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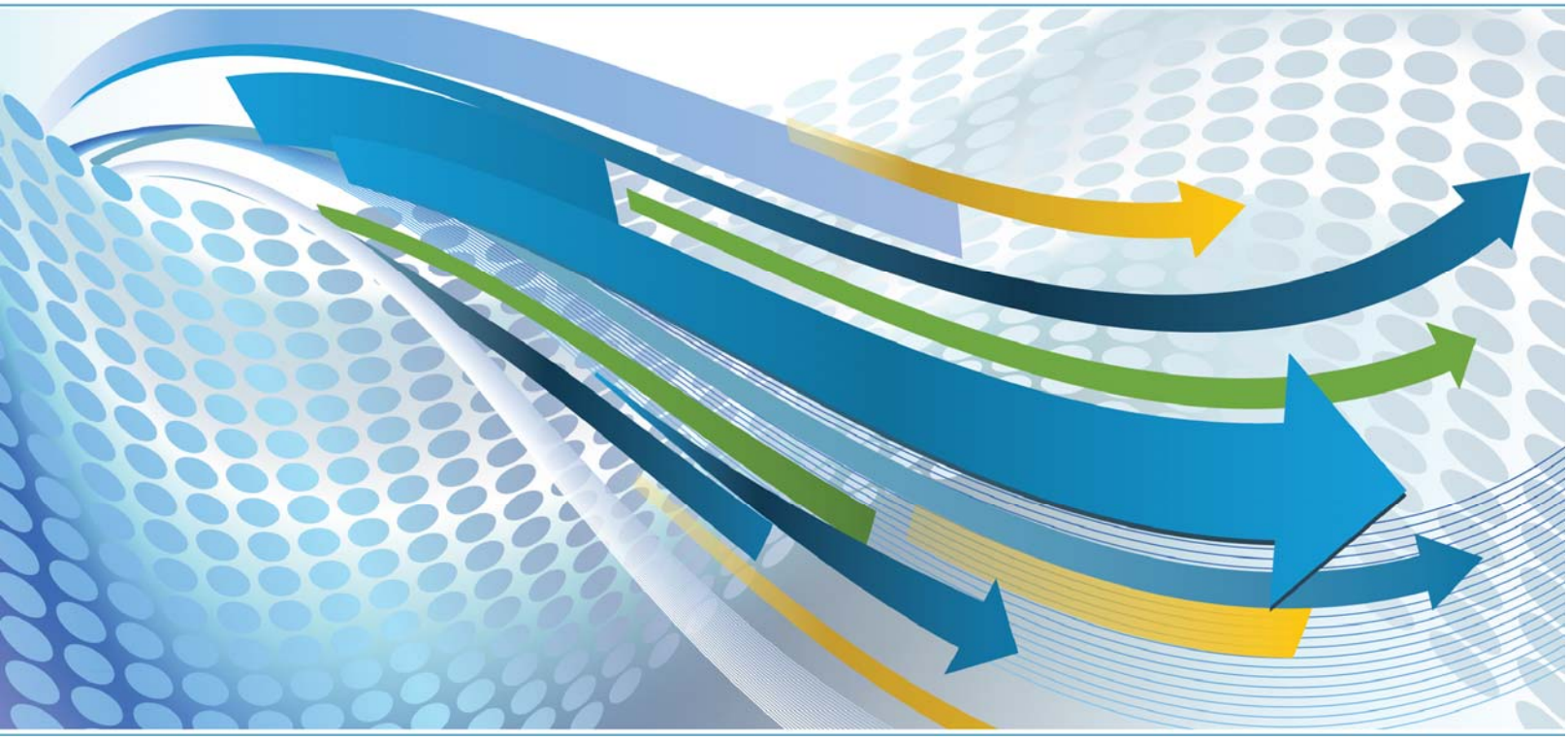
June 2019

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, renewable energy, and international petroleum; 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

June 2019

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

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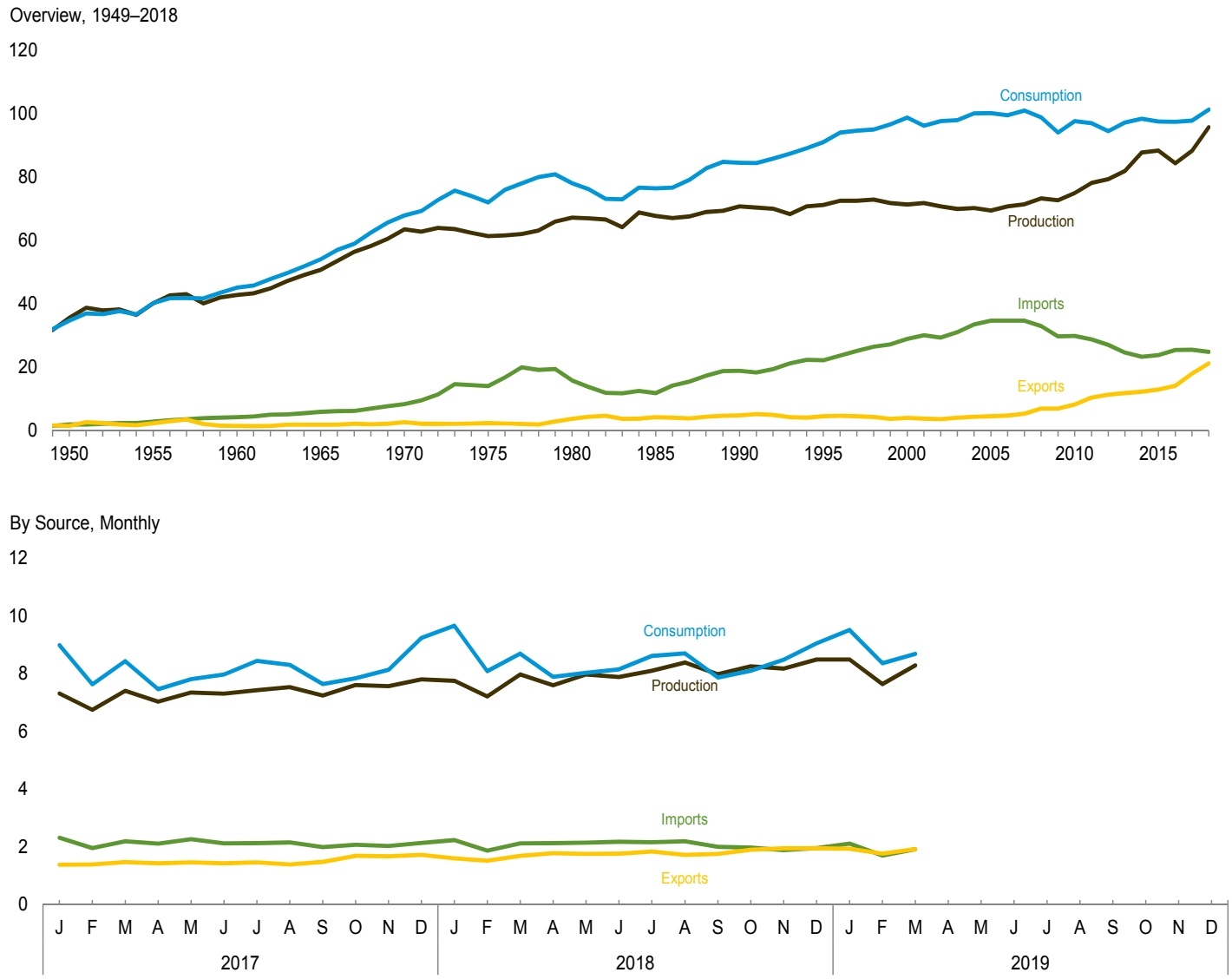
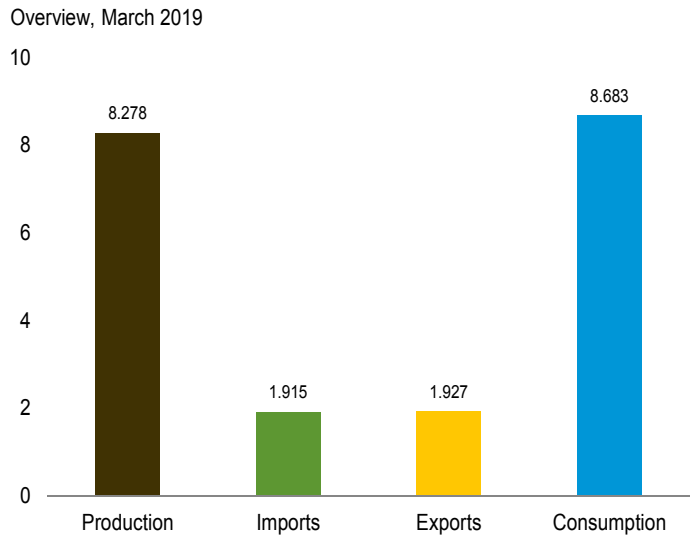
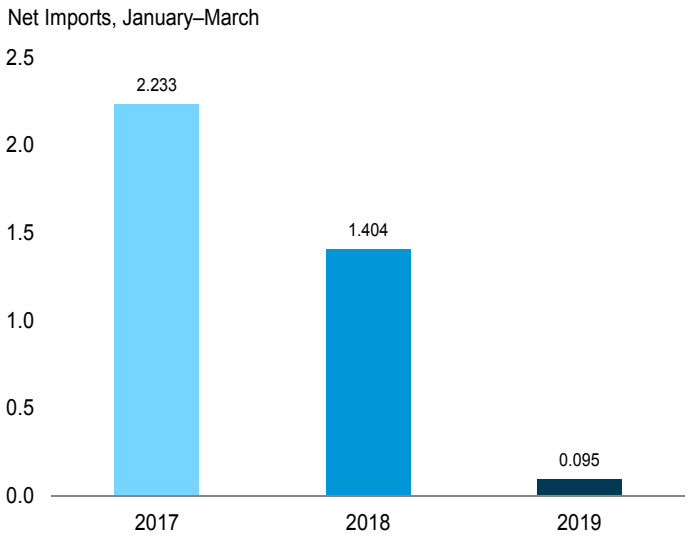
1. Energy Overview

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	**32.563**	**0.000**	**2.978**	**35.540**	**1.913**	**1.465**	**0.448**	**-1.372**	**31.632**	**0.000**	**2.978**	**34.616**
1955 Total	**37.364**	**.000**	**2.784**	**40.148**	**2.790**	**2.286**	**.504**	**-.444**	**37.410**	**.000**	**2.784**	**40.208**
1960 Total	**39.869**	**.006**	**2.928**	**42.803**	**4.188**	**1.477**	**2.710**	**-.427**	**42.137**	**.006**	**2.928**	**45.086**
1965 Total	**47.235**	**.043**	**3.396**	**50.674**	**5.892**	**1.829**	**4.063**	**-.722**	**50.577**	**.043**	**3.396**	**54.015**
1970 Total	**59.186**	**.239**	**4.070**	**63.495**	**8.342**	**2.632**	**5.709**	**-1.367**	**63.522**	**.239**	**4.070**	**67.838**
1975 Total	**54.733**	**1.900**	**4.687**	**61.320**	**14.032**	**2.323**	**11.709**	**-1.065**	**65.357**	**1.900**	**4.687**	**71.965**
1980 Total	**59.008**	**2.739**	**5.428**	**67.175**	**15.796**	**3.695**	**12.101**	**-1.210**	**69.828**	**2.739**	**5.428**	**78.067**
1985 Total	**57.539**	**4.076**	**6.084**	**67.698**	**11.781**	**4.196**	**7.584**	**1.110**	**66.093**	**4.076**	**6.084**	**76.392**
1990 Total	**58.560**	**6.104**	**6.040**	**70.704**	**18.817**	**4.752**	**14.065**	**-.284**	**72.332**	**6.104**	**6.040**	**84.485**
1995 Total	**57.540**	**7.075**	**6.557**	**71.173**	**22.180**	**4.496**	**17.684**	**2.134**	**77.222**	**7.075**	**6.559**	**90.991**
2000 Total	**57.366**	**7.862**	**6.102**	**71.330**	**28.865**	**3.962**	**24.904**	**2.543**	**84.694**	**7.862**	**6.104**	**98.776**
2001 Total	**58.541**	**8.029**	**5.162**	**71.732**	**30.052**	**3.731**	**26.321**	**-1.924**	**82.865**	**8.029**	**5.160**	**96.129**
2002 Total	**56.834**	**8.145**	**5.731**	**70.710**	**29.331**	**3.608**	**25.722**	**1.172**	**83.662**	**8.145**	**5.726**	**97.605**
2003 Total	**56.033**	**7.960**	**5.942**	**69.935**	**31.007**	**4.013**	**26.994**	**.969**	**83.972**	**7.960**	**5.944**	**97.898**
2004 Total	**55.942**	**8.223**	**6.063**	**70.228**	**33.492**	**4.351**	**29.141**	**.704**	**85.737**	**8.223**	**6.075**	**100.073**
2005 Total	**55.049**	**8.161**	**6.221**	**69.431**	**34.659**	**4.462**	**30.197**	**.540**	**85.689**	**8.161**	**6.234**	**100.168**
2006 Total	**55.934**	**8.215**	**6.586**	**70.735**	**34.649**	**4.727**	**29.921**	**-1.192**	**84.550**	**8.215**	**6.637**	**99.464**
2007 Total	**56.429**	**8.459**	**6.510**	**71.398**	**34.679**	**5.338**	**29.341**	**.232**	**85.883**	**8.459**	**6.523**	**100.971**
2008 Total	**57.587**	**8.426**	**7.192**	**73.205**	**32.970**	**6.949**	**26.021**	**-.401**	**83.112**	**8.426**	**7.175**	**98.825**
2009 Total	**56.661**	**8.355**	**7.625**	**72.641**	**29.690**	**6.920**	**22.770**	**-1.388**	**77.944**	**8.355**	**7.608**	**94.023**
2010 Total	**58.222**	**8.434**	**8.314**	**74.970**	**29.866**	**8.176**	**21.690**	**.949**	**80.818**	**8.434**	**8.267**	**97.608**
2011 Total	**60.567**	**8.269**	**9.300**	**78.136**	**28.748**	**10.373**	**18.375**	**.439**	**79.350**	**8.269**	**9.204**	**96.950**
2012 Total	**62.334**	**8.062**	**8.886**	**79.282**	**27.068**	**11.267**	**15.801**	**-.603**	**77.409**	**8.062**	**8.847**	**94.480**
2013 Total	**64.200**	**8.244**	**9.418**	**81.862**	**24.623**	**11.788**	**12.835**	**2.521**	**79.326**	**8.244**	**9.451**	**97.218**
2014 Total	**69.642**	**8.338**	**9.766**	**87.746**	**23.241**	**12.270**	**10.971**	**-.336**	**80.122**	**8.338**	**9.740**	**98.382**
2015 Total	**70.259**	**8.337**	**9.729**	**88.325**	**23.794**	**12.902**	**10.892**	**-1.732**	**79.200**	**8.337**	**9.720**	**97.484**
2016 Total	**65.507**	**8.427**	**10.428**	**84.362**	**25.378**	**14.119**	**11.259**	**1.824**	**78.424**	**8.427**	**10.368**	**97.445**
2017 January	5.620	.765	.926	7.311	2.315	1.382	.933	.738	7.292	.765	.904	8.982
February	5.209	.665	.867	6.741	1.959	1.387	.572	.309	6.089	.665	.852	7.623
March	5.698	.681	1.023	7.401	2.195	1.467	.728	.301	6.723	.681	1.010	8.430
April	5.433	.593	.997	7.023	2.112	1.429	.683	-.254	5.851	.593	.993	7.452
May	5.663	.641	1.035	7.340	2.264	1.459	.805	-.344	6.110	.641	1.034	7.800
June	5.610	.701	.991	7.302	2.117	1.430	.688	-.025	6.254	.701	.992	7.964
July	5.747	.746	.932	7.425	2.129	1.459	.670	.337	6.742	.746	.927	8.433
August	5.895	.757	.874	7.526	2.153	1.392	.760	.011	6.652	.757	.869	8.298
September	5.670	.712	.852	7.234	1.993	1.481	.512	-.116	6.060	.712	.842	7.630
October	5.988	.690	.924	7.603	2.067	1.686	.382	-.146	6.223	.690	.914	7.838
November	5.941	.697	.921	7.559	2.027	1.671	.356	.214	6.517	.697	.905	8.130
December	6.066	.771	.959	7.795	2.136	1.718	.417	1.016	7.504	.771	.940	9.229
Total	**68.541**	**8.419**	**11.301**	**88.261**	**25.467**	**17.960**	**7.507**	**2.042**	**78.017**	**8.419**	**11.181**	**97.809**
2018 January	5.965	.781	1.002	7.748	2.231	1.602	R .630	1.277	7.872	.781	.989	9.655
February	5.576	.678	.949	7.203	1.864	1.516	.347	.526	6.463	.678	.924	8.077
March	6.230	.701	1.033	7.964	2.119	1.691	.427	.293	6.950	.701	1.018	8.684
April	5.940	.618	1.034	7.593	2.126	1.782	R .344	R -.053	6.239	.618	1.016	7.884
May	6.197	.704	1.063	7.964	2.145	R 1.750	R .395	-.339	6.248	.704	1.053	8.019
June	6.095	.729	1.051	7.875	2.176	R 1.760	R .416	R -.147	6.365	.729	1.036	8.144
July	6.394	.758	.946	8.098	2.161	R 1.832	R .330	R .180	6.905	.758	.930	8.607
August	6.666	.756	.958	8.380	2.194	R 1.720	R .475	R -.160	6.979	.756	.943	8.694
September	6.425	.677	.874	7.976	2.001	R 1.753	R .248	R -.364	6.318	.677	.854	7.860
October	6.713	.621	.912	8.246	1.976	R 1.897	R .079	R -.230	6.570	.621	.894	8.095
November	6.572	.669	.928	8.168	1.887	R 1.948	R -.061	R .369	6.890	.669	.908	8.476
December	6.768	.749	.970	8.488	1.959	R 1.951	R .008	R .547	7.330	.749	.953	9.043
Total	**75.541**	**8.441**	**11.722**	**95.705**	**24.838**	**R 21.202**	**R 3.637**	**R 1.898**	**81.128**	**8.441**	**11.518**	**101.239**
2019 January	R 6.734	.771	.978	R 8.482	R 2.114	R 1.936	R .179	R .850	7.768	.771	.954	9.510
February	R 6.059	.677	R .897	R 7.632	R 1.695	R 1.766	R -.071	R .797	6.786	.677	.883	8.358
March	6.585	.681	1.013	8.278	1.915	1.927	-.012	.417	6.987	.681	1.002	8.683
3-Month Total	**19.378**	**2.128**	**2.887**	**24.393**	**5.724**	**5.629**	**.095**	**2.063**	**21.542**	**2.128**	**2.839**	**26.551**
2018 3-Month Total	**17.772**	**2.159**	**2.984**	**22.915**	**6.213**	**4.809**	**1.404**	**2.096**	**21.285**	**2.159**	**2.930**	**26.415**
2017 3-Month Total	**16.527**	**2.110**	**2.816**	**21.454**	**6.469**	**4.236**	**2.233**	**1.349**	**20.103**	**2.110**	**2.766**	**25.036**

[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.

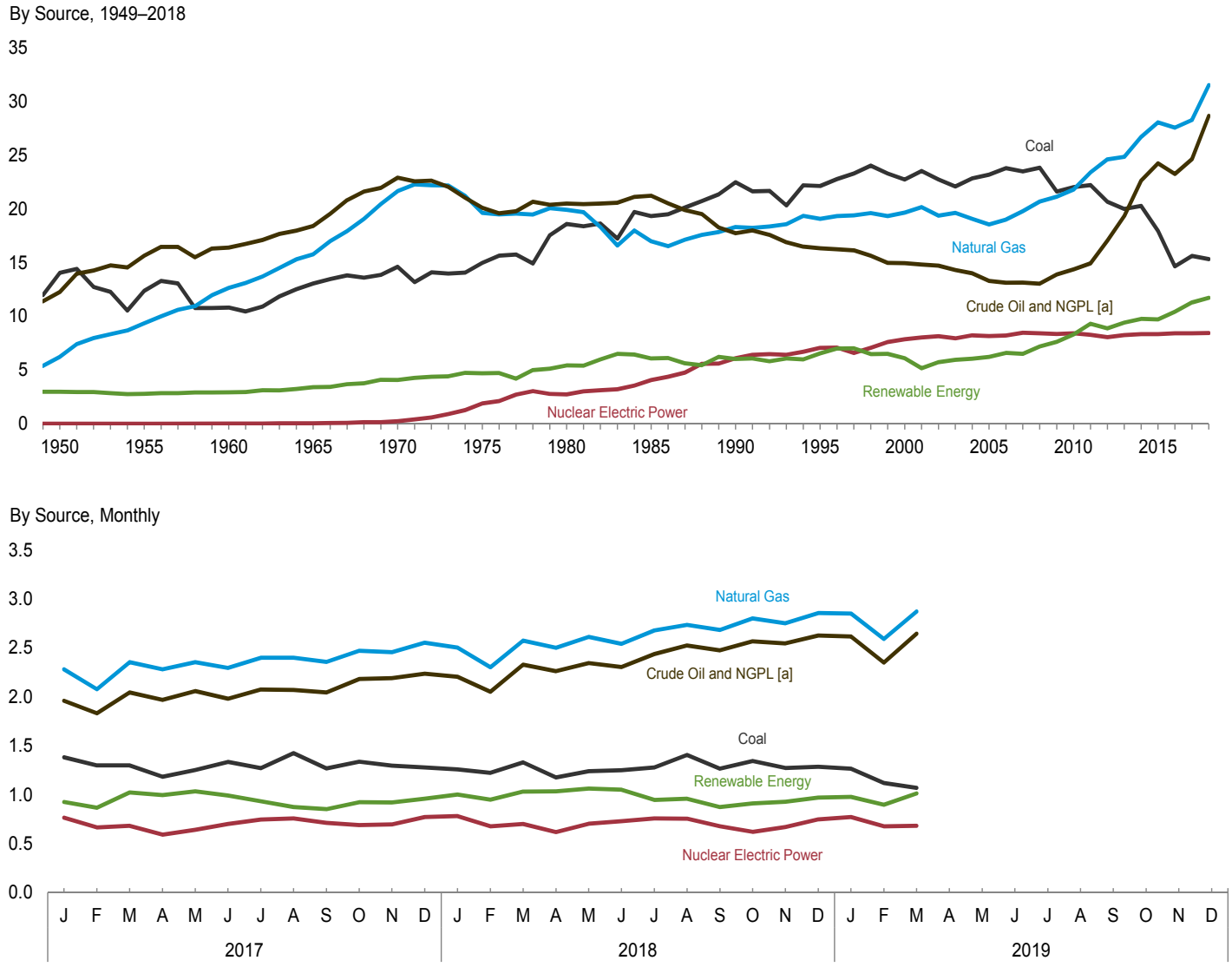
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

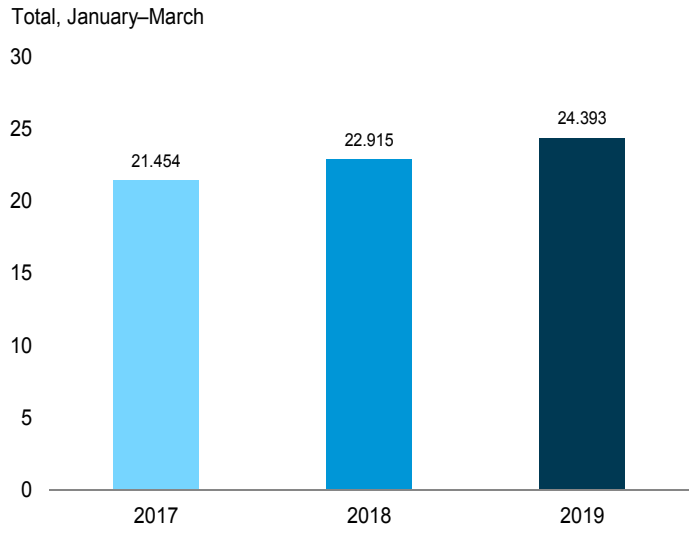
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

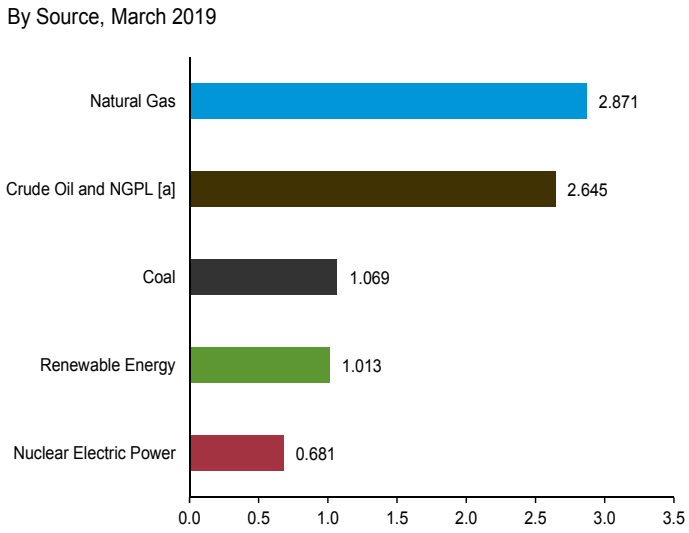
Sources: • **Production:** Table 1.2. • **Trade:** Tables 1.4a and 1.4b. • **Stock Change and Other:** Calculated as consumption minus production and net imports. • **Consumption:** Table 1.3.

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**	**0.823**	**32.563**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**35.540**
1955 Total	**12.370**	**9.345**	**14.410**	**1.240**	**37.364**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.148**
1960 Total	**10.817**	**12.656**	**14.935**	**1.461**	**39.869**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**42.803**
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**	**2.512**	**59.186**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**63.495**
1975 Total	**14.989**	**19.640**	**17.729**	**2.374**	**54.733**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**61.320**
1980 Total	**18.598**	**19.908**	**18.249**	**2.254**	**59.008**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**67.175**
1985 Total	**19.325**	**16.980**	**18.992**	**2.241**	**57.539**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**67.698**
1990 Total	**22.488**	**18.326**	**15.571**	**2.175**	**58.560**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**70.704**
1995 Total	**22.130**	**19.082**	**13.887**	**2.442**	**57.540**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.099**	**6.557**	**71.173**
2000 Total	**22.735**	**19.662**	**12.358**	**2.611**	**57.366**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.006**	**6.102**	**71.330**
2001 Total	**23.547**	**20.166**	**12.282**	**2.547**	**58.541**	**8.029**	**2.242**	**.164**	**.062**	**.070**	**2.624**	**5.162**	**71.732**
2002 Total	**22.732**	**19.382**	**12.160**	**2.559**	**56.834**	**8.145**	**2.689**	**.171**	**.060**	**.105**	**2.705**	**5.731**	**70.710**
2003 Total	**22.094**	**19.633**	**11.960**	**2.346**	**56.033**	**7.960**	**2.793**	**.173**	**.058**	**.113**	**2.805**	**5.942**	**69.935**
2004 Total	**22.852**	**19.074**	**11.550**	**2.466**	**55.942**	**8.223**	**2.688**	**.178**	**.058**	**.142**	**2.996**	**6.063**	**70.228**
2005 Total	**23.185**	**18.556**	**10.974**	**2.334**	**55.049**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.101**	**6.221**	**69.431**
2006 Total	**23.790**	**19.022**	**10.767**	**2.356**	**55.934**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.212**	**6.586**	**70.735**
2007 Total	**23.493**	**19.786**	**10.741**	**2.409**	**56.429**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.472**	**6.510**	**71.398**
2008 Total	**23.851**	**20.703**	**10.613**	**2.419**	**57.587**	**8.426**	**2.511**	**.192**	**.074**	**.546**	**3.868**	**7.192**	**73.205**
2009 Total	**21.624**	**21.139**	**11.324**	**2.574**	**56.661**	**8.355**	**2.669**	**.200**	**.078**	**.721**	**3.957**	**7.625**	**72.641**
2010 Total	**22.038**	**21.806**	**11.596**	**2.781**	**58.222**	**8.434**	**2.539**	**.208**	**.091**	**.923**	**4.553**	**8.314**	**74.970**
2011 Total	**22.221**	**23.406**	**11.970**	**2.970**	**60.567**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.704**	**9.300**	**78.136**
2012 Total	**20.677**	**24.610**	**13.801**	**3.246**	**62.334**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.547**	**8.886**	**79.282**
2013 Total	**20.001**	**24.859**	**15.807**	**3.532**	**64.200**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.816**	**9.418**	**81.862**
2014 Total	**20.286**	**26.718**	**18.542**	**4.096**	**69.642**	**8.338**	**2.467**	**.214**	**.337**	**1.728**	**5.020**	**9.766**	**87.746**
2015 Total	**17.946**	**28.067**	**19.679**	**4.567**	**70.259**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.992**	**9.729**	**88.325**
2016 Total	**14.667**	**27.576**	**18.494**	**4.770**	**65.507**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.081**	**10.428**	**84.362**
2017 January	1.382	2.281	1.568	.389	5.620	.765	.247	.018	.034	.183	.445	.926	7.311
February	1.300	2.078	1.456	.376	5.209	.665	.218	.016	.040	.195	.398	.867	6.741
March	1.299	2.354	1.622	.423	5.698	.681	.270	.018	.063	.230	.442	1.023	7.401
April	1.184	2.281	1.560	.409	5.433	.593	.271	.018	.069	.227	.412	.997	7.023
May	1.252	2.353	1.626	.432	5.663	.641	.298	.017	.081	.207	.432	1.035	7.340
June	1.335	2.295	1.558	.422	5.610	.701	.278	.016	.087	.183	.427	.991	7.302
July	1.271	2.400	1.638	.438	5.747	.746	.244	.018	.083	.147	.439	.932	7.425
August	1.424	2.400	1.640	.432	5.895	.757	.201	.018	.080	.125	.450	.874	7.526
September	1.269	2.357	1.630	.414	5.670	.712	.176	.017	.074	.164	.421	.852	7.234
October	1.336	2.470	1.721	.461	5.988	.690	.168	.017	.068	.233	.438	.924	7.603
November	1.296	2.455	1.735	.456	5.941	.697	.189	.017	.050	.222	.443	.921	7.559
December	1.277	2.552	1.781	.455	6.066	.771	.206	.020	.049	.226	.458	.959	7.795
Total	**15.625**	**28.274**	**19.535**	**5.107**	**68.541**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.204**	**11.301**	**88.261**
2018 January	1.259	E 2.502	E 1.768	.437	5.965	.781	.236	.018	.050	.247	.451	1.002	7.748
February	1.223	E 2.302	E 1.637	.415	5.576	.678	.235	.017	.058	.222	.417	.949	7.203
March	1.329	E 2.574	E 1.850	.476	6.230	.701	.239	.018	.076	.251	.448	1.033	7.964
April	1.177	E 2.500	E 1.793	.471	5.940	.618	.253	.017	.089	.247	.429	1.034	7.593
May	1.241	E 2.611	E 1.851	.493	6.197	.704	.280	.019	.100	.217	.447	1.063	7.964
June	1.249	E 2.541	E 1.827	.478	6.095	.729	.258	.018	.107	.225	.445	1.051	7.875
July	1.278	E 2.678	E 1.934	.504	6.394	.758	.221	.019	.100	.148	.459	.946	8.098
August	1.406	E 2.735	E 2.003	.522	6.666	.756	.197	.019	.099	.180	.464	.958	8.380
September	1.266	E 2.684	E 1.963	.512	6.425	.677	.172	.018	.090	.166	.428	.874	7.976
October	1.345	E 2.800	E 2.044	.523	6.713	.621	.173	.018	.076	.195	.451	.912	8.246
November	1.273	E 2.752	E 2.041	.505	6.572	.669	.204	.018	.058	.207	.440	.928	8.168
December	1.286	E 2.856	E 2.116	.511	6.768	.749	.219	.020	.050	.229	.454	.970	8.488
Total	**15.333**	**E 31.536**	**E 22.826**	**5.846**	**75.541**	**8.441**	**2.688**	**.218**	**.951**	**2.533**	**5.332**	**11.722**	**95.705**
2019 January	1.267	RE 2.850	RE 2.098	.519	R 6.734	.771	.226	.019	.055	.232	.446	.978	R 8.482
February	1.119	RE 2.591	RE 1.863	.485	R 6.059	.677	.203	.017	.059	.212	R .405	R .897	R 7.632
March	1.069	E 2.871	E 2.105	.540	6.585	.681	.234	.019	.088	.240	.431	1.013	8.278
3-Month Total	**3.456**	**E 8.311**	**E 6.066**	**1.544**	**19.378**	**2.128**	**.663**	**.055**	**.202**	**.684**	**1.282**	**2.887**	**24.393**
2018 3-Month Total	**3.811**	**E 7.378**	**E 5.255**	**1.328**	**17.772**	**2.159**	**.710**	**.054**	**.184**	**.721**	**1.316**	**2.984**	**22.915**
2017 3-Month Total	**3.981**	**6.713**	**4.646**	**1.188**	**16.527**	**2.110**	**.734**	**.053**	**.136**	**.608**	**1.285**	**2.816**	**21.454**

[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.

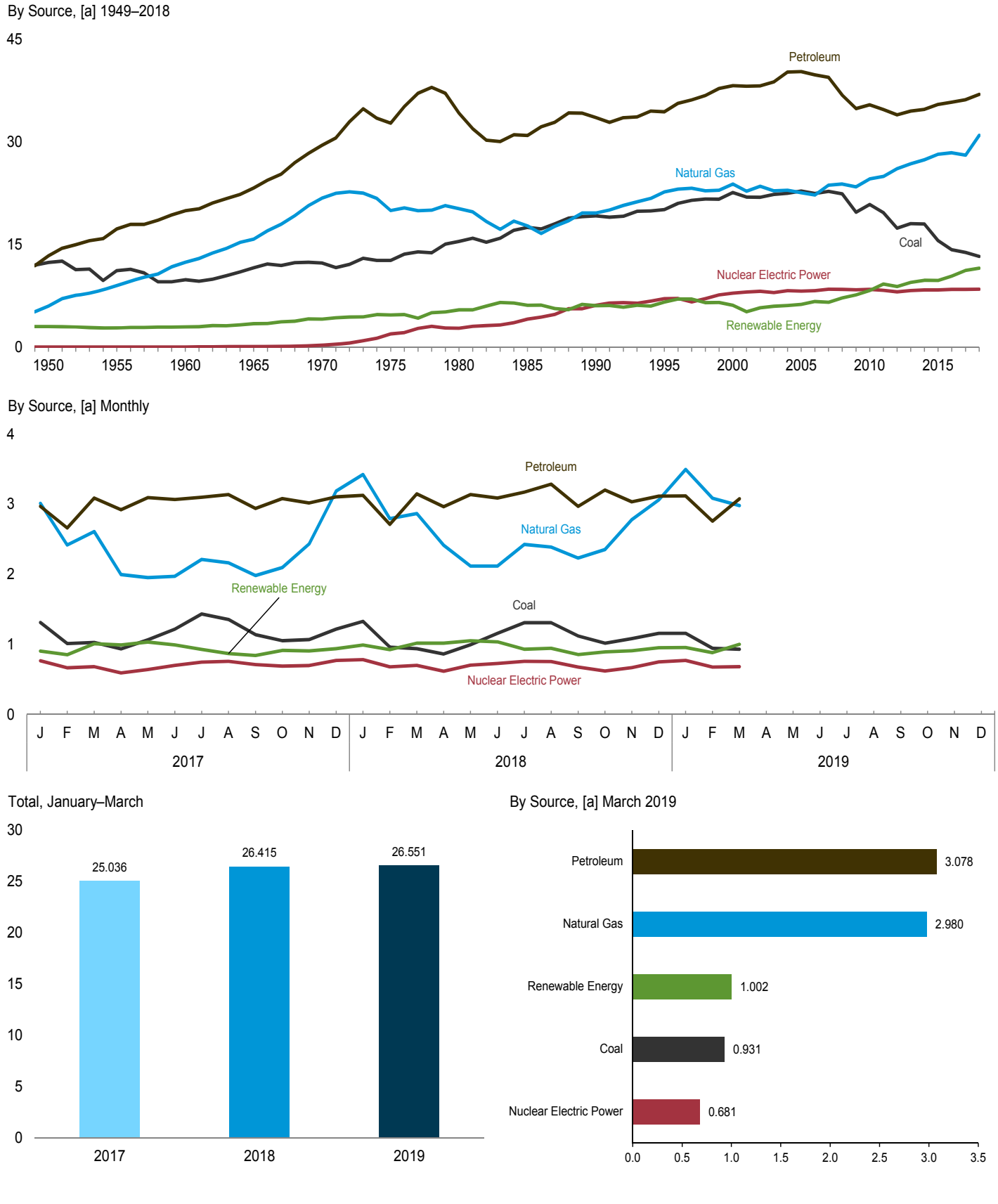
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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**	**13.315**	**31.632**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**34.616**
1955 Total	**11.167**	**8.998**	**17.255**	**37.410**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.208**
1960 Total	**9.838**	**12.385**	**19.919**	**42.137**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**45.086**
1965 Total	**11.581**	**15.769**	**23.246**	**50.577**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**54.015**
1970 Total	**12.265**	**21.795**	**29.521**	**63.522**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**67.838**
1975 Total	**12.663**	**19.948**	**32.732**	**65.357**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**71.965**
1980 Total	**15.423**	**20.235**	**34.205**	**69.828**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**78.067**
1985 Total	**17.478**	**17.703**	**30.925**	**66.093**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**76.392**
1990 Total	**19.173**	**19.603**	**33.552**	**72.332**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**84.485**
1995 Total	**20.089**	**22.671**	**34.401**	**77.222**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.101**	**6.559**	**90.991**
2000 Total	**22.580**	**23.824**	**38.226**	**84.694**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.008**	**6.104**	**98.776**
2001 Total	**21.914**	**22.773**	**38.149**	**82.865**	**8.029**	**2.242**	**.164**	**.062**	**.070**	**2.622**	**5.160**	**96.129**
2002 Total	**21.904**	**23.510**	**38.187**	**83.662**	**8.145**	**2.689**	**.171**	**.060**	**.105**	**2.701**	**5.726**	**97.605**
2003 Total	**22.321**	**22.831**	**38.770**	**83.972**	**7.960**	**2.793**	**.173**	**.058**	**.113**	**2.806**	**5.944**	**97.898**
2004 Total	**22.466**	**22.923**	**40.210**	**85.737**	**8.223**	**2.688**	**.178**	**.058**	**.142**	**3.008**	**6.075**	**100.073**
2005 Total	**22.797**	**22.565**	**40.283**	**85.689**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.114**	**6.234**	**100.168**
2006 Total	**22.447**	**22.239**	**39.803**	**84.550**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.262**	**6.637**	**99.464**
2007 Total	**22.749**	**23.663**	**39.445**	**85.883**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.485**	**6.523**	**100.971**
2008 Total	**22.387**	**23.843**	**36.841**	**83.112**	**8.426**	**2.511**	**.192**	**.074**	**.546**	**3.851**	**7.175**	**98.825**
2009 Total	**19.691**	**23.416**	**34.860**	**77.944**	**8.355**	**2.669**	**.200**	**.078**	**.721**	**3.940**	**7.608**	**94.023**
2010 Total	**20.834**	**24.575**	**35.416**	**80.818**	**8.434**	**2.539**	**.208**	**.091**	**.923**	**4.506**	**8.267**	**97.608**
2011 Total	**19.658**	**24.955**	**34.727**	**79.350**	**8.269**	**3.103**	**.212**	**.112**	**1.168**	**4.609**	**9.204**	**96.950**
2012 Total	**17.378**	**26.089**	**33.939**	**77.409**	**8.062**	**2.629**	**.212**	**.159**	**1.340**	**4.508**	**8.847**	**94.480**
2013 Total	**18.039**	**26.805**	**34.500**	**79.326**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.848**	**9.451**	**97.218**
2014 Total	**17.998**	**27.383**	**34.763**	**80.122**	**8.338**	**2.467**	**.214**	**.337**	**1.728**	**4.994**	**9.740**	**98.382**
2015 Total	**15.549**	**28.191**	**35.478**	**79.200**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**4.983**	**9.720**	**97.484**
2016 Total	**14.226**	**28.400**	**35.817**	**78.424**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.020**	**10.368**	**97.445**
2017 January	1.313	3.012	2.970	7.292	.765	.247	.018	.034	.183	.422	.904	8.982
February	1.011	2.418	2.661	6.089	.665	.218	.016	.040	.195	.383	.852	7.623
March	1.029	2.608	3.087	6.723	.681	.270	.018	.063	.230	.429	1.010	8.430
April	.937	1.995	2.920	5.851	.593	.271	.018	.069	.227	.408	.993	7.452
May	1.066	1.953	3.093	6.110	.641	.298	.017	.081	.207	.431	1.034	7.800
June	1.218	1.972	3.067	6.254	.701	.278	.016	.087	.183	.428	.992	7.964
July	1.433	2.212	3.099	6.742	.746	.244	.018	.083	.147	.434	.927	8.433
August	1.356	2.163	3.137	6.652	.757	.201	.018	.080	.125	.445	.869	8.298
September	1.140	1.983	2.939	6.060	.712	.176	.017	.074	.164	.411	.842	7.630
October	1.051	2.097	3.080	6.223	.690	.168	.017	.068	.233	.427	.914	7.838
November	1.069	2.433	3.018	6.517	.697	.189	.017	.050	.222	.426	.905	8.130
December	1.216	3.187	3.104	7.504	.771	.206	.020	.049	.226	.439	.940	9.229
Total	**13.837**	**28.034**	**36.174**	**78.017**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.084**	**11.181**	**97.809**
2018 January	1.328	3.423	3.125	7.872	.781	.236	.018	.050	.247	.437	.989	9.655
February	.961	2.792	2.711	6.463	.678	.235	.017	.058	.222	.391	.924	8.077
March	.939	2.867	3.146	6.950	.701	.239	.018	.076	.251	.433	1.018	8.684
April	.863	2.416	2.963	6.239	.618	.253	.017	.089	.247	.411	1.016	7.884
May	.996	2.116	3.137	6.248	.704	.280	.019	.100	.217	.437	1.053	8.019
June	1.159	2.118	3.089	6.365	.729	.258	.018	.107	.225	.429	1.036	8.144
July	1.310	2.425	3.171	6.905	.758	.221	.019	.100	.148	.442	.930	8.607
August	1.308	2.388	3.284	6.979	.756	.197	.019	.099	.180	.448	.943	8.694
September	1.120	2.230	2.968	6.318	.677	.172	.018	.090	.166	.408	.854	7.860
October	1.018	2.352	3.201	6.570	.621	.173	.018	.076	.195	.433	.894	8.095
November	1.082	2.779	3.033	6.890	.669	.204	.018	.058	.207	.421	.908	8.476
December	1.157	3.060	3.116	7.330	.749	.219	.020	.050	.229	.436	.953	9.043
Total	**13.242**	**30.966**	**36.945**	**81.128**	**8.441**	**2.688**	**.218**	**.951**	**2.533**	**5.128**	**11.518**	**101.239**
2019 January	1.157	R 3.496	3.118	7.768	.771	.226	.019	.055	.232	.423	.954	9.510
February	.943	3.086	2.758	6.786	.677	.203	.017	.059	.212	.391	.883	8.358
March	.931	2.980	3.078	6.987	.681	.234	.019	.088	.240	.421	1.002	8.683
3-Month Total	**3.031**	**9.561**	**8.954**	**21.542**	**2.128**	**.663**	**.055**	**.202**	**.684**	**1.235**	**2.839**	**26.551**
2018 3-Month Total	**3.228**	**9.081**	**8.982**	**21.285**	**2.159**	**.710**	**.054**	**.184**	**.721**	**1.262**	**2.930**	**26.415**
2017 3-Month Total	**3.353**	**8.039**	**8.717**	**20.103**	**2.110**	**.734**	**.053**	**.136**	**.608**	**1.234**	**2.766**	**25.036**

[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.

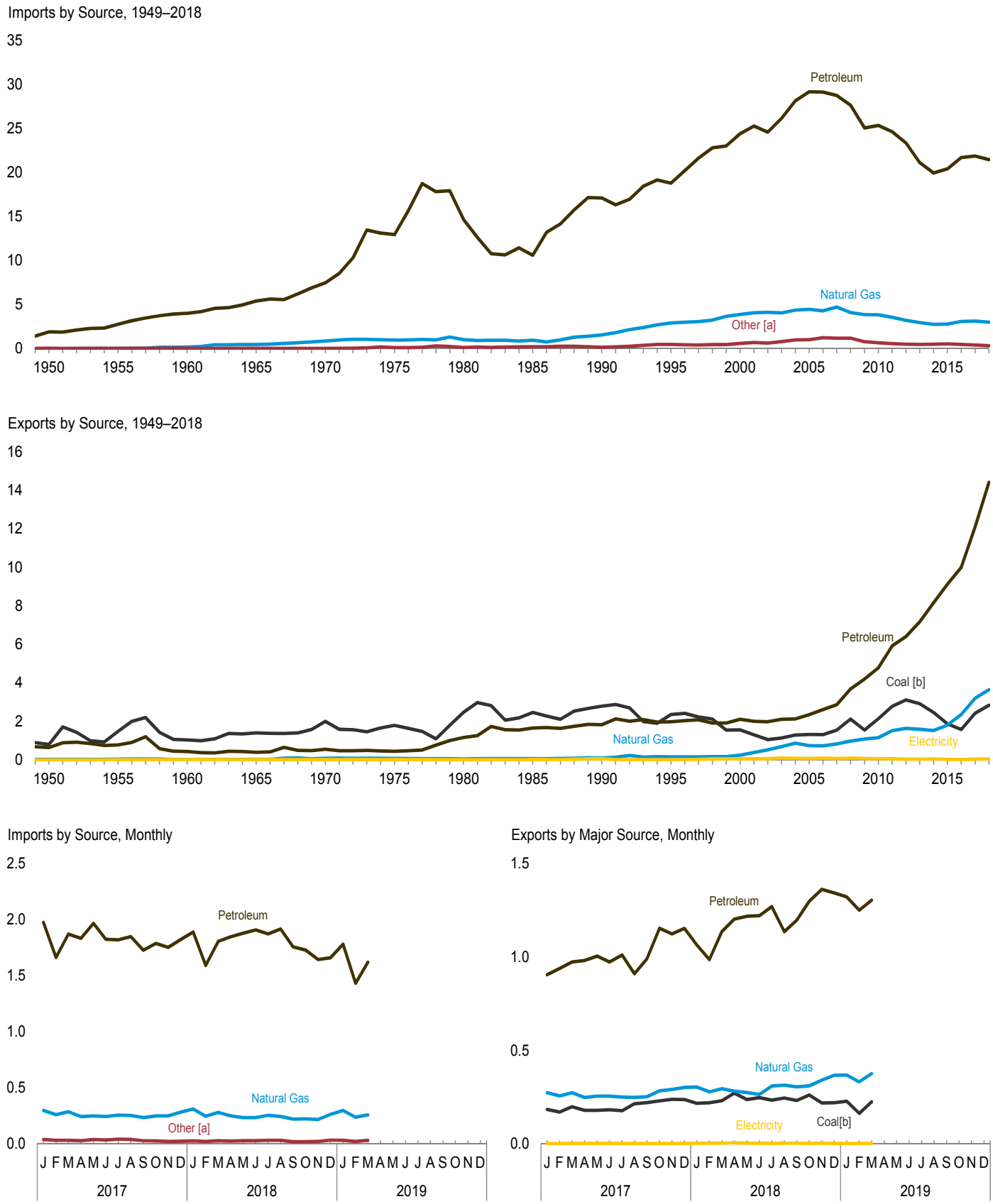
Notes: • See "Primary Energy Consumption" in Glossary. • See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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)

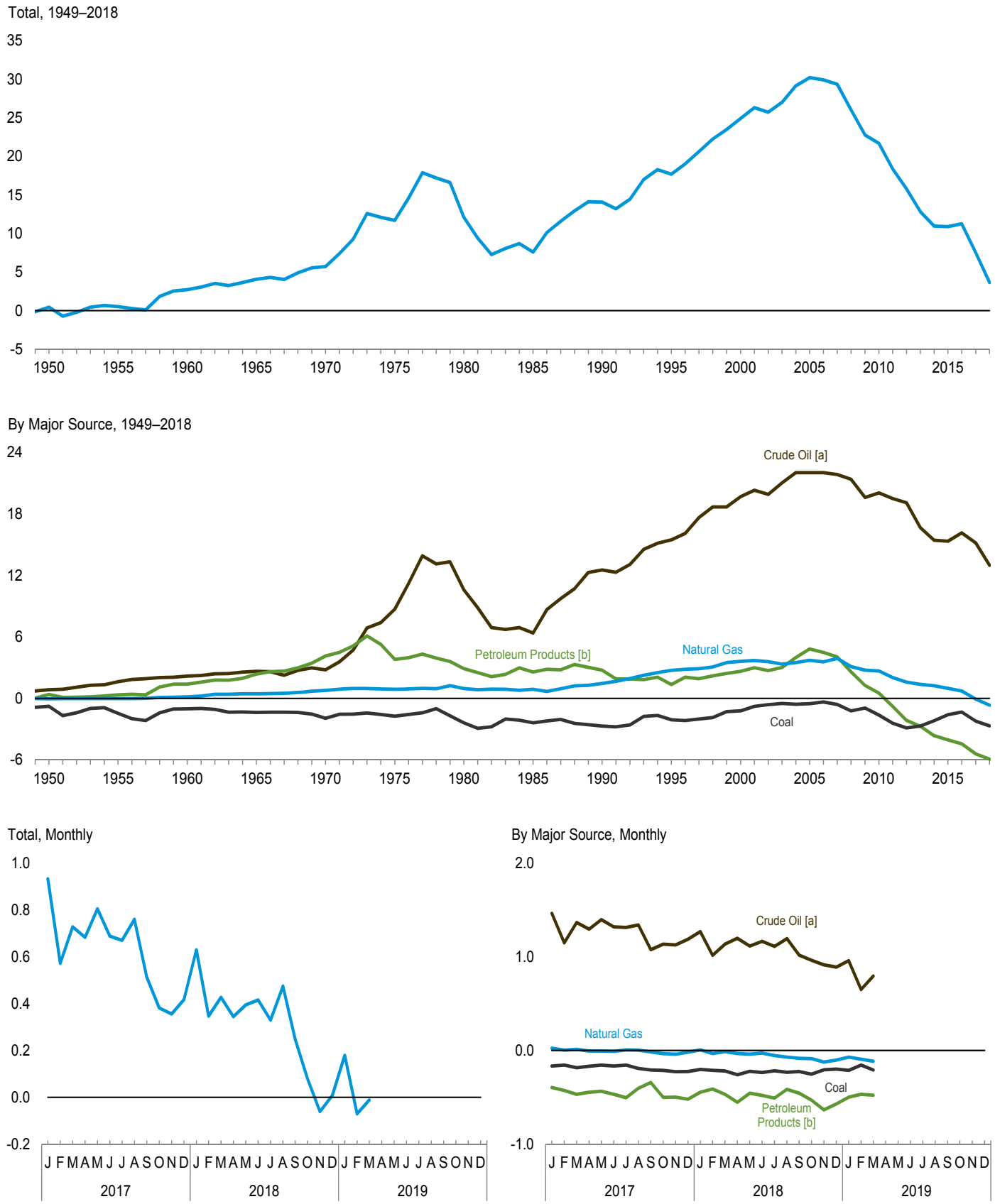


[a] Coal, coal coke, biomass, and electricity.
[b] Includes coal coke.

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)	.250	1.441	.346	1.787	.004	.013	2.067
November	.008	(s)	.250	1.393	.358	1.751	.005	.013	2.027
December	.009	(s)	.285	1.460	.362	1.822	.004	.016	2.136
Total	**.167**	**.001**	**3.118**	**17.597**	**4.277**	**21.874**	**.081**	**.224**	**25.467**
2018 January	.010	(s)	.311	1.507	.381	1.888	.004	.018	2.231
February	.007	(s)	.247	1.273	.318	1.591	.003	.016	1.864
March	.011	(s)	.281	1.432	.371	1.804	.004	.019	2.119
April	.010	.001	.250	1.501	.345	1.846	.004	.015	2.126
May	.011	.001	.235	1.472	.405	1.877	.004	.018	2.145
June	.010	(s)	.236	1.543	.363	1.906	.004	.019	2.176
July	.014	(s)	.255	1.490	.381	1.871	.002	.018	2.161
August	.010	(s)	.245	1.505	.409	1.914	.005	.021	2.194
September	.005	(s)	.221	1.381	.375	1.756	.003	.015	2.001
October	.006	.001	.223	1.375	.352	1.727	.006	.013	1.976
November	.008	(s)	.218	1.363	.279	1.642	.005	.013	1.887
December	.018	(s)	.264	1.335	.323	1.658	.004	.014	1.959
Total	**.122**	**.003**	**2.987**	**17.177**	**4.303**	**21.480**	**.048**	**.199**	**24.838**
2019 January	.013	(s)	R .298	1.414	.365	1.779	.005	.019	R 2.114
February	.007	(s)	R .239	1.130	.301	1.431	.003	.015	R 1.695
March	.014	(s)	.259	1.271	.348	1.619	.006	.016	1.915
3-Month Total	**.034**	**(s)**	**.797**	**3.816**	**1.013**	**4.829**	**.014**	**.050**	**5.724**
2018 3-Month Total	**.028**	**(s)**	**.839**	**4.212**	**1.070**	**5.283**	**.011**	**.053**	**6.213**
2017 3-Month Total	**.041**	**(s)**	**.847**	**4.456**	**1.048**	**5.503**	**.013**	**.064**	**6.469**

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

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

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

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

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

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

Sources: See end of section.

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

(Quadrillion Btu)

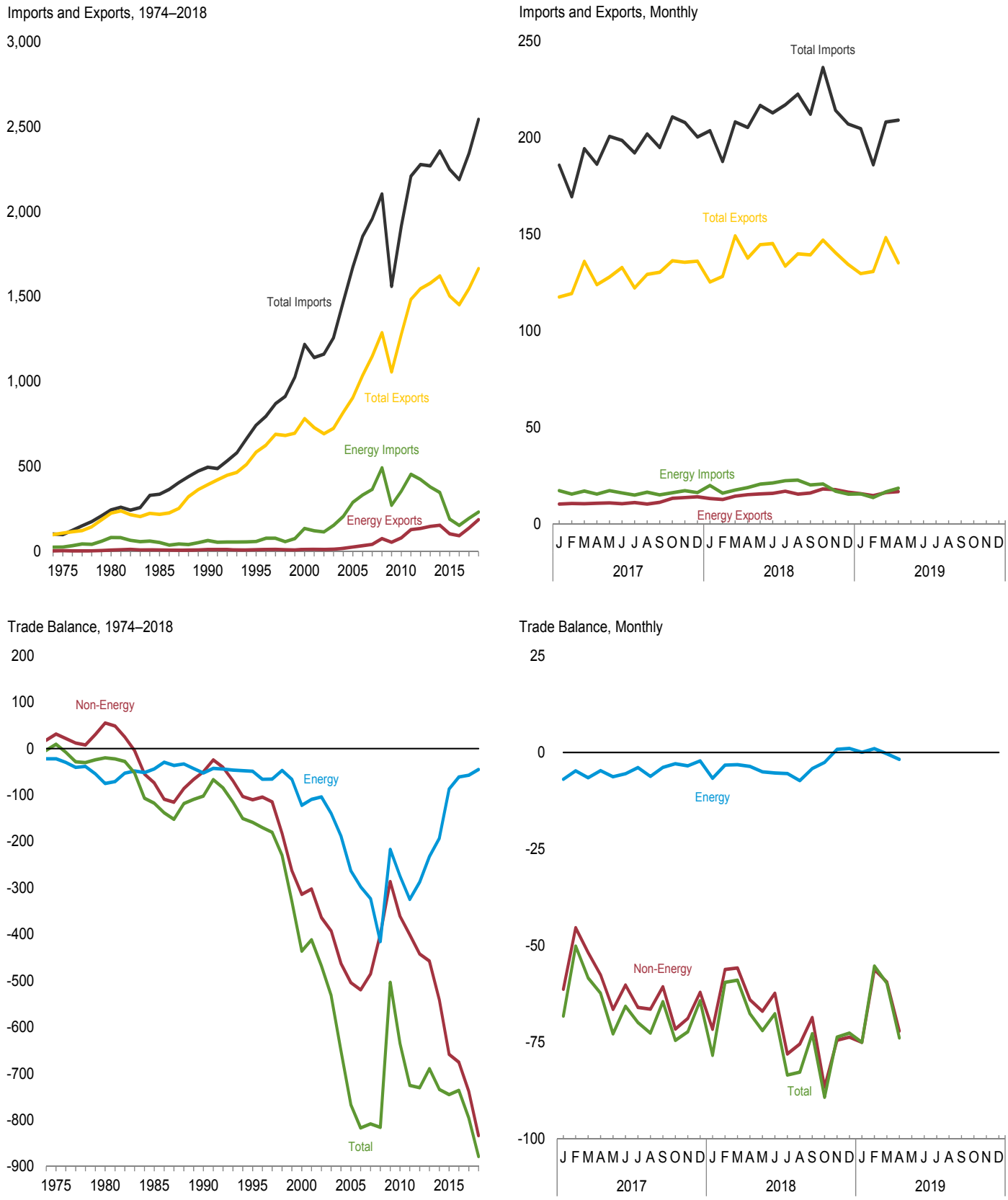
	Exports									Net Imports[a]
				Petroleum						
	Coal	Coal Coke	Natural Gas	Crude Oil[b]	Petroleum Products[c]	Total	Biomass[d]	Electricity	Total	Total
1950 Total	**0.786**	**0.010**	**0.027**	**0.202**	**0.440**	**0.642**	**NA**	**0.001**	**1.465**	**0.448**
1955 Total	**1.465**	**.013**	**.032**	**.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	.274	.126	.778	.904	.017	.002	1.382	.933
February	.170	.001	.257	.184	.754	.938	.018	.002	1.387	.572
March	.197	.002	.274	.165	.807	.972	.018	.003	1.467	.728
April	.178	.001	.249	.194	.787	.981	.015	.004	1.429	.683
May	.178	.001	.256	.195	.808	1.004	.017	.003	1.459	.805
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	.249	.145	.764	.910	.017	.003	1.392	.760
September	.219	.002	.253	.252	.738	.990	.015	.002	1.481	.512
October	.226	.005	.284	.306	.847	1.153	.016	.002	1.686	.382
November	.235	.003	.291	.266	.856	1.122	.016	.003	1.671	.356
December	.234	.003	.302	.271	.882	1.152	.024	.003	1.718	.417
Total	**2.388**	**.030**	**3.196**	**2.424**	**9.684**	**12.108**	**.206**	**.032**	**17.960**	**7.507**
2018 January	.213	.004	.304	.238	.826	1.064	.013	.004	1.602	R .630
February	.219	.001	.279	.257	.729	.986	.027	.004	1.516	.347
March	.229	.002	.295	.296	.840	1.136	.025	.004	1.691	.427
April	.269	.003	.282	.301	.899	1.201	.022	.006	1.782	R .344
May	.234	.002	R .275	.356	.861	1.217	.018	.004	R 1.750	R .395
June	.246	.002	R .265	.378	.843	1.220	.023	.004	R 1.760	R .416
July	.232	.002	R .309	.379	.889	1.268	.017	.003	R 1.832	R .330
August	.244	.001	R .315	.310	.825	1.135	.020	.004	R 1.720	R .475
September	.230	.001	R .305	.363	.832	1.195	.017	.004	R 1.753	R .248
October	.259	.002	R .310	.412	.884	1.297	.025	.003	R 1.897	R .079
November	.216	.003	R .341	.448	.913	1.361	.022	.004	R 1.948	R -.061
December	.217	.003	R .367	.445	.895	1.341	.021	.003	R 1.951	R .008
Total	**2.809**	**.029**	R **3.646**	**4.184**	**10.237**	**14.421**	**.250**	**.047**	R **21.202**	R **3.637**
2019 January	.226	.003	R .368	.457	.863	1.320	.017	.002	R 1.936	R .179
February	.163	.001	R .332	.479	.770	1.249	.018	.003	R 1.766	R -.071
March	.224	.001	.376	.476	.827	1.303	.021	.003	1.927	-.012
3-Month Total	**.612**	**.005**	**1.076**	**1.412**	**2.460**	**3.871**	**.056**	**.008**	**5.629**	**.095**
2018 3-Month Total	**.661**	**.008**	**.877**	**.791**	**2.394**	**3.186**	**.065**	**.012**	**4.809**	**1.404**
2017 3-Month Total	**.549**	**.006**	**.806**	**.476**	**2.338**	**2.814**	**.053**	**.007**	**4.236**	**2.233**

[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	**111,951**	**408,509**	**-296,558**	**136,054**	**423,862**	**-287,808**	**-442,638**	**1,545,821**	**2,276,267**	**-730,446**
2013 Total	**123,218**	**363,141**	**-239,923**	**147,539**	**379,758**	**-232,219**	**-457,712**	**1,578,439**	**2,268,370**	**-689,931**
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	**74,703**	**142,900**	**-68,197**	**92,757**	**153,781**	**-61,024**	**-675,553**	**1,451,024**	**2,187,600**	**-736,577**
2017 January	7,458	15,772	-8,314	10,329	17,258	-6,929	-61,285	117,458	185,672	-68,214
February	7,799	14,238	-6,439	10,634	15,420	-4,786	-45,354	119,252	169,392	-50,140
March	7,710	15,889	-8,179	10,460	17,030	-6,570	-51,783	135,905	194,258	-58,353
April	8,077	14,440	-6,363	10,714	15,449	-4,735	-57,573	123,842	186,150	-62,308
May	8,374	16,226	-7,852	10,950	17,257	-6,307	-66,508	127,782	200,597	-72,815
June	8,244	15,081	-6,837	10,555	16,062	-5,507	-60,199	132,741	198,447	-65,706
July	8,820	13,991	-5,171	11,083	14,985	-3,902	-66,001	122,140	192,044	-69,903
August	7,799	15,479	-7,680	10,302	16,500	-6,198	-66,437	129,186	201,821	-72,635
September	8,446	14,155	-5,709	11,213	15,105	-3,892	-60,626	130,278	194,796	-64,518
October	10,237	15,247	-5,010	13,294	16,207	-2,913	-71,620	136,199	210,732	-74,533
November	10,676	16,158	-5,482	13,728	17,212	-3,484	-68,809	135,477	207,770	-72,293
December	10,884	14,987	-4,103	14,112	16,298	-2,186	-62,084	136,014	200,285	-64,270
Total	**104,525**	**181,662**	**-77,137**	**137,374**	**194,784**	**-57,410**	**-738,280**	**1,546,273**	**2,341,963**	**-795,690**
2018 January	10,139	18,086	-7,947	13,231	19,944	-6,713	-71,661	125,219	203,593	-78,374
February	9,504	14,996	-5,492	12,643	15,947	-3,304	-56,179	128,057	187,540	-59,483
March	11,130	16,622	-5,492	14,373	17,567	-3,194	-55,775	149,164	208,133	-58,969
April	11,972	18,002	-6,030	15,200	18,813	-3,613	-64,010	137,648	205,271	-67,623
May	12,098	19,781	-7,683	15,557	20,585	-5,028	-66,981	144,593	216,602	-72,009
June	12,764	20,315	-7,551	15,865	21,188	-5,323	-62,319	145,134	212,775	-67,642
July	13,338	21,549	-8,211	16,988	22,448	-5,460	-78,051	133,429	216,940	-83,511
August	11,836	21,667	-9,831	15,424	22,699	-7,275	-75,450	139,760	222,485	-82,725
September	12,651	19,277	-6,626	16,022	20,207	-4,185	-68,600	139,262	212,047	-72,785
October	14,465	19,713	-5,248	18,130	20,737	-2,607	-86,640	146,983	236,230	-89,247
November	14,107	15,797	-1,690	17,719	16,930	789	-74,464	140,373	214,048	-73,675
December	12,551	14,040	-1,489	16,467	15,456	1,011	[R] -73,668	134,360	207,018	-72,657
Total	**146,555**	**219,845**	**-73,290**	**187,619**	**232,520**	**-44,901**	**[R] -833,800**	**1,663,982**	**2,542,683**	**-878,701**
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	[R] -59,385	[R] 148,267	[R] 207,993	[R] -59,726
April	13,050	17,696	-4,646	16,719	18,498	-1,779	-72,110	135,118	209,007	-73,889
4-Month Total	**49,618**	**59,267**	**-9,650**	**63,314**	**64,421**	**-1,107**	**-262,766**	**543,627**	**807,500**	**-263,872**
2018 4-Month Total	**44,212**	**67,478**	**-24,961**	**56,848**	**72,309**	**-16,824**	**-247,625**	**541,092**	**804,086**	**-262,993**
2017 4-Month Total	**31,044**	**60,339**	**-29,295**	**42,137**	**65,157**	**-23,020**	**-215,995**	**496,487**	**734,864**	**-238,377**

[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.

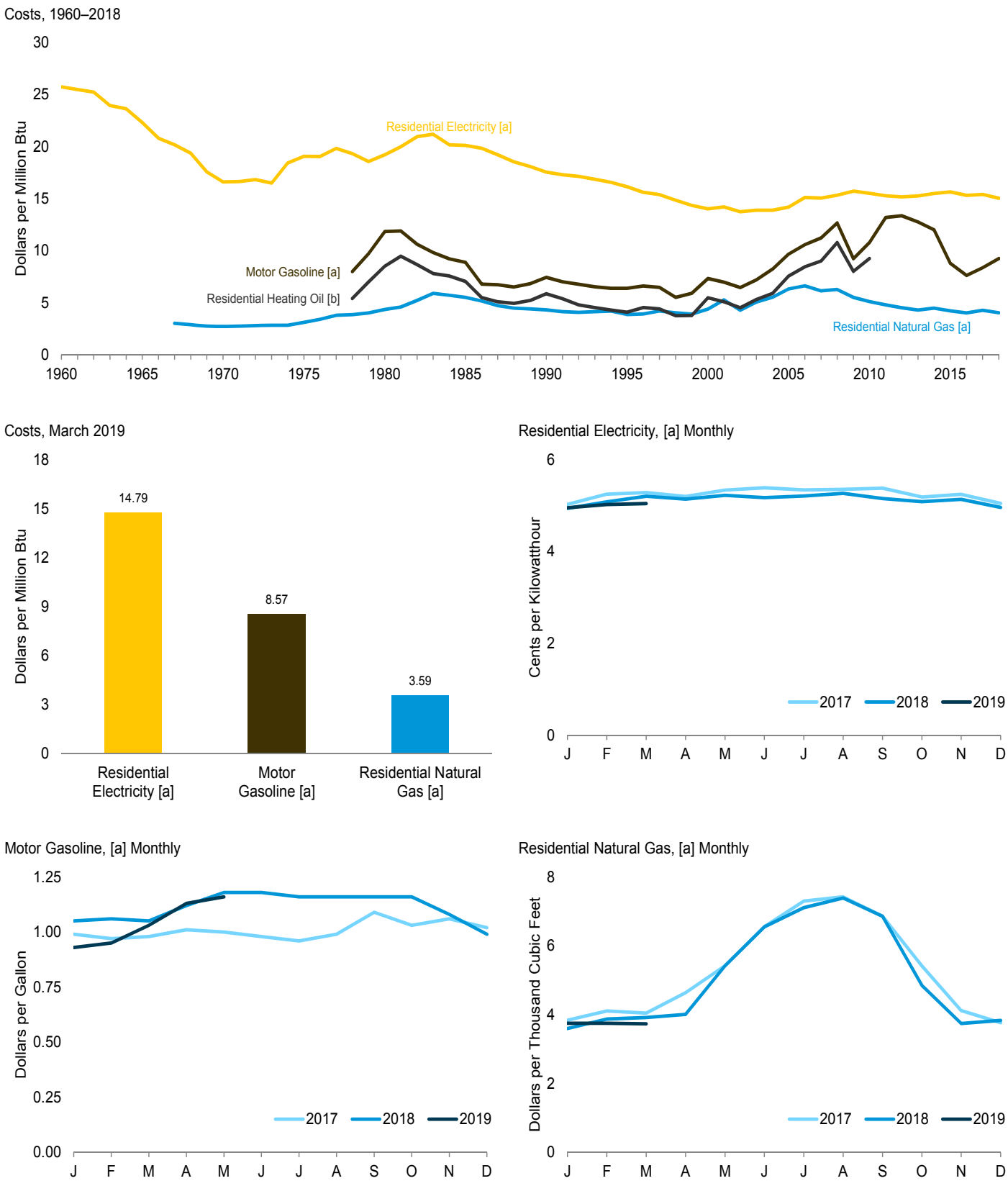
R=Revised.

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 1974.

Sources: See end of section.

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.
Sources: 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**	**9.24**	**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	5.42	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	5.42	5.22	5.19	15.21
November	246.669	1.057	8.79	NA	NA	4.12	3.97	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	3.60	3.46	4.94	14.48
February	248.991	1.057	8.78	NA	NA	3.87	3.73	5.08	14.90
March	249.554	1.054	8.76	NA	NA	3.92	3.78	5.21	15.26
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	5.42	5.22	5.23	15.32
June	251.989	1.179	9.79	NA	NA	6.55	6.31	5.17	15.17
July	252.006	1.163	9.66	NA	NA	7.11	6.85	5.21	15.27
August	252.146	1.158	9.62	NA	NA	7.39	7.12	5.27	15.44
September	252.439	1.161	9.65	NA	NA	6.86	6.61	5.15	15.10
October	252.885	1.165	9.68	NA	NA	4.85	4.67	5.09	14.92
November	252.038	1.084	9.01	NA	NA	3.74	3.60	5.14	15.06
December	251.233	0.987	8.20	NA	NA	3.83	3.69	4.96	14.55
Average	**251.107**	**1.113**	**9.25**	**NA**	**NA**	**4.19**	**4.04**	**5.13**	**15.04**
2019 January	251.712	0.934	7.77	NA	NA	3.75	3.61	4.95	14.52
February	252.776	0.954	7.93	NA	NA	3.75	R 3.61	5.02	14.73
March	254.202	1.031	8.57	NA	NA	R 3.73	R 3.59	R 5.05	R 14.79
April	255.548	1.132	9.41	NA	NA	NA	NA	NA	NA
May	256.092	1.157	9.62	NA	NA	NA	NA	NA	NA

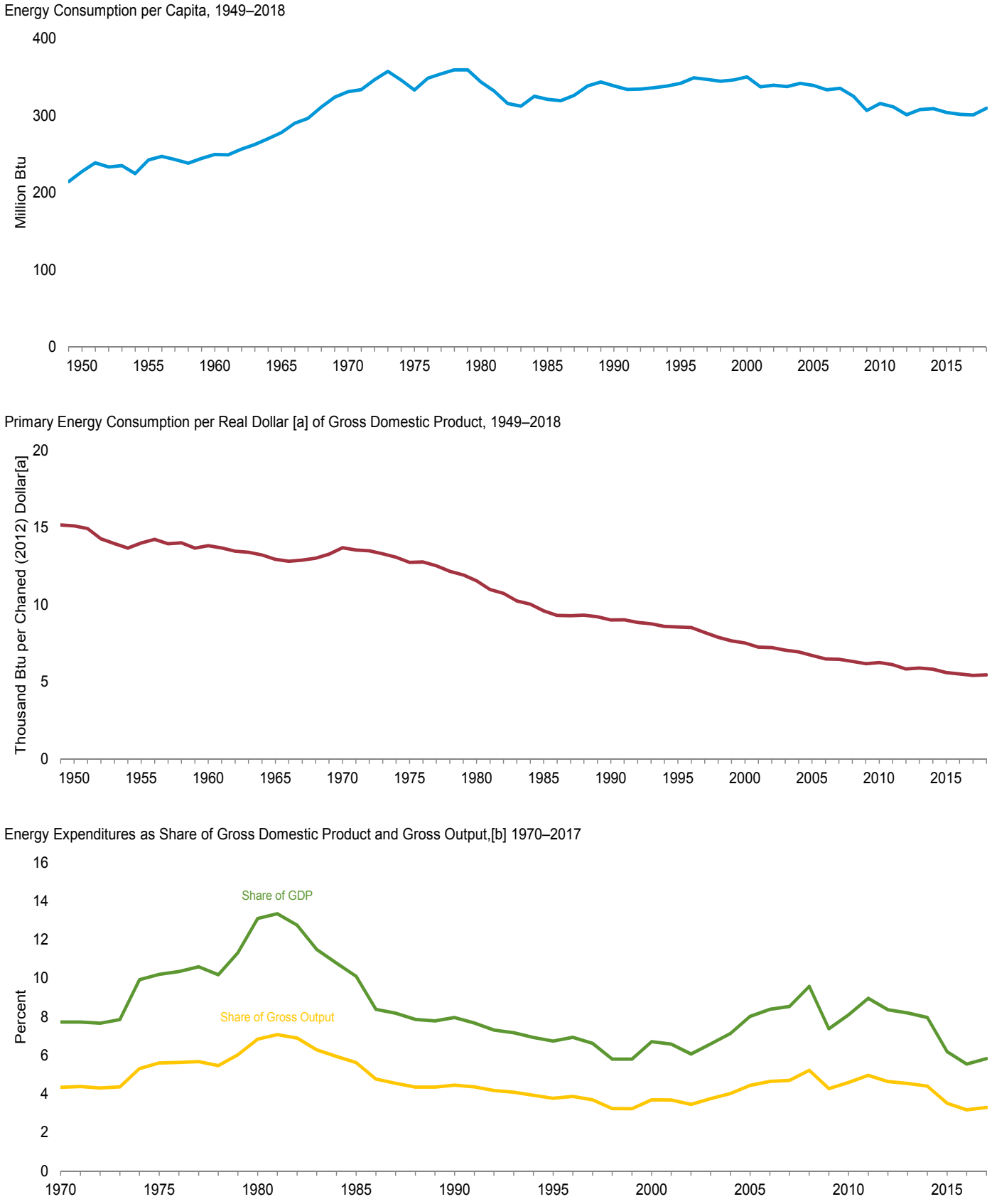
[a] Data are U.S. city averages for all items, and are not seasonally adjusted.
[b] Includes taxes.
[c] Excludes taxes.
R=Revised. NA=Not available.

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	34.616	227	15.12	NA	NA	NA	NA	2,382	15.6	1,040
1955	40.208	242	14.00	NA	NA	NA	NA	2,685	16.2	935
1960	45.086	250	13.83	NA	NA	NA	NA	2,914	16.1	894
1965	54.015	278	12.95	NA	NA	NA	NA	3,462	17.8	830
1970	67.838	331	13.70	82,875	404	7.7	4.3	4,261	20.8	861
1975	71.965	333	12.75	R 171,854	796	10.2	5.6	4,421	20.5	783
1980	78.067	344	11.55	R 374,350	1,647	13.1	6.8	4,750	20.9	703
1981	76.106	332	10.98	R 427,901	1,865	13.3	7.1	4,625	20.2	667
1982	73.099	316	10.74	R 426,482	1,841	12.8	6.9	4,393	19.0	645
1983	72.971	312	10.25	R 417,622	1,786	11.5	6.3	4,371	18.7	614
1984	76.632	325	10.04	R 435,313	1,846	10.8	5.9	4,600	19.5	603
1985	76.392	321	9.61	R 438,343	1,842	10.1	5.6	4,593	19.3	578
1986	76.647	319	9.32	R 384,091	1,599	8.4	4.8	4,598	19.1	559
1987	79.054	326	9.29	R 397,627	1,641	8.2	4.6	4,757	19.6	559
1988	82.709	338	9.33	R 411,568	1,683	7.9	4.4	4,982	20.4	562
1989	84.785	344	9.22	R 439,051	1,779	7.8	4.4	5,066	20.5	551
1990	84.485	338	9.02	R 474,652	1,901	8.0	4.5	5,038	20.2	538
1991	84.437	334	9.03	R 472,440	1,867	7.7	4.4	4,993	19.7	534
1992	85.782	334	8.86	R 476,845	1,859	7.3	4.2	5,090	19.8	526
1993	87.325	336	8.78	R 492,275	1,894	7.2	4.1	5,181	19.9	521
1994	89.040	338	8.60	R 504,856	1,919	6.9	3.9	5,258	20.0	508
1995	90.991	342	8.56	R 514,624	1,933	6.7	3.8	5,321	20.0	501
1996	94.000	349	8.52	R 560,293	2,080	6.9	3.9	5,510	20.5	499
1997	94.571	347	8.21	R 567,962	2,083	6.6	3.7	5,582	20.5	484
1998	94.982	344	7.89	R 526,283	1,908	5.8	3.2	5,635	20.4	468
1999	96.615	346	7.66	R 558,627	2,002	5.8	3.2	5,687	20.4	451
2000	98.776	350	7.52	R 687,711	2,437	6.7	3.7	5,864	20.8	447
2001	96.129	337	7.25	R 696,242	2,443	6.6	3.7	5,759	20.2	434
2002	97.605	339	7.23	R 663,964	2,308	6.1	3.5	5,803	20.2	430
2003	97.898	337	7.05	R 755,070	2,603	6.6	3.7	5,854	20.2	422
2004	100.073	342	6.95	R 871,210	2,975	7.1	4.0	5,969	20.4	414
2005	100.168	339	6.72	R 1,045,730	3,539	8.0	4.4	5,990	20.3	402
2006	99.464	333	6.48	R 1,158,821	3,884	8.4	4.6	5,911	19.8	385
2007	100.971	335	6.46	R 1,233,869	4,096	8.5	4.7	6,002	19.9	384
2008	98.825	325	6.33	R 1,408,759	4,633	9.6	5.2	5,811	19.1	372
2009	94.023	306	6.18	R 1,066,293	3,476	7.4	4.3	5,388	17.6	354
2010	97.608	316	6.26	R 1,214,034	R 3,925	8.1	4.6	5,586	18.1	358
2011	96.950	311	6.12	R 1,391,696	R 4,467	9.0	5.0	5,446	17.5	344
2012	94.480	301	5.83	R 1,355,024	4,317	8.4	4.6	5,237	16.7	323
2013	97.218	308	5.89	R 1,376,134	4,354	8.2	4.5	5,363	17.0	325
2014	98.382	309	5.82	R 1,394,918	4,381	8.0	4.4	5,411	17.0	320
2015	97.484	304	5.61	R 1,128,062	R 3,517	6.2	3.5	5,265	16.4	303
2016	97.445	302	5.52	R 1,038,120	R 3,213	R 5.5	3.2	5,172	16.0	293
2017	97.809	301	5.42	R 1,136,496	R 3,495	R 5.8	R 3.3	5,131	15.8	284
2018	101.239	309	5.45	NA	NA	NA	NA	5,268	16.1	284

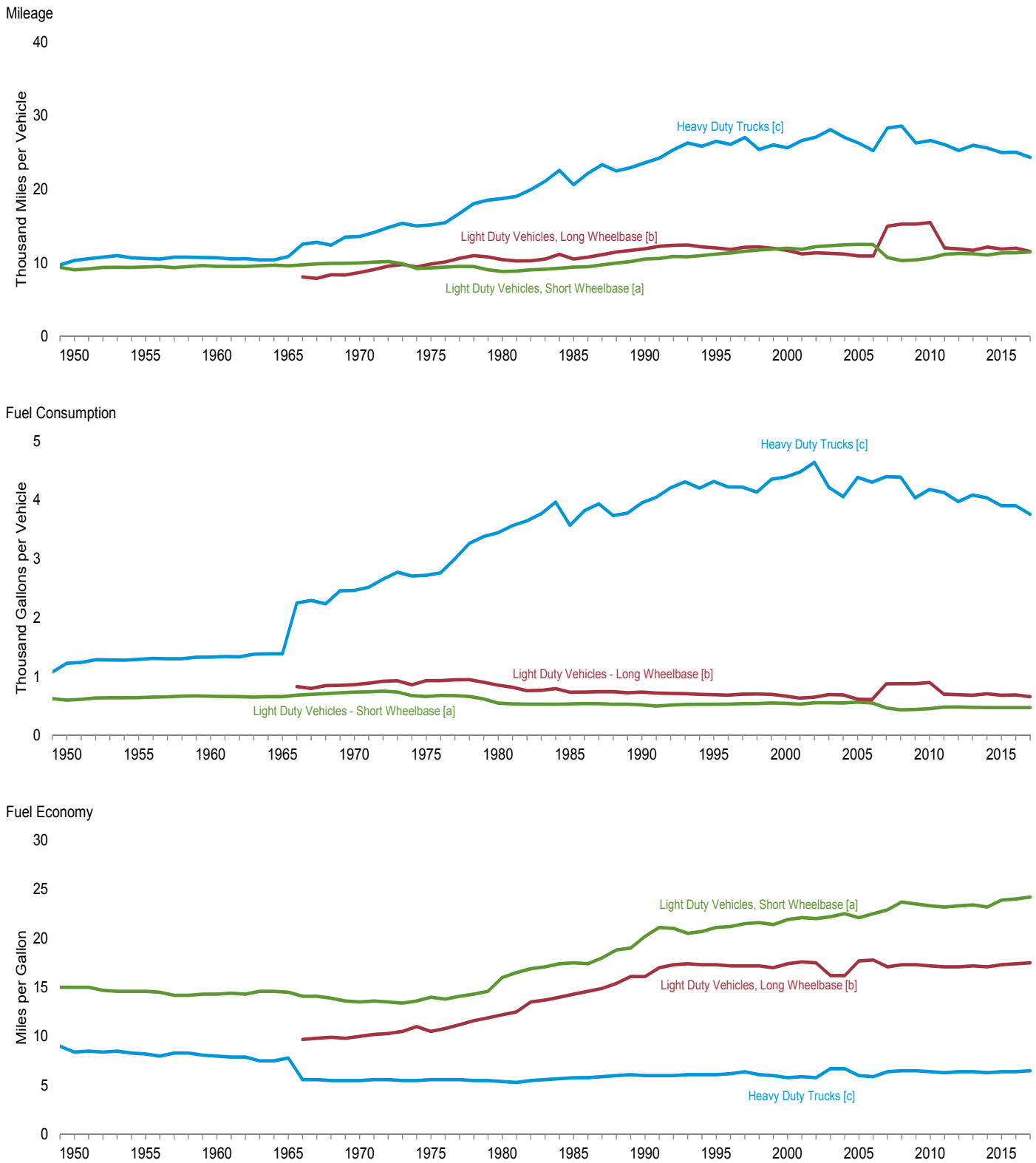
[a] See "Primary Energy Consumption" in Glossary.
[b] Expenditures include taxes where data are available.
[c] Carbon dioxide emissions from energy consumption. See Table 12.1.
[d] See "Chained Dollars" and "Real Dollars" in Glossary.
[e] See "Gross Domestic Product (GDP)" in Glossary.
[f] Gross output 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.
R=Revised. 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 12.1. • **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, 1949-2016



[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	R 1,258	1,213	1,309	1,374	700	R 929	R 661	771	459	896
February	R 869	R 808	981	R 1,178	307	411	R 347	R 749	R 495	624
March	R 927	913	922	869	R 435	R 474	R 184	R 604	R 485	R 608
April	R 676	R 616	703	715	206	312	R 142	380	R 298	410
May	R 168	R 107	99	89	12	13	0	R 164	R 177	R 86
June	62	29	24	23	1	0	0	57	65	26
July	2	1	4	11	0	0	0	9	8	3
August	3	2	8	20	0	0	0	25	14	7
September	R 65	34	48	90	2	2	3	90	62	38
October	R 458	355	420	R 495	99	137	R 69	R 383	R 186	253
November	R 819	765	913	1,003	R 379	565	372	R 678	R 352	593
December	R 1,029	R 929	1,004	1,103	R 489	R 636	R 469	R 897	R 562	731
Total	**R 6,337**	**R 5,773**	**R 6,435**	**R 6,969**	**2,630**	**R 3,480**	**R 2,246**	**R 4,806**	**R 3,162**	**4,276**
2019 January	1,222	R 1,154	R 1,304	R 1,360	R 581	749	546	R 895	R 543	859
February	R 1,030	R 941	1,064	1,284	377	R 461	R 357	868	R 654	R 719
March	977	892	963	1,001	375	505	305	669	489	632
3-Month Total	**3,230**	**2,987**	**3,331**	**3,644**	**1,334**	**1,716**	**1,208**	**2,432**	**1,686**	**2,211**
2018 3-Month Total	**3,055**	**2,935**	**3,212**	**3,421**	**1,442**	**1,815**	**1,192**	**2,124**	**1,438**	**2,129**
2017 3-Month Total	**2,980**	**2,659**	**2,691**	**2,812**	**1,145**	**1,375**	**773**	**2,056**	**1,554**	**1,856**

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

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

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

Source: 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	R 4	15	R 7
February	0	0	0	0	82	21	33	3	8	23
March	0	0	0	2	34	15	R 89	14	9	21
April	0	0	0	0	R 79	7	R 57	72	25	33
May	25	R 66	140	168	R 265	268	R 396	138	39	175
June	56	R 112	192	272	R 385	375	R 551	R 299	117	270
July	R 251	R 288	257	304	R 441	431	R 608	R 416	321	376
August	R 264	R 299	257	257	R 438	R 392	566	R 346	256	351
September	64	122	122	124	R 391	339	R 391	R 239	R 145	232
October	0	4	4	6	176	78	R 143	46	R 47	70
November	0	0	0	0	66	1	13	5	R 17	18
December	0	0	0	0	R 39	R 2	10	0	9	11
Total	**R 659**	**R 889**	**973**	**R 1,134**	**R 2,416**	**R 1,931**	**R 2,860**	**R 1,581**	**R 1,007**	**1,587**
2019 January	0	0	0	0	30	5	12	0	8	9
February	0	0	0	0	R 68	13	R 24	0	5	18
March	0	0	0	0	57	10	36	10	8	19
3-Month Total	**0**	**0**	**0**	**0**	**155**	**28**	**72**	**10**	**22**	**46**
2018 3-Month Total	**0**	**0**	**0**	**2**	**137**	**37**	**127**	**21**	**31**	**52**
2017 3-Month Total	**0**	**0**	**1**	**9**	**161**	**65**	**214**	**37**	**30**	**70**

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

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

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

Source: 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	**3,345**	**792**	**522**	**736**	**162**	**375**	**42**	**88**	**134**	**2,059**
1975 Total	**2,972**	**674**	**419**	**702**	**137**	**330**	**41**	**75**	**159**	**1,863**
1980 Total	**2,370**	**674**	**396**	**871**	**159**	**709**	**39**	**100**	**176**	**2,451**
1985 Total	**1,050**	**572**	**425**	**980**	**145**	**364**	**43**	**83**	**114**	**2,154**
1990 Total	**641**	**712**	**483**	**1,067**	**164**	**553**	**56**	**56**	**94**	**2,473**
1995 Total	**921**	**868**	**486**	**1,347**	**156**	**593**	**55**	**37**	**87**	**2,762**
1996 Total	**884**	**896**	**484**	**1,420**	**151**	**593**	**54**	**39**	**87**	**2,828**
1997 Total	**842**	**909**	**505**	**1,452**	**160**	**691**	**40**	**38**	**86**	**2,972**
1998 Total	**786**	**938**	**521**	**1,375**	**168**	**693**	**69**	**56**	**107**	**2,988**
1999 Total	**784**	**906**	**547**	**1,605**	**169**	**654**	**98**	**76**	**99**	**3,248**
2000 Total	**807**	**918**	**525**	**1,586**	**166**	**666**	**45**	**51**	**103**	**3,142**
2001 Total	**727**	**839**	**519**	**1,422**	**153**	**592**	**79**	**41**	**104**	**2,911**
2002 Total	**660**	**836**	**512**	**1,504**	**151**	**630**	**66**	**53**	**103**	**3,020**
2003 Total	**676**	**808**	**503**	**1,436**	**140**	**676**	**56**	**42**	**101**	**2,954**
2004 Total	**660**	**818**	**537**	**1,481**	**141**	**784**	**99**	**27**	**98**	**3,167**
2005 Total	**654**	**761**	**546**	**1,399**	**141**	**729**	**85**	**33**	**102**	**3,034**
2006 Total	**640**	**584**	**521**	**1,454**	**137**	**726**	**97**	**37**	**112**	**3,084**
2007 Total	**634**	**598**	**494**	**1,461**	**142**	**664**	**91**	**41**	**104**	**2,997**
2008 Total	**616**	**608**	**417**	**1,340**	**131**	**574**	**102**	**44**	**107**	**2,714**
2009 Total	**427**	**524**	**360**	**1,456**	**118**	**507**	**82**	**24**	**99**	**2,648**
2010 Total	**588**	**654**	**362**	**1,587**	**131**	**539**	**28**	**14**	**100**	**2,760**
2011 Total	**598**	**680**	**355**	**1,624**	**125**	**520**	**28**	**12**	**103**	**2,767**
2012 Total	**579**	**706**	**340**	**1,642**	**114**	**444**	**31**	**8**	**94**	**2,673**
2013 Total	**599**	**721**	**323**	**1,782**	**121**	**448**	**28**	**52**	**97**	**2,853**
2014 Total	**594**	**725**	**327**	**1,780**	**126**	**410**	**28**	**55**	**101**	**2,829**
2015 Total	**550**	**703**	**343**	**1,865**	**138**	**378**	**28**	**52**	**102**	**2,906**
2016 Total	**460**	**729**	**351**	**1,882**	**130**	**371**	**28**	**49**	**105**	**2,917**
2017 January	40	70	183	2,124	136	372	35	55	108	3,013
February	38	62	242	1,921	128	409	17	55	106	2,878
March	40	66	260	2,014	143	435	13	53	110	3,028
April	40	60	316	1,895	128	429	26	41	104	2,939
May	41	59	367	1,906	131	439	28	48	111	3,030
June	39	57	475	1,982	120	439	21	56	111	3,204
July	42	57	443	2,018	116	403	38	49	109	3,177
August	43	59	543	1,724	92	383	24	55	107	2,928
September	41	57	444	1,718	114	356	29	45	97	2,804
October	41	62	411	1,989	123	373	13	58	100	3,067
November	41	66	308	2,163	122	373	33	59	117	3,175
December	43	72	209	2,309	94	381	32	55	107	3,188
Total	**489**	**748**	**351**	**1,981**	**121**	**399**	**26**	**52**	**107**	**3,037**
2018 January	41	73	204	2,479	105	345	29	58	105	3,326
February	36	66	219	2,296	105	350	15	53	103	3,141
March	41	69	233	2,312	134	370	24	55	103	3,230
April	43	65	242	2,188	99	384	25	58	110	3,107
May	45	62	370	2,043	111	370	28	56	110	3,087
June	41	59	475	2,117	133	384	29	46	109	3,294
July	44	61	471	2,222	127	399	27	49	110	3,406
August	44	61	508	2,269	120	429	38	39	110	3,513
September	44	60	388	2,199	73	409	35	45	109	3,259
October	43	63	396	2,244	110	429	38	48	97	3,362
November	43	68	255	2,495	136	378	23	37	111	3,435
December	45	71	179	2,513	92	391	21	41	111	3,350
Total	**511**	**780**	**329**	**2,282**	**112**	**387**	**28**	**49**	**107**	**3,294**
2019 January	38	75	206	2,641	113	368	23	39	107	3,497
February	33	67	193	2,682	97	355	8	51	97	3,483
March	47	70	238	2,425	67	337	27	42	95	3,233
3-Month Total	**117**	**212**	**213**	**2,580**	**92**	**353**	**20**	**44**	**100**	**3,402**
2018 3-Month Total	**118**	**208**	**218**	**2,365**	**115**	**355**	**23**	**55**	**104**	**3,235**
2017 3-Month Total	**118**	**198**	**228**	**2,023**	**136**	**405**	**22**	**54**	**108**	**2,976**

[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.

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	**0.107**	**0.808**	**1.264**	**0.977**	**0.359**	**0.767**	**0.088**	**0.169**	**0.290**	**3.914**	**4.829**	**6.4**
1975 Total	**.095**	**.688**	**1.014**	**.921**	**.304**	**.675**	**.085**	**.144**	**.341**	**3.485**	**4.268**	**5.9**
1980 Total	**.076**	**.690**	**.962**	**1.147**	**.354**	**1.464**	**.081**	**.193**	**.379**	**4.580**	**5.345**	**6.8**
1985 Total	**.034**	**.590**	**1.029**	**1.251**	**.322**	**.747**	**.090**	**.159**	**.242**	**3.841**	**4.465**	**5.8**
1990 Total	**.021**	**.732**	**1.170**	**1.393**	**.362**	**1.138**	**.117**	**.107**	**.198**	**4.486**	**5.239**	**6.2**
1995 Total	**.029**	**.892**	**1.178**	**1.764**	**.346**	**1.222**	**.115**	**.071**	**.185**	**4.879**	**5.800**	**6.4**
1996 Total	**.028**	**.921**	**1.176**	**1.856**	**.335**	**1.211**	**.113**	**.075**	**.185**	**4.951**	**5.900**	**6.3**
1997 Total	**.027**	**.933**	**1.224**	**1.894**	**.354**	**1.410**	**.083**	**.072**	**.183**	**5.220**	**6.181**	**6.5**
1998 Total	**.025**	**.969**	**1.263**	**1.789**	**.371**	**1.409**	**.143**	**.107**	**.229**	**5.310**	**6.304**	**6.6**
1999 Total	**.025**	**.932**	**1.324**	**2.098**	**.375**	**1.336**	**.205**	**.145**	**.211**	**5.695**	**6.652**	**6.9**
2000 Total	**.026**	**.942**	**1.276**	**2.065**	**.369**	**1.353**	**.094**	**.097**	**.222**	**5.476**	**6.443**	**6.5**
2001 Total	**.023**	**.863**	**1.257**	**1.844**	**.338**	**1.205**	**.165**	**.078**	**.223**	**5.112**	**5.998**	**6.2**
2002 Total	**.021**	**.856**	**1.240**	**1.945**	**.334**	**1.276**	**.138**	**.102**	**.220**	**5.257**	**6.134**	**6.3**
2003 Total	**.022**	**.832**	**1.220**	**1.869**	**.309**	**1.371**	**.117**	**.080**	**.217**	**5.183**	**6.037**	**6.2**
2004 Total	**.021**	**.840**	**1.304**	**1.924**	**.313**	**1.592**	**.207**	**.051**	**.211**	**5.602**	**6.463**	**6.5**
2005 Total	**.021**	**.782**	**1.323**	**1.812**	**.312**	**1.474**	**.177**	**.063**	**.218**	**5.380**	**6.183**	**6.2**
2006 Total	**.020**	**.600**	**1.261**	**1.871**	**.303**	**1.477**	**.203**	**.070**	**.242**	**5.427**	**6.048**	**6.1**
2007 Total	**.020**	**.614**	**1.197**	**1.872**	**.313**	**1.351**	**.191**	**.078**	**.223**	**5.224**	**5.859**	**5.8**
2008 Total	**.020**	**.625**	**1.012**	**1.722**	**.291**	**1.172**	**.214**	**.085**	**.230**	**4.725**	**5.370**	**5.4**
2009 Total	**.014**	**.537**	**.873**	**1.839**	**.262**	**1.031**	**.172**	**.046**	**.212**	**4.434**	**4.985**	**5.3**
2010 Total	**.019**	**.669**	**.878**	**2.010**	**.291**	**1.096**	**.058**	**.026**	**.213**	**4.571**	**5.258**	**5.4**
2011 Total	**.019**	**.695**	**.859**	**2.028**	**.276**	**1.057**	**.059**	**.023**	**.221**	**4.522**	**5.236**	**5.4**
2012 Total	**.019**	**.724**	**.827**	**2.062**	**.254**	**.901**	**.064**	**.015**	**.201**	**4.324**	**5.066**	**5.4**
2013 Total	**.019**	**.741**	**.783**	**2.248**	**.268**	**.901**	**.059**	**.100**	**.206**	**4.567**	**5.327**	**5.5**
2014 Total	**.019**	**.749**	**.793**	**2.234**	**.280**	**.827**	**.058**	**.106**	**.214**	**4.512**	**5.280**	**5.4**
2015 Total	**.018**	**.730**	**.832**	**2.351**	**.305**	**.760**	**.059**	**.099**	**.215**	**4.622**	**5.370**	**5.5**
2016 Total	**.015**	**.757**	**.853**	**2.358**	**.289**	**.754**	**.058**	**.094**	**.223**	**4.629**	**5.401**	**5.5**
2017 January	.001	.073	.038	.227	.026	.064	.006	.009	.020	.388	.462	5.1
February	.001	.064	.045	.182	.022	.063	.003	.008	.017	.339	.405	5.3
March	.001	.069	.053	.214	.027	.075	.002	.009	.020	.400	.470	5.6
April	.001	.062	.063	.194	.023	.072	.004	.006	.018	.381	.444	6.0
May	.001	.061	.075	.200	.025	.076	.005	.008	.020	.409	.471	6.0
June	.001	.059	.095	.200	.022	.073	.004	.009	.019	.422	.482	6.1
July	.001	.059	.091	.214	.022	.070	.007	.008	.020	.430	.491	5.8
August	.001	.061	.112	.180	.017	.066	.004	.009	.019	.408	.471	5.7
September	.001	.060	.088	.176	.021	.060	.005	.007	.017	.374	.435	5.7
October	.001	.064	.085	.211	.023	.064	.002	.009	.018	.412	.478	6.1
November	.001	.069	.061	.219	.022	.062	.006	.009	.020	.400	.470	5.8
December	.001	.075	.043	.243	.018	.065	.006	.009	.019	.403	.479	5.2
Total	**.016**	**.776**	**.849**	**2.459**	**.267**	**.809**	**.054**	**.100**	**.228**	**4.767**	**5.558**	**5.7**
2018 January	.001	.076	.042	.264	.020	.059	.005	.009	.019	.418	.496	5.1
February	.001	.068	.041	.221	.018	.054	.002	.008	.017	.361	.430	5.3
March	.001	.072	.048	.241	.025	.064	.004	.009	.018	.409	.483	5.6
April	.001	.068	.048	.221	.018	.064	.004	.009	.019	.384	.453	5.7
May	.001	.065	.076	.212	.021	.064	.005	.009	.020	.407	.473	5.9
June	.001	.062	.095	.213	.024	.064	.005	.007	.019	.427	.490	6.0
July	.001	.063	.097	.232	.024	.069	.005	.008	.020	.454	.518	6.0
August	.001	.063	.104	.238	.022	.074	.007	.006	.020	.472	.536	6.2
September	.001	.062	.077	.222	.013	.068	.006	.007	.019	.413	.477	6.1
October	.001	.065	.081	.237	.021	.073	.007	.008	.017	.445	.512	6.3
November	.001	.071	.051	.255	.025	.063	.004	.006	.019	.423	.495	5.8
December	.001	.074	.037	.267	.017	.067	.004	.007	.020	.419	.495	5.5
Total	**.016**	**.809**	**.797**	**2.824**	**.248**	**.783**	**.058**	**.093**	**.228**	**5.031**	**5.857**	**5.8**
2019 January	.001	.078	.042	.281	.021	.064	.004	.006	.019	.438	.517	5.4
February	.001	.070	.036	.255	.016	.055	.001	.008	.016	.387	.458	5.5
March	.001	.073	.049	.255	.013	.058	.005	.007	.017	.403	.478	5.5
3-Month Total	**.004**	**.220**	**.127**	**.791**	**.050**	**.176**	**.010**	**.021**	**.052**	**1.228**	**1.452**	**5.5**
2018 3-Month Total	**.004**	**.216**	**.130**	**.726**	**.063**	**.177**	**.012**	**.026**	**.054**	**1.188**	**1.409**	**5.3**
2017 3-Month Total	**.004**	**.206**	**.136**	**.622**	**.074**	**.202**	**.011**	**.026**	**.057**	**1.128**	**1.337**	**5.3**

[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.

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. 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's Office of Energy Analysis (OEA) estimates non-combustion use ratios of coal tar. Prior to 1995, estimate ratios are based on coal tar production data from the United States International Trade Commission's Synthetic Organic Chemicals. From 1995 forward, coal tar production is estimated using the ratio of EIA's estimate of 1994 coke production, reported in EIA's Quarterly Coal Report. Coal tar ratios prior to 1980 are assumed to be equal to the 1980 ratio. 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. OEA estimates non-combustion ratios of natural gas using Form EIA-864A "Manufacturers Energy Consumption Survey" (MECS) and natural gas used as feedstock for hydrogen production using Form EIA-820 "Annual Refinery Report" data. For years when MECS data are unavailable, estimates are interpolated or extrapolated using chemical indices as scaling factors. Non-combustion ratios prior to 1980 are assumed to be equal to the 1980 ratio. For Table 1.11b, natural gas values in Table 1.11a are multiplied by the heat content factor for natural gas total consumption shown in Table A4.

Asphalt & 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 & Residual Fuels

OEA estimates non-combustion ratios of distillate and residual fuels using chemical industry fuel product data reported in MECS. Values for years after the most recent MECS are assumed to be equal to the most recent MECS values. Non-combustion ratios prior to 1980 are assumed to be equal to the 1980 ratio. Distillate and residual fuel oils are included in "other" petroleum products. For Table 1.11b, distillate fuel values in Table 1.11a are multiplied by the appropriate values in Table A3 and the number of days in the period. Residual fuel 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.

Hydrocarbon Gas Liquids (HGL)

OEA estimates non-combustion ratios of liquefied petroleum gas (LPG) components, including ethane, propane, and butane, using chemical industry fuel product data reported in MECS. Values for years after the most recent MECS are assumed to be equal to the most recent MECS values. OEA estimates non-combustion ratios of natural gasoline (pentanes plus) with annual surveys of natural gas liquids and refinery gases sold to the chemical industry published in EIA's Petroleum Supply Annual (PSA). All non-combustion ratios prior to 1980 are assumed to be equal to the 1980 ratio. For Table 1.11b, HGL values in Table 1.11a 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 are for non-combustion use in the industrial and transportation sectors. For Table 1.11b, lubricants values in Table 1.11a are multiplied by 6.065 million Btu/barrel (the approximate heat rate for lubricants) and the number of days in the period.

Petrochemical Feedstocks

EIA assumes all naphthas and other oils for petrochemical feedstock use are for non-combustion use. OEA estimates non-combustion ratios of still gas by deducting all known fuel uses (refinery fuel use from PSA and pipeline gas supplies from EIA's Natural Gas Annual) from the products supplied value from the PSA. The remainder is assumed to be dispatched to chemical plants as a feedstock. Non-combustion ratios prior to 1980 are assumed to be equal to the 1980 ratio. For Table 1.11b, petrochemical feedstock values in 1.11a are multiplied by the appropriate values in Table A1 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 using PSA and MECS data. Values for years after the most recent MECS are assumed to be equal to the most recent MECS values. Non-combustion ratios prior to 1980 are assumed to be equal to the 1980 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.

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. Waxes are included in "other" petroleum products. 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.

Miscellaneous Petroleum Products

Miscellaneous products include all finished petroleum products not classified elsewhere. EIA assumes all miscellaneous petroleum products consumption are for non-combustion use and are included in "other" petroleum products. For Table

1.11b, miscellaneous petroleum 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.

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.

1993–2009: "U.S. International Trade in Goods and Services," Annual Revisions.

2010–2011: "U.S. International Trade in Goods and Services," 2012 Annual Revisions.

2012–2014: "U.S. International Trade in Goods and Services," 2014 Annual Revisions.

2015 forward: "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.

1994–2009: "U.S. International Trade in Goods and Services," Annual Revisions.

2010–2011: "U.S. International Trade in Goods and Services," 2012 Annual Revisions.

2012–2014: “U.S. International Trade in Goods and Services,” 2014 Annual Revisions.

2015 forward: “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.

1993–2009: “U.S. International Trade in Goods and Services,” Annual Revisions.

2010–2011: “U.S. International Trade in Goods and Services,” 2012 Annual Revisions.

2012–2014: “U.S. International Trade in Goods and Services,” 2014 Annual Revisions.

2015 forward: “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.

1992–2009: “U.S. International Trade in Goods and Services,” Annual Revisions.

2010–2011: “U.S. International Trade in Goods and Services,” 2012 Annual Revisions.

2012–2014: “U.S. International Trade in Goods and Services,” 2014 Annual Revisions.

2015 forward: “U.S. International Trade in Goods and Services,” FT-900, monthly.

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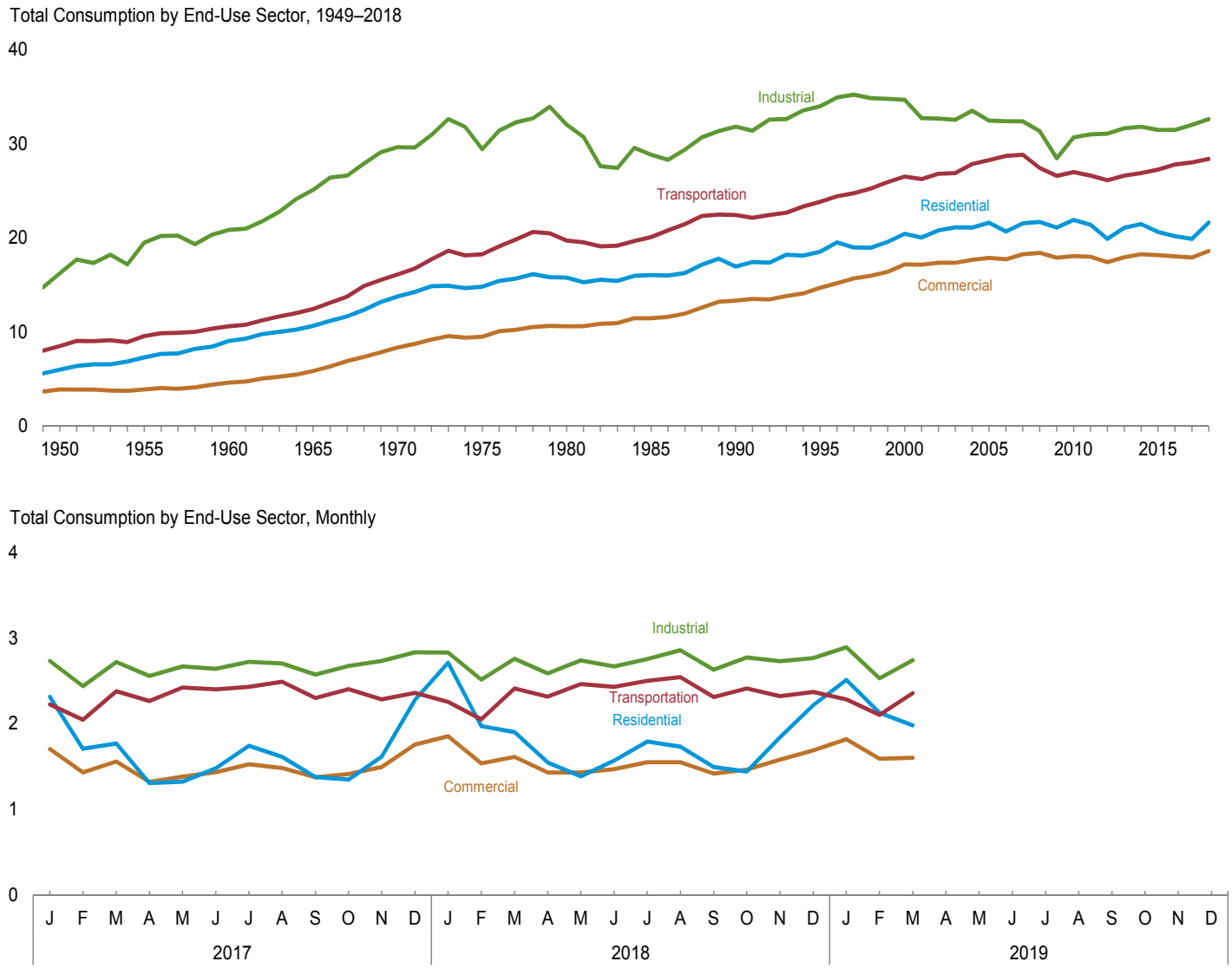
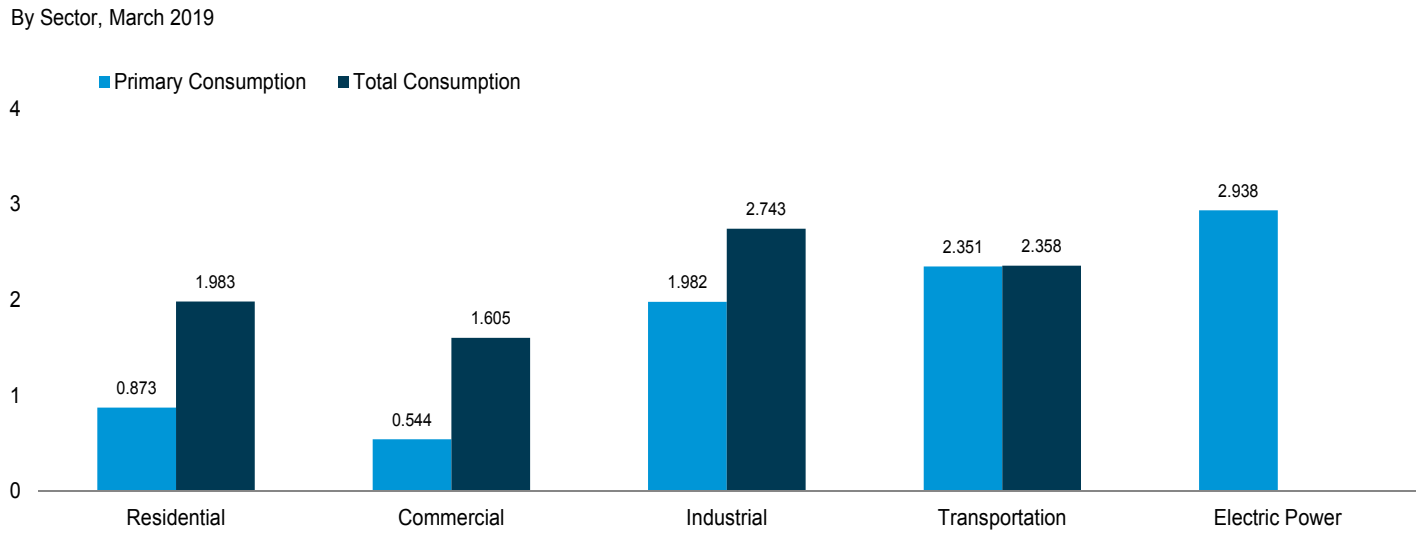
2. Energy Consumption By Sector

Figure 2.1 Energy Consumption by Sector

(Quadrillion Btu)





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

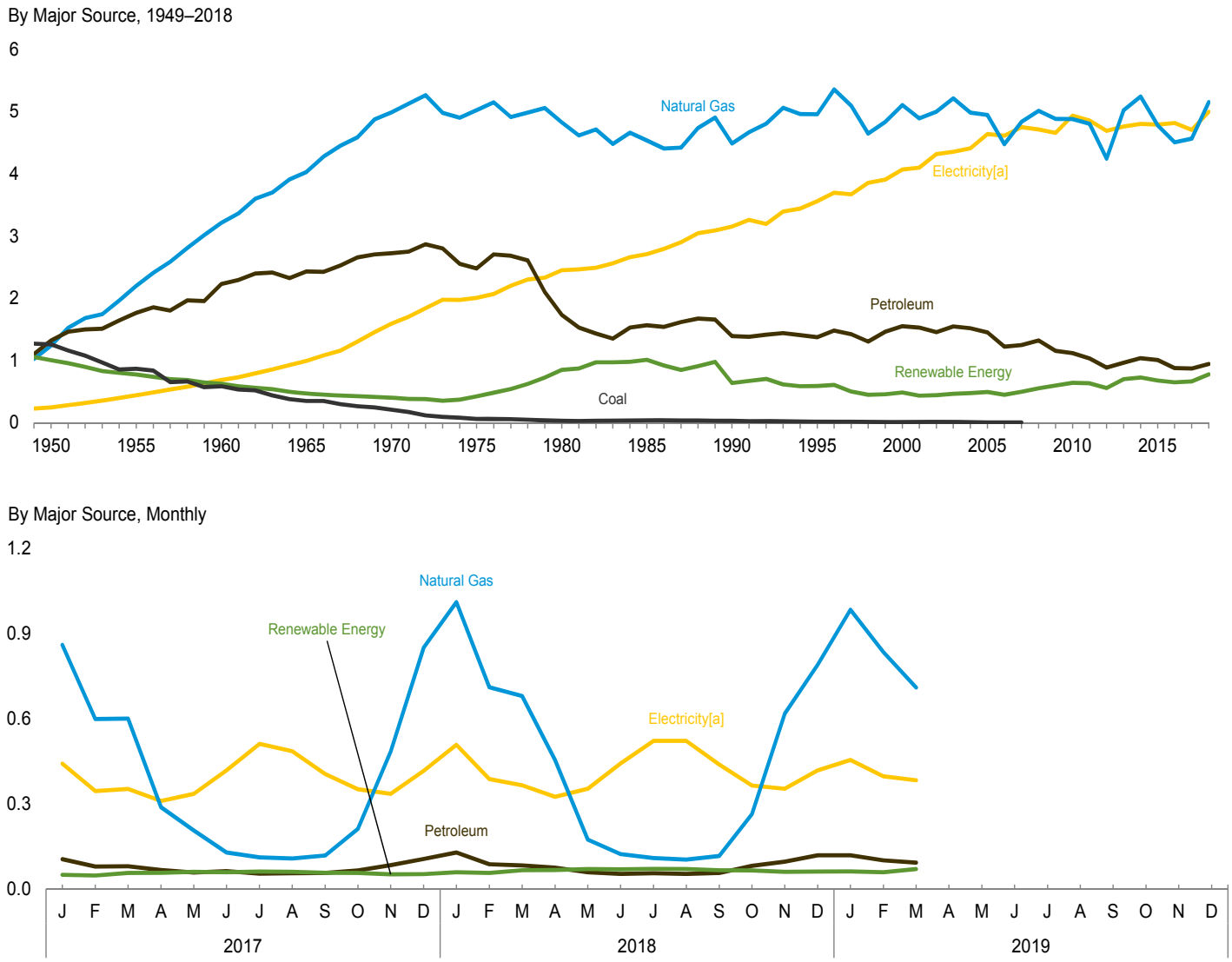
Table 2.1 Energy Consumption by Sector
(Trillion Btu)

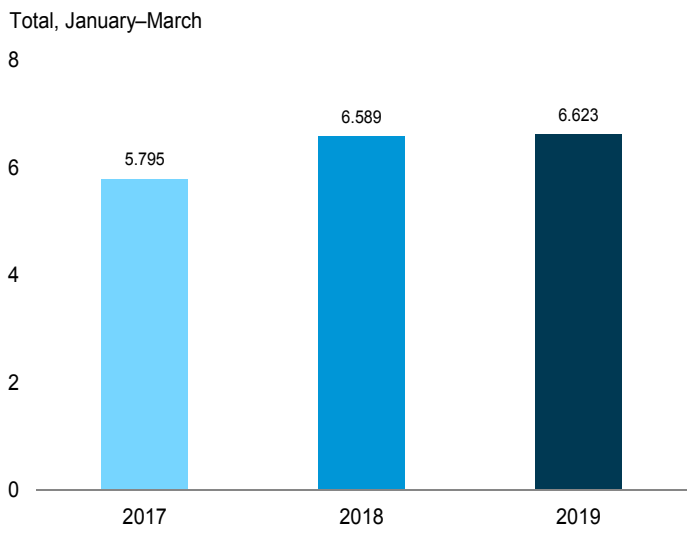
	End-Use Sectors								Electric Power Sector[c,d]	Balancing Item[g]	Primary Total[h]
	Residential		Commercial[a]		Industrial[b]		Transportation				
	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]		
1950 Total	**4,829**	**5,989**	**2,834**	**3,893**	**13,890**	**16,241**	**8,383**	**8,492**	**4,679**	**(s)**	**34,616**
1955 Total	**5,608**	**7,278**	**2,561**	**3,895**	**16,103**	**19,485**	**9,474**	**9,550**	**6,461**	**(s)**	**40,208**
1960 Total	**6,651**	**9,039**	**2,723**	**4,609**	**16,996**	**20,842**	**10,560**	**10,596**	**8,158**	**(s)**	**45,086**
1965 Total	**7,279**	**10,639**	**3,177**	**5,845**	**20,148**	**25,098**	**12,399**	**12,432**	**11,012**	**(s)**	**54,015**
1970 Total	**8,322**	**13,766**	**4,237**	**8,346**	**22,964**	**29,628**	**16,062**	**16,098**	**16,253**	**(s)**	**67,838**
1975 Total	**7,990**	**14,813**	**4,059**	**9,492**	**21,434**	**29,413**	**18,210**	**18,245**	**20,270**	**1**	**71,965**
1980 Total	**7,439**	**15,753**	**4,105**	**10,578**	**22,595**	**32,039**	**19,659**	**19,697**	**24,269**	**-1**	**78,067**
1985 Total	**7,148**	**16,041**	**3,732**	**11,451**	**19,443**	**28,816**	**20,041**	**20,088**	**26,032**	**-4**	**76,392**
1990 Total	**6,552**	**16,940**	**3,893**	**13,317**	**21,172**	**31,802**	**22,366**	**22,419**	[d] **30,495**	**7**	**84,485**
1995 Total	**6,934**	**18,517**	**4,100**	**14,690**	**22,718**	**33,969**	**23,757**	**23,812**	**33,479**	**3**	**90,991**
2000 Total	**7,156**	**20,421**	**4,278**	**17,175**	**22,823**	**34,662**	**26,456**	**26,516**	**38,062**	**2**	**98,776**
2001 Total	**6,864**	**20,038**	**4,084**	**17,137**	**21,792**	**32,718**	**26,179**	**26,242**	**37,215**	**-6**	**96,129**
2002 Total	**6,907**	**20,786**	**4,132**	**17,346**	**21,797**	**32,660**	**26,747**	**26,808**	**38,016**	**5**	**97,605**
2003 Total	**7,232**	**21,119**	**4,298**	**17,346**	**21,533**	**32,553**	**26,807**	**26,881**	**38,028**	**-1**	**97,898**
2004 Total	**6,987**	**21,081**	**4,232**	**17,655**	**22,411**	**33,515**	**27,748**	**27,827**	**38,701**	**-6**	**100,073**
2005 Total	**6,901**	**21,613**	**4,052**	**17,853**	**21,410**	**32,441**	**28,180**	**28,261**	**39,626**	**(s)**	**100,168**
2006 Total	**6,154**	**20,670**	**3,747**	**17,707**	**21,529**	**32,390**	**28,618**	**28,697**	**39,417**	**(s)**	**99,464**
2007 Total	**6,589**	**21,519**	**3,922**	**18,253**	**21,362**	**32,385**	**28,728**	**28,815**	**40,371**	**-1**	**100,971**
2008 Total	**6,889**	**21,668**	**4,100**	**18,402**	**20,527**	**31,333**	**27,340**	**27,422**	**39,969**	**1**	**98,825**
2009 Total	**6,637**	**21,081**	**4,056**	**17,888**	**18,755**	**28,465**	**26,507**	**26,589**	**38,069**	**(s)**	**94,023**
2010 Total	**6,640**	**21,894**	**4,023**	**18,059**	**20,423**	**30,670**	**26,897**	**26,978**	**39,619**	**7**	**97,608**
2011 Total	**6,472**	**21,381**	**4,065**	**17,981**	**20,594**	**30,981**	**26,518**	**26,599**	**39,293**	**8**	**96,950**
2012 Total	**5,684**	**19,870**	**3,725**	**17,421**	**20,888**	**31,061**	**26,050**	**26,126**	**38,131**	**2**	**94,480**
2013 Total	**6,688**	**21,051**	**4,161**	**17,929**	**21,481**	**31,627**	**26,533**	**26,612**	**38,357**	**-1**	**97,218**
2014 Total	**7,006**	**21,445**	**4,390**	**18,264**	**21,562**	**31,798**	**26,789**	**26,869**	**38,629**	**6**	**98,382**
2015 Total	**6,464**	**20,617**	**4,441**	**18,157**	**21,528**	**31,472**	**27,161**	**27,238**	**37,890**	**1**	**97,484**
2016 Total	**6,032**	**20,181**	**4,321**	**18,030**	**21,659**	**31,453**	**27,710**	**27,786**	**37,727**	**-4**	**97,445**
2017 January	1,015	2,315	605	1,707	1,940	2,733	2,219	2,226	3,201	2	8,982
February	725	1,708	463	1,433	1,713	2,438	2,041	2,047	2,684	-2	7,623
March	735	1,772	482	1,560	1,911	2,721	2,373	2,379	2,932	-2	8,430
April	412	1,310	307	1,322	1,777	2,558	2,260	2,265	2,700	-3	7,452
May	324	1,324	268	1,386	1,822	2,668	2,417	2,423	2,971	-1	7,800
June	250	1,482	229	1,436	1,785	2,643	2,395	2,401	3,303	2	7,964
July	226	1,744	219	1,528	1,834	2,723	2,425	2,432	3,722	5	8,433
August	222	1,614	225	1,484	1,831	2,705	2,484	2,491	3,531	4	8,298
September	231	1,379	229	1,376	1,766	2,573	2,295	2,301	3,108	(s)	7,630
October	333	1,349	294	1,414	1,856	2,674	2,397	2,403	2,960	-2	7,838
November	619	1,617	430	1,495	1,928	2,734	2,280	2,286	2,874	-2	8,130
December	1,008	2,280	617	1,757	1,996	2,833	2,353	2,360	3,255	-1	9,229
Total	**6,100**	**19,890**	**4,368**	**17,899**	**22,161**	**32,006**	**27,939**	**28,014**	**37,241**	**(s)**	**97,809**
2018 January	1,198	2,711	692	1,856	2,058	2,830	2,247	2,255	3,457	3	9,655
February	855	1,973	532	1,538	1,805	2,515	2,047	2,053	2,840	-2	8,077
March	828	1,905	528	1,615	1,984	2,757	2,405	2,411	2,943	-4	8,684
April	596	1,550	403	1,434	1,833	2,587	2,312	2,318	2,746	-5	7,884
May	303	1,387	253	1,433	1,884	2,739	2,456	2,462	3,125	-2	8,019
June	245	1,570	226	1,471	1,836	2,670	2,423	2,430	3,411	3	8,144
July	235	1,792	222	1,553	1,891	2,756	2,494	2,501	3,759	6	8,607
August	226	1,734	226	1,552	1,976	2,859	2,537	2,544	3,724	6	8,694
September	238	1,496	229	1,419	1,837	2,632	2,305	2,312	3,249	2	7,860
October	410	1,445	341	1,465	1,988	2,775	2,405	2,411	2,951	-1	8,095
November	773	1,841	501	1,581	1,937	2,731	2,318	2,324	2,950	-2	8,476
December	970	2,218	594	1,689	1,991	2,767	2,364	2,371	3,126	-2	9,043
Total	**6,877**	**21,621**	**4,746**	**18,608**	**23,022**	**32,618**	**28,313**	**28,391**	**38,280**	**2**	**101,239**
2019 January	1,165	2,511	691	1,820	R 2,104	2,893	2,279	2,285	3,271	1	9,510
February	995	R 2,129	593	1,594	R 1,827	2,532	2,097	R 2,103	2,848	-1	8,358
March	873	1,983	544	1,605	1,982	2,743	2,351	2,358	2,938	-5	8,683
3-Month Total	**3,034**	**6,623**	**1,827**	**5,019**	**5,912**	**8,168**	**6,726**	**6,746**	**9,058**	**-6**	**26,551**
2018 3-Month Total	**2,881**	**6,589**	**1,752**	**5,008**	**5,848**	**8,103**	**6,699**	**6,719**	**9,239**	**-3**	**26,415**
2017 3-Month Total	**2,476**	**5,795**	**1,550**	**4,699**	**5,565**	**7,893**	**6,632**	**6,652**	**8,817**	**-3**	**25,036**

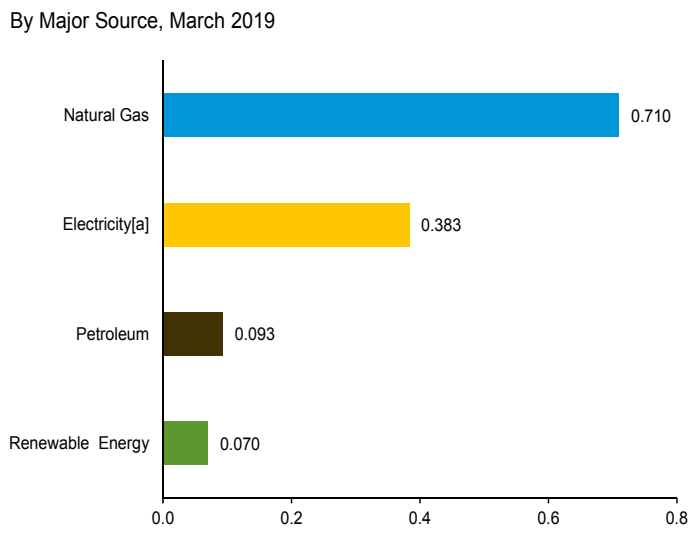
[a] Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[c] Electricity-only and combined-heat-and-power (CHP) plants within the 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 2, "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**	**4,829**	**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**	**2,227**	**6,024**	**NA**	**NA**	**627**	**627**	**6,651**	**687**	**1,701**	**9,039**
1965 Total	**352**	**4,028**	**2,432**	**6,811**	**NA**	**NA**	**468**	**468**	**7,279**	**993**	**2,367**	**10,639**
1970 Total	**209**	**4,987**	**2,725**	**7,922**	**NA**	**NA**	**401**	**401**	**8,322**	**1,591**	**3,852**	**13,766**
1975 Total	**63**	**5,023**	**2,479**	**7,564**	**NA**	**NA**	**425**	**425**	**7,990**	**2,007**	**4,817**	**14,813**
1980 Total	**31**	**4,825**	**1,734**	**6,589**	**NA**	**NA**	**850**	**850**	**7,439**	**2,448**	**5,866**	**15,753**
1985 Total	**39**	**4,534**	**1,565**	**6,138**	**NA**	**NA**	**1,010**	**1,010**	**7,148**	**2,709**	**6,184**	**16,041**
1990 Total	**31**	**4,487**	**1,394**	**5,912**	**6**	**55**	**580**	**640**	**6,552**	**3,153**	**7,235**	**16,940**
1995 Total	**17**	**4,954**	**1,373**	**6,345**	**7**	**63**	**520**	**589**	**6,934**	**3,557**	**8,026**	**18,517**
2000 Total	**11**	**5,105**	**1,553**	**6,669**	**9**	**58**	**420**	**486**	**7,156**	**4,069**	**9,197**	**20,421**
2001 Total	**12**	**4,889**	**1,528**	**6,429**	**9**	**55**	**370**	**435**	**6,864**	**4,100**	**9,074**	**20,038**
2002 Total	**12**	**4,995**	**1,456**	**6,463**	**10**	**53**	**380**	**443**	**6,907**	**4,317**	**9,562**	**20,786**
2003 Total	**12**	**5,209**	**1,546**	**6,768**	**13**	**52**	**400**	**465**	**7,232**	**4,353**	**9,534**	**21,119**
2004 Total	**11**	**4,981**	**1,519**	**6,511**	**14**	**51**	**410**	**475**	**6,987**	**4,408**	**9,687**	**21,081**
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**	**1,221**	**5,704**	**18**	**53**	**380**	**451**	**6,154**	**4,611**	**9,905**	**20,670**
2007 Total	**8**	**4,835**	**1,249**	**6,092**	**22**	**55**	**420**	**497**	**6,589**	**4,750**	**10,180**	**21,519**
2008 Total	**NA**	**5,010**	**1,324**	**6,334**	**26**	**58**	**470**	**555**	**6,889**	**4,711**	**10,068**	**21,668**
2009 Total	**NA**	**4,883**	**1,157**	**6,040**	**33**	**60**	**504**	**597**	**6,637**	**4,657**	**9,788**	**21,081**
2010 Total	**NA**	**4,878**	**1,120**	**5,998**	**37**	**65**	**541**	**642**	**6,640**	**4,933**	**10,321**	**21,894**
2011 Total	**NA**	**4,805**	**1,033**	**5,838**	**40**	**71**	**524**	**635**	**6,472**	**4,855**	**10,054**	**21,381**
2012 Total	**NA**	**4,242**	**885**	**5,127**	**40**	**79**	**438**	**557**	**5,684**	**4,690**	**9,496**	**19,870**
2013 Total	**NA**	**5,023**	**963**	**5,986**	**40**	**91**	**572**	**703**	**6,688**	**4,759**	**9,604**	**21,051**
2014 Total	**NA**	**5,242**	**1,036**	**6,278**	**40**	**109**	**579**	**728**	**7,006**	**4,801**	**9,638**	**21,445**
2015 Total	**NA**	**4,777**	**1,007**	**5,783**	**40**	**128**	**513**	**680**	**6,464**	**4,791**	**9,362**	**20,617**
2016 Total	**NA**	**4,506**	**878**	**5,384**	**40**	**161**	**448**	**649**	**6,032**	**4,815**	**9,334**	**20,181**
2017 January	NA	860	105	965	3	10	37	50	1,015	441	859	2,315
February	NA	599	79	678	3	11	33	47	725	345	638	1,708
March	NA	600	80	679	3	16	37	56	735	352	685	1,772
April	NA	288	67	356	3	18	36	57	412	310	588	1,310
May	NA	206	58	264	3	20	37	60	324	335	665	1,324
June	NA	128	63	191	3	20	36	59	250	418	814	1,482
July	NA	111	54	165	3	21	37	61	226	511	1,006	1,744
August	NA	107	55	162	3	20	37	60	222	485	907	1,614
September	NA	118	56	174	3	18	36	57	231	405	742	1,379
October	NA	212	65	277	3	16	37	56	333	351	665	1,349
November	NA	484	84	568	3	13	36	51	619	335	662	1,617
December	NA	850	106	956	3	12	37	52	1,008	416	856	2,280
Total	**NA**	**4,563**	**871**	**5,434**	**40**	**193**	**433**	**666**	**6,100**	**4,704**	**9,085**	**19,890**
2018 January	NA	1,011	128	1,139	3	12	44	59	1,198	508	1,005	2,711
February	NA	711	87	799	3	13	40	56	855	387	731	1,973
March	NA	680	83	762	3	18	44	66	828	365	712	1,905
April	NA	454	75	530	3	21	43	67	596	325	629	1,550
May	NA	174	59	233	3	23	44	70	303	353	731	1,387
June	NA	123	53	176	3	23	43	69	245	442	884	1,570
July	NA	109	55	164	3	24	44	71	235	522	1,034	1,792
August	NA	103	53	156	3	23	44	70	226	522	986	1,734
September	NA	116	56	172	3	20	43	66	238	438	819	1,496
October	NA	264	81	345	3	18	44	65	410	364	671	1,445
November	NA	617	96	713	3	15	43	60	773	353	715	1,841
December	NA	790	119	909	3	13	44	61	970	418	829	2,218
Total	**NA**	**5,151**	**945**	**6,096**	**40**	**224**	**517**	**780**	**6,877**	**4,996**	**9,748**	**21,621**
2019 January	NA	984	119	1,103	3	14	45	62	1,165	454	892	2,511
February	NA	R 835	101	937	3	15	41	59	995	397	737	R 2,129
March	NA	710	93	803	3	22	45	70	873	383	727	1,983
3-Month Total	**NA**	**2,530**	**313**	**2,843**	**10**	**51**	**131**	**191**	**3,034**	**1,234**	**2,356**	**6,623**
2018 3-Month Total	**NA**	**2,402**	**298**	**2,700**	**10**	**44**	**128**	**181**	**2,881**	**1,260**	**2,448**	**6,589**
2017 3-Month Total	**NA**	**2,059**	**263**	**2,322**	**10**	**37**	**107**	**153**	**2,476**	**1,137**	**2,183**	**5,795**

[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.

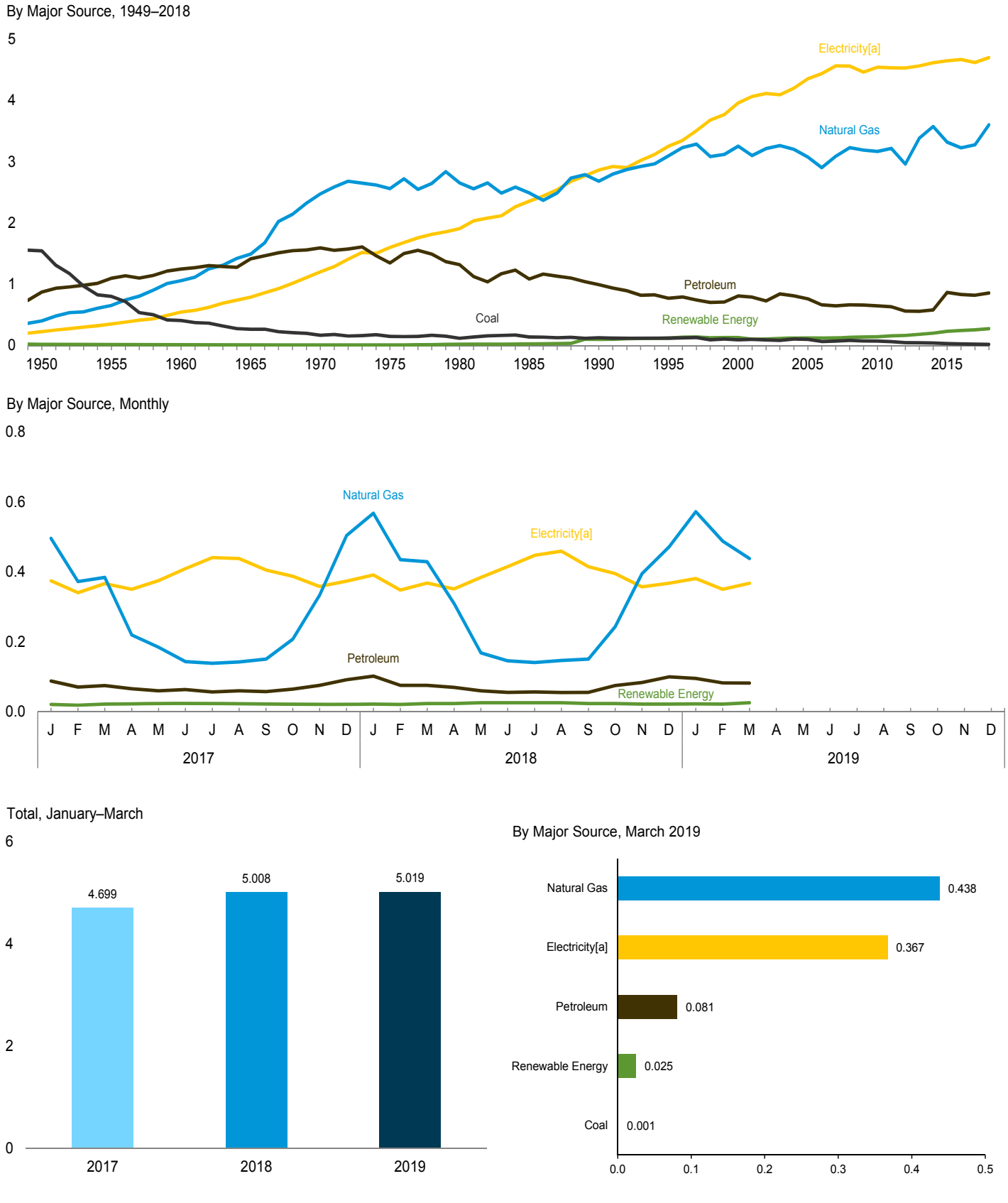
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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**	**4,609**
1965 Total	**265**	**1,490**	**1,413**	**3,168**	**NA**	**NA**	**NA**	**NA**	**9**	**9**	**3,177**	**789**	**1,880**	**5,845**
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**	**9,492**
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**	**3,893**	**2,860**	**6,564**	**13,317**
1995 Total	**117**	**3,096**	**769**	**3,982**	**1**	**5**	**(s)**	**–**	**113**	**119**	**4,100**	**3,252**	**7,337**	**14,690**
2000 Total	**92**	**3,252**	**806**	**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**	**4,084**	**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**	**841**	**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**	**17,655**
2005 Total	**97**	**3,073**	**761**	**3,931**	**1**	**14**	**2**	**–**	**105**	**121**	**4,052**	**4,351**	**9,451**	**17,853**
2006 Total	**65**	**2,902**	**661**	**3,627**	**1**	**14**	**3**	**–**	**103**	**120**	**3,747**	**4,435**	**9,525**	**17,707**
2007 Total	**70**	**3,085**	**646**	**3,801**	**1**	**14**	**4**	**–**	**103**	**122**	**3,922**	**4,560**	**9,771**	**18,253**
2008 Total	**81**	**3,228**	**660**	**3,969**	**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**	**646**	**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**	**4,065**	**4,531**	**9,385**	**17,981**
2012 Total	**44**	**2,960**	**560**	**3,563**	**(s)**	**20**	**33**	**1**	**108**	**162**	**3,725**	**4,528**	**9,168**	**17,421**
2013 Total	**41**	**3,380**	**558**	**3,979**	**(s)**	**20**	**41**	**1**	**120**	**182**	**4,161**	**4,562**	**9,206**	**17,929**
2014 Total	**40**	**3,572**	**577**	**4,190**	**(s)**	**20**	**52**	**1**	**127**	**200**	**4,390**	**4,614**	**9,261**	**18,264**
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	87	585	(s)	2	4	(s)	14	20	605	374	728	1,707
February	2	372	70	445	(s)	2	4	(s)	12	18	463	340	630	1,433
March	2	384	74	461	(s)	2	6	(s)	13	21	482	366	712	1,560
April	1	219	65	285	(s)	2	7	(s)	13	22	307	350	665	1,322
May	1	184	59	245	(s)	2	8	(s)	13	23	268	375	743	1,386
June	1	143	63	207	(s)	2	8	(s)	13	23	229	409	797	1,436
July	1	138	56	196	(s)	2	8	(s)	13	23	219	441	868	1,528
August	1	142	59	202	(s)	2	8	(s)	13	23	225	438	821	1,484
September	1	150	57	208	(s)	2	7	(s)	12	21	229	405	742	1,376
October	1	207	64	273	(s)	2	6	(s)	13	21	294	387	733	1,414
November	2	333	75	410	(s)	2	5	(s)	13	20	430	358	707	1,495
December	2	504	91	597	(s)	2	5	(s)	13	20	617	373	767	1,757
Total	**21**	**3,272**	**819**	**4,112**	**2**	**20**	**76**	**1**	**156**	**255**	**4,368**	**4,616**	**8,916**	**17,899**
2018 January	3	568	101	671	(s)	2	5	(s)	13	21	692	391	773	1,856
February	2	435	75	512	(s)	2	6	(s)	12	20	532	348	658	1,538
March	2	429	75	505	NM	2	8	(s)	13	23	528	368	718	1,615
April	1	309	69	380	(s)	2	9	(s)	12	23	403	351	681	1,434
May	1	168	59	228	NM	2	10	(s)	13	25	253	384	796	1,433
June	1	145	55	201	NM	2	10	(s)	13	25	226	415	830	1,471
July	1	140	56	197	NM	2	10	(s)	13	25	222	447	885	1,553
August	1	146	54	202	NM	2	10	(s)	13	25	226	459	867	1,552
September	1	150	55	206	(s)	2	9	(s)	12	23	229	415	775	1,419
October	1	243	74	319	NM	2	8	(s)	13	23	341	395	729	1,465
November	2	395	83	480	NM	2	6	(s)	13	21	501	357	724	1,581
December	2	471	99	572	(s)	2	6	(s)	13	21	594	367	728	1,689
Total	**19**	**3,600**	**854**	**4,473**	**2**	**20**	**96**	**2**	**153**	**273**	**4,746**	**4,697**	**9,165**	**18,608**
2019 January	1	572	95	669	NM	2	6	(s)	13	22	691	381	749	1,820
February	1	R 488	82	572	NM	2	7	(s)	12	21	593	350	651	1,594
March	1	438	81	519	NM	2	9	(s)	13	25	544	367	694	1,605
3-Month Total	**4**	**1,499**	**258**	**1,760**	**1**	**6**	**22**	**(s)**	**38**	**67**	**1,827**	**1,098**	**2,094**	**5,019**
2018 3-Month Total	**7**	**1,432**	**250**	**1,689**	**1**	**5**	**19**	**(s)**	**38**	**63**	**1,752**	**1,107**	**2,149**	**5,008**
2017 3-Month Total	**7**	**1,252**	**231**	**1,490**	**1**	**5**	**15**	**(s)**	**39**	**59**	**1,550**	**1,079**	**2,070**	**4,699**

[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.

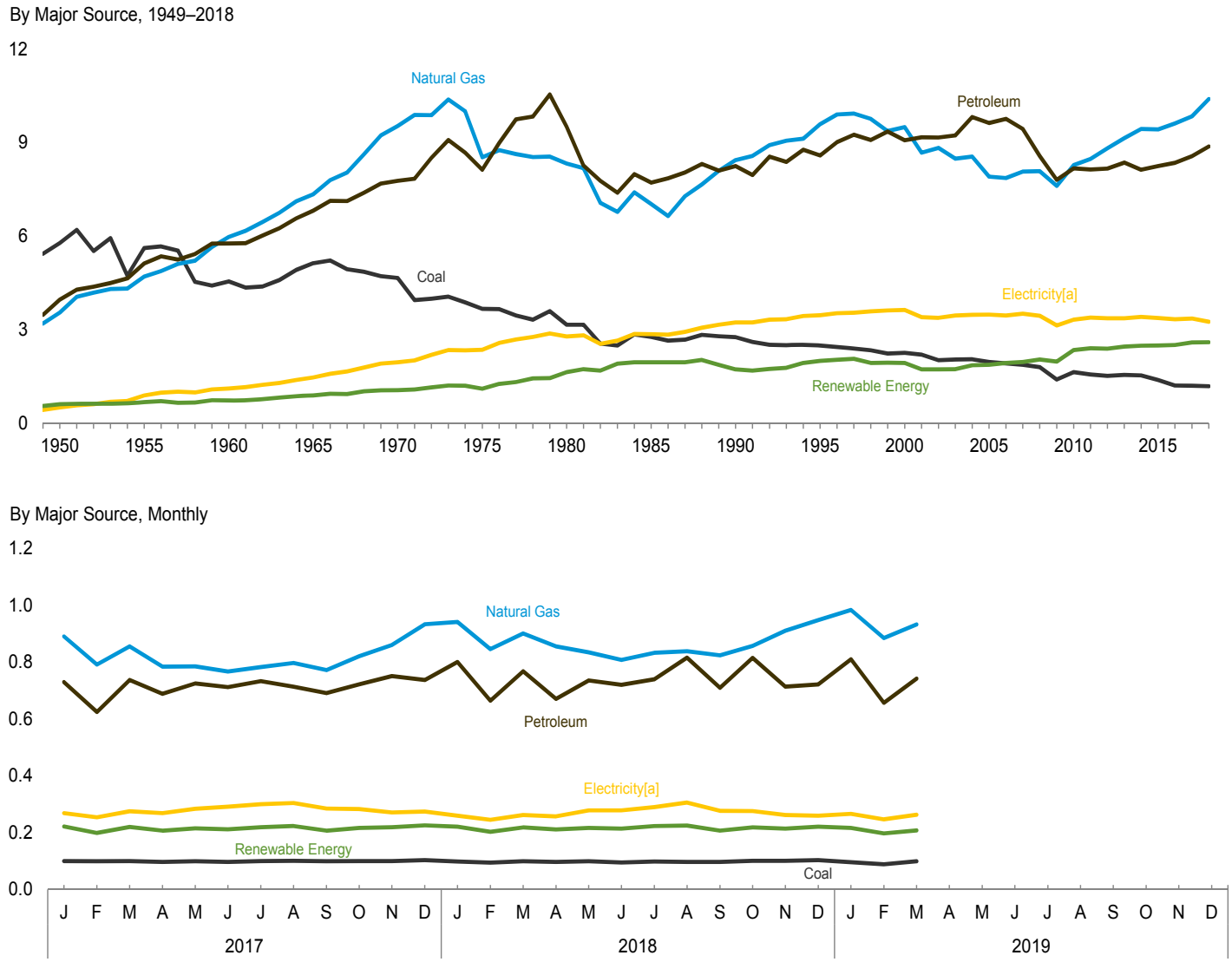
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity retail sales beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "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.

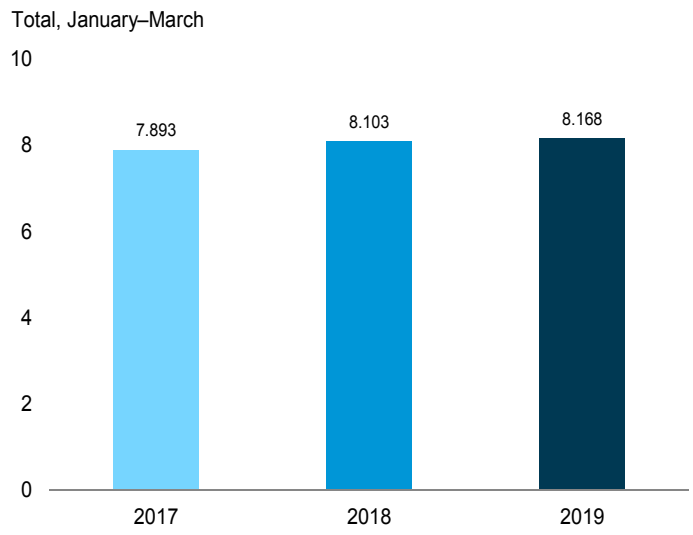
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

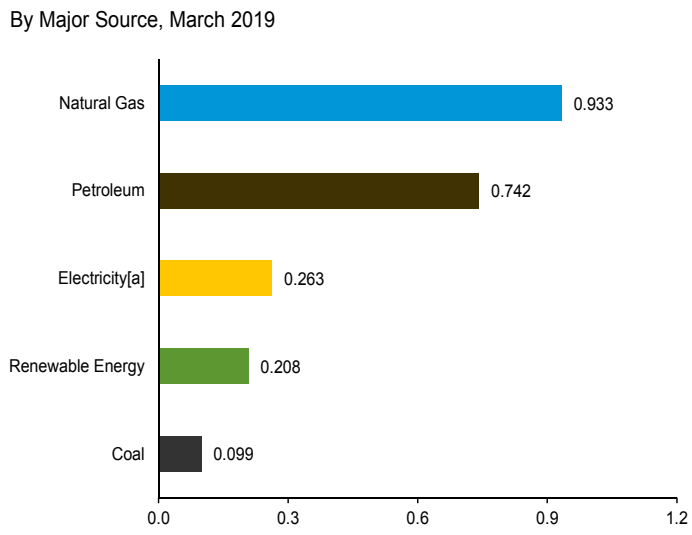
Sources: See end of section.

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**	**3,960**	**13,288**	**69**	**NA**	**NA**	**NA**	**532**	**602**	**13,890**	**500**	**1,852**	**16,241**
1955 Total	**5,620**	**4,701**	**5,123**	**15,434**	**38**	**NA**	**NA**	**NA**	**631**	**669**	**16,103**	**887**	**2,495**	**19,485**
1960 Total	**4,543**	**5,973**	**5,766**	**16,277**	**39**	**NA**	**NA**	**NA**	**680**	**719**	**16,996**	**1,107**	**2,739**	**20,842**
1965 Total	**5,127**	**7,339**	**6,813**	**19,260**	**33**	**NA**	**NA**	**NA**	**855**	**888**	**20,148**	**1,463**	**3,487**	**25,098**
1970 Total	**4,656**	**9,536**	**7,776**	**21,911**	**34**	**NA**	**NA**	**NA**	**1,019**	**1,053**	**22,964**	**1,948**	**4,716**	**29,628**
1975 Total	**3,667**	**8,532**	**8,127**	**20,339**	**32**	**NA**	**NA**	**NA**	**1,063**	**1,096**	**21,434**	**2,346**	**5,632**	**29,413**
1980 Total	**3,155**	**8,333**	**9,509**	**20,962**	**33**	**NA**	**NA**	**NA**	**1,600**	**1,633**	**22,595**	**2,781**	**6,664**	**32,039**
1985 Total	**2,760**	**7,032**	**7,714**	**17,492**	**33**	**NA**	**NA**	**NA**	**1,918**	**1,951**	**19,443**	**2,855**	**6,518**	**28,816**
1990 Total	**2,756**	**8,443**	**8,251**	**19,455**	**31**	**2**	**(s)**	**–**	**1,684**	**1,717**	**21,172**	**3,226**	**7,404**	**31,802**
1995 Total	**2,488**	**9,592**	**8,585**	**20,726**	**55**	**3**	**(s)**	**–**	**1,934**	**1,992**	**22,718**	**3,455**	**7,796**	**33,969**
2000 Total	**2,256**	**9,500**	**9,073**	**20,895**	**42**	**4**	**(s)**	**–**	**1,881**	**1,928**	**22,823**	**3,631**	**8,208**	**34,662**
2001 Total	**2,192**	**8,676**	**9,176**	**20,073**	**33**	**5**	**(s)**	**–**	**1,681**	**1,719**	**21,792**	**3,400**	**7,526**	**32,718**
2002 Total	**2,019**	**8,832**	**9,166**	**20,078**	**39**	**5**	**(s)**	**–**	**1,676**	**1,720**	**21,797**	**3,379**	**7,484**	**32,660**
2003 Total	**2,041**	**8,488**	**9,228**	**19,809**	**43**	**3**	**(s)**	**–**	**1,678**	**1,725**	**21,533**	**3,454**	**7,565**	**32,553**
2004 Total	**2,047**	**8,550**	**9,825**	**20,560**	**33**	**4**	**(s)**	**–**	**1,815**	**1,852**	**22,411**	**3,473**	**7,631**	**33,515**
2005 Total	**1,954**	**7,907**	**9,634**	**19,539**	**32**	**4**	**(s)**	**–**	**1,834**	**1,871**	**21,410**	**3,477**	**7,554**	**32,441**
2006 Total	**1,914**	**7,861**	**9,767**	**19,603**	**29**	**4**	**1**	**–**	**1,892**	**1,926**	**21,529**	**3,451**	**7,411**	**32,390**
2007 Total	**1,865**	**8,074**	**9,441**	**19,404**	**16**	**5**	**1**	**–**	**1,937**	**1,958**	**21,362**	**3,507**	**7,515**	**32,385**
2008 Total	**1,793**	**8,083**	**8,575**	**18,492**	**17**	**5**	**1**	**–**	**2,012**	**2,035**	**20,527**	**3,444**	**7,362**	**31,333**
2009 Total	**1,392**	**7,609**	**7,805**	**16,783**	**18**	**4**	**2**	**–**	**1,948**	**1,972**	**18,755**	**3,130**	**6,580**	**28,465**
2010 Total	**1,631**	**8,278**	**8,176**	**18,079**	**16**	**4**	**3**	**–**	**2,320**	**2,343**	**20,423**	**3,314**	**6,934**	**30,670**
2011 Total	**1,561**	**8,481**	**8,140**	**18,193**	**17**	**4**	**4**	**(s)**	**2,375**	**2,401**	**20,594**	**3,382**	**7,005**	**30,981**
2012 Total	**1,513**	**8,819**	**8,169**	**18,505**	**22**	**4**	**7**	**(s)**	**2,349**	**2,383**	**20,888**	**3,363**	**6,810**	**31,061**
2013 Total	**1,546**	**9,140**	**8,362**	**19,032**	**33**	**4**	**9**	**(s)**	**2,403**	**2,449**	**21,481**	**3,362**	**6,785**	**31,627**
2014 Total	**1,530**	**9,441**	**8,128**	**19,078**	**12**	**4**	**11**	**1**	**2,456**	**2,484**	**21,562**	**3,404**	**6,832**	**31,798**
2015 Total	**1,380**	**9,426**	**8,249**	**19,036**	**13**	**4**	**14**	**(s)**	**2,460**	**2,491**	**21,528**	**3,366**	**6,578**	**31,472**
2016 Total	**1,205**	**9,617**	**8,353**	**19,156**	**12**	**4**	**19**	**1**	**2,467**	**2,503**	**21,659**	**3,333**	**6,461**	**31,453**
2017 January	100	891	730	1,718	1	(s)	1	(s)	220	222	1,940	269	524	2,733
February	99	792	625	1,514	1	(s)	1	(s)	196	199	1,713	254	471	2,438
March	100	856	737	1,692	1	(s)	2	(s)	216	220	1,911	275	535	2,721
April	97	784	689	1,570	1	(s)	2	(s)	203	207	1,777	269	512	2,558
May	99	785	725	1,607	1	(s)	2	(s)	211	215	1,822	284	562	2,668
June	97	767	712	1,573	1	(s)	2	(s)	208	212	1,785	291	567	2,643
July	100	783	733	1,615	1	(s)	2	(s)	216	219	1,834	300	590	2,723
August	101	797	714	1,608	1	(s)	2	(s)	220	223	1,831	304	569	2,705
September	99	772	691	1,559	1	(s)	2	(s)	204	207	1,766	285	522	2,573
October	100	821	722	1,638	1	(s)	2	(s)	214	217	1,856	283	536	2,674
November	100	861	751	1,709	1	(s)	1	(s)	216	219	1,928	271	535	2,734
December	103	934	737	1,770	1	(s)	1	(s)	223	226	1,996	274	563	2,833
Total	**1,195**	**9,844**	**8,564**	**19,574**	**13**	**4**	**22**	**1**	**2,547**	**2,587**	**22,161**	**3,358**	**6,487**	**32,006**
2018 January	98	942	801	1,837	1	(s)	1	(s)	218	221	2,058	260	513	2,830
February	94	846	664	1,602	1	(s)	1	(s)	200	203	1,805	245	464	2,515
March	99	901	768	1,766	1	(s)	2	(s)	214	218	1,984	262	511	2,757
April	97	856	671	1,622	1	(s)	2	(s)	208	211	1,833	257	498	2,587
May	99	835	736	1,667	1	(s)	3	(s)	213	217	1,884	278	576	2,739
June	95	808	720	1,622	1	(s)	3	(s)	210	214	1,836	278	556	2,670
July	98	833	740	1,668	1	(s)	3	(s)	219	223	1,891	290	575	2,756
August	97	839	816	1,751	1	(s)	3	(s)	221	225	1,976	306	578	2,859
September	97	824	710	1,630	1	(s)	2	(s)	204	207	1,837	277	518	2,632
October	101	857	815	1,771	1	(s)	2	(s)	214	218	1,988	276	510	2,775
November	101	911	714	1,723	1	(s)	2	(s)	211	214	1,937	262	532	2,731
December	103	948	722	1,770	1	(s)	2	(s)	218	221	1,991	260	515	2,767
Total	**1,178**	**10,400**	**8,876**	**20,429**	**13**	**4**	**25**	**1**	**2,549**	**2,593**	**23,022**	**3,252**	**6,344**	**32,618**
2019 January	96	984	810	1,887	1	(s)	2	(s)	214	217	R 2,104	266	523	2,893
February	89	R 885	657	R 1,630	1	(s)	2	(s)	194	197	R 1,827	247	459	2,532
March	99	933	742	1,774	1	(s)	2	(s)	204	208	1,982	263	498	2,743
3-Month Total	**284**	**2,802**	**2,209**	**5,291**	**2**	**1**	**6**	**(s)**	**612**	**622**	**5,912**	**776**	**1,480**	**8,168**
2018 3-Month Total	**291**	**2,690**	**2,233**	**5,206**	**3**	**1**	**5**	**(s)**	**632**	**642**	**5,848**	**767**	**1,488**	**8,103**
2017 3-Month Total	**299**	**2,540**	**2,091**	**4,924**	**3**	**1**	**4**	**(s)**	**632**	**641**	**5,565**	**798**	**1,530**	**7,893**

[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.

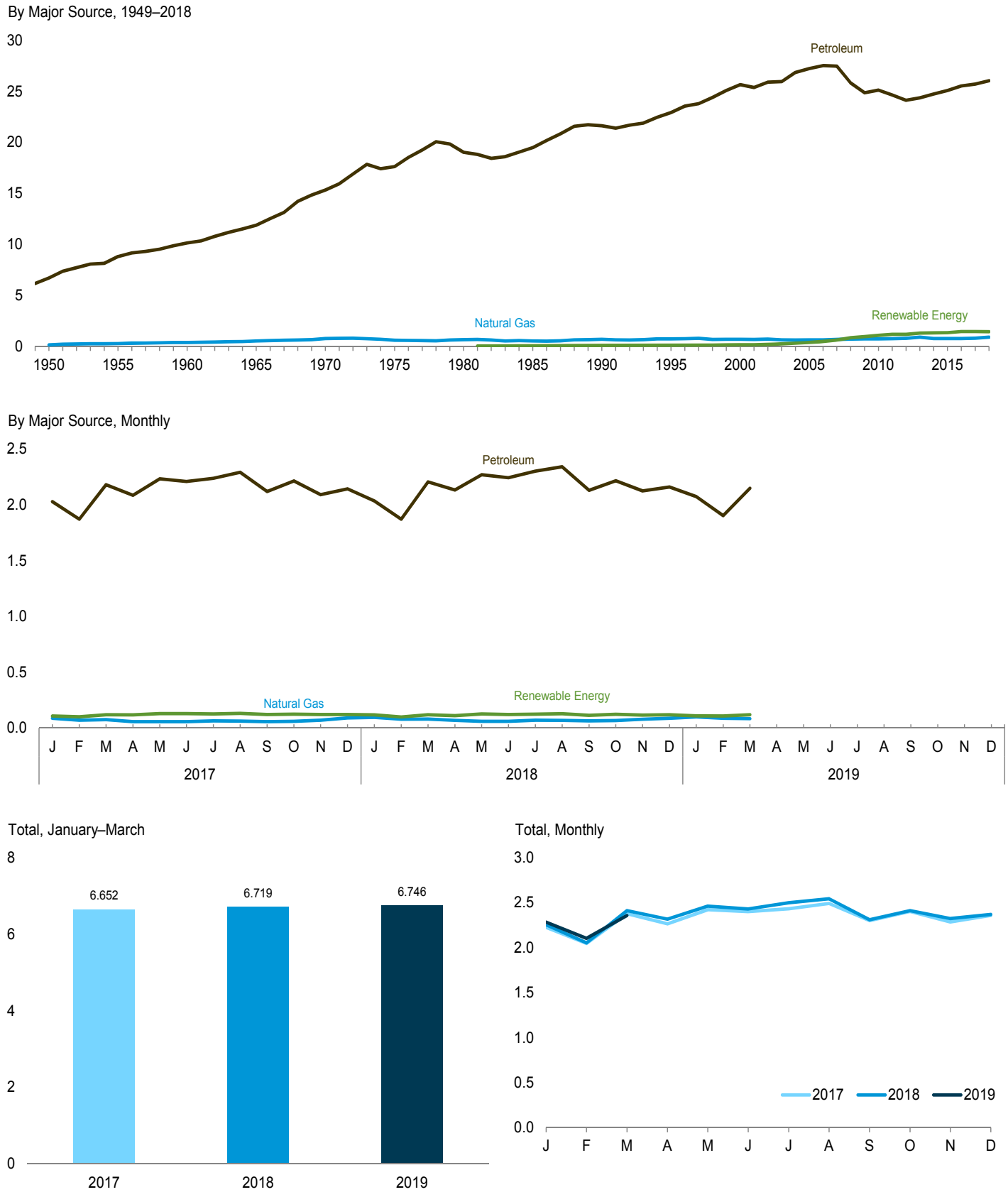
Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 2.5 Transportation Sector Energy Consumption

(Quadrillion Btu)



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

Table 2.5 Transportation Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]						Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
	Fossil Fuels				Renewable Energy[b]	Total Primary			
	Coal	Natural Gas[c]	Petroleum[d]	Total	Biomass				
1950 Total	**1,564**	**130**	**6,690**	**8,383**	**NA**	**8,383**	**23**	**86**	**8,492**
1955 Total	**421**	**254**	**8,799**	**9,474**	**NA**	**9,474**	**20**	**56**	**9,550**
1960 Total	**75**	**359**	**10,125**	**10,560**	**NA**	**10,560**	**10**	**26**	**10,596**
1965 Total	**16**	**517**	**11,866**	**12,399**	**NA**	**12,399**	**10**	**24**	**12,432**
1970 Total	**7**	**745**	**15,310**	**16,062**	**NA**	**16,062**	**11**	**26**	**16,098**
1975 Total	**1**	**595**	**17,615**	**18,210**	**NA**	**18,210**	**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**	**20,041**	**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**	**26,516**
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**	**27,827**
2005 Total	**(g)**	**624**	**27,217**	**27,840**	**339**	**28,180**	**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**	**28,728**	**28**	**60**	**28,815**
2008 Total	**(g)**	**692**	**25,823**	**26,515**	**825**	**27,340**	**26**	**56**	**27,422**
2009 Total	**(g)**	**715**	**24,857**	**25,572**	**935**	**26,507**	**27**	**56**	**26,589**
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**	**25,510**	**26,268**	**1,443**	**27,710**	**26**	**50**	**27,786**
2017 January	(g)	86	2,027	2,113	107	2,219	2	4	2,226
February	(g)	69	1,871	1,939	101	2,041	2	4	2,047
March	(g)	75	2,180	2,255	118	2,373	2	4	2,379
April	(g)	57	2,085	2,142	117	2,260	2	4	2,265
May	(g)	56	2,232	2,288	129	2,417	2	4	2,423
June	(g)	56	2,209	2,266	129	2,395	2	4	2,401
July	(g)	63	2,238	2,301	125	2,425	2	4	2,432
August	(g)	62	2,292	2,354	131	2,484	2	4	2,491
September	(g)	57	2,119	2,175	120	2,295	2	4	2,301
October	(g)	60	2,214	2,274	123	2,397	2	4	2,403
November	(g)	69	2,091	2,160	120	2,280	2	4	2,286
December	(g)	90	2,143	2,233	120	2,353	2	5	2,360
Total	**(g)**	**799**	**25,702**	**26,500**	**1,439**	**27,939**	**26**	**50**	**28,014**
2018 January	(g)	95	2,035	2,130	117	2,247	3	5	2,255
February	(g)	78	1,870	1,949	98	2,047	2	4	2,053
March	(g)	80	2,206	2,286	119	2,405	2	4	2,411
April	(g)	68	2,133	2,201	110	2,312	2	4	2,318
May	(g)	60	2,270	2,330	126	2,456	2	4	2,462
June	(g)	60	2,242	2,302	121	2,423	2	4	2,430
July	(g)	69	2,302	2,371	124	2,494	2	4	2,501
August	(g)	68	2,341	2,409	128	2,537	2	4	2,544
September	(g)	63	2,129	2,192	113	2,305	2	4	2,312
October	(g)	67	2,216	2,283	122	2,405	2	4	2,411
November	(g)	78	2,124	2,202	116	2,318	2	4	2,324
December	(g)	86	2,159	2,245	119	2,364	2	4	2,371
Total	**(g)**	**873**	**26,027**	**26,900**	**1,413**	**28,313**	**26**	**52**	**28,391**
2019 January	(g)	98	2,073	2,171	108	2,279	2	4	2,285
February	(g)	86	1,903	1,990	107	2,097	2	4	R 2,103
March	(g)	84	2,148	2,232	119	2,351	2	4	2,358
3-Month Total	**(g)**	**268**	**6,124**	**6,392**	**334**	**6,726**	**7**	**13**	**6,746**
2018 3-Month Total	**(g)**	**254**	**6,111**	**6,365**	**334**	**6,699**	**7**	**13**	**6,719**
2017 3-Month Total	**(g)**	**229**	**6,078**	**6,307**	**325**	**6,632**	**7**	**13**	**6,652**

[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.

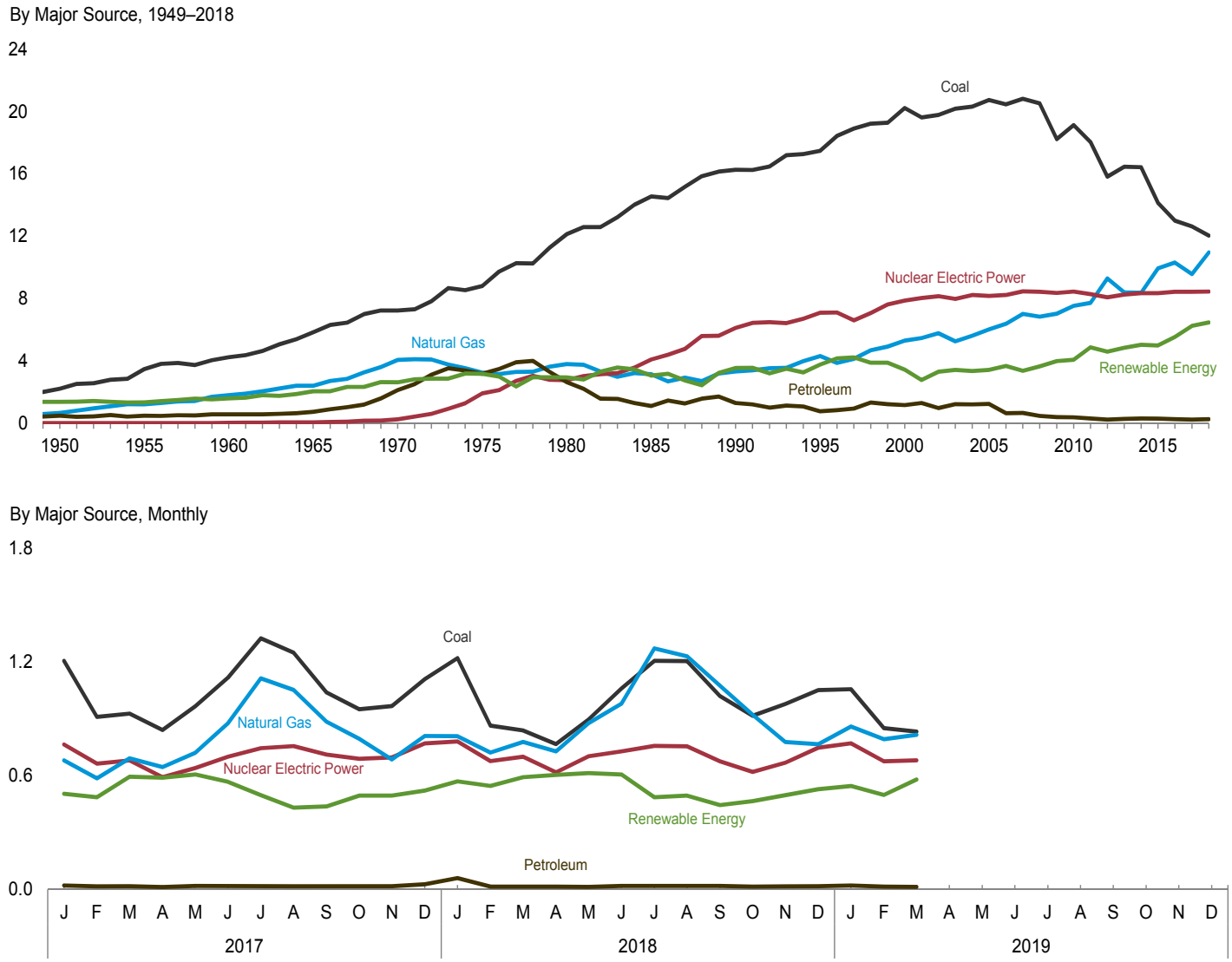
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the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

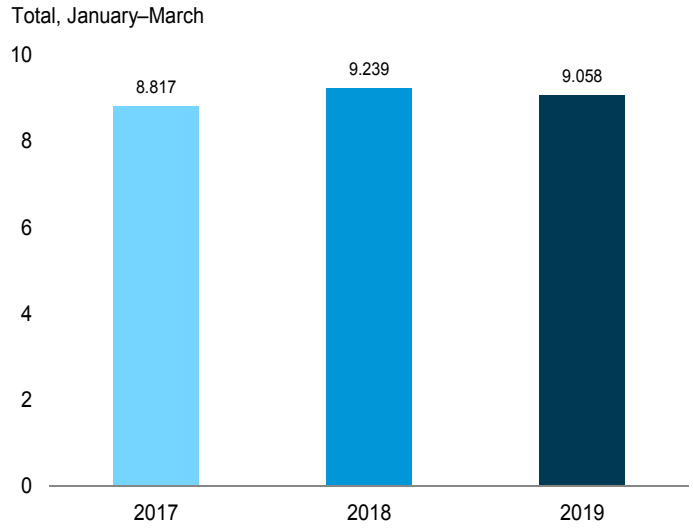
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

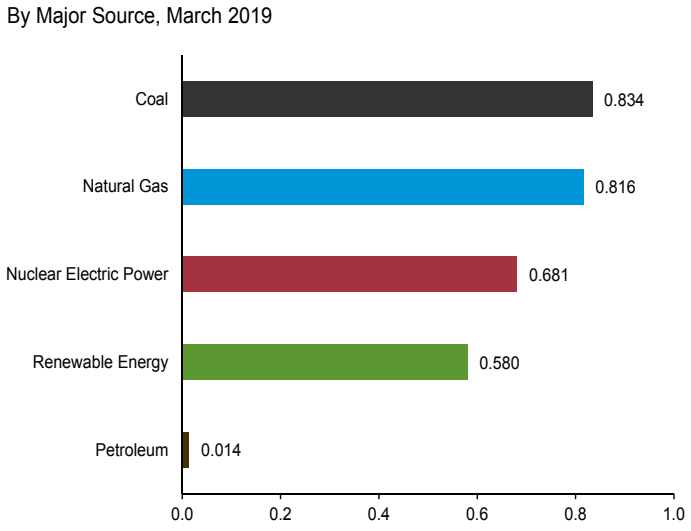
Sources: See end of section.

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	1,222	809	60	2,091	781	235	13	31	247	45	571	14	3,457
February	865	723	15	1,603	678	234	12	38	222	41	547	12	2,840
March	840	779	15	1,634	701	238	13	47	251	44	593	15	2,943
April	768	729	15	1,512	618	252	11	57	246	38	605	10	2,746
May	898	879	14	1,791	704	279	13	64	217	42	615	14	3,125
June	1,061	981	19	2,060	729	256	13	71	224	43	607	15	3,411
July	1,207	1,273	19	2,500	758	220	13	63	147	43	487	15	3,759
August	1,206	1,231	19	2,456	756	196	13	64	180	42	495	17	3,724
September	1,021	1,076	19	2,115	677	171	13	59	165	37	445	11	3,249
October	918	922	15	1,854	621	172	12	48	195	40	466	10	2,951
November	979	779	16	1,775	669	203	13	36	207	39	498	9	2,950
December	1,052	767	17	1,835	749	217	14	29	228	41	530	11	3,126
Total	**12,037**	**10,949**	**243**	**23,229**	**8,441**	**2,673**	**154**	**607**	**2,530**	**495**	**6,459**	**152**	**38,280**
2019 January	1,057	860	21	1,938	771	225	13	33	232	43	546	17	3,271
February	852	793	15	1,660	677	202	12	36	212	37	499	12	2,848
March	834	816	14	1,664	681	233	13	55	240	39	580	13	2,938
3-Month Total	**2,742**	**2,470**	**50**	**5,262**	**2,128**	**660**	**38**	**124**	**683**	**120**	**1,625**	**42**	**9,058**
2018 3-Month Total	**2,927**	**2,311**	**90**	**5,328**	**2,159**	**706**	**38**	**116**	**720**	**130**	**1,711**	**41**	**9,239**
2017 3-Month Total	**3,048**	**1,961**	**54**	**5,063**	**2,110**	**730**	**37**	**81**	**608**	**132**	**1,587**	**56**	**8,817**

[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 2, "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	14.9	8.8	5.9	15.5	8.6	43.7	6.7	29.1	19.7	915.1

[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.

Source: 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	133.9	400.1	1.5	46.4	582.3	3.9	181.7	23.0	915.1

[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.

Source: 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. 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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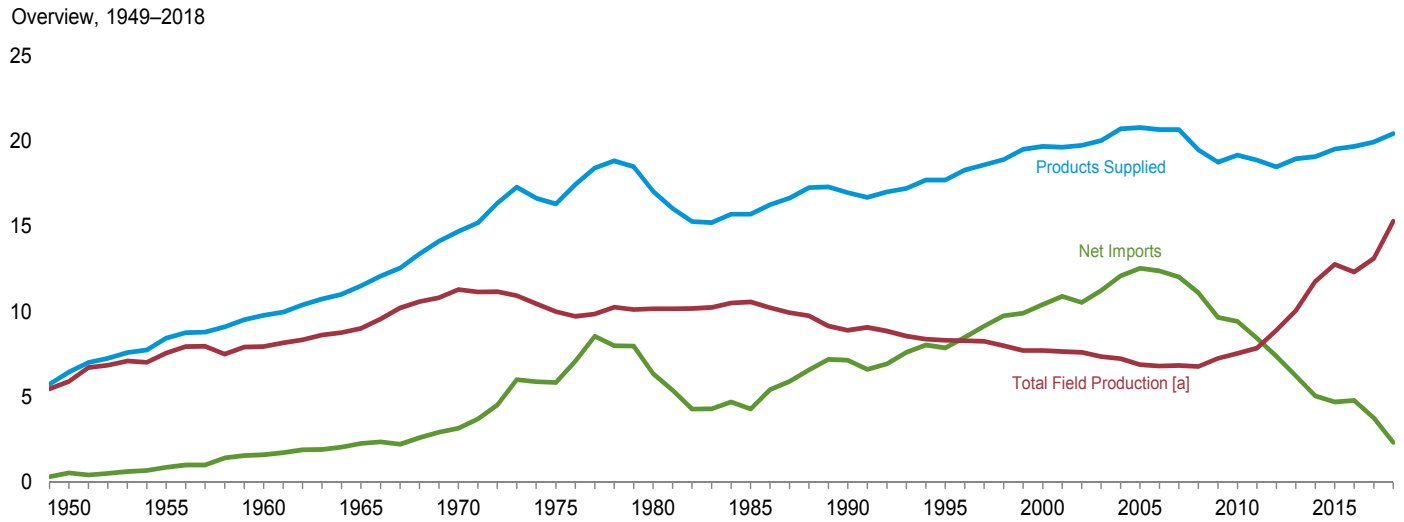
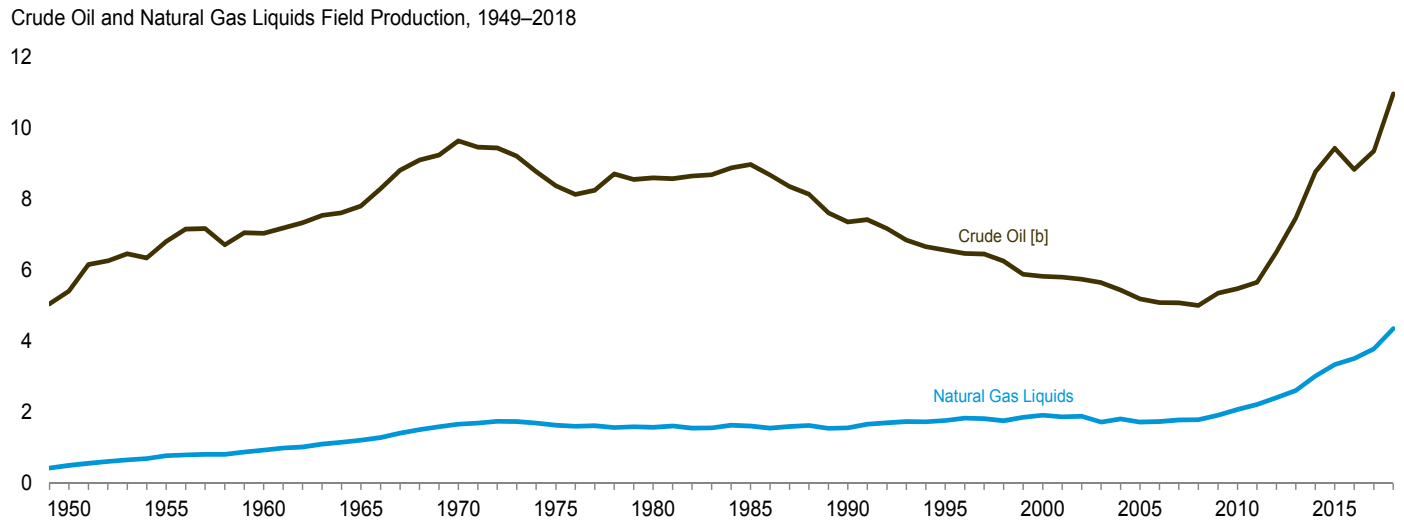
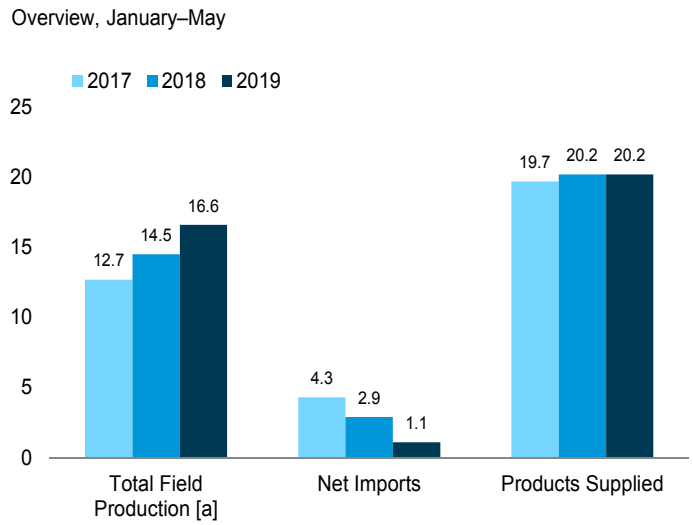
3. Petroleum

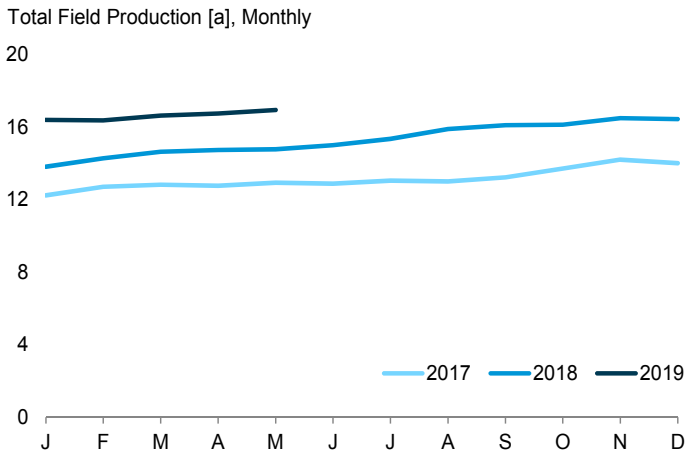
Figure 3.1 Petroleum Overview

(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	**4,704**	**645**	**5,349**	**1,910**	**7,259**	**746**	**979**	**11,691**	**2,024**	**9,667**	**107**	**228**	**18,771**
2010 Average	**4,878**	**600**	**5,478**	**2,074**	**7,552**	**907**	**1,068**	**11,793**	**2,353**	**9,441**	**39**	**253**	**19,180**
2011 Average	**5,093**	**561**	**5,654**	**2,216**	**7,870**	**1,016**	**1,076**	**11,436**	**2,986**	**8,450**	**-129**	**345**	**18,887**
2012 Average	**5,976**	**526**	**6,502**	**2,408**	**8,909**	**964**	**1,059**	**10,598**	**3,205**	**7,393**	**147**	**308**	**18,487**
2013 Average	**6,952**	**515**	**7,467**	**2,606**	**10,073**	**1,002**	**1,087**	**9,859**	**3,621**	**6,237**	**-139**	**429**	**18,967**
2014 Average	**8,262**	**496**	**8,759**	**3,015**	**11,773**	**1,055**	**1,081**	**9,241**	**4,176**	**5,065**	**267**	**394**	**19,100**
2015 Average	**8,948**	**483**	**9,431**	**3,342**	**12,773**	**1,095**	**1,062**	**9,449**	**4,738**	**4,711**	**429**	**322**	**19,534**
2016 Average	**8,341**	**490**	**8,831**	**3,509**	**12,340**	**1,158**	**1,118**	**10,055**	**5,261**	**4,795**	**130**	**406**	**19,687**
2017 January	8,324	516	8,840	3,395	12,235	1,187	1,139	10,745	5,645	5,101	746	407	19,323
February	8,570	513	9,083	3,633	12,716	1,173	1,063	10,033	6,461	3,573	-128	538	19,190
March	8,614	526	9,140	3,685	12,826	1,179	1,112	10,184	6,054	4,130	-602	211	20,060
April	8,559	525	9,085	3,682	12,767	1,142	1,146	10,322	6,277	4,045	-70	426	19,595
May	8,660	508	9,168	3,771	12,939	1,179	1,135	10,729	6,232	4,498	181	496	20,066
June	8,611	463	9,074	3,807	12,881	1,191	1,159	10,325	6,252	4,073	-802	454	20,561
July	8,807	423	9,230	3,822	13,052	1,193	1,101	9,954	6,291	3,663	-369	741	20,119
August	8,793	451	9,244	3,764	13,007	1,222	1,113	10,112	5,665	4,447	-363	100	20,251
September	9,013	482	9,495	3,731	13,226	1,180	1,010	9,752	6,289	3,464	-315	446	19,641
October	9,196	507	9,703	4,020	13,723	1,214	1,081	9,741	7,086	2,655	-1,180	137	19,990
November	9,593	510	10,103	4,106	14,209	1,268	1,146	9,876	7,144	2,732	-596	356	20,307
December	9,528	512	10,040	3,969	14,009	1,240	1,126	9,935	7,136	2,799	-927	222	20,323
Average	**8,857**	**494**	**9,352**	**3,783**	**13,134**	**1,198**	**1,111**	**10,144**	**6,376**	**3,768**	**-370**	**376**	**19,958**
2018 January	[E] 9,487	[E] 508	[E] 9,995	3,825	[E] 13,819	1,204	1,123	10,274	6,615	3,659	-500	155	20,461
February	[E] 9,735	[E] 513	[E] 10,248	4,023	[E] 14,271	1,221	1,117	9,580	6,844	2,736	-140	134	19,619
March	[E] 9,949	[E] 512	[E] 10,461	4,173	[E] 14,635	1,206	1,096	9,821	7,105	2,716	-444	477	20,573
April	[E] 9,978	[E] 497	[E] 10,475	4,260	[E] 14,735	1,199	1,114	10,364	7,730	2,634	78	337	19,941
May	[E] 9,968	[E] 496	[E] 10,464	4,321	[E] 14,785	1,223	1,119	10,228	7,517	2,712	206	723	20,357
June	[E] 10,222	[E] 451	[E] 10,672	4,326	[E] 14,998	1,257	1,129	10,706	7,801	2,905	-108	308	20,705
July	[E] 10,541	[E] 395	[E] 10,936	4,411	[E] 15,347	1,273	1,170	10,176	7,827	2,349	163	646	20,621
August	[E] 10,897	[E] 428	[E] 11,325	4,570	[E] 15,895	1,287	1,191	10,432	7,043	3,389	620	161	21,302
September	[E] 10,999	[E] 471	[E] 11,470	4,631	[E] 16,102	1,211	1,140	9,885	7,611	2,273	1,336	561	19,951
October	[E] 11,072	[E] 487	[E] 11,559	4,580	[E] 16,139	1,219	1,110	9,417	8,018	1,399	-500	406	20,774
November	[E] 11,429	[E] 497	[E] 11,926	4,571	[E] 16,497	1,239	1,158	9,213	8,669	545	-192	917	20,548
December	[E] 11,467	[E] 496	[E] 11,963	4,479	[E] 16,442	1,222	1,210	9,022	8,250	772	39	872	20,479
Average	**[E] 10,483**	**[E] 479**	**[E] 10,962**	**4,349**	**[E] 15,311**	**1,230**	**1,140**	**9,928**	**7,588**	**2,340**	**45**	**477**	**20,453**
2019 January	[RE] 11,364	[E] 496	[RE] 11,860	4,545	[RE] 16,405	1,190	1,110	9,693	8,104	1,589	260	[R] 419	20,452
February	[RE] 11,177	[E] 488	[RE] 11,664	4,706	[RE] 16,370	1,198	1,020	8,628	8,453	176	-616	[R] 814	20,194
March	[RE] 11,424	[RE] 481	[RE] 11,905	[R] 4,728	[RE] 16,633	[R] 1,163	[R] 1,042	[R] 8,837	[R] 7,996	[R] 842	[R] -136	[R] 389	[R] 20,204
April	[E] 11,722	[E] 478	[E] 12,200	[E] 4,545	[E] 16,745	[E] 1,139	[E] 1,097	[E] 9,310	[E] 7,797	[E] 1,513	[E] 802	[E] 533	[E] 20,225
May	[E] 11,771	[E] 477	[E] 12,248	[E] 4,696	[E] 16,945	[E] 1,151	[E] 1,118	[E] 9,826	[E] 8,313	[E] 1,513	[E] 1,613	[E] 959	[E] 20,073
5-Month Average	**[E] 11,496**	**[E] 484**	**[E] 11,980**	**[E] 4,644**	**[E] 16,624**	**[E] 1,168**	**[E] 1,078**	**[E] 9,271**	**[E] 8,128**	**[E] 1,143**	**[E] 402**	**[E] 620**	**[E] 20,230**
2018 5-Month Average	**[E] 9,824**	**[E] 505**	**[E] 10,329**	**4,121**	**[E] 14,451**	**1,210**	**1,114**	**10,061**	**7,165**	**2,896**	**-162**	**370**	**20,203**
2017 5-Month Average	**8,545**	**518**	**9,063**	**3,633**	**12,696**	**1,172**	**1,120**	**10,411**	**6,126**	**4,284**	**29**	**413**	**19,656**

[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.

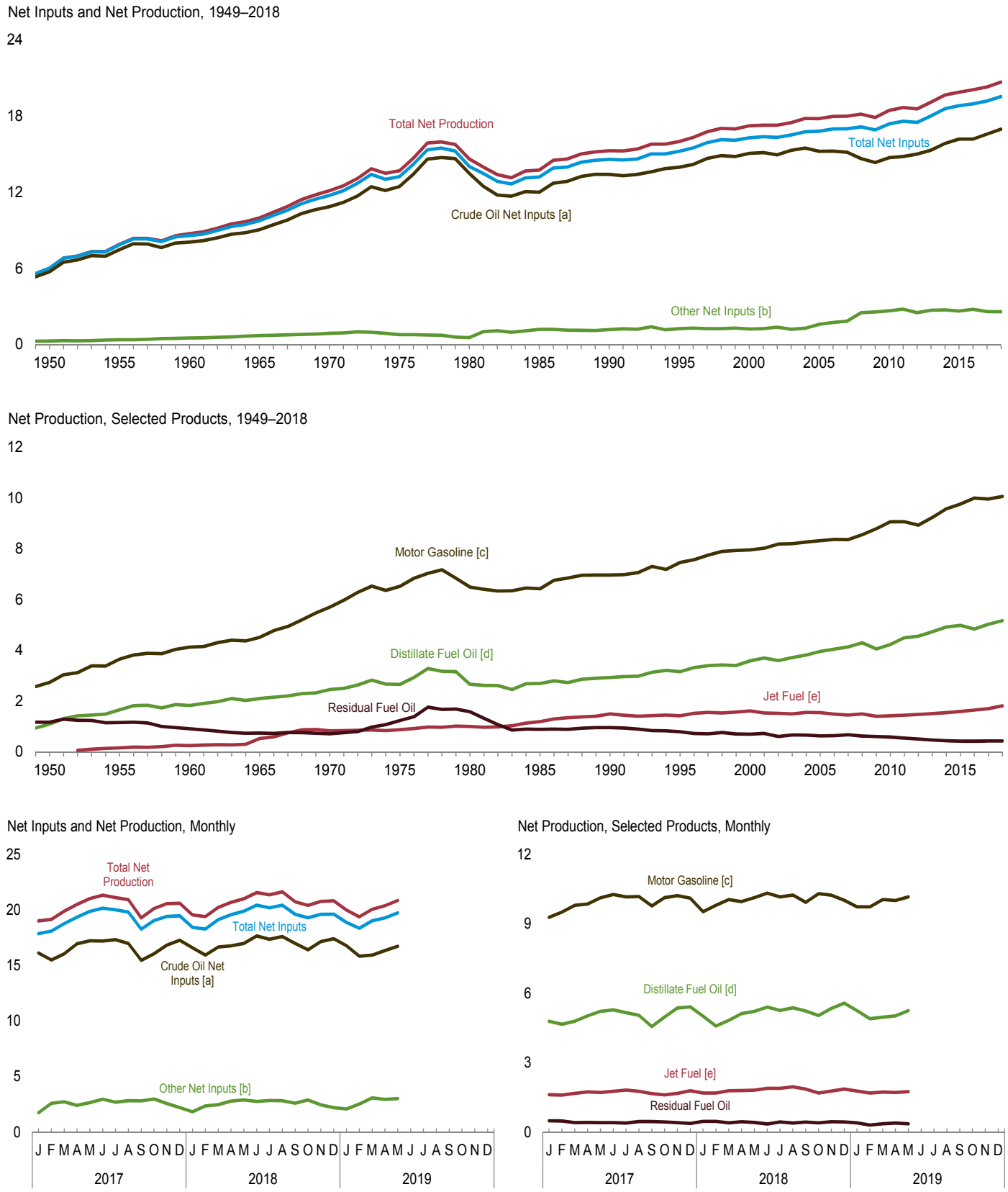
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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	629	1,206	18,435	5,010	296	304	600	394	1,690	9,519	467	2,478	19,558
February	15,932	634	1,715	18,281	4,584	295	274	568	409	1,690	9,800	462	2,453	19,397
March	16,665	556	1,915	19,136	4,825	295	276	571	631	1,784	10,052	403	2,538	20,232
April	16,766	497	2,302	19,564	5,119	307	286	593	800	1,798	9,964	450	2,546	20,678
May	16,989	454	2,442	19,885	5,213	300	292	591	853	1,808	10,130	415	2,585	21,004
June	17,666	457	2,307	20,430	5,406	323	286	609	875	1,893	10,326	348	2,712	21,559
July	17,355	442	2,396	20,194	5,256	320	286	607	870	1,894	10,166	444	2,732	21,363
August	17,612	504	2,320	20,436	5,369	310	293	604	880	1,955	10,243	391	2,790	21,627
September	16,986	565	2,045	19,596	5,230	296	294	590	650	1,856	9,926	429	2,644	20,736
October	16,409	686	2,205	19,300	5,036	279	294	574	460	1,691	10,299	397	2,527	20,410
November	17,152	746	1,709	19,607	5,350	294	314	608	395	1,769	10,240	450	2,563	20,766
December	17,409	732	1,474	19,615	5,576	303	313	615	372	1,856	10,020	440	2,561	20,825
Average	**16,968**	**575**	**2,005**	**19,547**	**5,168**	**301**	**293**	**594**	**634**	**1,808**	**10,059**	**424**	**2,595**	**20,687**
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	R 15,939	R 509	R 2,575	R 19,023	R 4,968	R 288	R 261	R 549	R 629	R 1,728	R 10,051	R 357	R 2,331	R 20,065
April	E 16,339	F 492	RE 2,453	RF 19,285	E 5,023	NA	NA	RE 491	F 827	E 1,717	E 10,007	E 394	RE 2,414	RE 20,382
May	E 16,729	F 476	E 2,529	F 19,734	E 5,252	NA	NA	E 563	F 886	E 1,748	E 10,166	E 362	E 2,437	E 20,852
5-Month Average	**E 16,335**	**E 549**	**E 2,182**	**E 19,066**	**E 5,083**	**NA**	**NA**	**E 548**	**E 632**	**E 1,732**	**E 9,942**	**E 364**	**E 2,392**	**E 20,145**
2018 5-Month Average	**16,602**	**553**	**1,918**	**19,072**	**4,956**	**298**	**287**	**585**	**621**	**1,755**	**9,894**	**439**	**2,521**	**20,186**
2017 5-Month Average	**16,381**	**543**	**1,881**	**18,804**	**4,898**	**300**	**284**	**584**	**645**	**1,669**	**9,717**	**439**	**2,556**	**19,924**

[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.

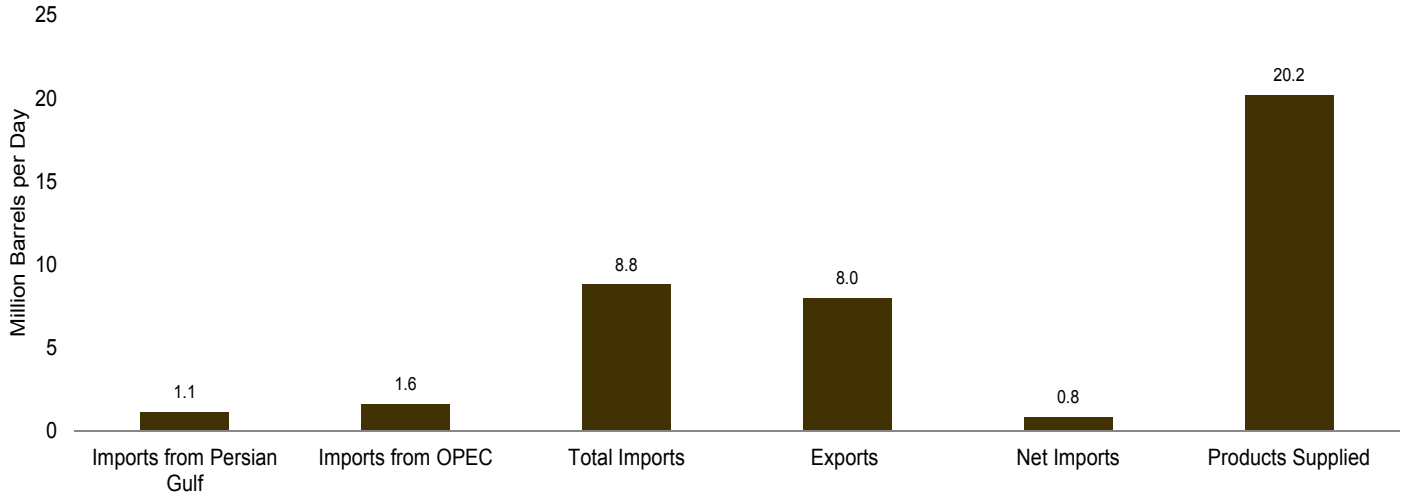
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

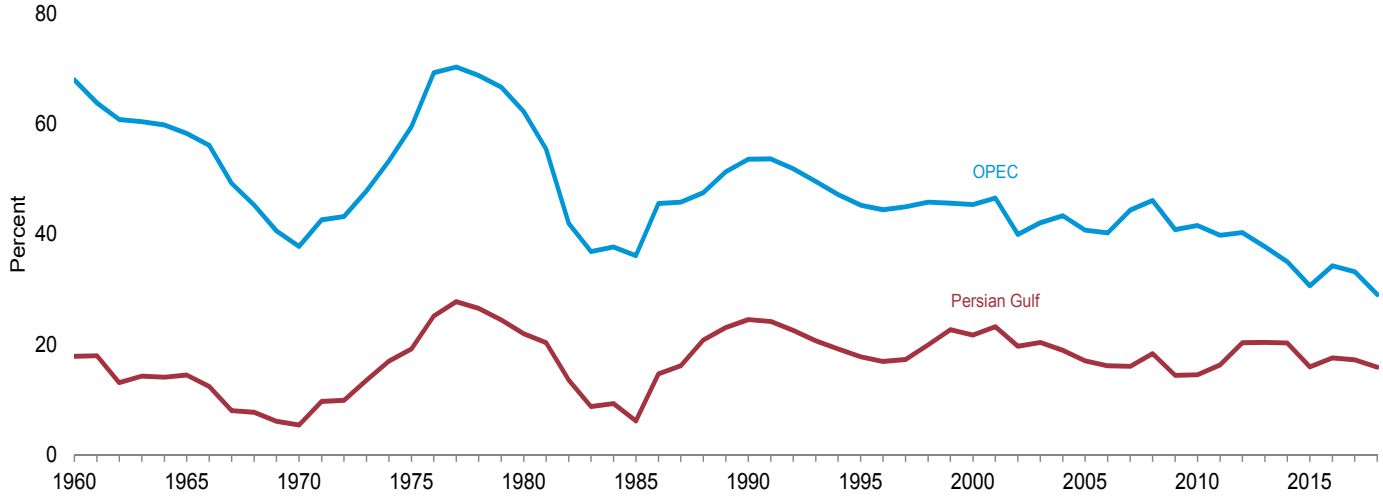
Sources: See end of section.

Figure 3.3a Petroleum Trade: Overview

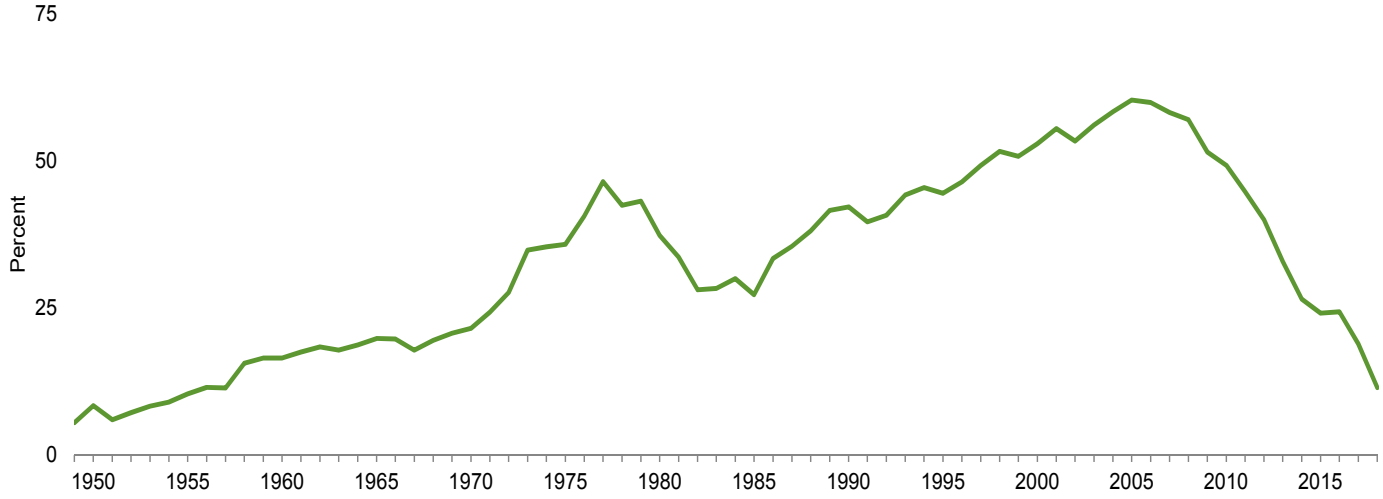
Overview, March 2019



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	10,274	6,615	3,659	20,461	7.8	14.7	50.2	17.9	15.5	29.3
February	1,554	2,740	9,580	6,844	2,736	19,619	7.9	14.0	48.8	13.9	16.2	28.6
March	1,738	2,843	9,821	7,105	2,716	20,573	8.4	13.8	47.7	13.2	17.7	29.0
April	1,899	3,523	10,364	7,730	2,634	19,941	9.5	17.7	52.0	13.2	18.3	34.0
May	1,573	2,737	10,228	7,517	2,712	20,357	7.7	13.4	50.2	13.3	15.4	26.8
June	1,487	3,041	10,706	7,801	2,905	20,705	7.2	14.7	51.7	14.0	13.9	28.4
July	1,489	2,971	10,176	7,827	2,349	20,621	7.2	14.4	49.3	11.4	14.6	29.2
August	1,599	2,857	10,432	7,043	3,389	21,302	7.5	13.4	49.0	15.9	15.3	27.4
September	1,645	2,996	9,885	7,611	2,273	19,951	8.2	15.0	49.5	11.4	16.6	30.3
October	1,563	2,729	9,417	8,018	1,399	20,774	7.5	13.1	45.3	6.7	16.6	29.0
November	1,567	2,703	9,213	8,669	545	20,548	7.6	13.2	44.8	2.6	17.0	29.3
December	1,237	2,516	9,022	8,250	772	20,479	6.0	12.3	44.1	3.8	13.7	27.9
Average	**1,578**	**2,888**	**9,928**	**7,588**	**2,340**	**20,453**	**7.7**	**14.1**	**48.5**	**11.4**	**15.9**	**29.1**
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	R 1,096	R 1,643	R 8,837	R 7,996	R 842	R 20,204	R 5.4	R 8.1	R 43.7	R 4.2	R 12.4	R 18.6
April	NA	NA	E 9,310	E 7,797	E 1,513	E 20,225	NA	NA	E 46.0	E 7.5	NA	NA
May	NA	NA	E 9,826	E 8,313	E 1,513	E 20,073	NA	NA	E 49.0	E 7.5	NA	NA
5-Month Average	**NA**	**NA**	**E 9,271**	**E 8,128**	**E 1,143**	**E 20,230**	**NA**	**NA**	**E 45.8**	**E 5.6**	**NA**	**NA**
2018 5-Month Average	**1,672**	**2,971**	**10,061**	**7,165**	**2,896**	**20,203**	**8.3**	**14.7**	**49.8**	**14.3**	**16.6**	**29.5**
2017 5-Month Average	**2,024**	**3,652**	**10,411**	**6,126**	**4,284**	**19,656**	**10.3**	**18.6**	**53.0**	**21.8**	**19.4**	**35.1**

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

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

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

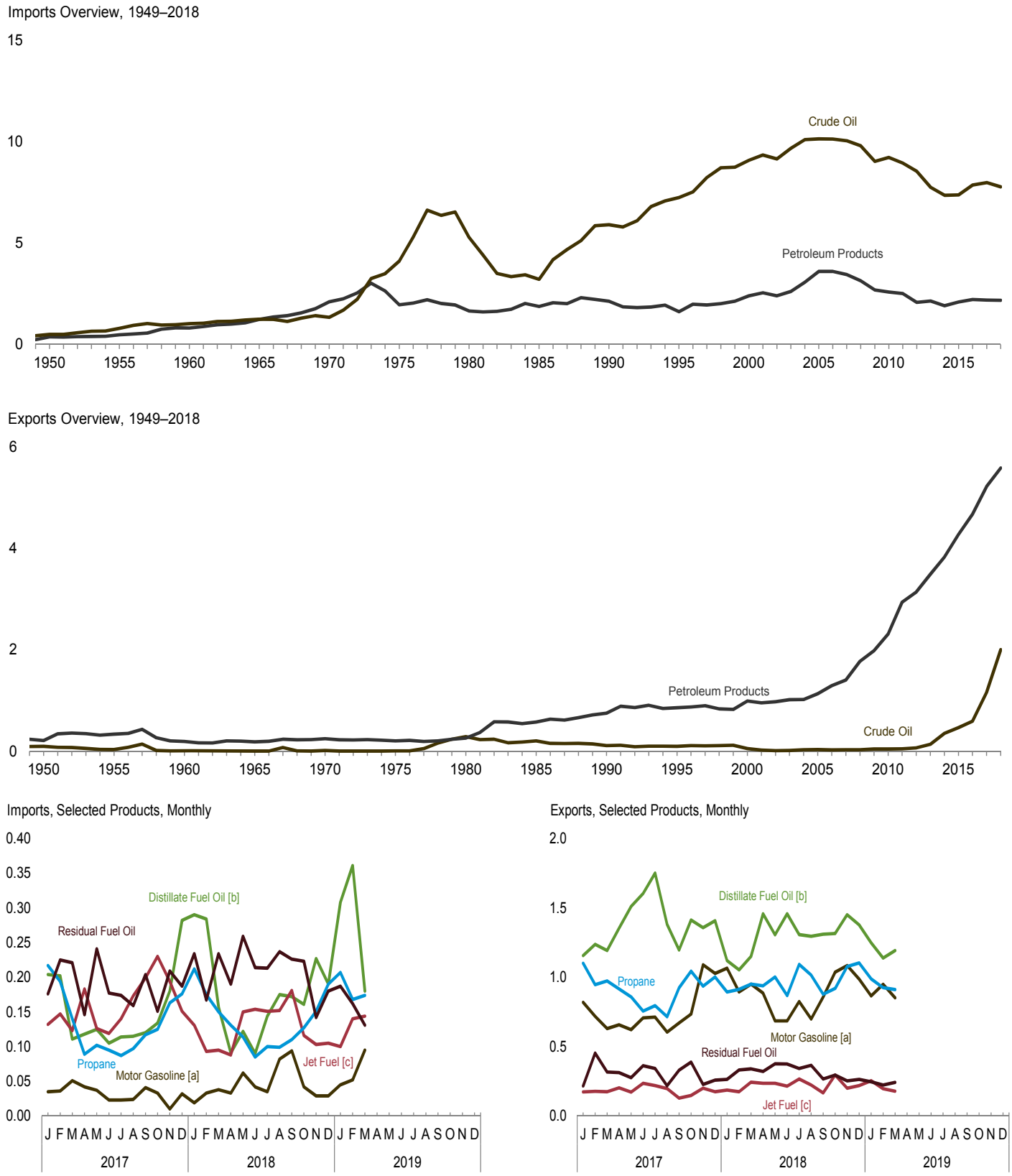
Notes: • For the feature article "Measuring Dependence on Imported Oil," published in the August 1995 *Monthly Energy Review,* see http://www.eia.gov/totalenergy/data/monthly/pdf/historical/imported_oil.pdf. • Beginning in October 1977, data include Strategic Petroleum Reserve imports. See Table 3.3b.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

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

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2018 and 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	–	8,012	290	212	15	227	260	131	19	234	1,327	10,274
February	–	7,493	284	175	23	198	231	93	33	167	1,280	9,580
March	–	7,616	157	150	23	173	217	95	38	234	1,463	9,821
April	–	8,244	91	131	10	141	168	88	33	190	1,550	10,364
May	–	7,825	122	114	20	135	158	150	62	259	1,654	10,228
June	–	8,480	90	85	20	105	135	154	42	214	1,591	10,706
July	–	7,923	144	100	20	120	156	151	35	213	1,553	10,176
August	–	8,000	175	99	22	121	159	152	82	237	1,626	10,432
September	–	7,589	172	110	14	124	172	181	94	227	1,451	9,885
October	–	7,312	161	127	15	141	192	116	42	223	1,370	9,417
November	–	7,490	227	151	13	164	222	103	29	142	1,001	9,213
December	–	7,099	190	190	15	206	268	105	29	180	1,152	9,022
Average	**–**	**7,757**	**175**	**137**	**17**	**154**	**195**	**127**	**45**	**211**	**1,420**	**9,928**
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	–	R 6,759	R 180	R 174	R 10	R 185	R 252	R 144	R 95	R 131	R 1,274	R 8,837
April	–	E 6,792	E 136	NA	NA	E 131	NA	E 200	E 127	E 163	NA	E 9,310
May	–	E 7,304	E 109	NA	NA	E 120	NA	E 163	E 158	E 153	NA	E 9,826
5-Month Average	**–**	**E 7,014**	**E 217**	**NA**	**NA**	**E 168**	**NA**	**E 149**	**E 96**	**E 159**	**NA**	**E 9,271**
2018 5-Month Average	**–**	**7,842**	**188**	**156**	**18**	**174**	**206**	**112**	**37**	**218**	**1,458**	**10,061**
2017 5-Month Average	**–**	**8,250**	**151**	**148**	**25**	**173**	**212**	**142**	**40**	**202**	**1,413**	**10,411**

[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. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2018 and 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	559	187	2,843
April	208	169	225	834	107	87	275	904	632	84	3,523
May	134	118	162	588	49	40	102	872	559	112	2,737
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
3-Month Average	**97**	**6**	**173**	**374**	**85**	**40**	**122**	**701**	**331**	**74**	**2,003**
2018 3-Month Average	**155**	**39**	**141**	**681**	**135**	**65**	**293**	**726**	**521**	**113**	**2,868**
2017 3-Month Average	**219**	**71**	**225**	**530**	**190**	**28**	**301**	**1,284**	**755**	**13**	**3,616**

[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. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports. • **2018 and 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	4,424	512	669	69	57	386	80	–	797	7,265
February	187	4,259	477	713	51	56	297	110	–	692	6,840
March	84	4,191	364	784	91	90	356	94	–	925	6,978
April	184	4,269	282	632	64	122	243	205	–	840	6,841
May	123	4,452	437	608	80	72	491	180	–	1,049	7,492
June	283	4,545	240	876	53	85	439	151	–	994	7,665
July	179	4,157	319	681	43	166	454	164	–	1,041	7,205
August	248	4,233	334	935	67	39	515	175	–	1,028	7,575
September	77	4,034	229	771	44	74	519	207	–	935	6,889
October	230	4,144	229	718	89	138	271	106	–	763	6,688
November	93	4,327	259	601	49	136	254	155	–	638	6,510
December	92	4,279	333	635	49	94	271	132	–	620	6,506
Average	**171**	**4,276**	**334**	**719**	**63**	**94**	**375**	**146**	**–**	**862**	**7,040**
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
3-Month Average	**133**	**4,448**	**403**	**665**	**85**	**80**	**304**	**97**	**–**	**848**	**7,064**
2018 3-Month Average	**181**	**4,292**	**450**	**722**	**71**	**68**	**348**	**94**	**–**	**808**	**7,034**
2017 3-Month Average	**225**	**4,179**	**360**	**657**	**68**	**61**	**358**	**120**	**–**	**687**	**6,714**

[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. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports. • **2018 and 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	1,342	1,119	894	1,481	187	1,066	264	1,156	6,615
February	1,605	1,053	913	1,430	175	894	332	1,355	6,844
March	1,671	1,150	951	1,452	244	951	340	1,296	7,105
April	1,756	1,457	939	1,678	235	886	321	1,397	7,730
May	2,005	1,306	1,002	1,749	235	685	376	1,160	7,517
June	2,200	1,458	868	1,628	215	686	375	1,239	7,801
July	2,139	1,308	1,093	1,677	267	825	343	1,270	7,827
August	1,749	1,295	1,015	1,641	223	699	366	1,070	7,043
September	2,116	1,310	878	1,640	167	857	267	1,255	7,611
October	2,326	1,316	920	1,586	295	1,037	295	1,163	8,018
November	2,609	1,450	1,077	1,654	200	1,085	253	1,417	8,669
December	2,511	1,377	1,103	1,597	220	987	264	1,294	8,250
Average	**2,004**	**1,301**	**972**	**1,602**	**222**	**888**	**316**	**1,254**	**7,588**
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	R 2,684	R 1,192	R 911	R 1,628	R 179	R 852	R 243	R 1,219	R 7,996
April	E 2,495	NA	NA	NA	NA	NA	NA	NA	E 7,797
May	E 3,160	NA	NA	NA	NA	NA	NA	NA	E 8,313
5-Month Average	**E 2,778**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**E 8,128**
2018 5-Month Average	**1,677**	**1,219**	**940**	**1,560**	**216**	**897**	**327**	**1,270**	**7,165**
2017 5-Month Average	**999**	**1,291**	**959**	**1,441**	**180**	**689**	**313**	**1,214**	**6,126**

[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. 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.

[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.

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. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2018 and 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	357	923	508	161	354	1,364	289	206	74	145	2,235	6,615
February	394	1,008	608	190	301	1,097	269	233	144	179	2,421	6,844
March	420	864	594	212	321	1,275	208	135	246	282	2,548	7,105
April	355	1,028	426	214	338	1,252	377	200	236	336	2,967	7,730
May	292	1,030	568	264	291	977	340	303	348	279	2,825	7,517
June	411	907	679	413	289	1,020	409	243	499	303	2,629	7,801
July	353	959	545	217	503	1,336	312	121	433	231	2,816	7,827
August	362	841	130	301	433	1,104	289	182	457	273	2,671	7,043
September	376	944	72	276	585	1,176	429	191	406	304	2,852	7,611
October	584	1,016	102	418	497	1,386	465	201	598	267	2,483	8,018
November	387	1,067	71	287	785	1,442	531	333	422	255	3,089	8,669
December	460	931	205	360	728	1,094	425	162	718	372	2,794	8,250
Average	**396**	**959**	**375**	**277**	**453**	**1,211**	**362**	**209**	**384**	**269**	**2,694**	**7,588**
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
3-Month Average	**461**	**974**	**156**	**535**	**506**	**1,244**	**475**	**129**	**472**	**331**	**2,893**	**8,175**
2018 3-Month Average	**390**	**929**	**569**	**188**	**326**	**1,250**	**255**	**190**	**155**	**203**	**2,401**	**6,855**
2017 3-Month Average	**299**	**809**	**438**	**179**	**341**	**995**	**241**	**282**	**136**	**124**	**2,195**	**6,039**

NA=Not available. – =No data reported.

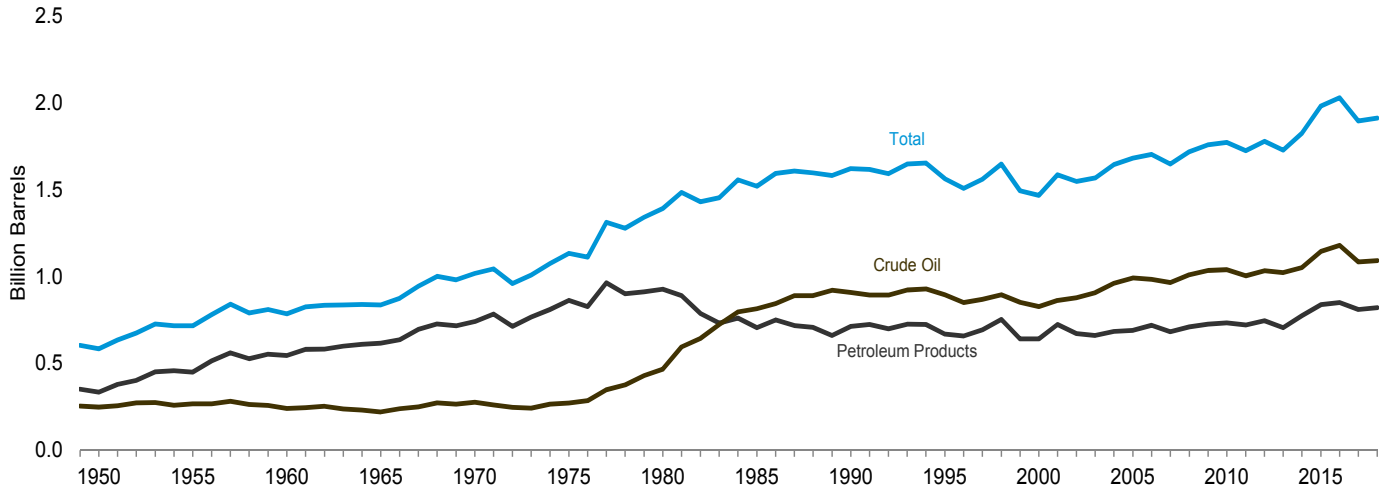
Notes: • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

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.

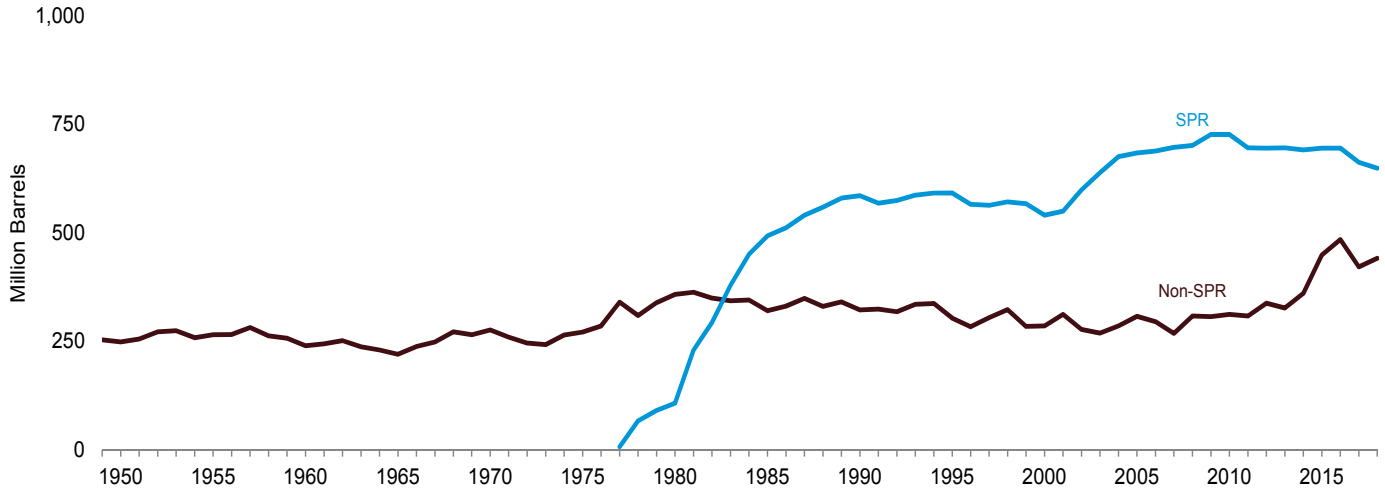
Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports. • **2018 and 2019:** EIA, *Petroleum Supply Monthly,* monthly reports.

Figure 3.4 Petroleum Stocks

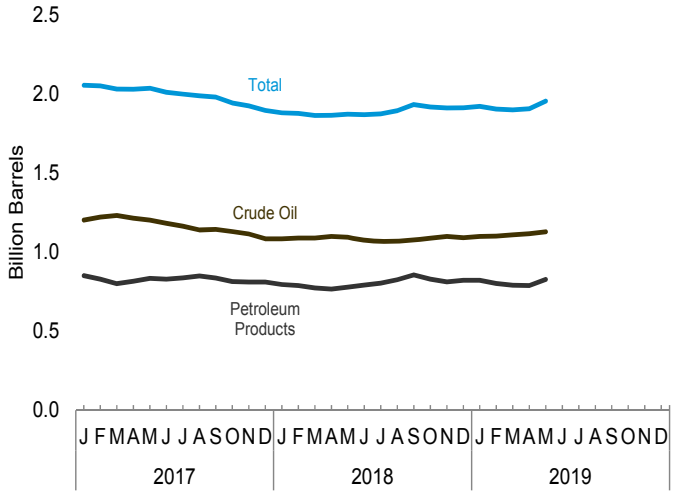
Overview, 1949–2018



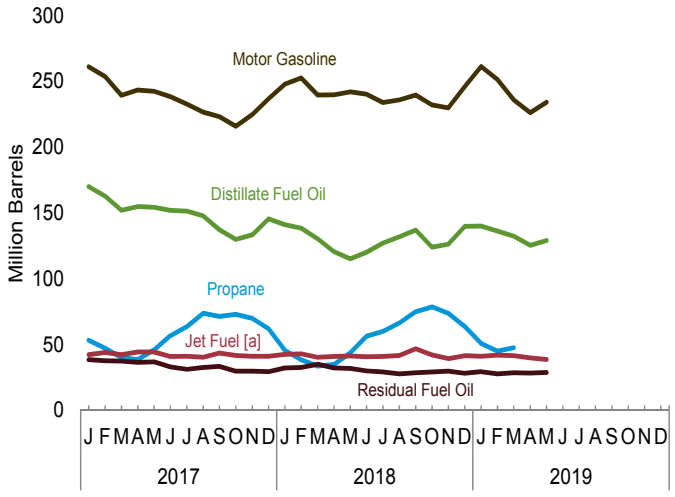
SPR and Non-SPR Crude Oil Stocks, 1949–2018



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]				Hydrocarbon Gas Liquids								
					Propane/Propylene								
	SPR[b]	Non-SPR[c,d]	Total[d]	Distillate Fuel Oil[e]	Propane	Propy-lene	Total[f]	Total[g]	Jet Fuel[h]	Motor Gasoline[i]	Residual Fuel Oil	Other[j]	Total
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	420	1,084	141	46	5	51	157	43	248	32	174	1,879
February	665	424	1,089	139	39	5	44	142	43	253	33	178	1,876
March	665	423	1,089	130	34	4	38	139	40	240	35	188	1,862
April	664	435	1,099	121	35	4	39	145	41	240	32	186	1,864
May	660	433	1,093	115	44	4	48	163	41	242	32	183	1,870
June	660	415	1,075	120	56	4	60	181	41	240	30	180	1,867
July	660	409	1,069	127	60	4	64	196	41	234	29	176	1,872
August	660	407	1,067	132	67	4	70	213	42	236	28	174	1,892
September	660	416	1,076	137	75	4	79	225	47	240	29	178	1,932
October	655	432	1,087	124	79	5	84	225	42	232	29	176	1,916
November	650	449	1,098	126	74	6	80	209	39	230	30	178	1,910
December	**649**	**442**	**1,091**	**140**	**64**	**7**	**71**	**189**	**42**	**246**	**28**	**176**	**1,912**
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	[R] 459	[R] 1,108	[R] 132	[R] 48	[R] 8	[R] 56	[R] 163	[R] 42	[R] 236	29	[R] 188	[R] 1,898
April	[E] 648	[E] 468	[E] 1,116	[E] 126	NA	NA	[E] 60	[RF] 177	[E] 40	[E] 226	[E] 28	[RE] 191	[E] 1,904
May	[E] 645	[E] 484	[E] 1,128	[E] 129	NA	NA	[E] 69	[F] 197	[E] 39	[E] 234	[E] 29	[E] 198	[E] 1,954

[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.

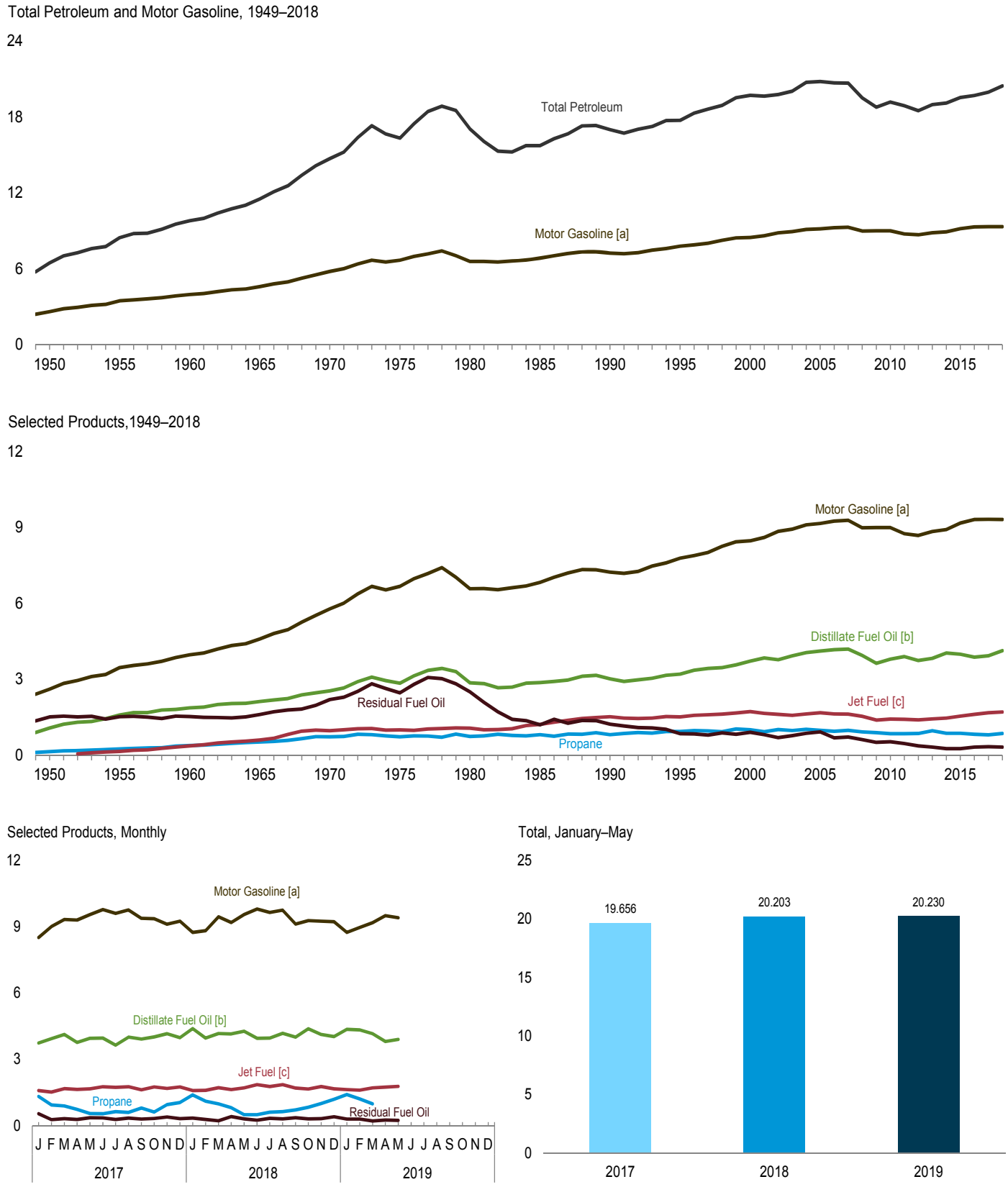
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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. • **1981–2017:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2018 and 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				Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene											
				Propane	Propylene	Total[b]	Total[c]								
1950 Average	**180**	**108**	**1,082**	**E 146**	**E 13**	**E 158**	**234**	**(d)**	**323**	**106**	**2,616**	**41**	**1,517**	**250**	**6,458**
1955 Average	**254**	**192**	**1,592**	**E 251**	**E 22**	**E 273**	**404**	**154**	**320**	**116**	**3,463**	**67**	**1,526**	**366**	**8,455**
1960 Average	**302**	**161**	**1,872**	**E 386**	**E 33**	**E 419**	**621**	**371**	**271**	**117**	**3,969**	**149**	**1,529**	**435**	**9,797**
1965 Average	**368**	**120**	**2,126**	**E 523**	**E 45**	**E 568**	**841**	**602**	**267**	**129**	**4,593**	**202**	**1,608**	**657**	**11,512**
1970 Average	**447**	**55**	**2,540**	**E 727**	**E 55**	**782**	**1,224**	**967**	**263**	**136**	**5,785**	**212**	**2,204**	**866**	**14,697**
1975 Average	**419**	**39**	**2,851**	**E 730**	**E 60**	**790**	**1,352**	**1,001**	**159**	**137**	**6,675**	**247**	**2,462**	**982**	**16,322**
1980 Average	**396**	**35**	**2,866**	**E 742**	**E 72**	**813**	**1,590**	**1,068**	**158**	**159**	**6,579**	**237**	**2,508**	**1,460**	**17,056**
1985 Average	**425**	**27**	**2,868**	**E 810**	**E 72**	**883**	**1,721**	**1,218**	**114**	**145**	**6,831**	**264**	**1,202**	**909**	**15,726**
1990 Average	**483**	**24**	**3,021**	**E 812**	**E 105**	**917**	**1,705**	**1,522**	**43**	**164**	**7,235**	**339**	**1,229**	**1,225**	**16,988**
1995 Average	**486**	**21**	**3,207**	**E 938**	**E 157**	**1,096**	**2,100**	**1,514**	**54**	**156**	**7,789**	**365**	**852**	**1,180**	**17,725**
2000 Average	**525**	**20**	**3,722**	**E 1,011**	**E 224**	**1,235**	**2,434**	**1,725**	**67**	**166**	**8,472**	**406**	**909**	**1,255**	**19,701**
2001 Average	**519**	**19**	**3,847**	**E 932**	**E 210**	**1,142**	**2,200**	**1,655**	**72**	**153**	**8,610**	**437**	**811**	**1,325**	**19,649**
2002 Average	**512**	**18**	**3,776**	**E 1,015**	**E 233**	**1,248**	**2,295**	**1,614**	**43**	**151**	**8,848**	**463**	**700**	**1,342**	**19,761**
2003 Average	**503**	**16**	**3,927**	**E 977**	**E 238**	**1,215**	**2,205**	**1,578**	**55**	**140**	**8,935**	**455**	**772**	**1,448**	**20,034**
2004 Average	**537**	**17**	**4,058**	**E 1,021**	**E 255**	**1,276**	**2,264**	**1,630**	**64**	**141**	**9,105**	**524**	**865**	**1,525**	**20,731**
2005 Average	**546**	**19**	**4,118**	**E 986**	**E 243**	**1,229**	**2,146**	**1,679**	**70**	**141**	**9,159**	**515**	**920**	**1,489**	**20,802**
2006 Average	**521**	**18**	**4,169**	**E 947**	**E 268**	**1,215**	**2,135**	**1,633**	**54**	**137**	**9,253**	**522**	**689**	**1,557**	**20,687**
2007 Average	**494**	**17**	**4,196**	**E 983**	**E 252**	**1,235**	**2,191**	**1,622**	**32**	**142**	**9,286**	**490**	**723**	**1,487**	**20,680**
2008 Average	**417**	**15**	**3,945**	**E 924**	**E 230**	**1,154**	**2,044**	**1,539**	**14**	**131**	**8,989**	**464**	**622**	**1,317**	**19,498**
2009 Average	**360**	**14**	**3,631**	**E 893**	**E 267**	**1,160**	**2,127**	**1,393**	**18**	**118**	**8,997**	**427**	**511**	**1,175**	**18,771**
2010 Average	**362**	**15**	**3,800**	**852**	**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	204	10	4,394	1,391	315	1,706	3,451	1,586	40	105	8,742	359	340	1,232	20,461
February	219	7	3,962	1,105	300	1,404	3,119	1,599	1	105	8,817	202	282	1,306	19,619
March	233	13	4,169	989	332	1,321	3,069	1,718	1	134	9,446	288	223	1,280	20,573
April	242	13	4,154	814	286	1,100	2,830	1,634	1	99	9,187	300	409	1,072	19,941
May	370	12	4,273	495	304	799	2,543	1,707	8	111	9,550	312	312	1,159	20,357
June	475	15	3,954	499	330	830	2,632	1,854	1	133	9,798	354	249	1,240	20,705
July	471	16	3,958	614	305	919	2,806	1,772	1	127	9,640	336	337	1,157	20,621
August	508	14	4,173	636	316	952	2,889	1,856	1	120	9,748	449	312	1,234	21,302
September	388	9	4,007	711	301	1,011	2,841	1,700	(s)	73	9,118	420	362	1,032	19,951
October	396	16	4,378	836	263	1,099	2,935	1,662	4	110	9,273	420	305	1,274	20,774
November	255	7	4,128	1,007	300	1,307	3,306	1,769	1	136	9,247	275	320	1,104	20,548
December	179	12	4,028	1,194	301	1,496	3,426	1,667	2	92	9,219	269	404	1,181	20,479
Average	**329**	**12**	**4,134**	**857**	**305**	**1,161**	**2,987**	**1,711**	**5**	**112**	**9,319**	**333**	**322**	**1,189**	**20,453**
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	R 238	R 12	R 4,155	R 985	R 280	R 1,265	R 3,202	R 1,709	R 4	R 67	R 9,174	R 323	R 217	R 1,103	R 20,204
April	RF 263	F 9	E 3,805	NA	NA	E 715	RF 2,939	E 1,746	RF 2	RF 143	E 9,499	F 250	E 254	RE 1,316	E 20,225
May	F 344	F 10	E 3,904	NA	NA	E 694	F 2,772	E 1,782	F 5	F 141	E 9,403	F 255	E 241	E 1,216	E 20,073
5-Month Average	**E 250**	**E 10**	**E 4,107**	**NA**	**NA**	**E 1,169**	**E 3,228**	**E 1,695**	**E 11**	**E 112**	**E 9,158**	**E 250**	**E 263**	**E 1,146**	**E 20,230**
2018 5-Month Average	**254**	**11**	**4,195**	**957**	**308**	**1,265**	**3,001**	**1,650**	**10**	**111**	**9,155**	**294**	**313**	**1,209**	**20,203**
2017 5-Month Average	**274**	**10**	**3,903**	**886**	**330**	**1,217**	**2,683**	**1,621**	**8**	**133**	**9,138**	**294**	**358**	**1,233**	**19,656**

[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.

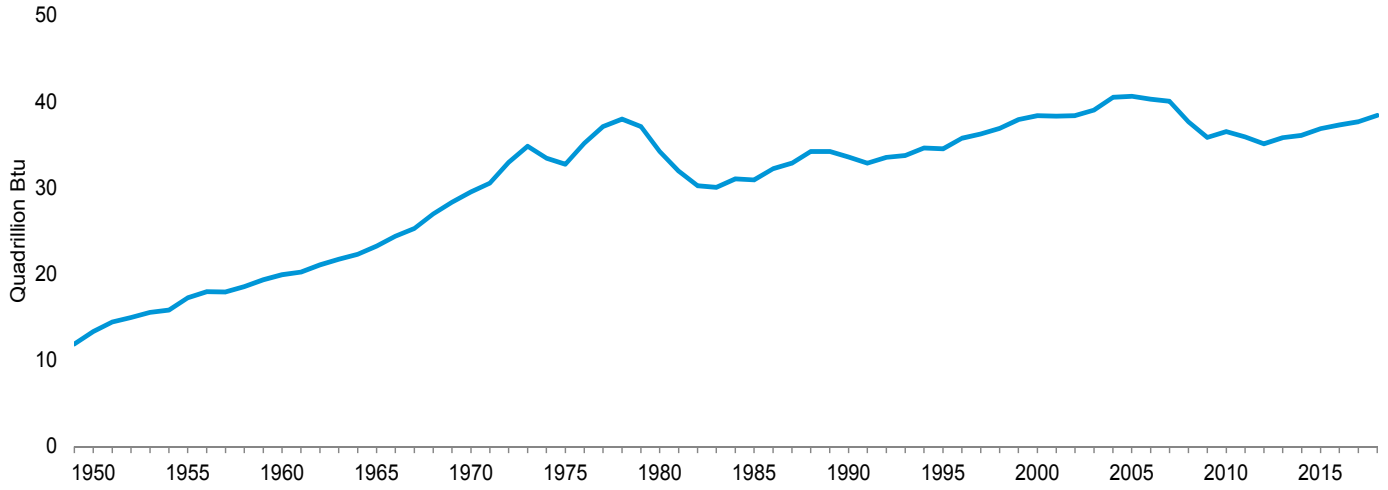
Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent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

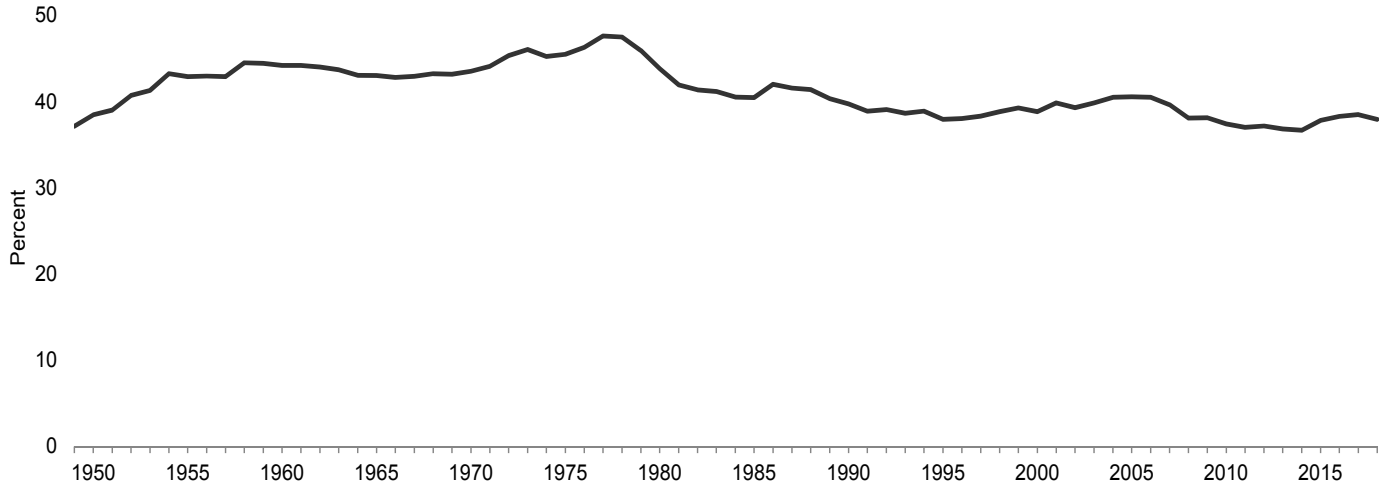
Sources: See end of section.

Figure 3.6 Heat Content of Petroleum Products Supplied by Type

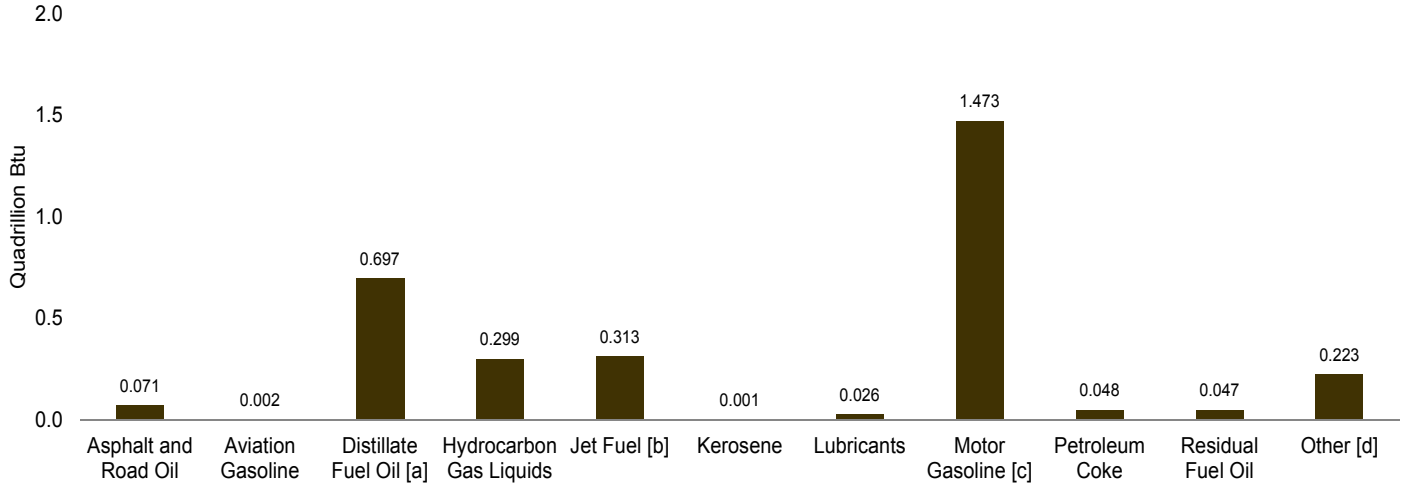
Total, 1949–2018



Petroleum Products Supplied as Share of Total Energy Consumption, 1949–2018



By Product, May 2019



[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[b]	HGL[a]		Jet Fuel[e]	Kero-sene	Lubri-cants	Motor Gasoline[f]	Petro-leum Coke	Residual Fuel Oil	Other[g]	Total
				Propane[c]	Total[d]								
1950 Total	**435**	**199**	**2,300**	**NA**	**343**	**([e])**	**668**	**236**	**5,015**	**90**	**3,482**	**546**	**13,315**
1955 Total	**615**	**354**	**3,385**	**NA**	**592**	**301**	**662**	**258**	**6,640**	**147**	**3,502**	**798**	**17,255**
1960 Total	**734**	**298**	**3,992**	**NA**	**912**	**739**	**563**	**259**	**7,631**	**328**	**3,517**	**947**	**19,919**
1965 Total	**890**	**222**	**4,519**	**NA**	**1,232**	**1,215**	**553**	**286**	**8,806**	**444**	**3,691**	**1,390**	**23,246**
1970 Total	**1,082**	**100**	**5,401**	**1,095**	**1,689**	**1,973**	**544**	**301**	**11,091**	**465**	**5,057**	**1,817**	**29,521**
1975 Total	**1,014**	**71**	**6,061**	**1,107**	**1,845**	**2,047**	**329**	**304**	**12,798**	**542**	**5,649**	**2,071**	**32,732**
1980 Total	**962**	**64**	**6,110**	**1,142**	**2,180**	**2,190**	**329**	**354**	**12,648**	**522**	**5,772**	**3,073**	**34,205**
1985 Total	**1,029**	**50**	**6,098**	**1,236**	**2,309**	**2,497**	**236**	**322**	**13,098**	**582**	**2,759**	**1,945**	**30,925**
1990 Total	**1,170**	**45**	**6,422**	**1,284**	**2,309**	**3,129**	**88**	**362**	**13,872**	**745**	**2,820**	**2,589**	**33,552**
1995 Total	**1,178**	**40**	**6,812**	**1,534**	**2,849**	**3,132**	**112**	**346**	**14,794**	**802**	**1,955**	**2,499**	**34,519**
2000 Total	**1,276**	**36**	**7,927**	**1,734**	**3,288**	**3,580**	**140**	**369**	**16,127**	**895**	**2,091**	**2,636**	**38,366**
2001 Total	**1,257**	**35**	**8,170**	**1,598**	**2,960**	**3,426**	**150**	**338**	**16,345**	**961**	**1,861**	**2,793**	**38,296**
2002 Total	**1,240**	**34**	**8,020**	**1,747**	**3,076**	**3,340**	**90**	**334**	**16,790**	**1,018**	**1,605**	**2,816**	**38,363**
2003 Total	**1,220**	**30**	**8,341**	**1,701**	**2,968**	**3,265**	**113**	**309**	**16,949**	**1,000**	**1,772**	**3,043**	**39,010**
2004 Total	**1,304**	**31**	**8,642**	**1,791**	**3,047**	**3,383**	**133**	**313**	**17,316**	**1,148**	**1,990**	**3,205**	**40,511**
2005 Total	**1,323**	**35**	**8,745**	**1,721**	**2,878**	**3,475**	**144**	**312**	**17,358**	**1,125**	**2,111**	**3,122**	**40,627**
2006 Total	**1,261**	**33**	**8,831**	**1,701**	**2,841**	**3,379**	**111**	**303**	**17,511**	**1,141**	**1,581**	**3,276**	**40,268**
2007 Total	**1,197**	**32**	**8,858**	**1,729**	**2,912**	**3,358**	**67**	**313**	**17,428**	**1,072**	**1,659**	**3,134**	**40,029**
2008 Total	**1,012**	**28**	**8,346**	**1,620**	**2,727**	**3,193**	**30**	**291**	**16,799**	**1,017**	**1,432**	**2,788**	**37,662**
2009 Total	**873**	**27**	**7,657**	**1,624**	**2,791**	**2,883**	**36**	**262**	**16,711**	**937**	**1,173**	**2,483**	**35,833**
2010 Total	**878**	**27**	**8,011**	**1,624**	**2,976**	**2,963**	**41**	**291**	**16,632**	**831**	**1,228**	**2,645**	**36,522**
2011 Total	**859**	**27**	**8,211**	**1,614**	**2,899**	**2,950**	**25**	**276**	**16,175**	**801**	**1,058**	**2,621**	**35,903**
2012 Total	**827**	**25**	**7,898**	**1,649**	**2,992**	**2,901**	**11**	**254**	**16,085**	**802**	**849**	**2,474**	**35,118**
2013 Total	**783**	**22**	**8,051**	**1,785**	**3,267**	**2,969**	**11**	**268**	**16,332**	**786**	**731**	**2,583**	**35,804**
2014 Total	**793**	**22**	**8,492**	**1,634**	**3,172**	**3,042**	**19**	**280**	**16,473**	**772**	**590**	**2,430**	**36,084**
2015 Total	**832**	**21**	**8,402**	**1,627**	**3,331**	**3,204**	**13**	**305**	**16,941**	**776**	**595**	**2,435**	**36,855**
2016 Total	**853**	**20**	**8,170**	**1,586**	**3,289**	**3,350**	**18**	**289**	**17,238**	**771**	**751**	**2,553**	**37,303**
2017 January	38	1	667	197	338	279	4	26	1,333	80	105	209	3,080
February	45	1	635	140	261	241	1	22	1,274	39	49	196	2,765
March	53	2	737	143	301	295	(s)	27	1,461	34	62	237	3,208
April	63	2	650	120	268	280	(s)	23	1,409	54	53	239	3,040
May	75	2	706	105	266	293	1	25	1,496	66	69	226	3,225
June	95	3	684	98	258	300	(s)	22	1,481	51	66	240	3,199
July	91	2	650	111	283	305	(s)	22	1,503	86	56	231	3,228
August	112	2	714	105	244	310	(s)	17	1,528	56	67	221	3,271
September	88	1	677	123	250	277	2	21	1,422	64	57	204	3,062
October	85	1	716	111	288	308	(s)	23	1,466	33	63	224	3,207
November	61	2	718	146	306	287	1	22	1,381	73	74	217	3,142
December	43	2	710	165	340	309	(s)	18	1,448	73	61	224	3,228
Total	**849**	**21**	**8,263**	**1,564**	**3,403**	**3,481**	**11**	**267**	**17,201**	**708**	**784**	**2,667**	**37,656**
2018 January	42	1	785	203	381	279	7	20	1,370	68	66	227	3,246
February	41	1	639	151	311	254	(s)	18	1,248	35	50	217	2,813
March	48	2	744	157	332	302	(s)	25	1,480	55	43	236	3,268
April	48	2	718	127	296	278	(s)	18	1,393	55	77	192	3,077
May	76	2	763	95	273	300	1	21	1,496	59	61	215	3,267
June	95	2	683	95	274	315	(s)	24	1,486	65	47	222	3,213
July	97	3	707	109	303	312	(s)	24	1,510	64	66	215	3,299
August	104	2	745	113	314	326	(s)	22	1,527	85	61	228	3,416
September	77	1	692	116	298	289	(s)	13	1,382	77	68	185	3,085
October	81	3	782	131	322	292	1	21	1,453	80	59	234	3,327
November	51	1	713	150	351	301	(s)	25	1,402	50	60	198	3,153
December	37	2	719	178	378	293	(s)	17	1,444	51	79	218	3,240
Total	**797**	**22**	**8,689**	**1,626**	**3,833**	**3,541**	**11**	**248**	**17,191**	**743**	**738**	**2,588**	**38,401**
2019 January	42	2	778	203	407	286	5	21	1,370	54	59	205	3,229
February	36	1	699	159	354	255	3	16	1,268	22	53	163	2,869
March	R 49	R 2	R 742	R 150	R 350	R 300	R 1	R 13	R 1,437	R 61	R 42	R 204	R 3,201
April	RF 52	F 1	E 657	E 82	RF 308	E 297	F (s)	RF 26	E 1,440	F 46	E 48	RE 245	E 3,121
May	F 71	F 2	E 697	E 83	F 299	E 313	F 1	F 26	E 1,473	F 48	E 47	E 223	E 3,201
5-Month Total	**E 250**	**E 8**	**E 3,572**	**E 677**	**E 1,717**	**E 1,451**	**E 9**	**E 103**	**E 6,989**	**E 231**	**E 249**	**E 1,040**	**E 15,621**
2018 5-Month Total	**255**	**8**	**3,649**	**732**	**1,593**	**1,412**	**9**	**102**	**6,986**	**272**	**297**	**1,087**	**15,670**
2017 5-Month Total	**274**	**8**	**3,394**	**705**	**1,434**	**1,388**	**7**	**122**	**6,973**	**273**	**339**	**1,107**	**15,319**

[a] Hydrocarbon gas liquids.

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

[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 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.")

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

[g] 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.

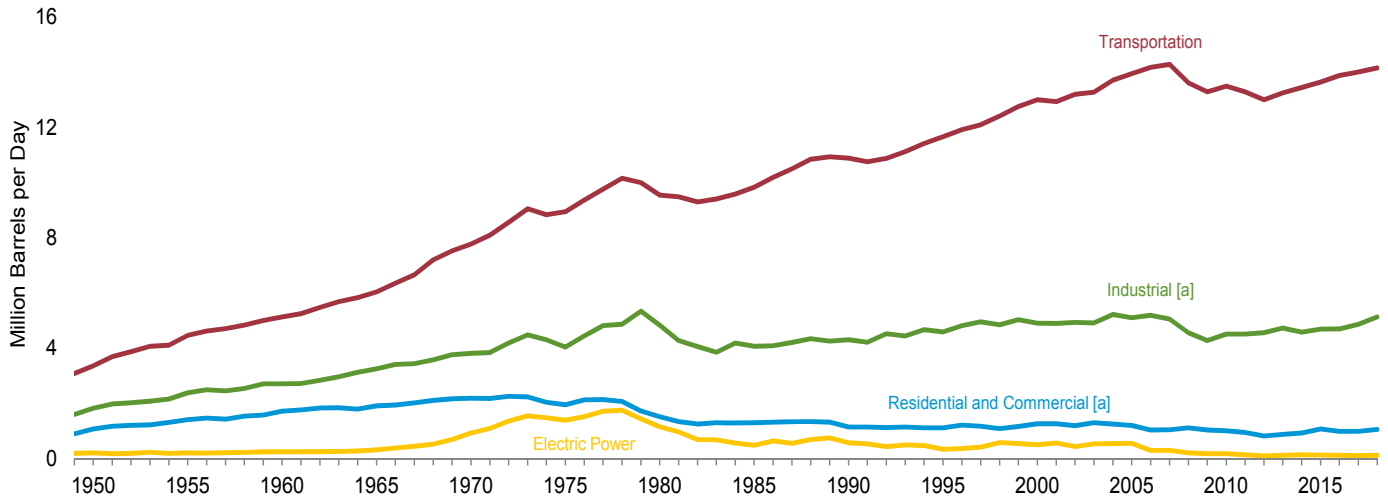
Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent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

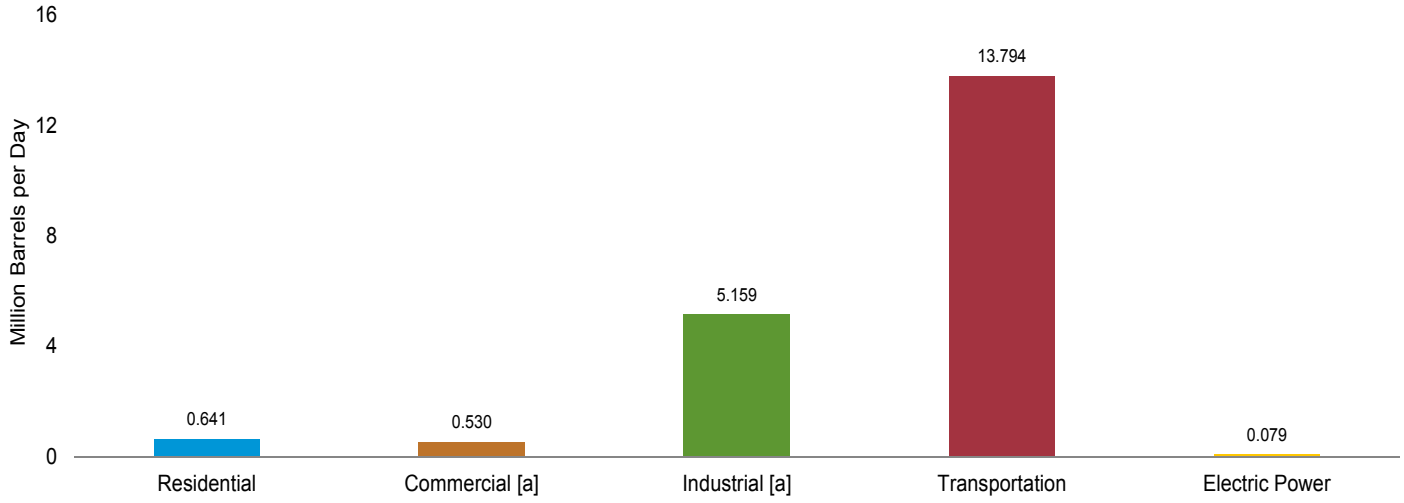
Sources: See end of section.

Figure 3.7 Petroleum Consumption by Sector

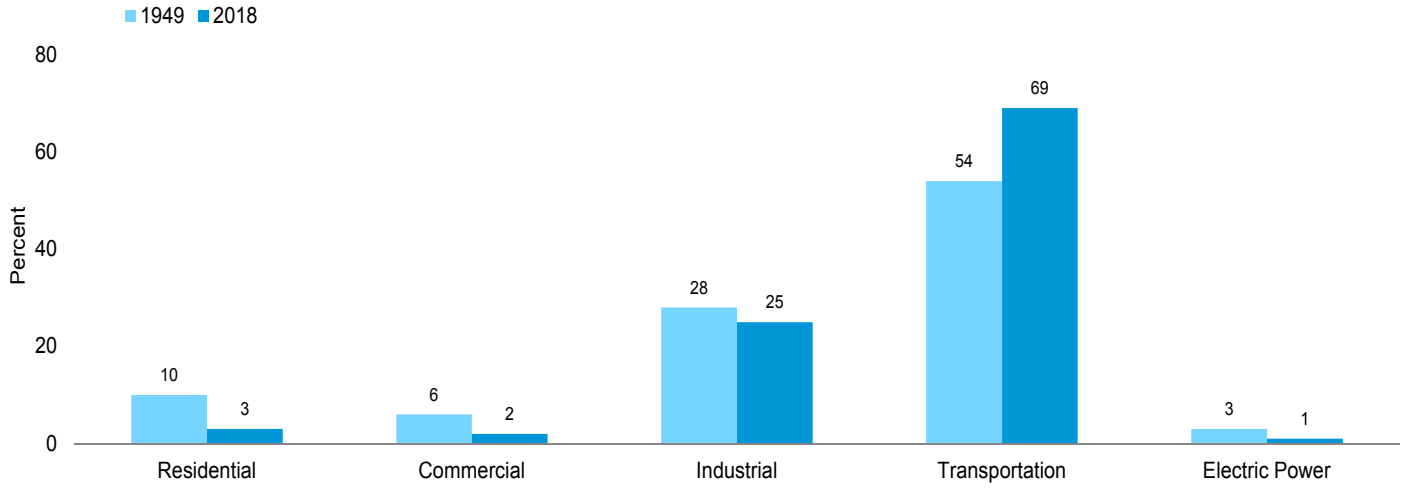
By Sector, 1949–2018



By Sector, March 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	358	19	708	248	129	3	178	(s)	3	561
February	273	310	7	590	204	112	1	189	(s)	2	508
March	232	317	2	551	173	115	(s)	196	(s)	2	486
April	192	293	2	486	143	106	(s)	195	(s)	2	446
May	133	283	2	418	99	102	(s)	200	(s)	1	403
June	165	297	1	463	123	107	(s)	205	(s)	1	437
July	101	304	(s)	406	76	110	(s)	201	(s)	1	388
August	132	262	1	394	98	95	(s)	205	(s)	1	399
September	132	272	11	415	99	98	2	197	(s)	1	397
October	168	290	1	458	125	105	(s)	196	(s)	1	428
November	259	338	3	600	193	122	(s)	191	(s)	2	509
December	350	362	1	712	261	131	(s)	194	(s)	3	589
Average	**205**	**307**	**4**	**517**	**153**	**111**	**1**	**196**	**(s)**	**2**	**462**
2018 January	416	406	31	853	310	147	4	183	(s)	3	648
February	296	365	1	662	221	132	(s)	185	(s)	2	541
March	222	360	(s)	583	166	130	(s)	198	(s)	2	496
April	212	332	1	546	158	120	(s)	193	(s)	2	473
May	126	295	6	427	94	107	1	200	0	1	403
June	101	307	1	408	75	111	(s)	206	0	1	392
July	91	322	(s)	414	68	116	(s)	202	0	1	388
August	77	329	(s)	406	58	119	(s)	204	0	1	382
September	110	322	(s)	433	82	116	(s)	191	(s)	1	391
October	228	336	3	568	170	121	(s)	194	(s)	2	489
November	304	378	1	683	227	137	(s)	194	(s)	2	560
December	403	391	2	795	301	141	(s)	193	(s)	3	639
Average	**215**	**345**	**4**	**565**	**161**	**125**	**1**	**195**	**(s)**	**2**	**483**
2019 January	369	417	20	806	275	151	3	183	(s)	3	615
February	[R] 340	410	13	[R] 763	[R] 254	148	2	188	(s)	2	[R] 594
March	272	366	3	641	203	132	(s)	192	(s)	2	530
3-Month Average	**326**	**397**	**12**	**736**	**244**	**144**	**2**	**188**	**(s)**	**2**	**579**
2018 3-Month Average	**312**	**377**	**11**	**701**	**233**	**136**	**2**	**189**	**(s)**	**2**	**562**
2017 3-Month Average	**279**	**329**	**9**	**617**	**208**	**119**	**1**	**188**	**(s)**	**2**	**519**

[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]										
	Asphalt and Road Oil	Distillate Fuel Oil	HGL[b]		Kerosene	Lubricants	Motor Gasoline[e,f]	Petroleum Coke	Residual Fuel Oil	Other[g]	Total
			Propane[c]	Total[d]							
1950 Average	**180**	**328**	**NA**	**100**	**132**	**43**	**131**	**41**	**617**	**250**	**1,822**
1955 Average	**254**	**466**	**NA**	**212**	**116**	**47**	**173**	**67**	**686**	**366**	**2,387**
1960 Average	**302**	**476**	**NA**	**333**	**78**	**48**	**198**	**149**	**689**	**435**	**2,708**
1965 Average	**368**	**541**	**NA**	**470**	**80**	**62**	**179**	**202**	**689**	**657**	**3,247**
1970 Average	**447**	**577**	**256**	**699**	**89**	**70**	**150**	**203**	**708**	**866**	**3,808**
1975 Average	**419**	**630**	**302**	**863**	**58**	**68**	**116**	**246**	**658**	**982**	**4,038**
1980 Average	**396**	**621**	**516**	**1,293**	**87**	**82**	**82**	**234**	**586**	**1,460**	**4,842**
1985 Average	**425**	**526**	**569**	**1,408**	**21**	**75**	**114**	**261**	**326**	**909**	**4,065**
1990 Average	**483**	**541**	**576**	**1,364**	**6**	**84**	**97**	**325**	**179**	**1,225**	**4,304**
1995 Average	**486**	**532**	**723**	**1,727**	**7**	**80**	**105**	**328**	**147**	**1,180**	**4,594**
2000 Average	**525**	**563**	**724**	**1,923**	**8**	**86**	**79**	**361**	**105**	**1,255**	**4,903**
2001 Average	**519**	**611**	**654**	**1,713**	**11**	**79**	**155**	**390**	**89**	**1,325**	**4,892**
2002 Average	**512**	**566**	**754**	**1,801**	**7**	**78**	**163**	**383**	**83**	**1,342**	**4,934**
2003 Average	**503**	**551**	**701**	**1,691**	**12**	**72**	**171**	**375**	**96**	**1,448**	**4,918**
2004 Average	**537**	**570**	**790**	**1,778**	**14**	**73**	**195**	**423**	**108**	**1,525**	**5,222**
2005 Average	**546**	**594**	**749**	**1,666**	**19**	**72**	**187**	**404**	**123**	**1,489**	**5,100**
2006 Average	**521**	**594**	**789**	**1,710**	**14**	**71**	**198**	**425**	**104**	**1,557**	**5,193**
2007 Average	**494**	**595**	**787**	**1,744**	**6**	**73**	**161**	**412**	**84**	**1,487**	**5,056**
2008 Average	**417**	**637**	**619**	**1,510**	**2**	**67**	**131**	**394**	**84**	**1,317**	**4,559**
2009 Average	**360**	**509**	**650**	**1,617**	**2**	**61**	**128**	**363**	**57**	**1,175**	**4,272**
2010 Average	**362**	**547**	**677**	**1,782**	**4**	**61**	**140**	**310**	**52**	**1,251**	**4,510**
2011 Average	**355**	**586**	**694**	**1,783**	**2**	**58**	**138**	**295**	**59**	**1,240**	**4,515**
2012 Average	**340**	**602**	**792**	**1,915**	**1**	**53**	**136**	**319**	**30**	**1,165**	**4,562**
2013 Average	**323**	**601**	**831**	**2,058**	**1**	**57**	**142**	**295**	**21**	**1,227**	**4,724**
2014 Average	**327**	**648**	**698**	**1,974**	**1**	**59**	**114**	**290**	**18**	**1,151**	**4,582**
2015 Average	**343**	**555**	**734**	**2,124**	**1**	**64**	[f] **140**	**295**	**15**	**1,153**	**4,689**
2016 Average	**351**	**548**	**712**	**2,119**	**1**	**61**	**142**	**289**	**23**	**1,170**	**4,702**
2017 January	183	539	1,159	2,555	2	64	131	360	34	1,133	5,001
February	242	652	879	2,228	1	60	138	180	17	1,180	4,698
March	260	748	768	2,292	(s)	67	143	139	21	1,288	4,957
April	316	477	641	2,121	(s)	60	143	265	18	1,338	4,738
May	367	610	490	2,061	(s)	61	147	293	22	1,227	4,789
June	475	519	441	2,069	(s)	56	150	221	22	1,345	4,858
July	443	370	516	2,168	(s)	54	147	397	18	1,251	4,848
August	543	547	522	1,889	(s)	43	150	247	21	1,195	4,635
September	444	590	697	1,973	1	54	144	301	19	1,137	4,663
October	411	616	533	2,215	(s)	58	144	138	20	1,214	4,817
November	308	695	807	2,436	(s)	57	140	347	28	1,219	5,231
December	209	509	887	2,619	(s)	44	142	337	21	1,214	5,095
Average	**351**	**572**	**694**	**2,220**	**1**	**56**	**143**	**269**	**22**	**1,228**	**4,862**
2018 January	204	701	1,147	2,891	4	49	134	303	22	1,232	5,540
February	219	575	902	2,617	(s)	49	135	153	17	1,306	5,072
March	233	712	825	2,573	(s)	63	145	249	14	1,280	5,269
April	242	614	642	2,372	(s)	47	141	260	25	1,072	4,772
May	370	730	392	2,136	1	52	147	287	19	1,159	4,900
June	475	495	407	2,209	(s)	62	151	305	17	1,240	4,954
July	471	488	475	2,362	(s)	60	148	282	20	1,157	4,988
August	508	622	500	2,436	(s)	56	150	397	19	1,234	5,421
September	388	585	568	2,397	(s)	34	140	369	22	1,032	4,969
October	396	696	636	2,472	(s)	52	142	390	19	1,274	5,441
November	255	552	787	2,785	(s)	63	142	234	20	1,104	5,157
December	179	425	957	2,888	(s)	43	142	221	25	1,181	5,105
Average	**329**	**600**	**686**	**2,511**	**1**	**53**	**143**	**289**	**20**	**1,189**	**5,135**
2019 January	206	809	1,131	3,097	3	53	134	236	19	1,109	5,664
February	193	[R] 753	919	3,017	2	45	138	78	18	973	[R] 5,218
March	238	651	760	2,697	(s)	32	141	283	14	1,103	5,159
3-Month Average	**213**	**737**	**937**	**2,934**	**2**	**43**	**138**	**203**	**17**	**1,064**	**5,352**
2018 3-Month Average	**218**	**666**	**960**	**2,696**	**1**	**54**	**138**	**238**	**18**	**1,271**	**5,301**
2017 3-Month Average	**228**	**646**	**937**	**2,363**	**1**	**64**	**137**	**228**	**24**	**1,201**	**4,892**

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[b] Hydrocarbon gas liquids.
[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] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.
[f] 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.
[g] 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. 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 3.7c 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]	Lubri-cants	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	6	1,588	72	8,198	476	12,937	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	4	1,762	49	9,397	294	14,726	20	47	30	97
September	10	3,078	4	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	6	1,756	50	8,911	239	13,780	50	46	51	147
Average	**11**	**2,976**	**5**	**1,682**	**64**	**8,988**	**290**	**14,016**	**26**	**47**	**29**	**101**
2018 January	10	2,801	7	1,586	56	8,424	209	13,092	166	56	106	328
February	7	2,849	6	1,599	56	8,497	239	13,252	20	49	24	93
March	13	3,048	6	1,718	71	9,103	186	14,145	20	39	21	80
April	13	3,146	5	1,634	53	8,853	359	14,063	23	40	24	87
May	12	3,298	5	1,707	59	9,203	266	14,549	26	25	26	78
June	15	3,257	5	1,854	71	9,442	202	14,845	26	49	30	105
July	16	3,289	5	1,772	68	9,289	288	14,728	21	54	28	103
August	14	3,394	5	1,856	64	9,393	262	14,988	22	52	31	105
September	9	3,208	5	1,700	39	8,786	306	14,054	20	51	33	105
October	16	3,262	5	1,662	59	8,936	256	14,196	22	29	29	80
November	7	3,020	6	1,769	72	8,911	273	14,058	24	40	26	90
December	12	2,875	6	1,667	49	8,884	354	13,848	23	47	22	93
Average	**12**	**3,122**	**6**	**1,711**	**60**	**8,981**	**266**	**14,158**	**35**	**44**	**34**	**113**
2019 January	11	2,870	7	1,629	60	8,425	250	13,251	33	49	33	115
February	9	[R] 2,962	7	1,603	51	8,637	259	[R] 13,528	22	48	21	91
March	12	3,009	6	1,709	36	8,841	181	13,794	20	39	20	79
3-Month Average	**11**	**2,946**	**6**	**1,649**	**49**	**8,635**	**229**	**13,524**	**25**	**45**	**25**	**95**
2018 3-Month Average	**10**	**2,901**	**6**	**1,635**	**61**	**8,681**	**210**	**13,505**	**70**	**48**	**51**	**169**
2017 3-Month Average	**10**	**2,772**	**5**	**1,596**	**72**	**8,619**	**331**	**13,406**	**27**	**49**	**26**	**102**

[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.

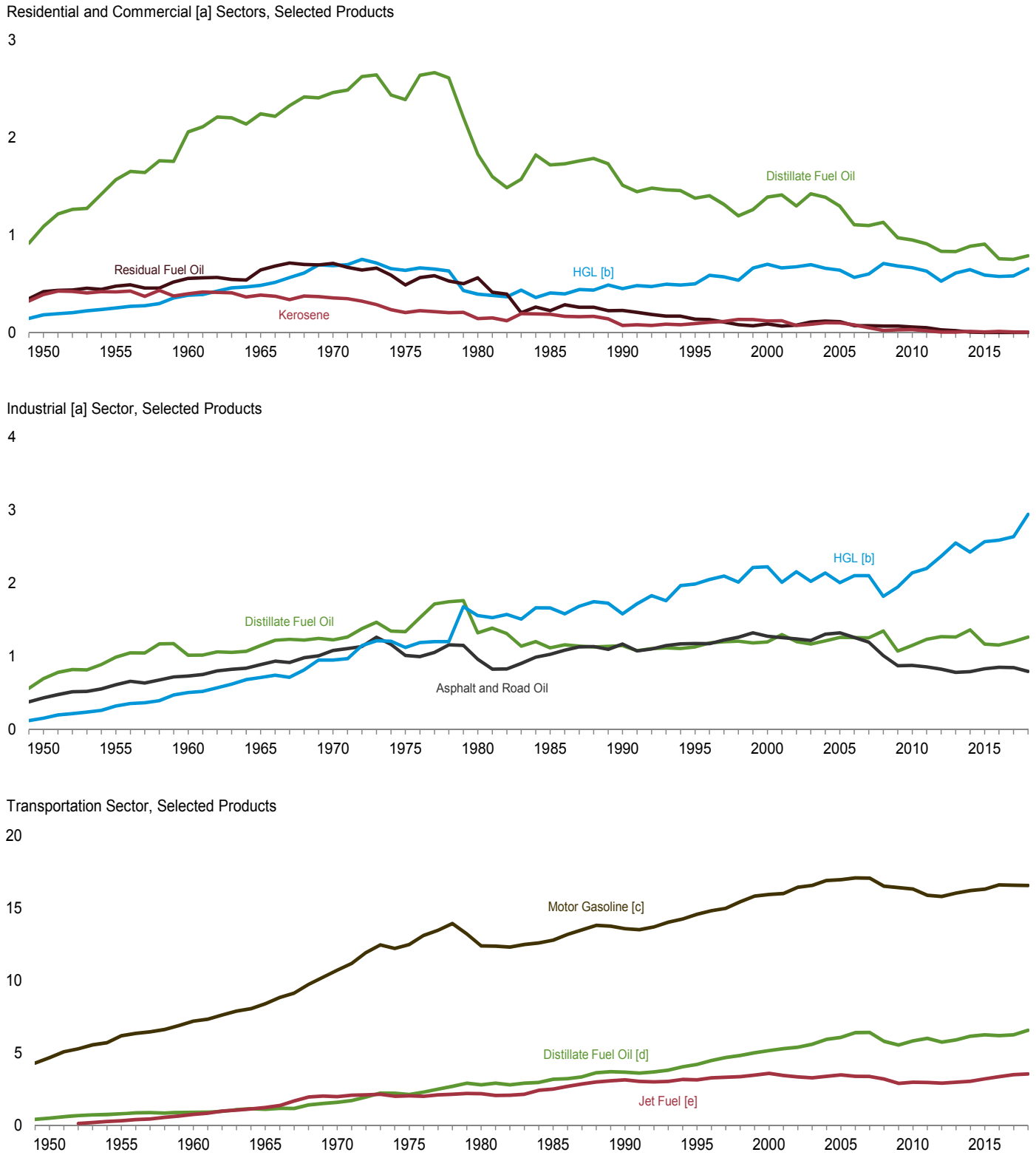
Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c.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

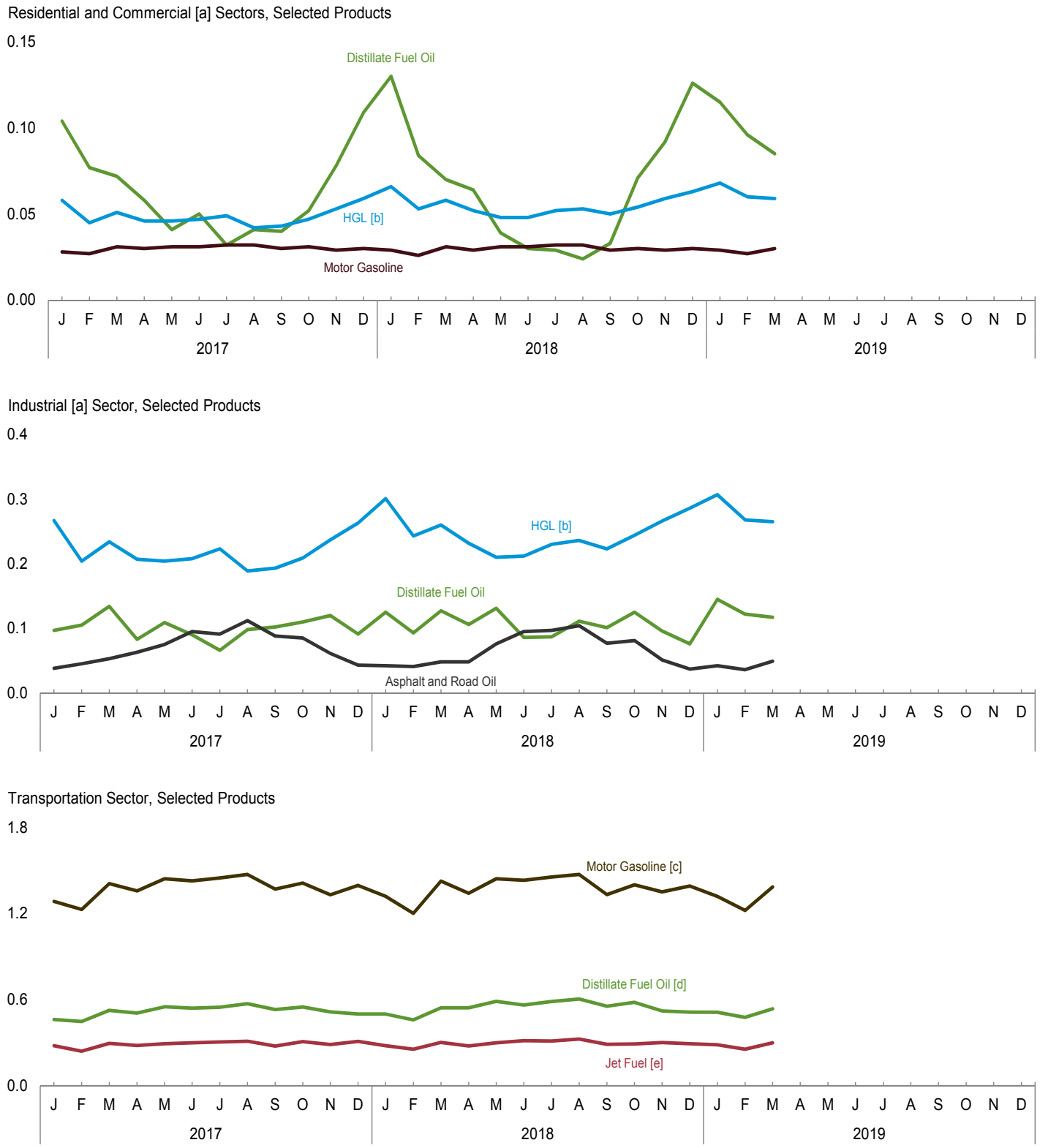


[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[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**	**2,227**	**494**	**81**	**48**	**67**	**NA**	**559**	**1,248**
1965 Total	**1,713**	**385**	**334**	**2,432**	**534**	**103**	**54**	**77**	**NA**	**645**	**1,413**
1970 Total	**1,878**	**549**	**298**	**2,725**	**587**	**143**	**61**	**86**	**NA**	**714**	**1,592**
1975 Total	**1,807**	**512**	**161**	**2,479**	**587**	**129**	**49**	**89**	**NA**	**492**	**1,346**
1980 Total	**1,316**	**311**	**107**	**1,734**	**518**	**88**	**41**	**107**	**NA**	**565**	**1,318**
1985 Total	**1,092**	**314**	**159**	**1,565**	**631**	**95**	**33**	**96**	**NA**	**228**	**1,083**
1990 Total	**978**	**352**	**64**	**1,394**	**536**	**102**	**12**	**111**	**0**	**230**	**991**
1995 Total	**904**	**395**	**74**	**1,373**	**478**	**109**	**22**	**18**	**(s)**	**141**	**769**
2000 Total	**904**	**555**	**95**	**1,553**	**490**	**150**	**30**	**44**	**(s)**	**92**	**807**
2001 Total	**907**	**526**	**95**	**1,528**	**508**	**143**	**31**	**37**	**(s)**	**70**	**789**
2002 Total	**859**	**537**	**60**	**1,456**	**444**	**141**	**16**	**45**	**(s)**	**80**	**725**
2003 Total	**931**	**544**	**70**	**1,546**	**496**	**157**	**19**	**60**	**(s)**	**111**	**842**
2004 Total	**923**	**512**	**85**	**1,519**	**470**	**152**	**20**	**45**	**(s)**	**122**	**810**
2005 Total	**853**	**513**	**84**	**1,450**	**447**	**131**	**22**	**46**	**(s)**	**116**	**762**
2006 Total	**709**	**446**	**66**	**1,221**	**400**	**123**	**15**	**48**	**(s)**	**75**	**662**
2007 Total	**721**	**484**	**44**	**1,249**	**381**	**121**	**9**	**60**	**(s)**	**75**	**648**
2008 Total	**750**	**553**	**21**	**1,324**	**384**	**158**	**4**	**45**	**(s)**	**71**	**662**
2009 Total	**582**	**547**	**28**	**1,157**	**395**	**139**	**4**	**52**	**(s)**	**71**	**662**
2010 Total	**562**	**529**	**29**	**1,120**	**391**	**140**	**5**	**52**	**(s)**	**62**	**650**
2011 Total	**523**	**492**	**19**	**1,033**	**391**	**142**	**3**	**44**	**(s)**	**54**	**635**
2012 Total	**482**	**395**	**8**	**885**	**355**	**135**	**1**	**39**	**(s)**	**31**	**562**
2013 Total	**491**	**463**	**8**	**963**	**344**	**151**	**1**	**40**	**(s)**	**24**	**561**
2014 Total	**533**	**489**	**14**	**1,036**	**357**	**160**	**2**	**54**	**1**	**8**	**581**
2015 Total	**551**	**445**	**10**	**1,007**	**360**	**148**	**1**	**[d] 376**	**1**	**4**	**890**
2016 Total	**435**	**429**	**14**	**878**	**326**	**150**	**2**	**375**	**(s)**	**4**	**857**
2017 January	59	43	3	105	44	15	(s)	28	(s)	1	89
February	44	33	1	79	33	12	(s)	27	(s)	(s)	72
March	41	38	(s)	80	31	14	(s)	31	(s)	(s)	76
April	33	34	(s)	67	25	12	(s)	30	(s)	(s)	67
May	24	34	(s)	58	18	12	(s)	31	(s)	(s)	62
June	29	34	(s)	63	21	12	(s)	31	(s)	(s)	65
July	18	36	(s)	54	14	13	(s)	32	(s)	(s)	58
August	24	31	(s)	55	18	11	(s)	32	(s)	(s)	61
September	23	31	2	56	17	11	(s)	30	(s)	(s)	59
October	30	34	(s)	65	22	12	(s)	31	(s)	(s)	66
November	45	39	(s)	84	33	14	(s)	29	(s)	(s)	77
December	63	43	(s)	106	47	16	(s)	30	(s)	1	93
Total	**432**	**430**	**8**	**871**	**323**	**155**	**1**	**361**	**(s)**	**4**	**844**
2018 January	74	48	6	128	56	17	1	29	(s)	1	103
February	48	39	(s)	87	36	14	(s)	26	(s)	(s)	77
March	40	43	(s)	83	30	15	(s)	31	(s)	(s)	77
April	37	38	(s)	75	27	14	(s)	29	(s)	(s)	71
May	22	35	1	59	17	13	(s)	31	0	(s)	61
June	17	35	(s)	53	13	13	(s)	31	0	(s)	57
July	16	38	(s)	55	12	14	(s)	32	0	(s)	58
August	14	39	(s)	53	10	14	(s)	32	0	(s)	57
September	19	37	(s)	56	14	13	(s)	29	(s)	(s)	57
October	41	40	1	81	30	14	(s)	30	(s)	(s)	76
November	53	43	(s)	96	39	16	(s)	29	(s)	(s)	85
December	72	46	(s)	119	54	17	(s)	30	(s)	1	102
Total	**454**	**483**	**8**	**945**	**339**	**175**	**1**	**361**	**(s)**	**4**	**879**
2019 January	66	50	4	119	49	18	1	29	(s)	1	97
February	55	44	2	101	41	16	(s)	27	(s)	(s)	84
March	49	44	1	93	36	16	(s)	30	(s)	(s)	83
3-Month Total	**170**	**137**	**6**	**313**	**127**	**50**	**1**	**85**	**(s)**	**1**	**264**
2018 3-Month Total	**162**	**130**	**6**	**298**	**121**	**47**	**1**	**86**	**(s)**	**1**	**256**
2017 3-Month Total	**145**	**114**	**5**	**263**	**108**	**41**	**1**	**85**	**(s)**	**1**	**237**

[a] Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.
[d] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.
NA=Not available. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • Data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.
Sources: See end of section.

Table 3.8b Heat Content of Petroleum Consumption: Industrial Sector

(Trillion Btu)

	Industrial Sector[a]										
	Asphalt and Road Oil	Distillate Fuel Oil	HGL[b]		Kerosene	Lubricants	Motor Gasoline[e,f]	Petroleum Coke	Residual Fuel Oil	Other[g]	Total
			Propane[c]	Total[d]							
1950 Total	**435**	**698**	**NA**	**156**	**274**	**94**	**251**	**90**	**1,416**	**546**	**3,960**
1955 Total	**615**	**991**	**NA**	**323**	**241**	**103**	**332**	**147**	**1,573**	**798**	**5,123**
1960 Total	**734**	**1,016**	**NA**	**507**	**161**	**107**	**381**	**328**	**1,584**	**947**	**5,766**
1965 Total	**890**	**1,150**	**NA**	**712**	**165**	**137**	**342**	**444**	**1,582**	**1,390**	**6,813**
1970 Total	**1,082**	**1,226**	**359**	**953**	**185**	**155**	**288**	**446**	**1,624**	**1,817**	**7,776**
1975 Total	**1,014**	**1,339**	**422**	**1,161**	**119**	**149**	**223**	**540**	**1,509**	**2,071**	**8,127**
1980 Total	**962**	**1,324**	**725**	**1,763**	**181**	**182**	**158**	**516**	**1,349**	**3,073**	**9,509**
1985 Total	**1,029**	**1,119**	**797**	**1,871**	**44**	**166**	**218**	**575**	**748**	**1,945**	**7,714**
1990 Total	**1,170**	**1,150**	**807**	**1,832**	**12**	**186**	**185**	**714**	**411**	**2,589**	**8,251**
1995 Total	**1,178**	**1,130**	**1,013**	**2,328**	**15**	**178**	**200**	**721**	**337**	**2,499**	**8,586**
2000 Total	**1,276**	**1,199**	**1,016**	**2,571**	**16**	**190**	**150**	**796**	**241**	**2,636**	**9,074**
2001 Total	**1,257**	**1,299**	**916**	**2,278**	**23**	**174**	**295**	**858**	**203**	**2,793**	**9,179**
2002 Total	**1,240**	**1,203**	**1,055**	**2,383**	**14**	**172**	**308**	**842**	**190**	**2,816**	**9,169**
2003 Total	**1,220**	**1,169**	**981**	**2,249**	**24**	**159**	**323**	**825**	**220**	**3,043**	**9,233**
2004 Total	**1,304**	**1,213**	**1,109**	**2,364**	**28**	**161**	**371**	**937**	**249**	**3,205**	**9,832**
2005 Total	**1,323**	**1,262**	**1,049**	**2,205**	**39**	**160**	**354**	**894**	**281**	**3,122**	**9,641**
2006 Total	**1,261**	**1,258**	**1,105**	**2,244**	**30**	**156**	**374**	**938**	**239**	**3,276**	**9,776**
2007 Total	**1,197**	**1,256**	**1,102**	**2,285**	**13**	**161**	**302**	**910**	**193**	**3,134**	**9,451**
2008 Total	**1,012**	**1,348**	**870**	**1,976**	**4**	**150**	**245**	**870**	**194**	**2,788**	**8,587**
2009 Total	**873**	**1,073**	**910**	**2,077**	**4**	**135**	**238**	**805**	**130**	**2,483**	**7,818**
2010 Total	**878**	**1,153**	**947**	**2,300**	**7**	**136**	**260**	**694**	**120**	**2,645**	**8,193**
2011 Total	**859**	**1,236**	**972**	**2,257**	**4**	**127**	**254**	**663**	**135**	**2,621**	**8,157**
2012 Total	**827**	**1,271**	**1,112**	**2,455**	**2**	**118**	**252**	**717**	**70**	**2,474**	**8,186**
2013 Total	**783**	**1,266**	**1,164**	**2,646**	**1**	**125**	**263**	**663**	**48**	**2,583**	**8,380**
2014 Total	**793**	**1,366**	**977**	**2,516**	**3**	**131**	**210**	**653**	**41**	**2,430**	**8,142**
2015 Total	**832**	**1,170**	**1,027**	**2,731**	**2**	**142**	[f] **258**	**663**	**34**	**2,435**	**8,266**
2016 Total	**853**	**1,157**	**1,000**	**2,703**	**2**	**135**	**262**	**653**	**52**	**2,553**	**8,371**
2017 January	38	97	138	279	(s)	12	20	69	7	209	731
February	45	105	94	215	(s)	10	20	32	3	196	626
March	53	134	91	249	(s)	13	22	27	4	237	739
April	63	83	74	222	(s)	11	22	49	3	239	691
May	75	109	58	220	(s)	12	23	56	4	226	726
June	95	90	51	211	(s)	10	23	41	4	240	714
July	91	66	61	233	(s)	10	23	76	3	231	734
August	112	98	62	201	(s)	8	23	48	4	221	715
September	88	102	80	207	(s)	10	22	56	4	204	692
October	85	110	63	241	(s)	11	23	27	4	224	723
November	61	120	93	252	(s)	10	21	64	5	217	753
December	43	91	105	281	(s)	8	22	65	4	224	738
Total	**849**	**1,205**	**972**	**2,810**	**1**	**125**	**264**	**610**	**50**	**2,667**	**8,582**
2018 January	42	125	136	314	1	9	21	58	4	227	802
February	41	93	97	257	(s)	8	19	27	3	217	665
March	48	127	98	273	(s)	12	23	48	3	236	770
April	48	106	74	243	(s)	8	21	48	5	192	672
May	76	131	47	225	(s)	10	23	55	4	215	737
June	95	86	47	225	(s)	11	23	57	3	222	722
July	97	87	56	250	(s)	11	23	54	4	215	742
August	104	111	59	260	(s)	11	23	76	4	228	818
September	77	101	65	247	(s)	6	21	68	4	185	711
October	81	125	76	267	(s)	10	22	74	4	234	817
November	51	96	91	291	(s)	12	22	43	4	198	716
December	37	76	114	315	(s)	8	22	43	5	218	724
Total	**797**	**1,265**	**960**	**3,167**	**1**	**116**	**264**	**650**	**46**	**2,588**	**8,895**
2019 January	42	145	134	338	(s)	10	21	45	4	205	811
February	36	122	99	293	(s)	8	19	14	3	163	658
March	49	117	90	290	(s)	6	22	54	3	204	744
3-Month Total	**127**	**383**	**324**	**921**	**1**	**24**	**63**	**114**	**10**	**572**	**2,213**
2018 3-Month Total	**130**	**346**	**331**	**845**	**1**	**29**	**63**	**133**	**10**	**680**	**2,237**
2017 3-Month Total	**136**	**336**	**324**	**743**	**1**	**35**	**63**	**128**	**14**	**642**	**2,096**

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[b] Hydrocarbon gas liquids.
[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] Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.
[f] 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.
[g] 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.

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 3.8c 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**	**15,310**	**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**	**27**	**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**	**16,422**	**791**	**25,814**	**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	2,134	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	2,362	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	500	1	279	10	1,320	41	2,152	30	10	21	60
February	1	459	1	254	10	1,202	42	1,969	3	8	4	15
March	2	544	1	302	13	1,426	36	2,324	4	7	4	15
April	2	543	1	278	10	1,342	68	2,243	4	7	4	15
May	2	588	1	300	11	1,442	52	2,396	5	4	5	14
June	2	562	1	315	13	1,432	38	2,363	5	8	6	19
July	3	587	1	312	13	1,455	56	2,426	4	10	6	19
August	2	605	1	326	12	1,472	51	2,469	4	9	6	19
September	1	554	1	289	7	1,332	58	2,242	4	9	6	19
October	3	582	1	292	11	1,400	50	2,338	4	5	6	15
November	1	521	1	301	13	1,351	51	2,240	4	7	5	16
December	2	513	1	293	9	1,392	69	2,279	4	8	4	17
Total	**22**	**6,559**	**8**	**3,541**	**132**	**16,567**	**612**	**27,440**	**73**	**92**	**77**	**243**
2019 January	2	512	1	286	11	1,320	49	2,181	6	9	6	21
February	1	R 477	1	255	9	1,222	46	R 2,010	4	8	4	15
March	2	537	1	300	7	1,385	35	2,267	4	7	4	14
3-Month Total	**5**	**1,526**	**2**	**841**	**27**	**3,928**	**130**	**6,458**	**13**	**23**	**14**	**50**
2018 3-Month Total	**5**	**1,503**	**2**	**835**	**33**	**3,948**	**119**	**6,445**	**36**	**25**	**29**	**90**
2017 3-Month Total	**4**	**1,436**	**2**	**815**	**39**	**3,920**	**187**	**6,403**	**14**	**25**	**15**	**54**

[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.)

1981–2017: 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.)

2018 and 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.)

1981–2017: 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.)

2018 and 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 (Including Propylene)

Product supplied data in thousand barrels per day for propane (including 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.

1981–2017: EIA, *Petroleum Supply Annual (PSA)*, annual reports, and unpublished revisions.

2018 and 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 (Including Propylene) and Total

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.

The annual shares of LPG total consumption that are estimated to be used by each sector are applied to each month's total LPG consumption to create monthly sector consumption estimates. The annual sector shares are calculated as described below.

Annual residential sector LPG consumption: Through 2002, residential sector LPG 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, residential sector LPG consumption is assumed to equal propane retail sales to the residential sector and sales to retailers/cylinder markets.

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

Annual transportation sector LPG consumption: Through 2009, transportation sector LPG 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, transportation sector LPG consumption is from EIA, *Annual Energy Outlook*, Table 37, “Transportation Sector Energy Use by Fuel Type within a Mode.”

Annual industrial sector LPG consumption: Industrial sector LPG is estimated as the difference between LPG total product supplied and the sum of the estimated LPG consumption by the residential, commercial, and transportation sectors. The industrial sector LPG consumption includes LPG used by chemical plants as raw materials or solvents and used in the production of synthetic rubber; refinery fuel use; use as synthetic natural gas feedstock and use in secondary recovery projects; all farm use; LPG sold to gas utility companies for distribution through the mains; and a portion of the use of LPG as an internal combustion engine fuel.

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.

Residential sector propane consumption is equal to residential sector LPG consumption.

Commercial sector propane consumption is equal to commercial sector LPG consumption.

Transportation sector propane consumption is equal to transportation sector LPG consumption.

Industrial sector propane (including propylene) consumption is equal to propane and propylene product supplied from the PSA, PSM, and earlier publications (see sources for Table 3.5), minus propane consumption in the residential, commercial, and transportation sectors.

Industrial sector total HGL consumption: Product supplied data in thousand barrels per day for natural gasoline are from the PSA, PSM, and earlier publications (see sources for Table 3.5). Industrial sector total HGL consumption is the sum of industrial sector LPG consumption and natural gasoline product supplied.

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 HGL are from Table 3.7a, and are converted to trillion Btu by multiplying by the propane/propylene heat content factor in Table A1.

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 (Including Propylene)
Industrial sector consumption data in thousand barrels per day for HGL are from Table 3.7b, and are converted to trillion Btu by multiplying by the propane/propylene heat content factor in Table A1.

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 HGL are from Table 3.7c, and are converted to trillion Btu by multiplying by the propane/propylene heat content factor in Table A1.

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.

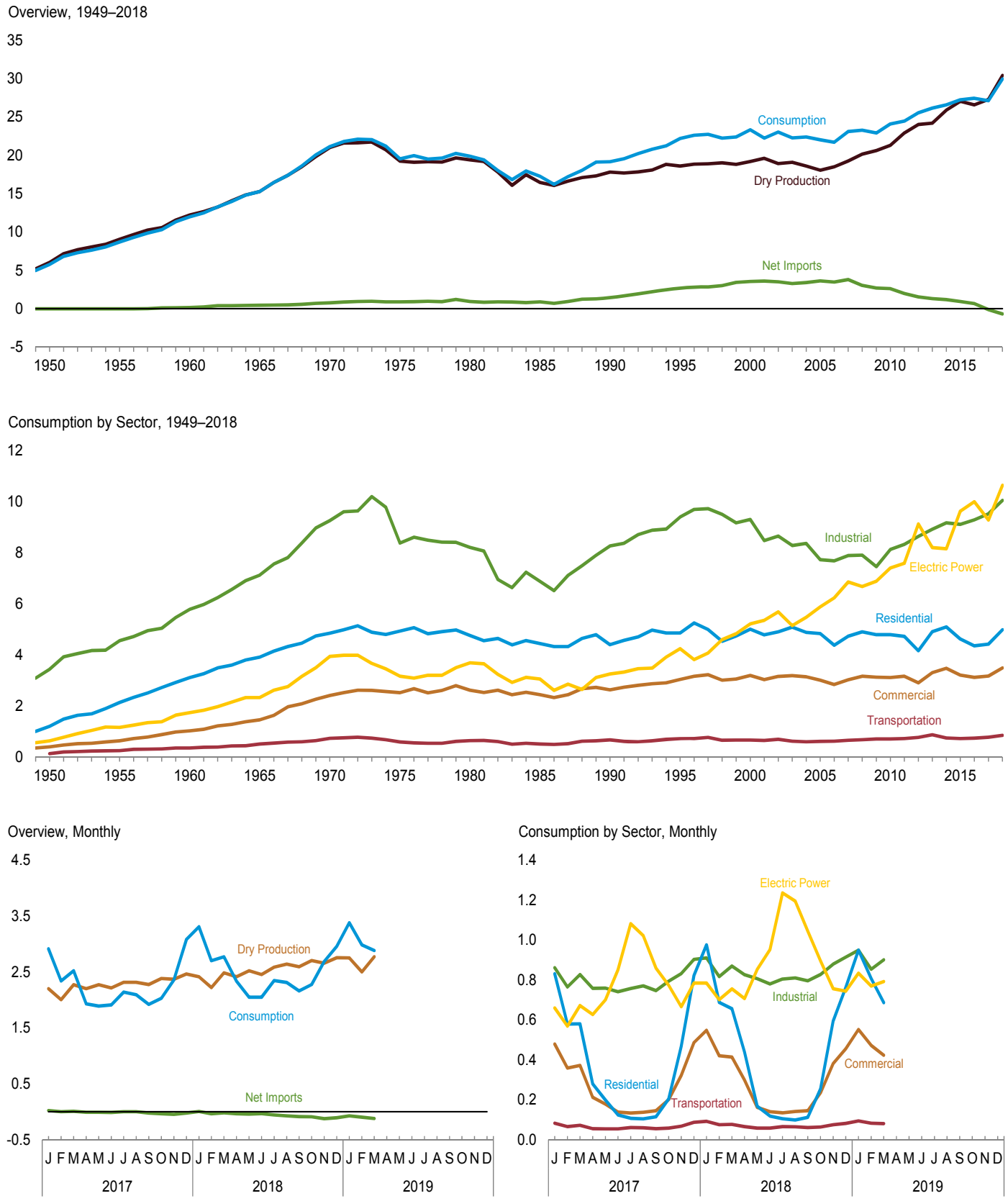
Total Petroleum

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.

4. Natural Gas

Figure 4.1 Natural Gas

(Trillion Cubic Feet)



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

Table 4.1 Natural Gas Overview

(Billion Cubic Feet)

	Gross Withdrawals[a]	Marketed Production (Wet)[b]	NGPL Production[c]	Dry Gas Production[d]	Supplemental Gaseous Fuels[e]	Trade			Net Storage Withdrawals[f]	Balancing Item[g]	Consumption[h]
						Imports	Exports	Net Imports			
1950 Total	**8,480**	[i] **6,282**	**260**	[i] **6,022**	**NA**	**0**	**26**	**-26**	**-54**	**-175**	**5,767**
1955 Total	**11,720**	[i] **9,405**	**377**	[i] **9,029**	**NA**	**11**	**31**	**-20**	**-68**	**-247**	**8,694**
1960 Total	**15,088**	[i] **12,771**	**543**	[i] **12,228**	**NA**	**156**	**11**	**144**	**-132**	**-274**	**11,967**
1965 Total	**17,963**	[i] **16,040**	**753**	[i] **15,286**	**NA**	**456**	**26**	**430**	**-118**	**-319**	**15,280**
1970 Total	**23,786**	[i] **21,921**	**906**	[i] **21,014**	**NA**	**821**	**70**	**751**	**-398**	**-228**	**21,139**
1975 Total	**21,104**	[i] **20,109**	**872**	[i] **19,236**	**NA**	**953**	**73**	**880**	**-344**	**-235**	**19,538**
1980 Total	**21,870**	**20,180**	**777**	**19,403**	**155**	**985**	**49**	**936**	**23**	**-640**	**19,877**
1985 Total	**19,607**	**17,270**	**816**	**16,454**	**126**	**950**	**55**	**894**	**235**	**-428**	**17,281**
1990 Total	**21,523**	**18,594**	**784**	**17,810**	**123**	**1,532**	**86**	**1,447**	**-513**	**307**	[j] **19,174**
1995 Total	**23,744**	**19,506**	**908**	**18,599**	**110**	**2,841**	**154**	**2,687**	**415**	**396**	**22,207**
2000 Total	**24,174**	**20,198**	**1,016**	**19,182**	**90**	**3,782**	**244**	**3,538**	**829**	**-306**	**23,333**
2001 Total	**24,501**	**20,570**	**954**	**19,616**	**86**	**3,977**	**373**	**3,604**	**-1,166**	**99**	**22,239**
2002 Total	**23,941**	**19,885**	**957**	**18,928**	**68**	**4,015**	**516**	**3,499**	**467**	**65**	**23,027**
2003 Total	**24,119**	**19,974**	**876**	**19,099**	**68**	**3,944**	**680**	**3,264**	**-197**	**44**	**22,277**
2004 Total	**23,970**	**19,517**	**927**	**18,591**	**60**	**4,259**	**854**	**3,404**	**-114**	**461**	**22,403**
2005 Total	**23,457**	**18,927**	**876**	**18,051**	**64**	**4,341**	**729**	**3,612**	**52**	**236**	**22,014**
2006 Total	**23,535**	**19,410**	**906**	**18,504**	**66**	**4,186**	**724**	**3,462**	**-436**	**103**	**21,699**
2007 Total	**24,664**	**20,196**	**930**	**19,266**	**63**	**4,608**	**822**	**3,785**	**192**	**-203**	**23,104**
2008 Total	**25,636**	**21,112**	**953**	**20,159**	**61**	**3,984**	**963**	**3,021**	**34**	**2**	**23,277**
2009 Total	**26,057**	**21,648**	**1,024**	**20,624**	**65**	**3,751**	**1,072**	**2,679**	**-355**	**-103**	**22,910**
2010 Total	**26,816**	**22,382**	**1,066**	**21,316**	**65**	**3,741**	**1,137**	**2,604**	**-13**	**115**	**24,087**
2011 Total	**28,479**	**24,036**	**1,134**	**22,902**	**60**	**3,469**	**1,506**	**1,963**	**-354**	**-94**	**24,477**
2012 Total	**29,542**	**25,283**	**1,250**	**24,033**	**61**	**3,138**	**1,619**	**1,519**	**-9**	**-66**	**25,538**
2013 Total	**29,523**	**25,562**	**1,357**	**24,206**	**55**	**2,883**	**1,572**	**1,311**	**546**	**38**	**26,155**
2014 Total	**31,405**	**27,498**	**1,608**	**25,890**	**60**	**2,695**	**1,514**	**1,181**	**-254**	**-283**	**26,593**
2015 Total	**32,915**	**28,772**	**1,707**	**27,065**	**59**	**2,718**	**1,784**	**935**	**-547**	**-268**	**27,244**
2016 Total	**32,592**	**28,400**	**1,808**	**26,592**	**57**	**3,006**	**2,335**	**671**	**340**	**-216**	**27,444**
2017 January	2,749	2,355	154	2,202	5	292	272	20	687	-1	2,913
February	2,505	2,146	140	2,005	5	255	255	(s)	292	38	2,339
March	2,812	2,431	159	2,272	5	281	272	9	281	-45	2,523
April	2,703	2,355	154	2,201	5	238	247	-9	-236	-31	1,931
May	2,787	2,430	159	2,271	5	244	254	-10	-348	-28	1,891
June	2,693	2,370	155	2,215	5	240	253	-14	-287	-11	1,909
July	2,764	2,479	162	2,317	6	251	248	2	-155	-29	2,140
August	2,781	2,478	162	2,316	6	248	247	1	-201	-28	2,093
September	2,767	2,434	159	2,275	5	229	250	-21	-323	-17	1,920
October	2,907	2,550	166	2,384	6	244	281	-37	-254	-69	2,030
November	2,884	2,535	165	2,370	6	244	288	-45	90	-66	2,355
December	3,006	2,635	172	2,463	6	278	299	-22	707	-72	3,083
Total	**33,357**	**29,197**	**1,906**	**27,291**	**66**	**3,042**	**3,168**	**-125**	**254**	**-360**	**27,126**
2018 January	[E] 2,959	[E] 2,586	171	[E] 2,415	6	304	301	3	896	-10	3,310
February	[E] 2,724	[E] 2,385	163	[E] 2,222	6	241	276	-36	467	42	2,701
March	[E] 3,048	[E] 2,673	188	[E] 2,485	6	274	292	-18	285	15	2,773
April	[E] 2,960	[E] 2,598	185	[E] 2,413	5	244	279	-35	-32	-14	2,337
May	[E] 3,082	[E] 2,713	193	[E] 2,521	5	229	273	-44	-423	-11	2,047
June	[E] 2,955	[E] 2,641	188	[E] 2,453	6	230	[R] 263	[R] -32	-349	[R] -28	2,050
July	[E] 3,108	[E] 2,784	198	[E] 2,585	5	249	[R] 307	[R] -58	-186	[R] (s)	2,346
August	[E] 3,180	[E] 2,845	205	[E] 2,640	6	239	[R] 312	[R] -73	-235	[R] -26	2,311
September	[E] 3,135	[E] 2,790	199	[E] 2,591	6	216	[R] 302	[R] -86	-334	[R] -17	2,159
October	[E] 3,272	[E] 2,909	206	[E] 2,703	6	217	[R] 307	[R] -90	-291	[R] -52	2,276
November	[E] 3,233	[E] 2,855	198	[E] 2,657	6	213	[R] 338	[R] -125	205	[R] -55	2,688
December	[E] 3,353	[E] 2,957	200	[E] 2,756	5	257	[R] 363	[R] -106	320	[R] -17	2,959
Total	[E] **37,009**	[E] **32,735**	**2,295**	[E] **30,440**	**68**	**2,914**	[R] **3,614**	[R] **-700**	**323**	[R] **-173**	**29,958**
2019 January	[RE] 3,356	[RE] 2,955	204	[RE] 2,751	5	[R] 291	[R] 365	[R] -74	709	[R] -11	3,379
February	[RE] 3,044	[RE] 2,691	191	[RE] 2,501	6	[R] 233	[R] 329	[R] -96	568	[R] 6	2,985
March	[E] 3,364	[E] 2,984	213	[E] 2,771	6	253	372	-119	245	-20	2,882
3-Month Total	[E] **9,764**	[E] **8,630**	**608**	[E] **8,022**	**17**	**777**	**1,067**	**-289**	**1,522**	**-25**	**9,246**
2018 3-Month Total	[E] **8,731**	[E] **7,644**	**522**	[E] **7,122**	**19**	**819**	**869**	**-51**	**1,647**	**47**	**8,784**
2017 3-Month Total	**8,065**	**6,932**	**452**	**6,479**	**16**	**827**	**799**	**28**	**1,260**	**-9**	**7,775**

[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: 1949–2017—**U.S. Energy Information Administration (EIA), *Natural Gas Annual,* annual reports. **2018 forward—**EIA, *Natural Gas Monthly,* May 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	136	27	272
February	0	246	0	(s)	0	0	8	0	255	88	4	130	34	255
March	0	276	0	(s)	0	0	5	0	281	100	0	140	33	272
April	0	233	0	(s)	0	0	5	0	238	81	7	130	29	247
May	0	239	0	(s)	0	0	5	0	244	64	4	139	47	254
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	248
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	136	44	250
October	0	242	0	(s)	0	0	2	0	244	68	7	140	66	281
November	0	237	0	(s)	0	0	6	0	244	74	0	145	69	288
December	0	266	0	1	3	0	8	0	278	81	14	139	65	299
Total	**0**	**2,965**	**0**	**1**	**6**	**0**	**70**	**0**	**3,042**	**917**	**53**	**1,684**	**513**	**3,168**
2018 January	0	287	0	(s)	0	0	14	3	304	92	4	147	58	301
February	0	233	0	1	0	0	7	0	241	77	7	R 140	52	276
March	0	268	0	(s)	0	0	4	3	274	68	0	161	63	292
April	0	241	0	(s)	0	0	3	0	244	63	11	142	64	279
May	0	227	0	(s)	0	0	2	0	229	40	13	R 151	68	273
June	0	228	0	(s)	0	0	3	0	230	52	10	R 164	37	R 263
July	0	243	0	1	0	0	5	0	249	58	13	R 172	64	R 307
August	0	233	0	1	0	0	5	0	239	66	10	R 175	60	R 312
September	0	213	0	(s)	0	0	3	0	216	71	17	R 161	54	R 302
October	0	212	0	(s)	0	0	6	0	217	65	3	R 159	80	R 307
November	0	210	0	(s)	0	0	3	0	213	90	R 24	R 147	R 77	R 338
December	0	243	0	(s)	3	0	12	0	257	100	14	R 151	98	R 363
Total	**0**	**2,836**	**0**	**3**	**3**	**0**	**66**	**6**	**2,914**	**843**	**R 126**	**R 1,871**	**R 775**	**R 3,614**
2019 January	0	R 276	0	(s)	0	0	12	3	R 291	87	14	R 165	99	R 365
February	0	R 226	0	(s)	0	0	7	0	R 233	92	10	R 142	86	R 329
March	0	249	0	(s)	0	0	3	0	253	93	7	156	117	372
3-Month Total	**0**	**752**	**0**	**(s)**	**0**	**0**	**23**	**3**	**777**	**272**	**31**	**463**	**301**	**1,067**
2018 3-Month Total	**0**	**788**	**0**	**1**	**0**	**0**	**24**	**6**	**819**	**237**	**11**	**449**	**173**	**869**
2017 3-Month Total	**0**	**800**	**0**	**(s)**	**3**	**0**	**24**	**0**	**827**	**286**	**14**	**405**	**93**	**799**

[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." • **1988–2017:** EIA, *Natural Gas Annual,* annual reports. • **2018 forward:** EIA, *Natural Gas Monthly,* May 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	126	107	628	735	861	78	4	83	660	2,913
February	579	359	115	97	554	650	765	63	4	66	569	2,339
March	580	372	130	103	594	697	827	68	4	72	672	2,523
April	279	212	126	99	533	632	758	51	4	55	627	1,931
May	199	178	130	102	527	629	759	50	4	54	700	1,891
June	124	138	127	104	510	615	741	50	4	54	851	1,909
July	107	134	133	112	512	624	757	56	4	61	1,082	2,140
August	104	137	133	108	529	638	770	56	4	60	1,022	2,093
September	115	145	130	103	513	616	747	51	4	55	859	1,920
October	205	201	137	104	553	657	794	54	4	58	773	2,030
November	468	322	136	104	593	696	832	63	4	67	666	2,355
December	822	487	141	115	647	761	903	83	4	87	785	3,083
Total	**4,412**	**3,164**	**1,564**	**1,257**	**6,693**	**7,949**	**9,514**	**722**	**49**	**770**	**9,266**	**27,126**
2018 January	976	548	[E] 139	115	656	771	910	[E] 88	[E] 4	[E] 92	785	3,310
February	687	420	[E] 128	101	588	689	817	[E] 72	[E] 3	[E] 75	701	2,701
March	656	414	[E] 143	107	620	727	870	[E] 74	[E] 4	[E] 77	755	2,773
April	439	299	[E] 139	104	582	687	826	[E] 62	[E] 4	[E] 66	707	2,337
May	168	162	[E] 145	104	556	660	806	[E] 54	[E] 4	[E] 58	853	2,047
June	119	140	[E] 142	107	532	639	780	[E] 55	[E] 4	[E] 58	952	2,050
July	105	135	[E] 149	112	543	655	804	[E] 62	[E] 4	[E] 66	1,236	2,346
August	99	141	[E] 152	113	545	658	810	[E] 62	[E] 4	[E] 65	1,195	2,311
September	112	145	[E] 149	108	538	647	796	[E] 57	[E] 4	[E] 61	1,045	2,159
October	255	235	[E] 156	107	564	671	827	[E] 61	[E] 4	[E] 64	895	2,276
November	595	382	[E] 153	114	612	726	879	[E] 72	[E] 4	[E] 75	756	2,688
December	763	455	[E] 158	117	639	756	914	[E] 79	[E] 4	[E] 82	744	2,959
Total	**4,975**	**3,477**	**[E] 1,754**	**1,310**	**6,976**	**8,286**	**10,040**	**[E] 797**	**[E] 43**	**[E] 841**	**10,626**	**29,958**
2019 January	949	552	[E] 158	120	671	791	949	[E] 90	[E] 4	[E] 94	834	3,379
February	807	472	[E] 144	107	[R] 603	710	854	[E] 79	[E] 4	[E] 83	769	2,985
March	686	423	[E] 160	111	630	741	901	[E] 77	[E] 4	[E] 81	792	2,882
3-Month Total	**2,442**	**1,447**	**[E] 462**	**339**	**1,903**	**2,242**	**2,704**	**[E] 246**	**[E] 12**	**[E] 258**	**2,396**	**9,246**
2018 3-Month Total	**2,319**	**1,382**	**[E] 410**	**323**	**1,864**	**2,187**	**2,597**	**[E] 234**	**[E] 11**	**[E] 244**	**2,242**	**8,784**
2017 3-Month Total	**1,990**	**1,210**	**371**	**307**	**1,775**	**2,082**	**2,453**	**209**	**12**	**221**	**1,901**	**7,775**

[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: 1949–2017—**U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA),* annual reports and unpublished revisions. **2018 forward—**EIA, *Natural Gas Monthly (NGM),* May 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). **1999–2017—**EIA, NGA, annual reports. **2018 forward—**EIA, NGM, May 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	-481	-18.4	1,037	141	896
February	4,357	1,673	6,030	-664	-28.4	599	133	467
March	4,353	1,391	5,744	-672	-32.6	449	164	285
April	4,350	1,427	5,778	-864	-37.7	224	256	-32
May	4,352	1,848	6,200	-778	-29.6	66	489	-423
June	4,354	2,196	6,550	-711	-24.5	88	436	-349
July	4,354	2,382	6,736	-672	-22.0	175	362	-186
August	4,355	2,618	6,973	-632	-19.5	172	407	-235
September	4,356	2,951	7,307	-616	-17.3	130	464	-334
October	4,357	3,237	7,594	-580	-15.2	131	422	-291
November	4,356	3,031	7,387	-678	-18.3	418	213	205
December	4,361	2,709	7,070	-324	-10.7	511	191	320
Total	**4,361**	**2,709**	**7,070**	**-324**	**-10.7**	**3,999**	**3,676**	**323**
2019 January	4,366	1,994	6,360	-147	-6.9	804	95	709
February	4,366	1,426	5,792	-247	-14.8	672	104	568
March	4,360	1,185	5,545	-206	-14.8	435	190	245
3-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**1,911**	**389**	**1,522**
2018 3-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**2,085**	**437**	**1,647**
2017 3-Month Total	**– –**	**– –**	**– –**	**– –**	**– –**	**1,659**	**424**	**1,234**

[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 1980–2017, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.
[c] Positive numbers indicate that withdrawals are greater than injections. Negative numbers indicate that injections are greater than withdrawals. Net withdrawals or injections may not equal the difference between applicable ending stocks. See Note 4, "Natural Gas Storage," at end of section.
– – =Not applicable. NA=Not available.
Notes: • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia (except Alaska, which is excluded through 2012).
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#naturalgas (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.
Sources: • **Storage Activity: 1949–1975—**U.S. Energy Information Administration (EIA), *Natural Gas Annual 1994, Volume 2,* Table 9. **1976–1979—**EIA, *Natural Gas Production and Consumption 1979,* Table 1. **1980–1995—**EIA, *Historical Natural Gas Annual 1930 Through 2000,* Table 11. **1996–2014—**EIA, *Natural Gas Monthly (NGM),* monthly issues. **2015 forward—**EIA, NGM, May 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." **1996–2017—**EIA, NGA, annual reports. **2018 forward—**EIA, NGM, May 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	P9,240	

P=Preliminary

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 (178 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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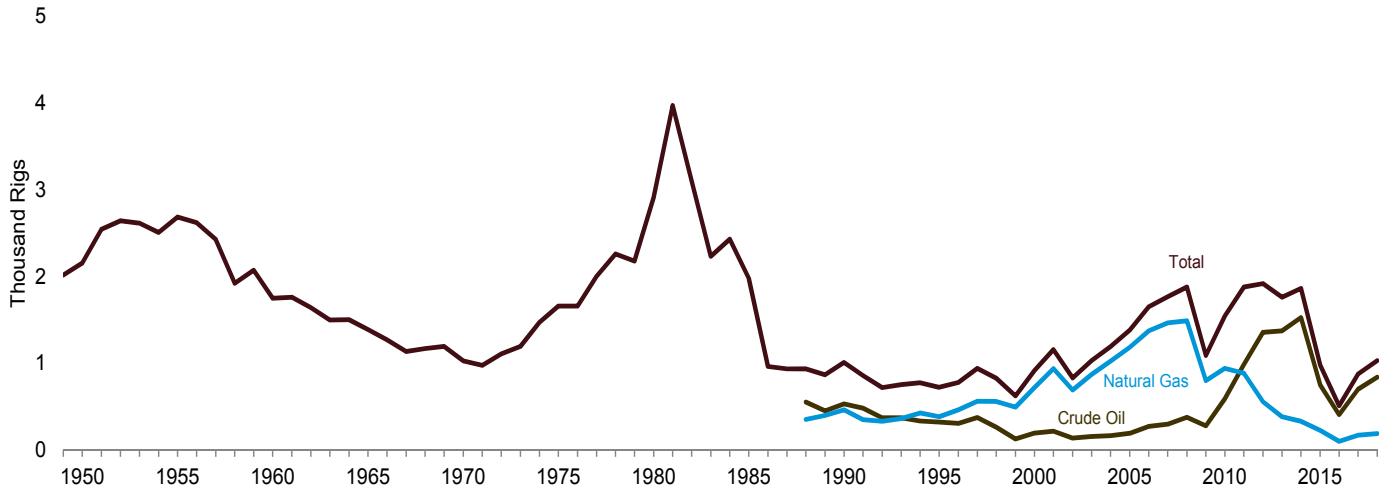
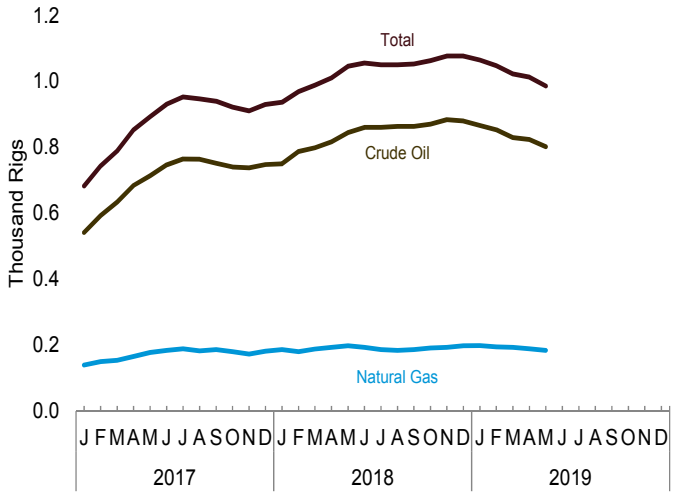
5. Crude Oil and Natural Gas Resource Development

Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators

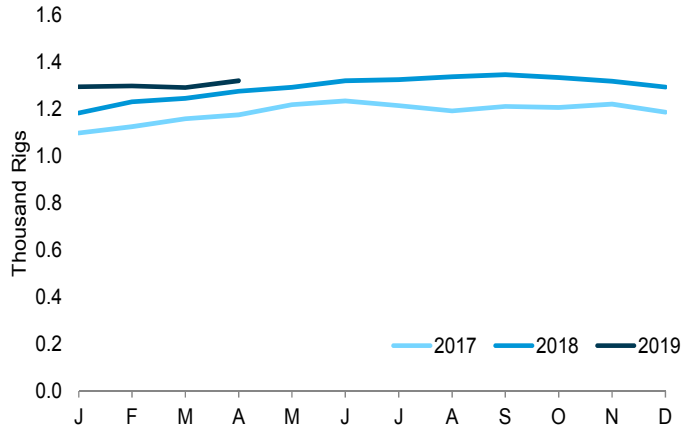
Rotary Rigs in Operation by Type, 1949–2018



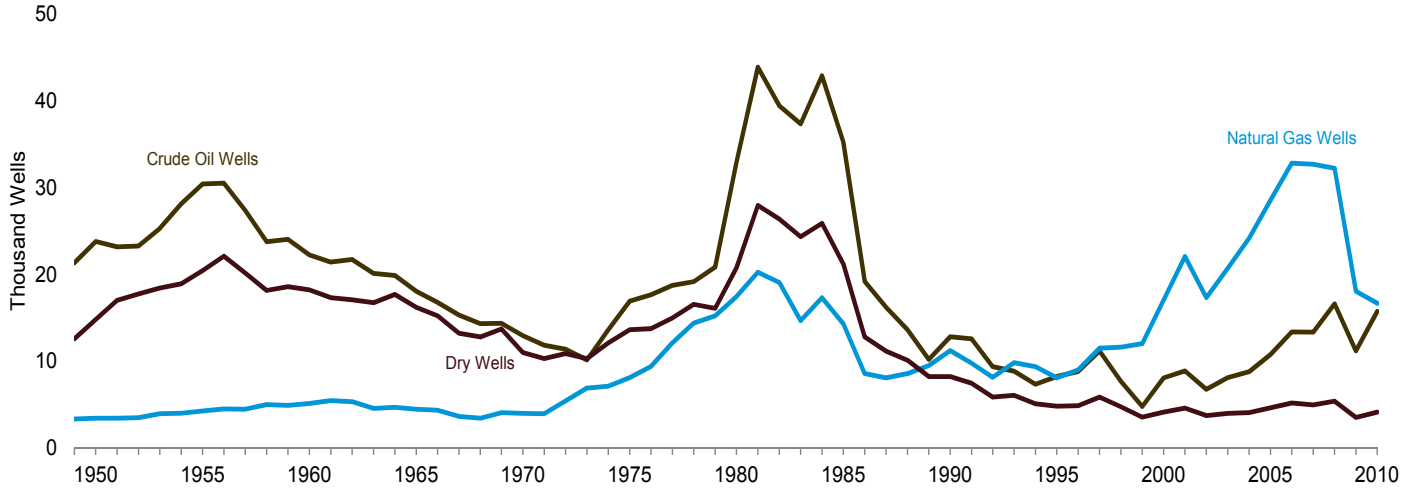
Rotary Rigs in Operation by Type, Monthly



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	R 1,321
May	965	21	802	184	986	NA
5-Month Average	**1,004**	**21**	**833**	**192**	**1,025**	**NA**
2018 5-Month Average	**974**	**16**	**800**	**189**	**990**	**1,246**
2017 5-Month Average	**771**	**21**	**634**	**157**	**792**	**1,156**

[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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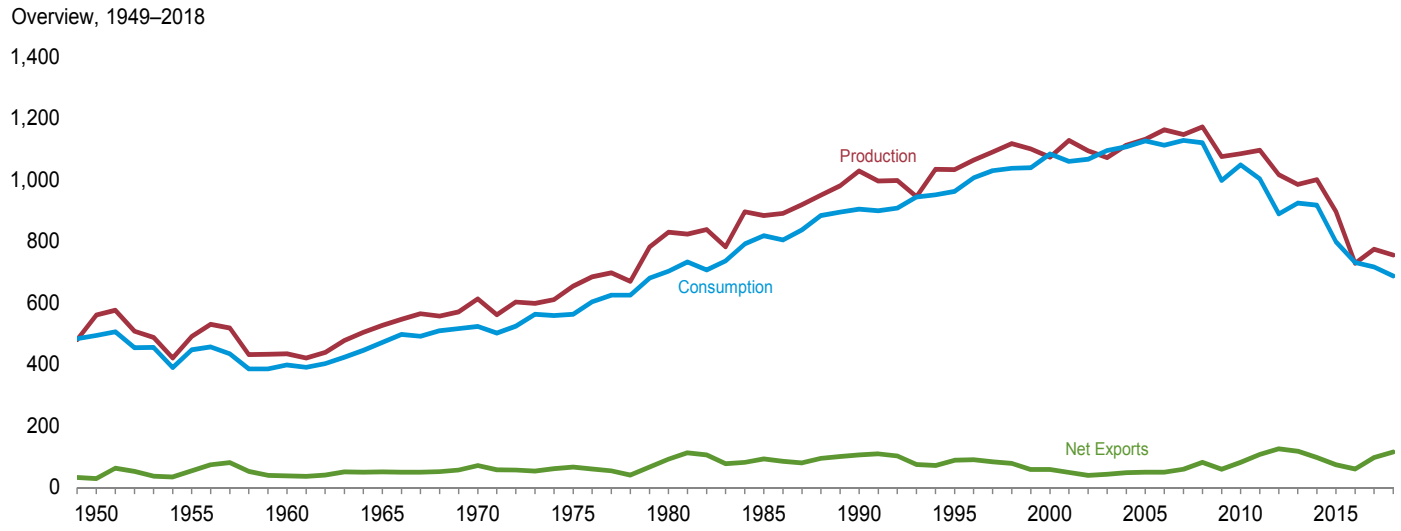
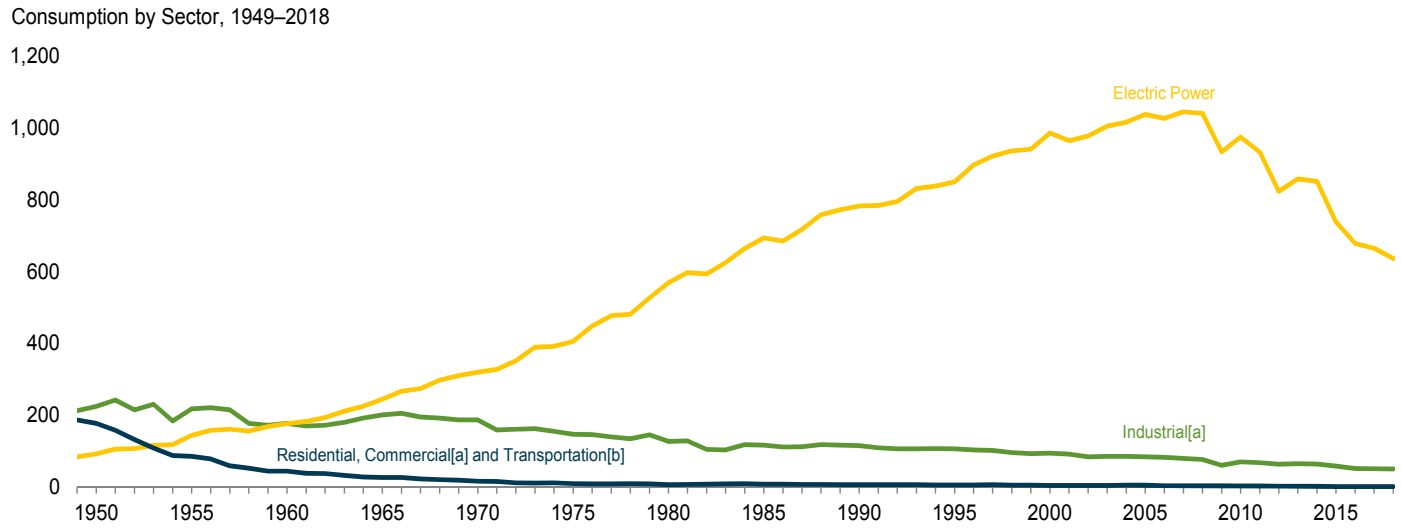
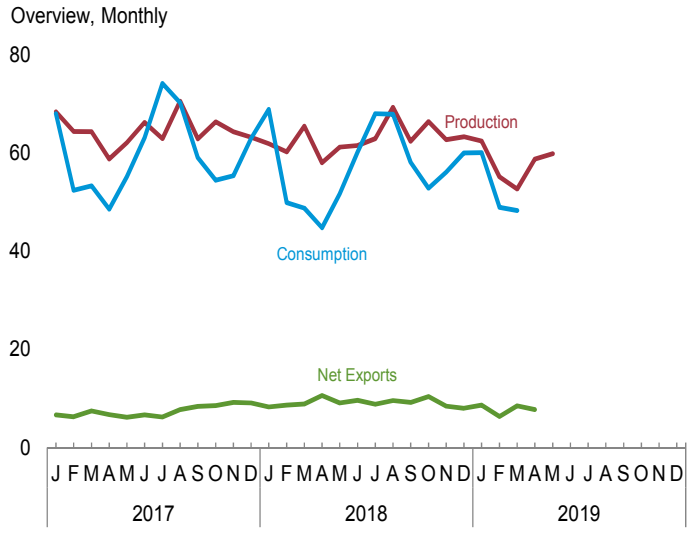
6. Coal

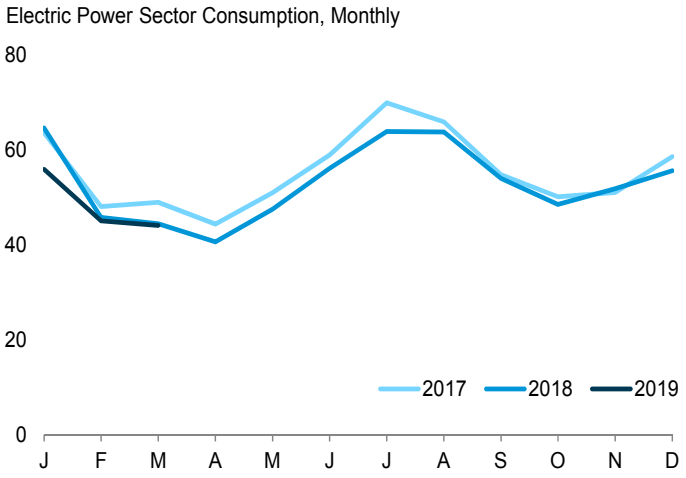
Figure 6.1 Coal

(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	61,937	1,013	500	8,772	-8,273	-13,394	-842	68,913
February	60,235	834	349	9,022	-8,673	-1,077	3,576	49,897
March	65,467	909	518	9,426	-8,908	5,496	3,213	48,759
April	58,032	714	494	11,092	-10,598	2,350	1,020	44,777
May	61,196	771	544	9,645	-9,102	-2,004	3,174	51,695
June	61,557	789	509	10,138	-9,629	-7,514	59	60,173
July	62,945	878	692	9,532	-8,840	-10,463	-2,572	68,018
August	69,301	907	484	10,052	-9,569	-8,632	1,376	67,895
September	62,417	807	263	9,483	-9,220	-2,446	-1,695	58,145
October	66,384	719	304	10,681	-10,377	5,306	-1,438	52,858
November	62,718	887	400	8,872	-8,472	-1,515	494	56,154
December	63,333	871	898	8,916	-8,018	-973	-2,886	60,044
Total	**755,523**	**10,098**	**5,954**	**115,632**	**-109,678**	**-34,865**	**3,479**	**687,328**
2019 January	62,479	F 778	625	9,285	-8,661	-6,128	659	60,066
February	55,140	F 778	358	6,707	-6,349	735	-114	48,947
March	52,657	RF 778	706	9,217	-8,512	R -1,275	R -2,101	R 48,299
April	58,765	NA	R 537	R 8,285	R -7,749	NA	NA	NA
May	59,867	NA	NA	NA	NA	NA	NA	NA
5-Month Total	**288,907**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
2018 5-Month Total	**306,867**	**4,241**	**2,405**	**47,958**	**-45,554**	**-8,629**	**10,142**	**264,040**
2017 5-Month Total	**318,008**	**4,265**	**3,461**	**36,786**	**-33,325**	**-944**	**12,413**	**277,479**

[a] Beginning in 2001, includes a small amount of refuse recovery (coal recaptured from a refuse mine and cleaned to reduce the concentration of noncombustible materials).

[b] Waste coal (including fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste) consumed by the electric power and industrial sectors. Beginning in 1989, waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in "Consumption."

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

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

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

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

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

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

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

Sources: See end of section.

Table 6.2 Coal Consumption by Sector
(Thousand Short Tons)

	End-Use Sectors										Electric Power Sector[e,f]	Total
		Commercial			Industrial							
						Other Industrial						
	Residential	CHP[a]	Other[b]	Total	Coke Plants	CHP[c]	Non-CHP[d]	Total	Total	Transportation		
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)	70	71	141	1,458	1,245	1,463	2,708	4,166	(h)	64,606	68,913
February	(i)	54	55	109	1,288	1,111	1,632	2,742	4,031	(h)	45,757	49,897
March	(i)	51	53	104	1,482	1,140	1,594	2,734	4,216	(h)	44,439	48,759
April	(i)	45	23	69	1,549	1,016	1,543	2,558	4,107	(h)	40,601	44,777
May	(i)	41	21	61	1,596	1,041	1,511	2,552	4,148	(h)	47,485	51,695
June	(i)	42	21	63	1,465	989	1,567	2,556	4,021	(h)	56,089	60,173
July	(i)	47	8	55	1,592	978	1,542	2,520	4,112	(h)	63,851	68,018
August	(i)	49	9	58	1,569	942	1,575	2,517	4,086	(h)	63,751	67,895
September	(i)	51	9	59	1,577	977	1,534	2,511	4,088	(h)	53,998	58,145
October	(i)	42	34	76	1,549	933	1,780	2,713	4,262	(h)	48,520	52,858
November	(i)	48	39	87	1,558	1,018	1,701	2,720	4,278	(h)	51,789	56,154
December	(i)	47	38	85	1,630	1,078	1,642	2,720	4,350	(h)	55,610	60,044
Total	**(i)**	**587**	**380**	**967**	**18,312**	**12,468**	**19,083**	**31,551**	**49,863**	**(h)**	**636,498**	**687,328**
2019 January	(i)	58	[F] 15	[F] 73	[F] 1,352	1,099	[F] 1,656	[F] 2,755	[F] 4,107	(h)	55,885	60,066
February	(i)	53	[F] 7	[F] 61	[F] 1,181	999	[F] 1,655	[F] 2,654	[F] 3,836	(h)	45,051	48,947
March	(i)	55	[F] 7	[F] 62	[F] 1,679	942	[F] 1,539	[F] 2,481	[F] 4,160	(h)	44,078	48,299
3-Month Total	**(i)**	**166**	**[E] 30**	**[E] 196**	**[E] 4,213**	**3,040**	**[E] 4,850**	**[E] 7,890**	**[E] 12,102**	**(h)**	**145,014**	**157,313**
2018 3-Month Total	**(i)**	**175**	**179**	**354**	**4,228**	**3,496**	**4,688**	**8,184**	**12,412**	**(h)**	**154,803**	**167,569**
2017 3-Month Total	**(i)**	**194**	**179**	**373**	**4,236**	**3,482**	**5,052**	**8,534**	**12,770**	**(h)**	**160,569**	**173,712**

[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	F 24,769	298	1,648	3,124	4,772	5,070	123,723	153,562
February	F 26,594	287	1,578	3,008	4,586	4,873	121,019	152,485
March	F 26,775	275	1,508	2,892	4,400	4,675	126,532	157,982
April	F 26,558	269	1,544	2,890	4,434	4,703	129,071	160,332
May	F 25,142	263	1,580	2,889	4,469	4,732	128,454	158,328
June	F 24,524	257	1,616	2,888	4,504	4,761	121,529	150,814
July	F 24,691	259	1,681	2,926	4,606	4,866	110,794	140,351
August	F 22,574	261	1,746	2,966	4,711	4,972	104,172	131,719
September	F 23,413	263	1,811	3,005	4,816	5,079	100,781	129,273
October	F 24,198	259	1,809	3,105	4,914	5,173	105,209	134,580
November	F 23,490	255	1,808	3,188	4,996	5,250	104,324	133,064
December	**F 23,978**	**250**	**1,807**	**3,270**	**5,077**	**5,328**	**102,786**	**132,092**
2019 January	F 21,391	F 240	F 1,741	F 3,390	F 5,132	F 5,372	99,201	125,963
February	F 23,051	F 223	F 1,536	F 3,144	F 4,680	F 4,903	98,744	126,698
March	F 23,158	F 225	F 1,354	F 3,558	F 4,912	F 5,137	97,127	125,423

[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.

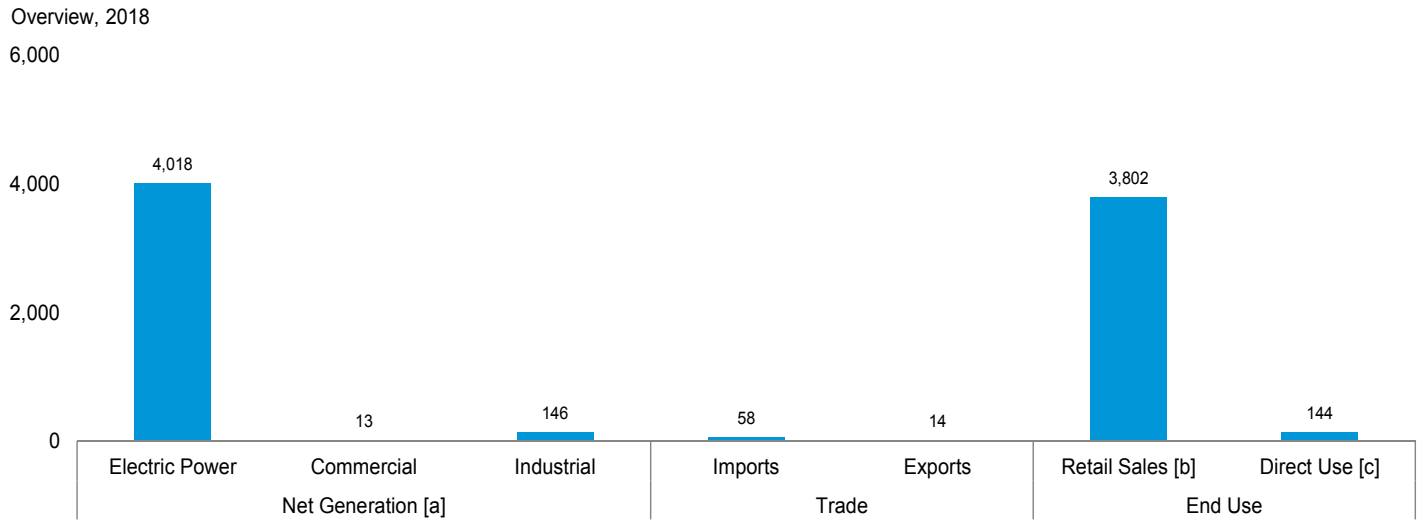
2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, STIFS.

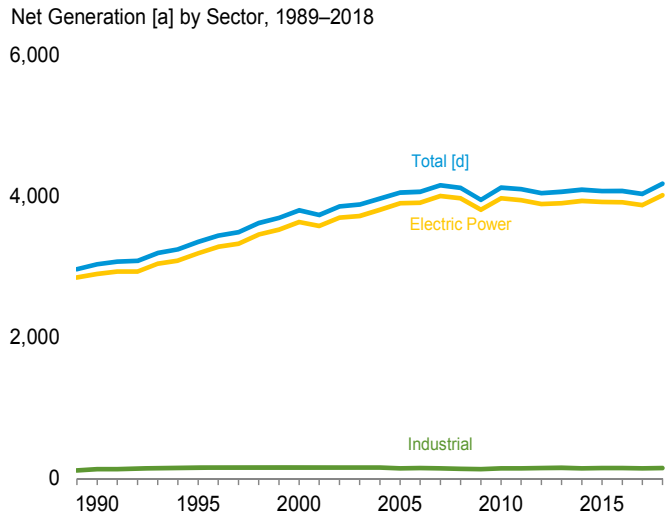
Electric Power
1949 forward: Table 7.5.

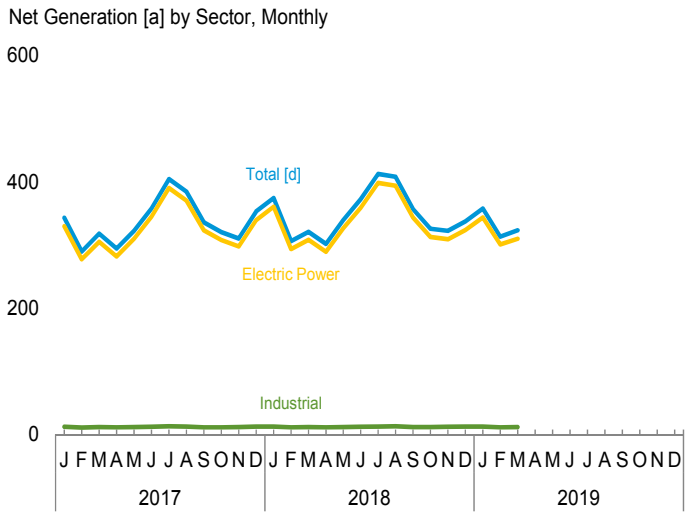
7. Electricity

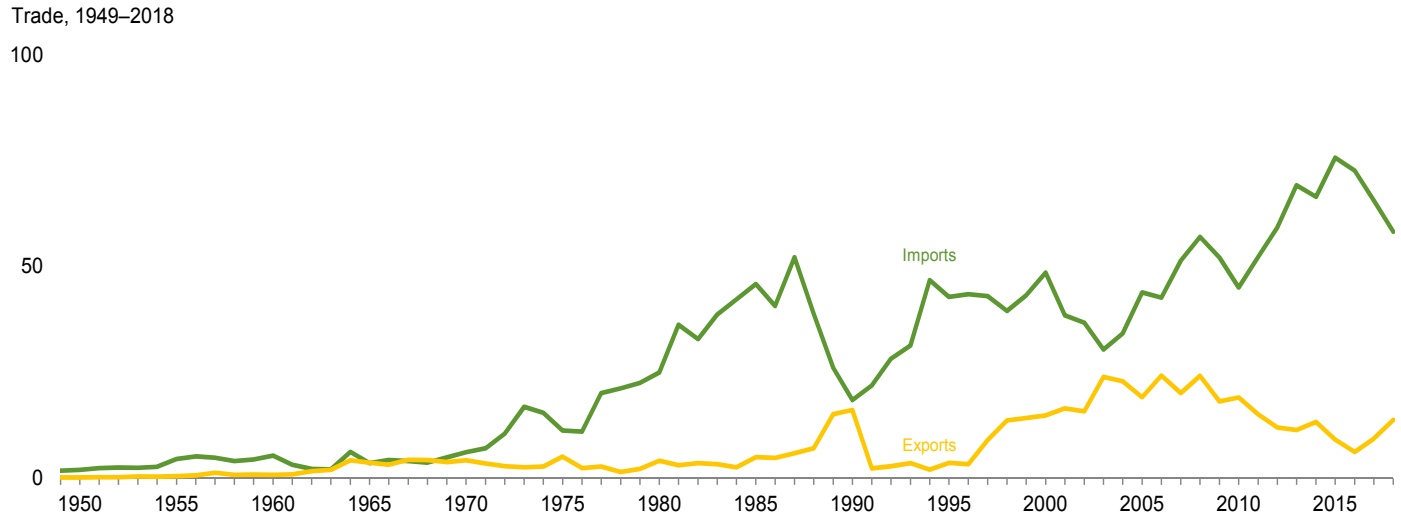
Figure 7.1 Electricity Overview

(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	360	1	13	374	5	1	4	26	340	[E] 12	353
February	294	1	11	306	5	1	4	11	288	[E] 11	299
March	308	1	12	321	6	1	4	22	292	[E] 12	304
April	289	1	11	302	5	2	3	19	274	[E] 11	285
May	327	1	12	340	5	1	4	34	298	[E] 12	310
June	359	1	12	372	5	1	4	32	333	[E] 12	345
July	398	1	13	413	5	1	4	35	370	[E] 13	382
August	394	1	13	408	6	1	5	22	378	[E] 13	391
September	344	1	12	357	4	1	3	16	332	[E] 12	344
October	313	1	12	326	4	1	3	13	304	[E] 12	316
November	309	1	12	322	4	1	3	27	286	[E] 12	298
December	323	1	13	337	4	1	3	21	307	[E] 12	320
Total	**4,018**	**13**	**146**	**4,178**	**58**	**14**	**44**	**277**	**3,802**	**[E] 144**	**3,946**
2019 January	344	1	13	358	[F] 6	[F] 1	[F] 5	27	323	[E] 13	336
February	301	1	11	313	[F] 4	[F] 1	[F] 4	14	292	[E] 11	303
March	310	1	12	323	[F] 5	[F] 1	[F] 4	18	297	[E] 12	309
3-Month Total	**955**	**3**	**36**	**994**	**[F] 15**	**[F] 2**	**[F] 12**	**58**	**913**	**[E] 36**	**948**
2018 3-Month Total	**962**	**3**	**36**	**1,001**	**16**	**4**	**12**	**58**	**921**	**[E] 35**	**956**
2017 3-Month Total	**912**	**3**	**35**	**951**	**19**	**2**	**17**	**47**	**885**	**[E] 35**	**920**

[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.

E=Estimate. NA=Not available. F=Forecast. (s)=Less than 0.5 billion kilowatthours.

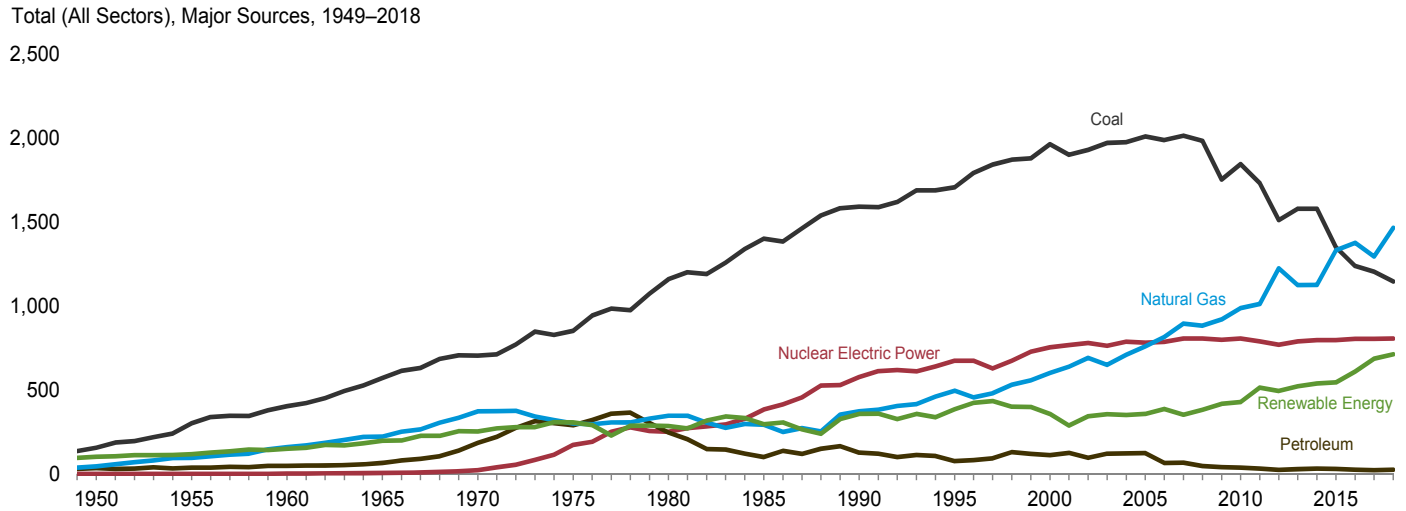
Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 3, "Electricity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

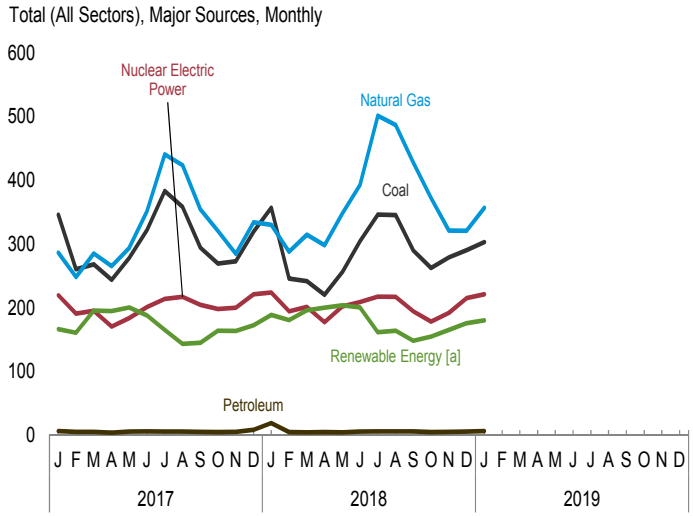
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

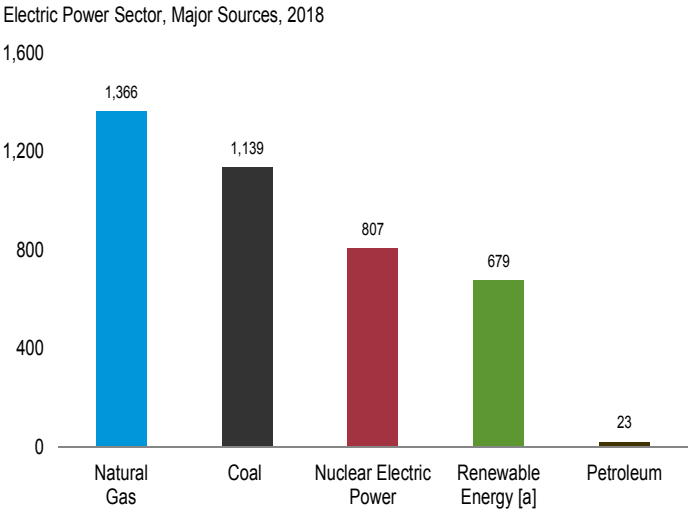
Sources: See end of section.

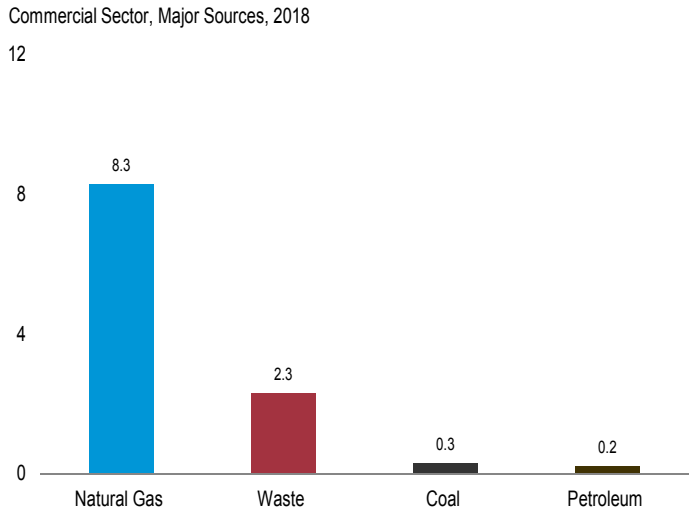
Figure 7.2 Electricity Net Generation

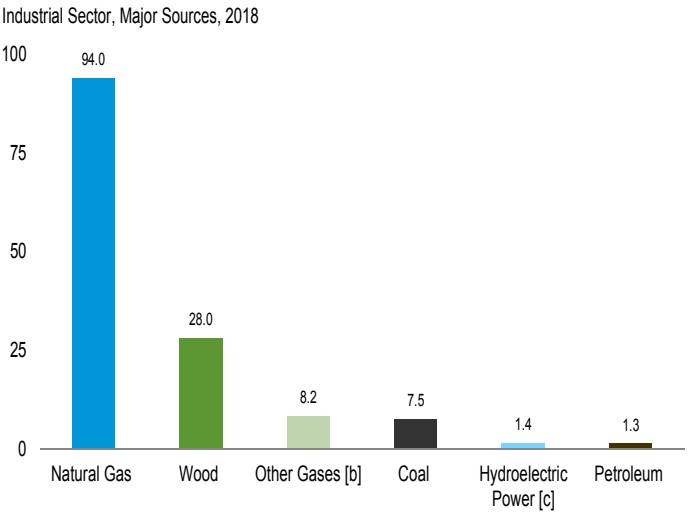
(Billion Kilowatthours)











[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	289,652
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	404,386
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**	**4,034,268**
2018 January	118,939	6,243	110,046	994	74,649	-547	25,596	3,759	1,854	1,407	3,407	26,862	374,324
February	81,922	1,518	96,002	990	64,790	-315	25,533	3,379	1,761	1,326	4,113	24,096	306,115
March	80,612	1,459	104,933	1,064	67,033	-490	25,951	3,535	1,870	1,414	5,203	27,283	320,982
April	73,383	1,546	99,446	940	59,133	-377	27,490	3,096	1,766	1,246	6,249	26,783	301,739
May	85,311	1,437	116,107	1,000	67,320	-390	30,434	3,550	1,744	1,434	7,070	23,603	339,694
June	101,509	1,827	130,823	1,010	69,688	-433	27,955	3,573	1,787	1,369	7,804	24,376	372,398
July	115,477	1,892	167,250	1,105	72,456	-644	24,014	3,690	1,798	1,436	6,938	16,014	412,542
August	115,216	1,914	162,377	1,225	72,282	-747	21,400	3,570	1,797	1,429	6,981	19,530	407,981
September	96,742	1,874	142,772	1,001	64,725	-603	18,665	3,284	1,635	1,388	6,469	17,977	356,728
October	87,452	1,473	124,171	930	59,397	-492	18,781	3,277	1,766	1,347	5,223	21,147	325,563
November	93,005	1,652	107,109	933	63,948	-343	22,176	3,284	1,752	1,397	3,958	22,457	322,409
December	96,825	1,737	106,978	998	71,657	-522	23,728	3,414	1,825	1,535	3,188	24,825	337,334
Total	**1,146,393**	**24,572**	**1,468,013**	**12,191**	**807,078**	**-5,905**	**291,724**	**41,411**	**21,354**	**16,728**	**66,604**	**274,952**	**4,177,810**
2019 January	101,019	2,136	118,935	994	73,701	-323	24,544	3,529	1,755	1,456	3,652	25,165	357,690
February	80,008	1,512	110,428	1,015	64,715	-389	22,031	3,165	1,570	1,339	3,913	23,047	313,278
March	78,454	1,439	112,574	1,143	65,080	-409	25,400	3,241	1,713	1,480	6,020	26,036	323,187
3-Month Total	**259,481**	**5,086**	**341,936**	**3,151**	**203,495**	**-1,121**	**71,974**	**9,935**	**5,038**	**4,274**	**13,585**	**74,247**	**994,155**
2018 3-Month Total	**281,473**	**9,220**	**310,981**	**3,049**	**206,472**	**-1,352**	**77,081**	**10,673**	**5,484**	**4,147**	**12,723**	**78,241**	**1,001,421**
2017 3-Month Total	**291,520**	**5,311**	**273,190**	**3,082**	**201,774**	**-1,464**	**79,703**	**10,149**	**5,495**	**4,006**	**8,831**	**66,031**	**950,777**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.
[c] Natural gas, plus a small amount of supplemental gaseous fuels.
[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.
[e] Pumped storage facility production minus energy used for pumping.
[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."
[g] Wood and wood-derived fuels.
[h] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).
[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.
[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).
[k] Through 1988, all data except hydroelectric are for electric utilities only; hydroelectric data through 1988 include industrial plants as well as electric utilities. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

NA=Not available.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section, "Table 7.2b Sources" and "Table 7.2c Sources."

Table 7.2b Electricity Net Generation: Electric Power Sector

(Subset of Table 7.2a; Million Kilowatthours)

	Fossil Fuels						Renewable Energy						
								Biomass					
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power[f]	Wood[g]	Waste[h]	Geothermal	Solar[i]	Wind	Total[j]
1950 Total	**154,520**	**33,734**	**44,559**	**NA**	**0**	**(f)**	**95,938**	**390**	**NA**	**NA**	**NA**	**NA**	**329,141**
1955 Total	**301,363**	**37,138**	**95,285**	**NA**	**0**	**(f)**	**112,975**	**276**	**NA**	**NA**	**NA**	**NA**	**547,038**
1960 Total	**403,067**	**47,987**	**157,970**	**NA**	**518**	**(f)**	**145,833**	**140**	**NA**	**33**	**NA**	**NA**	**755,549**
1965 Total	**570,926**	**64,801**	**221,559**	**NA**	**3,657**	**(f)**	**193,851**	**269**	**NA**	**189**	**NA**	**NA**	**1,055,252**
1970 Total	**704,394**	**184,183**	**372,890**	**NA**	**21,804**	**(f)**	**247,714**	**136**	**220**	**525**	**NA**	**NA**	**1,531,868**
1975 Total	**852,786**	**289,095**	**299,778**	**NA**	**172,505**	**(f)**	**300,047**	**18**	**174**	**3,246**	**NA**	**NA**	**1,917,649**
1980 Total	**1,161,562**	**245,994**	**346,240**	**NA**	**251,116**	**(f)**	**276,021**	**275**	**158**	**5,073**	**NA**	**NA**	**2,286,439**
1985 Total	**1,402,128**	**100,202**	**291,946**	**NA**	**383,691**	**(f)**	**281,149**	**743**	**640**	**9,325**	**11**	**6**	**2,469,841**
1990 Total[k]	**1,572,109**	**118,864**	**309,486**	**621**	**576,862**	**-3,508**	**289,753**	**7,032**	**11,500**	**15,434**	**367**	**2,789**	**2,901,322**
1995 Total	**1,686,056**	**68,146**	**419,179**	**1,927**	**673,402**	**-2,725**	**305,410**	**7,597**	**17,986**	**13,378**	**497**	**3,164**	**3,194,230**
2000 Total	**1,943,111**	**105,192**	**517,978**	**2,028**	**753,893**	**-5,539**	**271,338**	**8,916**	**20,307**	**14,093**	**493**	**5,593**	**3,637,529**
2001 Total	**1,882,826**	**119,149**	**554,940**	**586**	**768,826**	**-8,823**	**213,749**	**8,294**	**12,944**	**13,741**	**543**	**6,737**	**3,580,053**
2002 Total	**1,910,613**	**89,733**	**607,683**	**1,970**	**780,064**	**-8,743**	**260,491**	**9,009**	**13,145**	**14,491**	**555**	**10,354**	**3,698,458**
2003 Total	**1,952,714**	**113,697**	**567,303**	**2,647**	**763,733**	**-8,535**	**271,512**	**9,528**	**13,808**	**14,424**	**534**	**11,187**	**3,721,159**
2004 Total	**1,957,188**	**114,678**	**627,172**	**3,568**	**788,528**	**-8,488**	**265,064**	**9,736**	**13,062**	**14,811**	**575**	**14,144**	**3,808,360**
2005 Total	**1,992,054**	**116,482**	**683,829**	**3,777**	**781,986**	**-6,558**	**267,040**	**10,570**	**13,031**	**14,692**	**550**	**17,811**	**3,902,192**
2006 Total	**1,969,737**	**59,708**	**734,417**	**4,254**	**787,219**	**-6,558**	**286,254**	**10,341**	**13,927**	**14,568**	**508**	**26,589**	**3,908,077**
2007 Total	**1,998,390**	**61,306**	**814,752**	**4,042**	**806,425**	**-6,896**	**245,843**	**10,711**	**14,294**	**14,637**	**612**	**34,450**	**4,005,343**
2008 Total	**1,968,838**	**42,881**	**802,372**	**3,200**	**806,208**	**-6,288**	**253,096**	**10,638**	**15,379**	**14,840**	**864**	**55,363**	**3,974,349**
2009 Total	**1,741,123**	**35,811**	**841,006**	**3,058**	**798,855**	**-4,627**	**271,506**	**10,738**	**15,954**	**15,009**	**891**	**73,886**	**3,809,837**
2010 Total	**1,827,738**	**34,679**	**901,389**	**2,967**	**806,968**	**-5,501**	**258,455**	**11,446**	**16,376**	**15,219**	**1,206**	**94,636**	**3,972,386**
2011 Total	**1,717,891**	**28,202**	**926,290**	**2,939**	**790,204**	**-6,421**	**317,531**	**10,733**	**15,989**	**15,316**	**1,727**	**120,121**	**3,948,186**
2012 Total	**1,500,557**	**20,072**	**1,132,791**	**2,984**	**769,331**	**-4,950**	**273,859**	**11,050**	**16,555**	**15,562**	**4,164**	**140,749**	**3,890,358**
2013 Total	**1,567,722**	**24,510**	**1,028,949**	**4,322**	**789,016**	**-4,681**	**265,058**	**12,302**	**16,918**	**15,775**	**8,724**	**167,742**	**3,903,715**
2014 Total	**1,568,774**	**28,043**	**1,033,172**	**3,358**	**797,166**	**-6,174**	**258,046**	**15,027**	**17,602**	**15,877**	**17,304**	**181,496**	**3,937,003**
2015 Total	**1,340,993**	**26,505**	**1,237,656**	**3,715**	**797,178**	**-5,091**	**247,636**	**14,563**	**17,823**	**15,918**	**24,456**	**190,547**	**3,919,294**
2016 Total	**1,229,663**	**22,710**	**1,279,380**	**3,912**	**805,694**	**-6,686**	**266,326**	**13,420**	**18,183**	**15,826**	**35,497**	**226,790**	**3,918,078**
2017 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	344,617
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	339,547
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**	**3,877,450**
2018 January	118,151	6,050	101,254	329	74,649	-547	25,462	1,316	1,567	1,407	3,375	26,834	360,468
February	81,226	1,413	88,169	326	64,790	-315	25,399	1,155	1,500	1,326	4,072	24,070	293,720
March	79,910	1,352	96,975	346	67,033	-490	25,806	1,172	1,582	1,414	5,151	27,253	308,123
April	72,769	1,442	91,456	334	59,133	-377	27,346	872	1,492	1,246	6,183	26,755	289,228
May	84,660	1,333	107,960	360	67,320	-390	30,283	1,125	1,471	1,434	6,995	23,578	326,710
June	100,873	1,699	122,324	330	69,688	-433	27,818	1,206	1,526	1,369	7,712	24,353	359,105
July	114,811	1,760	158,158	363	72,456	-644	23,882	1,216	1,530	1,436	6,861	15,995	398,473
August	114,554	1,803	153,127	393	72,282	-747	21,277	1,169	1,527	1,429	6,900	19,510	393,724
September	96,121	1,757	134,147	319	64,725	-603	18,547	1,047	1,390	1,388	6,393	17,957	343,548
October	86,881	1,366	115,791	259	59,397	-492	18,652	1,032	1,489	1,347	5,165	21,122	312,618
November	92,407	1,555	98,296	298	63,948	-343	22,032	1,002	1,485	1,397	3,918	22,431	309,038
December	96,172	1,619	98,001	342	71,657	-522	23,576	1,020	1,542	1,502	3,156	24,799	323,498
Total	**1,138,535**	**23,148**	**1,365,658**	**3,998**	**807,078**	**-5,905**	**290,080**	**13,333**	**18,102**	**16,695**	**65,882**	**274,656**	**4,018,253**
2019 January	100,364	2,021	109,631	377	73,701	-323	24,428	1,225	1,472	1,414	3,616	25,137	343,679
February	79,425	1,416	102,335	373	64,715	-389	21,932	1,074	1,322	1,298	3,875	23,021	300,928
March	77,883	1,345	104,092	377	65,080	-409	25,287	981	1,433	1,435	5,959	26,008	310,030
3-Month Total	**257,672**	**4,782**	**316,057**	**1,127**	**203,495**	**-1,121**	**71,648**	**3,280**	**4,227**	**4,148**	**13,450**	**74,166**	**954,638**
2018 3-Month Total	**279,288**	**8,814**	**286,398**	**1,001**	**206,472**	**-1,352**	**76,666**	**3,643**	**4,649**	**4,147**	**12,598**	**78,157**	**962,311**
2017 3-Month Total	**289,417**	**4,957**	**248,785**	**1,016**	**201,774**	**-1,464**	**79,274**	**3,466**	**4,612**	**4,006**	**8,738**	**65,968**	**912,295**

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.
[c] Natural gas, plus a small amount of supplemental gaseous fuels.
[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.
[e] Pumped storage facility production minus energy used for pumping.
[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."
[g] Wood and wood-derived fuels.
[h] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).
[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.
[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).
[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilites and independent power producers.

NA=Not available.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 7.2c Electricity Net Generation: Commercial and Industrial Sectors

(Subset of Table 7.2a; Million Kilowatthours)

	Commercial Sector[a]					Industrial Sector[b]							
				Biomass							Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Total[g]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[h]	Hydroelectric Power[i]	Wood[j]	Waste[f]	Total[k]
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**4,946**	**NA**	**NA**	**4,946**
1955 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,261**	**NA**	**NA**	**3,261**
1960 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,607**	**NA**	**NA**	**3,607**
1965 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,134**	**NA**	**NA**	**3,134**
1970 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,244**	**NA**	**NA**	**3,244**
1975 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,106**	**NA**	**NA**	**3,106**
1980 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1990 Total	**796**	**589**	**3,272**	**812**	**5,837**	**21,107**	**7,008**	**60,007**	**9,641**	**2,975**	**25,379**	**949**	**130,830**
1995 Total	**998**	**379**	**5,162**	**1,519**	**8,232**	**22,372**	**6,030**	**71,717**	**11,943**	**5,304**	**28,868**	**900**	**151,025**
2000 Total	**1,097**	**432**	**4,262**	**1,985**	**7,903**	**22,056**	**5,597**	**78,798**	**11,927**	**4,135**	**28,652**	**839**	**156,673**
2001 Total	**995**	**438**	**4,434**	**1,007**	**7,416**	**20,135**	**5,293**	**79,755**	**8,454**	**3,145**	**26,888**	**596**	**149,175**
2002 Total	**992**	**431**	**4,310**	**1,053**	**7,415**	**21,525**	**4,403**	**79,013**	**9,493**	**3,825**	**29,643**	**846**	**152,580**
2003 Total	**1,206**	**423**	**3,899**	**1,289**	**7,496**	**19,817**	**5,285**	**78,705**	**12,953**	**4,222**	**27,988**	**715**	**154,530**
2004 Total	**1,340**	**499**	**3,969**	**1,562**	**8,270**	**19,773**	**5,967**	**78,959**	**11,684**	**3,248**	**28,367**	**797**	**153,925**
2005 Total	**1,353**	**375**	**4,249**	**1,657**	**8,492**	**19,466**	**5,368**	**72,882**	**9,687**	**3,195**	**28,271**	**733**	**144,739**
2006 Total	**1,310**	**235**	**4,355**	**1,599**	**8,371**	**19,464**	**4,223**	**77,669**	**9,923**	**2,899**	**28,400**	**572**	**148,254**
2007 Total	**1,371**	**189**	**4,257**	**1,599**	**8,273**	**16,694**	**4,243**	**77,580**	**9,411**	**1,590**	**28,287**	**631**	**143,128**
2008 Total	**1,261**	**142**	**4,188**	**1,534**	**7,926**	**15,703**	**3,219**	**76,421**	**8,507**	**1,676**	**26,641**	**821**	**137,113**
2009 Total	**1,096**	**163**	**4,225**	**1,748**	**8,165**	**13,686**	**2,963**	**75,748**	**7,574**	**1,868**	**25,292**	**740**	**132,329**
2010 Total	**1,111**	**124**	**4,725**	**1,672**	**8,592**	**18,441**	**2,258**	**81,583**	**8,343**	**1,668**	**25,706**	**869**	**144,082**
2011 Total	**1,049**	**89**	**5,487**	**2,315**	**10,080**	**14,490**	**1,891**	**81,911**	**8,624**	**1,799**	**26,691**	**917**	**141,875**
2012 Total	**883**	**196**	**6,603**	**2,319**	**11,301**	**12,603**	**2,922**	**86,500**	**8,913**	**2,353**	**26,725**	**948**	**146,107**
2013 Total	**839**	**124**	**7,154**	**2,567**	**12,234**	**12,554**	**2,531**	**88,733**	**8,531**	**3,463**	**27,691**	**1,346**	**150,015**
2014 Total	**595**	**255**	**7,227**	**2,681**	**12,520**	**12,341**	**1,934**	**86,209**	**8,664**	**1,282**	**27,239**	**1,367**	**144,083**
2015 Total	**509**	**191**	**7,471**	**2,637**	**12,595**	**10,896**	**1,552**	**88,355**	**9,401**	**1,410**	**27,318**	**1,243**	**145,712**
2016 Total	**383**	**82**	**7,730**	**2,496**	**12,706**	**9,103**	**1,412**	**91,197**	**8,895**	**1,269**	**27,458**	**1,134**	**145,890**
2017 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	44	NM	673	199	1,124	744	148	8,119	665	112	2,435	87	12,732
February	32	9	635	179	1,008	664	96	7,197	665	112	2,218	82	11,387
March	26	9	651	199	1,063	676	97	7,307	718	122	2,358	89	11,796
April	22	9	634	190	1,040	591	94	7,356	607	119	2,222	85	11,471
May	19	9	644	195	1,070	632	96	7,503	640	125	2,420	78	11,915
June	21	8	706	193	1,148	615	120	7,793	680	114	2,359	68	12,144
July	25	12	821	194	1,251	641	121	8,271	742	113	2,465	73	12,819
August	30	10	831	196	1,269	633	100	8,419	832	106	2,391	74	12,989
September	29	9	749	179	1,148	592	108	7,876	682	103	2,229	65	12,031
October	24	8	673	197	1,070	547	99	7,707	671	115	2,241	80	11,876
November	27	13	641	184	1,014	572	84	8,172	634	127	2,279	82	12,357
December	29	11	685	197	1,114	623	106	8,292	656	135	2,386	85	12,723
Total	**327**	**154**	**8,343**	**2,304**	**13,318**	**7,531**	**1,270**	**94,012**	**8,193**	**1,403**	**28,002**	**948**	**146,239**
2019 January	35	15	717	198	1,169	620	100	8,587	617	95	2,296	84	12,842
February	29	10	661	171	1,060	554	86	7,432	641	81	2,082	78	11,290
March	33	10	689	190	1,148	538	84	7,794	766	92	2,249	90	12,008
3-Month Total	**97**	**34**	**2,067**	**559**	**3,377**	**1,712**	**270**	**23,812**	**2,024**	**268**	**6,628**	**251**	**36,140**
2018 3-Month Total	**101**	**63**	**1,960**	**578**	**3,195**	**2,085**	**342**	**22,623**	**2,048**	**346**	**7,010**	**258**	**35,915**
2017 3-Month Total	**105**	**33**	**1,931**	**616**	**3,131**	**1,997**	**322**	**22,474**	**2,067**	**371**	**6,665**	**267**	**35,351**

[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.

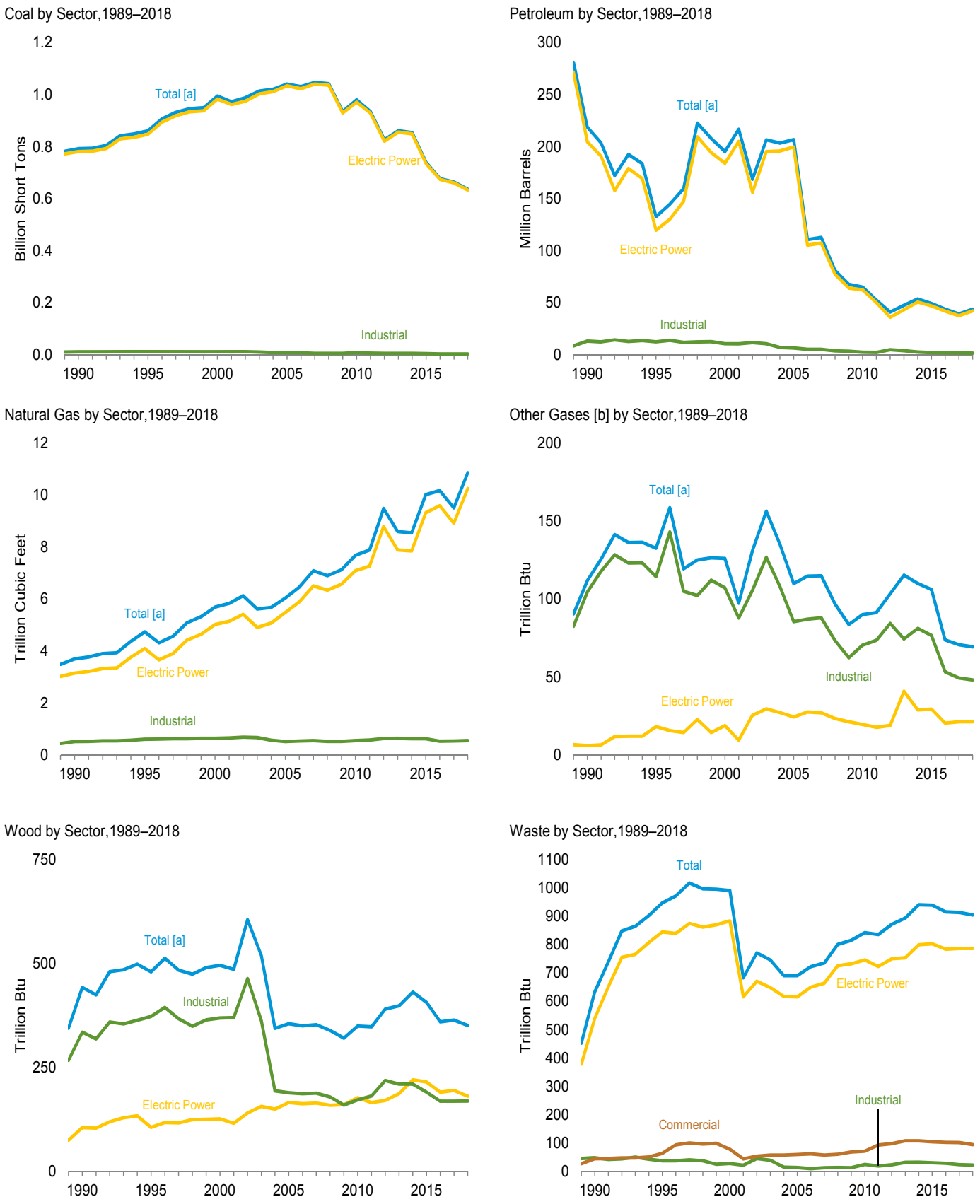
NA=Not available. NM=Not meaningful.

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	64,517	5,155	3,273	619	349	10,790	804	6	32	26	16
February	45,655	578	676	114	275	2,743	717	6	29	25	14
March	44,388	629	666	114	245	2,636	771	6	30	27	16
April	40,554	711	716	102	246	2,757	727	6	26	25	15
May	47,470	839	810	131	161	2,587	872	6	31	25	16
June	56,031	815	898	114	312	3,388	972	6	31	26	16
July	63,805	686	874	131	344	3,408	1,255	6	32	25	16
August	63,710	724	948	145	327	3,454	1,216	7	30	26	16
September	53,945	641	992	142	316	3,356	1,064	6	28	23	14
October	48,488	695	895	141	190	2,680	914	5	28	24	15
November	51,720	759	766	129	247	2,888	777	5	27	24	15
December	55,549	745	691	183	299	3,116	764	6	29	25	16
Total	**635,833**	**12,977**	**12,205**	**2,063**	**3,311**	**43,802**	**10,855**	**69**	**351**	**301**	**184**
2019 January	55,769	1,031	1,008	255	312	3,854	854	5	31	24	16
February	44,982	622	586	155	269	2,709	787	6	27	22	13
March	43,971	646	611	141	247	2,632	810	7	28	24	14
3-Month Total	**144,722**	**2,299**	**2,205**	**550**	**828**	**9,194**	**2,451**	**18**	**86**	**70**	**43**
2018 3-Month Total	**154,560**	**6,362**	**4,616**	**847**	**869**	**16,170**	**2,293**	**17**	**91**	**78**	**45**
2017 3-Month Total	**160,285**	**2,468**	**2,309**	**360**	**910**	**9,686**	**1,957**	**17**	**91**	**77**	**46**

[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	64,230	5,070	3,237	594	334	10,571	753	2	17	23	10
February	45,403	557	664	89	264	2,631	672	2	15	22	10
March	44,138	606	654	96	233	2,518	724	2	16	23	10
April	40,338	686	706	84	231	2,629	679	2	12	22	10
May	47,235	809	801	108	148	2,459	824	2	16	22	10
June	55,806	785	883	96	293	3,231	922	2	17	23	11
July	63,568	648	866	92	326	3,234	1,201	2	17	22	11
August	63,479	685	937	131	312	3,312	1,162	2	16	22	11
September	53,725	605	981	133	299	3,211	1,014	2	14	20	10
October	48,289	669	884	124	173	2,544	865	1	14	21	10
November	51,496	724	754	113	234	2,761	726	1	14	21	10
December	55,309	710	676	169	282	2,966	711	2	15	22	10
Total	**633,016**	**12,553**	**12,044**	**1,828**	**3,128**	**42,067**	**10,252**	**21**	**181**	**262**	**124**
2019 January	55,533	995	993	237	298	3,713	799	2	17	21	10
February	44,766	600	576	132	257	2,594	739	2	14	19	9
March	43,785	620	600	123	233	2,509	760	2	14	21	10
3-Month Total	**144,084**	**2,215**	**2,169**	**492**	**788**	**8,816**	**2,299**	**6**	**45**	**60**	**29**
2018 3-Month Total	**153,771**	**6,233**	**4,555**	**779**	**831**	**15,720**	**2,148**	**5**	**48**	**67**	**31**
2017 3-Month Total	**159,491**	**2,389**	**2,272**	**300**	**859**	**9,256**	**1,812**	**5**	**50**	**67**	**30**

[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	12	68	4	3	274	152	48	4	15	1	4
February	9	16	4	3	243	96	42	4	13	1	3
March	8	14	4	3	243	104	43	4	14	1	4
April	6	16	4	3	210	111	44	4	14	1	3
May	6	20	4	3	230	108	44	4	15	1	4
June	6	19	4	3	219	138	46	4	14	1	3
July	7	28	5	3	230	146	48	4	15	1	3
August	9	25	5	3	223	116	49	5	14	1	4
September	8	21	5	2	212	125	46	4	13	(s)	3
October	7	18	4	3	191	118	45	4	13	1	4
November	7	24	4	3	216	102	48	4	14	1	4
December	8	22	4	3	232	127	49	4	14	1	4
Total	**94**	**292**	**52**	**32**	**2,723**	**1,444**	**552**	**48**	**170**	**8**	**42**
2019 January	10	25	4	3	226	115	50	4	14	1	4
February	8	15	4	2	207	100	44	4	13	1	3
March	9	18	4	3	177	106	46	4	14	1	3
3-Month Total	**27**	**58**	**13**	**8**	**610**	**321**	**139**	**12**	**41**	**2**	**10**
2018 3-Month Total	**29**	**98**	**12**	**8**	**760**	**352**	**132**	**12**	**43**	**2**	**10**
2017 3-Month Total	**30**	**51**	**12**	**8**	**764**	**380**	**133**	**12**	**40**	**2**	**12**

[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).

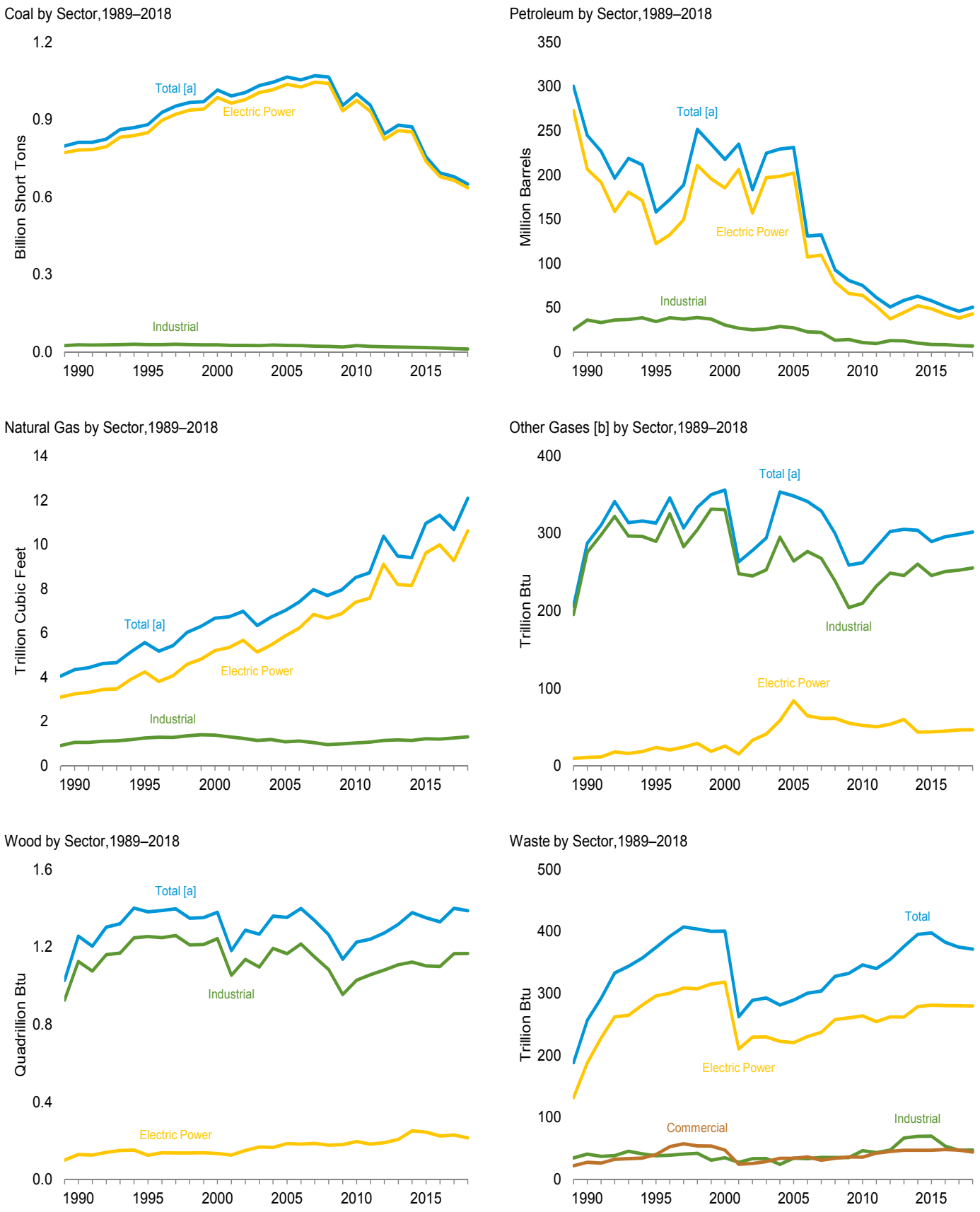
(s)=Less than 0.5 trillion Btu.

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	65,921	5,475	3,578	711	421	11,870	914	26	120	34	18
February	46,922	608	747	161	338	3,206	815	24	112	31	17
March	45,631	673	748	153	307	3,110	875	26	116	34	18
April	41,662	742	790	144	323	3,293	824	24	111	31	17
May	48,567	876	894	174	225	3,069	969	24	115	31	18
June	57,119	852	1,037	158	378	3,937	1,072	25	116	30	19
July	64,876	734	940	191	416	3,944	1,362	26	120	30	19
August	64,743	767	1,036	180	395	3,960	1,323	27	121	30	19
September	55,025	683	1,091	171	389	3,887	1,166	24	110	27	17
October	49,496	729	991	180	264	3,221	1,015	25	114	31	18
November	52,856	816	854	165	312	3,396	883	24	113	31	18
December	56,735	810	801	278	376	3,766	874	26	120	32	19
Total	**649,554**	**13,766**	**13,507**	**2,666**	**4,144**	**50,660**	**12,091**	**302**	**1,388**	**372**	**217**
2019 January	57,043	1,230	1,132	308	380	4,568	969	26	120	31	18
February	46,104	679	667	204	329	3,196	889	25	107	28	16
March	45,074	691	703	181	317	3,159	917	27	108	31	17
3-Month Total	**148,221**	**2,600**	**2,501**	**693**	**1,026**	**10,922**	**2,774**	**78**	**335**	**90**	**51**
2018 3-Month Total	**158,473**	**6,756**	**5,073**	**1,025**	**1,066**	**18,186**	**2,604**	**76**	**348**	**99**	**54**
2017 3-Month Total	**164,245**	**2,574**	**2,557**	**494**	**1,150**	**11,377**	**2,246**	**75**	**348**	**98**	**55**

[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	64,606	5,141	3,294	623	344	10,780	785	4	20	25	11
February	45,757	561	674	90	273	2,690	701	4	18	23	11
March	44,439	611	664	97	242	2,584	755	4	19	25	11
April	40,601	691	715	86	242	2,700	707	4	15	23	11
May	47,485	817	813	108	155	2,512	853	4	18	23	11
June	56,089	791	895	97	296	3,261	952	4	19	24	12
July	63,851	652	876	93	335	3,298	1,236	4	20	23	12
August	63,751	690	947	132	322	3,379	1,195	4	19	24	12
September	53,998	609	994	133	307	3,270	1,045	4	17	21	10
October	48,520	674	898	126	183	2,612	895	4	17	23	11
November	51,789	728	767	114	243	2,823	756	3	16	23	11
December	55,610	714	696	228	292	3,095	744	4	18	24	11
Total	**636,498**	**12,680**	**12,231**	**1,927**	**3,233**	**43,005**	**10,626**	**46**	**215**	**280**	**136**
2019 January	55,885	1,014	1,021	249	307	3,816	834	4	20	23	11
February	45,051	609	592	133	267	2,667	769	4	17	20	10
March	44,078	627	616	123	243	2,579	792	5	17	23	11
3-Month Total	**145,014**	**2,250**	**2,228**	**505**	**816**	**9,063**	**2,396**	**13**	**54**	**66**	**31**
2018 3-Month Total	**154,803**	**6,313**	**4,631**	**810**	**860**	**16,054**	**2,242**	**11**	**57**	**73**	**34**
2017 3-Month Total	**160,569**	**2,408**	**2,319**	**324**	**890**	**9,498**	**1,901**	**11**	**60**	**72**	**33**

[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	70	186	14	4	1,245	904	115	22	100	5	5
February	54	50	13	4	1,111	466	101	20	93	4	4
March	51	44	13	4	1,140	482	107	22	97	5	5
April	45	38	12	4	1,016	555	104	20	95	5	4
May	41	37	12	4	1,041	520	104	20	97	4	5
June	42	36	13	4	989	640	107	21	97	3	5
July	47	58	14	4	978	588	112	22	100	3	4
August	49	50	14	4	942	531	113	23	102	3	5
September	51	42	13	3	977	576	108	21	93	3	4
October	42	39	13	4	933	570	107	21	96	4	5
November	48	62	12	4	1,018	511	114	21	96	5	5
December	47	67	13	4	1,078	604	117	22	101	5	5
Total	**587**	**706**	**155**	**44**	**12,468**	**6,949**	**1,310**	**255**	**1,167**	**47**	**55**
2019 January	58	80	14	4	1,099	672	120	21	99	5	5
February	53	48	13	3	999	481	107	20	90	4	4
March	55	54	13	4	942	525	111	22	91	4	5
3-Month Total	**166**	**181**	**40**	**11**	**3,040**	**1,678**	**339**	**64**	**279**	**13**	**13**
2018 3-Month Total	**175**	**279**	**39**	**11**	**3,496**	**1,853**	**323**	**64**	**290**	**14**	**14**
2017 3-Month Total	**194**	**161**	**38**	**12**	**3,482**	**1,717**	**307**	**63**	**287**	**14**	**15**

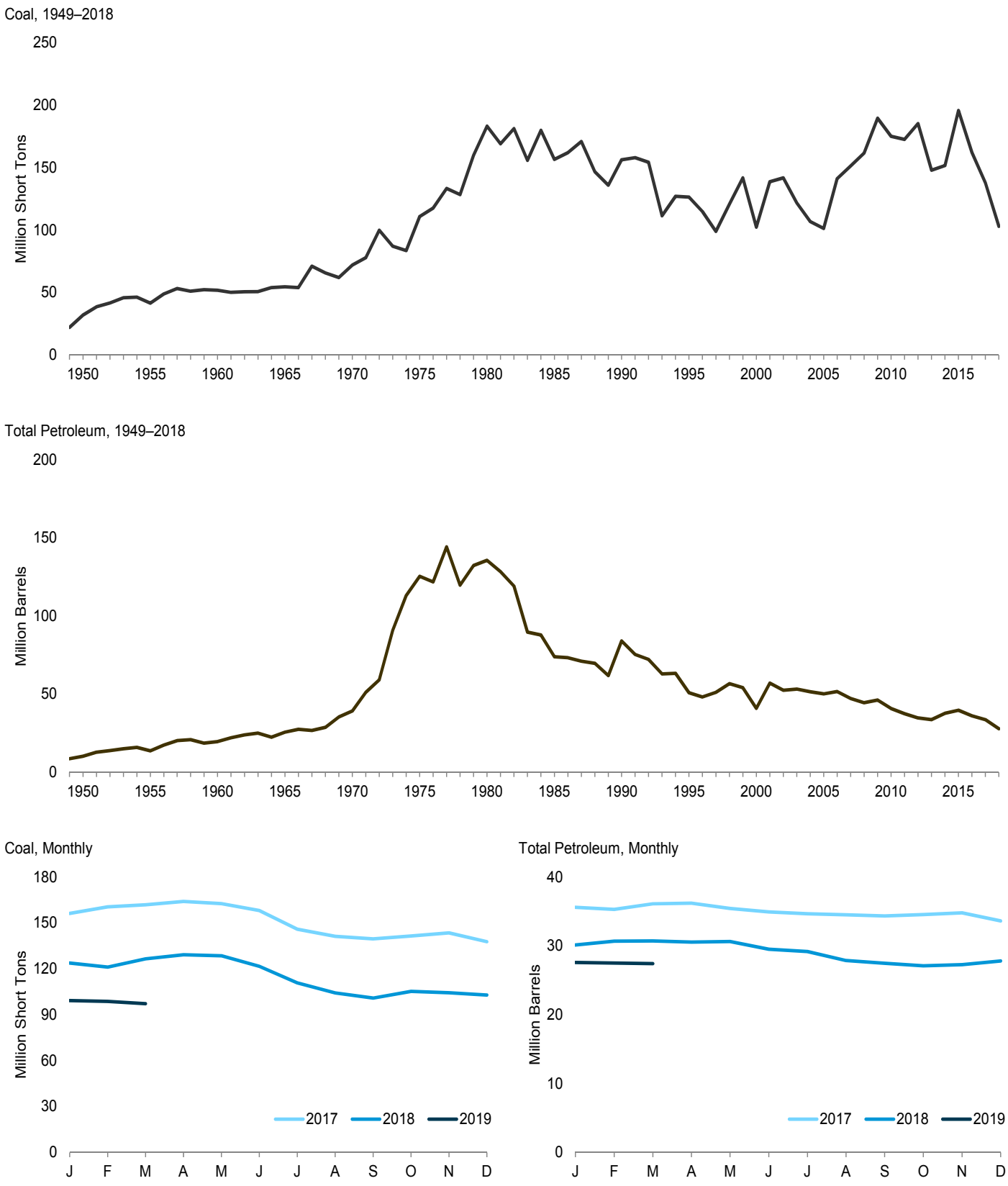
[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.
[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.
[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.
[d] Distillate fuel oil, residual fuel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

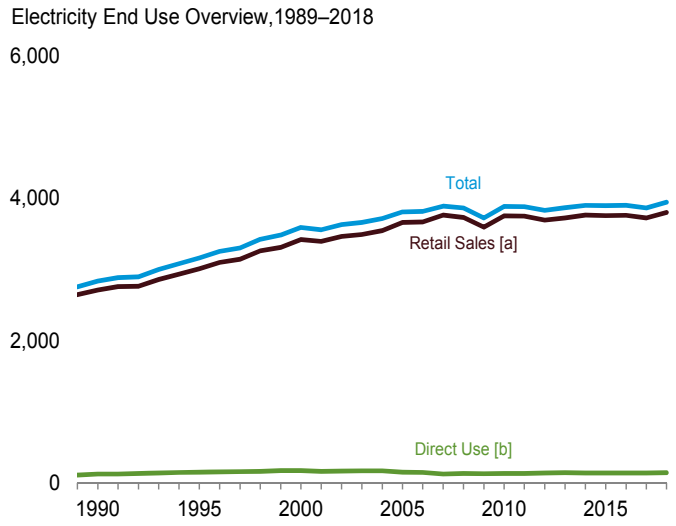
Table 7.5 Stocks of Coal and Petroleum: Electric Power Sector

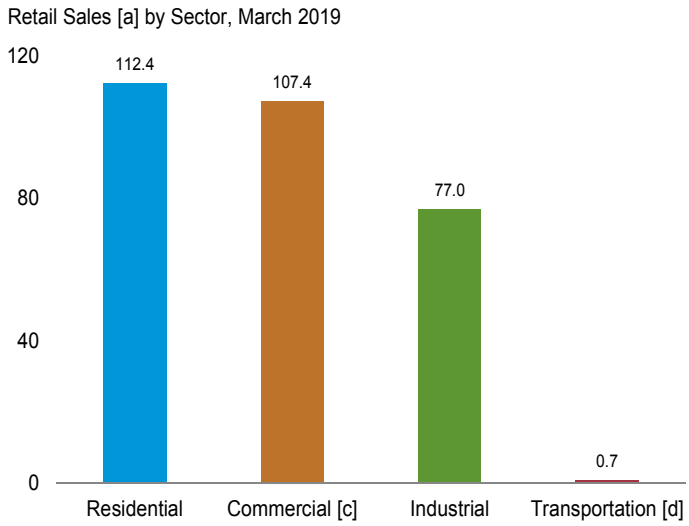
	Coal[a]	Petroleum				
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e,f]
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels
1950 Year	**31,842**	**NA**	**NA**	**NA**	**NA**	**10,201**
1955 Year	**41,391**	**NA**	**NA**	**NA**	**NA**	**13,671**
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	123,723	14,989	9,676	1,842	721	30,109
February	121,019	15,223	10,137	1,878	689	30,685
March	126,532	15,143	10,102	1,881	717	30,710
April	129,071	15,064	10,032	1,884	710	30,527
May	128,454	15,176	9,927	1,950	715	30,628
June	121,529	14,860	9,871	1,846	583	29,491
July	110,794	14,800	9,356	1,806	643	29,178
August	104,172	14,396	8,694	1,737	607	27,863
September	100,781	14,430	8,434	1,729	576	27,476
October	105,209	14,468	8,404	1,630	517	27,088
November	104,324	14,706	8,206	1,625	546	27,269
December	**102,786**	**14,906**	**8,557**	**1,619**	**541**	**27,787**
2019 January	99,201	14,912	8,399	1,624	529	27,579
February	98,744	14,758	8,656	1,544	507	27,495
March	97,127	14,675	8,688	1,557	500	27,419

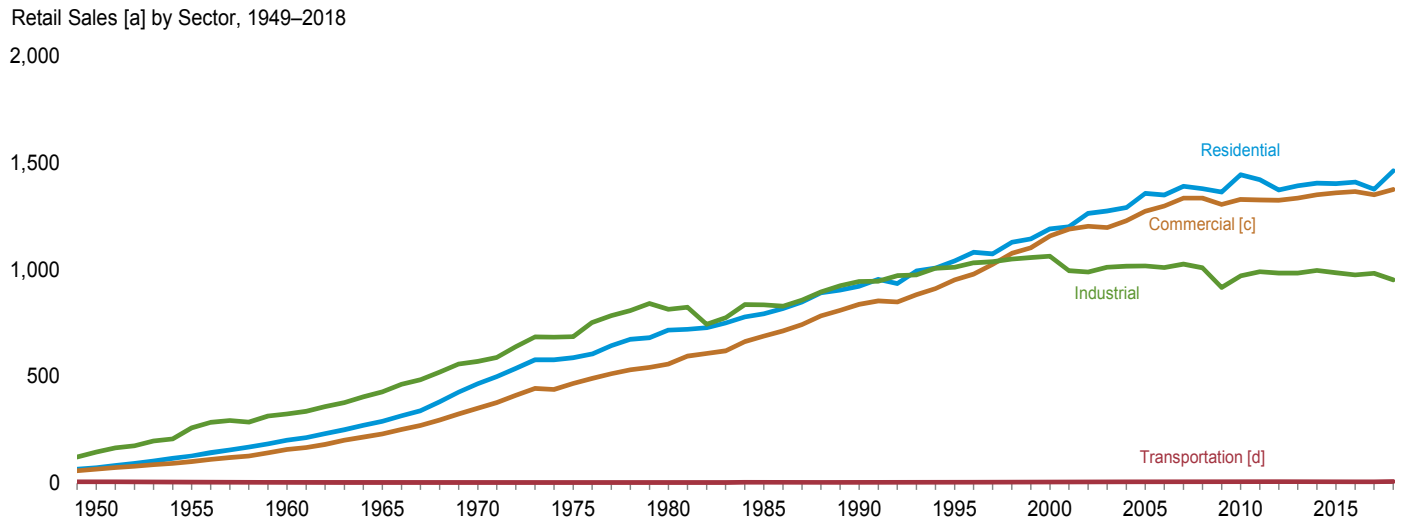
[a] Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.
[b] Fuel oil nos. 1, 2 and 4. For 1973–1979, data are for gas turbine and internal combustion plant stocks of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.
[c]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

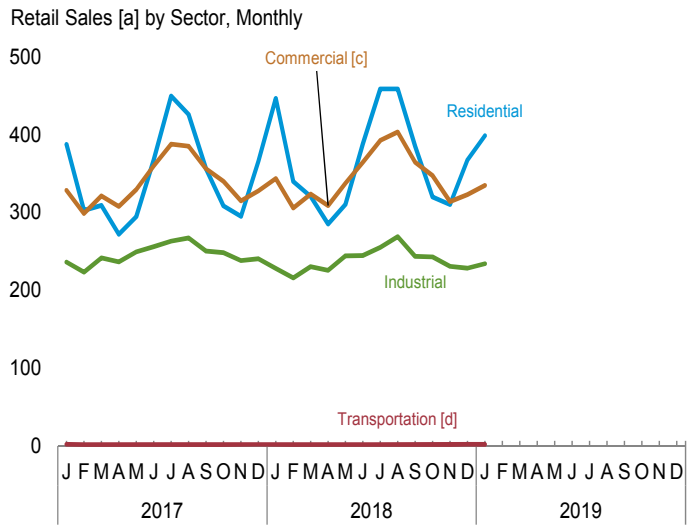
Figure 7.6 Electricity End Use

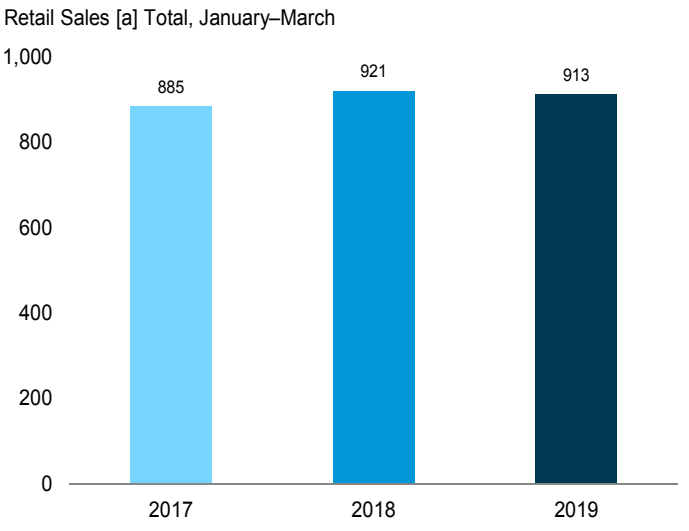
(Billion Kilowatthours)











[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	148,978	114,618	76,061	751	340,408	[E] 12,468	352,876
February	113,383	102,001	71,948	643	287,975	[E] 11,154	299,129
March	106,939	107,886	76,811	625	292,262	[E] 11,572	303,833
April	95,128	102,922	75,241	608	273,898	[E] 11,258	285,156
May	103,395	112,597	81,461	591	298,044	[E] 11,684	309,728
June	129,478	121,578	81,527	628	333,212	[E] 11,961	345,173
July	153,031	130,916	85,041	640	369,629	[E] 12,661	382,289
August	152,951	134,479	89,632	686	377,748	[E] 12,830	390,578
September	128,459	121,581	81,192	648	331,881	[E] 11,859	343,741
October	106,638	115,861	81,023	636	304,157	[E] 11,649	315,807
November	103,372	104,622	76,927	622	285,543	[E] 12,032	297,574
December	122,620	107,678	76,213	660	307,171	[E] 12,451	319,622
Total	**1,464,373**	**1,376,741**	**953,076**	**7,738**	**3,801,928**	[E] 143,579	**3,945,507**
2019 January	132,989	111,613	78,033	664	323,300	[E] 12,608	335,908
February	116,311	102,690	72,371	677	292,049	[E] 11,113	303,161
March	112,384	107,422	77,007	685	297,498	[E] 11,839	309,337
3-Month Total	**361,684**	**321,725**	**227,411**	**2,026**	**912,846**	[E] **35,560**	**948,406**
2018 3-Month Total	**369,301**	**324,506**	**224,819**	**2,019**	**920,645**	[E] **35,194**	**955,839**
2017 3-Month Total	**333,276**	**316,301**	**233,873**	**1,947**	**885,398**	[E] **34,629**	**920,026**

[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*), May 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, May 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 May 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."

2001–2017: EIA, *Electric Power Annual* 2017, December 2018, Table 2.2.

2018: 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 2018, the 2017 annual share is used.

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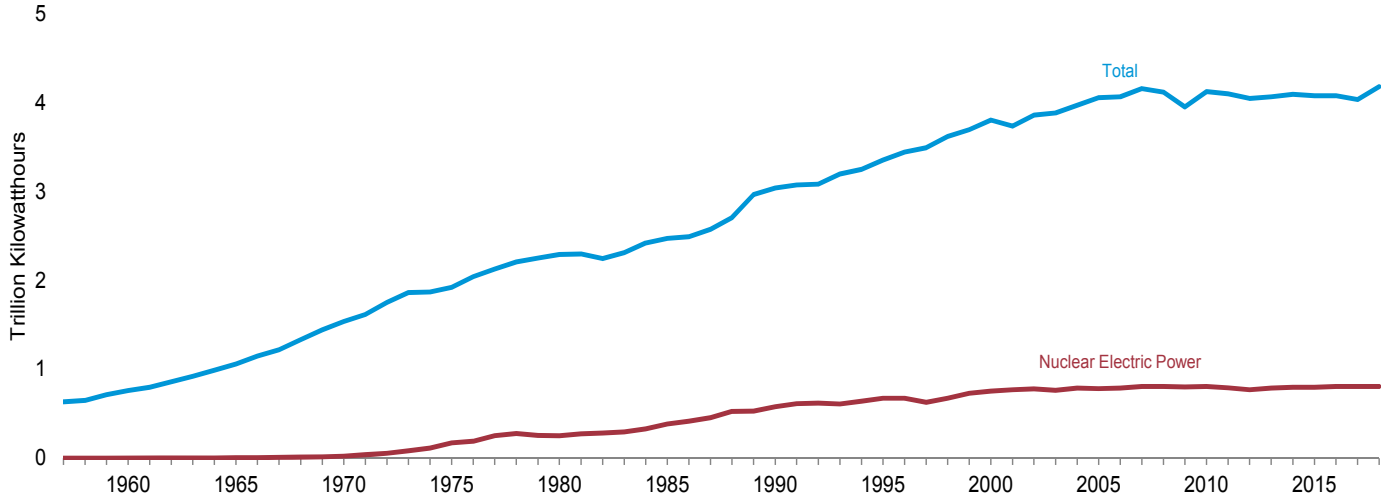
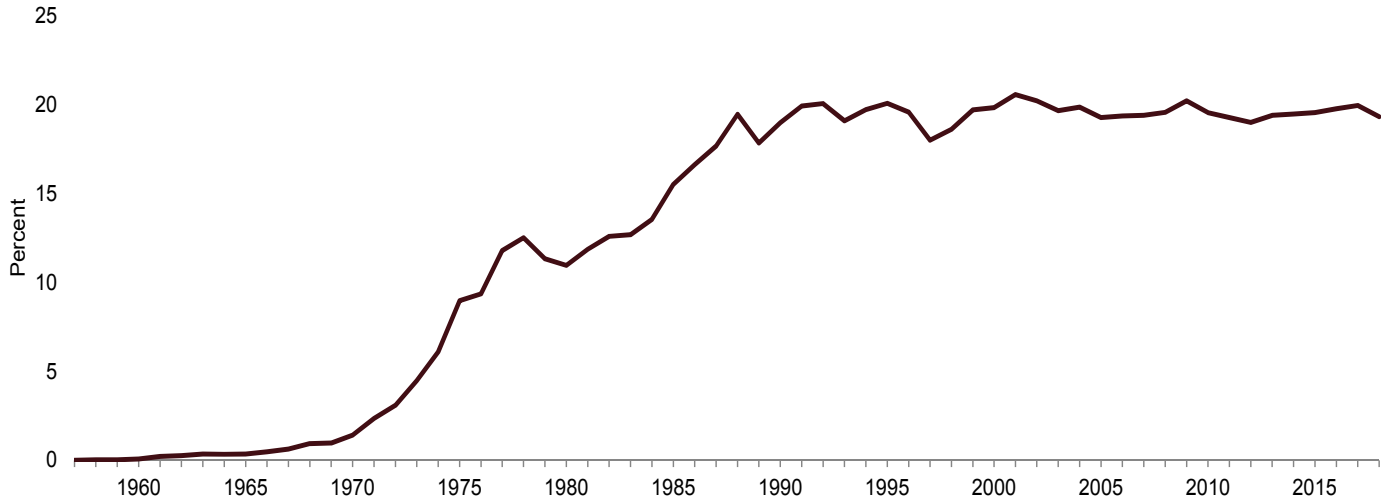
8. Nuclear Energy

Figure 8.1 Nuclear Energy Overview

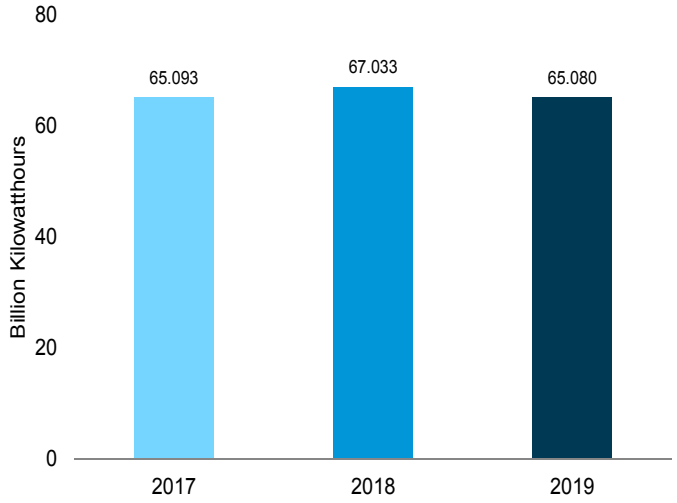
Electricity Net Generation,1957–2018



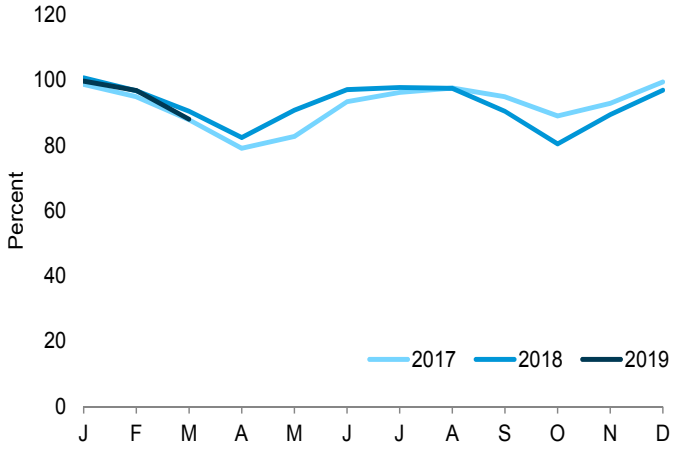
Nuclear Share of Electricity Net Generation,1957–2018



Nuclear Electricity Net Generation–March



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	94.9
March	99	99.610	65,093	20.5	87.8
April	99	99.610	56,743	19.3	79.1
May	99	99.610	61,313	19.0	82.7
June	99	99.610	67,011	18.7	93.4
July	99	99.629	71,314	17.6	96.2
August	99	99.629	72,384	18.8	97.6
September	99	99.629	68,098	20.3	94.9
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**	**92.2**
2018 January	99	[E] 99.653	74,649	19.9	[E] 100.7
February	99	[E] 99.653	64,790	21.2	[E] 96.7
March	99	[E] 99.653	67,033	20.9	[E] 90.4
April	99	[E] 99.653	59,133	19.6	[E] 82.4
May	99	[E] 99.653	67,320	19.8	[E] 90.8
June	99	[E] 99.653	69,688	18.7	[E] 97.1
July	99	[E] 99.653	72,456	17.6	[E] 97.7
August	99	[E] 99.653	72,282	17.7	[E] 97.5
September	98	[E] 99.200	64,725	18.1	[E] 90.4
October	98	[E] 99.200	59,397	18.2	[E] 80.5
November	98	[E] 99.355	63,948	19.8	[E] 89.4
December	98	[E] 99.355	71,657	21.2	[E] 96.9
Total	**98**	[E] 99.355	**807,078**	**19.3**	[E] 92.6
2019 January	98	[E] 99.360	73,701	20.6	[E] 99.7
February	98	[E] 99.446	64,715	20.7	[RE] 96.8
March	98	[E] 99.377	65,080	20.1	[E] 88.0
3-Month Total	**98**	**[E] 99.377**	**203,495**	**20.5**	**[E] 94.8**
2018 3-Month Total	**99**	**[E] 99.653**	**206,472**	**20.6**	**[E] 95.9**
2017 3-Month Total	**99**	**99.610**	**201,774**	**21.2**	**93.8**

[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.

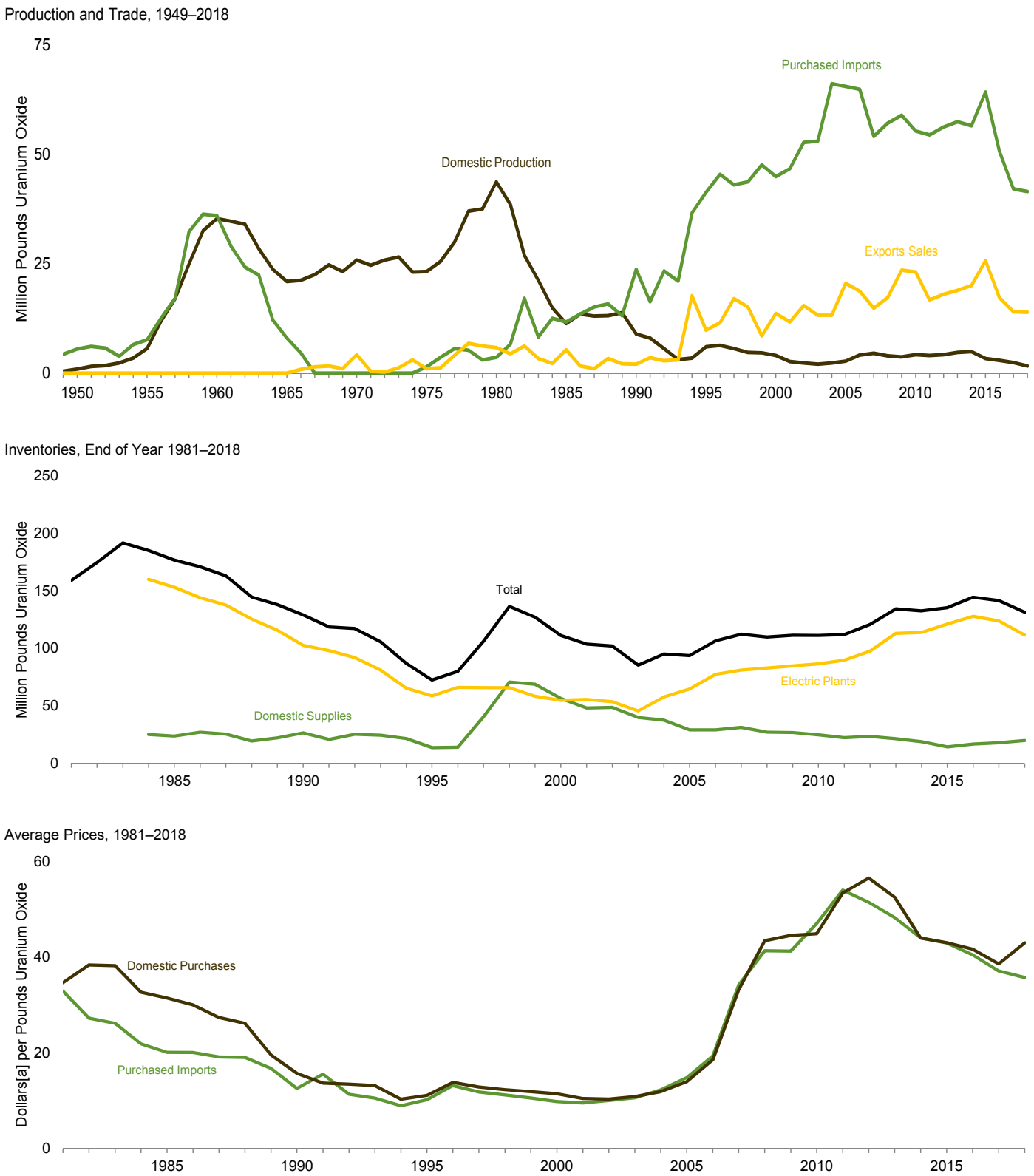
R=Revised. E=Estimate. NA=Not available. (s)=Less than 0.05%.

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.

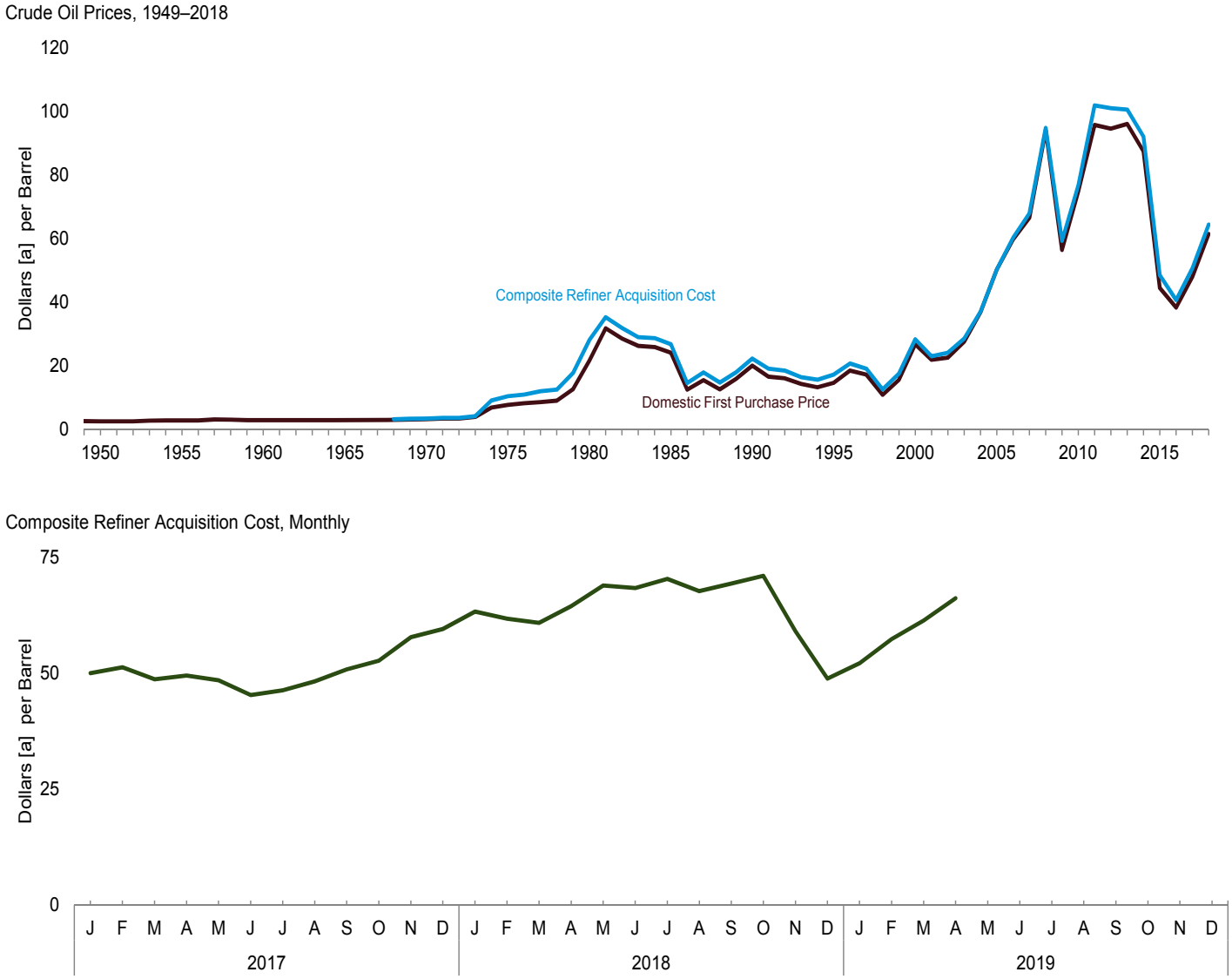
Capacity Factor

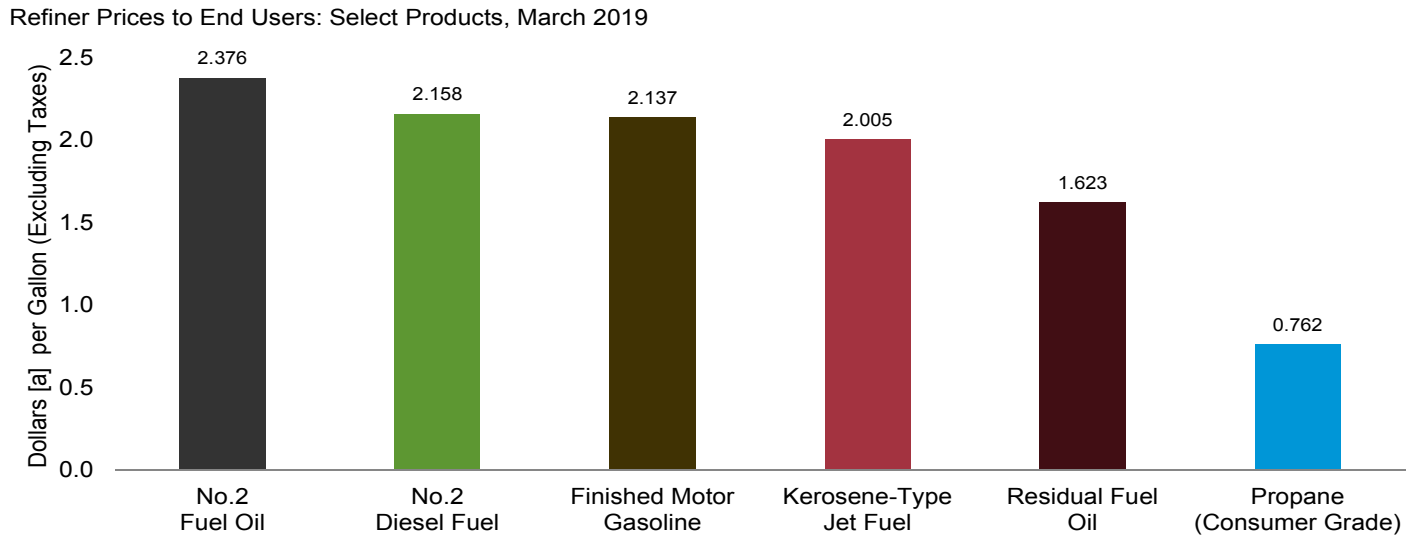
1973–2007: Calculated by EIA using the method described above in Note 2.

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	[R] 58.25	66.08	[R] 59.71	[R] 63.25
February	[R] 61.18	53.42	[R] 56.76	64.68	[R] 58.03	[R] 61.74
March	60.68	53.35	56.32	64.03	[R] 56.82	[R] 60.81
April	63.50	[R] 58.56	[R] 60.62	67.14	[R] 61.24	[R] 64.41
May	66.16	62.95	65.15	[R] 71.29	[R] 65.89	[R] 68.91
June	62.80	63.09	65.48	[R] 69.63	[R] 66.82	[R] 68.35
July	67.00	62.35	[R] 65.44	[R] 73.33	[R] 66.62	[R] 70.29
August	62.64	[R] 61.41	[R] 64.16	69.45	65.48	67.68
September	[R] 63.54	61.56	63.69	[R] 71.09	[R] 66.70	[R] 69.29
October	65.18	[R] 60.23	[R] 61.78	[R] 73.07	[R] 67.79	[R] 70.99
November	55.65	[R] 44.66	[R] 47.16	62.47	54.40	59.01
December	[R] 47.63	36.91	[R] 39.14	53.25	42.80	48.83
Average	**[R] 61.40**	**[R] 56.31**	**[R] 58.89**	**[R] 67.05**	**60.95**	**[R] 64.38**
2019 January	47.85	[R] 48.72	[R] 49.25	53.86	49.57	52.11
February	[R] 52.51	[R] 53.67	[R] 55.40	[R] 57.89	[R] 56.50	[R] 57.35
March	[R] 57.47	[R] 56.48	[R] 58.24	[R] 61.41	[R] 61.20	[R] 61.33
April	NA	NA	NA	[E] 66.52	[E] 65.71	[E] 66.15

[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	R 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	R 59.85
August	W	67.29	63.08	W	R 71.08	W	63.09	R 70.11	R 68.40	57.46
September	W	W	68.15	W	72.90	W	68.94	72.05	71.80	56.39
October	W	W	R 73.91	W	74.73	W	68.44	74.61	73.26	R 54.18
November	–	64.87	63.76	W	R 62.34	W	53.25	R 63.44	R 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**	**R 62.75**	**71.41**	**R 68.23**	**71.65**	**R 61.25**	**R 66.55**	**R 65.61**	**R 51.41**
2019 January	–	53.27	R 54.81	W	W	W	R 48.38	R 58.54	R 55.22	R 46.13
February	–	56.59	R 58.52	W	W	W	R W	61.20	R 62.51	R 51.44
March	–	61.28	60.61	W	W	W	–	64.23	64.48	55.01

[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	R 51.17	63.25	R 59.86	69.15	64.81	W	62.79	R 63.83	R 64.78	R 54.69
February	W	R 48.27	62.55	57.37	69.60	65.30	68.19	55.98	63.21	62.93	R 53.05
March	70.27	47.01	63.59	56.99	70.59	66.77	W	57.72	63.72	R 63.53	51.07
April	W	52.22	66.34	58.62	W	69.44	73.82	R 63.62	67.09	R 66.95	R 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	R 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	R 72.85	72.41	64.12	R 71.64	R 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	R 47.96	R 74.22	R 74.76	W	73.75	W	69.31	72.24	72.19	R 57.15
November	–	28.06	66.20	64.52	68.03	R 65.87	W	55.70	R 64.99	R 63.30	38.56
December	–	21.62	54.71	53.89	62.21	60.39	W	48.93	58.67	57.11	R 30.89
Average	**73.42**	R **48.34**	R **66.75**	R **63.48**	**71.93**	R **69.40**	**73.28**	R **62.46**	R **67.55**	R **67.22**	**54.27**
2019 January	–	R 40.33	56.26	R 56.12	W	R 61.69	W	R 51.82	R 59.80	R 57.46	R 45.44
February	–	R 49.84	R 59.69	R 59.72	W	R 63.53	W	R 52.72	R 61.99	R 61.32	R 53.53
March	–	53.81	64.14	61.74	W	65.21	W	W	63.98	63.70	56.86

[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,* June 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

[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	1.607	1.572	1.623

[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,* June 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

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

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,* June 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	R 1.949	W	1.956	W	2.367	R 2.080	.784
March	2.137	W	2.005	W	2.376	2.158	.762

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

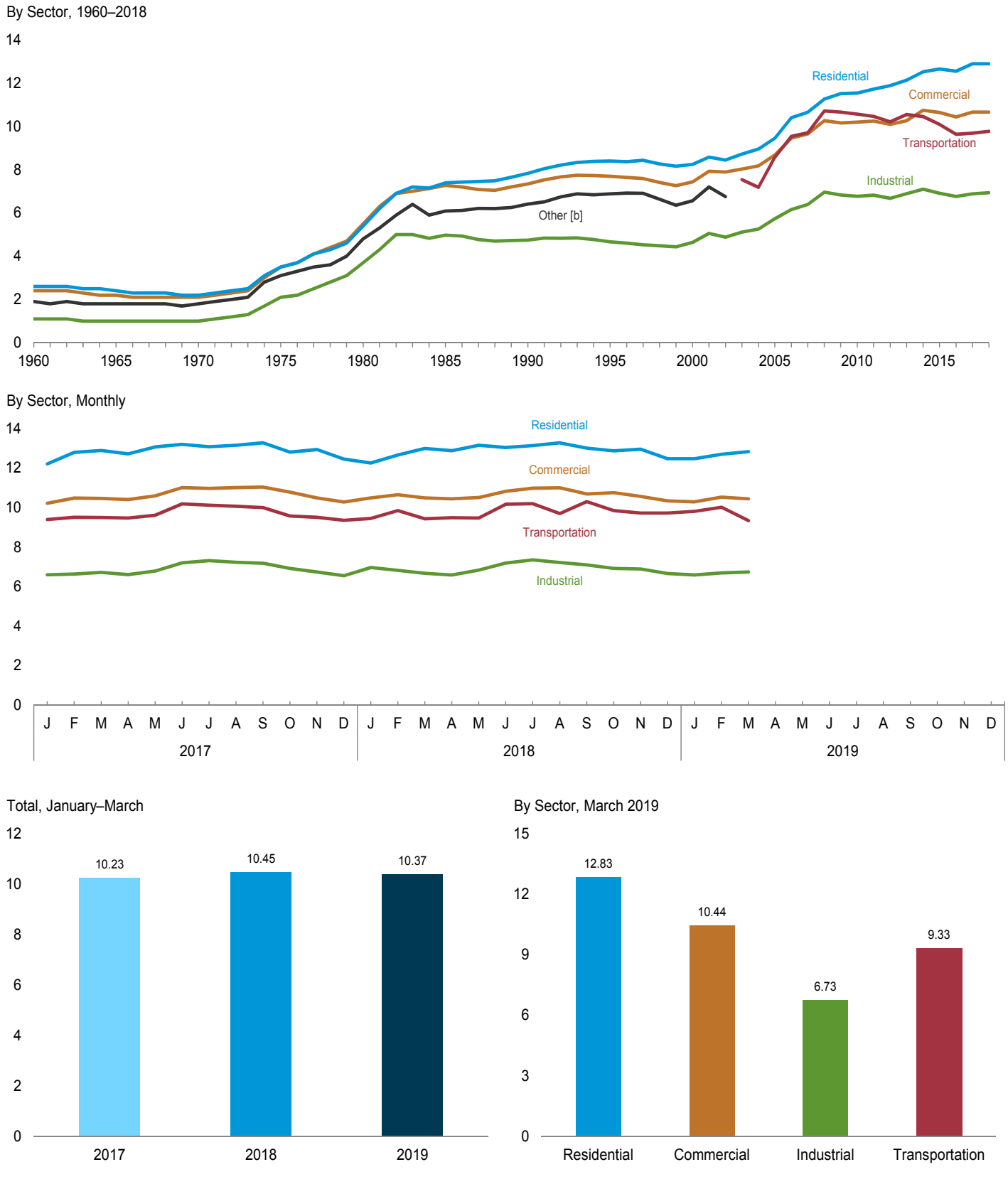
Notes: • Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. Sales for resale are shown in Table 9.6; they are sales made to purchasers other than ultimate consumers. • 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,* June 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	12.25	10.49	6.96	9.44	– –	10.47
February	12.66	10.65	6.81	9.84	– –	10.48
March	12.99	10.49	6.66	9.43	– –	10.40
April	12.88	10.44	6.58	9.48	– –	10.23
May	13.15	10.50	6.82	9.46	– –	10.41
June	13.04	10.82	7.18	10.16	– –	10.79
July	13.13	10.98	7.34	10.19	– –	11.03
August	13.28	11.00	7.21	9.69	– –	11.02
September	13.01	10.68	7.09	10.30	– –	10.70
October	12.87	10.75	6.91	9.84	– –	10.46
November	12.95	10.56	6.88	9.72	– –	10.43
December	12.47	10.33	6.65	9.72	– –	10.27
Average	**12.89**	**10.66**	**6.93**	**9.77**	**– –**	**10.58**
2019 January	12.47	10.29	6.58	9.80	– –	10.29
February	12.70	10.52	6.68	10.01	– –	10.43
March	12.83	10.44	6.73	9.33	– –	10.38
3-Month Average	**12.65**	**10.41**	**6.67**	**9.71**	**– –**	**10.37**
2018 3-Month Average	**12.59**	**10.54**	**6.81**	**9.56**	**– –**	**10.45**
2017 3-Month Average	**12.60**	**10.38**	**6.64**	**9.46**	**– –**	**10.23**

[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.

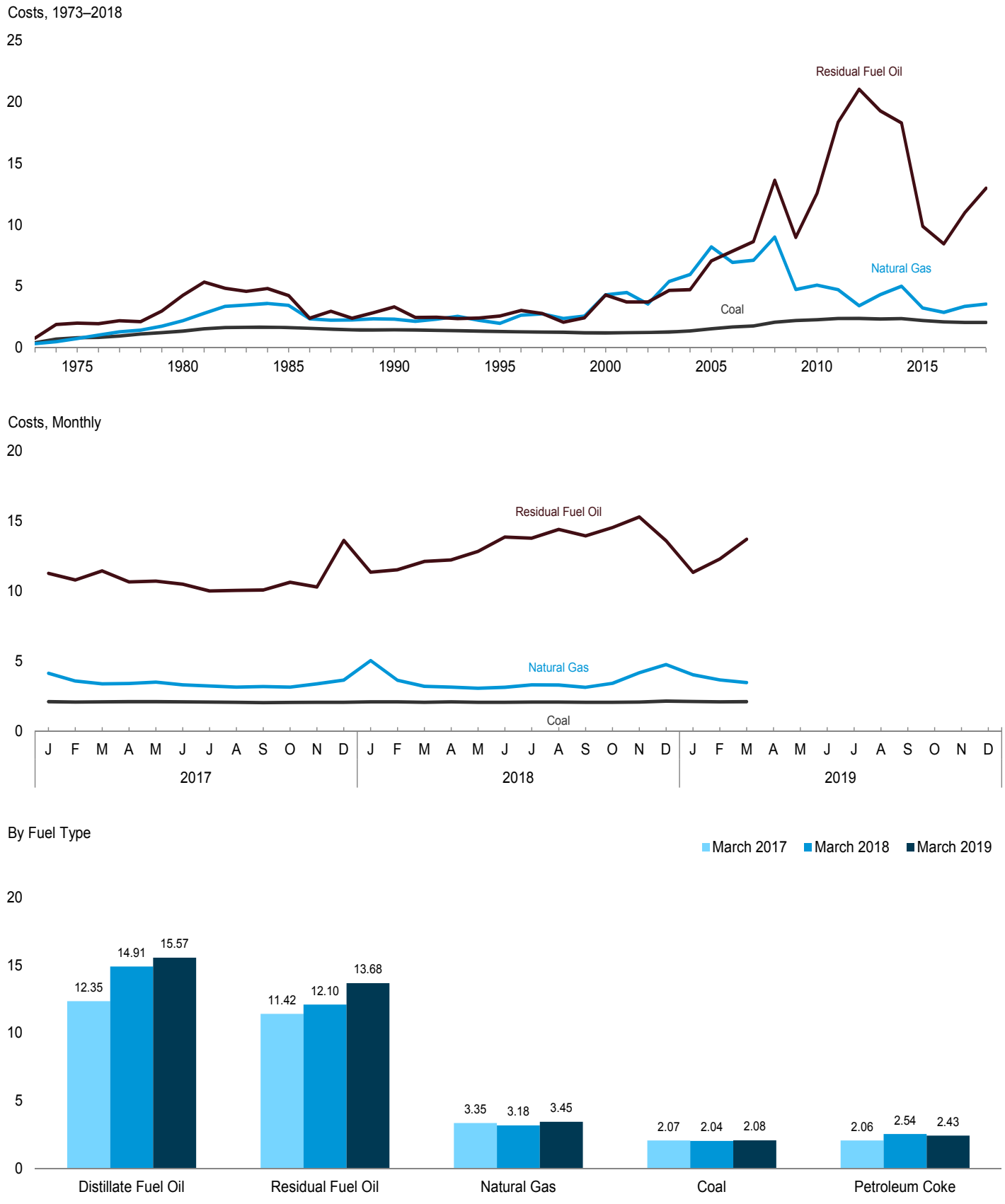
Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of energy service provider 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,* May 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	2.07	11.33	15.96	2.38	11.32	5.02	3.50
February	2.07	11.51	15.00	2.43	8.26	3.61	2.79
March	2.04	12.10	14.91	2.54	7.69	3.18	2.57
April	2.07	12.21	16.07	2.56	8.08	3.13	2.58
May	2.05	12.82	16.78	2.41	10.31	3.04	2.56
June	2.05	13.85	16.91	2.73	9.14	3.11	2.61
July	2.06	13.76	16.40	2.71	8.12	3.29	2.73
August	2.06	14.38	16.76	2.79	8.22	3.28	2.69
September	2.05	13.92	17.35	2.94	8.85	3.11	2.62
October	2.05	14.52	17.66	2.48	10.29	3.39	2.71
November	2.06	15.27	16.20	2.21	9.47	4.16	3.01
December	2.12	13.58	14.27	2.03	9.17	4.73	3.25
Average	**2.06**	**12.98**	**16.09**	**2.54**	**9.27**	**3.55**	**2.80**
2019 January	2.10	11.31	14.12	2.08	8.41	4.01	2.98
February	2.07	12.27	15.31	2.27	9.37	3.64	2.85
March	2.08	13.68	15.57	2.43	10.14	3.45	2.78
3-Month Average	**2.09**	**12.37**	**14.88**	**2.24**	**9.23**	**3.70**	**2.88**
2018 3-Month Average	**2.06**	**11.51**	**15.63**	**2.45**	**9.67**	**3.97**	**2.97**
2017 3-Month Average	**2.07**	**11.24**	**12.82**	**2.06**	**7.36**	**3.67**	**2.73**

[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.

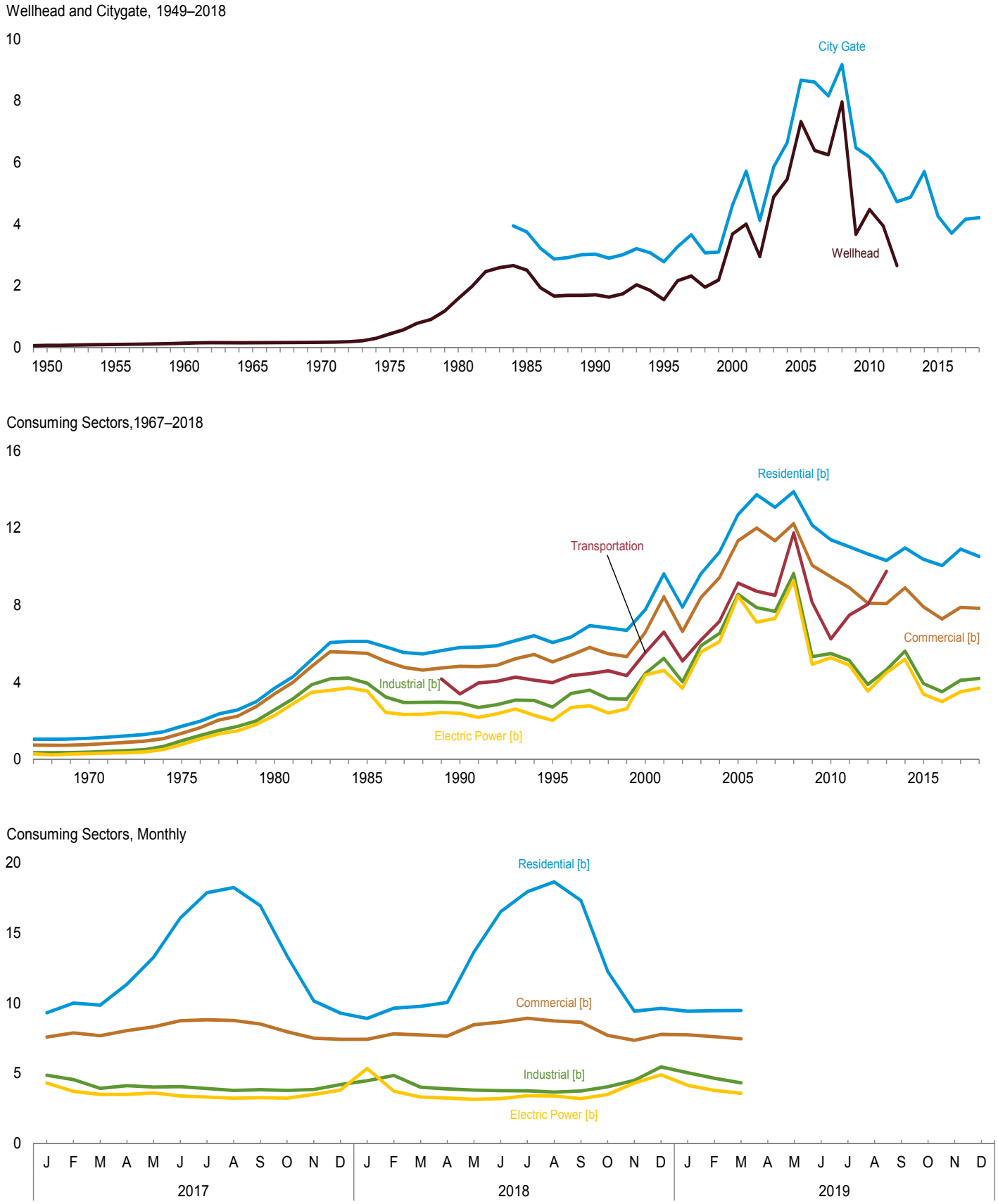
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated 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	4.87	15.0	NA	4.31	94.6
February	NA	4.13	10.01	95.8	7.89	69.0	4.56	14.9	NA	3.72	95.5
March	NA	3.84	9.86	95.7	7.68	67.7	3.94	14.9	NA	3.51	95.6
April	NA	4.20	11.34	95.2	8.04	65.0	4.13	14.5	NA	3.50	96.0
May	NA	4.42	13.26	95.5	8.31	60.8	4.03	13.9	NA	3.61	96.8
June	NA	4.82	16.06	94.4	8.75	58.2	4.06	14.5	NA	3.40	96.0
July	NA	4.73	17.86	95.8	8.81	57.2	3.93	14.6	NA	3.32	95.1
August	NA	4.61	18.22	95.6	8.76	55.9	3.79	14.2	NA	3.24	95.6
September	NA	4.52	16.92	96.1	8.52	56.2	3.84	13.7	NA	3.27	95.1
October	NA	4.03	13.36	96.4	7.97	61.5	3.79	14.2	NA	3.24	95.2
November	NA	3.97	10.15	96.0	7.51	65.8	3.85	14.5	NA	3.50	94.9
December	NA	4.00	9.29	96.5	7.42	69.1	4.21	15.0	NA	3.81	94.8
Average	**NA**	**4.16**	**10.91**	**95.9**	**7.88**	**65.4**	**4.10**	**14.5**	**NA**	**3.51**	**95.4**
2018 January	NA	4.29	8.91	96.1	7.43	71.2	4.48	14.9	NA	5.35	87.6
February	NA	3.99	9.64	96.0	7.82	69.1	4.86	14.6	NA	3.74	86.8
March	NA	3.71	9.78	95.9	7.74	68.4	4.02	15.0	NA	3.32	88.2
April	NA	3.64	10.04	95.6	7.66	65.3	3.90	14.7	NA	3.25	88.5
May	NA	4.13	13.64	94.8	8.46	59.7	3.81	13.8	NA	3.15	85.4
June	NA	4.46	16.51	95.7	8.65	57.4	3.78	13.7	NA	3.21	87.7
July	NA	4.71	17.92	95.8	8.93	56.0	3.76	13.7	NA	3.41	84.9
August	NA	4.84	18.63	95.6	8.74	54.8	3.67	13.9	NA	3.39	86.1
September	NA	4.70	17.31	96.2	8.64	56.5	3.75	13.7	NA	3.21	86.7
October	NA	4.07	12.26	96.5	7.71	61.0	4.04	13.7	NA	3.50	88.4
November	NA	4.29	9.43	96.4	7.35	66.5	4.51	14.2	NA	4.32	88.8
December	NA	4.75	9.63	96.2	7.77	68.8	5.46	14.3	NA	4.89	91.6
Average	**NA**	**4.21**	**10.52**	**96.0**	**7.83**	**65.6**	**4.20**	**14.2**	**NA**	**3.68**	**87.3**
2019 January	NA	4.09	9.43	96.3	7.75	70.2	5.04	13.6	NA	4.16	91.1
February	NA	3.89	[R] 9.47	96.1	[R] 7.61	69.4	4.65	14.0	NA	3.79	90.5
March	NA	4.06	9.48	96.0	7.47	69.1	4.33	13.6	NA	3.59	89.9
3-Month Average	**NA**	**4.02**	**9.46**	**96.2**	**7.62**	**69.6**	**4.68**	**13.7**	**NA**	**3.86**	**90.5**
2018 3-Month Average	**NA**	**4.03**	**9.38**	**96.0**	**7.64**	**69.7**	**4.45**	**14.9**	**NA**	**4.17**	**87.5**
2017 3-Month Average	**NA**	**4.08**	**9.69**	**95.8**	**7.71**	**69.2**	**4.46**	**14.9**	**NA**	**3.85**	**95.2**

[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*, June 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*, June 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*, June 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*, June 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*, May 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), May 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, May 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, May 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).

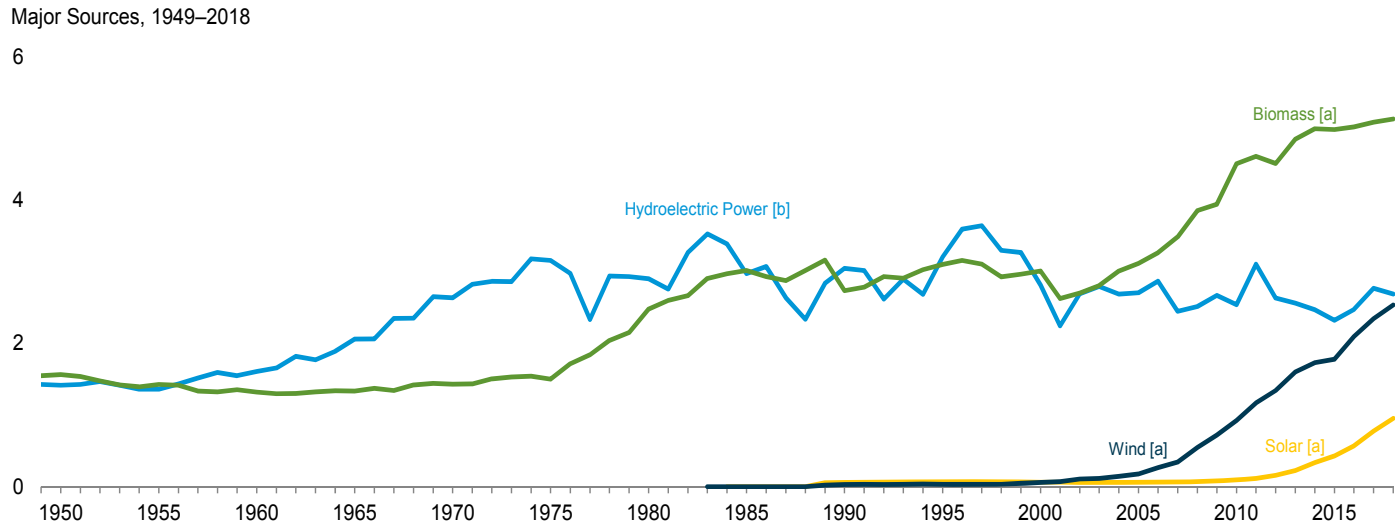
2002–2007: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report,"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

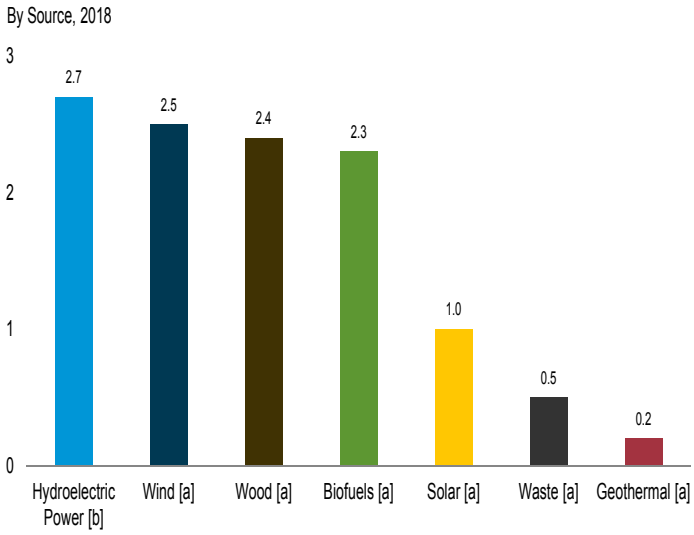
2008 forward: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form EIA-923, "Power Plant Operations Report," divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

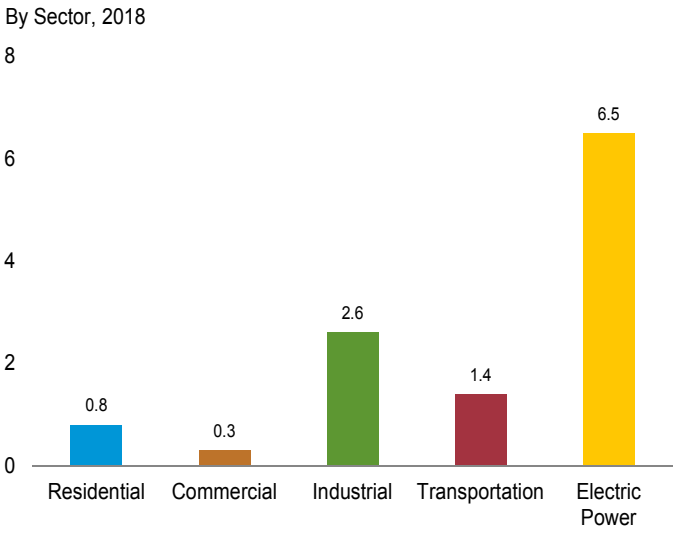
10. Renewable Energy

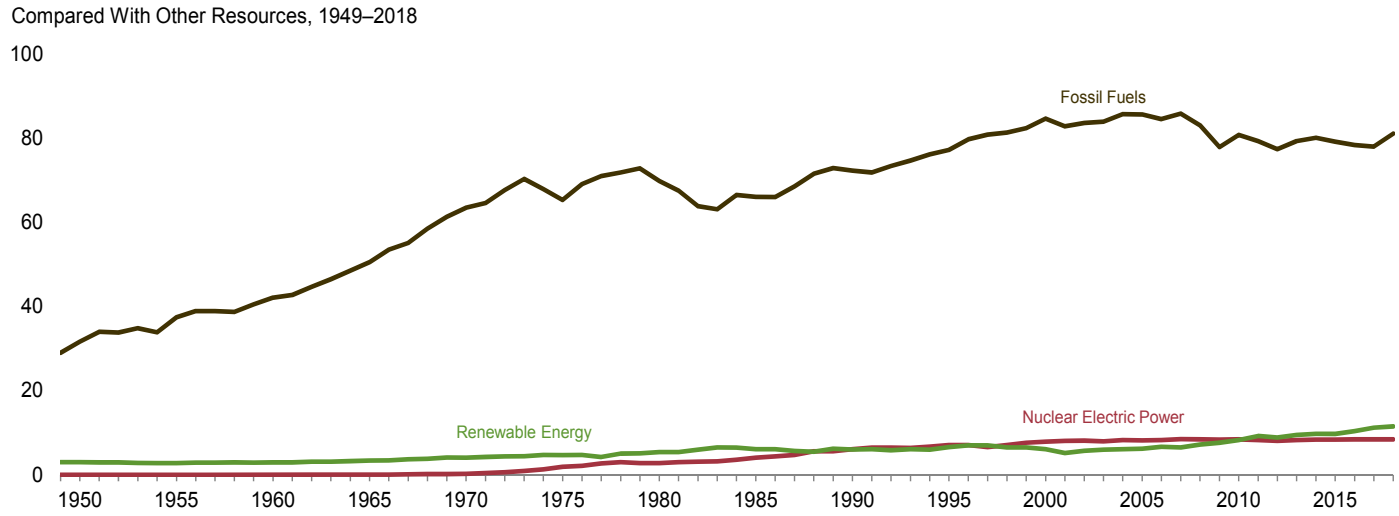
Figure 10.1 Renewable Energy Consumption

(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[d]	Hydroelectric Power[e]	Geothermal[f]	Solar[g]	Wind[h]	Biomass				Total Renewable Energy
	Biofuels[b]	Total[c]						Wood[i]	Waste[j]	Biofuels[k]	Total	
1950 Total	**NA**	**1,562**	**2,978**	**1,415**	**NA**	**NA**	**NA**	**1,562**	**NA**	**NA**	**1,562**	**2,978**
1955 Total	**NA**	**1,424**	**2,784**	**1,360**	**NA**	**NA**	**NA**	**1,424**	**NA**	**NA**	**1,424**	**2,784**
1960 Total	**NA**	**1,320**	**2,928**	**1,608**	**(s)**	**NA**	**NA**	**1,320**	**NA**	**NA**	**1,320**	**2,928**
1965 Total	**NA**	**1,335**	**3,396**	**2,059**	**2**	**NA**	**NA**	**1,335**	**NA**	**NA**	**1,335**	**3,396**
1970 Total	**NA**	**1,431**	**4,070**	**2,634**	**6**	**NA**	**NA**	**1,429**	**2**	**NA**	**1,431**	**4,070**
1975 Total	**NA**	**1,499**	**4,687**	**3,155**	**34**	**NA**	**NA**	**1,497**	**2**	**NA**	**1,499**	**4,687**
1980 Total	**NA**	**2,475**	**5,428**	**2,900**	**53**	**NA**	**NA**	**2,474**	**2**	**NA**	**2,475**	**5,428**
1985 Total	**93**	**3,016**	**6,084**	**2,970**	**97**	**(s)**	**(s)**	**2,687**	**236**	**93**	**3,016**	**6,084**
1990 Total	**111**	**2,735**	**6,040**	**3,046**	**171**	**59**	**29**	**2,216**	**408**	**111**	**2,735**	**6,040**
1995 Total	**198**	**3,099**	**6,557**	**3,205**	**152**	**68**	**33**	**2,370**	**531**	**200**	**3,101**	**6,559**
2000 Total	**233**	**3,006**	**6,102**	**2,811**	**164**	**63**	**57**	**2,262**	**511**	**236**	**3,008**	**6,104**
2001 Total	**254**	**2,624**	**5,162**	**2,242**	**164**	**62**	**70**	**2,006**	**364**	**253**	**2,622**	**5,160**
2002 Total	**308**	**2,705**	**5,731**	**2,689**	**171**	**60**	**105**	**1,995**	**402**	**303**	**2,701**	**5,726**
2003 Total	**401**	**2,805**	**5,942**	**2,793**	**173**	**58**	**113**	**2,002**	**401**	**403**	**2,806**	**5,944**
2004 Total	**486**	**2,996**	**6,063**	**2,688**	**178**	**58**	**142**	**2,121**	**389**	**498**	**3,008**	**6,075**
2005 Total	**561**	**3,101**	**6,221**	**2,703**	**181**	**58**	**178**	**2,137**	**403**	**574**	**3,114**	**6,234**
2006 Total	**716**	**3,212**	**6,586**	**2,869**	**181**	**61**	**264**	**2,099**	**397**	**766**	**3,262**	**6,637**
2007 Total	**970**	**3,472**	**6,510**	**2,446**	**186**	**66**	**341**	**2,089**	**413**	**983**	**3,485**	**6,523**
2008 Total	**1,374**	**3,868**	**7,192**	**2,511**	**192**	**74**	**546**	**2,059**	**435**	**1,357**	**3,851**	**7,175**
2009 Total	**1,570**	**3,957**	**7,625**	**2,669**	**200**	**78**	**721**	**1,935**	**452**	**1,553**	**3,940**	**7,608**
2010 Total	**1,868**	**4,553**	**8,314**	**2,539**	**208**	**91**	**923**	**2,217**	**468**	**1,821**	**4,506**	**8,267**
2011 Total	**2,029**	**4,704**	**9,300**	**3,103**	**212**	**112**	**1,168**	**2,213**	**462**	**1,934**	**4,609**	**9,204**
2012 Total	**1,929**	**4,547**	**8,886**	**2,629**	**212**	**159**	**1,340**	**2,151**	**467**	**1,890**	**4,508**	**8,847**
2013 Total	**1,981**	**4,816**	**9,418**	**2,562**	**214**	**225**	**1,601**	**2,338**	**496**	**2,014**	**4,848**	**9,451**
2014 Total	**2,103**	**5,020**	**9,766**	**2,467**	**214**	**337**	**1,728**	**2,401**	**516**	**2,077**	**4,994**	**9,740**
2015 Total	**2,161**	**4,992**	**9,729**	**2,321**	**212**	**427**	**1,777**	**2,312**	**518**	**2,153**	**4,983**	**9,720**
2016 Total	**2,275**	**5,081**	**10,428**	**2,472**	**210**	**570**	**2,096**	**2,230**	**503**	**2,287**	**5,020**	**10,368**
2017 January	197	445	926	247	18	34	183	196	45	181	422	904
February	177	398	867	218	16	40	195	176	40	168	383	852
March	197	442	1,023	270	18	63	230	194	43	191	429	1,010
April	183	412	997	271	18	69	227	183	41	185	408	993
May	197	432	1,035	298	17	81	207	188	41	202	431	1,034
June	192	427	991	278	16	87	183	188	40	199	428	992
July	196	439	932	244	18	83	147	197	41	196	434	927
August	203	450	874	201	18	80	125	199	41	205	445	869
September	192	421	852	176	17	74	164	183	38	190	411	842
October	201	438	924	168	17	68	233	190	40	196	427	914
November	203	443	921	189	17	50	222	191	42	194	426	905
December	205	458	959	206	20	49	226	200	43	195	439	940
Total	**2,344**	**5,204**	**11,301**	**2,767**	**210**	**777**	**2,343**	**2,285**	**495**	**2,304**	**5,084**	**11,181**
2018 January	198	451	1,002	236	18	50	247	203	44	191	437	989
February	182	417	949	235	17	58	222	186	41	165	391	924
March	200	448	1,033	239	18	76	251	198	44	191	433	1,018
April	190	429	1,034	253	17	89	247	190	41	179	411	1,016
May	201	447	1,063	280	19	100	217	198	41	199	437	1,053
June	200	445	1,051	258	18	107	225	196	40	193	429	1,036
July	210	459	946	221	19	100	148	203	40	200	442	930
August	212	464	958	197	19	99	180	203	40	205	448	943
September	193	428	874	172	18	90	166	190	36	182	408	854
October	204	451	912	173	18	76	195	196	41	196	433	894
November	198	440	928	204	18	58	207	192	41	187	421	908
December	200	454	970	219	20	50	229	202	43	191	436	953
Total	**2,389**	**5,332**	**11,722**	**2,688**	**218**	**951**	**2,533**	**2,357**	**492**	**2,279**	**5,128**	**11,518**
2019 January	195	446	978	226	19	55	232	203	41	178	423	954
February	177	R 405	R 897	203	17	59	212	182	37	171	391	883
March	191	431	1,013	234	19	88	240	192	41	189	421	1,002
3-Month Total	**563**	**1,282**	**2,887**	**663**	**55**	**202**	**684**	**577**	**120**	**538**	**1,235**	**2,839**
2018 3-Month Total	**581**	**1,316**	**2,984**	**710**	**54**	**184**	**721**	**587**	**128**	**547**	**1,262**	**2,930**
2017 3-Month Total	**572**	**1,285**	**2,816**	**734**	**53**	**136**	**608**	**566**	**128**	**540**	**1,234**	**2,766**

[a] For hydroelectric power, geothermal, solar, wind, and biomass waste, production equals consumption. For biofuels, production equals total biomass inputs to the production of fuel ethanol and biodiesel. For wood, through 2015, production equals consumption; beginning in 2016, production equals consumption plus densified biomass exports.

[b] Total biomass inputs to the production of fuel ethanol and biodiesel.

[c] Wood and wood-derived fuels, biomass waste, and total biomass inputs to the production of fuel ethanol and biodiesel.

[d] Hydroelectric power, geothermal, solar, wind, and biomass.

[e] Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[f] 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.

[g] 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.

[h] Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[i] Wood and wood-derived fuels.

[j] 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).

[k] 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**	**[j] 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	66	NM	2	8	(s)	7	4	2	13	23
April	3	21	43	67	(s)	2	9	(s)	7	4	2	12	23
May	3	23	44	70	NM	2	10	(s)	7	4	2	13	25
June	3	23	43	69	NM	2	10	(s)	7	4	2	13	25
July	3	24	44	71	NM	2	10	(s)	7	4	2	13	25
August	3	23	44	70	NM	2	10	(s)	7	4	2	13	25
September	3	20	43	66	(s)	2	9	(s)	7	3	2	12	23
October	3	18	44	65	NM	2	8	(s)	7	4	2	13	23
November	3	15	43	60	NM	2	6	(s)	7	4	2	13	21
December	3	13	44	61	(s)	2	6	(s)	7	4	2	13	21
Total	**40**	**224**	**517**	**780**	**2**	**20**	**96**	**2**	**84**	**44**	**25**	**153**	**273**
2019 January	3	14	45	62	NM	2	6	(s)	7	4	2	13	22
February	3	15	41	59	NM	2	7	(s)	7	3	2	12	21
March	3	22	45	70	NM	2	9	(s)	7	4	2	13	25
3-Month Total	**10**	**51**	**131**	**191**	**1**	**6**	**22**	**(s)**	**21**	**11**	**6**	**38**	**67**
2018 3-Month Total	**10**	**44**	**128**	**181**	**1**	**5**	**19**	**(s)**	**21**	**11**	**6**	**38**	**63**
2017 3-Month Total	**10**	**37**	**107**	**153**	**1**	**5**	**15**	**(s)**	**21**	**12**	**6**	**39**	**59**

[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)	131	15	2	70	218	221	98	18	2	117
February	1	(s)	1	(s)	122	14	1	63	200	203	81	14	3	98
March	1	(s)	2	(s)	128	15	2	69	214	218	96	20	3	119
April	1	(s)	2	(s)	126	14	1	66	208	211	88	20	2	110
May	1	(s)	3	(s)	128	14	2	69	213	217	103	21	2	126
June	1	(s)	3	(s)	127	12	2	69	210	214	98	22	1	121
July	1	(s)	3	(s)	132	13	2	72	219	223	101	22	1	124
August	1	(s)	3	(s)	134	13	2	73	221	225	104	23	1	128
September	1	(s)	2	(s)	124	13	1	66	204	207	91	21	1	113
October	1	(s)	2	(s)	128	15	2	70	214	218	99	22	1	122
November	1	(s)	2	(s)	127	14	2	68	211	214	94	19	2	116
December	1	(s)	2	(s)	133	15	2	68	218	221	97	21	2	119
Total	**13**	**4**	**25**	**1**	**1,540**	**168**	**18**	**823**	**2,549**	**2,593**	**1,150**	**242**	**21**	**1,413**
2019 January	1	(s)	2	(s)	131	15	1	67	214	217	90	16	2	108
February	1	(s)	2	(s)	118	14	1	61	194	197	89	17	2	107
March	1	(s)	2	(s)	123	14	2	66	204	208	97	20	2	119
3-Month Total	**2**	**1**	**6**	**(s)**	**371**	**43**	**4**	**194**	**612**	**622**	**276**	**53**	**5**	**334**
2018 3-Month Total	**3**	**1**	**5**	**(s)**	**382**	**44**	**4**	**202**	**632**	**642**	**275**	**52**	**7**	**334**
2017 3-Month Total	**3**	**1**	**4**	**(s)**	**379**	**44**	**4**	**204**	**632**	**641**	**271**	**46**	**8**	**325**

[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	235	13	31	247	20	25	45	571
February	234	12	38	222	18	23	41	547
March	238	13	47	251	19	25	44	593
April	252	11	57	246	15	23	38	605
May	279	13	64	217	18	23	42	615
June	256	13	71	224	19	24	43	607
July	220	13	63	147	20	23	43	487
August	196	13	64	180	19	24	42	495
September	171	13	59	165	17	21	37	445
October	172	12	48	195	17	23	40	466
November	203	13	36	207	16	23	39	498
December	217	14	29	228	18	24	41	530
Total	**2,673**	**154**	**607**	**2,530**	**215**	**280**	**495**	**6,459**
2019 January	225	13	33	232	20	23	43	546
February	202	12	36	212	17	20	37	499
March	233	13	55	240	17	23	39	580
3-Month Total	**660**	**38**	**124**	**683**	**54**	**66**	**120**	**1,625**
2018 3-Month Total	**706**	**38**	**116**	**720**	**57**	**73**	**130**	**1,711**
2017 3-Month Total	**730**	**37**	**81**	**608**	**60**	**72**	**132**	**1,587**

[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**	**821**	***800***
2009 Total	**1,503**	**602**	**5,688**	**260,424**	**10,938**	**928**	**4,720**	**16,594**	**2,368**	**262,776**	**11,037**	**936**	***910***
2010 Total	**1,823**	**726**	**6,506**	**316,617**	**13,298**	**1,127**	**-9,115**	**17,941**	**1,347**	**306,155**	**12,858**	**1,090**	***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**	**1,126**	**-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**	**1,212**	**-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	182	69	504	32,428	1,362	115	-2,104	24,229	[i] 1,181	29,143	1,224	104	*102*
February	166	63	441	29,519	1,240	105	-5,298	24,335	106	24,115	1,013	86	*84*
March	181	69	484	32,216	1,353	114	-5,122	22,883	-1,452	28,546	1,199	101	*100*
April	172	65	462	30,532	1,282	108	-3,866	23,256	373	26,293	1,104	93	*92*
May	181	69	487	32,215	1,353	114	-2,280	22,636	-620	30,555	1,283	109	*106*
June	180	68	473	31,924	1,341	113	-3,609	21,880	-756	29,071	1,221	103	*101*
July	188	72	519	33,496	1,407	119	-2,487	22,802	922	30,087	1,264	107	*105*
August	190	72	527	33,773	1,418	120	-2,638	22,833	31	31,104	1,306	111	*108*
September	173	66	471	30,667	1,288	109	-2,106	24,422	1,589	26,972	1,133	96	*94*
October	182	69	450	32,380	1,360	115	-3,714	23,675	-747	29,413	1,235	105	*103*
November	177	68	470	31,514	1,324	112	-3,384	23,679	4	28,126	1,181	100	*98*
December	178	68	518	31,736	1,333	113	-3,075	23,338	-341	29,002	1,218	103	*101*
Total	**2,152**	**819**	**5,806**	**382,400**	**16,061**	**1,359**	**-39,682**	**23,338**	**[i] 290**	**342,428**	**14,382**	**1,217**	***1,193***
2019 January	177	67	548	31,601	1,327	112	-3,048	25,026	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*
3-Month Total	**510**	**193**	**1,551**	**91,072**	**3,825**	**324**	**-8,847**	**23,311**	**-27**	**82,252**	**3,455**	**292**	***286***
2018 3-Month Total	**530**	**202**	**1,429**	**94,163**	**3,955**	**335**	**-12,523**	**22,883**	**-165**	**81,805**	**3,436**	**291**	***285***
2017 3-Month Total	**532**	**204**	**1,748**	**94,587**	**3,973**	**336**	**-9,472**	**23,981**	**4,223**	**80,892**	**3,397**	**288**	***281***

[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 2017 stocks value (23,048 thousand barrels), not the final 2017 value (23,043 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**	**2,455**	**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)	2,945	124	16	246	102	144	4,557	[i] -193	3,282	138	18	2
February	16	(s)	2,996	126	16	146	103	43	4,924	367	2,672	112	14	3
March	19	(s)	3,493	147	19	457	255	202	4,916	-8	3,702	155	20	3
April	18	(s)	3,344	140	18	308	217	91	4,681	-235	3,670	154	20	2
May	19	(s)	3,538	149	19	325	382	-57	4,257	-424	3,905	164	21	2
June	20	(s)	3,718	156	20	296	275	21	3,845	-412	4,150	174	22	1
July	21	(s)	3,892	163	21	157	259	-102	3,583	-262	4,052	170	22	1
August	22	(s)	4,028	169	22	281	263	18	3,412	-172	4,217	177	23	1
September	21	(s)	3,850	162	21	277	190	87	3,360	-52	3,989	168	21	1
October	22	(s)	4,039	170	22	468	188	280	3,647	287	4,032	169	22	1
November	21	(s)	3,783	159	20	416	156	260	4,056	409	3,633	153	19	2
December	22	(s)	3,991	168	21	536	61	475	4,684	628	3,838	161	21	2
Total	**237**	**3**	**43,616**	**1,832**	**234**	**3,913**	**2,453**	**1,460**	**4,684**	**[i] -65**	**45,141**	**1,896**	**242**	**21**
2019 January	19	(s)	3,427	144	18	308	72	236	5,377	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
3-Month Total	**54**	**1**	**9,888**	**415**	**53**	**1,084**	**404**	**680**	**5,371**	**687**	**9,881**	**415**	**53**	**5**
2018 3-Month Total	**51**	**1**	**9,434**	**396**	**51**	**849**	**460**	**389**	**4,916**	**166**	**9,656**	**406**	**52**	**7**
2017 3-Month Total	**39**	**1**	**7,207**	**303**	**39**	**1,440**	**238**	**1,202**	**6,189**	**-208**	**8,618**	**362**	**46**	**8**

[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 2017 stocks value (4,750 thousand barrels), not the final 2017 value (4,268 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)	31	31	50
February	4	9	6	1	16	20	(s)	(s)	38	38	58
March	5	13	7	2	22	28	(s)	(s)	47	48	76
April	6	15	8	2	25	31	1	(s)	57	58	89
May	7	16	9	2	28	34	1	(s)	64	65	100
June	7	17	9	2	28	35	1	(s)	71	72	107
July	7	17	10	3	29	36	1	(s)	63	64	100
August	7	16	9	2	28	35	1	(s)	64	64	99
September	6	14	8	2	25	31	1	(s)	59	60	90
October	5	13	7	2	22	27	(s)	(s)	48	48	76
November	4	10	6	2	18	22	(s)	(s)	36	36	58
December	4	9	5	1	16	20	(s)	(s)	29	29	50
Total	**66**	**158**	**90**	**24**	**272**	**338**	**6**	**1**	**607**	**614**	**951**
2019 January	4	10	6	2	18	21	(s)	(s)	33	34	55
February	4	11	6	2	19	23	(s)	(s)	36	36	59
March	5	16	9	2	27	33	(s)	(s)	55	55	88
3-Month Total	**13**	**38**	**21**	**6**	**64**	**77**	**1**	**(s)**	**124**	**125**	**202**
2018 3-Month Total	**13**	**31**	**18**	**5**	**53**	**66**	**1**	**(s)**	**116**	**117**	**184**
2017 3-Month Total	**12**	**24**	**14**	**4**	**42**	**55**	**1**	**(s)**	**81**	**81**	**136**

[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	922	547	146	1,615	28	4	3,375	3,407	5,022
February	1,008	599	154	1,762	35	5	4,072	4,113	5,875
March	1,394	813	220	2,427	45	7	5,151	5,203	7,630
April	1,596	900	240	2,736	57	8	6,183	6,249	8,984
May	1,758	986	266	3,010	65	9	6,995	7,070	10,080
June	1,793	999	267	3,060	81	11	7,712	7,804	10,863
July	1,839	1,032	276	3,147	68	9	6,861	6,938	10,085
August	1,762	989	268	3,018	70	11	6,900	6,981	9,999
September	1,545	890	245	2,681	66	10	6,393	6,469	9,150
October	1,391	786	223	2,400	50	8	5,165	5,223	7,624
November	1,114	624	176	1,914	34	6	3,918	3,958	5,873
December	1,025	591	159	1,774	28	4	3,156	3,188	4,962
Total	**17,146**	**9,756**	**2,641**	**29,543**	**629**	**92**	**65,882**	**66,604**	**96,147**
2019 January	1,122	647	168	1,938	31	5	3,616	3,652	5,590
February	1,219	688	178	2,085	33	5	3,875	3,913	5,999
March	1,754	959	255	2,968	53	8	5,959	6,020	8,988
3-Month Total	**4,096**	**2,294**	**601**	**6,991**	**117**	**18**	**13,450**	**13,585**	**20,576**
2018 3-Month Total	**3,325**	**1,959**	**520**	**5,804**	**109**	**17**	**12,598**	**12,723**	**18,528**
2017 3-Month Total	**2,639**	**1,507**	**456**	**4,603**	**86**	**6**	**8,738**	**8,831**	**13,433**

[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-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 4.645 million Btu per barrel (the estimated quantity-weighted factor of natural gasoline and conventional motor gasoline used as denaturant).

2009–2017: 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 4.620 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.

2018 and 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 4.620 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."

2009–2017: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

2018 and 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
1992–2017: EIA, PSA, annual reports, Table 1.

2018 and 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).

2009–2017: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2018 and 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.

2011–2017: EIA, *Petroleum Supply Annual (PSA)*, annual reports, Table 1, data for renewable fuels except fuel ethanol.

2018 and 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.

2012–2017: EIA, PSA, annual reports, Tables 25 and 31, data for biomass-based diesel fuel.

2018 and 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.

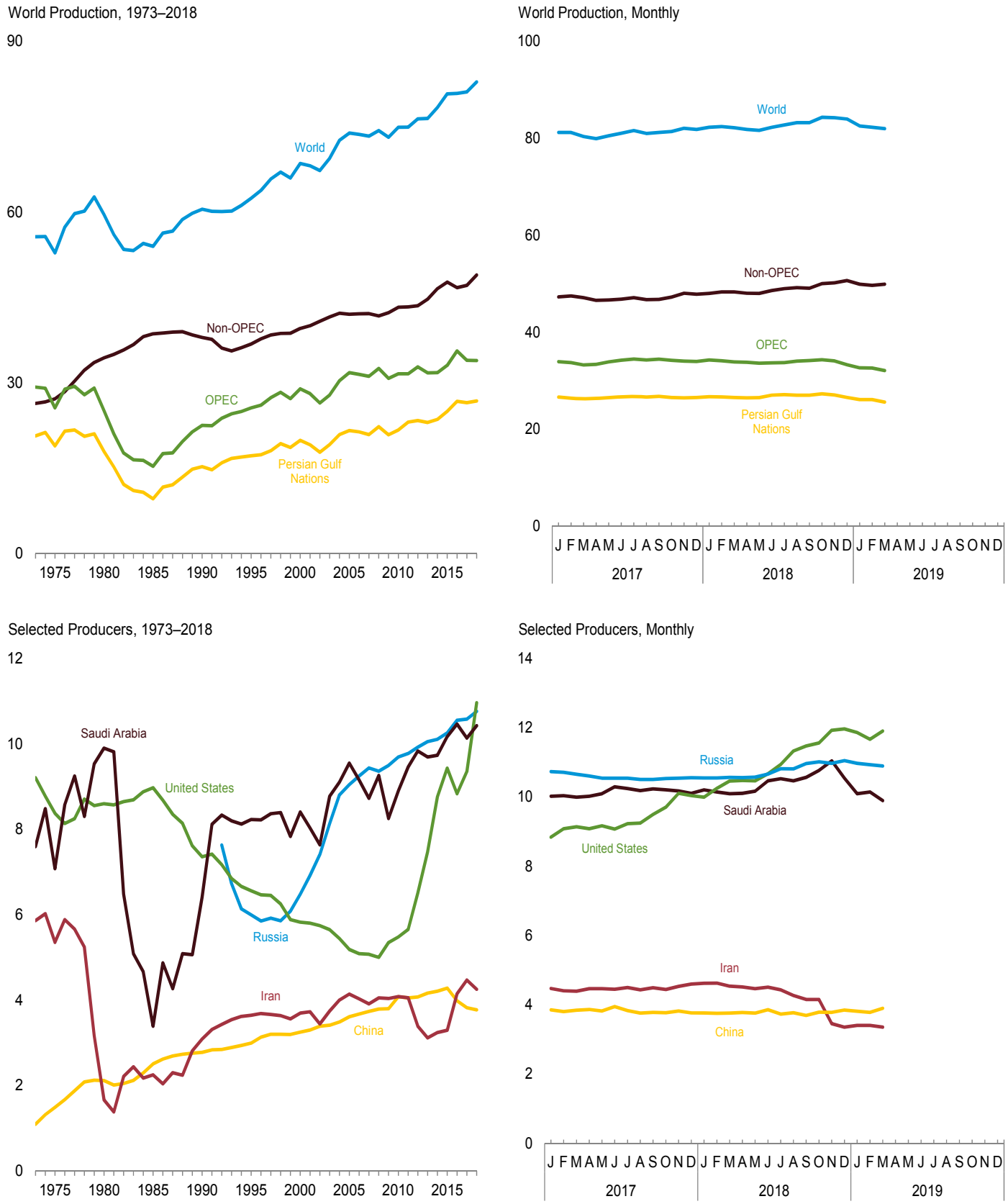
Solar Energy Consumption: Total

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. International Petroleum

Figure 11.1a World Crude Oil Production Overview

(Million Barrels per Day)



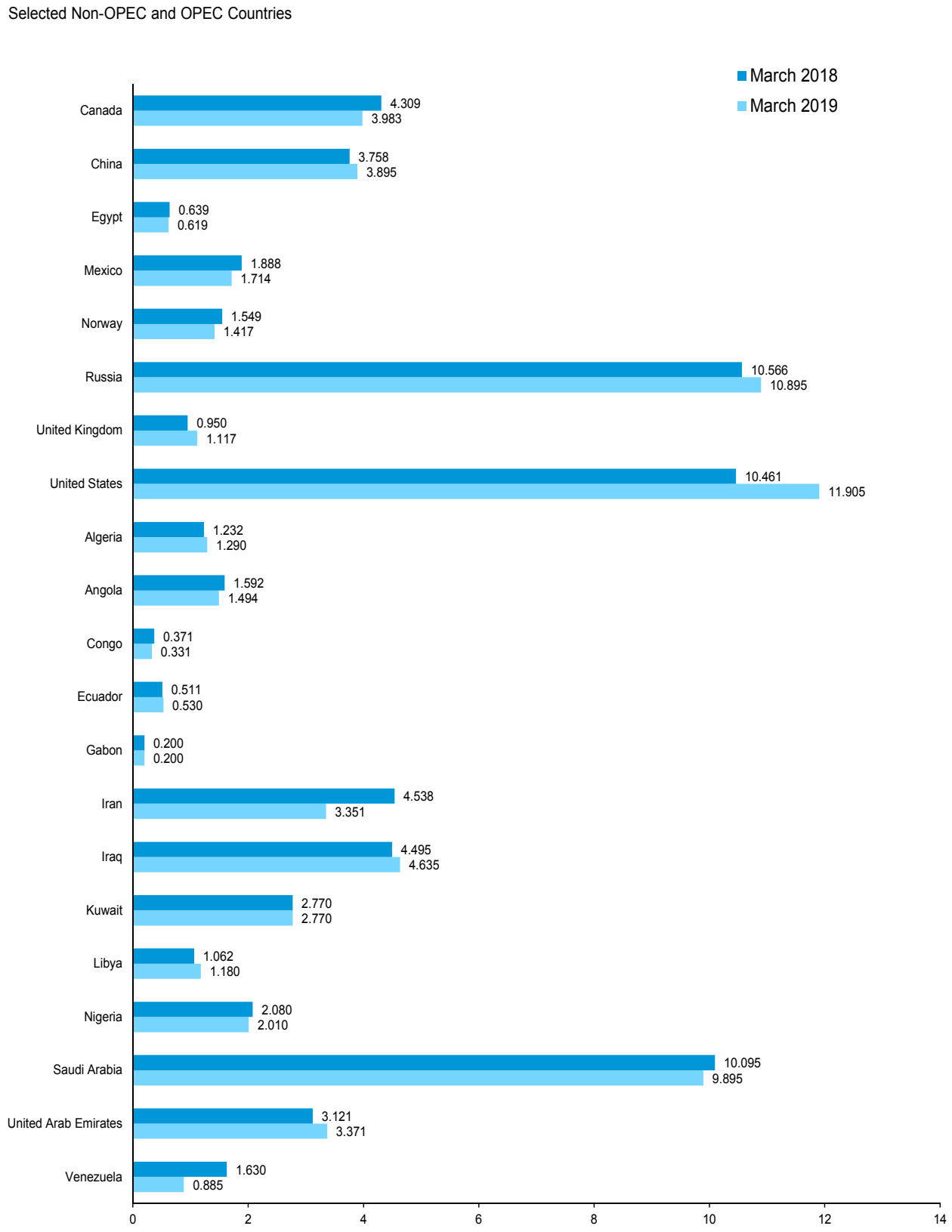
Notes: • OPEC is the Organization of the Petroleum Exporting Countries. • The Persian Gulf Nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates. Production from the Neutral Zone between Kuwait and Saudi Arabia is included in "Persian Gulf Nations."

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

Sources: Tables 11.1a and 11.1b.

Figure 11.1b World Crude Oil Production by Selected Countries

(Million Barrels per Day)



Note: OPEC is the Organization of the Petroleum Exporting Countries.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#international.
Sources: Tables 11.1a and 11.1b.

Table 11.1a World Crude Oil Production: Selected OPEC Members

(Thousand Barrels per Day)

	Algeria	Angola	Congo (Brazzaville)	Ecuador	Gabon	Iran	Iraq	Kuwait[a]	Libya	Nigeria	Saudi Arabia[a]	United Arab Emirates	Venezuela	Total OPEC[b]
1973 Average	**1,097**	**162**	**35**	**209**	**150**	**5,861**	**2,018**	**3,020**	**2,175**	**2,054**	**7,596**	**1,533**	**3,366**	**29,276**
1975 Average	**983**	**165**	**37**	**161**	**223**	**5,350**	**2,262**	**2,084**	**1,480**	**1,783**	**7,075**	**1,664**	**2,346**	**25,612**
1980 Average	**1,106**	**150**	**65**	**204**	**175**	**1,662**	**2,514**	**1,656**	**1,787**	**2,055**	**9,900**	**1,709**	**2,168**	**25,151**
1985 Average	**1,036**	**231**	**120**	**281**	**172**	**2,250**	**1,433**	**1,023**	**1,059**	**1,495**	**3,388**	**1,193**	**1,677**	**15,358**
1990 Average	**1,180**	**475**	**165**	**285**	**270**	**3,088**	**2,040**	**1,175**	**1,375**	**1,810**	**6,410**	**2,117**	**2,137**	**22,527**
1995 Average	**1,162**	**646**	**188**	**392**	**365**	**3,643**	**560**	**2,057**	**1,390**	**1,993**	**8,231**	**2,233**	**2,750**	**25,616**
1996 Average	**1,227**	**709**	**201**	**396**	**368**	**3,686**	**579**	**2,062**	**1,401**	**2,001**	**8,218**	**2,278**	**2,938**	**26,079**
1997 Average	**1,259**	**714**	**253**	**388**	**370**	**3,664**	**1,155**	**2,007**	**1,446**	**2,132**	**8,362**	**2,316**	**3,280**	**27,399**
1998 Average	**1,226**	**735**	**265**	**375**	**352**	**3,634**	**2,150**	**2,085**	**1,390**	**2,153**	**8,389**	**2,345**	**3,167**	**28,351**
1999 Average	**1,177**	**745**	**270**	**373**	**331**	**3,557**	**2,508**	**1,898**	**1,319**	**2,130**	**7,833**	**2,169**	**2,826**	**27,237**
2000 Average	**1,214**	**746**	**280**	**395**	**315**	**3,696**	**2,571**	**2,079**	**1,410**	**2,165**	**8,404**	**2,368**	**3,155**	**28,965**
2001 Average	**1,265**	**742**	**255**	**412**	**270**	**3,724**	**2,390**	**1,998**	**1,367**	**2,256**	**8,031**	**2,205**	**3,010**	**28,106**
2002 Average	**1,349**	**896**	**249**	**393**	**251**	**3,444**	**2,023**	**1,894**	**1,319**	**2,118**	**7,634**	**2,082**	**2,604**	**26,469**
2003 Average	**1,516**	**903**	**247**	**411**	**241**	**3,743**	**1,308**	**2,136**	**1,421**	**2,275**	**8,775**	**2,348**	**2,335**	**27,865**
2004 Average	**1,582**	**1,052**	**235**	**528**	**239**	**4,001**	**2,011**	**2,376**	**1,515**	**2,329**	**9,101**	**2,478**	**2,557**	**30,371**
2005 Average	**1,692**	**1,239**	**229**	**532**	**266**	**4,139**	**1,878**	**2,529**	**1,651**	**2,627**	**9,550**	**2,535**	**2,565**	**31,795**
2006 Average	**1,699**	**1,398**	**242**	**536**	**237**	**4,028**	**1,996**	**2,535**	**1,736**	**2,440**	**9,152**	**2,636**	**2,511**	**31,488**
2007 Average	**1,708**	**1,724**	**207**	**511**	**244**	**3,912**	**2,086**	**2,464**	**1,787**	**2,350**	**8,722**	**2,603**	**2,490**	**31,153**
2008 Average	**1,705**	**1,951**	**233**	**505**	**248**	**4,050**	**2,375**	**2,586**	**1,803**	**2,165**	**9,261**	**2,821**	**2,510**	**32,550**
2009 Average	**1,585**	**1,877**	**268**	**486**	**242**	**4,037**	**2,391**	**2,350**	**1,696**	**2,208**	**8,250**	**2,560**	**2,520**	**30,791**
2010 Average	**1,540**	**1,909**	**340**	**486**	**246**	**4,080**	**2,399**	**2,300**	**1,710**	**2,408**	**8,900**	**2,570**	**2,410**	**31,596**
2011 Average	**1,540**	**1,756**	**288**	**500**	**241**	**4,054**	**2,626**	**2,530**	**485**	**2,474**	**9,458**	**2,849**	**2,500**	**31,579**
2012 Average	**1,532**	**1,787**	**260**	**504**	**230**	**3,387**	**2,983**	**2,635**	**1,432**	**2,457**	**9,832**	**2,994**	**2,500**	**32,822**
2013 Average	**1,462**	**1,803**	**239**	**526**	**220**	**3,113**	**3,054**	**2,650**	**978**	**2,307**	**9,693**	**2,938**	**2,500**	**31,754**
2014 Average	**1,420**	**1,742**	**233**	**556**	**220**	**3,239**	**3,368**	**2,642**	**530**	**2,347**	**9,735**	**3,010**	**2,500**	**31,803**
2015 Average	**1,429**	**1,802**	**238**	**543**	**213**	**3,293**	**4,045**	**2,784**	**484**	**2,171**	**10,168**	**3,149**	**2,500**	**33,070**
2016 Average	**1,348**	**1,770**	198	**548**	**211**	**4,151**	**4,444**	**2,905**	**466**	**1,871**	**10,461**	**3,243**	**2,277**	**34,119**
2017 January	1,340	1,658	190	536	200	4,467	4,553	2,812	759	1,849	10,020	3,205	2,100	33,891
February	1,340	1,688	198	535	185	4,405	4,433	2,752	769	1,869	10,040	3,185	2,090	33,691
March	1,316	1,630	160	531	190	4,392	4,418	2,742	669	1,730	9,992	3,165	2,090	33,227
April	1,306	1,700	171	528	210	4,464	4,413	2,742	614	1,780	10,022	3,145	2,080	33,361
May	1,306	1,660	200	533	200	4,464	4,463	2,742	859	1,900	10,093	3,165	2,080	33,851
June	1,306	1,690	257	540	200	4,445	4,478	2,752	929	1,945	10,293	3,185	2,030	34,236
July	1,306	1,670	278	541	210	4,495	4,488	2,742	1,084	2,022	10,243	3,185	2,030	34,480
August	1,306	1,690	270	536	200	4,431	4,513	2,742	969	2,027	10,183	3,185	2,025	34,258
September	1,306	1,670	273	529	200	4,490	4,553	2,762	1,004	2,038	10,233	3,185	2,010	34,434
October	1,256	1,695	299	526	200	4,439	4,403	2,772	1,039	2,021	10,204	3,175	1,960	34,175
November	1,276	1,600	310	521	190	4,532	4,333	2,742	1,059	2,065	10,174	3,145	1,890	34,018
December	1,306	1,640	**321**	520	200	4,596	4,393	2,732	999	2,099	10,105	3,165	1,710	33,967
Average	**1,306**	**1,666**	244	**531**	**199**	**4,469**	**4,454**	**2,753**	**897**	**1,946**	**10,134**	**3,174**	**2,007**	**33,967**
2018 January	1,282	1,632	322	513	200	4,617	4,445	2,760	1,092	2,140	10,205	3,181	1,710	34,275
February	1,272	1,622	333	513	200	4,624	4,485	2,760	1,067	2,110	10,145	3,141	1,670	34,118
March	1,232	1,592	371	511	200	4,538	4,495	2,770	1,062	2,080	10,095	3,121	1,630	33,873
April	1,232	1,587	370	517	190	4,515	4,455	2,760	1,082	2,060	10,105	3,131	1,600	33,780
May	1,262	1,592	365	516	200	4,462	4,505	2,760	1,067	1,880	10,165	3,111	1,545	33,606
June	1,282	1,562	342	517	200	4,508	4,589	2,770	827	1,810	10,465	3,151	1,485	33,679
July	1,292	1,572	332	523	180	4,428	4,619	2,850	732	1,860	10,525	3,181	1,450	33,720
August	1,282	1,582	347	530	200	4,271	4,690	2,850	1,067	1,930	10,465	3,221	1,405	34,016
September	1,242	1,602	342	519	200	4,151	4,715	2,850	1,157	2,030	10,565	3,221	1,371	34,141
October	1,242	1,572	337	514	200	4,151	4,745	2,850	1,157	1,990	10,765	3,271	1,341	34,311
November	1,242	1,612	307	515	180	3,451	4,785	2,850	1,207	R 1,980	11,045	3,411	1,321	R 34,067
December	1,242	1,592	**317**	519	200	3,351	4,815	2,850	957	2,010	10,545	3,451	1,291	33,291
Average	**1,259**	**1,593**	340	**517**	**196**	**4,254**	**4,613**	**2,807**	**1,039**	R **1,989**	**10,425**	**3,216**	**1,484**	R **33,905**
2019 January	1,190	1,594	326	524	200	3,401	4,865	2,800	R 920	1,950	10,095	3,371	1,261	R 32,643
February	1,280	1,484	341	533	200	3,401	4,795	2,800	R 950	1,980	10,145	3,421	1,131	R 32,597
March	1,290	1,494	331	530	200	3,351	4,635	2,770	1,180	2,010	9,895	3,371	885	32,098
3-Month Average	**1,252**	**1,525**	**332**	**529**	**200**	**3,384**	**4,764**	**2,790**	**1,019**	**1,980**	**10,042**	**3,387**	**1,091**	**32,441**
2018 3-Month Average	**1,262**	**1,615**	**342**	**512**	**200**	**4,592**	**4,475**	**2,763**	**1,074**	**2,110**	**10,148**	**3,148**	**1,670**	**34,088**
2017 3-Month Average	**1,332**	**1,658**	**182**	**534**	**192**	**4,422**	**4,469**	**2,769**	**731**	**1,814**	**10,017**	**3,185**	**2,093**	**33,600**

[a] Except for the period from August 1990 through May 1991, includes about one-half of the production in the Kuwait-Saudi Arabia Neutral Zone. Kuwaiti Neutral Zone output was discontinued following Iraq's invasion of Kuwait on August 2, 1990, but was resumed in June 1991. As of July 2015 all Neutral Zone production is offline. Data for Saudi Arabia include approximately 150 thousand barrels per day from the Abu Safah field produced on behalf of Bahrain.

[b] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. On Tables 11.1a and 11.1b, countries are classified as "OPEC" or "Non-OPEC" in all years based on their status in the most current year. For example, Equatorial Guinea joined OPEC in May 2017 and is thus included in "Total OPEC" for all years.

R=Revised.

Notes: • Data are for crude oil and lease condensate; they exclude natural gas plant liquids. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary monthly data are not available.

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

Sources: See end of section.

Table 11.1b World Crude Oil Production: Persian Gulf Nations, Non-OPEC, and World

(Thousand Barrels per Day)

	Persian Gulf Nations[b]	Selected Non-OPEC[a] Producers									Total Non-OPEC[a]	World
		Canada	China	Egypt	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States		
1973 Average	**20,668**	**1,798**	**1,090**	**165**	**465**	**32**	**8,324**	**– –**	**2**	**9,208**	**26,403**	**55,679**
1975 Average	**18,934**	**1,430**	**1,490**	**235**	**705**	**189**	**9,523**	**– –**	**12**	**8,375**	**27,216**	**52,828**
1980 Average	**17,961**	**1,435**	**2,114**	**595**	**1,936**	**486**	**11,706**	**– –**	**1,622**	**8,597**	**34,406**	**59,558**
1985 Average	**9,630**	**1,471**	**2,505**	**887**	**2,745**	**773**	**11,585**	**– –**	**2,530**	**8,971**	**38,608**	**53,966**
1990 Average	**15,278**	**1,553**	**2,774**	**873**	**2,553**	**1,630**	**10,975**	**– –**	**1,820**	**7,355**	**37,970**	**60,498**
1995 Average	**17,208**	**1,805**	**2,990**	**920**	**2,711**	**2,766**	**– –**	**5,995**	**2,489**	**6,560**	**36,818**	**62,434**
1996 Average	**17,367**	**1,837**	**3,131**	**922**	**2,944**	**3,091**	**– –**	**5,850**	**2,568**	**6,465**	**37,739**	**63,818**
1997 Average	**18,095**	**1,922**	**3,200**	**856**	**3,104**	**3,142**	**– –**	**5,920**	**2,518**	**6,452**	**38,406**	**65,806**
1998 Average	**19,337**	**1,981**	**3,198**	**834**	**3,160**	**3,011**	**– –**	**5,854**	**2,616**	**6,252**	**38,681**	**67,032**
1999 Average	**18,667**	**1,907**	**3,195**	**852**	**2,998**	**3,019**	**– –**	**6,079**	**2,684**	**5,881**	**38,730**	**65,967**
2000 Average	**19,897**	**1,977**	**3,249**	**768**	**3,104**	**3,222**	**– –**	**6,479**	**2,275**	**5,822**	**39,562**	**68,527**
2001 Average	**19,114**	**2,029**	**3,300**	**720**	**3,218**	**3,226**	**– –**	**6,917**	**2,282**	**5,801**	**40,026**	**68,132**
2002 Average	**17,824**	**2,171**	**3,390**	**715**	**3,263**	**3,131**	**– –**	**7,408**	**2,292**	**5,744**	**40,821**	**67,290**
2003 Average	**19,154**	**2,306**	**3,409**	**713**	**3,459**	**3,042**	**– –**	**8,132**	**2,093**	**5,649**	**41,595**	**69,460**
2004 Average	**20,906**	**2,398**	**3,485**	**673**	**3,476**	**2,954**	**– –**	**8,805**	**1,845**	**5,441**	**42,225**	**72,595**
2005 Average	**21,644**	**2,369**	**3,609**	**623**	**3,423**	**2,698**	**– –**	**9,043**	**1,649**	**5,184**	**42,074**	**73,869**
2006 Average	**21,377**	**2,525**	**3,673**	**616**	**3,345**	**2,491**	**– –**	**9,247**	**1,490**	**5,086**	**42,134**	**73,621**
2007 Average	**20,904**	**2,628**	**3,736**	**608**	**3,143**	**2,270**	**– –**	**9,437**	**1,498**	**5,074**	**42,178**	**73,331**
2008 Average	**22,301**	**2,579**	**3,790**	**633**	**2,839**	**2,182**	**– –**	**9,357**	**1,391**	**5,000**	**41,751**	**74,301**
2009 Average	**20,898**	**2,579**	**3,796**	**649**	**2,646**	**2,067**	**– –**	**9,495**	**1,328**	**5,349**	**42,329**	**73,121**
2010 Average	**21,736**	**2,741**	**4,078**	**636**	**2,621**	**1,871**	**– –**	**9,694**	**1,233**	**5,478**	**43,291**	**74,887**
2011 Average	**23,102**	**2,901**	**4,052**	**637**	**2,600**	**1,760**	**– –**	**9,774**	**1,026**	**5,654**	**43,329**	**74,908**
2012 Average	**23,394**	**3,138**	**4,074**	**642**	**2,593**	**1,612**	**– –**	**9,922**	**888**	**6,502**	**43,561**	**76,382**
2013 Average	**23,037**	**3,325**	**4,164**	**645**	**2,562**	**1,533**	**– –**	**10,054**	**801**	**7,467**	**44,695**	**76,449**
2014 Average	**23,582**	**3,613**	**4,208**	**645**	**2,469**	**1,562**	**– –**	**10,107**	**787**	**8,759**	**46,559**	**78,362**
2015 Average	**24,989**	**3,677**	**4,278**	**686**	**2,302**	**1,610**	**– –**	**10,253**	**893**	**9,431**	**47,685**	**80,755**
2016 Average	**26,748**	**3,679**	**3,983**	**654**	**2,187**	**1,648**	**– –**	**10,551**	**933**	**8,831**	**46,723**	**80,842**
2017 January	26,622	4,097	3,855	630	2,054	1,653	– –	10,733	970	8,840	47,277	81,168
February	26,360	4,137	3,803	622	2,051	1,693	– –	10,713	945	9,083	47,471	81,162
March	26,254	3,917	3,843	613	2,053	1,745	– –	10,654	943	9,140	47,127	80,354
April	26,331	3,577	3,863	622	2,046	1,738	– –	10,603	915	9,085	46,564	79,925
May	26,472	3,690	3,822	630	2,053	1,636	– –	10,543	930	9,168	46,658	80,509
June	26,698	3,793	3,947	631	2,042	1,576	– –	10,543	937	9,074	46,803	81,039
July	26,698	3,990	3,832	628	2,020	1,653	– –	10,546	912	9,230	47,105	81,585
August	26,599	4,154	3,760	636	1,962	1,584	– –	10,507	831	9,244	46,716	80,974
September	26,768	3,950	3,779	644	1,761	1,473	– –	10,503	885	9,495	46,738	81,172
October	26,528	3,902	3,769	638	1,933	1,576	– –	10,530	944	9,703	47,218	81,393
November	26,461	4,230	3,820	634	1,896	1,520	– –	10,543	979	10,103	48,027	82,045
December	26,536	4,287	3,764	635	1,903	1,567	– –	10,553	741	10,040	47,834	81,801
Average	**26,528**	**3,977**	**3,821**	**630**	**1,981**	**1,618**	**– –**	**10,580**	**911**	**9,352**	**47,126**	**81,094**
2018 January	26,708	4,131	3,763	634	1,953	1,650	– –	10,550	1,020	[E] 9,995	47,975	82,250
February	26,655	4,284	3,753	639	1,919	1,598	– –	10,552	1,007	[E] 10,248	[R] 48,305	[R] 82,423
March	26,529	4,309	3,758	639	1,888	1,549	– –	10,566	950	[E] 10,461	[R] 48,292	[R] 82,165
April	26,466	3,996	3,774	645	1,911	1,544	– –	10,562	1,077	[E] 10,475	48,027	81,807
May	26,503	4,206	3,761	647	1,891	1,348	– –	10,569	992	[E] 10,464	47,996	81,602
June	26,993	4,188	3,857	614	1,871	1,517	– –	10,663	953	[E] 10,672	48,570	82,249
July	27,113	4,311	3,732	637	1,865	1,556	– –	10,814	1,003	[E] 10,936	48,995	82,715
August	27,017	4,520	3,768	645	1,841	1,535	– –	10,811	927	[E] 11,325	49,169	83,185
September	27,002	4,174	3,694	643	1,849	1,335	– –	10,964	902	[E] 11,470	49,059	83,200
October	27,282	4,450	3,789	636	1,785	1,511	– –	11,014	1,043	[E] 11,559	49,994	84,305
November	27,042	4,223	3,779	641	1,720	1,525	– –	10,972	1,037	[E] 11,926	[R] 50,154	[R] 84,221
December	26,512	4,362	3,845	646	1,733	1,535	– –	11,051	1,086	[E] 11,963	50,654	83,945
Average	**26,819**	**4,264**	**3,773**	**639**	**1,852**	**1,517**	**– –**	**10,759**	**1,000**	**[E] 10,962**	**48,938**	**[R] 82,842**
2019 January	26,082	4,021	3,812	[R] 638	1,647	1,487	– –	10,973	[R] 1,054	[RE] 11,860	[R] 49,888	[R] 82,531
February	26,112	[R] 4,081	3,780	[R] 632	[R] 1,724	1,420	– –	10,931	[R] 1,135	[RE] 11,664	[R] 49,655	[R] 82,252
March	25,572	3,983	3,895	619	1,714	1,417	– –	10,895	1,117	[E] 11,905	49,872	81,970
3-Month Average	**25,916**	**4,027**	**3,831**	**630**	**1,694**	**1,442**	**– –**	**10,933**	**1,101**	**[E] 11,815**	**49,810**	**82,251**
2018 3-Month Average	**26,630**	**4,240**	**3,758**	**637**	**1,920**	**1,599**	**– –**	**10,556**	**992**	**[E] 10,234**	**48,187**	**82,275**
2017 3-Month Average	**26,414**	**4,047**	**3,835**	**622**	**2,053**	**1,697**	**– –**	**10,700**	**953**	**9,019**	**47,286**	**80,886**

[a] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. On Tables 11.1a and 11.1b, countries are classified as "OPEC" or "Non-OPEC" in all years based on their status in the most current year. For example, Equatorial Guinea joined OPEC in May 2017 and is thus included in "Total OPEC" for all years.

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

R=Revised. – – =Not applicable. E=Estimate.

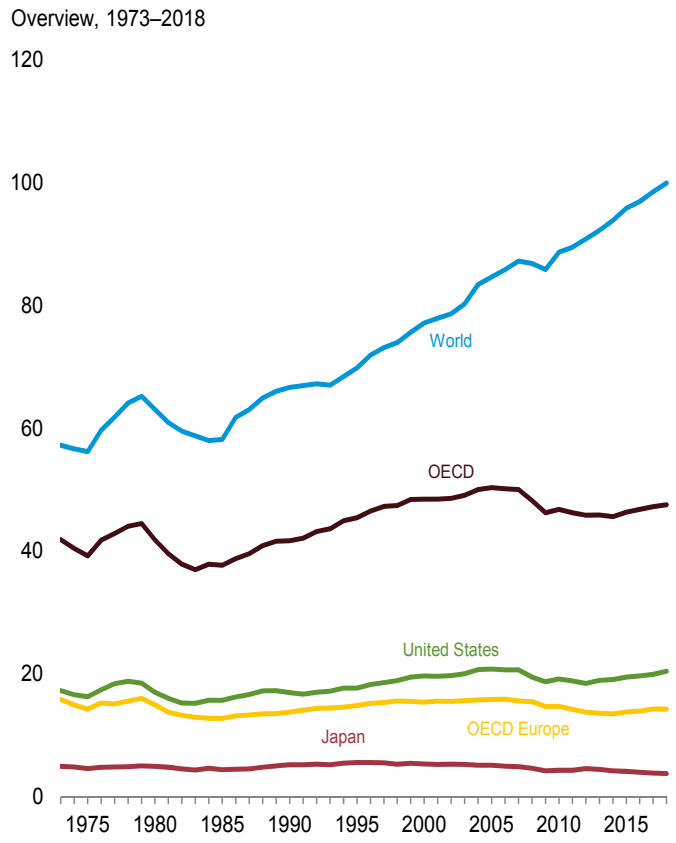
Notes: • Data are for crude oil and lease condensate; they exclude natural gas plant liquids. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary monthly data are not available. • Data for countries may not sum to World totals due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

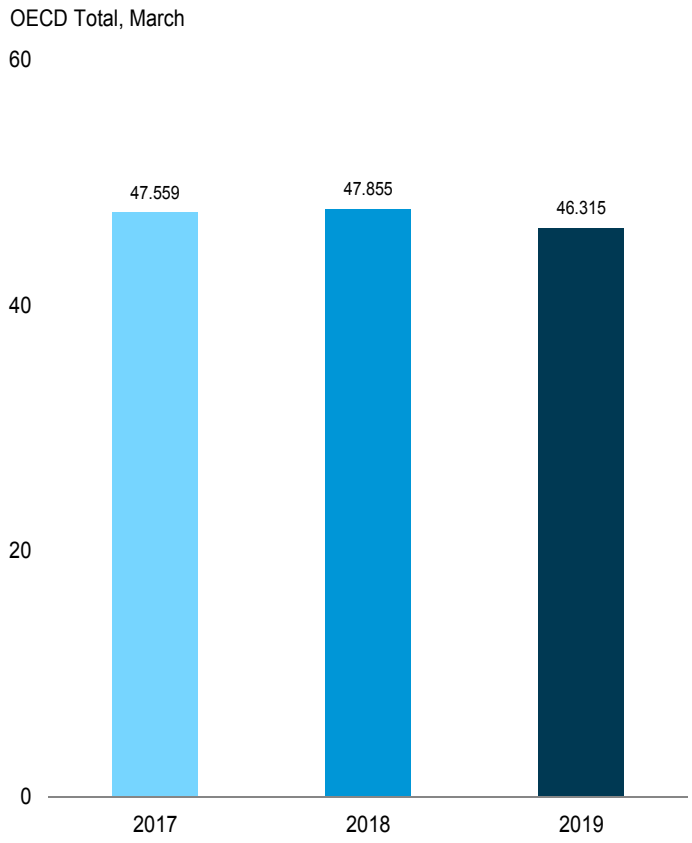
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#international (Excel and CSV files) for all available annual and monthly data beginning in 1973.

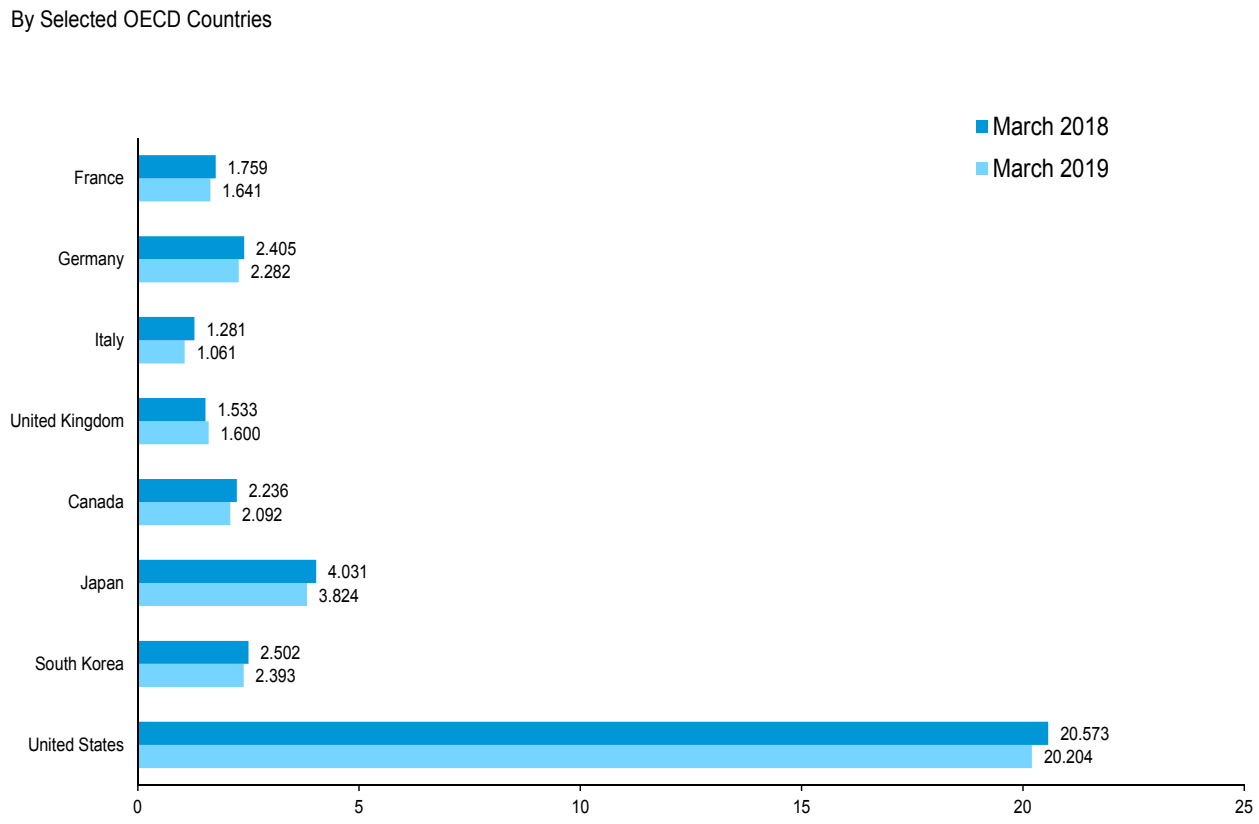
Sources: See end of section.

Figure 11.2 Petroleum Consumption in OECD Countries

(Million Barrels per Day)







Note: OECD is the Organization for Economic Cooperation and Development.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#international.
Source: Table 11.2.

Table 11.2 Petroleum Consumption in OECD Countries

(Thousand Barrels per Day)

	France	Germany[a]	Italy	United Kingdom	OECD Europe[b]	Canada	Japan	South Korea	United States	Other OECD[c]	OECD[d]	World
1973 Average	**2,601**	**3,324**	**2,068**	**2,341**	**15,879**	**1,729**	**4,949**	**281**	**17,308**	**1,768**	**41,913**	**57,237**
1975 Average	**2,252**	**2,957**	**1,855**	**1,911**	**14,314**	**1,779**	**4,621**	**311**	**16,322**	**1,885**	**39,232**	**56,198**
1980 Average	**2,256**	**3,082**	**1,934**	**1,725**	**14,995**	**1,873**	**4,960**	**537**	**17,056**	**2,449**	**41,870**	**63,113**
1985 Average	**1,753**	**2,651**	**1,705**	**1,617**	**12,769**	**1,514**	**4,436**	**552**	**15,726**	**2,699**	**37,696**	**58,176**
1990 Average	**1,827**	**2,682**	**1,868**	**1,776**	**13,789**	**1,722**	**5,223**	**1,048**	**16,988**	**2,968**	**41,738**	**66,660**
1995 Average	**1,915**	**2,882**	**1,942**	**1,816**	**14,899**	**1,799**	**5,581**	**2,008**	**17,725**	**3,453**	**45,465**	**69,861**
1996 Average	**1,943**	**2,922**	**1,920**	**1,852**	**15,216**	**1,853**	**5,587**	**2,101**	**18,309**	**3,486**	**46,552**	**71,913**
1997 Average	**1,962**	**2,917**	**1,934**	**1,810**	**15,354**	**1,940**	**5,545**	**2,255**	**18,620**	**3,577**	**47,292**	**73,129**
1998 Average	**2,040**	**2,923**	**1,943**	**1,792**	**15,653**	**1,931**	**5,348**	**1,917**	**18,917**	**3,649**	**47,415**	**73,950**
1999 Average	**2,034**	**2,836**	**1,891**	**1,811**	**15,558**	**2,016**	**5,486**	**2,084**	**19,519**	**3,750**	**48,414**	**75,604**
2000 Average	**2,001**	**2,767**	**1,854**	**1,765**	**15,399**	**2,008**	**5,361**	**2,135**	**19,701**	**3,850**	**48,454**	**77,147**
2001 Average	**2,054**	**2,807**	**1,835**	**1,747**	**15,585**	**2,029**	**5,269**	**2,132**	**19,649**	**3,796**	**48,459**	**77,921**
2002 Average	**1,991**	**2,710**	**1,870**	**1,739**	**15,546**	**2,040**	**5,314**	**2,149**	**19,761**	**3,800**	**48,610**	**78,648**
2003 Average	**2,001**	**2,679**	**1,860**	**1,759**	**15,670**	**2,155**	**5,296**	**2,175**	**20,034**	**3,767**	**49,096**	**80,273**
2004 Average	**2,008**	**2,648**	**1,829**	**1,789**	**15,774**	**2,233**	**5,159**	**2,155**	**20,731**	**3,976**	**50,029**	**83,411**
2005 Average	**1,990**	**2,624**	**1,781**	**1,819**	**15,856**	**2,326**	**5,164**	**2,191**	**20,802**	**4,039**	**50,378**	**84,645**
2006 Average	**1,991**	**2,636**	**1,777**	**1,805**	**15,905**	**2,322**	**5,038**	**2,180**	**20,687**	**4,051**	**50,183**	**85,847**
2007 Average	**1,975**	**2,407**	**1,729**	**1,751**	**15,637**	**2,412**	**4,904**	**2,240**	**20,680**	**4,190**	**50,064**	**87,257**
2008 Average	**1,935**	**2,533**	**1,667**	**1,729**	**15,489**	**2,324**	**4,667**	**2,142**	**19,498**	**4,134**	**48,254**	**86,824**
2009 Average	**1,859**	**2,434**	**1,544**	**1,649**	**14,763**	**2,269**	**4,266**	**2,188**	**18,771**	**4,020**	**46,278**	**85,860**
2010 Average	**1,818**	**2,467**	**1,544**	**1,624**	**14,731**	**2,380**	**4,340**	**2,269**	**19,180**	**3,920**	**46,819**	**88,693**
2011 Average	**1,778**	**2,392**	**1,494**	**1,582**	**14,256**	**2,408**	**4,353**	**2,259**	**18,887**	**4,121**	**46,284**	**89,489**
2012 Average	**1,736**	**2,389**	**1,370**	**1,534**	**13,791**	**2,453**	**4,631**	**2,322**	**18,487**	**4,162**	**45,845**	**90,827**
2013 Average	**1,714**	**2,435**	**1,260**	**1,512**	**13,606**	**2,429**	**4,487**	**2,328**	**18,967**	**4,073**	**45,891**	**92,259**
2014 Average	**1,691**	**2,374**	**1,266**	**1,518**	**13,529**	**2,387**	**4,261**	**2,348**	**19,100**	**3,988**	**45,613**	**93,874**
2015 Average	**1,691**	**2,368**	**1,274**	**1,556**	**13,828**	**2,417**	**4,142**	**2,473**	**19,534**	**3,966**	**46,359**	**95,861**
2016 Average	**1,652**	**2,383**	**1,237**	**1,583**	**13,992**	**2,471**	**4,010**	**2,605**	**19,687**	**4,027**	**46,793**	**96,934**
2017 January	R 1,767	2,342	1,132	1,450	R 13,521	2,373	4,148	2,597	19,323	3,778	R 45,738	NA
February	R 1,731	2,421	1,184	1,658	R 13,912	2,349	4,533	2,664	19,190	4,062	R 46,710	NA
March	R 1,744	2,577	1,235	1,497	R 14,138	2,398	4,250	2,599	20,060	4,113	R 47,559	NA
April	R 1,661	2,438	1,149	1,634	R 13,870	2,182	3,786	2,451	19,595	4,064	R 45,949	NA
May	R 1,718	2,492	1,234	1,519	R 14,264	2,435	3,500	2,521	20,066	4,148	R 46,933	NA
June	R 1,784	2,495	1,324	1,634	R 14,751	2,460	3,469	2,492	20,561	4,166	R 47,899	NA
July	R 1,763	2,498	1,302	1,592	R 14,646	2,487	3,583	2,565	20,119	4,009	R 47,409	NA
August	R 1,749	2,500	1,233	1,589	R 14,585	2,583	3,693	2,548	20,251	4,129	R 47,789	NA
September	R 1,870	2,475	1,283	1,650	R 14,988	2,498	3,624	2,611	19,641	4,085	R 47,447	NA
October	R 1,656	2,416	1,294	1,569	R 14,522	2,504	3,596	2,564	19,990	3,922	R 47,097	NA
November	R 1,669	2,556	1,240	1,632	R 14,546	2,586	4,093	2,680	20,307	4,097	R 48,309	NA
December	R 1,716	2,309	1,220	1,603	R 14,189	2,475	4,497	2,721	20,323	4,086	R 48,291	NA
Average	**R 1,736**	**2,460**	**1,236**	**1,584**	**R 14,329**	**2,445**	**3,894**	**2,584**	**19,958**	**4,054**	**R 47,264**	**R 98,490**
2018 January	1,590	R 2,206	1,163	R 1,505	R 13,389	2,360	4,257	2,704	20,461	4,041	R 47,213	NA
February	1,784	R 2,502	1,301	R 1,704	R 14,633	2,377	4,556	2,686	19,619	4,167	R 48,037	NA
March	1,759	R 2,405	1,281	R 1,533	R 14,307	2,236	4,031	2,502	20,573	4,206	R 47,855	NA
April	1,699	R 2,403	1,270	R 1,689	R 14,282	2,253	3,604	2,544	19,941	4,051	R 46,674	NA
May	1,657	R 2,300	1,261	R 1,573	R 14,060	2,408	3,437	2,559	20,357	4,137	R 46,957	NA
June	1,714	R 2,316	1,292	R 1,660	R 14,477	2,371	3,238	2,537	20,705	4,157	R 47,485	NA
July	1,789	R 2,341	1,339	R 1,575	R 14,859	2,548	3,504	2,511	20,621	4,120	R 48,163	NA
August	1,713	R 2,382	1,262	R 1,640	R 14,735	2,538	3,599	2,484	21,302	4,081	R 48,739	NA
September	1,704	R 2,337	1,284	R 1,683	R 14,482	2,590	3,496	2,455	19,951	4,057	R 47,031	NA
October	1,825	R 2,362	1,317	1,536	R 14,589	2,636	3,623	2,274	20,774	4,040	R 47,935	NA
November	1,643	R 2,347	1,251	R 1,656	R 14,184	2,515	3,862	2,432	20,548	4,070	R 47,610	NA
December	1,578	R 2,204	1,202	R 1,594	R 13,624	2,309	4,198	2,599	20,479	3,848	R 47,057	NA
Average	**1,704**	**R 2,341**	**1,268**	**R 1,611**	**R 14,298**	**2,429**	**3,780**	**2,523**	**20,453**	**4,081**	**R 47,563**	**R 99,917**
2019 January	R 1,695	R 2,437	1,096	R 1,522	R 13,803	R 2,205	4,060	2,678	20,452	R 3,953	R 47,151	NA
February	R 1,727	R 2,509	R 1,081	R 1,676	R 14,213	R 2,310	R 4,305	2,518	20,194	R 4,172	R 47,713	NA
March	1,641	2,282	1,061	1,600	13,812	2,092	3,824	2,393	20,204	3,990	46,315	NA
3-Month Average	**1,686**	**2,406**	**1,079**	**1,597**	**13,933**	**2,199**	**4,055**	**2,530**	**20,286**	**4,034**	**47,038**	**NA**
2018 3-Month Average	**1,708**	**2,367**	**1,246**	**1,577**	**14,092**	**2,322**	**4,272**	**2,629**	**20,238**	**4,137**	**47,691**	**NA**
2017 3-Month Average	**1,748**	**2,448**	**1,183**	**1,531**	**13,855**	**2,374**	**4,303**	**2,618**	**19,536**	**3,982**	**46,668**	**NA**

[a] Data are for unified Germany, i.e., the former East Germany and West Germany.

[b] "OECD Europe" consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom; for 1984 forward, Czech Republic, Hungary, Poland, and Slovakia; and, for 2000 forward, Slovenia.

[c] "Other OECD" consists of Australia, New Zealand, and the U.S. Territories; for 1984 forward, Mexico; for 2000 forward, Chile, Estonia, and Israel; and, for 2016 forward, Latvia.

[d] The Organization for Economic Cooperation and Development (OECD) consists of "OECD Europe," Canada, Japan, South Korea, the United States, and "Other OECD."

R=Revised. NA=Not available.

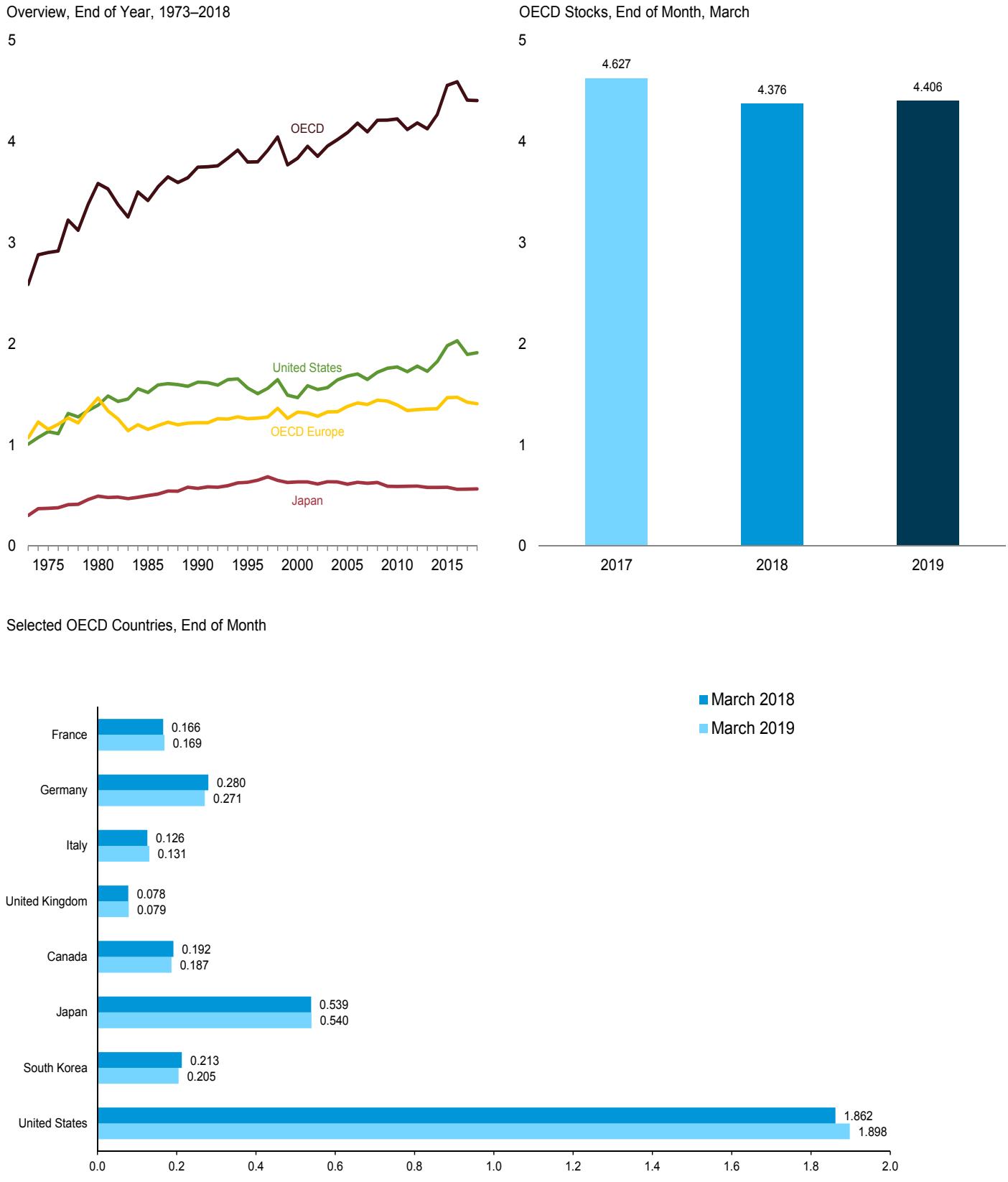
Notes: • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **United States:** Table 3.1. • **Chile, East Germany, Former Czechoslovakia, Hungary, Mexico, Poland, South Korea, Non-OECD Countries, U.S. Territories,** and **World: 1973–1979—**U.S. Energy Information Administration (EIA), International Energy Database. • **Countries Other Than United States: 1980–2008—**EIA, International Energy Statistics (IES). • **OECD Countries,** and **U.S. Territories: 2009 forward—**EIA, IES. • **World: 2009 forward—**EIA, International Energy Statistics Database. • **All Other Data:—**International Energy Agency (IEA), *Quarterly Oil Statistics and Energy Balances in OECD Countries,* various issues.

Figure 11.3 Petroleum Stocks in OECD Countries

(Billion Barrels)



Note: OECD is the Organization for Economic Cooperation and Development.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#international.
Source: Table 11.3.

Table 11.3 Petroleum Stocks in OECD Countries

(Million Barrels)

	France	Germany[a]	Italy	United Kingdom	OECD Europe[b]	Canada	Japan	South Korea	United States	Other OECD[c]	OECD[d]
1973 Year	**201**	**181**	**152**	**156**	**1,070**	**140**	**303**	**NA**	**1,008**	**67**	**2,588**
1975 Year	**225**	**187**	**143**	**165**	**1,154**	**174**	**375**	**NA**	**1,133**	**67**	**2,903**
1980 Year	**243**	**319**	**170**	**168**	**1,464**	**164**	**495**	**NA**	**1,392**	**72**	**3,587**
1985 Year	**139**	**277**	**156**	**131**	**1,154**	**112**	**500**	**13**	**1,519**	**119**	**3,417**
1990 Year	**143**	**280**	**171**	**103**	**1,221**	**143**	**572**	**64**	**1,621**	**126**	**3,748**
1995 Year	**155**	**302**	**162**	**101**	**1,260**	**132**	**631**	**92**	**1,563**	**122**	**3,799**
1996 Year	**154**	**303**	**152**	**103**	**1,265**	**127**	**651**	**123**	**1,507**	**126**	**3,800**
1997 Year	**161**	**299**	**147**	**100**	**1,277**	**144**	**685**	**124**	**1,560**	**123**	**3,913**
1998 Year	**169**	**323**	**153**	**104**	**1,362**	**139**	**649**	**129**	**1,647**	**120**	**4,045**
1999 Year	**160**	**290**	**148**	**101**	**1,263**	**141**	**629**	**132**	**1,493**	**113**	**3,771**
2000 Year	**170**	**272**	**157**	**100**	**1,326**	**143**	**634**	**140**	**1,468**	**126**	**3,836**
2001 Year	**165**	**273**	**151**	**113**	**1,316**	**154**	**634**	**143**	**1,586**	**120**	**3,954**
2002 Year	**170**	**253**	**156**	**104**	**1,284**	**155**	**615**	**140**	**1,548**	**111**	**3,854**
2003 Year	**179**	**273**	**153**	**100**	**1,327**	**165**	**636**	**155**	**1,568**	**104**	**3,956**
2004 Year	**177**	**267**	**154**	**101**	**1,329**	**154**	**635**	**149**	**1,645**	**107**	**4,020**
2005 Year	**185**	**283**	**151**	**95**	**1,382**	**168**	**612**	**135**	**1,682**	**112**	**4,090**
2006 Year	**182**	**283**	**153**	**103**	**1,416**	**169**	**631**	**152**	**1,703**	**112**	**4,182**
2007 Year	**180**	**275**	**152**	**92**	**1,401**	**163**	**621**	**143**	**1,648**	**119**	**4,096**
2008 Year	**179**	**279**	**148**	**93**	**1,443**	**162**	**629**	**135**	**1,719**	**122**	**4,211**
2009 Year	**175**	**284**	**146**	**89**	**1,435**	**157**	**591**	**155**	**1,758**	**116**	**4,213**
2010 Year	**168**	**287**	**143**	**83**	**1,395**	**184**	**590**	**165**	**1,772**	**118**	**4,224**
2011 Year	**165**	**281**	**135**	**80**	**1,341**	**178**	**592**	**167**	**1,725**	**116**	**4,119**
2012 Year	**162**	**288**	**126**	**80**	**1,350**	**174**	**594**	**181**	**1,779**	**106**	**4,184**
2013 Year	**167**	**290**	**125**	**78**	**1,356**	**170**	**580**	**185**	**1,728**	**110**	**4,127**
2014 Year	**168**	**284**	**119**	**78**	**1,359**	**193**	**581**	**197**	**1,825**	**113**	**4,268**
2015 Year	**168**	**285**	**117**	**81**	**1,468**	**188**	**582**	**228**	**1,982**	**108**	**4,556**
2016 Year	**162**	**285**	**124**	**82**	**1,471**	**183**	**562**	**230**	**2,030**	**115**	**4,592**
2017 January	166	285	129	82	1,510	185	562	238	2,053	120	4,667
February	166	285	131	82	1,513	187	556	236	2,049	119	4,659
March	168	280	134	81	1,506	185	546	238	2,030	121	4,627
April	165	283	131	84	1,513	181	558	240	2,028	121	4,643
May	167	280	132	81	1,491	180	572	238	2,034	125	4,640
June	165	277	134	81	1,483	183	566	236	2,010	121	4,599
July	170	279	131	80	1,481	188	577	240	1,998	118	4,602
August	170	278	131	80	1,468	186	582	240	1,987	117	4,581
September	165	274	128	78	1,444	186	571	244	1,978	114	4,536
October	165	273	125	79	1,424	184	575	241	1,941	117	4,483
November	164	271	125	82	1,430	185	574	235	1,923	110	4,457
December	**166**	**279**	**125**	**80**	**1,423**	**189**	**563**	**231**	**1,895**	**109**	**4,409**
2018 January	167	283	125	83	1,467	186	560	225	1,879	116	4,434
February	165	278	130	79	1,463	184	545	230	1,876	117	4,415
March	166	280	126	78	1,454	192	539	213	1,862	117	4,376
April	168	R 278	129	79	R 1,456	186	553	207	1,864	115	4,380
May	168	277	128	80	1,446	190	559	202	1,870	116	R 4,384
June	168	278	125	82	1,442	190	549	210	1,867	113	4,371
July	167	R 277	133	83	1,450	190	557	207	1,872	116	R 4,392
August	165	277	132	80	1,442	200	567	202	1,892	115	4,417
September	165	273	125	78	1,417	195	561	200	1,932	114	R 4,419
October	162	R 270	125	77	R 1,400	194	573	202	1,916	119	4,404
November	160	269	124	74	1,393	190	578	211	1,910	111	4,393
December	**161**	**271**	**125**	**76**	**1,407**	**192**	**565**	**206**	**1,912**	**124**	**4,406**
2019 January	162	276	124	R 79	R 1,433	R 189	554	201	1,920	125	R 4,422
February	165	271	130	78	1,453	R 185	549	213	1,902	R 111	4,415
March	169	271	131	79	1,462	187	540	205	1,898	115	4,406

[a] Through December 1983, the data for Germany are for the former West Germany only. Beginning with January 1984, the data for Germany are for the unified Germany, i.e., the former East Germany and West Germany.

[b] "OECD Europe" consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom; for 1984 forward, Czech Republic, Hungary, Poland, and Slovakia; and, for 2000 forward, Slovenia.

[c] "Other OECD" consists of Australia, New Zealand, and the U.S. Territories; for 1984 forward, Mexico; for 2000 forward, Chile, Estonia, and Israel; and, for 2016 forward, Latvia.

[d] The Organization for Economic Cooperation and Development (OECD) consists of "OECD Europe," Canada, Japan, South Korea, the United States, and "Other OECD."

R=Revised. NA=Not available.

Notes: • Stocks are at end of period. • Petroleum stocks include crude oil (including strategic reserves), unfinished oils, natural gas liquids, and refined products. • In the United States in January 1975, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys, thereby affecting subsequent stocks reported. New-basis end-of-year U.S. stocks, in million barrels, would have been 1,121 in 1974, 1,425 in 1980, and 1,461 in 1982. • 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/#international (Excel and CSV files) for all available annual and monthly data beginning in 1973.

Sources: • **United States:** Table 3.4. • **U.S. Territories: 1983 forward—**U.S. Energy Information Administration, International Energy Database. • **All Other Data: 1973–1982—**International Energy Agency (IEA), *Quarterly Oil Statistics and Energy Balances,* various issues. **1983—**IEA, Monthly Oil and Gas Statistics Database. **1984 forward—**IEA, Monthly Oil Data Service, June 14, 2019.

Tables 11.1a and 11.1b Sources

United States
Table 3.1.

All Other Countries and World, Annual Data
1973–1979: U.S. Energy Information Administration (EIA*), International Energy Annual 1981*, Table 8.

1980 forward: EIA, International Energy Statistics Database, June 2019.

All Other Countries and World, Monthly Data
1973–1980: Petroleum Intelligence Weekly (PIW), Oil & Gas Journal (OGJ), and EIA adjustments.

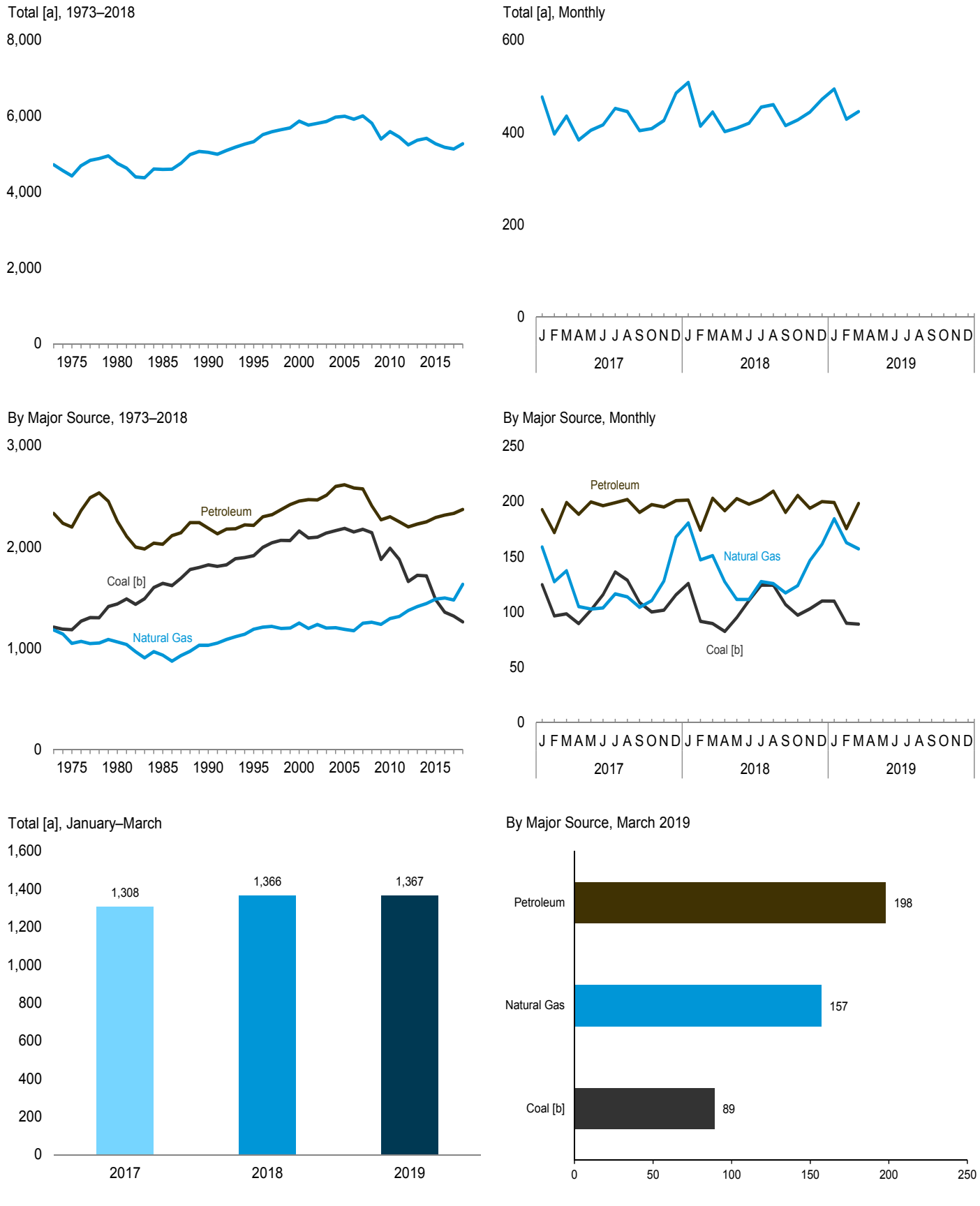
1981–1993: PIW, OGJ, and other industry sources.

1994 forward: EIA, International Energy Statistics Database, June 2019.

12. Environment

Figure 12.1 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 12.1.

Table 12.1 Carbon Dioxide Emissions From Energy Consumption by Source

(Million Metric Tons of Carbon Dioxide[a])

	Coal[b]	Natural Gas[c]	Petroleum											Total[h,i]
			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	
1973 Total	**1,207**	**1,179**	**6**	**480**	**76**	**155**	**32**	**13**	**911**	**54**	**506**	**97**	**2,330**	**4,715**
1975 Total	**1,181**	**1,046**	**5**	**442**	**70**	**146**	**24**	**11**	**911**	**51**	**442**	**93**	**2,195**	**4,421**
1980 Total	**1,436**	**1,061**	**4**	**446**	**80**	**156**	**24**	**13**	**900**	**49**	**452**	**129**	**2,253**	**4,750**
1985 Total	**1,638**	**929**	**3**	**445**	**83**	**178**	**17**	**12**	**930**	**55**	**216**	**86**	**2,025**	**4,593**
1990 Total	**1,821**	**1,026**	**3**	**470**	**76**	**223**	**6**	**13**	**988**	**70**	**221**	**114**	**2,184**	**5,038**
1995 Total	**1,913**	**1,186**	**3**	**498**	**91**	**222**	**8**	**13**	**1,042**	**76**	**152**	**107**	**2,212**	**5,321**
1996 Total	**1,995**	**1,207**	**3**	**524**	**97**	**232**	**9**	**12**	**1,062**	**80**	**152**	**125**	**2,297**	**5,510**
1997 Total	**2,040**	**1,214**	**3**	**534**	**95**	**234**	**10**	**13**	**1,073**	**80**	**143**	**131**	**2,317**	**5,582**
1998 Total	**2,064**	**1,193**	**2**	**537**	**91**	**238**	**12**	**14**	**1,105**	**93**	**158**	**116**	**2,367**	**5,635**
1999 Total	**2,062**	**1,198**	**3**	**555**	**100**	**245**	**11**	**14**	**1,125**	**97**	**148**	**119**	**2,417**	**5,687**
2000 Total	**2,156**	**1,246**	**3**	**579**	**104**	**254**	**10**	**14**	**1,133**	**87**	**162**	**106**	**2,452**	**5,864**
2001 Total	**2,088**	**1,193**	**2**	**597**	**94**	**243**	**11**	**13**	**1,149**	**90**	**145**	**125**	**2,467**	**5,759**
2002 Total	**2,095**	**1,231**	**2**	**586**	**96**	**237**	**6**	**12**	**1,181**	**97**	**125**	**121**	**2,464**	**5,803**
2003 Total	**2,136**	**1,196**	**2**	**610**	**93**	**231**	**8**	**11**	**1,186**	**96**	**138**	**134**	**2,510**	**5,854**
2004 Total	**2,160**	**1,201**	**2**	**632**	**95**	**240**	**10**	**12**	**1,209**	**107**	**155**	**136**	**2,596**	**5,969**
2005 Total	**2,182**	**1,183**	**2**	**639**	**90**	**246**	**10**	**12**	**1,208**	**106**	**164**	**135**	**2,613**	**5,990**
2006 Total	**2,147**	**1,170**	**2**	**645**	**85**	**240**	**8**	**11**	**1,216**	**106**	**122**	**147**	**2,582**	**5,911**
2007 Total	**2,172**	**1,246**	**2**	**647**	**89**	**238**	**5**	**12**	**1,208**	**100**	**129**	**143**	**2,573**	**6,002**
2008 Total	**2,140**	**1,255**	**2**	**610**	**85**	**226**	**2**	**11**	**1,139**	**93**	**111**	**126**	**2,404**	**5,811**
2009 Total	**1,876**	**1,233**	**2**	**555**	**83**	**204**	**3**	**10**	**1,126**	**87**	**91**	**107**	**2,268**	**5,388**
2010 Total	**1,986**	**1,292**	**2**	**583**	**86**	**210**	**3**	**11**	**1,110**	**82**	**96**	**115**	**2,297**	**5,586**
2011 Total	**1,876**	**1,311**	**2**	**592**	**80**	**209**	**2**	**10**	**1,077**	**79**	**82**	**114**	**2,247**	**5,446**
2012 Total	**1,657**	**1,372**	**2**	**569**	**84**	**206**	**1**	**9**	**1,071**	**79**	**66**	**110**	**2,197**	**5,237**
2013 Total	**1,718**	**1,409**	**2**	**573**	**92**	**210**	**1**	**10**	**1,086**	**77**	**57**	**116**	**2,224**	**5,363**
2014 Total	**1,714**	**1,440**	**2**	**606**	**87**	**216**	**1**	**10**	**1,095**	**76**	**46**	**108**	**2,247**	**5,411**
2015 Total	**1,480**	**1,483**	**1**	**598**	**91**	**227**	**1**	**11**	**1,125**	**76**	**47**	**112**	**2,290**	**5,265**
2016 Total	**1,354**	**1,494**	**1**	**576**	**88**	**237**	**1**	**11**	**1,144**	**76**	**59**	**120**	**2,313**	**5,172**
2017 January	125	159	(s)	48	10	20	(s)	1	88	8	8	10	193	477
February	96	127	(s)	45	7	17	(s)	1	85	4	4	9	172	396
March	98	137	(s)	52	8	21	(s)	1	97	3	5	11	199	435
April	89	105	(s)	46	7	20	(s)	1	93	5	4	12	188	383
May	102	103	(s)	49	7	21	(s)	1	99	6	5	10	199	404
June	116	104	(s)	48	6	21	(s)	1	98	5	5	11	196	416
July	136	116	(s)	46	7	22	(s)	1	100	8	4	11	199	452
August	129	114	(s)	50	6	22	(s)	1	101	5	5	10	202	445
September	108	104	(s)	48	7	20	(s)	1	94	6	4	10	190	403
October	100	110	(s)	51	8	22	(s)	1	97	3	5	11	197	408
November	102	128	(s)	51	8	20	(s)	1	91	7	6	10	195	425
December	116	168	(s)	50	9	22	(s)	1	96	7	5	11	201	485
Total	**1,316**	**1,474**	**1**	**584**	**90**	**247**	**1**	**10**	**1,140**	**70**	**61**	**126**	**2,330**	**5,131**
2018 January	126	180	(s)	56	11	20	1	1	90	7	5	11	201	508
February	91	147	(s)	45	8	18	(s)	1	83	3	4	11	174	413
March	89	151	(s)	53	9	21	(s)	1	98	5	3	12	203	444
April	82	127	(s)	51	7	20	(s)	1	93	5	6	8	191	402
May	95	111	(s)	54	6	21	(s)	1	99	6	5	10	202	409
June	110	111	(s)	48	6	22	(s)	1	99	6	4	11	197	420
July	124	128	(s)	50	7	22	(s)	1	100	6	5	10	202	454
August	124	126	(s)	53	8	23	(s)	1	101	8	5	10	209	460
September	107	117	(s)	49	8	20	(s)	(s)	92	8	5	8	190	415
October	97	124	(s)	55	8	21	(s)	1	96	8	5	11	205	427
November	103	146	(s)	51	9	21	(s)	1	93	5	5	9	194	444
December	110	161	(s)	51	10	21	(s)	1	96	5	6	10	200	472
Total	**1,259**	**1,629**	**2**	**616**	**99**	**251**	**1**	**9**	**1,140**	**73**	**58**	**121**	**2,369**	**5,268**
2019 January	110	184	(s)	56	11	20	(s)	1	91	5	5	9	199	494
February	90	163	(s)	50	9	18	(s)	1	84	2	4	7	175	428
March	89	157	(s)	53	9	21	(s)	(s)	95	6	3	10	198	445
3-Month Total	**288**	**504**	**(s)**	**158**	**30**	**60**	**1**	**2**	**270**	**13**	**12**	**26**	**572**	**1,367**
2018 3-Month Total	**307**	**478**	**(s)**	**154**	**28**	**59**	**1**	**2**	**272**	**15**	**12**	**34**	**578**	**1,366**
2017 3-Month Total	**319**	**423**	**(s)**	**145**	**25**	**58**	**(s)**	**3**	**270**	**15**	**17**	**30**	**563**	**1,308**

[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 12.6.
[i] Excludes emissions from biomass energy consumption. See Table 12.7.

(s)=Less than 0.5 million metric tons.

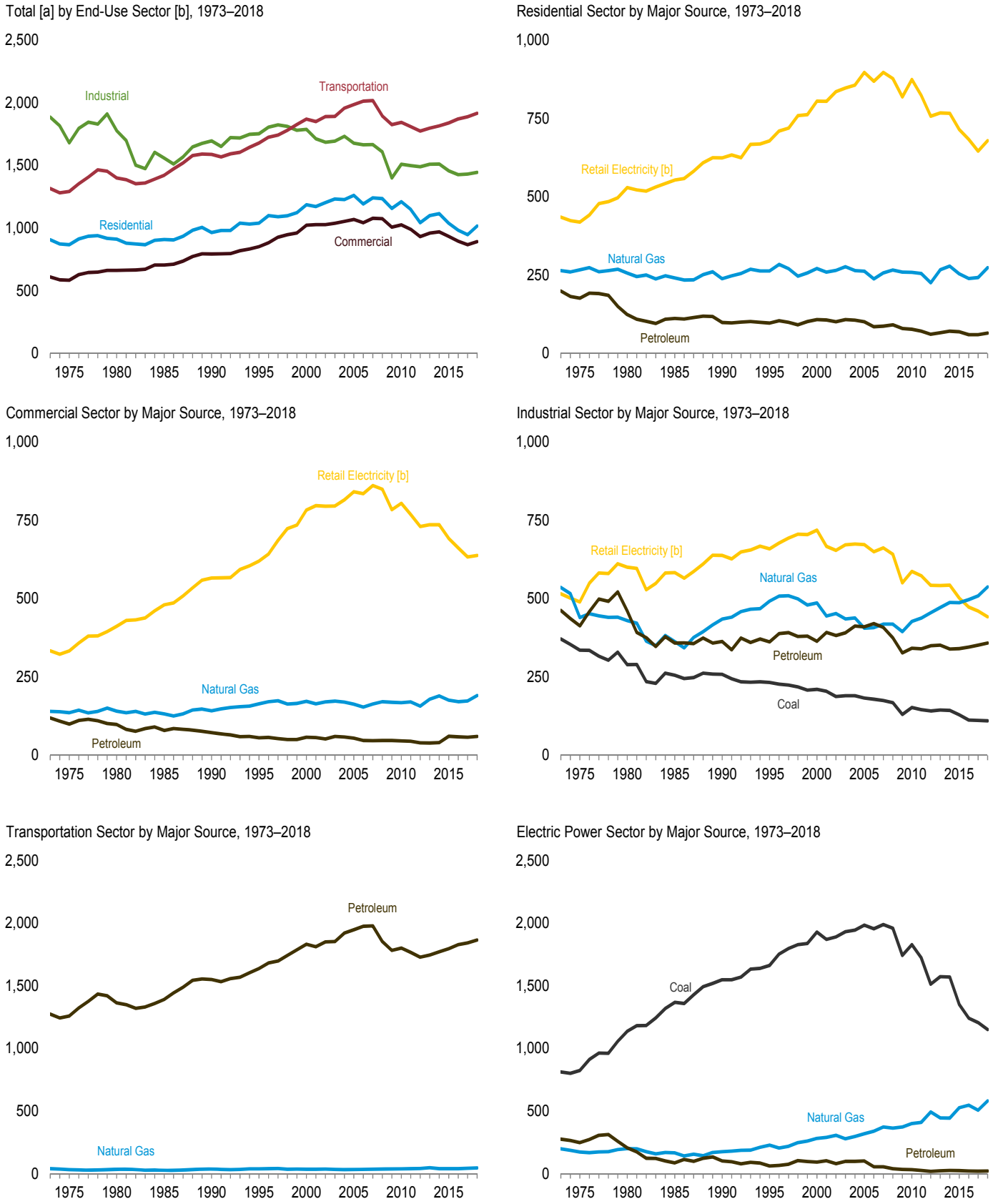
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 12 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 12.7 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 12.2 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 12.2–12.6.

Table 12.2 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**	**1,234**
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	3	(s)	7	63	116
February	NA	32	3	2	(s)	5	44	81
March	NA	32	3	2	(s)	5	45	82
April	NA	15	2	2	(s)	5	39	59
May	NA	11	2	2	(s)	4	45	60
June	NA	7	2	2	(s)	4	58	69
July	NA	6	1	2	(s)	4	77	86
August	NA	6	2	2	(s)	4	70	80
September	NA	6	2	2	(s)	4	55	65
October	NA	11	2	2	(s)	4	46	62
November	NA	26	3	2	(s)	6	46	77
December	NA	45	5	3	(s)	7	60	112
Total	**NA**	**242**	**32**	**27**	**1**	**59**	**645**	**947**
2018 January	NA	54	5	3	(s)	9	72	135
February	NA	38	4	2	(s)	6	49	92
March	NA	36	3	3	(s)	6	45	87
April	NA	24	3	2	(s)	5	40	69
May	NA	9	2	2	(s)	4	47	60
June	NA	7	1	2	(s)	4	61	71
July	NA	6	1	2	(s)	4	77	86
August	NA	5	1	2	(s)	3	74	83
September	NA	6	1	2	(s)	4	61	71
October	NA	14	3	3	(s)	6	49	68
November	NA	33	4	3	(s)	7	50	89
December	NA	42	5	3	(s)	8	57	107
Total	**NA**	**273**	**33**	**30**	**1**	**64**	**679**	**1,016**
2019 January	NA	52	5	3	(s)	8	61	122
February	NA	44	4	3	(s)	7	50	101
March	NA	38	4	3	(s)	6	47	91
3-Month Total	**NA**	**134**	**12**	**9**	**(s)**	**22**	**159**	**314**
2018 3-Month Total	**NA**	**127**	**12**	**8**	**(s)**	**20**	**166**	**314**
2017 3-Month Total	**NA**	**109**	**11**	**7**	**(s)**	**18**	**152**	**279**

[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 12.6.
[f] Excludes emissions from biomass energy consumption. See Table 12.7.
NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 12 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 12.7 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 12.3 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**	**704**
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)	6	53	86
February	(s)	20	2	1	(s)	2	(s)	(s)	5	44	68
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	1	(s)	2	(s)	(s)	4	57	69
July	(s)	7	1	1	(s)	2	(s)	(s)	4	66	78
August	(s)	8	1	1	(s)	2	(s)	(s)	4	63	75
September	(s)	8	1	1	(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)	6	53	87
Total	**2**	**174**	**24**	**10**	**(s)**	**24**	**(s)**	**(s)**	**58**	**633**	**867**
2018 January	(s)	30	4	1	(s)	2	(s)	(s)	7	56	93
February	(s)	23	3	1	(s)	2	(s)	(s)	5	44	72
March	(s)	23	2	1	(s)	2	(s)	(s)	5	46	74
April	(s)	16	2	1	(s)	2	(s)	(s)	5	43	64
May	(s)	9	1	1	(s)	2	0	(s)	4	51	64
June	(s)	8	1	1	(s)	2	0	(s)	4	57	69
July	(s)	7	1	1	(s)	2	0	(s)	4	66	77
August	(s)	8	1	1	(s)	2	0	(s)	4	65	77
September	(s)	8	1	1	(s)	2	(s)	(s)	4	58	69
October	(s)	13	2	1	(s)	2	(s)	(s)	5	53	71
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**	**191**	**25**	**11**	**(s)**	**24**	**(s)**	**(s)**	**60**	**638**	**891**
2019 January	(s)	30	4	1	(s)	2	(s)	(s)	7	52	89
February	(s)	26	3	1	(s)	2	(s)	(s)	6	44	76
March	(s)	23	3	1	(s)	2	(s)	(s)	6	45	74
3-Month Total	**(s)**	**80**	**9**	**3**	**(s)**	**6**	**(s)**	**(s)**	**18**	**141**	**239**
2018 3-Month Total	**1**	**76**	**9**	**3**	**(s)**	**6**	**(s)**	**(s)**	**18**	**145**	**239**
2017 3-Month Total	**1**	**66**	**8**	**3**	**(s)**	**6**	**(s)**	**(s)**	**16**	**144**	**227**

[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 12.6.
[g] Excludes emissions from biomass energy consumption. See Table 12.7.
NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 12 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 12.7 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 12.4 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**	**536**	**106**	**28**	**11**	**7**	**18**	**53**	**142**	**97**	**463**	**515**	**1,884**
1975 Total	**336**	**2**	**440**	**97**	**27**	**9**	**6**	**16**	**51**	**115**	**93**	**413**	**490**	**1,680**
1980 Total	**289**	**-4**	**430**	**96**	**54**	**13**	**7**	**11**	**49**	**103**	**129**	**461**	**601**	**1,776**
1985 Total	**256**	**-2**	**363**	**81**	**55**	**3**	**6**	**15**	**54**	**57**	**86**	**358**	**583**	**1,558**
1990 Total	**258**	**1**	**435**	**84**	**46**	**1**	**7**	**13**	**67**	**32**	**114**	**363**	**638**	**1,695**
1995 Total	**233**	**7**	**492**	**82**	**58**	**1**	**7**	**14**	**68**	**25**	**107**	**362**	**659**	**1,752**
1996 Total	**227**	**3**	**508**	**86**	**59**	**1**	**6**	**14**	**72**	**25**	**125**	**389**	**678**	**1,804**
1997 Total	**224**	**5**	**509**	**88**	**58**	**1**	**7**	**15**	**70**	**22**	**131**	**392**	**694**	**1,824**
1998 Total	**219**	**8**	**500**	**88**	**56**	**2**	**7**	**14**	**80**	**16**	**116**	**379**	**706**	**1,811**
1999 Total	**208**	**7**	**480**	**86**	**57**	**1**	**7**	**11**	**85**	**14**	**119**	**381**	**704**	**1,780**
2000 Total	**211**	**7**	**486**	**87**	**58**	**1**	**7**	**11**	**77**	**17**	**106**	**364**	**719**	**1,787**
2001 Total	**204**	**3**	**444**	**94**	**51**	**2**	**6**	**21**	**79**	**14**	**125**	**392**	**667**	**1,712**
2002 Total	**188**	**7**	**453**	**88**	**52**	**1**	**6**	**22**	**79**	**13**	**121**	**382**	**654**	**1,684**
2003 Total	**190**	**6**	**435**	**85**	**48**	**2**	**6**	**23**	**78**	**15**	**134**	**391**	**672**	**1,694**
2004 Total	**190**	**16**	**438**	**88**	**52**	**2**	**6**	**26**	**85**	**17**	**136**	**413**	**674**	**1,732**
2005 Total	**183**	**5**	**406**	**92**	**48**	**3**	**6**	**25**	**82**	**20**	**135**	**410**	**672**	**1,677**
2006 Total	**179**	**7**	**408**	**91**	**47**	**2**	**6**	**26**	**85**	**16**	**147**	**421**	**650**	**1,664**
2007 Total	**175**	**3**	**418**	**91**	**50**	**1**	**6**	**21**	**83**	**13**	**143**	**408**	**662**	**1,666**
2008 Total	**168**	**5**	**419**	**98**	**38**	**(s)**	**6**	**17**	**78**	**13**	**126**	**375**	**642**	**1,608**
2009 Total	**131**	**-3**	**395**	**78**	**38**	**(s)**	**5**	**16**	**73**	**9**	**107**	**327**	**550**	**1,400**
2010 Total	**153**	**-1**	**427**	**84**	**43**	**1**	**5**	**17**	**68**	**8**	**115**	**342**	**587**	**1,508**
2011 Total	**146**	**1**	**438**	**90**	**40**	**(s)**	**5**	**17**	**65**	**9**	**114**	**340**	**574**	**1,498**
2012 Total	**141**	**(s)**	**455**	**93**	**50**	**(s)**	**4**	**17**	**70**	**5**	**110**	**350**	**543**	**1,490**
2013 Total	**145**	**-2**	**472**	**92**	**53**	**(s)**	**5**	**17**	**65**	**3**	**116**	**352**	**542**	**1,508**
2014 Total	**143**	**-2**	**488**	**100**	**46**	**(s)**	**5**	**14**	**64**	**3**	**108**	**339**	**543**	**1,511**
2015 Total	**129**	**-2**	**487**	**85**	**53**	**(s)**	**5**	**17**	**65**	**2**	**112**	**340**	**502**	**1,457**
2016 Total	**113**	**-2**	**497**	**84**	**51**	**(s)**	**5**	**17**	**64**	**4**	**120**	**345**	**473**	**1,426**
2017 January	9	(s)	46	7	6	(s)	(s)	1	7	(s)	10	32	38	125
February	9	(s)	41	8	4	(s)	(s)	1	3	(s)	9	26	33	109
March	9	(s)	44	10	5	(s)	(s)	1	3	(s)	11	31	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	117
June	9	(s)	40	7	3	(s)	(s)	2	4	(s)	11	27	41	116
July	9	(s)	41	5	4	(s)	(s)	2	7	(s)	11	29	45	124
August	9	(s)	41	7	4	(s)	(s)	2	5	(s)	10	28	44	122
September	9	(s)	40	7	4	(s)	(s)	1	5	(s)	10	29	39	116
October	9	(s)	42	8	5	(s)	(s)	1	3	(s)	11	28	37	117
November	9	(s)	44	9	5	(s)	(s)	1	6	(s)	10	32	37	123
December	10	(s)	48	7	5	(s)	(s)	1	6	(s)	11	31	39	128
Total	**112**	**-3**	**509**	**88**	**53**	**(s)**	**5**	**18**	**60**	**3**	**126**	**352**	**461**	**1,430**
2018 January	9	(s)	49	9	6	(s)	(s)	1	6	(s)	11	35	37	129
February	9	(s)	44	7	5	(s)	(s)	1	3	(s)	11	27	31	110
March	9	(s)	47	9	5	(s)	(s)	2	5	(s)	12	33	33	121
April	9	(s)	44	8	4	(s)	(s)	1	5	(s)	8	27	31	112
May	9	(s)	43	10	3	(s)	(s)	2	5	(s)	10	30	37	119
June	9	(s)	42	6	3	(s)	(s)	2	6	(s)	11	28	38	117
July	9	(s)	43	6	4	(s)	(s)	2	5	(s)	10	28	43	122
August	9	(s)	43	8	4	(s)	(s)	2	7	(s)	10	33	43	128
September	9	(s)	43	7	4	(s)	(s)	1	7	(s)	8	28	38	118
October	9	(s)	44	9	5	(s)	(s)	1	7	(s)	11	34	37	125
November	9	(s)	47	7	5	(s)	(s)	1	4	(s)	9	28	37	121
December	10	(s)	49	6	6	(s)	(s)	1	4	(s)	10	28	36	122
Total	**110**	**-3**	**538**	**92**	**57**	**(s)**	**4**	**18**	**63**	**3**	**121**	**358**	**442**	**1,445**
2019 January	9	(s)	51	11	7	(s)	(s)	1	4	(s)	9	34	36	129
February	8	(s)	46	9	6	(s)	(s)	1	1	(s)	7	25	31	110
March	9	(s)	48	9	5	(s)	(s)	1	5	(s)	10	31	32	121
3-Month Total	**27**	**-1**	**145**	**28**	**18**	**(s)**	**1**	**4**	**11**	**1**	**26**	**89**	**100**	**360**
2018 3-Month Total	**27**	**-1**	**139**	**25**	**16**	**(s)**	**1**	**4**	**13**	**1**	**34**	**95**	**100**	**360**
2017 3-Month Total	**28**	**-1**	**131**	**24**	**15**	**(s)**	**1**	**4**	**12**	**1**	**30**	**88**	**106**	**353**

[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 12.6.
[h] Excludes emissions from biomass energy consumption. See Table 12.7.

(s)=Less than 0.5 million metric tons and greater than -0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 12 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 12.7 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 12.5 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])	5	(s)	35	(s)	20	(s)	87	3	146	(s)	151
February	([h])	4	(s)	32	(s)	18	(s)	80	3	134	(s)	138
March	([h])	4	(s)	38	(s)	21	(s)	95	3	158	(s)	162
April	([h])	4	(s)	38	(s)	20	(s)	89	5	153	(s)	157
May	([h])	3	(s)	41	(s)	21	(s)	95	4	163	(s)	166
June	([h])	3	(s)	39	(s)	22	(s)	95	3	161	(s)	164
July	([h])	4	(s)	41	(s)	22	(s)	97	4	165	(s)	169
August	([h])	4	(s)	43	(s)	23	(s)	97	4	168	(s)	172
September	([h])	3	(s)	39	(s)	20	(s)	88	5	153	(s)	156
October	([h])	4	(s)	41	(s)	21	(s)	93	4	159	(s)	163
November	([h])	4	(s)	37	(s)	21	(s)	90	4	152	(s)	157
December	([h])	5	(s)	36	(s)	21	(s)	92	5	155	(s)	160
Total	**([h])**	**46**	**2**	**461**	**(s)**	**251**	**5**	**1,099**	**48**	**1,865**	**4**	**1,915**
2019 January	([h])	5	(s)	36	(s)	20	(s)	88	4	149	(s)	154
February	([h])	5	(s)	34	(s)	18	(s)	81	4	136	(s)	141
March	([h])	4	(s)	38	(s)	21	(s)	92	3	154	(s)	159
3-Month Total	**([h])**	**14**	**(s)**	**107**	**(s)**	**60**	**1**	**260**	**10**	**439**	**1**	**454**
2018 3-Month Total	**([h])**	**13**	**(s)**	**106**	**(s)**	**59**	**1**	**262**	**9**	**438**	**1**	**452**
2017 3-Month Total	**([h])**	**12**	**(s)**	**101**	**(s)**	**58**	**1**	**260**	**15**	**435**	**1**	**449**

[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 12.6.
[g] Excludes emissions from biomass energy consumption. See Table 12.7.
[h] Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

(s)=Less than 0.5 million metric tons.

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 12 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 12.7 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 12.6 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	165
February	83	38	(s)	1	(s)	1	(s)	1	123
March	80	41	(s)	1	(s)	1	(s)	1	124
April	73	39	(s)	1	(s)	1	(s)	1	114
May	86	47	(s)	(s)	(s)	1	(s)	1	135
June	101	52	(s)	1	(s)	2	(s)	1	156
July	115	68	(s)	1	(s)	2	(s)	1	186
August	115	65	(s)	1	(s)	2	(s)	1	183
September	98	57	(s)	1	(s)	2	(s)	1	157
October	88	49	(s)	1	(s)	1	(s)	1	139
November	94	41	(s)	1	(s)	1	(s)	1	137
December	100	41	(s)	1	(s)	1	(s)	1	144
Total	**1,150**	**581**	**5**	**9**	**6**	**21**	**(s)**	**11**	**1,763**
2019 January	101	46	(s)	1	1	2	(s)	1	149
February	81	42	(s)	1	(s)	1	(s)	1	126
March	80	43	(s)	1	(s)	1	(s)	1	125
3-Month Total	**262**	**131**	**1**	**2**	**1**	**4**	**(s)**	**3**	**400**
2018 3-Month Total	**280**	**123**	**3**	**3**	**2**	**7**	**(s)**	**3**	**412**
2017 3-Month Total	**291**	**104**	**1**	**3**	**1**	**5**	**(s)**	**3**	**403**

[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 12.7.
NA=Not available. (s)=Less than 0.5 million metric tons.
Notes: • Data are estimates for carbon dioxide emissions from energy consumption. See "Section 12 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 12.7 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 12.7 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	13	7	4	28
March	19	4	7	1	31	4	1	13	8	4	31
April	18	4	6	1	29	4	1	13	7	3	29
May	19	4	7	2	31	4	1	13	9	4	31
June	18	4	7	2	31	4	1	13	8	4	31
July	19	4	7	2	31	4	1	14	9	4	31
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**	**45**	**82**	**18**	**365**	**49**	**14**	**161**	**97**	**46**	**365**
2019 January	19	4	6	1	30	4	1	14	7	4	30
February	17	3	6	1	28	4	1	12	7	3	28
March	18	4	7	1	30	4	1	13	8	4	30
3-Month Total	**54**	**11**	**20**	**4**	**88**	**12**	**3**	**39**	**23**	**11**	**88**
2018 3-Month Total	**55**	**12**	**20**	**4**	**90**	**12**	**3**	**40**	**23**	**12**	**90**
2017 3-Month Total	**53**	**12**	**19**	**3**	**87**	**10**	**3**	**40**	**22**	**12**	**87**

[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 12.1–12.6. See Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Data are estimates. See "Section 12 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 12.1–12.6 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 12.7).

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 12.1–12.6, but appear in MER Table 12.7. 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 12 Methodology and Sources

To estimate carbon dioxide emissions from energy consumption for the *Monthly Energy Review (MER)*, Tables 12.1–12.7, 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 12, 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 12, 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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Appendices

Appendix A: 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	Motor Gasoline Blending Components (MGBC)	
Aviation Gasoline (Finished)	5.048	Through 2006	5.253
Aviation Gasoline Blending Components	5.048	Beginning in 2007	5.222
Biodiesel	5.359	Oxygenates (excluding Fuel Ethanol)	4.247
Crude Oil–see Table A2		Petrochemical Feedstocks	
Distillate Fuel Oil–see Table A3 for averages		Naphtha Less Than 401°F	5.248
15 ppm sulfur and under	5.770	Other Oils Equal to or Greater Than 401°F	5.825
Greater than 15 ppm to 500 ppm sulfur	5.817	Petroleum Coke–see Table A3 for averages	
Greater than 500 ppm sulfur	5.825	Total, through 2003	6.024
Fuel Ethanol–see Table A3		Catalyst, beginning in 2004	[a] 6.287
Hydrocarbon Gas Liquids		Marketable, beginning in 2004	5.719
Ethane/Ethylene	3.082	Plant Condensate	5.418
Propane/Propylene	3.836	Renewable Fuels Except Fuel Ethanol	[b] 5.359; [b] 5.494
Normal Butane/Butylene	4.326	Residual Fuel Oil	6.287
Isobutane/Isobutylene	3.974	Special Naphthas	5.248
Natural Gasoline (Pentanes Plus)	4.620	Still Gas	[c] 6.287; [c] 6.000
Hydrogen	[a] 6.287	Unfinished Oils	5.825
Jet Fuel, Kerosene Type	5.670	Unfractionated Stream	5.418
Jet Fuel, Naphtha Type	5.355	Waxes	5.537
Kerosene	5.670	Miscellaneous Products	5.796
Lubricants	6.065	Other Hydrocarbons	5.825
Motor Gasoline (Finished)–see Tables A2/A3			

[a] Per residual fuel oil equivalent barrel (6.287 million Btu per barrel).
[b] The biodiesel heat content factor, 5.359 million Btu per barrel, is used for "Biomass-Based Diesel Fuel" and "Other Renewable Fuels"; however, a factor of 5.494 million Btu per barrel is used for "Other Renewable Diesel Fuel."
[c] Through 2015, the still gas heat content factor is 6.000 million Btu per fuel oil equivalent barrel; beginning in 2016, the factor is 6.287 million Btu per residual fuel oil equivalent 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	Total	Crude Oil[a]	Motor Gasoline[c]	Total Products	Total
1950	5.800	4.522	5.943	5.253	6.263	6.080	5.800	5.253	5.751	5.766
1955	5.800	4.406	5.924	5.253	6.234	6.040	5.800	5.253	5.765	5.768
1960	5.800	4.295	5.911	5.253	6.161	6.021	5.800	5.253	5.835	5.834
1965	5.800	4.264	5.872	5.253	6.123	5.997	5.800	5.253	5.742	5.743
1970	5.800	4.146	5.822	5.253	6.088	5.985	5.800	5.253	5.811	5.810
1975	5.800	3.984	5.821	5.253	5.935	5.858	5.800	5.253	5.747	5.748
1980	5.800	3.914	5.812	5.253	5.748	5.796	5.800	5.253	5.841	5.820
1981	5.800	3.930	5.818	5.253	5.659	5.775	5.800	5.253	5.837	5.821
1982	5.800	3.872	5.826	5.253	5.664	5.775	5.800	5.253	5.829	5.820
1983	5.800	3.839	5.825	5.253	5.677	5.774	5.800	5.253	5.800	5.800
1984	5.800	3.812	5.823	5.253	5.613	5.745	5.800	5.253	5.867	5.850
1985	5.800	3.815	5.832	5.253	5.572	5.736	5.800	5.253	5.819	5.814
1986	5.800	3.797	5.903	5.253	5.624	5.808	5.800	5.253	5.839	5.832
1987	5.800	3.804	5.901	5.253	5.599	5.820	5.800	5.253	5.860	5.858
1988	5.800	3.800	5.900	5.253	5.618	5.820	5.800	5.253	5.842	5.840
1989	5.800	3.826	5.906	5.253	5.641	5.833	5.800	5.253	5.869	5.857
1990	5.800	3.822	5.934	5.253	5.614	5.849	5.800	5.253	5.838	5.833
1991	5.800	3.807	5.948	5.253	5.636	5.873	5.800	5.253	5.827	5.823
1992	5.800	3.804	5.953	5.253	5.623	5.877	5.800	5.253	5.774	5.777
1993	5.800	3.801	5.954	5.253	5.539	5.866	5.800	5.253	5.681	5.693
1994	5.800	3.794	5.950	5.253	5.416	5.835	5.800	5.253	5.693	5.704
1995	5.800	3.796	5.938	5.253	5.345	5.830	5.800	5.253	5.692	5.703
1996	5.800	3.777	5.947	5.253	5.373	5.828	5.800	5.253	5.663	5.678
1997	5.800	3.762	5.954	5.253	5.333	5.836	5.800	5.253	5.663	5.678
1998	5.800	3.769	5.953	5.253	5.314	5.833	5.800	5.253	5.505	5.539
1999	5.800	3.744	5.942	5.253	5.291	5.815	5.800	5.253	5.530	5.564
2000	5.800	3.733	5.959	5.253	5.309	5.823	5.800	5.253	5.529	5.542
2001	5.800	3.735	5.976	5.253	5.330	5.838	5.800	5.253	5.637	5.641
2002	5.800	3.729	5.971	5.253	5.362	5.845	5.800	5.253	5.517	5.519
2003	5.800	3.739	5.970	5.253	5.381	5.845	5.800	5.253	5.628	5.630
2004	5.800	3.724	5.981	5.253	5.429	5.853	5.800	5.253	5.532	5.539
2005	5.800	3.724	5.977	5.253	5.436	5.835	5.800	5.253	5.504	5.513
2006	5.800	3.712	5.980	5.253	5.431	5.836	5.800	5.219	5.415	5.423
2007	5.800	3.701	5.985	5.222	5.483	5.857	5.800	5.188	5.465	5.471
2008	5.800	3.706	5.990	5.222	5.459	5.861	5.800	5.215	5.587	5.591
2009	5.800	3.692	5.988	5.222	5.509	5.878	5.800	5.221	5.674	5.677
2010	5.800	3.674	5.989	5.222	5.545	5.892	5.800	5.214	5.601	5.604
2011	5.800	3.672	6.008	5.222	5.538	5.905	5.800	5.216	5.526	5.530
2012	5.800	3.683	6.165	5.222	5.501	6.035	5.800	5.217	5.520	5.526
2013	5.800	3.714	6.010	5.222	5.497	5.899	5.800	5.216	5.470	5.482
2014	5.800	3.723	6.035	5.222	5.518	5.929	5.800	5.218	5.369	5.406
2015	5.717	3.744	6.065	5.222	5.504	5.941	5.682	5.218	5.279	5.319
2016	5.722	3.714	6.053	5.222	5.491	5.929	5.724	5.218	5.184	5.245
2017	5.723	3.699	6.050	5.222	5.489	5.930	5.738	5.221	5.151	5.258
2018	P 5.705	P 3.683	P 6.067	P 5.222	P 5.490	P 5.938	P 5.721	P 5.222	P 5.099	P 5.264
2019	E 5.705	E 3.683	E 6.067	E 5.222	E 5.490	E 5.938	E 5.721	E 5.222	E 5.099	E 5.264

[a] Includes lease condensate.
[b] Excludes fuel ethanol, methyl tertiary butyl ether (MTBE), and other oxygenates blended into motor gasoline.
[c] 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.
P=Preliminary. 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	5.953	5.461	6.254	5.649	5.825	4.011	5.253	6.024	NA	*NA*
1955	5.469	5.781	5.881	5.407	6.254	5.591	5.825	4.011	5.253	6.024	NA	*NA*
1960	5.417	5.781	5.818	5.387	6.267	5.555	5.825	4.011	5.253	6.024	NA	*NA*
1965	5.364	5.760	5.748	5.386	6.267	5.532	5.825	4.011	5.253	6.024	NA	*NA*
1970	5.260	5.708	5.595	5.393	6.252	5.503	5.825	[g] 3.779	5.253	6.024	NA	*NA*
1975	5.253	5.649	5.513	5.392	6.250	5.494	5.825	3.739	5.253	6.024	NA	*NA*
1980	5.321	5.751	5.366	5.441	6.254	5.479	5.825	3.746	5.253	6.024	3.563	*6.586*
1981	5.283	5.693	5.299	5.433	6.258	5.448	5.825	3.715	5.253	6.024	3.563	*6.562*
1982	5.266	5.698	5.247	5.423	6.258	5.415	5.825	3.678	5.253	6.024	3.563	*6.539*
1983	5.140	5.591	5.254	5.416	6.255	5.406	5.825	3.633	5.253	6.024	3.563	*6.515*
1984	5.307	5.657	5.207	5.418	6.251	5.395	5.825	3.677	5.253	6.024	3.563	*6.492*
1985	5.263	5.598	5.199	5.423	6.247	5.387	5.825	3.676	5.253	6.024	3.563	*6.469*
1986	5.268	5.632	5.269	5.426	6.257	5.418	5.825	3.710	5.253	6.024	3.563	*6.446*
1987	5.239	5.594	5.233	5.429	6.249	5.403	5.825	3.734	5.253	6.024	3.563	*6.423*
1988	5.257	5.597	5.228	5.433	6.250	5.410	5.825	3.719	5.253	6.024	3.563	*6.400*
1989	5.194	5.549	5.219	5.438	[d] 6.240	5.410	5.825	3.747	5.253	6.024	3.563	*6.377*
1990	5.145	5.553	5.253	5.442	6.244	5.411	5.825	3.712	5.253	6.024	3.563	*6.355*
1991	5.094	5.528	5.167	5.441	6.246	5.384	5.825	3.708	5.253	6.024	3.563	*6.332*
1992	5.124	5.513	5.168	5.443	6.238	5.378	5.825	3.722	5.253	6.024	3.563	*6.309*
1993	5.102	[b] 5.504	[b] 5.177	[b] 5.412	6.230	[b] 5.363	5.825	3.709	[h] 5.217	6.024	3.563	*6.287*
1994	5.095	5.512	5.149	5.413	6.213	5.353	[f] 5.820	3.730	5.214	6.024	3.563	*6.264*
1995	5.060	5.475	5.121	5.409	6.187	5.336	5.820	3.718	5.204	6.024	3.563	*6.242*
1996	4.995	5.430	5.114	5.416	6.194	5.333	5.820	3.708	5.211	6.024	3.563	*6.220*
1997	4.986	5.387	5.119	5.410	6.198	5.332	5.820	3.704	5.205	6.024	3.563	*6.198*
1998	4.972	5.361	5.136	5.406	6.210	5.344	5.819	3.697	5.203	6.024	3.563	*6.176*
1999	4.899	5.287	5.091	5.406	6.204	5.323	5.819	3.706	5.202	6.024	3.563	*6.167*
2000	4.905	5.312	5.056	5.415	6.188	5.321	5.819	3.692	5.201	6.024	3.563	*6.159*
2001	4.934	5.321	5.141	5.405	6.199	5.340	5.819	3.685	5.201	6.024	3.563	*6.151*
2002	4.883	5.289	5.092	5.403	6.172	5.318	5.819	3.671	5.199	6.024	3.563	*6.143*
2003	4.918	5.312	5.143	5.400	6.182	5.335	5.819	3.688	5.197	6.024	3.563	*6.106*
2004	4.949	5.323	5.144	5.407	6.134	5.339	5.818	3.677	5.196	[i] 5.982	3.563	*6.069*
2005	4.913	5.359	5.179	5.408	6.126	5.351	5.818	3.674	5.192	5.982	3.563	*6.032*
2006	4.883	5.295	5.158	5.405	6.038	5.333	5.803	3.644	5.185	5.987	3.563	*5.995*
2007	4.830	5.269	5.121	5.376	6.064	5.303	5.784	3.641	5.142	5.996	3.563	*5.959*
2008	4.769	5.155	5.146	5.342	6.013	5.278	5.780	3.645	5.106	5.992	3.563	*5.922*
2009	4.661	5.215	5.014	[c] 5.319	5.987	[c] 5.230	5.781	3.595	5.089	6.017	3.563	*5.901*
2010	4.661	5.193	4.976	5.316	5.956	5.217	5.778	3.600	5.067	6.059	3.561	*5.880*
2011	4.654	5.174	4.950	5.315	5.900	5.208	5.776	3.543	5.063	6.077	3.560	*5.859*
2012	4.711	5.124	4.903	5.306	5.925	5.190	5.774	3.559	5.062	6.084	3.560	*5.838*
2013	4.645	5.052	4.860	5.302	5.892	5.172	5.774	3.579	5.060	6.089	3.559	*5.817*
2014	4.661	5.014	4.868	5.300	5.906	5.176	5.773	3.558	5.059	6.100	3.558	*5.797*
2015	4.718	5.049	4.829	5.302	5.915	5.169	5.773	3.576	5.057	6.085	3.558	*5.776*
2016	4.628	5.020	4.864	5.303	5.885	5.177	5.773	3.543	5.055	6.104	3.558	*5.755*
2017	4.620	5.004	4.836	5.305	5.893	5.169	5.772	3.527	5.053	6.132	3.556	*5.735*
2018	[E] 4.587	[E] 4.983	[E] 4.746	[E] 5.310	[P] 5.904	[P] 5.144	[P] 5.772	[P] 3.516	[P] 5.054	[P] 6.116	[P] 3.553	*5.715*
2019	[E] 4.587	[E] 4.983	[E] 4.746	[E] 5.310	[E] 5.904	[E] 5.144	[E] 5.772	[E] 3.516	[E] 5.054	[E] 6.116	[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] There is a discontinuity in this time series between 1966 and 1967; beginning in 1967, the single constant factor is replaced by a quantity-weighted factor. Quantity-weighted averages of the major components of hydrocarbon gas liquids are calculated by using heat content values shown in Table A1.

[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.

P=Preliminary. 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	[E] 1,129	[P] 1,036	[P] 1,038	[P] 1,033	[P] 1,036	[E] 1,025	[E] 1,009
2019	[E] 1,129	[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.

P=Preliminary. 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	[P] 20.150	[P] 10.778	[P] 19.268	[P] 28.608	[P] 20.735	[P] 18.911	[P] 19.266	[P] 20.415	[P] 24.290	[P] 24.800
2019	[E] 20.150	[E] 10.778	[E] 19.268	[E] 28.608	[E] 20.735	[E] 18.911	[E] 19.266	[E] 20.415	[E] 24.290	[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.

P=Preliminary. 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	[E] 10,465	[E] 10,834	[E] 7,812	[E] 9,213	[E] 10,459	[E] 9,213	3,412
2019	[E] 10,465	[E] 10,834	[E] 7,812	[E] 9,213	[E] 10,459	[E] 9,213	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.

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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.

Butane-Propane Mixture. EIA adopted the Bureau of Mines calculation of 4.130 million Btu per barrel based on an assumed mixture of 60% normal butane and 40% propane. See **Normal Butane/Butylene** and **Propane/Propylene**.

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/Ethylene. EIA adopted the Bureau of Mines thermal conversion factor of 3.082 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Ethane-Propane Mixture. EIA calculation of 3.308 million Btu per barrel based on an assumed mixture of 70% ethane and 30% propane. See **Ethane/Ethylene** and **Propane/Propylene**.

Hydrocarbon Gas Liquids. • 1949–1966: U.S. Department of the Interior, Bureau of Mines, Mineral Industry Surveys, "Crude Petroleum and Petroleum Products, 1956," Table 4 footnote, constant value of 4.011 million Btu per barrel. • 1967 forward: Calculated annually by EIA as the average of the thermal conversion factors for all hydrocarbon gas liquids consumed (see Table A1) weighted by the quantities consumed. The component products of hydrocarbon gas liquids are ethane (including ethylene), propane (including propylene), normal butane (including butylene), isobutane (including isobutylene), butane-propane mixtures, ethane-propane mixtures, and natural gasoline (pentanes plus). For 1967–1980, quantities consumed are from EIA, Energy Data Reports, "Petroleum Statement, Annual," Table 1. For 1981 forward, quantities consumed are from EIA, *Petroleum Supply Annual*, Table 2.

Hydrogen. Assumed by EIA to be 6.287 million Btu per barrel or equal to the thermal conversion factor for **Residual Fuel Oil**.

Isobutane/Isobutylene. EIA adopted the Bureau of Mines thermal conversion factor of 3.974 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Jet Fuel, Kerosene-Type. EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel for "Jet Fuel, Commercial" as published by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947–1985*, a 1968 release of historical and projected statistics.

Jet Fuel, Naphtha-Type. EIA adopted the Bureau of Mines thermal conversion factor of 5.355 million Btu per barrel for "Jet Fuel, Military" as published by the Texas Eastern Transmission Corporation in the report *Competition and Growth in American Energy Markets 1947–1985*, a 1968 release of historical and projected statistics.

Kerosene. EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

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 adopted the thermal conversion factor of 4.620 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual 1956.*

Normal Butane/Butylene. EIA adopted the Bureau of Mines thermal conversion factor of 4.326 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

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. Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane/Propylene. EIA adopted the Bureau of Mines thermal conversion factor of 3.836 million Btu per barrel as published in the *California Oil World and Petroleum Industry,* First Issue, April 1942.

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 or equal to that for **Distillate Fuel Oil** and first published it in EIA's *Annual Report to Congress, Volume 3, 1977*.

Unfractionated Stream. EIA assumed the thermal conversion factor to be 5.418 million Btu per barrel or equal to that for **Plant Condensate** and first published it in EIA's *Annual Report to Congress, Volume 2, 1981*.

Waxes. EIA adopted the thermal conversion factor of 5.537 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Approximate Heat Content of Biofuels

Biodiesel. EIA estimated the 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 (4.620 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).

Appendix B: Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

Data presented in the *Monthly Energy Review* and in other U.S. Energy Information Administration publications are expressed predominately in units that historically have been used in the United States, such as British thermal units, barrels, cubic feet, and short tons. The metric conversion factors presented in Table B1 can be used to calculate the metric-unit equivalents of values expressed in U.S. Customary units. For example, 500 short tons are the equivalent of 453.6 metric tons (500 short tons x 0.9071847 metric tons/short ton = 453.6 metric tons).

In the metric system of weights and measures, the names of multiples and subdivisions of any unit may be derived by combining the name of the unit with prefixes, such as deka, hecto, and kilo, meaning, respectively, 10, 100, 1,000, and deci, centi, and milli, meaning, respectively, one-tenth, one-hundredth, and one-thousandth. Common metric prefixes can be found in Table B2.

The conversion factors presented in Table B3 can be used to calculate equivalents in various physical units commonly used in energy analyses. For example, 10 barrels are the equivalent of 420 U.S. gallons (10 barrels x 42 gallons/barrel = 420 gallons).

Table B1. Metric Conversion Factors

Type of Unit	U.S. Unit		Equivalent in	Metric Units
Mass	1 short ton (2,000 lb)	=	0.907 184 7	metric tons (t)
	1 long ton	=	1.016 047	metric tons (t)
	1 pound (lb)	=	0.453 592 37[a]	kilograms (kg)
	1 pound uranium oxide (lb U_3O_8)	=	0.384 647[b]	kilograms uranium (kgU)
	1 ounce, avoirdupois (avdp oz)	=	28.349 52	grams (g)
Volume	1 barrel of oil (bbl)	=	0.158 987 3	cubic meters (m^3)
	1 cubic yard (yd^3)	=	0.764 555	cubic meters (m^3)
	1 cubic foot (ft^3)	=	0.028 316 85	cubic meters (m^3)
	1 U.S. gallon (gal)	=	3.785 412	liters (L)
	1 ounce, fluid (fl oz)	=	29.573 53	milliliters (mL)
	1 cubic inch (in^3)	=	16.387 06	milliliters (mL)
Length	1 mile (mi)	=	1.609 344[a]	kilometers (km)
	1 yard (yd)	=	0.914 4[a]	meters (m)
	1 foot (ft)	=	0.304 8[a]	meters (m)
	1 inch (in)	=	2.54[a]	centimeters (cm)
Area	1 acre	=	0.404 69	hectares (ha)
	1 square mile (mi^2)	=	2.589 988	square kilometers (km^2)
	1 square yard (yd^2)	=	0.836 127 4	square meters (m^2)
	1 square foot (ft^2)	=	0.092 903 04[a]	square meters (m^2)
	1 square inch (in^2)	=	6.451 6[a]	square centimeters (cm^2)
Energy	1 British thermal unit (Btu)[c]	=	1,055.055 852 62[a]	joules (J)
	1 calorie (cal)	=	4.186 8[a]	joules (J)
	1 kilowatthour (kWh)	=	3.6[a]	megajoules (MJ)
Temperature[d]	32 degrees Fahrenheit (°F)	=	0[a]	degrees Celsius (°C)
	212 degrees Fahrenheit (°F)	=	100[a]	degrees Celsius (°C)

[a] Exact conversion.
[b] Calculated by the U.S. Energy Information Administration.
[c] The Btu used in this table is the International Table Btu adopted by the Fifth International Conference on Properties of Steam, London, 1956.
[d] To convert degrees Fahrenheit (°F) to degrees Celsius (°C) exactly, subtract 32, then multiply by 5/9.

Notes: • Spaces have been inserted after every third digit to the right of the decimal for ease of reading. • Most metric units belong to the International System of Units (SI), and the liter, hectare, and metric ton are accepted for use with the SI units. For more information about the SI units, see http://physics.nist/gov/cuu/Units/index.html.

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

Sources: • General Services Administration, Federal Standard 376B, *Preferred Metric Units for General Use by the Federal Government* (Washington, DC, January 1993), pp. 9–11, 13, and 16. • U.S. Department of Commerce, National Institute of Standards and Technology, Special Publications 330, 811, and 814. • American National Standards Institute/Institute of Electrical and Electronic Engineers, ANSI/IEEE Std268-1992, pp. 28 and 29.

Table B2. Metric Prefixes

Unit Multiple	Prefix	Symbol	Unit Subdivision	Prefix	Symbol
10^{1}	deka	da	10^{-1}	deci	d
10^{2}	hecto	h	10^{-2}	centi	c
10^{3}	kilo	k	10^{-3}	milli	m
10^{6}	mega	M	10^{-6}	micro	µ
10^{9}	giga	G	10^{-9}	nano	n
10^{12}	tera	T	10^{-12}	pico	p
10^{15}	peta	P	10^{-15}	femto	f
10^{18}	exa	E	10^{-18}	atto	a
10^{21}	zetta	Z	10^{-21}	zepto	z
10^{24}	yotta	Y	10^{-24}	yocto	y

Web Page: http://www.eia.gov/totalenergy/data/monthly/#appendices.
Source: U.S. Department of Commerce, National Institute of Standards and Technology, *The International System of Units (SI)*, NIST Special Publication 330, 1991 Edition (Washington, DC, August 1991), p.10.

Table B3. Other Physical Conversion Factors

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.
Source: U.S. Department of Commerce, National Institute of Standards and Technology, *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, NIST Handbook 44, 1994 Edition (Washington, DC, October 1993), pp. B-10, C-17, and C-21.

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

Table C1. Population, U.S. Gross Domestic Product, and U.S. Gross Output

	Population			U.S. Gross Domestic Product			U.S. Gross Output[a]
	United States[b]	World	United States as Share of World	Billion Nominal Dollars[d]	Billion Chained (2012) Dollars[e]	Implicit Price Deflator[c] (2012 = 1.00000)	Billion Nominal Dollars[d]
	Million People		Percent				
1950	152.3	2,557.6	6.0	299.8	2,289.5	0.13095	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).

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Appendix D: 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.

Appendix E: 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	995	1,692	2,688	64	57	97	218	938	1,595	2,533

[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	171	227	386	951	2,448	3,942	6,390

[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.

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 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 also includes all non-combustion use of fossil fuels. 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**.

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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