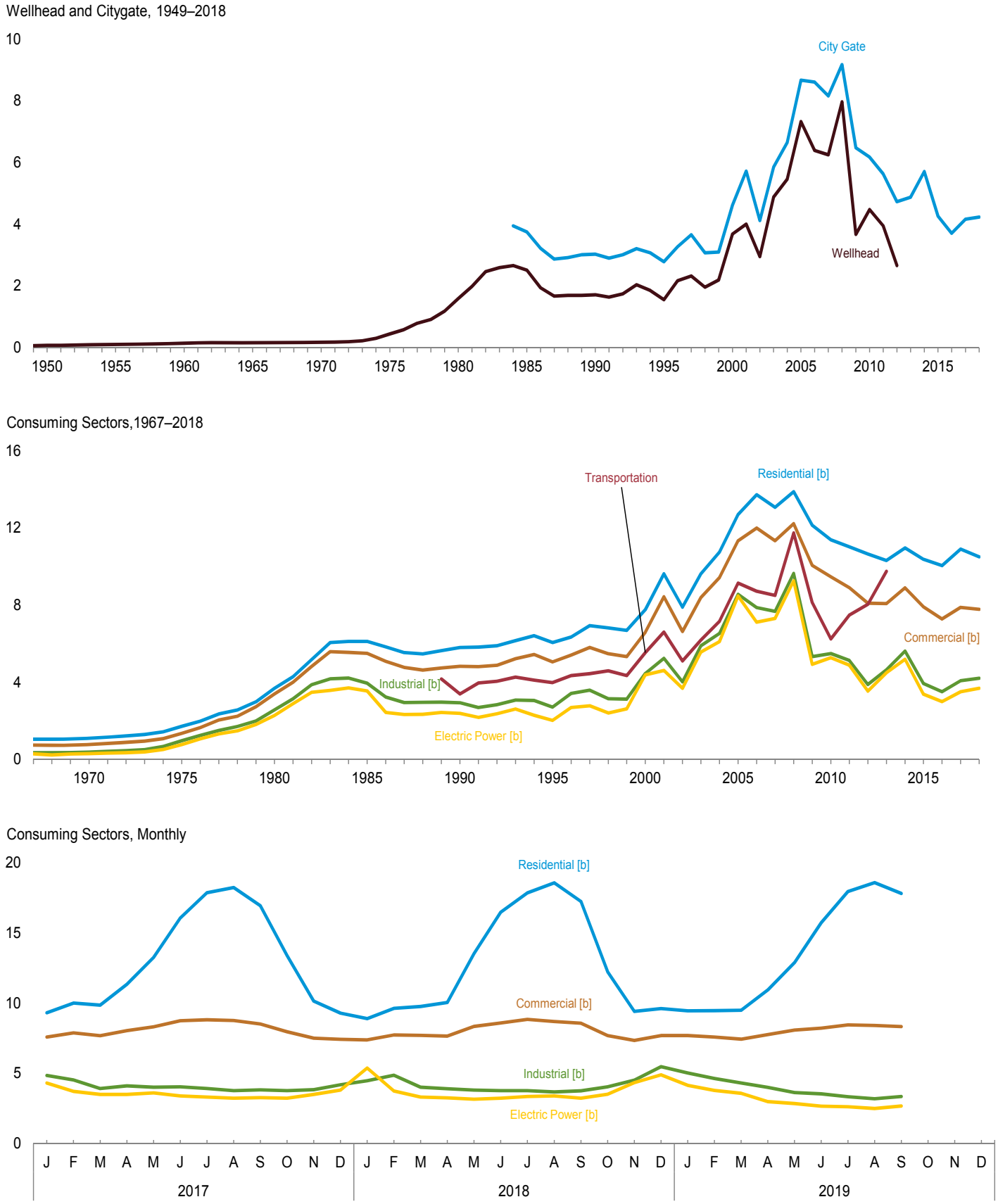
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated 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 January	NA	4.21	9.32	95.9	7.58	70.5	4.85	15.2	NA	4.31	94.6
February	NA	4.13	10.01	95.8	7.89	69.0	4.53	15.2	NA	3.72	95.5
March	NA	3.84	9.86	95.7	7.68	67.7	3.92	15.1	NA	3.51	95.6
April	NA	4.20	11.34	95.7	8.04	65.0	4.11	14.7	NA	3.50	96.0
May	NA	4.42	13.25	95.5	8.31	60.8	4.02	14.2	NA	3.61	96.8
June	NA	4.82	16.06	95.6	8.75	58.2	4.05	14.8	NA	3.40	96.0
July	NA	4.73	17.86	95.8	8.81	57.2	3.92	14.8	NA	3.32	95.1
August	NA	4.61	18.22	95.6	8.76	55.9	3.78	14.4	NA	3.24	95.6
September	NA	4.52	16.92	96.1	8.52	56.2	3.83	13.9	NA	3.27	95.1
October	NA	4.03	13.39	96.4	7.97	61.5	3.78	14.4	NA	3.24	95.2
November	NA	3.97	10.14	96.1	7.51	65.8	3.84	14.8	NA	3.50	94.9
December	NA	4.00	9.29	96.5	7.42	69.1	4.19	15.2	NA	3.81	94.8
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	7.39	71.4	4.48	15.0	NA	5.38	94.4
February	NA	3.99	9.63	96.0	7.74	69.2	4.87	14.6	NA	3.75	94.4
March	NA	3.69	9.76	95.9	7.71	68.5	4.02	15.1	NA	3.32	95.1
April	NA	3.65	10.05	95.6	7.65	65.4	3.91	14.8	NA	3.26	95.9
May	NA	4.14	13.52	94.8	8.34	60.0	3.81	13.9	NA	3.16	94.8
June	NA	4.49	16.47	95.7	8.58	57.7	3.78	13.8	NA	3.23	96.3
July	NA	4.50	17.84	95.8	8.84	56.3	3.77	13.6	NA	3.35	95.2
August	NA	5.25	18.56	95.6	8.69	55.1	3.68	13.9	NA	3.39	95.8
September	NA	4.72	17.23	96.2	8.57	56.8	3.76	13.8	NA	3.23	96.3
October	NA	4.10	12.23	96.5	7.69	61.2	4.04	14.1	NA	3.52	96.4
November	NA	4.28	9.41	96.4	7.34	66.6	4.52	14.2	NA	4.34	94.6
December	NA	4.72	9.61	96.2	7.70	69.0	5.48	14.3	NA	4.89	95.6
Average	**NA**	**4.23**	**10.50**	**96.0**	**7.78**	**65.8**	**4.21**	**14.3**	**NA**	**3.68**	**95.5**
2019 January	NA	4.04	9.45	96.3	7.70	70.4	5.03	13.6	NA	4.16	90.7
February	NA	3.85	9.47	96.1	7.58	69.6	4.64	14.0	NA	3.79	89.7
March	NA	4.01	9.49	96.0	7.44	69.4	4.32	13.6	NA	3.59	89.7
April	NA	3.68	10.94	95.6	7.76	64.5	4.00	12.9	NA	2.99	88.4
May	NA	3.65	12.88	95.7	8.08	61.1	3.64	12.5	NA	2.85	90.4
June	NA	4.05	15.72	95.6	8.22	58.9	3.55	12.3	NA	2.67	88.7
July	NA	4.16	17.94	95.9	8.45	56.4	3.34	12.9	NA	2.62	86.0
August	NA	4.20	18.58	96.0	8.41	56.0	3.20	[R] 12.2	NA	2.50	86.2
September	NA	4.13	17.81	96.2	8.33	56.6	3.35	12.1	NA	2.68	87.3
9-Month Average	**NA**	**3.95**	**10.89**	**96.0**	**7.79**	**65.6**	**3.96**	**12.9**	**NA**	**3.03**	**88.3**
2018 9-Month Average	**NA**	**4.13**	**10.74**	**95.9**	**7.87**	**65.5**	**4.03**	**14.3**	**NA**	**3.53**	**95.4**
2017 9-Month Average	**NA**	**4.24**	**11.26**	**95.8**	**8.01**	**64.9**	**4.13**	**14.7**	**NA**	**3.50**	**95.6**

[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.

R=Revised. 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 2019, 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 2019, 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 2019, 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 2019, 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*, May 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 2019, 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 2019, 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 2019, 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 2019, 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).

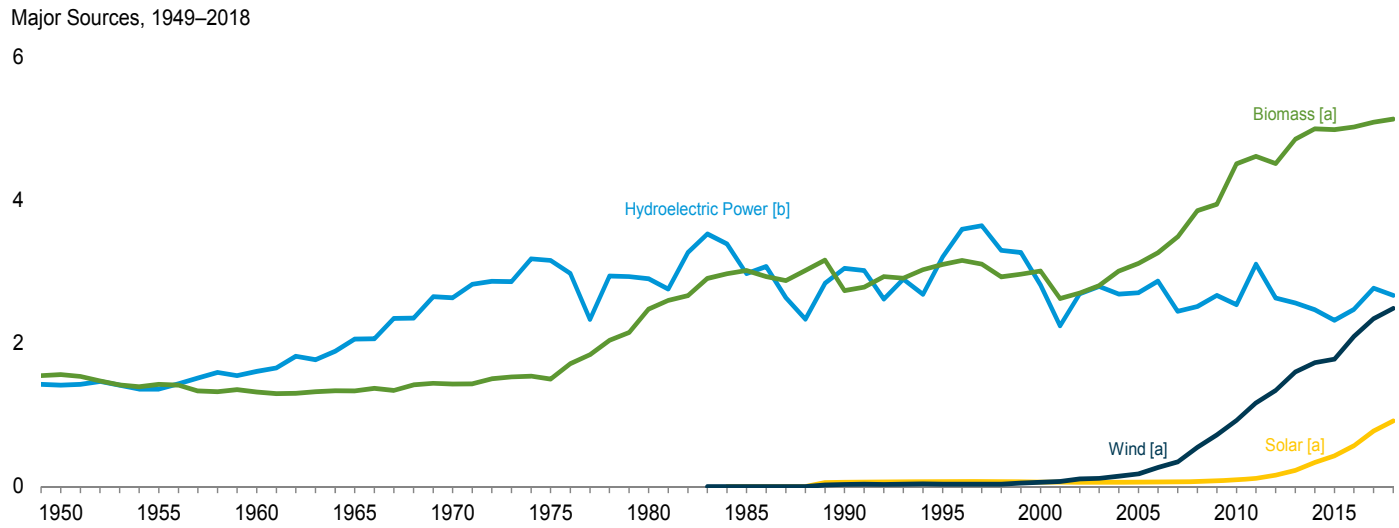
2002–2007: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report," divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

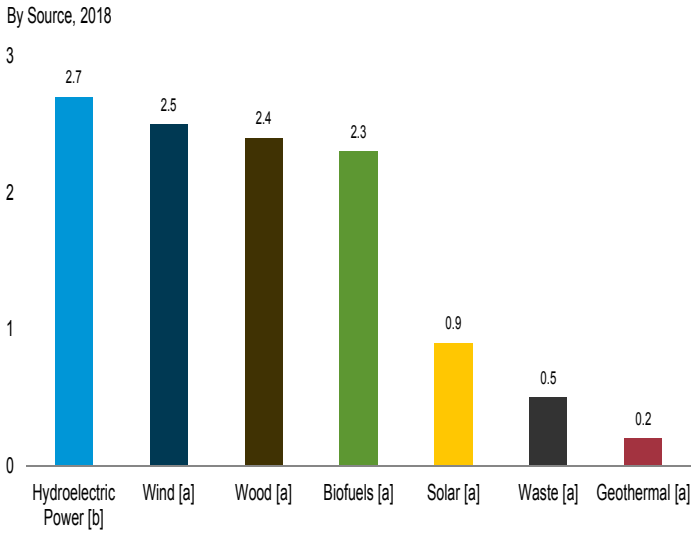
2008 forward: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form EIA-923, "Power Plant Operations Report," divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

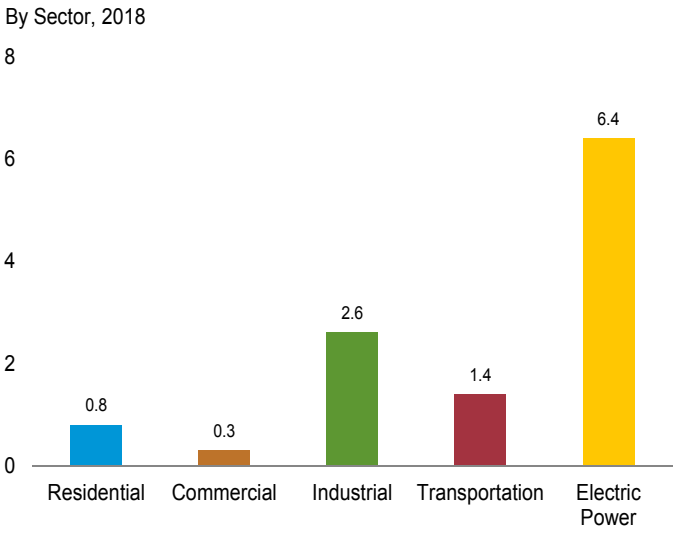
10. Renewable Energy

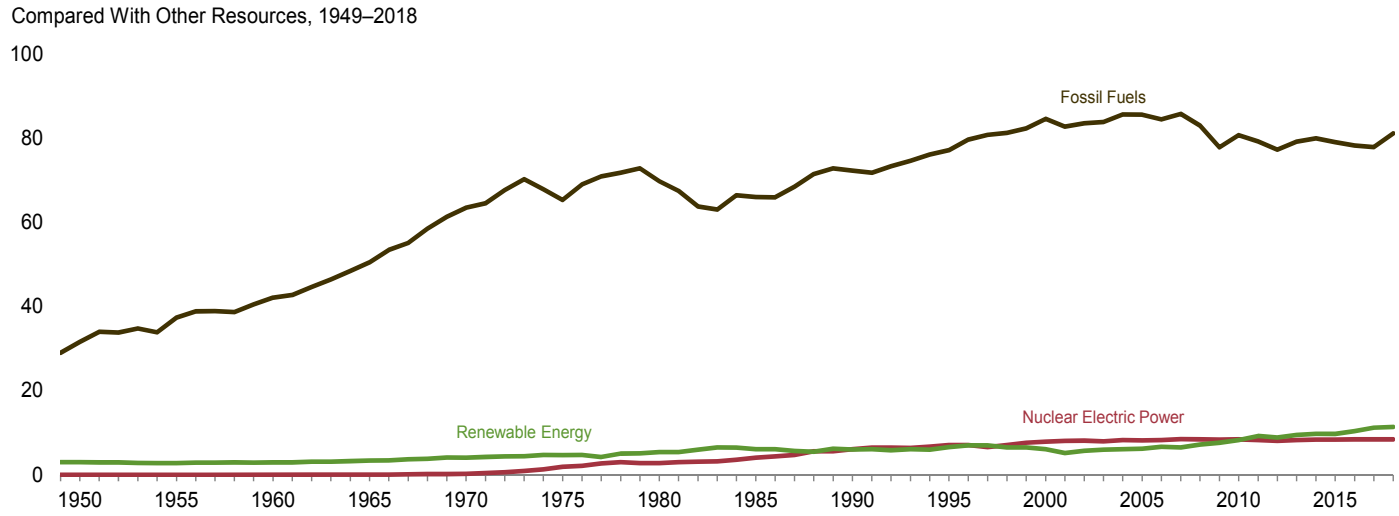
Figure 10.1 Renewable Energy Consumption

(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**	**9,766**	**2,467**	**214**	**337**	**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**	**9,720**
2016 Total	**2,302**	**2,275**	**5,081**	**10,428**	**2,472**	**210**	**570**	**2,096**	**2,230**	**503**	**2,287**	**5,020**	**10,368**
2017 January	203	197	445	926	247	18	34	183	196	45	181	422	904
February	181	177	398	867	218	16	40	195	176	40	168	383	852
March	201	197	442	1,023	270	18	63	230	194	43	191	429	1,010
April	189	183	412	997	271	18	69	227	183	41	185	408	993
May	193	197	432	1,035	298	17	81	207	188	41	202	431	1,034
June	195	192	427	991	278	16	87	183	188	40	199	428	992
July	202	196	439	932	244	18	83	147	197	41	196	434	927
August	205	203	450	874	201	18	80	125	199	41	205	445	869
September	191	192	421	852	176	17	74	164	183	38	190	411	842
October	197	201	438	924	168	17	68	233	190	40	196	427	914
November	198	203	443	921	189	17	50	222	191	42	194	426	905
December	209	205	458	959	206	20	49	226	200	43	195	439	940
Total	**2,364**	**2,344**	**5,204**	**11,301**	**2,767**	**210**	**777**	**2,343**	**2,285**	**495**	**2,304**	**5,084**	**11,181**
2018 January	211	200	454	982	229	18	49	233	205	43	187	435	963
February	191	184	415	926	227	16	56	211	184	40	166	390	900
March	206	202	451	1,020	236	18	74	241	200	43	192	436	1,004
April	196	191	428	1,028	256	16	86	241	189	41	181	411	1,011
May	205	202	448	1,058	278	18	97	218	197	41	201	439	1,049
June	204	200	443	1,039	252	17	102	225	195	39	194	428	1,024
July	212	210	461	955	229	18	97	150	205	39	199	444	938
August	212	212	465	959	201	18	95	181	204	40	206	450	945
September	199	194	429	874	175	17	85	169	190	37	182	409	854
October	204	204	450	910	178	17	72	193	195	41	196	431	892
November	203	198	442	916	200	17	56	201	194	41	189	424	898
December	210	200	453	949	208	19	48	222	201	42	191	435	931
Total	**2,454**	**2,397**	**5,337**	**11,617**	**2,667**	**209**	**917**	**2,486**	**2,359**	**487**	**2,283**	**5,130**	**11,409**
2019 January	209	195	443	965	221	18	54	229	203	38	178	420	942
February	191	177	402	885	199	17	57	210	182	35	171	388	871
March	199	191	429	1,004	233	18	86	238	192	38	189	419	994
April	194	193	423	1,040	232	17	98	271	186	35	185	406	1,023
May	201	202	438	1,072	274	18	104	237	193	35	199	427	1,060
June	197	197	429	1,010	241	18	112	209	188	35	193	416	997
July	204	203	442	993	216	18	116	201	195	35	194	425	976
August	R 211	199	R 446	R 946	190	18	111	181	200	36	197	433	933
September	195	182	411	896	149	18	97	222	187	34	178	399	884
9-Month Total	**1,802**	**1,740**	**3,863**	**8,811**	**1,956**	**160**	**836**	**1,997**	**1,728**	**321**	**1,684**	**3,732**	**8,681**
2018 9-Month Total	**1,836**	**1,794**	**3,993**	**8,841**	**2,081**	**156**	**740**	**1,870**	**1,769**	**363**	**1,707**	**3,840**	**8,688**
2017 9-Month Total	**1,760**	**1,735**	**3,866**	**8,497**	**2,203**	**157**	**610**	**1,661**	**1,704**	**370**	**1,718**	**3,792**	**8,423**

[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**	**109**	**579**	**728**	**(s)**	**20**	**52**	**1**	**76**	**47**	**4**	**127**	**200**
2015 Total	**40**	**128**	**513**	**680**	**(s)**	**20**	**57**	**1**	**79**	**47**	**[k] 26**	**152**	**230**
2016 Total	**40**	**161**	**448**	**649**	**2**	**20**	**62**	**1**	**84**	**48**	**26**	**158**	**242**
2017 January	3	10	37	50	(s)	2	4	(s)	7	4	2	14	20
February	3	11	33	47	(s)	2	4	(s)	7	4	2	12	18
March	3	16	37	56	(s)	2	6	(s)	7	4	2	13	21
April	3	18	36	57	(s)	2	7	(s)	7	4	2	13	22
May	3	20	37	60	(s)	2	8	(s)	7	4	2	13	23
June	3	20	36	59	(s)	2	8	(s)	7	4	2	13	23
July	3	21	37	61	(s)	2	8	(s)	7	4	2	13	23
August	3	20	37	60	(s)	2	8	(s)	7	4	2	13	23
September	3	18	36	57	(s)	2	7	(s)	7	4	2	12	21
October	3	16	37	56	(s)	2	6	(s)	7	4	2	13	21
November	3	13	36	51	(s)	2	5	(s)	7	4	2	13	20
December	3	12	37	52	(s)	2	5	(s)	7	4	2	13	20
Total	**40**	**193**	**433**	**666**	**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	13	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**	**222**	**517**	**778**	**2**	**20**	**94**	**2**	**84**	**47**	**25**	**156**	**274**
2019 January	3	14	45	62	NM	2	6	(s)	7	4	2	13	21
February	3	15	41	59	NM	2	7	(s)	7	3	2	12	20
March	3	21	45	69	NM	2	9	(s)	7	3	2	13	24
April	3	24	44	70	NM	2	10	(s)	7	3	2	12	24
May	3	26	45	74	NM	2	11	(s)	7	3	2	12	25
June	3	27	44	73	(s)	2	11	(s)	7	3	2	12	25
July	3	28	45	76	NM	2	11	(s)	7	3	2	12	26
August	3	27	45	75	NM	2	11	(s)	7	3	2	12	25
September	3	24	44	70	NM	2	10	(s)	7	3	2	12	24
9-Month Total	**30**	**204**	**396**	**630**	**2**	**18**	**85**	**1**	**63**	**27**	**19**	**109**	**215**
2018 9-Month Total	**30**	**176**	**387**	**592**	**2**	**15**	**75**	**1**	**63**	**35**	**19**	**117**	**209**
2017 9-Month Total	**30**	**153**	**324**	**507**	**2**	**15**	**60**	**1**	**62**	**36**	**19**	**117**	**194**

[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			
	Hydro-electric Power[b]	Geo-ther-mal[c]	Solar[d]	Wind[e]	Wood[f]	Waste[g]	Fuel Ethanol[h,i]	Losses and Co-products[j]	Total	Total	Fuel Ethanol[i,k]	Bio-diesel[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 January	1	(s)	1	(s)	132	15	1	71	220	222	91	13	3	107
February	1	(s)	1	(s)	118	14	1	63	196	199	84	14	3	101
March	1	(s)	2	(s)	129	15	2	70	216	220	96	19	3	118
April	1	(s)	2	(s)	123	14	1	64	203	207	94	21	3	117
May	1	(s)	2	(s)	127	14	2	69	211	215	100	25	3	129
June	1	(s)	2	(s)	128	12	2	67	208	212	100	25	4	129
July	1	(s)	2	(s)	133	13	2	68	216	219	99	24	2	125
August	1	(s)	2	(s)	134	13	2	71	220	223	103	26	2	131
September	1	(s)	2	(s)	123	13	2	67	204	207	96	22	2	120
October	1	(s)	2	(s)	128	14	2	70	214	217	99	22	2	123
November	1	(s)	1	(s)	129	15	2	71	216	219	97	21	1	120
December	1	(s)	1	(s)	135	15	2	71	223	226	97	21	2	120
Total	**13**	**4**	**22**	**1**	**1,539**	**168**	**18**	**821**	**2,547**	**2,587**	**1,156**	**253**	**30**	**1,439**
2018 January	1	(s)	1	(s)	133	15	2	70	219	222	97	15	1	113
February	1	(s)	1	(s)	119	14	1	64	197	200	82	15	2	99
March	1	(s)	2	(s)	130	15	2	70	216	219	96	20	3	119
April	1	(s)	2	(s)	124	14	1	66	205	209	90	20	2	112
May	1	(s)	2	(s)	129	14	2	70	214	218	104	21	2	127
June	1	(s)	2	(s)	127	12	2	69	209	213	98	23	1	121
July	1	(s)	3	(s)	133	13	2	72	219	223	101	21	1	124
August	1	(s)	2	(s)	133	13	2	73	220	224	104	24	1	129
September	1	(s)	2	(s)	124	12	1	66	204	207	90	22	1	113
October	1	(s)	2	(s)	127	14	2	70	213	216	99	22	1	122
November	1	(s)	2	(s)	128	14	2	68	212	215	95	20	2	117
December	1	(s)	1	(s)	132	15	2	68	217	220	97	21	2	119
Total	**10**	**4**	**24**	**1**	**1,537**	**165**	**18**	**824**	**2,545**	**2,585**	**1,153**	**243**	**19**	**1,415**
2019 January	1	(s)	2	(s)	131	15	1	67	214	217	90	16	2	108
February	1	(s)	2	(s)	119	13	1	61	194	197	89	17	2	107
March	1	(s)	2	(s)	123	14	2	66	205	209	97	20	2	119
April	1	(s)	3	(s)	120	13	1	66	201	205	93	20	2	115
May	1	(s)	3	(s)	122	13	2	69	206	210	102	22	2	126
June	1	(s)	3	(s)	120	13	2	68	202	207	100	20	2	122
July	1	(s)	3	(s)	124	12	2	69	207	212	99	20	2	121
August	1	(s)	3	(s)	127	13	2	68	209	213	101	22	2	125
September	1	(s)	3	(s)	118	12	1	62	194	197	93	19	1	113
9-Month Total	**8**	**3**	**22**	**1**	**1,105**	**118**	**14**	**596**	**1,833**	**1,867**	**864**	**176**	**15**	**1,055**
2018 9-Month Total	**7**	**3**	**19**	**1**	**1,150**	**122**	**14**	**618**	**1,904**	**1,934**	**861**	**181**	**14**	**1,056**
2017 9-Month Total	**10**	**3**	**18**	**1**	**1,147**	**124**	**14**	**609**	**1,894**	**1,925**	**862**	**189**	**25**	**1,076**

[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 January	245	13	19	183	20	26	46	505
February	217	11	23	195	18	22	41	487
March	268	13	39	230	21	24	45	595
April	269	12	43	227	17	22	39	590
May	297	12	52	207	17	24	40	607
June	277	11	56	182	18	24	42	569
July	243	12	52	147	20	24	44	498
August	200	12	50	125	21	23	45	432
September	175	12	47	164	18	22	40	438
October	167	11	44	233	18	22	40	496
November	188	12	31	222	19	23	42	495
December	205	14	31	226	21	24	45	522
Total	**2,752**	**147**	**486**	**2,341**	**229**	**280**	**510**	**6,235**
2018 January	228	12	30	233	21	24	46	549
February	226	12	35	211	19	23	42	526
March	235	12	46	241	20	24	44	578
April	255	11	55	241	16	23	39	600
May	276	13	62	218	17	23	40	609
June	251	12	67	225	19	23	42	597
July	228	12	61	150	21	23	44	495
August	200	12	60	181	20	23	43	496
September	174	12	54	169	17	21	37	446
October	177	12	45	193	17	23	39	466
November	199	12	34	201	17	23	40	485
December	207	13	28	221	18	23	41	510
Total	**2,655**	**145**	**577**	**2,484**	**221**	**275**	**496**	**6,356**
2019 January	220	13	33	229	20	20	40	534
February	198	12	34	209	17	18	35	488
March	232	13	53	238	17	21	37	573
April	231	11	62	271	16	19	35	609
May	273	12	65	237	19	20	39	625
June	240	12	72	209	17	19	37	570
July	215	13	73	201	19	20	39	541
August	189	13	71	181	21	20	41	494
September	148	12	61	221	18	19	37	480
9-Month Total	**1,947**	**109**	**524**	**1,995**	**164**	**176**	**340**	**4,915**
2018 9-Month Total	**2,072**	**109**	**470**	**1,869**	**170**	**206**	**376**	**4,896**
2017 9-Month Total	**2,191**	**109**	**380**	**1,660**	**171**	**211**	**382**	**4,722**

[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

	Feed-stock[a]	Losses and Co-products[b]	Dena-turant[c]	Production[d]			Trade[d] Net Imports[e]	Stocks[d,f]	Stock Change[d,g]	Consumption[d]			*Consump-tion 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 January	185	71	600	32,887	1,381	117	-2,844	22,679	2,921	27,122	1,139	96	*94*
February	165	63	545	29,307	1,231	104	-3,605	23,195	516	25,186	1,058	90	*87*
March	182	70	603	32,393	1,361	115	-3,023	23,981	786	28,584	1,201	102	*99*
April	167	64	545	29,639	1,245	105	-1,918	23,671	-310	28,031	1,177	100	*97*
May	180	69	562	31,863	1,338	113	-2,831	22,855	-816	29,848	1,254	106	*104*
June	173	66	543	30,794	1,293	110	-2,045	21,770	-1,085	29,834	1,253	106	*104*
July	177	68	559	31,384	1,318	112	-2,553	21,167	-603	29,434	1,236	105	*102*
August	184	70	577	32,672	1,372	116	-2,029	21,186	19	30,624	1,286	109	*106*
September	173	66	535	30,701	1,289	109	-1,757	21,507	321	28,623	1,202	102	*100*
October	182	70	536	32,212	1,353	115	-2,419	21,663	156	29,637	1,245	105	*103*
November	184	71	523	32,631	1,371	116	-2,069	23,203	1,540	29,022	1,219	103	*101*
December	186	71	529	32,952	1,384	117	-4,175	23,043	-160	28,937	1,215	103	*101*
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	548	31,601	1,327	112	-3,048	25,026	[i] 1,688	26,866	1,128	95	*93*
February	160	61	499	28,576	1,200	102	-2,715	24,448	-578	26,439	1,110	94	*92*
March	173	65	504	30,895	1,298	110	-3,084	23,311	-1,137	28,948	1,216	103	*101*
April	174	66	462	30,951	1,300	110	-3,265	23,218	-93	27,779	1,167	99	*97*
May	182	69	471	32,443	1,363	115	-2,375	22,818	-400	30,468	1,280	108	*106*
June	179	68	505	31,895	1,340	113	-2,485	22,573	-245	29,655	1,246	105	*103*
July	182	69	512	32,541	1,367	116	-2,319	23,235	662	29,560	1,242	105	*103*
August	179	68	513	31,921	1,341	113	-2,342	22,721	-514	30,093	1,264	107	*105*
September	164	62	474	29,232	1,228	104	-1,337	23,036	315	27,580	1,158	98	*96*
9-Month Total	**1,569**	**594**	**4,488**	**280,055**	**11,762**	**995**	**-22,970**	**23,036**	**-302**	**257,387**	**10,810**	**914**	***896***
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***
2017 9-Month Total	**1,586**	**607**	**5,069**	**281,640**	**11,829**	**1,002**	**-22,604**	**21,507**	**1,749**	**257,287**	**10,806**	**915**	***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 2018 stocks value (23,338 thousand barrels), not the final 2018 value (23,418 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 January	12	(s)	2,208	93	12	241	42	199	6,397	(s)	2,407	101	13	3
February	12	(s)	2,238	94	12	549	59	490	6,475	78	2,650	111	14	3
March	15	(s)	2,761	116	15	650	136	514	6,189	-286	3,561	150	19	3
April	16	(s)	3,020	127	16	681	283	398	5,706	-484	3,901	164	21	3
May	18	(s)	3,242	136	17	948	239	709	4,909	-797	4,748	199	25	3
June	18	(s)	3,344	140	18	1,736	226	1,510	5,052	144	4,711	198	25	4
July	19	(s)	3,560	150	19	1,670	453	1,217	5,405	353	4,424	186	24	2
August	19	(s)	3,559	149	19	1,582	387	1,195	5,356	-49	4,803	202	26	2
September	19	(s)	3,507	147	19	205	100	105	4,849	-507	4,119	173	22	2
October	19	(s)	3,515	148	19	386	217	169	4,485	-364	4,047	170	22	2
November	19	(s)	3,523	148	19	222	49	173	4,233	-252	3,948	166	21	1
December	19	(s)	3,515	148	19	504	35	469	4,268	35	3,949	166	21	2
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	72	236	5,377	[i] 692	2,971	125	16	2
February	17	(s)	3,108	131	17	267	92	175	5,509	133	3,150	132	17	2
March	18	(s)	3,353	141	18	509	240	269	5,371	-138	3,760	158	20	2
April	20	(s)	3,623	152	19	410	370	40	5,315	-56	3,718	156	20	2
May	20	(s)	3,675	154	20	281	419	-138	4,802	-514	4,050	170	22	2
June	18	(s)	3,370	142	18	310	300	10	4,404	-397	3,777	159	20	2
July	21	(s)	3,776	159	20	333	392	-59	4,397	-8	3,725	156	20	2
August	20	(s)	3,712	156	20	140	290	-150	3,844	-553	4,115	173	22	2
September	18	(s)	3,377	142	18	280	238	42	3,706	-138	3,557	149	19	1
9-Month Total	**171**	**2**	**31,421**	**1,320**	**168**	**2,838**	**2,414**	**424**	**3,706**	**-979**	**32,824**	**1,379**	**176**	**15**
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**
2017 9-Month Total	**149**	**2**	**27,440**	**1,152**	**147**	**8,262**	**1,926**	**6,336**	**4,849**	**-1,549**	**35,324**	**1,484**	**189**	**25**

[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 2018 stocks value (4,684 thousand barrels), not the final 2018 value (4,662 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**	**337**
2015 Total	**63**	**65**	**53**	**14**	**132**	**195**	**4**	**(s)**	**228**	**232**	**427**
2016 Total	**63**	**98**	**57**	**19**	**174**	**237**	**5**	**(s)**	**328**	**333**	**570**
2017 January	3	6	4	1	11	15	(s)	(s)	19	19	34
February	4	7	4	1	13	16	(s)	(s)	23	24	40
March	5	11	6	2	18	24	(s)	(s)	39	39	63
April	6	12	6	2	20	26	(s)	(s)	43	43	69
May	7	13	7	2	22	29	(s)	(s)	52	52	81
June	7	14	7	2	23	30	1	(s)	56	57	87
July	7	14	7	2	24	30	1	(s)	52	53	83
August	7	13	7	2	23	30	1	(s)	50	50	80
September	6	12	7	2	21	27	(s)	(s)	47	47	74
October	5	11	6	2	18	24	(s)	(s)	44	44	68
November	4	8	5	1	14	19	(s)	(s)	31	31	50
December	4	8	5	1	14	18	(s)	(s)	31	31	49
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	36	56
March	5	13	7	2	22	28	(s)	(s)	46	46	74
April	6	15	8	2	25	31	(s)	(s)	55	55	86
May	7	16	9	2	27	34	1	(s)	62	62	97
June	7	16	9	2	28	35	1	(s)	67	68	102
July	7	17	9	3	29	36	1	(s)	61	62	97
August	7	16	9	2	28	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**	**335**	**5**	**(s)**	**577**	**582**	**917**
2019 January	4	10	6	2	17	21	(s)	(s)	33	33	54
February	4	11	6	2	19	23	(s)	(s)	34	35	57
March	5	16	9	2	27	32	(s)	(s)	53	54	86
April	6	18	10	3	30	36	(s)	(s)	62	62	98
May	7	19	10	3	33	39	1	(s)	65	65	104
June	7	20	10	3	33	40	1	(s)	72	73	112
July	7	21	11	3	34	41	1	(s)	73	74	116
August	7	20	10	3	33	40	1	(s)	71	72	111
September	6	18	9	3	29	35	(s)	(s)	61	61	97
9-Month Total	**52**	**152**	**81**	**22**	**255**	**307**	**4**	**(s)**	**524**	**529**	**836**
2018 9-Month Total	**52**	**124**	**71**	**19**	**214**	**266**	**4**	**(s)**	**470**	**474**	**740**
2017 9-Month Total	**51**	**102**	**56**	**17**	**175**	**226**	**4**	**(s)**	**380**	**384**	**610**

[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 January	703	420	123	1,246	17	1	2,011	2,030	3,276
February	789	458	137	1,384	27	2	2,526	2,555	3,939
March	1,147	629	197	1,972	42	3	4,200	4,245	6,218
April	1,283	699	213	2,195	46	4	4,646	4,696	6,891
May	1,415	770	239	2,423	53	4	5,605	5,663	8,086
June	1,469	777	241	2,487	61	5	6,109	6,175	8,662
July	1,495	808	252	2,555	58	5	5,690	5,753	8,308
August	1,446	788	246	2,480	55	5	5,374	5,434	7,914
September	1,293	709	223	2,225	52	4	5,059	5,115	7,340
October	1,157	632	201	1,990	47	4	4,771	4,821	6,811
November	904	502	156	1,561	34	3	3,372	3,409	4,970
December	841	492	138	1,472	29	3	3,358	3,389	4,861
Total	**13,942**	**7,685**	**2,364**	**23,990**	**521**	**42**	**52,723**	**53,286**	**77,276**
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	1,106	637	168	1,910	29	3	3,608	3,641	5,551
February	1,204	684	178	2,066	29	3	3,779	3,811	5,877
March	1,726	945	254	2,925	47	6	5,833	5,885	8,809
April	1,934	1,048	278	3,260	52	6	6,748	6,806	10,066
May	2,129	1,129	309	3,566	55	6	7,099	7,161	10,727
June	2,174	1,137	311	3,622	61	7	7,903	7,971	11,593
July	2,268	1,193	321	3,783	63	8	8,061	8,132	11,915
August	2,183	1,136	311	3,630	61	7	7,776	7,844	11,474
September	1,929	1,012	281	3,222	51	6	6,668	6,726	9,948
9-Month Total	**16,653**	**8,921**	**2,410**	**27,984**	**449**	**52**	**57,475**	**57,976**	**85,959**
2018 9-Month Total	**13,583**	**7,800**	**2,085**	**23,467**	**432**	**38**	**51,533**	**52,003**	**75,471**
2017 9-Month Total	**11,040**	**6,058**	**1,870**	**18,967**	**411**	**33**	**41,222**	**41,667**	**60,634**

[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).

2009–2018: 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.

2019: 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."

2009–2018: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

2019: EIA, PSM, monthly reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

Trade, Stocks, and Stock Change

1992–2018: EIA, PSA, annual reports, Table 1.

2019: 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).

2009–2018: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2019: 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.

2011–2018: EIA, *Petroleum Supply Annual* (PSA), annual reports, Table 1, data for renewable fuels except fuel ethanol.

2019: 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.

2012–2018: EIA, PSA, annual reports, Tables 25 and 31, data for biomass-based diesel fuel.

2019: 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.

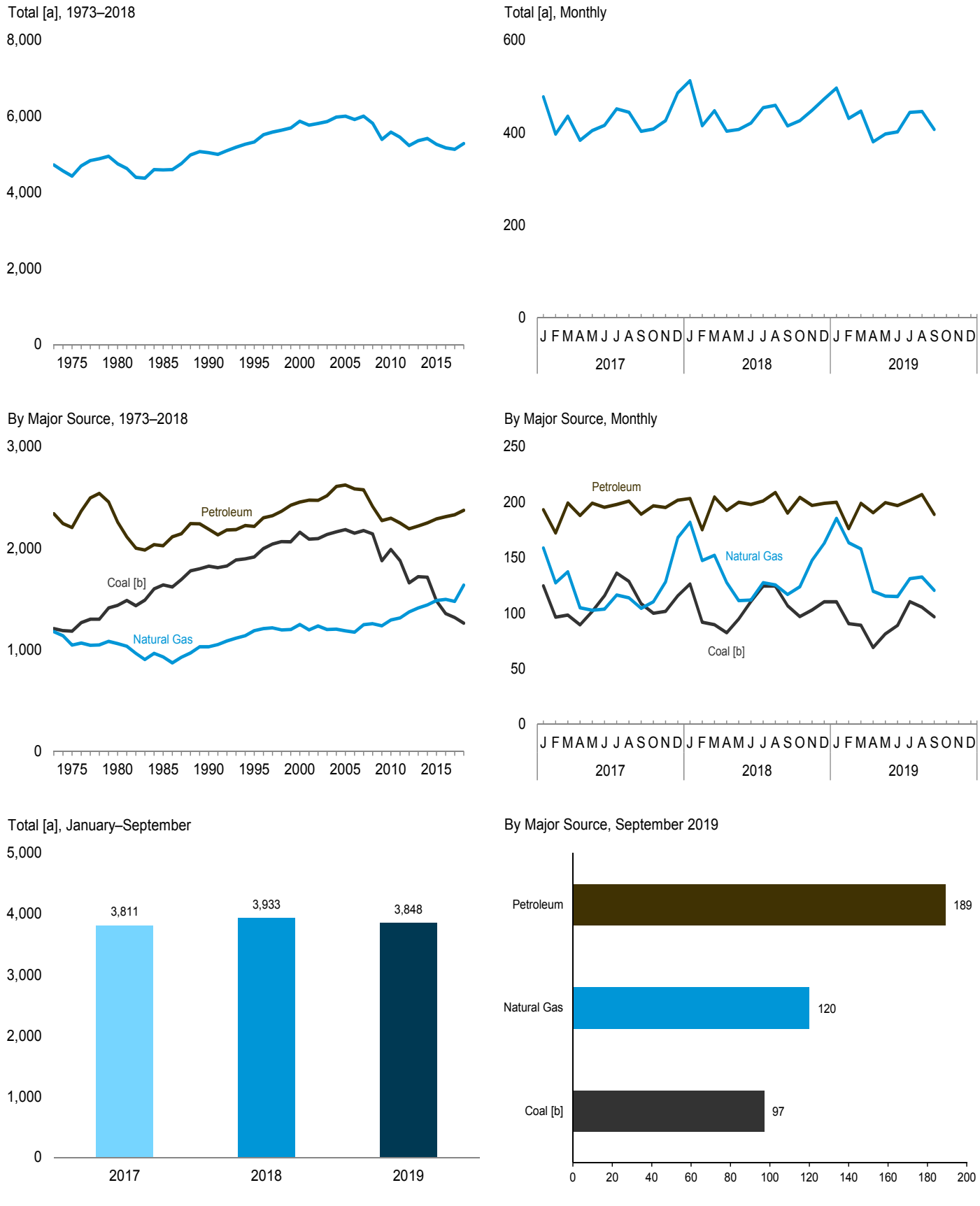
Solar Energy Consumption: Total

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**
1996 Total	**1,995**	**1,207**	**3**	**524**	**97**	**232**	**9**	**12**	**1,062**	**80**	**154**	**125**	**2,299**	**5,512**
1997 Total	**2,040**	**1,214**	**3**	**534**	**95**	**234**	**10**	**13**	**1,073**	**80**	**144**	**132**	**2,318**	**5,583**
1998 Total	**2,065**	**1,193**	**2**	**537**	**86**	**238**	**12**	**14**	**1,105**	**92**	**160**	**117**	**2,363**	**5,631**
1999 Total	**2,063**	**1,198**	**3**	**555**	**102**	**245**	**11**	**14**	**1,125**	**98**	**150**	**119**	**2,422**	**5,693**
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**	**5,170**
2017 January	125	159	(s)	48	10	20	(s)	1	88	8	8	10	193	R 477
February	96	127	(s)	45	7	17	(s)	1	85	4	4	9	172	397
March	98	137	(s)	52	8	21	(s)	1	97	3	5	11	199	436
April	90	105	(s)	46	7	20	(s)	1	93	5	4	12	188	383
May	102	103	(s)	49	6	21	(s)	1	99	7	5	10	199	404
June	116	104	(s)	48	5	21	(s)	1	98	5	5	11	195	416
July	136	116	(s)	46	6	22	(s)	1	100	9	4	11	198	451
August	129	114	(s)	50	5	22	(s)	1	101	6	5	10	201	444
September	108	104	(s)	48	6	20	(s)	1	94	6	4	10	189	403
October	100	110	(s)	51	7	22	(s)	1	97	3	5	11	197	408
November	102	128	(s)	51	8	20	(s)	1	91	7	6	10	195	426
December	116	168	(s)	50	10	22	(s)	1	96	7	5	11	202	486
Total	**1,316**	**1,475**	**1**	**584**	**86**	**247**	**1**	**10**	**1,140**	**72**	**62**	**126**	**2,329**	**5,131**
2018 January	126	182	(s)	57	12	20	(s)	1	91	7	5	11	203	512
February	92	147	(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	192	403
May	95	111	(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	127	(s)	50	6	22	(s)	1	100	6	5	10	201	454
August	124	125	(s)	53	7	23	(s)	1	101	8	4	10	209	459
September	107	117	(s)	49	7	21	(s)	1	92	7	5	8	190	414
October	97	124	(s)	55	8	21	(s)	1	96	8	4	11	204	426
November	103	R 147	(s)	51	10	21	(s)	1	93	5	5	10	197	448
December	110	163	(s)	51	11	21	(s)	1	95	5	6	10	199	473
Total	**1,260**	**1,636**	**2**	**618**	**97**	**250**	**1**	**10**	**1,141**	**74**	**57**	**123**	**2,373**	**5,280**
2019 January	110	185	(s)	56	12	20	(s)	1	91	5	5	9	200	496
February	90	163	(s)	50	10	18	(s)	1	84	2	4	7	176	431
March	89	158	(s)	53	10	21	(s)	(s)	95	6	3	10	199	447
April	69	120	(s)	49	7	21	(s)	1	94	4	3	11	190	380
May	81	115	(s)	51	7	22	(s)	1	97	6	3	12	200	397
June	89	115	(s)	49	6	22	(s)	1	97	7	5	10	197	R 401
July	110	131	(s)	49	7	23	(s)	1	99	8	5	9	202	444
August	105	132	(s)	51	7	23	(s)	1	102	7	5	12	207	R 446
September	97	120	(s)	48	7	20	(s)	1	92	5	4	11	189	407
9-Month Total	**841**	**1,240**	**1**	**455**	**74**	**191**	**1**	**7**	**852**	**52**	**37**	**90**	**1,759**	**3,848**
2018 9-Month Total	**950**	**1,201**	**1**	**461**	**69**	**187**	**1**	**7**	**856**	**56**	**42**	**92**	**1,773**	**3,933**
2017 9-Month Total	**999**	**1,069**	**1**	**432**	**61**	**183**	**1**	**8**	**856**	**54**	**46**	**95**	**1,735**	**3,811**

[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.

R=Revised. (s)=Less than 0.5 million metric tons.

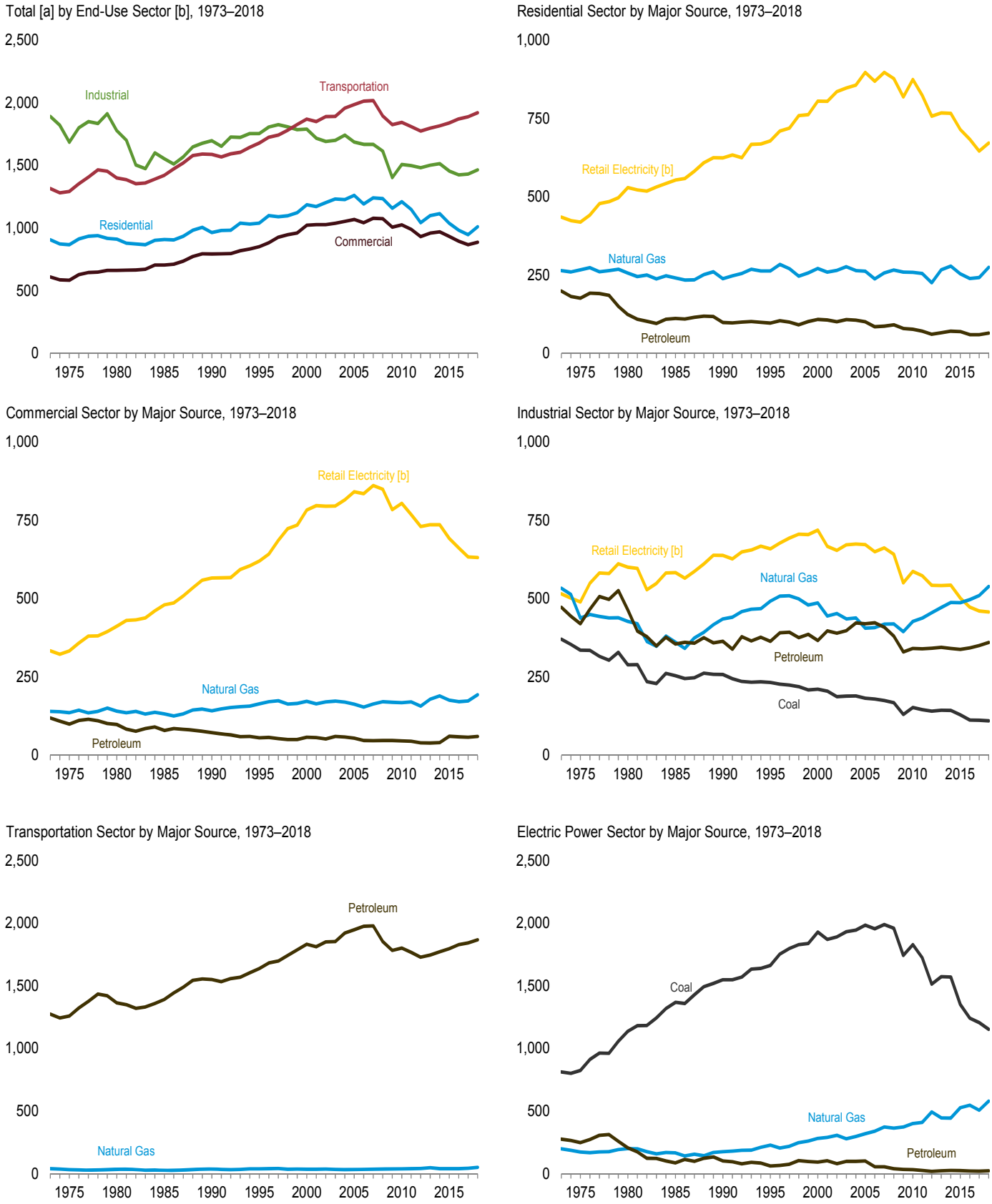
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon 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**
1996 Total	**2**	**284**	**68**	**30**	**6**	**104**	**710**	**1,099**
1997 Total	**2**	**270**	**64**	**29**	**7**	**99**	**719**	**1,090**
1998 Total	**1**	**247**	**56**	**27**	**8**	**91**	**759**	**1,097**
1999 Total	**1**	**257**	**60**	**33**	**8**	**102**	**762**	**1,122**
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 January	NA	46	4	4	(s)	9	63	117
February	NA	32	3	3	(s)	7	44	82
March	NA	32	3	3	(s)	6	45	83
April	NA	15	2	2	(s)	4	39	58
May	NA	11	2	2	(s)	3	45	59
June	NA	7	2	1	(s)	3	58	68
July	NA	6	1	1	(s)	2	77	85
August	NA	6	2	1	(s)	3	70	78
September	NA	6	2	1	(s)	3	55	64
October	NA	11	2	2	(s)	4	46	62
November	NA	26	3	3	(s)	6	46	78
December	NA	45	5	4	(s)	9	60	114
Total	**NA**	**242**	**32**	**27**	**1**	**59**	**645**	**947**
2018 January	NA	54	5	5	(s)	11	72	137
February	NA	38	4	4	(s)	7	48	93
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	58
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	1	1	(s)	2	60	68
October	NA	14	3	2	(s)	5	48	67
November	NA	33	4	4	(s)	8	49	90
December	NA	42	5	4	(s)	10	57	109
Total	**NA**	**274**	**33**	**31**	**1**	**65**	**671**	**1,010**
2019 January	NA	52	5	5	(s)	10	62	124
February	NA	44	4	4	(s)	8	50	103
March	NA	38	4	4	(s)	7	47	93
April	NA	18	2	2	(s)	5	34	57
May	NA	12	2	2	(s)	3	41	56
June	NA	7	2	1	(s)	3	52	61
July	NA	6	1	1	(s)	2	72	80
August	NA	6	2	1	(s)	3	69	77
September	NA	6	1	1	(s)	2	58	67
9-Month Total	**NA**	**189**	**23**	**21**	**1**	**44**	**485**	**719**
2018 9-Month Total	**NA**	**186**	**21**	**21**	**1**	**42**	**519**	**747**
2017 9-Month Total	**NA**	**160**	**22**	**18**	**1**	**40**	**496**	**696**

[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**
1996 Total	**12**	**171**	**35**	**8**	**2**	**2**	**(s)**	**11**	**57**	**643**	**883**
1997 Total	**12**	**174**	**32**	**8**	**2**	**3**	**(s)**	**9**	**54**	**686**	**926**
1998 Total	**9**	**164**	**31**	**7**	**2**	**3**	**(s)**	**7**	**50**	**724**	**947**
1999 Total	**10**	**165**	**32**	**9**	**2**	**2**	**(s)**	**6**	**51**	**735**	**960**
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 January	(s)	26	3	1	(s)	2	(s)	(s)	7	53	86
February	(s)	20	2	1	(s)	2	(s)	(s)	5	44	69
March	(s)	20	2	1	(s)	2	(s)	(s)	5	47	73
April	(s)	12	2	1	(s)	2	(s)	(s)	5	44	60
May	(s)	10	1	1	(s)	2	(s)	(s)	4	50	64
June	(s)	8	2	(s)	(s)	2	(s)	(s)	4	57	69
July	(s)	7	1	(s)	(s)	2	(s)	(s)	4	66	77
August	(s)	8	1	(s)	(s)	2	(s)	(s)	4	63	75
September	(s)	8	1	(s)	(s)	2	(s)	(s)	4	55	67
October	(s)	11	2	1	(s)	2	(s)	(s)	4	51	67
November	(s)	18	2	1	(s)	2	(s)	(s)	5	49	72
December	(s)	27	3	1	(s)	2	(s)	(s)	7	53	87
Total	**2**	**174**	**24**	**10**	**(s)**	**24**	**(s)**	**(s)**	**58**	**633**	**867**
2018 January	(s)	30	4	2	(s)	2	(s)	(s)	8	56	94
February	(s)	23	3	1	(s)	2	(s)	(s)	6	43	72
March	(s)	23	2	1	(s)	2	(s)	(s)	6	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**	**25**	**11**	**(s)**	**24**	**(s)**	**(s)**	**60**	**631**	**886**
2019 January	(s)	31	4	2	(s)	2	(s)	(s)	7	52	90
February	(s)	26	3	1	(s)	2	(s)	(s)	6	44	76
March	(s)	23	3	1	(s)	2	(s)	(s)	6	45	75
April	(s)	14	2	1	(s)	2	(s)	(s)	5	39	57
May	(s)	10	1	1	(s)	2	0	(s)	4	46	60
June	(s)	8	1	1	(s)	2	0	(s)	4	50	62
July	(s)	8	1	1	(s)	2	0	(s)	4	61	73
August	(s)	8	2	1	(s)	2	0	(s)	4	60	72
September	(s)	8	1	1	(s)	2	0	(s)	3	54	65
9-Month Total	**1**	**136**	**17**	**8**	**(s)**	**18**	**(s)**	**(s)**	**43**	**450**	**630**
2018 9-Month Total	**1**	**134**	**16**	**8**	**(s)**	**18**	**(s)**	**(s)**	**42**	**479**	**655**
2017 9-Month Total	**1**	**118**	**16**	**7**	**(s)**	**18**	**(s)**	**(s)**	**41**	**479**	**640**

[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 Elec-tricity[g]	Total[h]
				Distillate Fuel Oil[c]	HGL[d]	Kero-sene	Lubri-cants	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**
1996 Total	**227**	**3**	**508**	**86**	**59**	**1**	**6**	**14**	**72**	**26**	**125**	**391**	**678**	**1,807**
1997 Total	**224**	**5**	**509**	**88**	**58**	**1**	**7**	**15**	**69**	**23**	**132**	**393**	**694**	**1,825**
1998 Total	**219**	**8**	**500**	**88**	**51**	**2**	**7**	**14**	**79**	**18**	**117**	**376**	**706**	**1,808**
1999 Total	**209**	**7**	**480**	**86**	**59**	**1**	**7**	**11**	**87**	**16**	**119**	**386**	**704**	**1,785**
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 January	9	(s)	46	7	4	(s)	(s)	1	7	1	10	30	38	124
February	9	(s)	41	8	3	(s)	(s)	1	3	(s)	9	25	33	108
March	9	(s)	44	10	4	(s)	(s)	1	3	(s)	11	30	35	119
April	9	(s)	41	6	4	(s)	(s)	1	5	(s)	12	29	34	112
May	9	(s)	41	8	4	(s)	(s)	2	6	(s)	10	30	38	118
June	9	(s)	40	7	4	(s)	(s)	2	4	(s)	11	28	41	117
July	9	(s)	41	5	5	(s)	(s)	2	8	(s)	11	30	45	125
August	9	(s)	41	7	4	(s)	(s)	2	5	(s)	10	28	44	123
September	9	(s)	40	7	4	(s)	(s)	1	6	(s)	10	29	39	117
October	9	(s)	43	8	5	(s)	(s)	1	3	(s)	11	28	37	117
November	9	(s)	45	9	4	(s)	(s)	1	7	(s)	10	32	37	122
December	10	(s)	48	7	4	(s)	(s)	1	7	(s)	11	30	39	127
Total	**112**	**-3**	**510**	**88**	**48**	**(s)**	**5**	**18**	**62**	**4**	**126**	**351**	**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	27	32	111
March	9	(s)	47	10	4	(s)	(s)	2	5	(s)	12	33	34	122
April	9	(s)	44	8	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	29	44	125
August	9	(s)	43	8	5	(s)	(s)	2	7	(s)	10	34	44	130
September	9	(s)	43	7	5	(s)	(s)	1	7	(s)	8	29	40	121
October	9	(s)	44	9	5	(s)	(s)	1	7	(s)	11	34	38	126
November	9	(s)	47	8	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**	**539**	**93**	**55**	**(s)**	**4**	**18**	**64**	**3**	**123**	**360**	**458**	**1,464**
2019 January	9	(s)	51	11	6	(s)	(s)	1	5	(s)	9	32	36	128
February	9	(s)	46	9	5	(s)	(s)	1	1	(s)	7	24	31	110
March	9	(s)	48	8	5	(s)	(s)	1	5	(s)	10	30	33	120
April	8	(s)	44	7	4	(s)	1	1	4	(s)	11	28	29	109
May	9	(s)	44	8	4	(s)	(s)	1	5	(s)	12	31	33	118
June	9	(s)	42	6	5	(s)	(s)	1	7	(s)	10	30	35	115
July	9	(s)	43	6	6	(s)	(s)	2	7	(s)	9	30	40	122
August	10	(s)	R 45	R 5	5	(s)	(s)	2	6	(s)	12	R 30	40	R 125
September	10	(s)	43	7	6	(s)	(s)	1	5	(s)	11	30	36	119
9-Month Total	**83**	**-2**	**406**	**67**	**45**	**(s)**	**3**	**13**	**45**	**2**	**90**	**265**	**314**	**1,066**
2018 9-Month Total	**82**	**-2**	**398**	**71**	**40**	**(s)**	**3**	**13**	**48**	**2**	**92**	**271**	**342**	**1,091**
2017 9-Month Total	**83**	**-2**	**374**	**64**	**36**	**(s)**	**4**	**13**	**46**	**3**	**95**	**260**	**346**	**1,062**

[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.

R=Revised. (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 Elec-tricity[f]	Total[g]
			Aviation Gasoline	Distillate Fuel Oil[c]	HGL[d]	Jet Fuel	Lubri-cants	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**
1996 Total	**(h)**	**39**	**3**	**327**	**1**	**232**	**6**	**1,046**	**67**	**1,681**	**3**	**1,724**
1997 Total	**(h)**	**41**	**3**	**341**	**1**	**234**	**6**	**1,055**	**56**	**1,698**	**3**	**1,742**
1998 Total	**(h)**	**35**	**2**	**352**	**1**	**238**	**7**	**1,088**	**53**	**1,741**	**3**	**1,779**
1999 Total	**(h)**	**36**	**3**	**365**	**1**	**245**	**7**	**1,113**	**52**	**1,786**	**3**	**1,826**
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 January	(h)	5	(s)	33	(s)	20	1	85	7	145	(s)	150
February	(h)	4	(s)	32	(s)	17	(s)	82	3	134	(s)	138
March	(h)	4	(s)	37	(s)	21	1	93	4	156	(s)	160
April	(h)	3	(s)	35	(s)	20	(s)	90	4	149	(s)	153
May	(h)	3	(s)	38	(s)	21	(s)	96	5	160	(s)	163
June	(h)	3	(s)	37	(s)	21	(s)	95	4	158	(s)	162
July	(h)	3	(s)	38	(s)	22	(s)	96	4	160	(s)	164
August	(h)	3	(s)	40	(s)	22	(s)	98	5	164	(s)	168
September	(h)	3	(s)	37	(s)	20	(s)	91	4	152	(s)	155
October	(h)	3	(s)	38	(s)	22	(s)	94	4	159	(s)	162
November	(h)	4	(s)	36	(s)	20	(s)	88	5	150	(s)	154
December	(h)	5	(s)	35	(s)	22	(s)	93	4	154	(s)	159
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)	R 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)	97	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	159	(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)**	**50**	**2**	**461**	**(s)**	**250**	**5**	**1,100**	**47**	**1,866**	**4**	**1,920**
2019 January	(h)	6	(s)	36	(s)	20	(s)	88	4	149	(s)	154
February	(h)	5	(s)	34	(s)	18	(s)	81	4	136	(s)	142
March	(h)	5	(s)	38	(s)	21	(s)	92	3	154	(s)	159
April	(h)	4	(s)	38	(s)	21	1	91	2	152	(s)	156
May	(h)	4	(s)	40	(s)	22	(s)	94	2	159	(s)	163
June	(h)	4	(s)	40	(s)	22	(s)	94	4	160	(s)	164
July	(h)	4	(s)	41	(s)	23	(s)	95	4	164	(s)	168
August	(h)	4	(s)	41	(s)	23	(s)	98	4	167	(s)	172
September	(h)	4	(s)	39	(s)	20	(s)	89	3	152	(s)	156
9-Month Total	**(h)**	**38**	**1**	**345**	**(s)**	**191**	**4**	**821**	**31**	**1,393**	**3**	**1,434**
2018 9-Month Total	**(h)**	**37**	**1**	**348**	**(s)**	**187**	**4**	**825**	**35**	**1,400**	**3**	**1,440**
2017 9-Month Total	**(h)**	**31**	**1**	**327**	**(s)**	**183**	**4**	**825**	**39**	**1,379**	**3**	**1,413**

[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.

R=Revised. (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**
1996 Total	**1,752**	**205**	**8**	**8**	**50**	**66**	**(s)**	**10**	**2,033**
1997 Total	**1,797**	**219**	**8**	**10**	**56**	**75**	**(s)**	**10**	**2,101**
1998 Total	**1,828**	**248**	**10**	**13**	**82**	**105**	**(s)**	**10**	**2,192**
1999 Total	**1,836**	**260**	**10**	**11**	**76**	**97**	**(s)**	**10**	**2,204**
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 January	115	36	(s)	1	(s)	2	(s)	1	154
February	87	31	(s)	1	(s)	1	(s)	1	121
March	89	37	(s)	1	(s)	1	(s)	1	128
April	80	34	(s)	(s)	(s)	1	(s)	1	117
May	92	38	(s)	1	(s)	2	(s)	1	133
June	107	47	(s)	1	(s)	2	(s)	1	156
July	127	59	(s)	1	(s)	2	(s)	1	188
August	119	56	(s)	1	(s)	2	(s)	1	178
September	99	47	(s)	1	(s)	1	(s)	1	149
October	91	42	(s)	1	(s)	1	(s)	1	135
November	92	36	(s)	1	(s)	1	(s)	1	131
December	106	43	1	1	1	2	(s)	1	152
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	82	42	(s)	1	(s)	1	(s)	1	126
March	80	44	(s)	1	(s)	1	(s)	1	126
April	61	40	(s)	1	(s)	1	(s)	1	103
May	72	45	(s)	1	(s)	2	(s)	1	120
June	80	54	(s)	1	(s)	1	(s)	1	137
July	101	70	(s)	1	(s)	2	(s)	1	174
August	95	70	(s)	1	(s)	2	(s)	1	168
September	86	60	(s)	1	(s)	1	(s)	1	149
9-Month Total	**759**	**472**	**3**	**7**	**4**	**13**	**(s)**	**8**	**1,252**
2018 9-Month Total	**869**	**447**	**5**	**8**	**5**	**18**	**(s)**	**8**	**1,343**
2017 9-Month Total	**916**	**385**	**3**	**8**	**4**	**14**	**(s)**	**8**	**1,324**

[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**
1996 Total	**229**	**32**	**6**	**NA**	**266**	**51**	**10**	**170**	**6**	**30**	**266**
1997 Total	**222**	**30**	**7**	**NA**	**259**	**40**	**10**	**172**	**7**	**30**	**259**
1998 Total	**205**	**30**	**8**	**NA**	**242**	**36**	**9**	**160**	**8**	**30**	**242**
1999 Total	**208**	**29**	**8**	**NA**	**245**	**37**	**9**	**161**	**8**	**30**	**245**
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**	**356**	**42**	**14**	**155**	**98**	**47**	**356**
2017 January	18	4	6	1	30	3	1	14	7	4	30
February	16	4	6	1	27	3	1	12	7	4	27
March	18	4	7	1	30	3	1	14	8	4	30
April	17	4	7	2	29	3	1	13	8	4	29
May	18	4	7	2	30	3	1	13	9	4	30
June	18	4	7	2	30	3	1	13	9	4	30
July	18	4	7	2	31	3	1	14	8	4	31
August	19	4	7	2	32	3	1	14	9	4	32
September	17	3	7	2	29	3	1	13	8	4	29
October	18	4	7	2	30	3	1	13	8	4	30
November	18	4	7	2	30	3	1	14	8	4	30
December	19	4	7	2	31	3	1	14	8	4	31
Total	**214**	**45**	**82**	**19**	**360**	**41**	**14**	**161**	**98**	**47**	**360**
2018 January	19	4	7	1	31	4	1	14	8	4	31
February	17	4	6	1	28	4	1	12	7	4	28
March	19	4	7	1	31	4	1	14	8	4	31
April	18	4	6	1	29	4	1	13	8	4	29
May	19	4	7	2	31	4	1	13	9	4	31
June	18	4	7	2	30	4	1	13	8	4	30
July	19	4	7	2	32	4	1	14	9	4	32
August	19	4	7	2	32	4	1	14	9	4	32
September	18	3	6	2	29	4	1	13	8	3	29
October	18	4	7	2	31	4	1	13	8	4	31
November	18	4	7	1	30	4	1	13	8	4	30
December	19	4	7	2	31	4	1	14	8	4	31
Total	**221**	**44**	**82**	**18**	**365**	**49**	**14**	**160**	**97**	**46**	**365**
2019 January	19	3	6	1	30	4	1	14	7	4	30
February	17	3	6	1	28	4	1	12	7	3	28
March	18	3	7	1	30	4	1	13	8	3	30
April	17	3	7	1	29	4	1	13	8	3	29
May	18	3	7	2	30	4	1	13	9	4	30
June	18	3	7	1	29	4	1	13	8	3	29
July	18	3	7	1	30	4	1	13	8	4	30
August	19	3	7	2	31	4	1	13	9	4	31
September	18	3	7	1	29	4	1	12	8	3	29
9-Month Total	**162**	**29**	**61**	**13**	**266**	**37**	**10**	**115**	**72**	**31**	**266**
2018 9-Month Total	**166**	**33**	**61**	**13**	**273**	**36**	**10**	**120**	**72**	**35**	**273**
2017 9-Month Total	**160**	**34**	**61**	**14**	**269**	**30**	**10**	**120**	**73**	**35**	**269**

[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.

Energy-related carbon dioxide emissions account for about 98% of U.S. CO2 emissions. The vast majority of 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 for emissions of CO2 from all sources, as well as for emissions of other greenhouse gases, see EIA's *Emissions of Greenhouse Gases Report* at http://www.eia.gov/environment/emissions/ghg_report/.

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.

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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	Crude Oil[a]	Motor Gasoline[b]	Total Products[c]	Total[c]	Crude Oil[a]	Motor Gasoline[d]	Total Products[c]	Total[c]
1950	5.800	4.534	5.943	5.253	6.263	6.080	5.800	5.253	5.751	5.766
1955	5.800	4.414	5.924	5.253	6.234	6.040	5.800	5.253	5.765	5.768
1960	5.800	4.301	5.911	5.253	6.161	6.021	5.800	5.253	5.835	5.834
1965	5.800	4.265	5.872	5.253	6.123	5.997	5.800	5.253	5.742	5.743
1970	5.800	4.132	5.822	5.253	6.088	5.985	5.800	5.253	5.811	5.810
1975	5.800	3.944	5.821	5.253	5.935	5.858	5.800	5.253	5.747	5.748
1980	5.800	3.862	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	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	5.222	5.151	5.258
2018	5.706	3.591	6.063	5.222	[c] 5.491	[c] 5.938	5.721	5.222	[c] 5.088	[c] 5.259
2019	[E] 5.706	[E] 3.591	[E] 6.063	[E] 5.222	[E] 5.491	[E] 5.938	[E] 5.721	[E] 5.222	[E] 5.088	[E] 5.259

[a] Includes lease condensate.
[b] Excludes fuel ethanol, methyl tertiary butyl ether (MTBE), and other oxygenates blended into motor gasoline.
[c] 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.
[d] Through 2005, excludes fuel ethanol, MTBE, and other oxygenates blended into motor gasoline. Beginning in 2006, includes MTBE, but excludes fuel ethanol and other 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	4.920	5.316	5.956	5.204	5.778	3.489	5.067	6.059	3.562	*5.880*
2011	4.657	5.176	4.889	5.315	5.900	5.194	5.776	3.421	5.063	6.077	3.561	*5.859*
2012	4.714	5.126	4.843	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	3.462	5.057	6.085	3.558	*5.776*
2016	4.631	5.022	4.799	5.303	5.885	5.162	5.773	3.423	5.055	6.104	3.558	*5.755*
2017	4.623	5.006	4.767	5.305	5.893	5.152	5.772	3.401	5.053	6.132	3.556	*5.735*
2018	[E] 4.588	[E] 4.983	[E] 4.665	[E] 5.310	5.896	5.123	5.772	3.380	5.054	6.122	3.553	*5.715*
2019	[E] 4.588	[E] 4.983	[E] 4.665	[E] 5.310	[E] 5.896	[E] 5.123	[E] 5.772	[E] 3.380	[E] 5.054	[E] 6.122	[E] 3.553	*5.694*

[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	[E] 1,134	[E] 1,036	[E] 1,038	[E] 1,033	[E] 1,036	[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							
				Industrial Sector						
	Production[a]	Waste Coal Supplied[b]	Residential and Commercial Sectors[c]	Coke Plants	Other[d]	Electric Power Sector[e,f]	Total	Imports	Exports	Imports and Exports
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	[E] 20.160	[E] 11.419	[E] 19.269	[E] 28.608	[E] 20.739	[E] 18.915	[E] 19.258	[E] 20.415	[E] 24.294	[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	10,514	11,095	7,822	9,118	10,455	9,118	3,412
2019	[E] 10,514	[E] 11,095	[E] 7,822	[E] 9,118	[E] 10,455	[E] 9,118	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.

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).

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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 (ºF)	=	0[a]	degrees Celsius (ºC)
	212 degrees Fahrenheit (ºF)	=	100[a]	degrees Celsius (ºC)

[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 (ºF) to degrees Celsius (ºC) 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

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	579.3
1955	165.9	2,782.1	6.0	425.5	2,871.2	.14819	804.6
1960	180.7	3,043.0	5.9	542.4	3,260.0	.16638	1,008.7
1965	194.3	3,350.8	5.8	742.3	4,170.8	.17798	1,359.8
1970	205.1	3,713.4	5.5	1,073.3	4,951.3	.21677	1,908.6
1975	216.0	4,089.0	5.3	1,684.9	5,644.8	.29849	3,063.7
1980	227.2	4,445.4	5.1	2,857.3	6,759.2	.42273	5,476.0
1981	229.5	4,526.7	5.1	3,207.0	6,930.7	.46273	6,048.2
1982	231.7	4,607.1	5.0	3,343.8	6,805.8	.49132	6,187.5
1983	233.8	4,688.4	5.0	3,634.0	7,117.7	.51056	6,645.8
1984	235.8	4,767.4	4.9	4,037.6	7,632.8	.52898	7,328.6
1985	237.9	4,849.6	4.9	4,339.0	7,951.1	.54571	7,796.9
1986	240.1	4,933.9	4.9	4,579.6	8,226.4	.55670	8,053.7
1987	242.3	5,020.6	4.8	4,855.2	8,511.0	.57046	8,731.6
1988	244.5	5,108.1	4.8	5,236.4	8,866.5	.59059	9,458.5
1989	246.8	5,198.4	4.7	5,641.6	9,192.1	.61374	10,092.1
1990	249.6	5,286.8	4.7	5,963.1	9,365.5	.63671	10,649.2
1991	253.0	5,370.1	4.7	6,158.1	9,355.4	.65825	10,830.4
1992	256.5	5,454.6	4.7	6,520.3	9,684.9	.67325	11,415.4
1993	259.9	5,536.5	4.7	6,858.6	9,951.5	.68920	12,033.0
1994	263.1	5,616.7	4.7	7,287.2	10,352.4	.70392	12,828.3
1995	266.3	5,695.3	4.7	7,639.7	10,630.3	.71868	13,649.2
1996	269.4	5,776.1	4.7	8,073.1	11,031.4	.73183	14,465.1
1997	272.6	5,854.9	4.7	8,577.6	11,521.9	.74445	15,393.3
1998	275.9	5,932.5	4.6	9,062.8	12,038.3	.75283	16,216.8
1999	279.0	6,009.6	4.6	9,630.7	12,610.5	.76370	17,272.3
2000	282.2	6,086.1	4.6	10,252.3	13,131.0	.78078	18,623.9
2001	285.0	6,162.8	4.6	10,581.8	13,262.1	.79790	18,888.3
2002	287.6	6,239.6	4.6	10,936.4	13,493.1	.81052	19,178.3
2003	290.1	6,316.8	4.6	11,458.2	13,879.1	.82557	20,141.2
2004	292.8	6,394.0	4.6	12,213.7	14,406.4	.84780	21,690.2
2005	295.5	6,471.4	4.6	13,036.6	14,912.5	.87421	23,512.9
2006	298.4	6,550.5	4.6	13,814.6	15,338.3	.90066	24,931.4
2007	301.2	6,631.0	4.5	14,451.9	15,626.0	.92486	26,238.5
2008	304.1	6,712.5	4.5	14,712.8	15,604.7	.94285	26,989.2
2009	306.8	6,793.5	4.5	14,448.9	15,208.8	.95004	24,919.5
2010	309.3	6,872.7	4.5	14,992.1	15,598.8	.96111	26,422.4
2011	311.6	6,951.2	4.5	15,542.6	15,840.7	.98118	27,999.5
2012	313.9	7,030.1	4.5	16,197.0	16,197.0	1.00000	29,186.8
2013	316.1	7,109.6	4.4	16,784.9	16,495.4	1.01755	30,291.3
2014	318.4	7,188.4	4.4	17,521.7	16,899.8	1.03680	31,705.3
2015	320.7	7,267.0	4.4	18,219.3	17,386.7	1.04789	32,086.1
2016	323.1	7,345.8	4.4	18,707.2	17,659.2	1.05935	32,776.4
2017	325.1	7,424.2	4.4	19,485.4	18,050.7	1.07948	34,445.6
2018	327.2	7,503.8	4.4	20,494.1	18,566.4	1.10382	36,462.4

[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 (2009) dollars.
[d] See "Nominal Dollars" in Glossary.
[e] See "Chained Dollars" in Glossary.

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" (December 2018). • **World Population: 1950 forward—**DOC, U.S. Census Bureau, International Database (September 2018). • **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 (December 2018), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1949–1996—**DOC, BEA, GDP by industry (Historical) data (November 2018); these data have been adjusted by EIA based on BEA's 2012 comprehensive revision. **1997 forward—**DOC, BEA, GDP by Industry data (April 2019).

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				
	Coal	Natural Gas	Petroleum	Total	Conventional Hydroelectric Power	Biomass: Wood [a]	Biomass: Total	Electricity Net Imports[b]	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.

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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]

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[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]		
	Trans-formed Into Electricity[d,e]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[g]	Direct Consump-tion[h]	Trans-formed Into Electricity[d,i]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[j]	Trans-formed 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	1,669	2,667	64	54	91	209	930	1,556	2,486

[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	337	1,783	2,963	4,746
2015	63	48	84	85	147	427	1,814	2,922	4,737
2016	63	64	109	123	210	570	2,056	3,291	5,348
2017	65	82	139	182	309	777	2,339	3,758	6,097
2018	66	101	169	218	364	917	2,430	3,849	6,279

[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.

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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.

> **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**.
>
> **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**.

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 forward), Equatorial Guinea (2017 forward), Gabon (1974–1995 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: 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.

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.

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