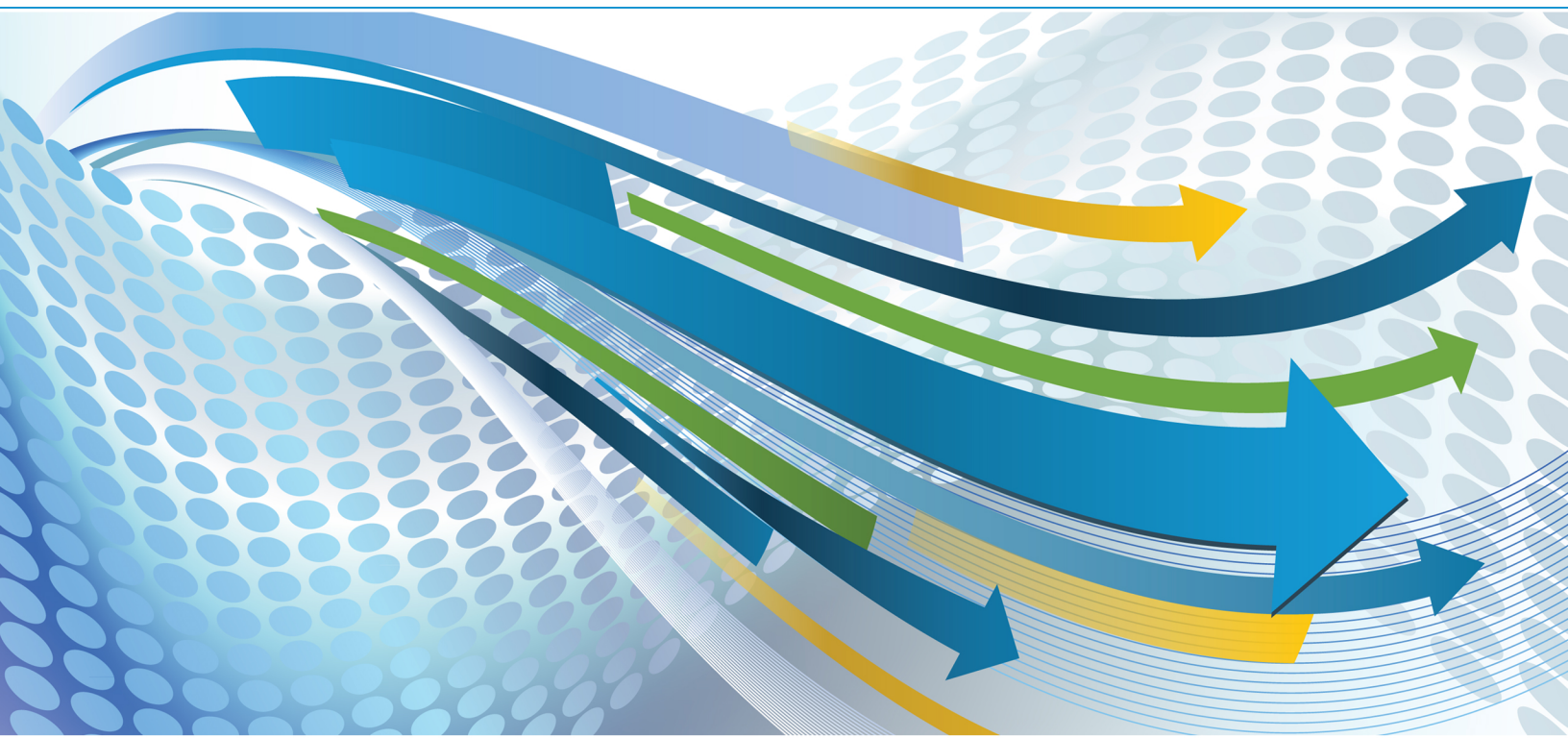


May 2016

# Monthly Energy Review



*Independent Statistics & Analysis*

U.S. Energy Information  
Administration

[www.eia.gov/mer](http://www.eia.gov/mer)

# Monthly Energy Review

The *Monthly Energy Review (MER)* is the U.S. Energy Information Administration's (EIA) primary report of recent and historical energy statistics. Included are statistics on total energy production, consumption, 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 the content of the MER 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](mailto: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 and comma-separated values (CSV) files. 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 and CSV files.

**Comprehensive Changes:** Each month, most MER tables and figures carry a new month of data, which is usually preliminary (and sometimes estimated or even forecast) and likely to be revised in the succeeding month.

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## Electronic Access

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- Full report and sections: PDF files
- Report tables: PDF files
- Table data (unrounded): Excel and CSV files
- Graphs: PDF files

Note: PDF files display selected annual and monthly data; Excel and CSV files display all available annual and monthly data, often at a greater level of precision than the PDF files.

**Timing of Release:** The MER is posted on the EIA website no later than the last work day of the month at <http://www.eia.gov/totalenergy/data/monthly>.

# **Monthly Energy Review**

## **May 2016**

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

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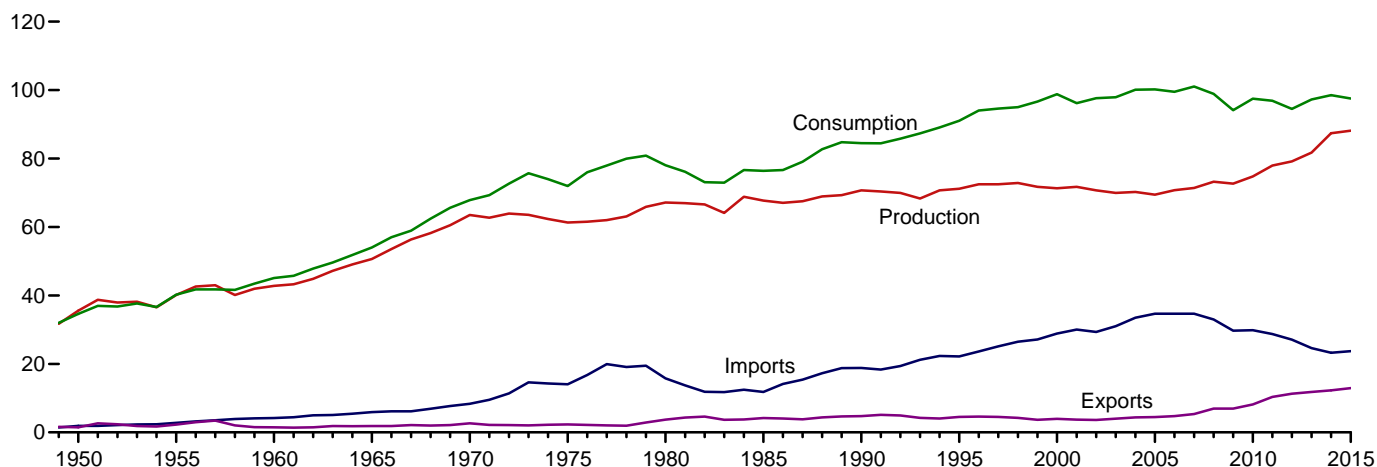
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# 1. Energy Overview

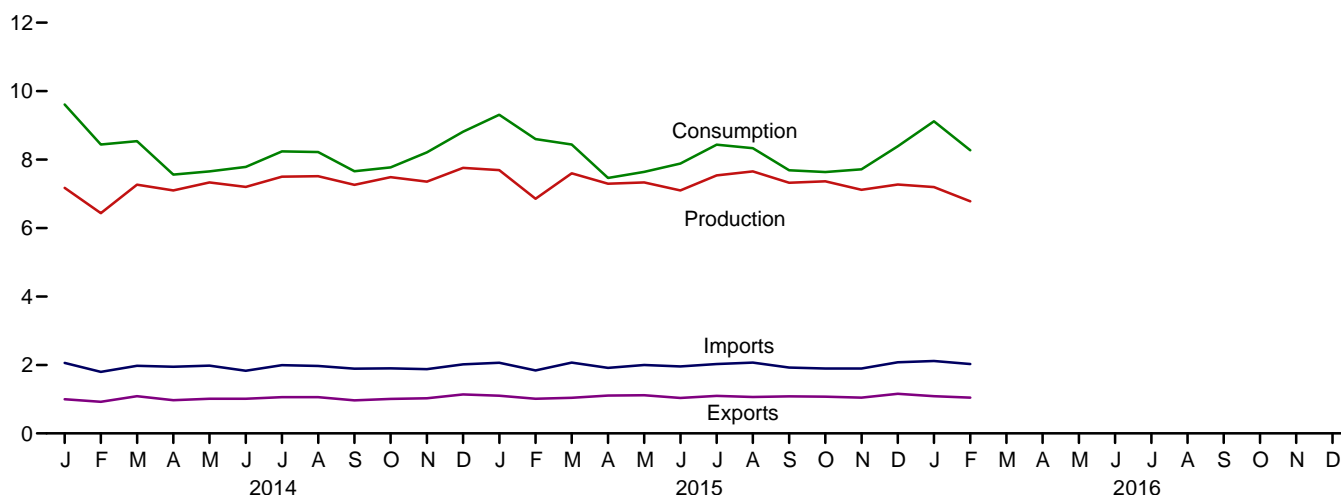
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**Figure 1.1 Primary Energy Overview**  
(Quadrillion Btu)

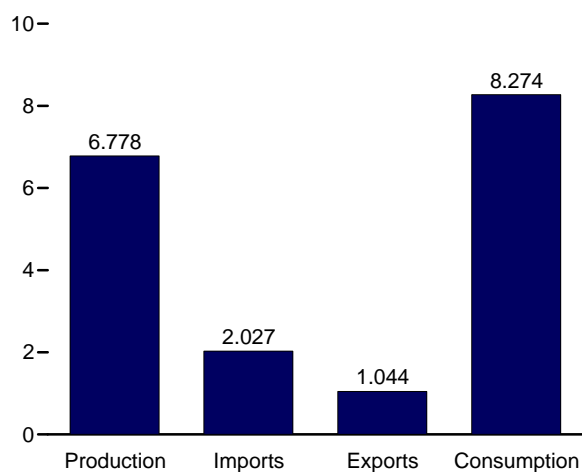
Overview, 1949–2015



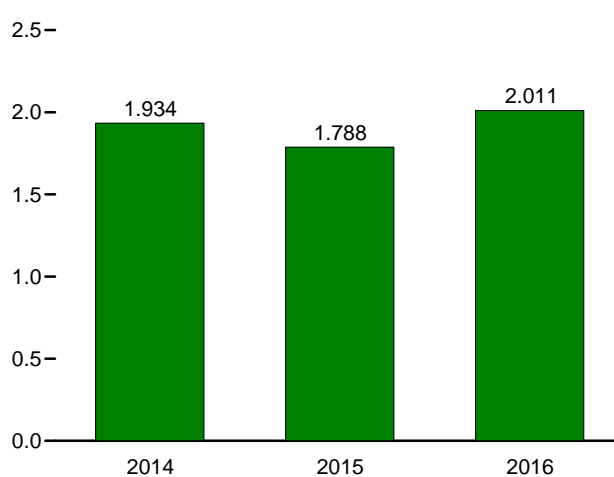
Overview, Monthly



Overview, February 2016



Net Imports, January–February



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 <sup>d</sup>	Consumption			
	Fossil Fuels <sup>a</sup>	Nuclear Electric Power	Renewable Energy <sup>b</sup>	Total	Imports	Exports	Net Imports <sup>c</sup>		Fossil Fuels <sup>a</sup>	Nuclear Electric Power	Renewable Energy <sup>b</sup>	Total <sup>f</sup>
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	6.041	70.705	18.817	4.752	14.065	-.284	72.332	6.104	6.041	84.485
1995 Total .....	57.540	7.075	6.558	71.174	22.180	4.496	17.684	2.174	77.262	7.075	6.560	91.032
2000 Total .....	57.366	7.862	6.104	71.332	28.865	3.962	24.904	2.583	84.735	7.862	6.106	98.819
2001 Total .....	58.541	8.029	5.164	71.735	30.052	3.731	26.321	-1.883	82.906	8.029	5.163	96.172
2002 Total .....	56.834	8.145	5.734	70.713	29.331	3.608	25.722	1.211	83.700	8.145	5.729	97.647
2003 Total .....	56.033	7.960	5.946	69.938	31.007	4.013	26.994	.989	83.992	7.960	5.948	97.921
2004 Total .....	55.942	8.223	6.067	70.232	33.492	4.351	29.141	.721	85.754	8.223	6.079	100.094
2005 Total .....	55.049	8.161	6.226	69.436	34.659	4.462	30.197	.560	85.709	8.161	6.239	100.193
2006 Total .....	55.935	8.215	6.594	70.744	34.649	4.727	29.921	-1.173	84.570	8.215	6.645	99.492
2007 Total .....	56.436	8.459	6.520	71.415	34.679	5.338	29.341	.270	85.928	8.459	6.533	101.027
2008 Total .....	57.590	8.426	7.206	73.223	32.970	6.949	26.021	-.338	83.178	8.426	7.189	98.906
2009 Total .....	56.672	8.355	7.641	72.667	29.690	6.920	22.770	-1.300	78.042	8.355	7.624	94.138
2010 Total .....	58.217	8.434	8.112	74.764	29.866	8.176	21.690	1.026	80.891	8.434	8.066	97.480
2011 Total .....	60.531	8.269	9.155	77.955	28.748	10.373	18.375	.571	79.447	8.269	9.059	96.902
2012 Total .....	62.279	8.062	8.813	79.155	27.068	11.267	15.801	-.469	77.487	8.062	8.777	94.877
2013 Total .....	64.173	8.244	9.330	81.747	24.623	11.788	12.835	2.655	79.440	8.244	9.356	97.238
2014 January .....	R 5.581	.765	.827	R 7.173	2.058	R 1.000	R 1.059	R 1.379	R 8.011	.765	.820	R 9.611
February .....	R 5.070	.655	.709	R 6.434	1.798	R .923	R .875	R 1.132	R 7.069	.655	.706	R 8.441
March .....	R 5.755	.653	.858	R 7.265	1.977	R 1.088	R .889	R .383	R 7.019	.653	.852	R 8.536
April .....	R 5.646	.590	.864	R 7.099	1.949	R .972	R .977	R -.515	R 6.099	.590	.862	R 7.562
May .....	R 5.816	.658	.860	R 7.334	1.979	R 1.013	R .966	R -.647	R 6.121	.658	.858	R 7.653
June .....	R 5.632	.713	.858	R 7.202	1.829	R 1.014	R .815	R -.232	R 6.204	.713	.853	R 7.785
July .....	R 5.923	.752	.824	R 7.500	1.995	R 1.061	R .934	R -.196	R 6.647	.752	.821	R 8.238
August .....	R 6.014	.744	.758	R 7.516	1.972	R 1.061	R .912	R -.208	R 6.695	.744	.761	R 8.220
September .....	R 5.842	.706	.714	R 7.262	1.889	R .966	R .923	R -.525	R 6.223	.706	.713	R 7.660
October .....	R 6.067	.653	.764	R 7.484	1.899	R 1.009	R .891	R -.605	R 6.337	.653	.765	R 7.770
November .....	R 5.865	.681	.811	R 7.358	1.879	R 1.024	R .855	R (s)	R 6.708	.681	.808	R 8.213
December .....	R 6.158	.767	.830	R 7.756	R 2.016	R 1.140	R .876	R .184	R 7.212	.767	.822	R 8.816
Total .....	R 69.368	8.338	9.678	R 87.383	R 23.241	R 12.270	R 10.971	R .151	R 80.345	8.338	9.641	R 98.505
2015 January .....	R 6.075	.777	.839	R 7.691	R 2.066	R 1.102	R .965	R .654	R 7.690	.777	.826	R 9.310
February .....	R 5.414	.664	.777	R 6.855	R 1.838	R 1.014	R .824	R .919	R 7.147	.664	.772	R 8.597
March .....	R 6.084	.675	.840	R 7.599	R 2.070	R 1.040	R 1.031	R -.187	R 6.913	.675	.834	R 8.442
April .....	R 5.843	.625	.829	R 7.297	R 1.913	R 1.106	R .807	R -.643	R 5.990	.625	.826	R 7.461
May .....	R 5.824	.689	.821	R 7.333	R 1.998	R 1.114	R .884	R -.577	R 6.108	.689	.822	R 7.639
June .....	R 5.601	.717	.782	R 7.100	R 1.956	R 1.034	R .922	R -.137	R 6.363	.717	.785	R 7.885
July .....	R 5.979	.747	.811	R 7.537	R 2.024	R 1.096	R .928	R -.030	R 6.856	.747	.812	R 8.436
August .....	R 6.114	.757	.783	R 7.654	R 2.068	R 1.063	R 1.005	R -.328	R 6.765	.757	.787	R 8.331
September .....	R 5.895	.695	.734	R 7.324	R 1.924	R 1.082	R .843	R -.480	R 6.232	.695	.740	R 7.687
October .....	R 5.957	.634	.774	R 7.364	R 1.897	R 1.072	R .826	R -.555	R 6.212	.634	.774	R 7.635
November .....	R 5.663	.630	.823	R 7.116	R 1.897	R 1.047	R .851	R -.251	R 6.248	.630	.820	R 7.716
December .....	R 5.663	.728	.881	R 7.272	R 2.076	R 1.158	R .919	R .196	R 6.765	.728	.876	R 8.387
Total .....	R 70.112	8.338	9.694	R 88.143	R 23.730	R 12.927	R 10.803	R -1.420	R 79.288	8.338	9.675	R 97.527
2016 January .....	R 5.558	.759	.881	R 7.198	R 2.117	R 1.089	R 1.028	R .894	R 7.470	.759	.869	R 9.119
February .....	5.225	.687	.867	6.778	2.027	1.044	.983	.512	6.704	.687	.865	8.274
2-Month Total .....	10.783	1.445	1.748	13.976	4.144	2.133	2.011	1.406	14.175	1.445	1.734	17.393
2015 2-Month Total .....	11.489	1.441	1.617	14.546	3.904	2.116	1.788	1.573	14.837	1.441	1.597	17.907
2014 2-Month Total .....	10.650	1.420	1.536	13.607	3.857	1.923	1.934	2.511	15.080	1.420	1.526	18.052

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

<sup>b</sup> 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.

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

<sup>d</sup> 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.

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

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

R=Revised. (s)=Less than 0.0005 Quadrillion Btu.

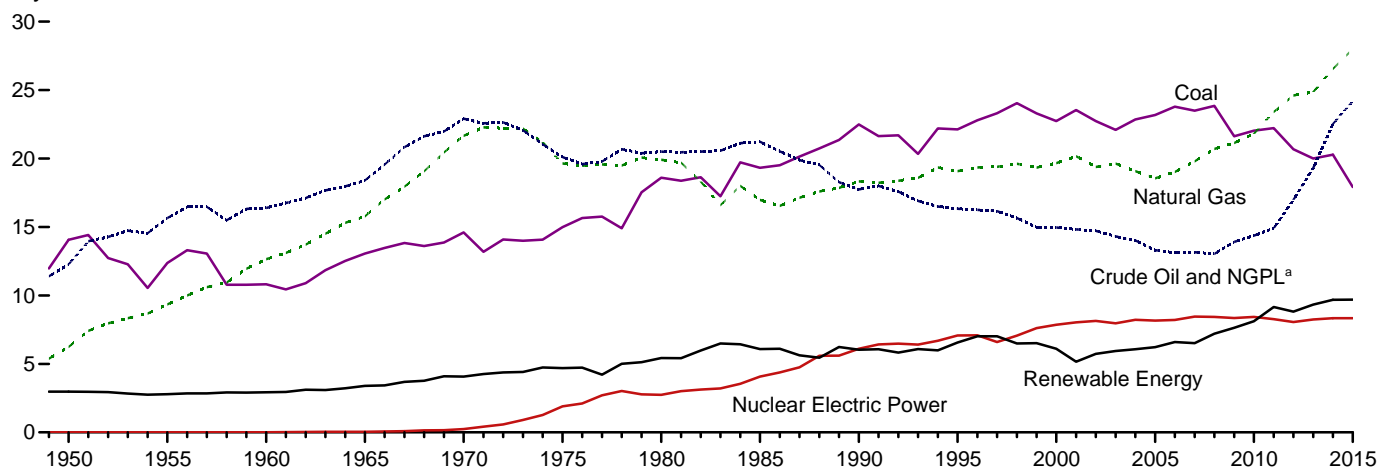
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

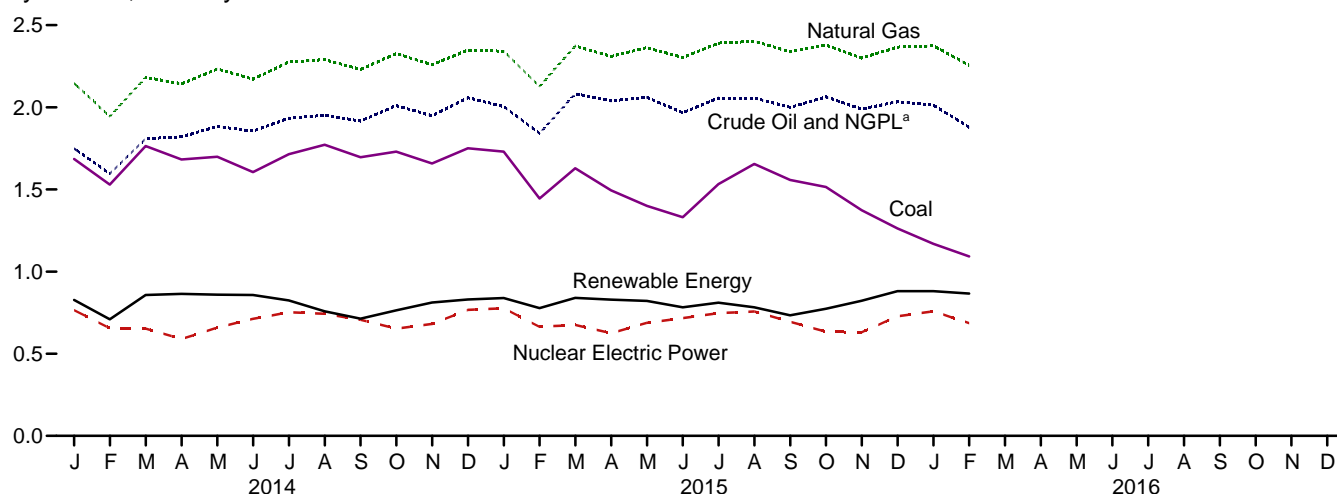
Sources: • **Production:** Table 1.2. • **Trade:** Tables 1.4a and 1.4b. • **Stock Change and Other:** Calculated as consumption minus production and net imports. • **Consumption:** Table 1.3.

**Figure 1.2 Primary Energy Production**  
(Quadrillion Btu)

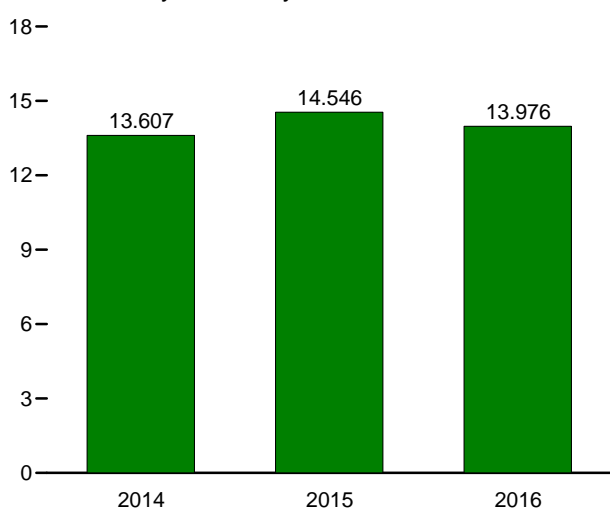
By Source, 1949–2015



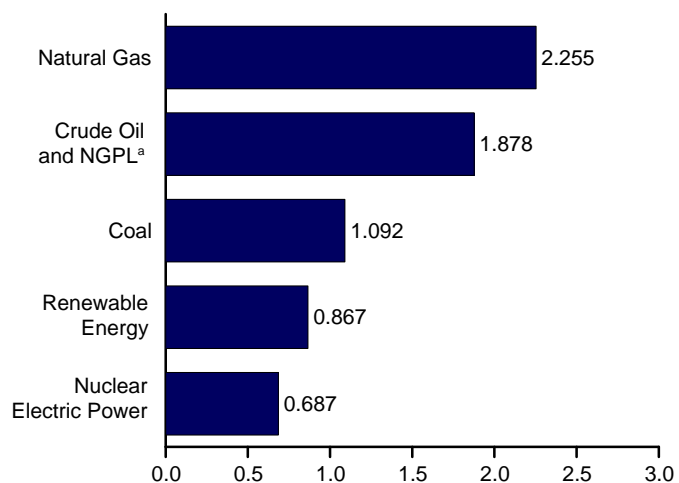
By Source, Monthly



Total, January–February



By Source, February 2016



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

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

Source: Table 1.2.

**Table 1.2 Primary Energy Production by Source**  
(Quadrillion Btu)

	Fossil Fuels					Nuclear Electric Power	Renewable Energy <sup>a</sup>						Total
	Coal <sup>b</sup>	Natural Gas (Dry)	Crude Oil <sup>c</sup>	NGPL <sup>d</sup>	Total		Hydro- electric Power <sup>e</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	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	6.041	70.705
1995 Total .....	22.130	19.082	13.887	2.442	57.540	7.075	3.205	.152	.069	.033	3.099	6.558	71.174
2000 Total .....	22.735	19.662	12.358	2.611	57.366	7.862	2.811	.164	.066	.057	3.006	6.104	71.332
2001 Total .....	23.547	20.166	12.282	2.547	58.541	8.029	2.242	.164	.064	.070	2.624	5.164	71.735
2002 Total .....	22.732	19.382	12.160	2.559	56.834	8.145	2.689	.171	.063	.105	2.705	5.734	70.713
2003 Total .....	22.094	19.633	11.960	2.346	56.033	7.960	2.793	.173	.062	.113	2.805	5.946	69.938
2004 Total .....	22.852	19.074	11.550	2.466	55.942	8.223	2.688	.178	.063	.142	2.996	6.067	70.232
2005 Total .....	23.185	18.556	10.974	2.334	55.049	8.161	2.703	.181	.063	.178	3.101	6.226	69.436
2006 Total .....	23.790	19.022	10.768	2.356	55.935	8.215	2.869	.181	.068	.264	3.212	6.594	70.744
2007 Total .....	23.493	19.786	10.749	2.409	56.436	8.459	2.446	.186	.076	.341	3.472	6.520	71.415
2008 Total .....	23.851	20.703	10.616	2.419	57.590	8.426	2.511	.192	.089	.546	3.868	7.206	73.223
2009 Total .....	21.624	21.139	11.335	2.574	56.672	8.355	2.669	.200	.098	.721	3.953	7.641	72.667
2010 Total .....	22.038	21.806	11.592	2.781	58.217	8.434	2.539	.208	.126	.923	4.316	8.112	74.764
2011 Total .....	22.221	23.406	11.934	2.970	60.531	8.269	3.103	.212	.171	1.168	4.501	9.155	77.955
2012 Total .....	20.677	24.610	13.747	3.246	62.279	8.062	2.629	.212	.227	1.340	4.406	8.813	79.155
2013 Total .....	20.001	24.859	15.781	3.532	64.173	8.244	2.562	.214	.305	1.601	4.647	9.330	81.747
2014 January .....	R 1.686	E 2.146	E 1.438	.311	R 5.581	.765	.206	.018	.029	.170	.404	.827	R 7.173
February .....	R 1.529	E 1.945	E 1.313	.283	R 5.070	.655	.165	.016	.027	.133	.367	.709	R 6.434
March .....	R 1.764	E 2.182	E 1.482	.327	R 5.755	.653	.231	.018	.034	.169	.406	.858	R 7.265
April .....	R 1.682	E 2.143	E 1.491	.320	R 5.646	.590	.242	.018	.035	.177	.392	.864	R 7.099
May .....	R 1.699	E 2.234	E 1.542	.341	R 5.816	.658	.252	.018	.038	.148	.403	.860	R 7.334
June .....	R 1.605	E 2.171	E 1.510	.346	R 5.632	.713	.245	.018	.039	.150	.406	.858	R 7.202
July .....	R 1.714	E 2.275	E 1.574	.359	R 5.923	.752	.232	.018	.038	.116	.420	.824	R 7.500
August .....	R 1.772	E 2.291	E 1.588	.363	R 6.014	.744	.188	.018	.039	.097	.416	.758	R 7.516
September .....	R 1.696	E 2.231	E 1.559	.357	R 5.842	.706	.153	.018	.038	.110	.396	.714	R 7.262
October .....	R 1.730	E 2.327	E 1.641	.369	R 6.067	.653	.163	.018	.038	.138	.407	.764	R 7.484
November .....	R 1.658	E 2.259	E 1.600	.348	R 5.865	.681	.177	.018	.034	.179	.403	.811	R 7.358
December .....	R 1.751	E 2.349	E 1.694	.364	R 6.158	.767	.212	.018	.031	.140	.428	.830	R 7.756
Total .....	R 17.927	E 27.991	E 19.720	4.474	R 70.112	8.338	2.389	.224	.550	1.816	4.715	9.694	R 88.143
2015 January .....	R 1.730	E 2.340	RE 1.659	.346	R 6.075	.777	.234	.020	.037	.145	.403	.839	R 7.691
February .....	R 1.445	E 2.128	RE 1.516	.325	R 5.414	.664	.217	.018	.038	.142	.362	.777	R 6.855
March .....	R 1.628	E 2.372	RE 1.713	.369	R 6.084	.675	.237	.019	.047	.146	.391	.840	R 7.599
April .....	R 1.495	E 2.310	RE 1.666	.372	R 5.843	.625	.215	.018	.049	.170	.378	.829	R 7.297
May .....	R 1.400	E 2.363	RE 1.683	.377	R 5.824	.689	.192	.019	.050	.164	.396	.821	R 7.333
June .....	R 1.331	E 2.303	RE 1.601	.366	R 5.601	.717	.191	.018	.050	.128	.394	.782	R 7.100
July .....	R 1.533	E 2.390	RE 1.675	.381	R 5.979	.747	.201	.019	.052	.130	.409	.811	R 7.537
August .....	R 1.655	E 2.402	RE 1.671	.385	R 6.114	.757	.185	.019	.052	.124	.402	.783	R 7.654
September .....	R 1.558	E 2.337	RE 1.625	.376	R 5.895	.695	.154	.017	.047	.132	.383	.734	R 7.324
October .....	R 1.515	E 2.379	RE 1.666	.398	R 5.957	.634	.159	.018	.045	.156	.396	.774	R 7.364
November .....	R 1.374	E 2.300	RE 1.603	.386	R 5.663	.630	.184	.018	.043	.187	.390	.823	R 7.116
December .....	R 1.263	RE 2.366	RE 1.642	.392	R 5.663	.728	.220	.019	.041	.191	.410	.881	R 7.272
Total .....	R 17.927	RE 27.991	RE 19.720	4.474	R 70.112	8.338	2.389	.224	.550	1.816	4.715	9.694	R 88.143
2016 January .....	R 1.169	RE 2.375	RE 1.630	.383	R 5.558	.759	.243	.019	.044	.176	.399	.881	R 7.198
February .....	R 1.092	E 2.255	E 1.517	.362	R 5.225	.687	.231	.018	.051	.192	.375	.867	R 6.778
2-Month Total .....	2.260	E 4.630	E 3.147	.745	10.783	1.445	.474	.038	.095	.368	.773	1.748	13.976
2015 2-Month Total .....	3.175	E 4.468	E 3.175	.671	11.489	1.441	.451	.037	.075	.287	.766	1.617	14.546
2014 2-Month Total .....	3.215	4.091	2.751	.594	10.650	1.420	.371	.035	.056	.304	.771	1.536	13.607

<sup>a</sup> 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.

<sup>b</sup> Beginning in 1989, includes waste coal supplied. Beginning in 2001, also includes a small amount of refuse recovery. See Table 6.1.

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

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

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

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

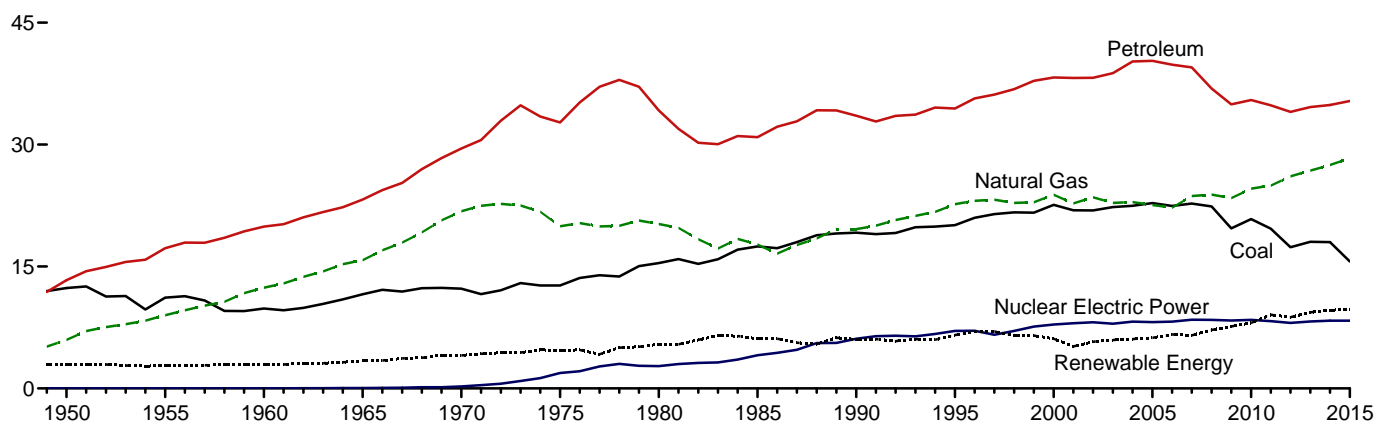
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

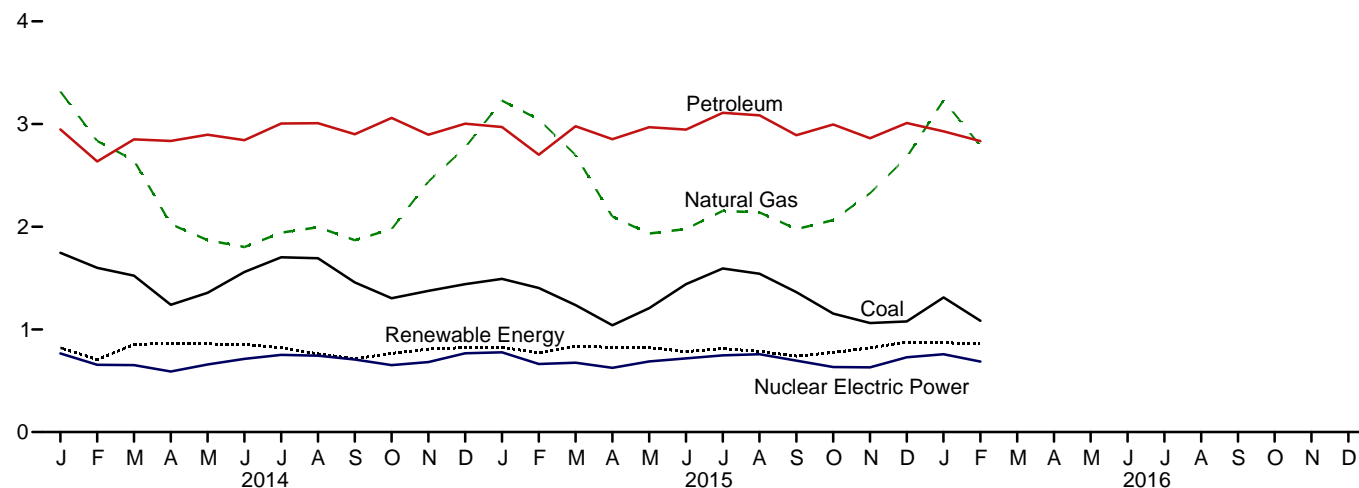
Sources: See end of section.

**Figure 1.3 Primary Energy Consumption**  
(Quadrillion Btu)

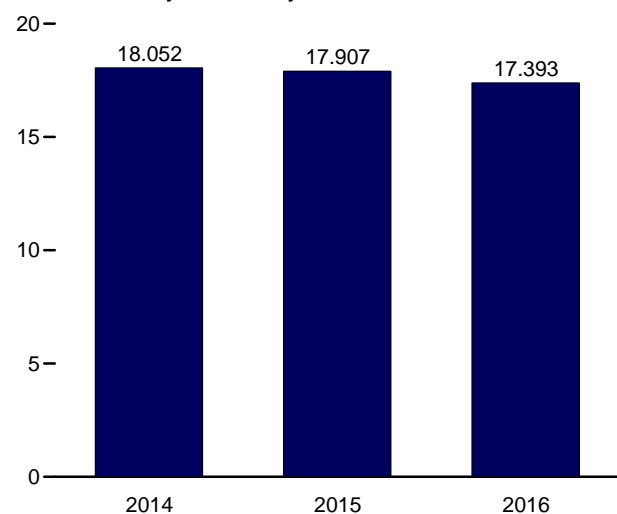
By Source,<sup>a</sup> 1949–2015



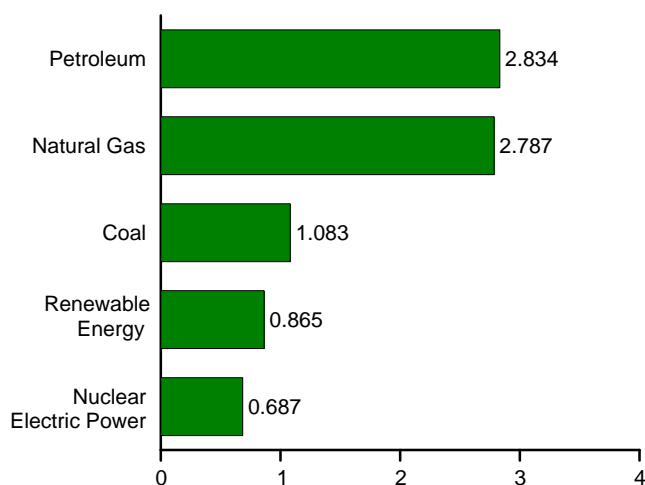
By Source,<sup>a</sup> Monthly



Total, January–February



By Source,<sup>a</sup> February 2016



<sup>a</sup> 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				Nuclear Electric Power	Renewable Energy <sup>a</sup>						Total <sup>f</sup>
	Coal	Natural Gas <sup>b</sup>	Petro- leum <sup>c</sup>	Total <sup>d</sup>		Hydro- electric Power <sup>e</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total	
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	6.041	84.485
1995 Total .....	20.089	22.671	34.441	77.262	7.075	3.205	.152	.069	.033	3.101	6.560	91.032
2000 Total .....	22.580	23.824	38.266	84.735	7.862	2.811	.164	.066	.057	3.008	6.106	98.819
2001 Total .....	21.914	22.773	38.190	82.906	8.029	2.242	.164	.064	.070	2.622	5.163	96.172
2002 Total .....	21.904	23.510	38.226	83.700	8.145	2.689	.171	.063	.105	2.701	5.729	97.647
2003 Total .....	22.321	22.831	38.790	83.992	7.960	2.793	.173	.062	.113	2.806	5.948	97.921
2004 Total .....	22.466	22.923	40.227	85.754	8.223	2.688	.178	.063	.142	3.008	6.079	100.094
2005 Total .....	22.797	22.565	40.303	85.709	8.161	2.703	.181	.063	.178	3.114	6.239	100.193
2006 Total .....	22.447	22.239	39.824	84.570	8.215	2.869	.181	.068	.264	3.262	6.645	99.492
2007 Total .....	22.749	23.663	39.491	85.928	8.459	2.446	.186	.076	.341	3.485	6.533	101.027
2008 Total .....	22.387	23.843	36.907	83.178	8.426	2.511	.192	.089	.546	3.851	7.189	98.906
2009 Total .....	19.691	23.416	34.959	78.042	8.355	2.669	.200	.098	.721	3.936	7.624	94.138
2010 Total .....	20.834	24.575	35.489	80.891	8.434	2.539	.208	.126	.923	4.270	8.066	97.480
2011 Total .....	19.658	24.955	34.824	79.447	8.269	3.103	.212	.171	1.168	4.405	9.059	96.902
2012 Total .....	17.378	26.089	34.016	77.487	8.062	2.629	.212	.227	1.340	4.369	8.777	94.487
2013 Total .....	18.039	26.805	34.613	79.440	8.244	2.562	.214	.305	1.601	4.673	9.356	97.238
2014 January .....	R 1.747	3.317	2.948	R 8.011	.765	.206	.018	.029	.170	.397	.820	R 9.611
February .....	R 1.600	2.835	2.636	R 7.069	.655	.165	.016	.027	.133	.364	.706	R 8.441
March .....	R 1.523	2.645	2.851	R 7.019	.653	.231	.018	.034	.169	.401	.852	R 8.536
April .....	R 1.240	2.025	2.835	R 6.099	.590	.242	.018	.035	.177	.390	.862	R 7.562
May .....	R 1.357	1.870	2.896	R 6.121	.658	.252	.018	.038	.148	.401	.858	R 7.653
June .....	R 1.559	1.803	2.843	R 6.204	.713	.245	.018	.039	.150	.402	.853	R 7.785
July .....	R 1.702	1.942	3.004	R 6.647	.752	.232	.018	.038	.116	.417	.821	R 8.238
August .....	R 1.694	1.996	3.009	R 6.695	.744	.188	.018	.039	.097	.418	.761	R 8.220
September .....	R 1.457	1.869	2.900	R 6.223	.706	.153	.018	.038	.110	.394	.713	R 7.660
October .....	R 1.304	1.976	3.059	R 6.337	.653	.163	.018	.038	.138	.408	.765	R 7.770
November .....	R 1.376	2.439	2.896	R 6.681	.681	.177	.018	.034	.179	.399	.808	R 8.213
December .....	R 1.440	2.772	3.003	R 7.212	.767	.212	.018	.031	.140	.420	.822	R 8.816
Total .....	R 17.998	27.488	34.881	R 80.345	8.338	2.467	.214	.420	1.728	4.812	9.641	R 98.505
2015 January .....	R 1.492	3.228	R 2.971	R 7.690	.777	.234	.020	.037	.145	.390	.826	R 9.310
February .....	R 1.404	3.043	R 2.702	R 7.147	.664	.217	.018	.038	.142	.357	.772	R 8.597
March .....	R 1.236	2.699	R 2.979	R 6.913	.675	.237	.019	.047	.146	.386	.834	R 8.442
April .....	R 1.040	2.098	R 2.853	R 5.990	.625	.215	.018	.049	.170	.375	.826	R 7.461
May .....	R 1.207	1.933	R 2.970	R 6.108	.689	.192	.019	.050	.164	.397	.822	R 7.639
June .....	R 1.441	1.979	R 2.946	R 6.363	.717	.191	.018	.050	.128	.397	.785	R 7.885
July .....	R 1.593	2.154	R 3.109	R 6.856	.747	.201	.019	.052	.130	.410	.812	R 8.436
August .....	R 1.542	2.138	R 3.085	R 6.765	.757	.185	.019	.052	.124	.406	.787	R 8.331
September .....	R 1.363	1.977	R 2.892	R 6.232	.695	.154	.017	.047	.132	.389	.740	R 7.687
October .....	R 1.154	2.064	R 2.995	R 6.212	.634	.159	.018	.045	.156	.397	.774	R 7.635
November .....	R 1.062	2.326	R 2.862	R 6.248	.630	.184	.018	.043	.187	.388	.820	R 7.716
December .....	R 1.078	2.678	R 3.010	R 6.765	.728	.220	.019	.041	.191	.406	.876	R 8.387
Total .....	R 15.614	R 28.319	R 35.373	R 79.288	8.338	2.389	.224	.550	1.816	4.696	9.675	R 97.527
2016 January .....	R 1.311	R 3.232	R 2.928	R 7.470	.759	.243	.019	.044	.176	.386	.869	R 9.119
February .....	1.083	2.787	2.834	6.704	.687	.231	.018	.051	.192	.374	.865	8.274
2-Month Total .....	2.394	6.019	5.763	14.175	1.445	.474	.038	.095	.368	.760	1.734	17.393
2015 2-Month Total .....	2.896	6.272	5.673	14.837	1.441	.451	.037	.075	.287	.747	1.597	17.907
2014 2-Month Total .....	3.346	6.153	5.583	15.080	1.420	.371	.035	.056	.304	.761	1.526	18.052

<sup>a</sup> 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.

<sup>b</sup> Natural gas only; excludes supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

<sup>c</sup> Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel. Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

<sup>d</sup> Includes coal coke net imports. See Tables 1.4a and 1.4b.

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

<sup>f</sup> 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.

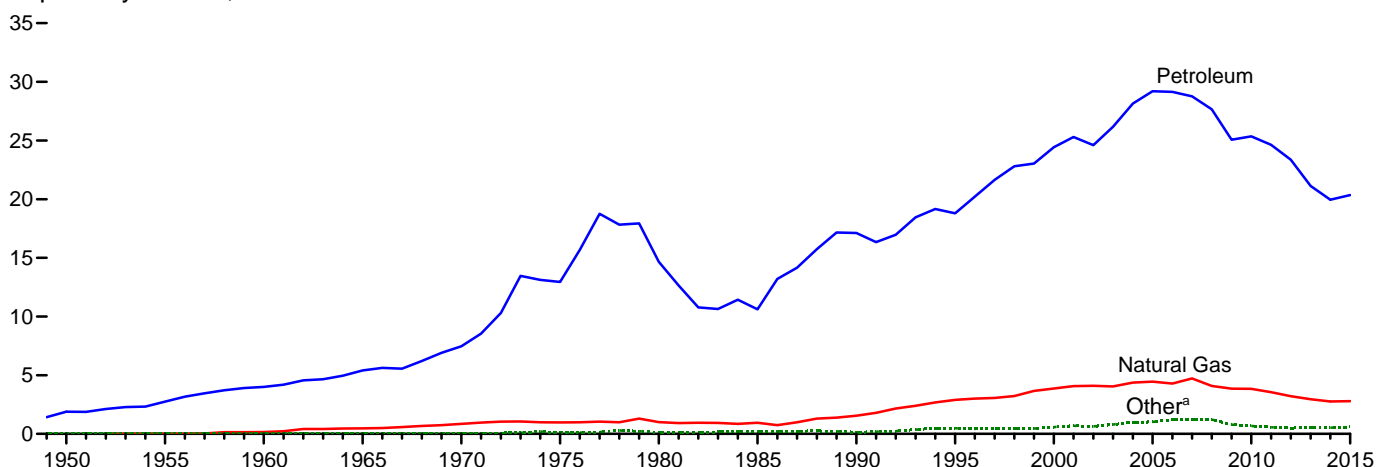
• Geographic coverage is the 50 states and the District of Columbia.

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.

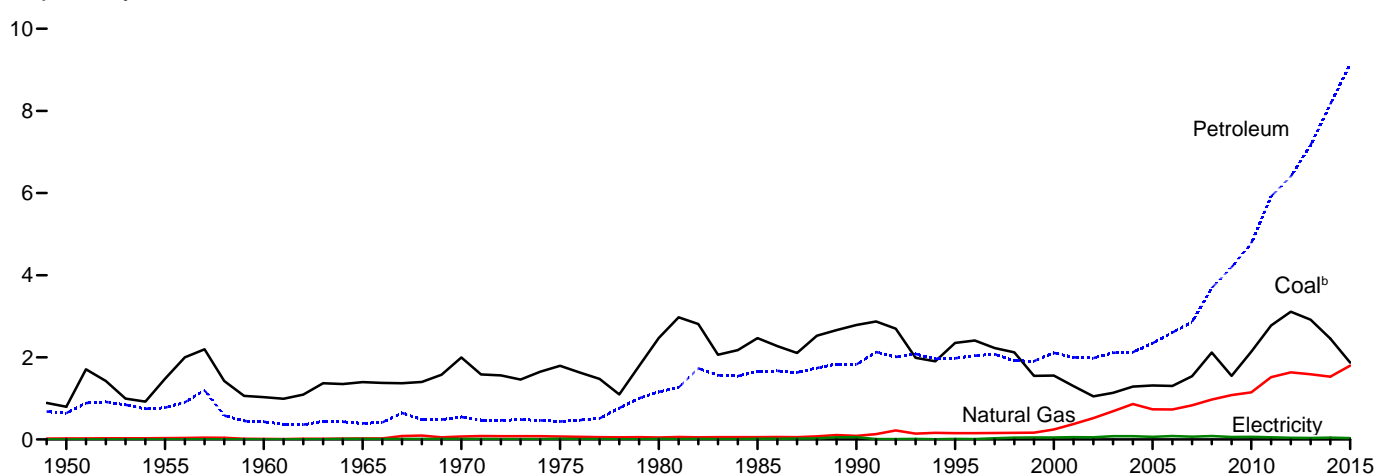
Sources: See end of section.

**Figure 1.4a Primary Energy Imports and Exports**  
(Quadrillion Btu)

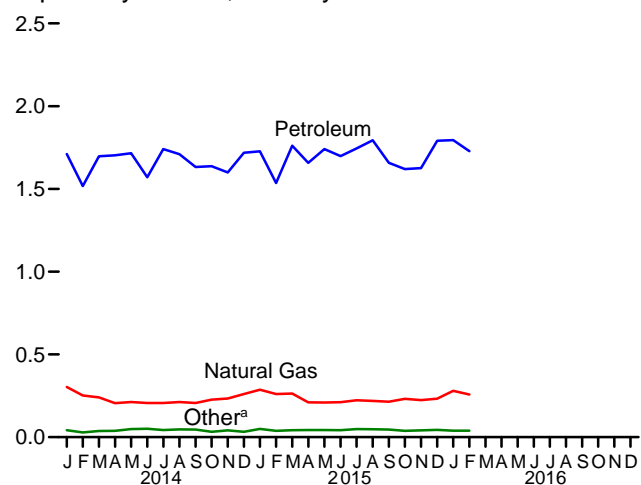
Imports by Source, 1949–2015



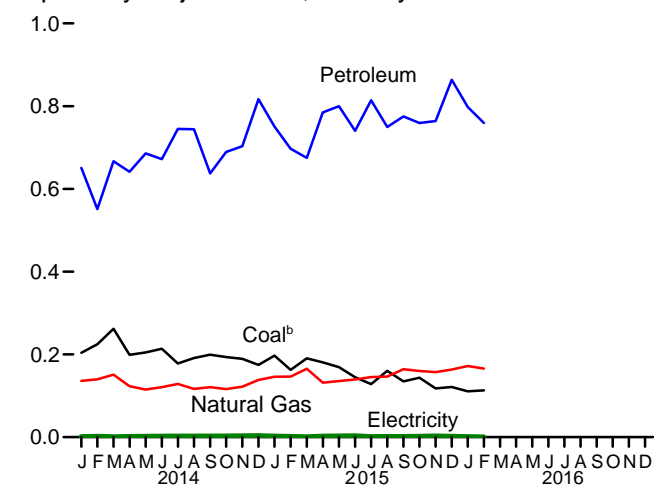
Exports by Source, 1949–2015



Imports by Source, Monthly



Exports by Major Source, Monthly



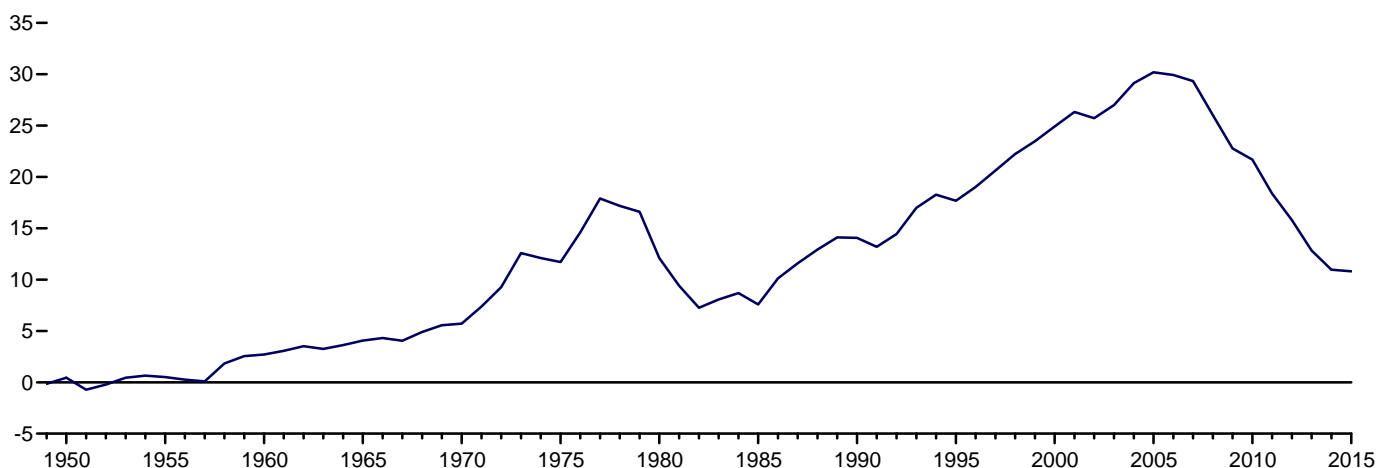
<sup>a</sup> Coal, coal coke, biofuels, and electricity.

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

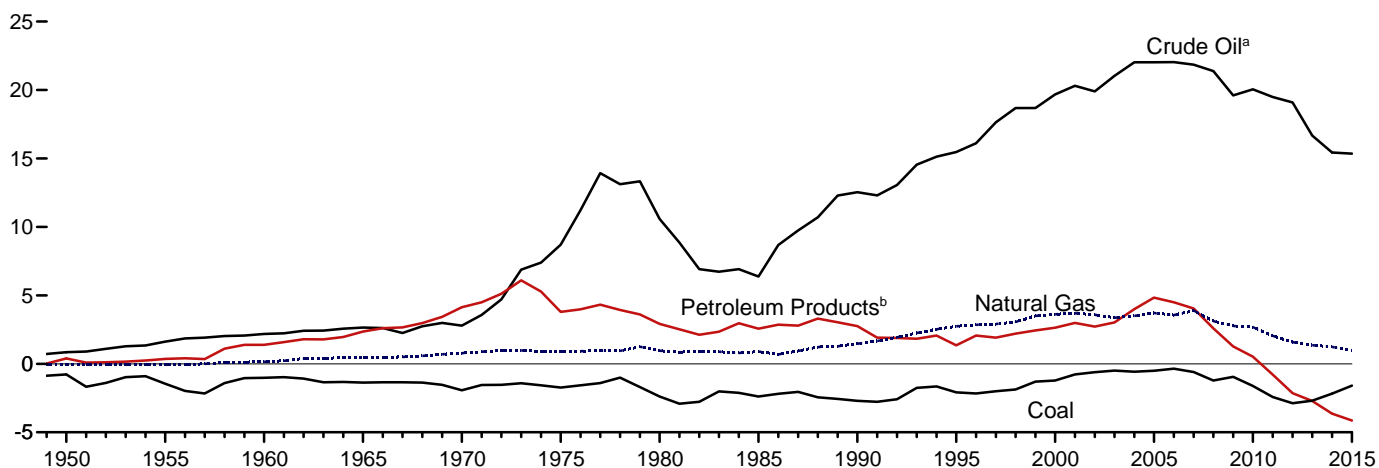
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#summary>.  
Sources: Tables 1.4a and 1.4b.

**Figure 1.4b Primary Energy Net Imports**  
(Quadrillion Btu)

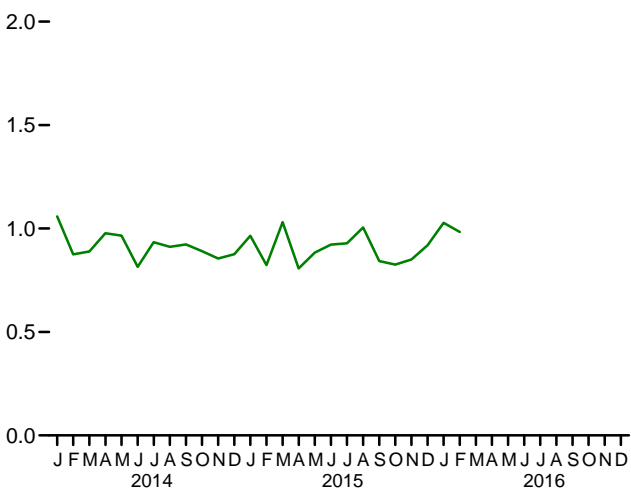
Total, 1949–2015



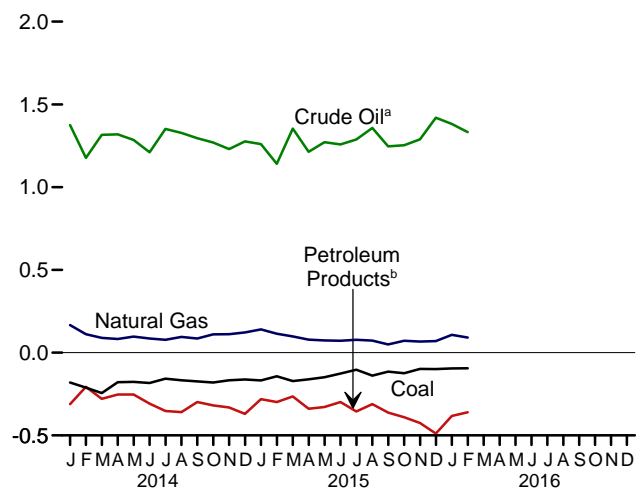
By Major Source, 1949–2015



Total, Monthly



By Major Source, Monthly



<sup>a</sup> Crude oil and lease condensate. Includes imports into the Strategic Petroleum Reserve, which began in 1977.

<sup>b</sup> Petroleum products, unfinished oils, pentanes plus, 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								
	Coal	Coal Coke	Natural Gas	Petroleum			Biofuels <sup>c</sup>	Electricity	Total
				Crude Oil <sup>a</sup>	Petroleum Products <sup>b</sup>	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 January .....	R .024	(s)	.303	1.420	.291	1.710	.003	.019	2.058
February .....	.013	(s)	.252	1.216	.300	1.517	.002	.015	1.798
March .....	.018	(s)	.240	1.361	.336	1.697	.003	.019	1.977
April .....	R .021	(s)	.206	1.368	.335	1.703	.004	.016	1.949
May .....	.028	(s)	.212	1.341	.375	1.716	.005	.018	1.979
June .....	R .030	.001	.207	1.280	.291	1.571	.002	.019	1.829
July .....	R .021	(s)	.206	1.427	.313	1.740	.006	.021	1.995
August .....	.024	(s)	.212	1.398	.312	1.710	.004	.023	1.972
September .....	.025	(s)	.207	1.357	.276	1.633	.003	.021	1.889
October .....	.013	.001	.226	1.337	.300	1.637	.004	.018	1.899
November .....	.022	(s)	.233	1.321	.278	1.599	.005	.019	1.879
December .....	.013	(s)	.260	1.352	.367	1.719	.005	.018	R 2.016
Total .....	R .252	.002	2.763	16.178	3.773	19.951	.046	.227	R 23.241
2015 January .....	R .029	(s)	.286	R 1.347	R .380	R 1.727	.003	.021	R 2.066
February .....	.019	(s)	.261	R 1.210	.326	R 1.536	.003	.019	R 1.838
March .....	.019	(s)	.264	R 1.427	.334	R 1.761	.004	.023	R 2.070
April .....	R .020	(s)	.210	R 1.314	R .343	R 1.657	.004	.022	R 1.913
May .....	R .021	(s)	.209	R 1.365	R .375	R 1.740	.005	.023	R 1.998
June .....	R .019	(s)	.211	R 1.332	.366	R 1.698	.006	.023	R 1.956
July .....	R .025	(s)	.223	R 1.381	R .363	R 1.744	.009	.023	R 2.024
August .....	R .022	(s)	.219	R 1.439	.355	R 1.794	.009	.024	R 2.068
September .....	.020	.002	.214	R 1.317	.341	R 1.658	.008	.023	R 1.924
October .....	.019	(s)	.232	R 1.341	R .278	R 1.620	.009	.018	R 1.897
November .....	R .020	(s)	.224	R 1.344	.282	R 1.626	.008	.020	R 1.897
December .....	R .022	.001	.233	R 1.488	.303	R 1.791	.009	.020	R 2.076
Total .....	R .255	.003	2.786	R 16.304	R 4.047	R 20.351	.077	.258	R 23.730
2016 January .....	R .016	(s)	.280	R 1.446	R .349	R 1.795	.003	.024	R 2.117
February .....	.018	(s)	.257	1.394	.334	1.728	.003	.020	2.027
2-Month Total .....	.034	(s)	.537	2.840	.683	3.523	.006	.044	4.144
2015 2-Month Total .....	.049	(s)	.547	2.557	.706	3.263	.006	.040	3.904
2014 2-Month Total .....	.037	(s)	.554	2.636	.591	3.227	.005	.034	3.857

<sup>a</sup> Crude oil and lease condensate. Includes imports into the Strategic Petroleum Reserve, which began in 1977.

<sup>b</sup> Petroleum products, unfinished oils, pentanes plus, and gasoline blending components. Does not include biofuels.

<sup>c</sup> 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 <sup>a</sup>
	Coal	Coal Coke	Natural Gas	Petroleum			Biofuels <sup>d</sup>	Electricity	Total	Total
				Crude Oil <sup>b</sup>	Petroleum Products <sup>c</sup>	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 January .....	R .204	.001	.136	.045	.602	.646	.008	.004	R 1.000	R 1.059
February .....	R .225	.002	.140	.040	.507	.547	.006	.004	R .923	R .875
March .....	R .262	.001	.151	.045	.615	.660	.008	.007	R 1.088	R .889
April .....	R .199	.001	.123	.049	.588	.637	.007	.005	R .972	R .977
May .....	R .205	.002	.115	.055	.628	.683	.006	.003	R 1.013	R .966
June .....	R .214	.002	.121	.069	.600	.668	.006	.004	R 1.014	R .815
July .....	R .178	.002	.128	.076	.666	.741	.007	.004	R 1.061	R .934
August .....	R .191	.003	.116	.070	.671	.741	.006	.003	R 1.061	R .912
September .....	R .199	.003	.121	.061	.574	.635	.005	.003	R .966	R .923
October .....	R .194	.002	.116	.068	.618	.686	.007	.003	R 1.009	R .891
November .....	R .189	.002	.122	.091	.610	.700	.008	.003	R 1.024	R .855
December .....	R .175	.003	.138	.076	.737	.813	.007	.004	R 1.140	R .876
Total .....	R 2.435	.023	1.528	.744	7.414	8.158	.081	.045	R 12.270	R 10.971
2015 January .....	R .197	.002	.146	R .087	R .661	R .748	.006	.003	R 1.102	R .965
February .....	R .163	.001	.146	R .068	R .624	R .692	.007	.005	R 1.014	R .824
March .....	R .191	.001	.165	R .074	R .598	R .672	.008	.003	R 1.040	R 1.031
April .....	R .181	.002	.132	R .100	R .683	R .783	.007	.002	R 1.106	R .807
May .....	R .169	.003	.135	R .094	R .704	R .798	.007	.002	R 1.114	R .884
June .....	R .145	.003	.139	R .074	R .665	R .738	.006	.002	R 1.034	R .922
July .....	R .128	.001	.145	R .093	R .719	R .812	.008	.002	R 1.096	R .928
August .....	R .160	.001	.146	R .081	R .666	R .747	.006	.002	R 1.063	R 1.005
September .....	R .135	.002	.164	R .070	R .703	R .773	.006	.002	R 1.082	R .843
October .....	R .144	.002	.160	R .088	R .669	R .757	.007	.002	R 1.072	R .826
November .....	R .118	.002	.157	R .055	R .707	R .762	.005	.002	R 1.047	R .851
December .....	R .121	.002	.163	R .069	R .792	R .861	.007	.003	R 1.158	R .919
Total .....	R 1.851	.021	1.800	R .952	R 8.190	R 9.143	.081	.031	R 12.927	R 10.803
2016 January .....	R .111	.001	R .172	R .064	R .731	R .796	.007	.002	R 1.089	R 1.028
February .....	.113	(s)	.166	.062	.694	.756	.006	.003	1.044	.983
2-Month Total .....	.224	.001	.337	.126	1.426	1.552	.013	.006	2.133	2.011
2015 2-Month Total .....	.360	.003	.292	.155	1.286	1.441	.013	.007	2.116	1.788
2014 2-Month Total .....	.429	.002	.276	.085	1.108	1.193	.014	.009	1.923	1.934

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

<sup>b</sup> Crude oil and lease condensate.

<sup>c</sup> Petroleum products, unfinished oils, pentanes plus, and gasoline blending components. Does not include biofuels.

<sup>d</sup> Through 2010, data are for biodiesel only. Beginning in 2011, data are for fuel ethanol (minus denaturant) and biodiesel.

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

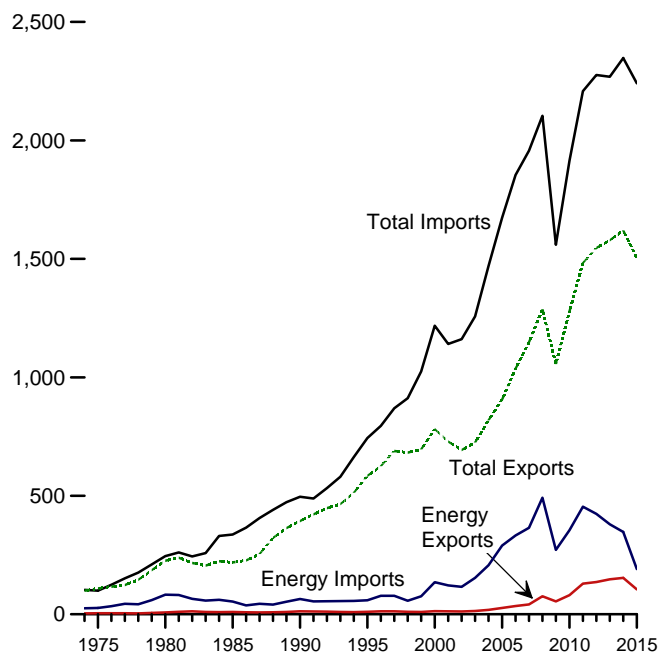
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

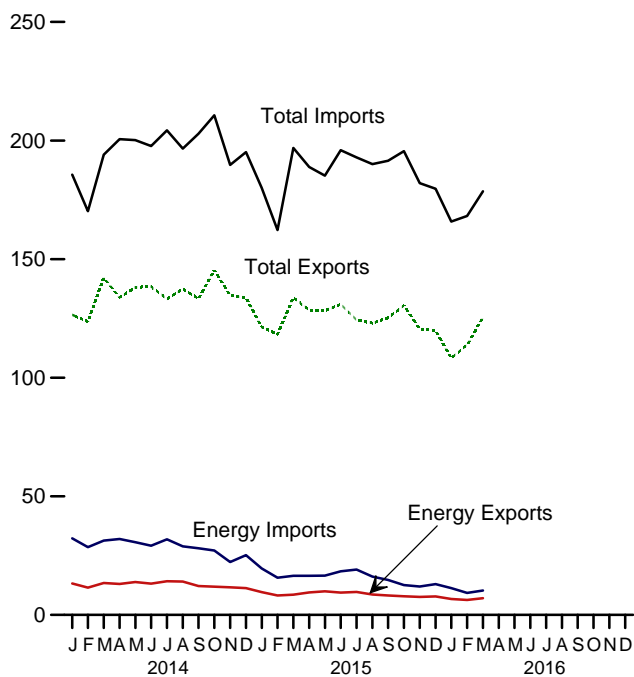
Sources: See end of section.

**Figure 1.5 Merchandise Trade Value**  
(Billion Dollars<sup>a</sup>)

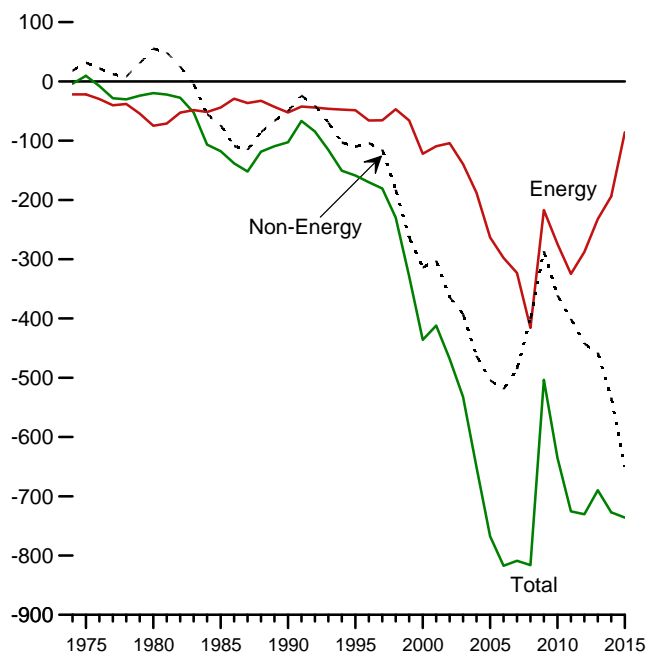
Imports and Exports, 1974–2015



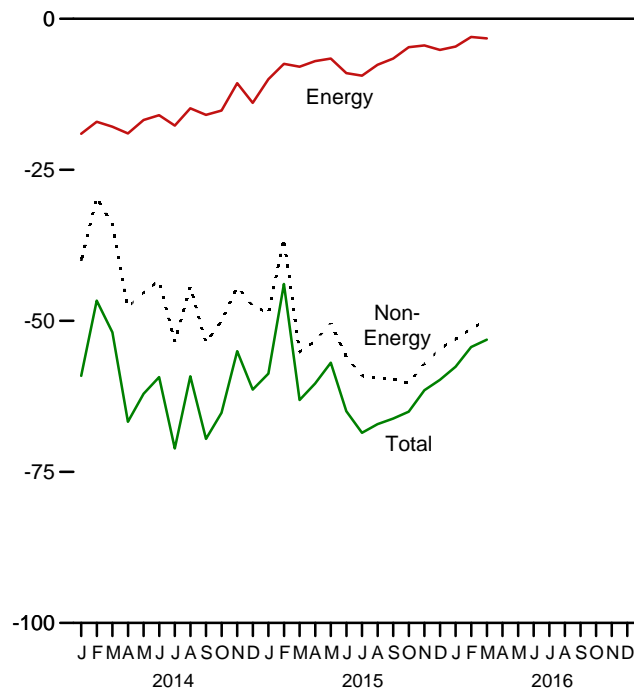
Imports and Exports, Monthly



Trade Balance, 1974–2015



Trade Balance, Monthly



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

**Table 1.5 Merchandise Trade Value**  
(Million Dollars<sup>a</sup>)

	Petroleum <sup>b</sup>			Energy <sup>c</sup>			Non-Energy Balance	Total Merchandise		
	Exports	Imports	Balance	Exports	Imports	Balance		Exports	Imports	Balance
<b>1974 Total</b> .....	792	24,668	-23,876	3,444	25,454	-22,010	18,126	99,437	103,321	-3,884
<b>1975 Total</b> .....	907	25,197	-24,289	4,470	26,476	-22,006	31,557	108,856	99,305	9,551
<b>1980 Total</b> .....	2,833	78,637	-75,803	7,982	82,924	-74,942	55,246	225,566	245,262	-19,696
<b>1985 Total</b> .....	4,707	50,475	-45,768	9,971	53,917	-43,946	-73,765	218,815	336,526	-117,712
<b>1990 Total</b> .....	6,901	61,583	-54,682	12,233	64,661	-52,428	-50,068	393,592	496,088	-102,496
<b>1995 Total</b> .....	6,321	54,368	-48,047	10,358	59,109	-48,751	-110,050	584,742	743,543	-158,801
<b>2000 Total</b> .....	10,192	119,251	-109,059	13,179	135,367	-122,188	-313,916	781,918	1,218,022	-436,104
<b>2001 Total</b> .....	8,868	102,747	-93,879	12,494	121,923	-109,429	-302,470	729,100	1,140,999	-411,899
<b>2002 Total</b> .....	8,569	102,663	-94,094	11,541	115,748	-104,207	-364,056	693,103	1,161,366	-468,263
<b>2003 Total</b> .....	10,209	132,433	-122,224	13,768	153,298	-139,530	-392,820	724,771	1,257,121	-532,350
<b>2004 Total</b> .....	13,130	179,266	-166,136	18,642	206,660	-188,018	-462,912	818,775	1,469,704	-650,930
<b>2005 Total</b> .....	19,155	250,068	-230,913	26,488	289,723	-263,235	-504,242	905,978	1,673,455	-767,477
<b>2006 Total</b> .....	28,171	299,714	-271,543	34,711	332,500	-297,789	-519,515	1,036,635	1,853,938	-817,304
<b>2007 Total</b> .....	33,293	327,620	-294,327	41,725	364,987	-323,262	-485,501	1,148,199	1,956,962	-808,763
<b>2008 Total</b> .....	61,695	449,847	-388,152	76,075	491,885	-415,810	-400,389	1,287,442	2,103,641	-816,199
<b>2009 Total</b> .....	44,509	251,833	-207,324	54,536	271,739	-217,203	-286,379	1,056,043	1,559,625	-503,582
<b>2010 Total</b> .....	64,753	333,472	-268,719	80,625	354,982	-274,357	-361,005	1,278,495	1,913,857	-635,362
<b>2011 Total</b> .....	<sup>b</sup> 102,180	<sup>b</sup> 431,866	<sup>b</sup> 329,686	128,989	453,839	-324,850	-400,597	1,482,508	2,207,954	-725,447
<b>2012 Total</b> .....	111,951	408,509	-296,558	136,054	423,862	-287,808	-442,638	1,545,821	2,276,267	-730,446
<b>2013 Total</b> .....	123,218	363,141	-239,923	147,539	379,758	-232,219	-457,712	1,578,439	2,268,370	-689,931
<b>2014 January</b> .....	10,994	29,460	-18,466	13,242	32,260	-19,018	-40,080	126,517	185,615	-59,098
February .....	9,157	25,711	-16,554	11,515	28,561	-17,046	-29,603	123,591	170,240	-46,649
March .....	10,656	28,912	-18,256	13,454	31,311	-17,857	-34,033	142,184	194,074	-51,890
April .....	10,395	30,519	-20,124	13,041	32,016	-18,975	-47,733	133,875	200,582	-66,708
May .....	11,386	29,201	-17,815	13,895	30,655	-16,760	-45,300	138,122	200,182	-62,060
June .....	11,093	27,668	-16,575	13,214	29,166	-15,952	-43,367	138,358	197,677	-59,319
July .....	12,032	30,447	-18,415	14,221	31,891	-17,670	-53,454	133,198	204,322	-71,124
August .....	12,032	27,585	-15,553	14,096	28,901	-14,805	-44,369	137,420	196,594	-59,174
September .....	9,983	26,778	-16,795	12,165	28,079	-15,914	-53,613	133,360	202,887	-69,527
October .....	9,776	25,875	-16,099	11,928	27,122	-15,194	-50,020	145,436	120,650	-65,214
November .....	9,924	20,859	-10,935	11,649	22,309	-10,660	-44,347	134,726	189,733	-55,007
December .....	9,500	23,700	-14,200	11,276	25,206	-13,930	-47,454	133,746	195,129	-61,384
<b>Total</b> .....	<b>126,928</b>	<b>326,715</b>	<b>-199,787</b>	<b>153,696</b>	<b>347,477</b>	<b>-193,781</b>	<b>-533,372</b>	<b>1,620,532</b>	<b>2,347,685</b>	<b>-727,153</b>
<b>2015 January</b> .....	7,939	18,094	-10,155	9,622	19,614	-9,992	-48,724	121,398	180,113	-58,716
February .....	6,705	13,737	-7,033	8,227	15,694	-7,466	-36,433	118,348	162,246	-43,899
March .....	6,824	15,019	-8,195	8,538	16,467	-7,929	-55,173	133,785	196,886	-63,102
April .....	7,791	15,549	-7,758	9,480	16,485	-7,005	-53,362	128,505	188,872	-60,367
May .....	8,341	15,552	-7,211	9,966	16,550	-6,584	-50,348	128,259	185,191	-56,932
June .....	8,021	17,474	-9,453	9,421	18,406	-8,985	-55,954	130,994	195,933	-64,939
July .....	8,339	18,079	-9,740	9,699	19,125	-9,426	-59,101	124,391	192,918	-68,527
August .....	7,144	15,192	-8,048	8,575	16,187	-7,612	-59,472	123,011	190,095	-67,084
September .....	6,846	13,836	-6,990	8,198	14,768	-6,570	-59,596	125,281	191,447	-66,166
October .....	6,510	11,662	-5,152	7,884	12,597	-4,713	-60,323	130,463	195,499	-65,036
November .....	6,308	11,093	-4,785	7,582	11,983	-4,401	-57,085	120,570	182,056	-61,486
December .....	6,505	12,150	-5,645	7,817	12,968	-5,151	-54,614	119,909	179,674	-59,765
<b>Total</b> .....	<b>87,272</b>	<b>177,438</b>	<b>-90,166</b>	<b>105,009</b>	<b>190,845</b>	<b>-85,836</b>	<b>-650,183</b>	<b>1,504,914</b>	<b>2,240,933</b>	<b>-736,019</b>
<b>2016 January</b> .....	5,513	10,281	-4,768	6,719	11,312	-4,593	-53,006	108,273	165,873	-57,599
February .....	5,137	8,379	-3,242	6,293	9,290	-2,997	<sup>R</sup> -51,344	<sup>R</sup> 113,841	<sup>R</sup> 168,182	<sup>R</sup> -54,341
March .....	5,760	9,334	-3,574	7,023	10,262	-3,239	-49,883	125,448	178,570	-53,122
<b>3-Month Total</b> .....	<b>16,410</b>	<b>27,993</b>	<b>-11,584</b>	<b>20,036</b>	<b>30,864</b>	<b>-10,829</b>	<b>-154,233</b>	<b>347,562</b>	<b>512,624</b>	<b>-165,062</b>
<b>2015 3-Month Total</b> .....	<b>21,468</b>	<b>46,850</b>	<b>-25,382</b>	<b>26,388</b>	<b>51,775</b>	<b>-25,388</b>	<b>-140,329</b>	<b>373,530</b>	<b>539,246</b>	<b>-165,716</b>
<b>2014 3-Month Total</b> .....	<b>30,807</b>	<b>84,083</b>	<b>-53,276</b>	<b>38,211</b>	<b>92,132</b>	<b>-53,921</b>	<b>-103,716</b>	<b>392,292</b>	<b>549,929</b>	<b>-157,637</b>

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> 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.

<sup>c</sup> Petroleum, coal, natural gas, and electricity.

R=Revised.

Notes: • Monthly data are not adjusted for seasonal variations. • See Note, "Merchandise Trade Value," at end of section. • Totals may not equal sum of

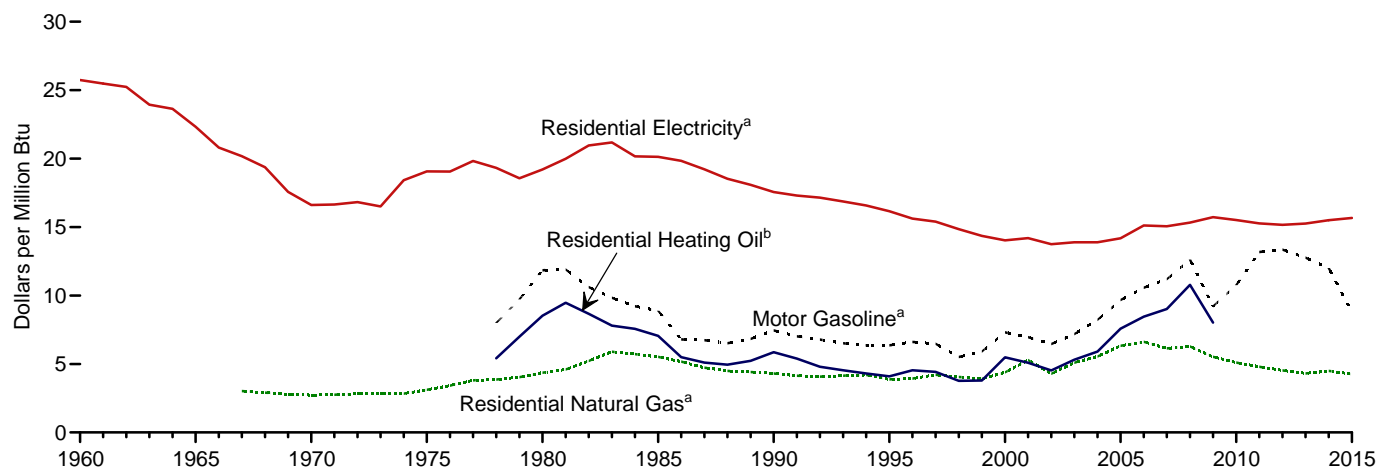
components due to independent rounding. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory, which comprises the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands.

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.

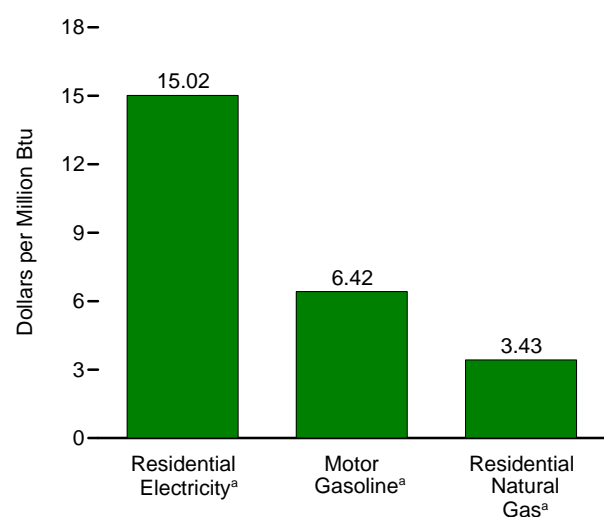
Sources: See end of section.

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

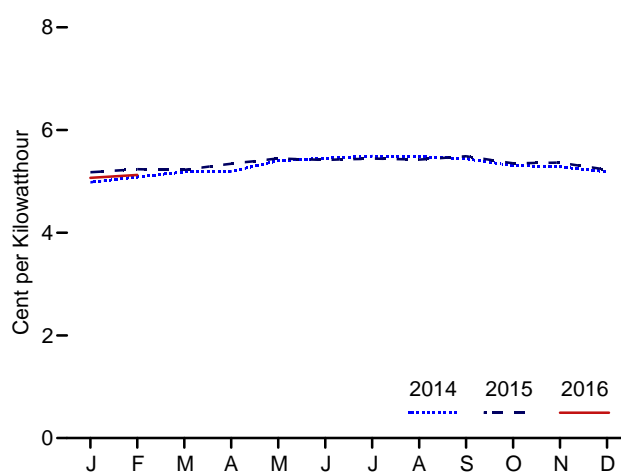
Costs, 1960–2015



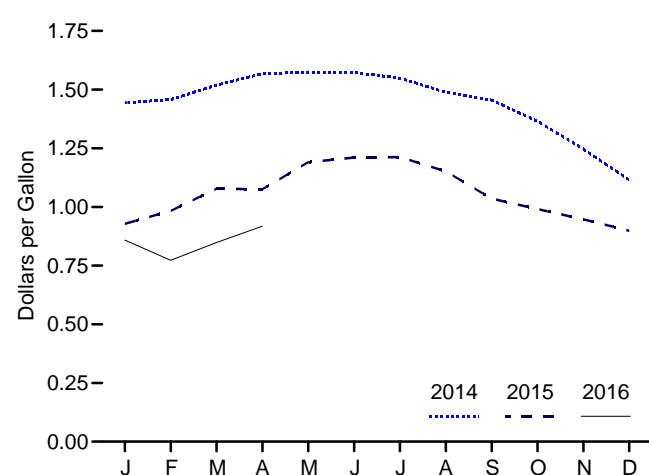
Costs, February 2016



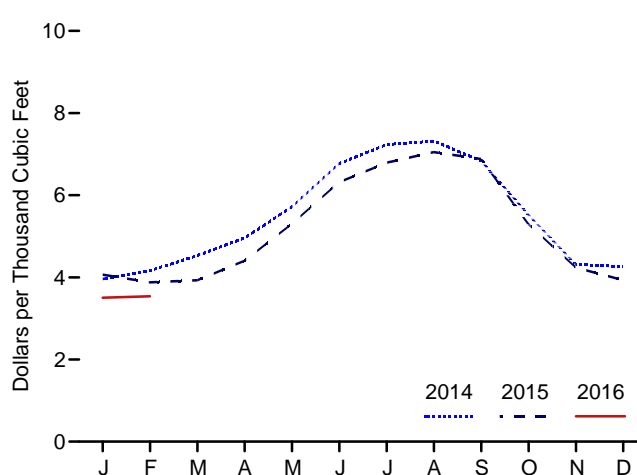
Residential Electricity,<sup>a</sup> Monthly



Motor Gasoline,<sup>a</sup> Monthly



Residential Natural Gas,<sup>a</sup> Monthly



<sup>a</sup> Includes taxes.

<sup>b</sup> Excludes taxes.

Note: See "Real Dollars" in Glossary.

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

Source: Table 1.6.

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

	Consumer Price Index, All Urban Consumers <sup>a</sup>	Motor Gasoline <sup>b</sup>		Residential Heating Oil <sup>c</sup>		Residential Natural Gas <sup>b</sup>		Residential Electricity <sup>b</sup>	
	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
<b>1960 Average</b> .....	29.6	NA	NA	NA	NA	NA	NA	8.8	25.74
<b>1965 Average</b> .....	31.5	NA	NA	NA	NA	NA	NA	7.6	22.33
<b>1970 Average</b> .....	38.8	NA	NA	NA	NA	2.81	2.72	5.7	16.62
<b>1975 Average</b> .....	53.8	NA	NA	NA	NA	3.18	3.12	6.5	19.07
<b>1980 Average</b> .....	82.4	1.482	11.85	1.182	8.52	4.47	4.36	6.6	19.21
<b>1985 Average</b> .....	107.6	1.112	8.89	0.979	7.06	5.69	5.52	6.87	20.13
<b>1990 Average</b> .....	130.7	0.931	7.44	0.813	5.86	4.44	4.31	5.99	17.56
<b>1995 Average</b> .....	152.4	0.791	6.36	0.569	4.10	3.98	3.87	5.51	16.15
<b>2000 Average</b> .....	172.2	0.908	7.31	0.761	5.49	4.51	4.39	4.79	14.02
<b>2001 Average</b> .....	177.1	0.864	6.96	0.706	5.09	5.44	5.28	4.84	14.20
<b>2002 Average</b> .....	179.9	0.801	6.46	0.628	4.52	4.39	4.28	4.69	13.75
<b>2003 Average</b> .....	184.0	0.890	7.19	0.736	5.31	5.23	5.09	4.74	13.89
<b>2004 Average</b> .....	188.9	1.018	8.22	0.819	5.91	5.69	5.55	4.74	13.89
<b>2005 Average</b> .....	195.3	1.197	9.67	1.051	7.58	6.50	6.33	4.84	14.18
<b>2006 Average</b> .....	201.6	1.307	10.58	1.173	8.46	6.81	6.63	5.16	15.12
<b>2007 Average</b> .....	207.342	1.374	11.20	1.250	9.01	6.31	6.14	5.14	15.05
<b>2008 Average</b> .....	215.303	1.541	12.62	1.495	10.78	6.45	6.28	5.23	15.33
<b>2009 Average</b> .....	214.537	1.119	9.21	1.112	8.02	5.66	5.52	5.37	15.72
<b>2010 Average</b> .....	218.056	1.301	10.76	1.283	NA	5.22	5.11	5.29	15.51
<b>2011 Average</b> .....	224.939	1.590	13.18	NA	NA	4.90	4.80	5.21	15.27
<b>2012 Average</b> .....	229.594	1.609	13.35	NA	NA	4.64	4.53	5.17	15.17
<b>2013 Average</b> .....	232.957	1.538	12.76	NA	NA	4.43	4.31	5.21	15.26
<b>2014 January</b> .....	233.916	1.444	11.99	NA	NA	3.96	3.84	4.98	14.60
February .....	234.781	1.458	12.10	NA	NA	4.16	4.03	5.09	14.91
March .....	236.293	1.519	12.61	NA	NA	4.53	4.39	5.18	15.19
April .....	237.072	1.568	13.01	NA	NA	4.96	4.81	5.19	15.22
May .....	237.900	1.574	13.07	NA	NA	5.72	5.54	5.40	15.83
June .....	238.343	1.573	13.06	NA	NA	6.77	6.56	5.45	15.97
July .....	238.250	1.549	12.86	NA	NA	7.23	7.01	5.49	16.10
August .....	237.852	1.488	12.35	NA	NA	7.32	7.09	5.48	16.07
September .....	238.031	1.455	12.08	NA	NA	6.84	6.62	5.44	15.95
October .....	237.433	1.365	11.33	NA	NA	5.52	5.35	5.31	15.55
November .....	236.151	1.247	10.35	NA	NA	4.32	4.18	5.28	15.49
December .....	234.812	1.115	9.25	NA	NA	4.26	4.13	5.18	15.19
<b>Average</b> .....	<b>236.736</b>	<b>1.447</b>	<b>12.01</b>	<b>NA</b>	<b>NA</b>	<b>4.63</b>	<b>4.49</b>	<b>5.29</b>	<b>15.50</b>
<b>2015 January</b> .....	233.707	0.929	7.71	NA	NA	4.07	3.94	5.18	15.17
February .....	234.722	0.983	<sup>R</sup> 8.17	NA	NA	3.88	3.76	5.24	15.35
March .....	236.119	1.077	<sup>R</sup> 8.95	NA	NA	3.93	3.81	5.23	15.32
April .....	236.599	1.076	8.93	NA	NA	4.40	4.27	5.34	15.66
May .....	237.805	1.191	<sup>R</sup> 9.89	NA	NA	5.30	5.14	5.45	15.96
June .....	238.638	1.211	10.05	NA	NA	6.32	6.12	5.42	15.88
July .....	238.654	1.212	<sup>R</sup> 10.07	NA	NA	6.79	6.58	5.44	15.95
August .....	238.316	1.152	<sup>R</sup> 9.57	NA	NA	7.05	6.83	5.43	15.90
September .....	237.945	1.035	<sup>R</sup> 8.60	NA	NA	6.88	6.67	5.49	16.09
October .....	237.838	0.991	8.23	NA	NA	5.29	5.13	5.35	15.69
November .....	237.336	0.948	7.87	NA	NA	4.24	4.11	5.36	15.72
December .....	236.525	0.898	7.46	NA	NA	3.93	3.81	5.23	15.32
<b>Average</b> .....	<b>237.017</b>	<b>1.059</b>	<sup>R</sup> <b>8.80</b>	<b>NA</b>	<b>NA</b>	<b>4.38</b>	<b>4.24</b>	<b>5.35</b>	<b>15.67</b>
<b>2016 January</b> .....	236.916	0.859	7.13	NA	NA	<sup>R</sup> 3.50	<sup>R</sup> 3.39	5.07	14.86
February .....	237.111	0.773	6.42	NA	NA	<sup>R</sup> 3.54	<sup>R</sup> 3.43	<sup>R</sup> 5.12	<sup>R</sup> 15.02
March .....	238.132	0.849	<sup>R</sup> 7.05	NA	NA	NA	NA	NA	NA
April .....	239.261	0.918	7.62	NA	NA	NA	NA	NA	NA

<sup>a</sup> Data are U.S. city averages for all items, and are not seasonally adjusted.

<sup>b</sup> Includes taxes.

<sup>c</sup> Excludes taxes.

R=Revised. NA=Not available.

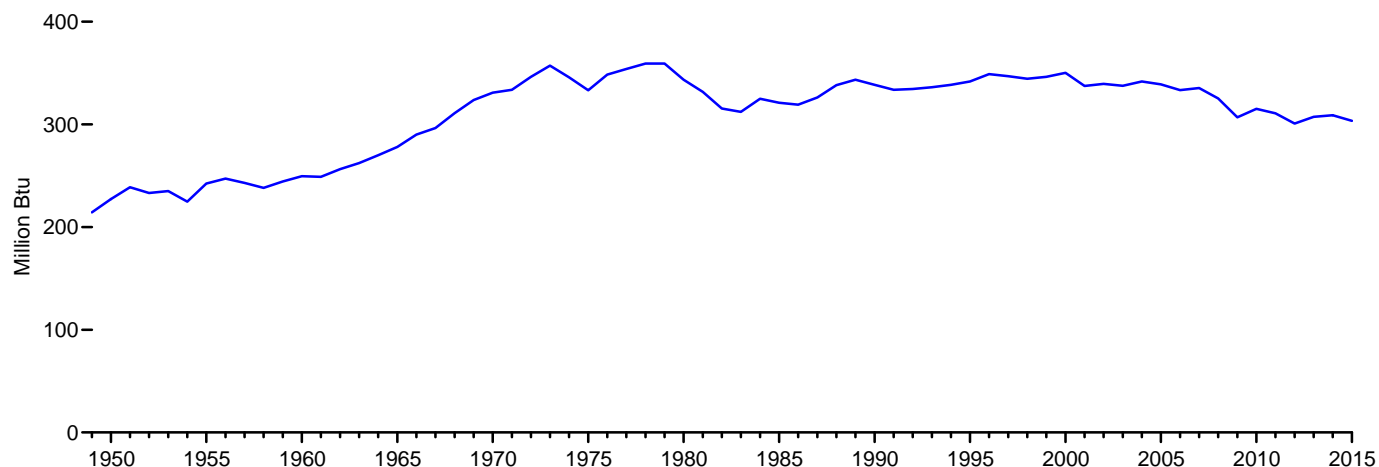
Notes: • See "Real Dollars" in Glossary. • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. • Annual averages may not equal average of months due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

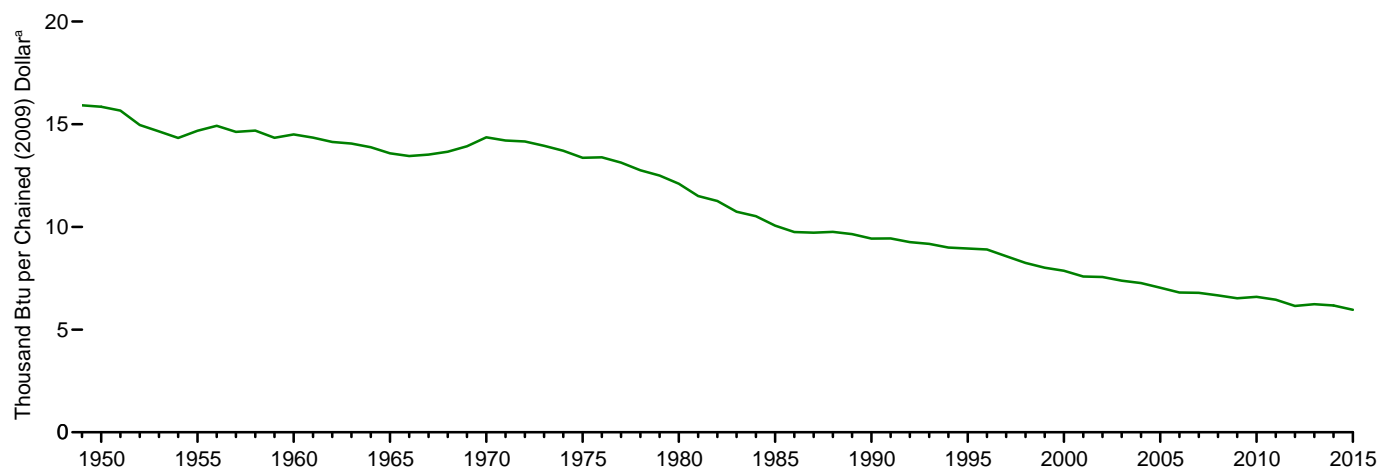
Sources: • **Fuel Prices:** Tables 9.4 (All Grades), 9.8, and 9.10, adjusted by the CPI; and *Monthly Energy Review*, September 2012, Table 9.8c. • **Consumer Price Index, All Urban Consumers:** U.S. Department of Labor, Bureau of Labor Statistics, series ID CUUR0000SA0. • **Conversion Factors:** Tables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

## Figure 1.7 Primary Energy Consumption and Energy Expenditures Indicators

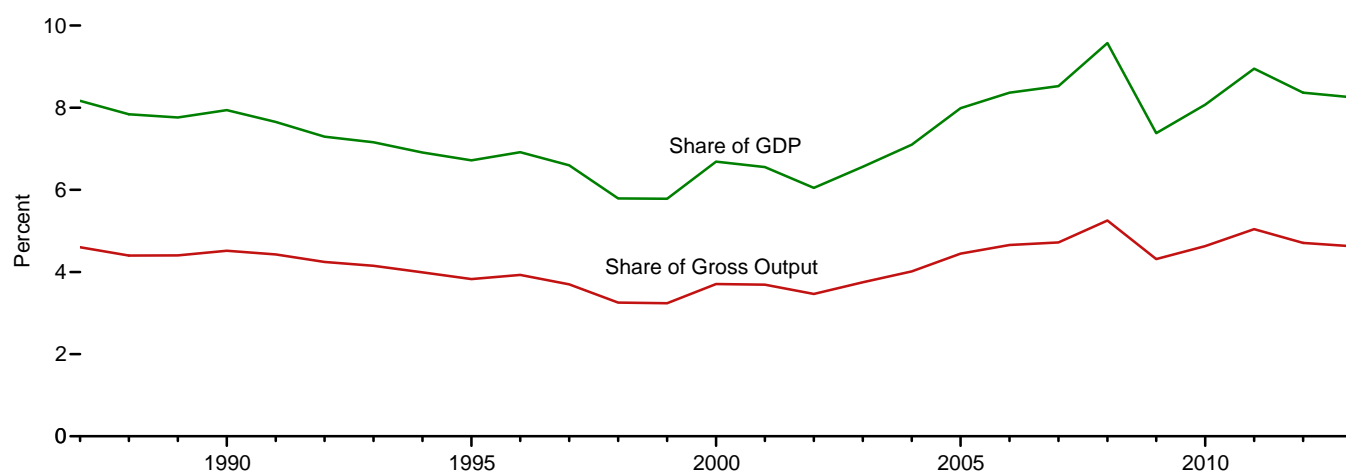
### Energy Consumption per Capita, 1949–2015



### Primary Energy Consumption per Real Dollar<sup>a</sup> of Gross Domestic Product, 1949–2015



### Energy Expenditures as Share of Gross Domestic Product and Gross Output,<sup>b</sup> 1987–2013



<sup>a</sup> See "Chained Dollars" and "Real Dollars" in Glossary.

<sup>b</sup> Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.

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

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

	Primary Energy Consumption <sup>a</sup>			Energy Expenditures <sup>b</sup>				Carbon Dioxide Emissions <sup>c</sup>		
	Consumption	Consumption per Capita	Consumption per Real Dollar <sup>d</sup> of GDP <sup>e</sup>	Expenditures	Expenditures per Capita	Expenditures as Share of GDP <sup>e</sup>	Expenditures as Share of Gross Output <sup>f</sup>	Emissions	Emissions per Capita	Emissions per Real Dollar <sup>d</sup> of GDP <sup>e</sup>
	Quadrillion Btu	Million Btu	Thousand Btu per Chained (2009) Dollar <sup>d</sup>	Million Nominal Dollars <sup>g</sup>	Nominal Dollars <sup>g</sup>	Percent	Percent	Million Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide per Million Chained (2009) Dollars <sup>d</sup>
1950 .....	34.616	227	15.85	NA	NA	NA	NA	2,382	15.6	1,091
1955 .....	40.208	242	14.68	NA	NA	NA	NA	2,685	16.2	980
1960 .....	45.086	250	14.50	NA	NA	NA	NA	2,914	16.1	937
1965 .....	54.015	278	13.58	NA	NA	NA	NA	3,462	17.8	871
1970 .....	67.838	331	14.37	82,875	404	7.7	NA	4,261	20.8	902
1975 .....	71.965	333	13.36	171,851	796	10.2	NA	4,439	20.6	824
1980 .....	78.067	344	12.10	374,347	1,647	13.1	NA	4,771	21.0	740
1981 .....	76.106	332	11.50	427,898	1,865	13.3	NA	4,646	20.2	702
1982 .....	73.099	316	11.26	426,479	1,841	12.7	NA	4,405	19.0	679
1983 .....	72.971	312	10.74	417,617	1,786	11.5	NA	4,377	18.7	644
1984 .....	76.632	325	10.52	435,371	1,846	10.8	NA	4,614	19.6	633
1985 .....	76.392	321	10.06	438,531	1,843	10.1	NA	4,600	19.3	606
1986 .....	76.647	319	9.75	384,284	1,600	8.4	NA	4,608	19.2	586
1987 .....	79.054	326	9.72	397,819	1,642	8.2	4.6	4,766	19.7	586
1988 .....	82.709	338	9.76	411,739	1,684	7.8	4.4	4,984	20.4	588
1989 .....	84.786	344	9.65	439,235	1,780	7.8	4.4	5,070	20.5	577
1990 .....	84.485	338	9.43	474,831	1,902	7.9	4.5	5,039	20.2	563
1991 .....	84.438	334	9.44	472,543	1,868	7.7	4.4	4,993	19.7	558
1992 .....	85.783	334	9.26	477,024	1,860	7.3	4.2	5,087	19.8	549
1993 .....	87.366	336	9.18	492,383	1,894	7.2	4.2	5,185	19.9	545
1994 .....	89.088	339	8.99	504,988	1,919	6.9	4.0	5,261	20.0	531
1995 .....	91.032	342	8.95	514,755	1,933	6.7	3.8	5,323	20.0	523
1996 .....	94.022	349	8.90	560,409	2,080	6.9	3.9	5,510	20.5	522
1997 .....	94.602	347	8.57	568,075	2,084	6.6	3.7	5,584	20.5	506
1998 .....	95.019	344	8.24	526,394	1,908	5.8	3.3	5,635	20.4	489
1999 .....	96.650	346	8.01	558,739	2,002	5.8	3.2	5,688	20.4	471
2000 .....	98.819	350	7.87	687,824	2,438	6.7	3.7	5,868	20.8	467
2001 .....	96.172	337	7.58	696,347	2,444	6.6	3.7	5,761	20.2	454
2002 .....	97.647	339	7.56	664,072	2,309	6.0	3.5	5,804	20.2	450
2003 .....	97.921	338	7.38	755,205	2,603	6.6	3.8	5,853	20.2	441
2004 .....	100.094	342	7.27	871,337	2,976	7.1	4.0	5,970	20.4	433
2005 .....	100.193	339	7.04	1,045,910	3,539	8.0	4.4	5,993	20.3	421
2006 .....	99.492	333	6.81	1,159,022	3,884	8.4	4.7	5,910	19.8	404
2007 .....	101.027	335	6.79	1,234,037	4,097	8.5	4.7	6,001	19.9	403
2008 .....	98.906	325	6.67	1,409,247	4,634	9.6	5.3	5,809	19.1	392
2009 .....	94.138	307	6.53	1,063,889	3,468	7.4	4.3	5,386	17.6	374
2010 .....	97.480	315	6.59	1,208,443	3,906	8.1	4.6	5,576	18.0	377
2011 .....	96.902	311	6.45	1,388,618	4,455	8.9	5.0	5,439	17.4	362
2012 .....	94.487	301	6.15	1,351,513	4,303	8.4	4.7	5,227	16.6	340
2013 .....	97.238	307	6.24	1,375,306	4,346	8.3	<sup>R</sup> 4.7	5,355	16.9	344
2014 .....	<sup>R</sup> 98.505	309	6.17	NA	NA	NA	NA	<sup>R</sup> 5,406	17.0	339
2015 .....	<sup>R</sup> 97.527	<sup>R</sup> 303	5.97	NA	NA	NA	NA	<sup>R</sup> 5,257	16.4	322

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

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

<sup>c</sup> Carbon dioxide emissions from energy consumption. See Table 12.1.

<sup>d</sup> See "Chained Dollars" and "Real Dollars" in Glossary.

<sup>e</sup> See "Gross Domestic Product (GDP)" in Glossary.

<sup>f</sup> Gross output is the value of GDP plus the value of intermediate inputs used to produce GDP.

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

<sup>R</sup>=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 (2009) dollars (see Table C1).

• **Expenditures:** U.S. Energy Information Administration, "State Energy Price and Expenditure Estimates, 1970 Through 2013" (July 2015), 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).

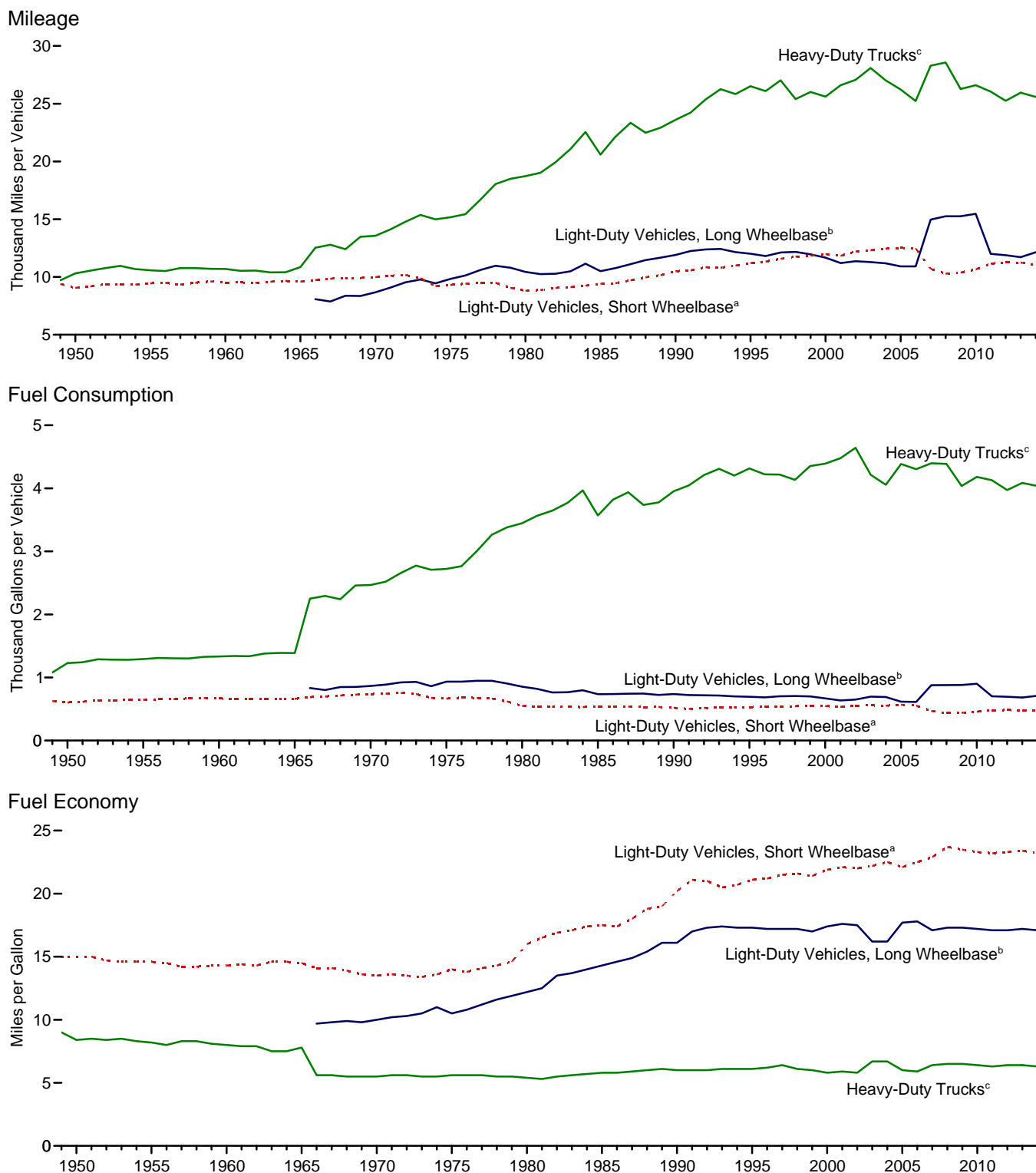
• **Expenditures as Share of Gross Output:** Calculated as energy expenditures divided by U.S. gross output (see Table C1).

• **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 (2009) dollars (see Table C1).

**Figure 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949–2014**



<sup>a</sup> 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.

<sup>b</sup> 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.

<sup>c</sup> 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.

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 <sup>a</sup>			Light-Duty Vehicles, Long Wheelbase <sup>b</sup>			Heavy-Duty Trucks <sup>c</sup>			All Motor Vehicles <sup>d</sup>		
	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	( <sup>e</sup> )	( <sup>e</sup> )	( <sup>e</sup> )	10,316	1,229	8.4	9,321	725	12.8
1955 .....	9,447	645	14.6	( <sup>e</sup> )	( <sup>e</sup> )	( <sup>e</sup> )	10,576	1,293	8.2	9,661	761	12.7
1960 .....	9,518	668	14.3	( <sup>e</sup> )	( <sup>e</sup> )	( <sup>e</sup> )	10,693	1,333	8.0	9,732	784	12.4
1965 .....	9,603	661	14.5	( <sup>e</sup> )	( <sup>e</sup> )	( <sup>e</sup> )	10,851	1,387	7.8	9,826	787	12.5
1970 .....	9,989	737	13.5	8,676	866	10.0	13,565	2,467	5.5	9,976	830	12.0
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 .....	<sup>a</sup> 10,710	<sup>a</sup> 468	<sup>a</sup> 22.9	<sup>b</sup> 14,970	<sup>b</sup> 877	<sup>b</sup> 17.1	<sup>c</sup> 28,290	<sup>c</sup> 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 <sup>P</sup> .....	11,048	476	23.2	12,138	710	17.1	25,594	4,036	6.3	11,621	666	17.5

<sup>a</sup> 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.

<sup>b</sup> 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.

<sup>c</sup> 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.

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

<sup>e</sup> Included in "Heavy-Duty Trucks."

P=Preliminary.

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 <sup>a</sup>	Middle Atlantic <sup>b</sup>	East North Central <sup>c</sup>	West North Central <sup>d</sup>	South Atlantic <sup>e</sup>	East South Central <sup>f</sup>	West South Central <sup>g</sup>	Mountain <sup>h</sup>	Pacific <sup>i</sup>	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 January .....	1,304	1,305	1,518	1,483	760	1,014	650	834	437	970
February .....	1,141	1,104	1,322	1,347	494	690	478	705	449	799
March .....	1,116	1,026	1,094	1,031	461	564	351	583	375	683
April .....	582	505	496	512	158	182	81	405	276	325
May .....	254	179	205	200	37	49	11	218	131	127
June .....	46	20	27	41	1	1	0	86	61	28
July .....	4	7	29	30	1	1	0	11	9	10
August .....	32	19	19	21	1	0	0	37	11	13
September .....	110	74	120	126	11	17	4	100	37	57
October .....	358	311	418	389	119	162	37	273	122	221
November .....	785	757	937	1,021	442	626	390	654	353	614
December .....	941	896	1,009	1,102	478	627	421	837	511	706
Total .....	6,674	6,203	7,194	7,304	2,963	3,932	2,422	4,743	2,773	4,552
2015 January .....	R 1,335	1,260	R 1,334	1,267	645	R 837	R 623	818	469	R 890
February .....	1,415	1,319	R 1,404	1,306	668	865	499	R 601	R 330	867
March .....	R 1,102	1,002	951	R 802	R 359	445	278	R 481	R 280	R 583
April .....	R 588	R 482	455	R 398	133	146	56	R 396	292	300
May .....	147	101	159	R 214	22	37	14	R 266	R 207	119
June .....	R 84	30	45	40	1	1	0	42	25	24
July .....	7	4	R 11	12	0	0	0	24	8	6
August .....	8	9	R 24	33	0	1	0	20	13	11
September .....	43	27	39	50	8	13	1	78	57	32
October .....	R 457	R 391	364	355	144	164	R 41	247	110	227
November .....	R 609	R 528	603	650	238	R 314	R 216	683	R 466	444
December .....	R 722	R 624	R 774	960	281	R 403	R 357	937	R 614	R 580
Total .....	R 6,518	R 5,777	6,164	R 6,086	R 2,498	R 3,226	R 2,086	R 4,593	R 2,869	R 4,083
2016 January .....	1,130	R 1,118	1,240	1,303	662	859	R 563	R 913	R 561	R 869
February .....	954	901	956	936	484	574	309	619	343	628
2-Month Total .....	2,084	2,019	2,196	2,238	1,146	1,433	872	1,532	905	1,497
2015 2-Month Total .....	2,750	2,579	2,739	2,573	1,312	1,702	1,122	1,419	798	1,757
2014 2-Month Total .....	2,445	2,409	2,840	2,831	1,253	1,704	1,128	1,539	886	1,768

<sup>a</sup> Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

<sup>b</sup> New Jersey, New York, and Pennsylvania.

<sup>c</sup> Illinois, Indiana, Michigan, Ohio, and Wisconsin.

<sup>d</sup> Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

<sup>e</sup> Delaware, Florida, Georgia, Maryland (and the District of Columbia), North Carolina, South Carolina, Virginia, and West Virginia.

<sup>f</sup> Alabama, Kentucky, Mississippi, and Tennessee.

<sup>g</sup> Arkansas, Louisiana, Oklahoma, and Texas.

<sup>h</sup> Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

<sup>i</sup> 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](http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf).

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

	New England <sup>a</sup>	Middle Atlantic <sup>b</sup>	East North Central <sup>c</sup>	West North Central <sup>d</sup>	South Atlantic <sup>e</sup>	East South Central <sup>f</sup>	West South Central <sup>g</sup>	Mountain <sup>h</sup>	Pacific <sup>i</sup>	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 January .....	0	0	0	0	20	0	5	3	14	7
February .....	0	0	0	0	45	1	8	7	10	12
March .....	0	0	0	0	43	5	21	20	15	15
April .....	0	0	1	4	82	26	96	47	26	37
May .....	8	26	54	65	209	147	226	119	72	113
June .....	69	131	176	194	350	329	457	272	127	242
July .....	201	219	133	200	399	307	502	391	274	301
August .....	109	150	197	261	380	376	557	272	228	292
September .....	32	65	46	78	279	236	381	206	190	183
October .....	0	6	2	12	126	60	195	85	86	74
November .....	0	0	0	0	31	0	10	9	19	11
December .....	0	0	0	0	36	4	15	0	7	10
Total .....	420	596	610	814	2,001	1,493	2,474	1,432	1,068	1,297
2015 January .....	0	0	0	0	R 33	3	R 6	2	11	9
February .....	0	0	0	0	R 19	0	6	11	14	7
March .....	0	0	0	3	84	21	40	33	R 29	30
April .....	0	0	1	8	R 129	52	R 141	R 40	23	53
May .....	R 32	71	82	R 56	240	175	R 261	77	28	R 126
June .....	39	113	139	202	392	R 353	454	316	178	255
July .....	193	R 249	202	290	R 454	443	R 586	326	R 220	336
August .....	207	228	R 170	202	408	R 340	R 562	363	266	R 316
September .....	R 87	135	128	168	293	235	R 423	233	R 196	223
October .....	0	1	7	13	R 134	59	R 190	85	R 100	R 78
November .....	0	0	0	0	102	16	R 53	3	12	30
December .....	0	2	2	0	98	23	R 25	0	10	26
Total .....	R 558	799	R 729	942	R 2,385	1,719	R 2,746	1,489	R 1,089	R 1,488
2016 January .....	0	0	0	0	24	2	9	0	8	7
February .....	0	0	0	0	23	3	26	10	14	11
2-Month Total .....	0	0	0	0	47	6	36	10	22	18
2015 2-Month Total .....	0	0	0	0	52	3	12	13	25	17
2014 2-Month Total .....	0	0	0	0	65	2	13	10	24	19

<sup>a</sup> Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

<sup>b</sup> New Jersey, New York, and Pennsylvania.

<sup>c</sup> Illinois, Indiana, Michigan, Ohio, and Wisconsin.

<sup>d</sup> Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

<sup>e</sup> Delaware, Florida, Georgia, Maryland (and the District of Columbia), North Carolina, South Carolina, Virginia, and West Virginia.

<sup>f</sup> Alabama, Kentucky, Mississippi, and Tennessee.

<sup>g</sup> Arkansas, Louisiana, Oklahoma, and Texas.

<sup>h</sup> Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

<sup>i</sup> 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](http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf).

## Energy Overview

**Note. 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.

### 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 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 refinery and blender net inputs of renewable fuels (excluding fuel ethanol) from U.S. Energy Information Administration, *Petroleum Supply Annual/Petroleum Supply Monthly*, Table 1 (for biomass-based diesel fuel, 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).

### **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 “Biofuels—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 “Biofuels—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.

### **Biofuels—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.

### **Biofuels—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.

### **Biofuels—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 Biofuels**

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

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

2009 forward: Total biofuels 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 biofuels, 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 “Biofuels—Fuel Ethanol (Minus Denaturant)” sources below). 2011 forward: Biomass-based diesel fuel exports data are from U.S. Energy Information Administration, *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 “Biofuels—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.

### **Biofuels—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.

### **Biofuels—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.

### **Total Biofuels**

2001–2009: Total biofuels exports are equal to biodiesel exports.

2010 forward: Total biofuels exports are equal to fuel ethanol (minus denaturant) exports plus biodiesel exports.

### **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 biofuels, 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 and 2016: “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 and 2016: “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.  
 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 and 2016: “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 and 2016: “U.S. International Trade in Goods and Services,” FT-900, monthly.

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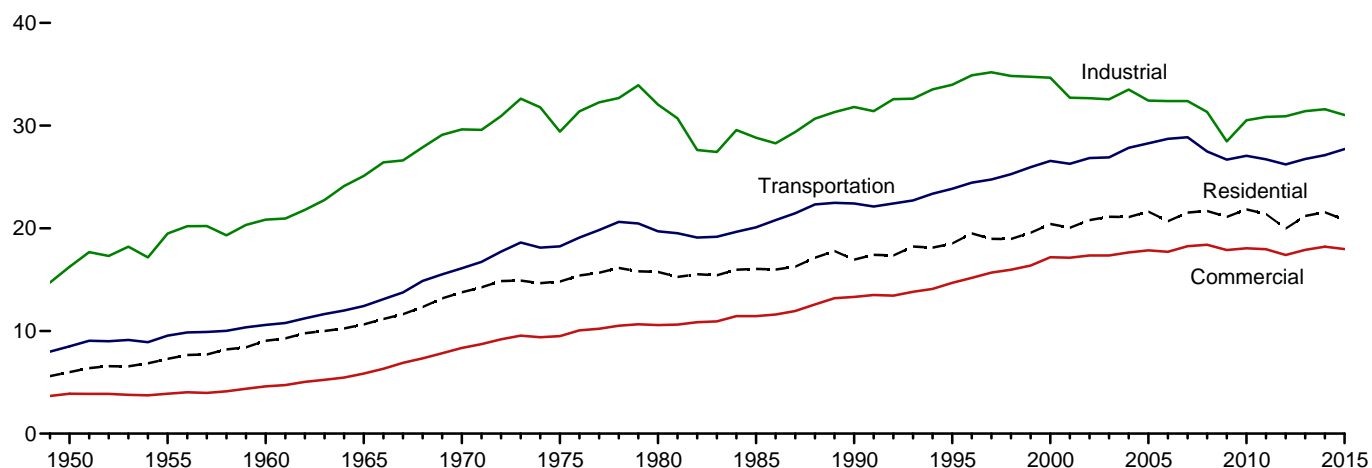


## **2. Energy Consumption by Sector**

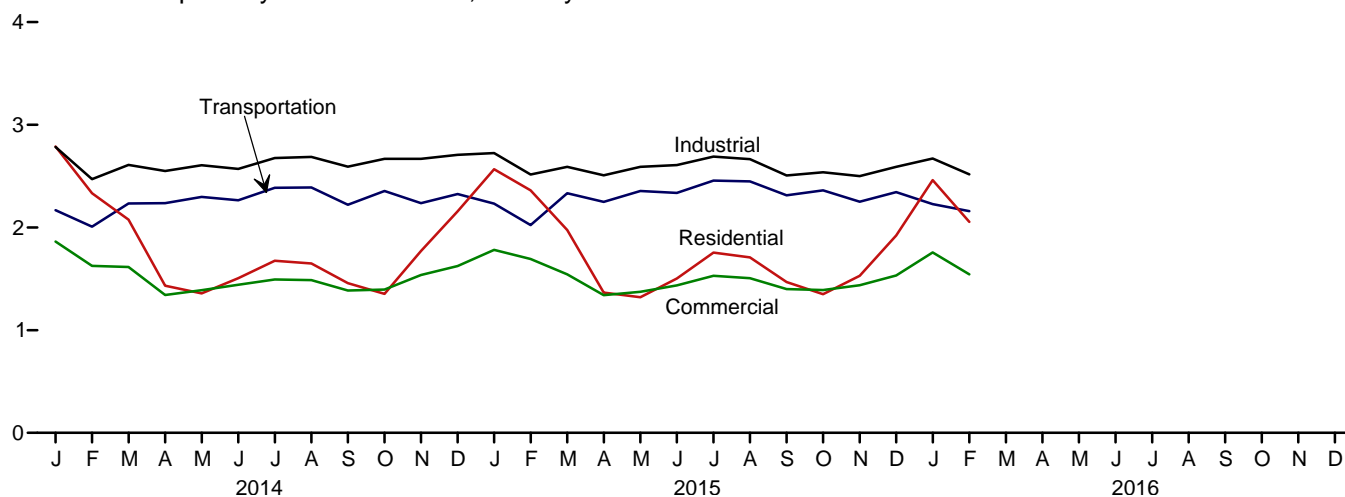
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**Figure 2.1 Energy Consumption by Sector**  
(Quadrillion Btu)

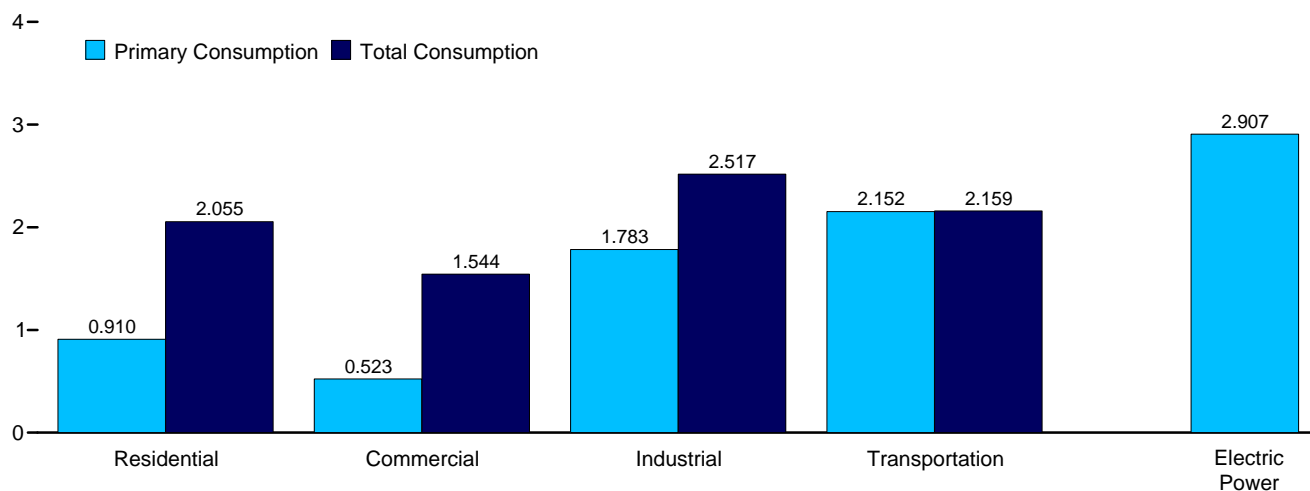
Total Consumption by End-Use Sector, 1949–2015



Total Consumption by End-Use Sector, Monthly



By Sector, February 2016



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 <sup>c,d</sup>	Balancing Item <sup>g</sup>	Primary Total <sup>i</sup>
	Residential		Commercial <sup>a</sup>		Industrial <sup>b</sup>		Transportation				
	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>			
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 .....	6,557	16,945	3,896	13,320	21,180	31,810	22,366	22,420	<sup>d</sup> 30,495	-9	84,485
1995 Total .....	6,936	18,518	4,100	14,690	22,718	33,970	23,796	23,851	33,479	3	91,032
2000 Total .....	7,158	20,424	4,278	17,175	22,823	34,662	26,495	26,555	38,062	2	98,819
2001 Total .....	6,867	20,041	4,084	17,136	21,793	32,719	26,219	26,282	37,215	-6	96,172
2002 Total .....	6,911	20,790	4,131	17,345	21,798	32,661	26,785	26,846	38,016	5	97,647
2003 Total .....	7,237	21,124	4,297	17,345	21,533	32,553	26,826	26,900	38,028	-1	97,921
2004 Total .....	6,992	21,087	4,231	17,654	22,411	33,515	27,764	27,843	38,701	-6	100,094
2005 Total .....	6,908	21,620	4,050	17,852	21,410	32,441	28,199	28,280	39,626	(s)	100,193
2006 Total .....	6,165	20,681	3,745	17,705	21,528	32,390	28,638	28,717	39,417	(s)	99,492
2007 Total .....	6,603	21,534	3,919	18,249	21,362	32,385	28,772	28,859	40,371	-1	101,027
2008 Total .....	6,911	21,689	4,094	18,396	20,527	31,333	27,404	27,486	39,969	1	98,906
2009 Total .....	6,662	21,107	4,048	17,880	18,754	28,464	26,605	26,687	38,069	(s)	94,138
2010 Total .....	6,590	21,844	4,011	18,047	20,275	30,523	26,978	27,059	39,619	7	97,480
2011 Total .....	6,475	21,383	4,044	17,960	20,452	30,839	26,632	26,712	39,293	8	96,902
2012 Total .....	5,779	19,965	3,695	17,392	20,735	30,908	26,144	26,219	38,131	2	94,487
2013 Total .....	6,832	21,195	4,125	17,894	21,254	31,401	26,671	26,750	38,357	-1	97,238
2014 January .....	1,252	2,789	669	1,863	1,944	<sup>R</sup> 2,784	2,161	2,168	<sup>R</sup> 3,578	<sup>R</sup> 7	<sup>R</sup> 9,611
February .....	1,050	<sup>R</sup> 2,333	583	<sup>R</sup> 1,625	1,718	2,471	2,000	2,007	<sup>R</sup> 3,085	<sup>R</sup> 5	<sup>R</sup> 8,441
March .....	893	2,076	509	1,616	1,776	<sup>R</sup> 2,609	2,227	2,233	<sup>R</sup> 3,130	2	<sup>R</sup> 8,536
April .....	502	<sup>R</sup> 1,433	309	1,343	<sup>R</sup> 1,737	<sup>R</sup> 2,550	2,231	2,237	<sup>R</sup> 2,785	<sup>R</sup> -1	<sup>R</sup> 7,562
May .....	354	1,359	239	1,390	1,710	2,606	2,292	2,298	<sup>R</sup> 3,059	(s)	7,653
June .....	267	1,506	199	<sup>R</sup> 1,441	1,671	2,570	2,258	2,264	<sup>R</sup> 3,387	3	<sup>R</sup> 7,785
July .....	254	<sup>R</sup> 1,676	193	<sup>R</sup> 1,494	1,759	2,677	2,380	2,386	<sup>R</sup> 3,647	<sup>R</sup> 5	<sup>R</sup> 8,238
August .....	250	<sup>R</sup> 1,649	194	1,488	1,762	2,688	2,383	2,390	<sup>R</sup> 3,626	<sup>R</sup> 5	<sup>R</sup> 8,220
September .....	277	1,458	212	1,387	1,756	2,593	2,215	2,221	<sup>R</sup> 3,198	<sup>R</sup> 2	<sup>R</sup> 7,660
October .....	378	1,353	271	<sup>R</sup> 1,395	1,823	<sup>R</sup> 2,668	2,349	2,356	<sup>R</sup> 2,951	-2	<sup>R</sup> 7,770
November .....	726	1,772	442	<sup>R</sup> 1,537	1,816	2,668	2,231	2,237	<sup>R</sup> 3,000	<sup>R</sup> -1	<sup>R</sup> 8,213
December .....	916	2,158	514	<sup>R</sup> 1,625	1,884	<sup>R</sup> 2,707	2,320	2,326	<sup>R</sup> 3,183	-1	<sup>R</sup> 8,816
Total .....	7,117	<sup>R</sup> 21,557	4,333	<sup>R</sup> 18,207	<sup>R</sup> 21,356	<sup>R</sup> 31,592	27,046	27,126	<sup>R</sup> 38,629	<sup>R</sup> 24	<sup>R</sup> 98,505
2015 January .....	1,146	<sup>R</sup> 2,568	635	<sup>R</sup> 1,782	<sup>R</sup> 1,925	<sup>R</sup> 2,724	<sup>R</sup> 2,225	<sup>R</sup> 2,232	<sup>R</sup> 3,375	<sup>R</sup> 4	<sup>R</sup> 9,310
February .....	1,093	<sup>R</sup> 2,361	613	<sup>R</sup> 1,693	<sup>R</sup> 1,752	<sup>R</sup> 2,515	<sup>R</sup> 2,016	<sup>R</sup> 2,023	<sup>R</sup> 3,118	<sup>R</sup> 4	<sup>R</sup> 8,597
March .....	810	<sup>R</sup> 1,975	470	<sup>R</sup> 1,544	<sup>R</sup> 1,819	<sup>R</sup> 2,590	<sup>R</sup> 2,326	<sup>R</sup> 2,333	<sup>R</sup> 3,017	<sup>R</sup> (s)	<sup>R</sup> 8,442
April .....	462	<sup>R</sup> 1,366	296	<sup>R</sup> 1,340	<sup>R</sup> 1,724	<sup>R</sup> 2,508	<sup>R</sup> 2,243	<sup>R</sup> 2,249	<sup>R</sup> 2,738	<sup>R</sup> -2	<sup>R</sup> 7,461
May .....	317	<sup>R</sup> 1,321	219	<sup>R</sup> 1,374	<sup>R</sup> 1,736	<sup>R</sup> 2,590	<sup>R</sup> 2,349	<sup>R</sup> 2,356	<sup>R</sup> 3,019	<sup>R</sup> -1	<sup>R</sup> 7,639
June .....	243	<sup>R</sup> 1,504	183	<sup>R</sup> 1,435	<sup>R</sup> 1,727	<sup>R</sup> 2,608	<sup>R</sup> 2,330	<sup>R</sup> 2,337	<sup>R</sup> 3,400	<sup>R</sup> 2	<sup>R</sup> 7,885
July .....	235	<sup>R</sup> 1,756	185	<sup>R</sup> 1,529	<sup>R</sup> 1,797	<sup>R</sup> 2,690	<sup>R</sup> 2,450	<sup>R</sup> 2,457	<sup>R</sup> 3,765	<sup>R</sup> 3	<sup>R</sup> 8,436
August .....	231	<sup>R</sup> 1,708	190	<sup>R</sup> 1,506	<sup>R</sup> 1,785	<sup>R</sup> 2,666	<sup>R</sup> 2,443	<sup>R</sup> 2,449	<sup>R</sup> 3,680	<sup>R</sup> 1	<sup>R</sup> 8,331
September .....	230	<sup>R</sup> 1,468	190	<sup>R</sup> 1,399	<sup>R</sup> 1,691	<sup>R</sup> 2,507	<sup>R</sup> 2,306	<sup>R</sup> 2,313	<sup>R</sup> 3,269	<sup>R</sup> (s)	<sup>R</sup> 7,687
October .....	369	<sup>R</sup> 1,351	274	<sup>R</sup> 1,391	<sup>R</sup> 1,736	<sup>R</sup> 2,538	<sup>R</sup> 2,356	<sup>R</sup> 2,362	<sup>R</sup> 2,907	<sup>R</sup> -6	<sup>R</sup> 7,635
November .....	578	<sup>R</sup> 1,530	368	<sup>R</sup> 1,438	<sup>R</sup> 1,713	<sup>R</sup> 2,500	<sup>R</sup> 2,245	<sup>R</sup> 2,251	<sup>R</sup> 2,815	<sup>R</sup> -3	<sup>R</sup> 7,716
December .....	787	<sup>R</sup> 1,922	446	<sup>R</sup> 1,532	<sup>R</sup> 1,815	<sup>R</sup> 2,591	<sup>R</sup> 2,338	<sup>R</sup> 2,345	<sup>R</sup> 3,004	<sup>R</sup> -3	<sup>R</sup> 8,387
Total .....	6,502	<sup>R</sup> 20,825	<sup>R</sup> 4,067	<sup>R</sup> 17,967	<sup>R</sup> 21,221	<sup>R</sup> 31,029	<sup>R</sup> 27,628	<sup>R</sup> 27,707	<sup>R</sup> 38,109	<sup>R</sup> -1	<sup>R</sup> 97,527
2016 January .....	1,110	<sup>R</sup> 2,461	<sup>R</sup> 618	<sup>R</sup> 1,757	<sup>R</sup> 1,884	<sup>R</sup> 2,672	<sup>R</sup> 2,221	2,228	<sup>R</sup> 3,284	<sup>R</sup> 2	<sup>R</sup> 9,119
February .....	910	2,055	523	1,544	1,783	2,517	2,152	2,159	2,907	-1	8,274
2-Month Total .....	2,020	4,516	1,140	3,301	3,667	5,189	4,373	4,386	6,191	1	17,393
2015 2-Month Total .....	2,239	4,929	1,248	3,475	3,678	5,239	4,241	4,255	6,493	8	17,907
2014 2-Month Total .....	2,302	5,122	1,252	3,488	3,661	5,255	4,161	4,176	6,663	12	18,052

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

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

<sup>c</sup> 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.

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

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

<sup>f</sup> 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.

<sup>g</sup> A balancing item. The sum of primary consumption in the five energy-use sectors equals the sum of total consumption in the four end-use sectors. However, total energy consumption does not equal the sum of the sectoral components due

to the use of sector-specific conversion factors for coal and natural gas.

<sup>h</sup> Primary energy consumption total. See Table 1.3.

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

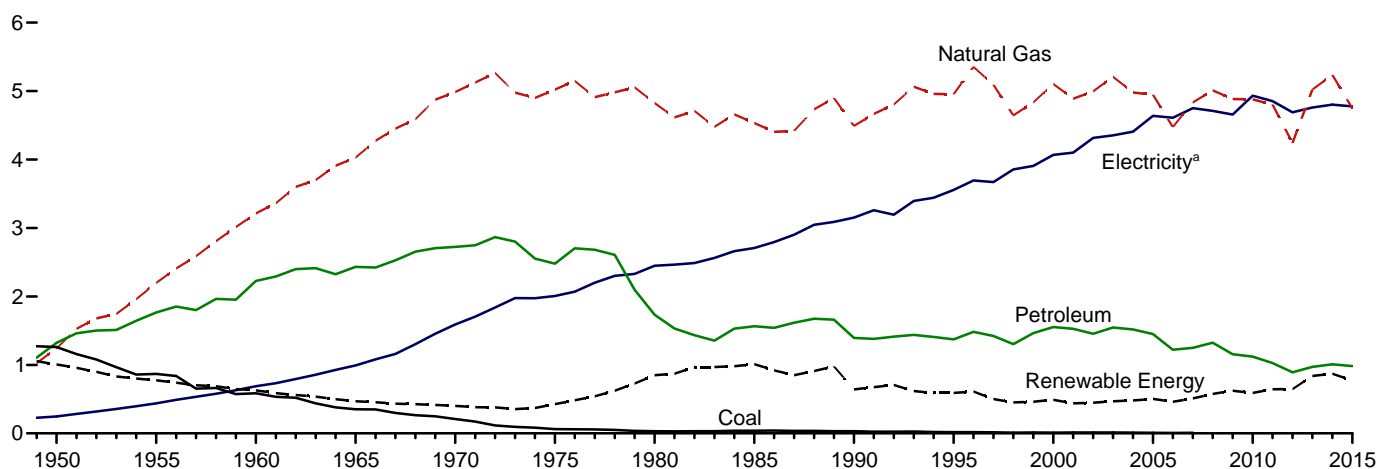
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding.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

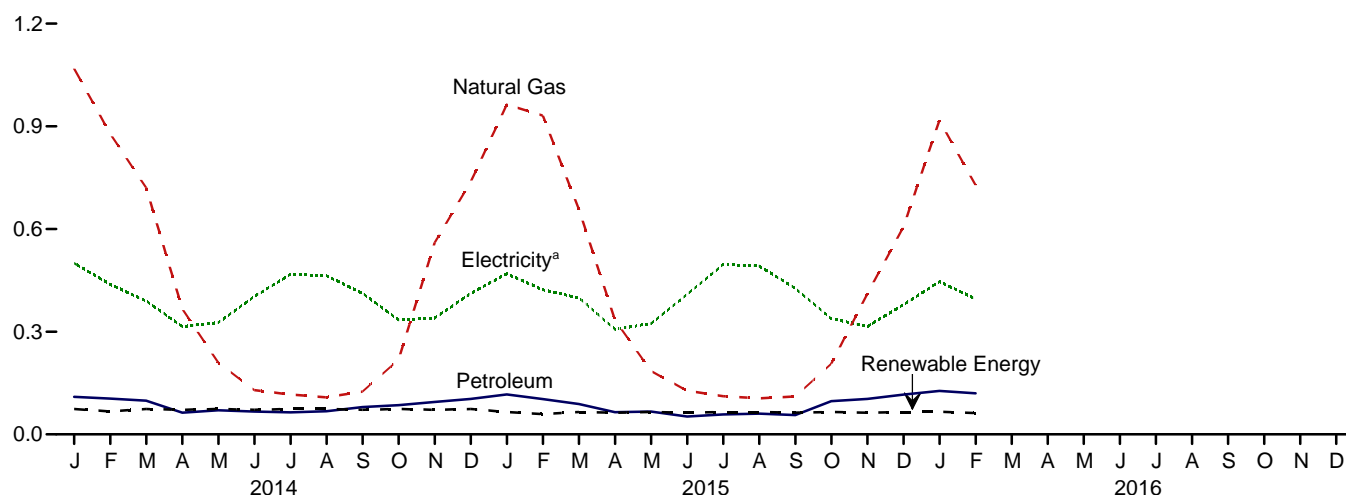
• Primary Total: Table 1.3.

**Figure 2.2 Residential Sector Energy Consumption**  
(Quadrillion Btu)

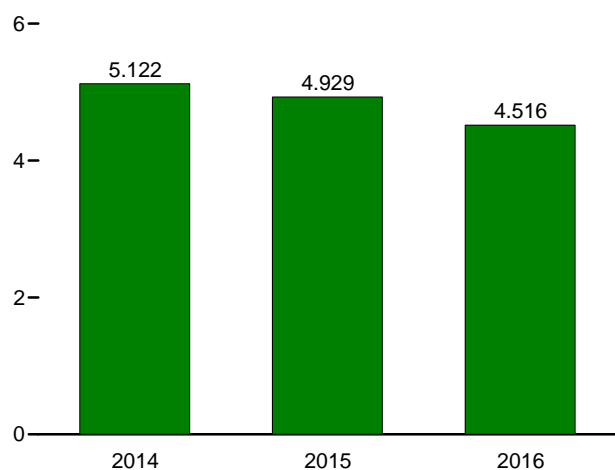
By Major Source, 1949–2015



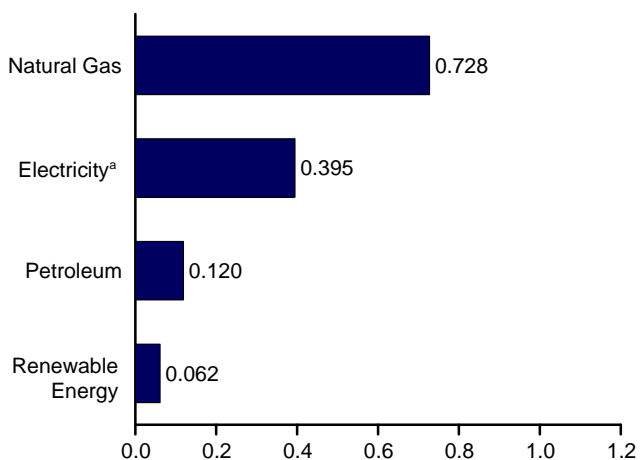
By Major Source, Monthly



Total, January–February



By Major Source, February 2016



<sup>a</sup> 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 <sup>a</sup>									Electricity Retail Sales <sup>e</sup>	Electrical System Energy Losses <sup>f</sup>	Total
	Fossil Fuels				Renewable Energy <sup>b</sup>				Total Primary			
	Coal	Natural Gas <sup>c</sup>	Petro- leum	Total	Geo- thermal	Solar/ PV <sup>d</sup>	Bio- mass	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	4,491	1,394	5,916	6	56	580	641	6,557	3,153	7,235	16,945
1995 Total .....	17	4,954	1,373	6,345	7	64	520	591	6,936	3,557	8,026	18,518
2000 Total .....	11	5,105	1,553	6,669	9	61	420	489	7,158	4,069	9,197	20,424
2001 Total .....	12	4,889	1,528	6,429	9	59	370	438	6,867	4,100	9,074	20,041
2002 Total .....	12	4,995	1,456	6,463	10	57	380	448	6,911	4,317	9,562	20,790
2003 Total .....	12	5,209	1,546	6,768	13	57	400	470	7,237	4,353	9,534	21,124
2004 Total .....	11	4,981	1,519	6,511	14	57	410	481	6,992	4,408	9,687	21,087
2005 Total .....	8	4,946	1,450	6,405	16	58	430	504	6,908	4,638	10,074	21,620
2006 Total .....	6	4,476	1,221	5,704	18	63	380	462	6,165	4,611	9,905	20,681
2007 Total .....	8	4,835	1,249	6,092	22	70	420	512	6,603	4,750	10,180	21,534
2008 Total .....	NA	5,010	1,324	6,334	26	80	470	577	6,911	4,711	10,068	21,689
2009 Total .....	NA	4,883	1,157	6,040	33	89	500	622	6,662	4,657	9,788	21,107
2010 Total .....	NA	4,878	1,121	5,999	37	114	440	591	6,590	4,933	10,321	21,844
2011 Total .....	NA	4,805	1,027	5,832	40	153	450	643	6,475	4,855	10,054	21,383
2012 Total .....	NA	4,242	892	5,134	40	186	420	646	5,779	4,690	9,496	19,965
2013 Total .....	NA	5,023	970	5,993	40	219	580	839	6,832	4,759	9,604	21,195
2014 January .....	NA	1,069	110	1,178	3	21	49	74	1,252	500	<sup>R</sup> 1,036	2,789
February .....	NA	879	105	983	3	19	44	67	1,050	438	<sup>R</sup> 844	2,333
March .....	NA	721	98	819	3	21	49	74	893	390	793	2,076
April .....	NA	367	64	430	3	21	48	72	502	315	<sup>R</sup> 617	1,433
May .....	NA	209	71	280	3	21	49	74	354	327	<sup>R</sup> 678	1,359
June .....	NA	129	67	196	3	21	48	72	267	403	836	1,506
July .....	NA	116	64	180	3	21	49	74	254	468	<sup>R</sup> 954	1,676
August .....	NA	108	68	176	3	21	49	74	250	463	<sup>R</sup> 936	1,649
September .....	NA	125	80	205	3	21	48	72	277	412	<sup>R</sup> 769	1,458
October .....	NA	218	85	303	3	21	49	74	378	335	641	1,353
November .....	NA	560	95	654	3	21	48	72	726	339	<sup>R</sup> 706	1,772
December .....	NA	738	104	842	3	21	49	74	916	412	830	2,158
Total .....	NA	5,237	1,009	6,246	40	252	580	871	7,117	4,801	<sup>R</sup> 9,638	21,557
2015 January .....	NA	964	116	1,080	3	25	37	65	1,146	469	<sup>R</sup> 953	2,568
February .....	NA	931	103	1,034	3	23	33	59	1,093	422	<sup>R</sup> 845	2,361
March .....	NA	656	89	745	3	25	37	65	810	399	<sup>R</sup> 766	1,975
April .....	NA	334	65	399	3	25	35	63	462	307	<sup>R</sup> 597	1,366
May .....	NA	185	66	251	3	25	37	65	317	324	<sup>R</sup> 680	1,321
June .....	NA	127	52	180	3	25	35	63	243	409	<sup>R</sup> 852	1,504
July .....	NA	111	58	169	3	25	37	65	235	496	<sup>R</sup> 1,025	1,756
August .....	NA	105	60	166	3	25	37	65	231	492	<sup>R</sup> 986	1,708
September .....	NA	111	56	167	3	25	35	63	230	426	<sup>R</sup> 812	1,468
October .....	NA	207	97	303	3	25	37	65	369	338	<sup>R</sup> 644	1,351
November .....	NA	411	104	515	3	25	35	63	578	315	<sup>R</sup> 636	1,530
December .....	NA	606	116	722	3	25	37	65	787	379	<sup>R</sup> 756	1,922
Total .....	NA	4,749	983	5,731	41	298	432	770	6,502	4,776	<sup>R</sup> 9,547	20,825
2016 January .....	NA	<sup>R</sup> 918	127	1,044	4	30	33	66	1,110	446	<sup>R</sup> 904	2,461
February .....	NA	728	120	848	3	28	31	62	910	395	750	2,055
2-Month Total .....	NA	1,646	246	1,892	7	57	63	128	2,020	842	1,654	4,516
2015 2-Month Total .....	NA	1,895	220	2,115	7	48	70	125	2,239	892	1,798	4,929
2014 2-Month Total .....	NA	1,947	214	2,162	6	41	94	141	2,302	938	1,881	5,122

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

<sup>b</sup> See Table 10.2a for notes on series components.

<sup>c</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

<sup>d</sup> Includes distributed solar thermal and PV energy used in the commercial, industrial, and electric power sectors.

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

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

electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of section.

R=Revised. NA=Not available.

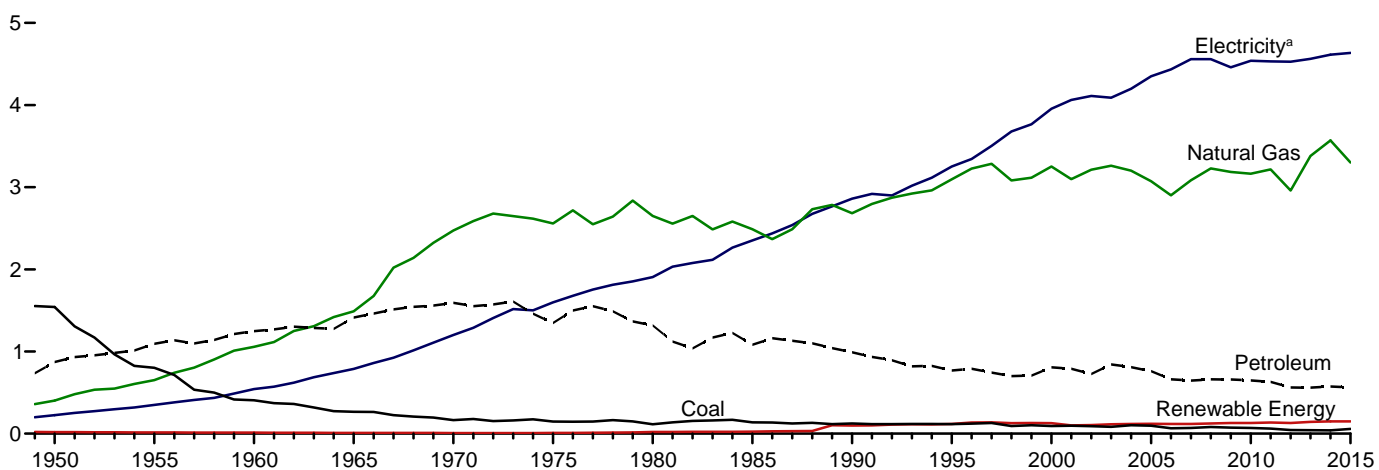
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

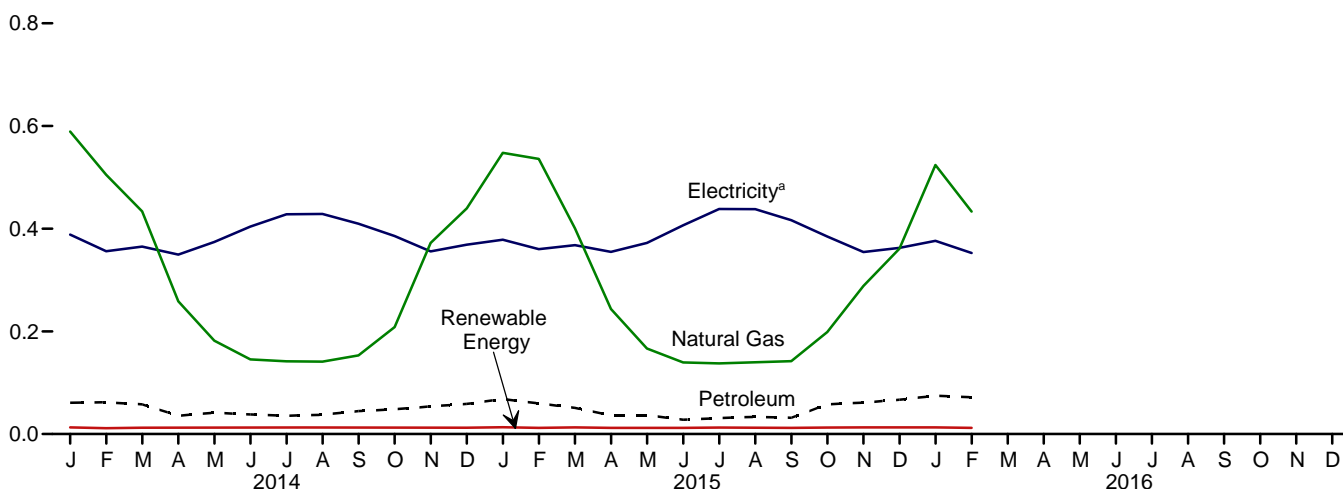
Sources: See end of section.

**Figure 2.3 Commercial Sector Energy Consumption**  
(Quadrillion Btu)

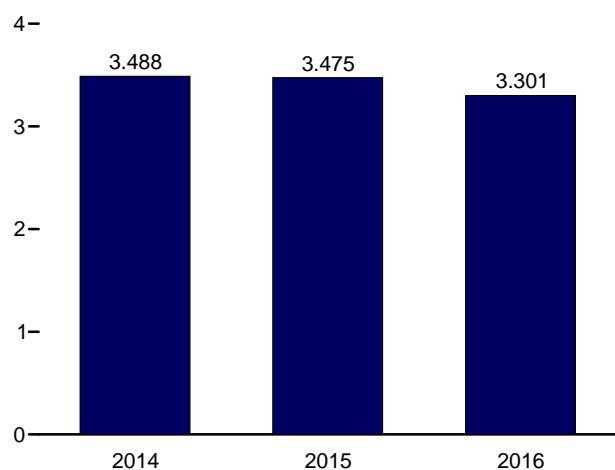
By Major Source, 1949–2015



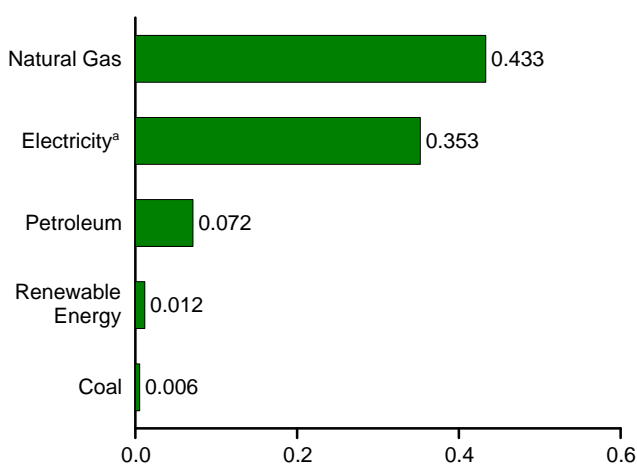
By Major Source, Monthly



Total, January–February



By Major Source, February 2016



<sup>a</sup> 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 <sup>a</sup>										Elec- tricity Retail Sales <sup>f</sup>	Electrical System Energy Losses <sup>g</sup>	Total	
	Fossil Fuels				Renewable Energy <sup>b</sup>									
	Coal	Natural Gas <sup>c</sup>	Petro- leum <sup>d</sup>	Total	Hydro- electric Power <sup>e</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total				Total Primary
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	2,682	991	3,798	1	3	—	—	94	98	3,896	2,860	6,564	13,320
1995 Total .....	117	3,096	769	3,982	1	5	—	—	113	118	4,100	3,252	7,337	14,690
2000 Total .....	92	3,252	806	4,150	1	8	—	—	119	128	4,278	3,956	8,942	17,175
2001 Total .....	97	3,097	789	3,983	1	8	—	—	92	101	4,084	4,062	8,990	17,136
2002 Total .....	90	3,212	725	4,027	(s)	9	—	—	95	104	4,131	4,110	9,104	17,345
2003 Total .....	82	3,261	841	4,184	1	11	—	—	101	113	4,297	4,090	8,958	17,345
2004 Total .....	103	3,201	809	4,113	1	12	—	—	105	118	4,231	4,198	9,225	17,654
2005 Total .....	97	3,073	761	3,931	1	14	—	—	105	120	4,050	4,351	9,451	17,852
2006 Total .....	65	2,902	661	3,627	1	14	—	—	103	118	3,745	4,435	9,525	17,705
2007 Total .....	70	3,085	646	3,801	1	14	—	—	103	118	3,919	4,560	9,771	18,249
2008 Total .....	81	3,228	660	3,970	1	15	(s)	—	109	125	4,094	4,559	9,743	18,396
2009 Total .....	73	3,187	659	3,919	1	17	(s)	(s)	112	129	4,048	4,459	9,373	17,880
2010 Total .....	70	3,165	647	3,881	1	19	(s)	(s)	111	130	4,011	4,539	9,497	18,047
2011 Total .....	62	3,216	630	3,908	(s)	20	1	(s)	115	136	4,044	4,531	9,385	17,960
2012 Total .....	44	2,960	562	3,565	(s)	20	1	1	108	130	3,695	4,528	9,168	17,392
2013 Total .....	41	3,380	560	3,982	(s)	20	3	1	120	143	4,125	4,562	9,206	17,894
2014 January .....	5	589	61	656	(s)	2	(s)	(s)	11	13	669	389	806	1,863
February .....	5	505	62	572	(s)	2	(s)	(s)	9	11	583	356	686	R 1,625
March .....	5	434	58	496	(s)	2	(s)	(s)	10	12	509	365	R 742	1,616
April .....	3	258	36	297	(s)	2	(s)	(s)	10	12	309	350	685	1,343
May .....	2	182	42	226	(s)	2	(s)	(s)	11	13	239	374	777	R 1,390
June .....	3	146	38	186	(s)	2	(s)	(s)	10	13	199	404	R 838	R 1,441
July .....	3	142	36	180	(s)	2	(s)	(s)	11	13	193	428	R 873	R 1,494
August .....	2	141	37	181	(s)	2	(s)	(s)	11	13	194	429	866	1,488
September .....	2	153	45	200	(s)	2	(s)	(s)	10	12	212	410	765	1,387
October .....	R 2	208	48	259	(s)	2	(s)	(s)	10	12	271	386	739	R 1,395
November .....	R 3	372	54	430	(s)	2	(s)	(s)	10	12	442	356	740	R 1,537
December .....	4	440	59	502	(s)	2	(s)	(s)	10	12	514	369	R 742	R 1,625
Total .....	R 40	3,569	575	R 4,183	(s)	20	4	1	124	149	4,333	4,614	R 9,261	R 18,207
2015 January .....	6	548	68	R 621	(s)	2	(s)	(s)	11	13	635	379	R 769	R 1,782
February .....	6	536	60	601	(s)	2	(s)	(s)	10	12	613	360	R 721	R 1,693
March .....	R 5	400	51	457	(s)	2	(s)	(s)	11	13	470	368	R 706	R 1,544
April .....	4	244	36	284	(s)	2	1	(s)	10	12	296	355	R 690	R 1,340
May .....	4	166	37	207	(s)	2	1	(s)	10	12	219	372	R 782	R 1,374
June .....	4	139	28	171	(s)	2	1	(s)	10	12	183	406	R 846	R 1,435
July .....	4	138	31	173	(s)	2	1	(s)	10	13	185	438	R 905	R 1,529
August .....	R 4	140	34	178	(s)	2	1	(s)	10	12	190	438	R 878	R 1,506
September .....	4	142	32	178	(s)	2	(s)	(s)	10	12	190	417	R 793	R 1,399
October .....	5	199	58	261	(s)	2	(s)	(s)	10	12	274	385	R 733	R 1,391
November .....	R 5	288	61	355	(s)	2	(s)	(s)	11	13	368	355	R 716	R 1,438
December .....	R 5	361	67	433	(s)	2	(s)	(s)	11	13	446	363	R 724	R 1,532
Total .....	R 56	3,301	562	R 3,919	(s)	20	5	1	122	149	R 4,067	4,635	R 9,264	R 17,967
2016 January .....	6	R 524	75	R 605	(s)	2	(s)	(s)	11	13	R 618	376	R 763	R 1,757
February .....	6	433	72	511	(s)	2	(s)	(s)	10	12	523	353	669	1,544
2-Month Total .....	12	958	146	1,116	(s)	3	1	(s)	21	25	1,140	729	1,431	3,301
2015 2-Month Total .....	11	1,084	128	1,223	(s)	3	1	(s)	21	25	1,248	739	1,489	3,475
2014 2-Month Total .....	11	1,094	123	1,228	(s)	3	(s)	(s)	21	24	1,252	745	1,491	3,488

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

<sup>b</sup> See Table 10.2a for notes on series components and estimation.

<sup>c</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

<sup>d</sup> Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

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

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

<sup>g</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of section.

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

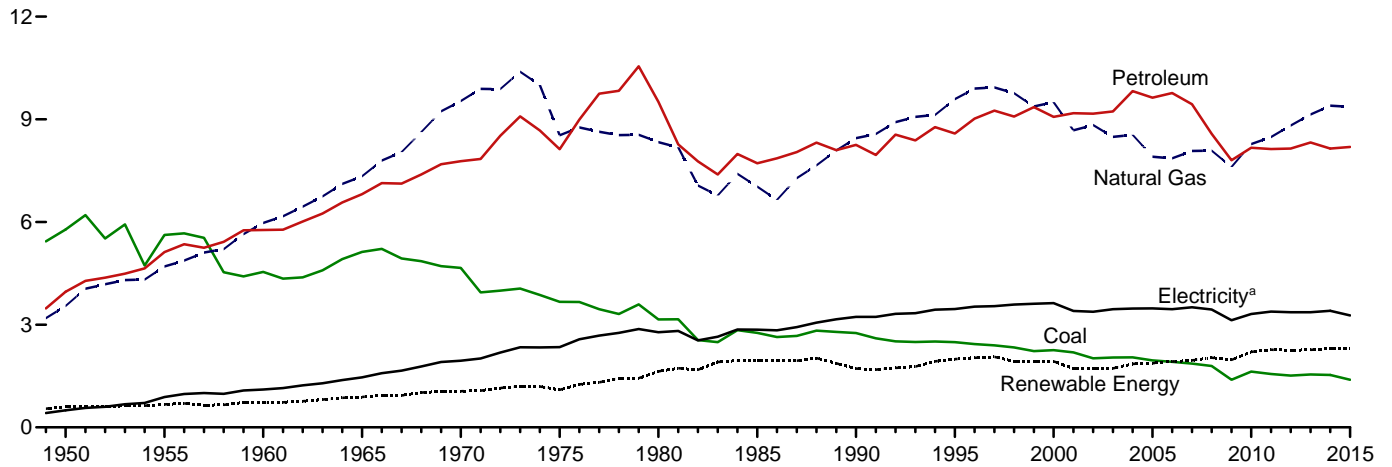
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar/PV; wind; and electricity retail sales beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of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

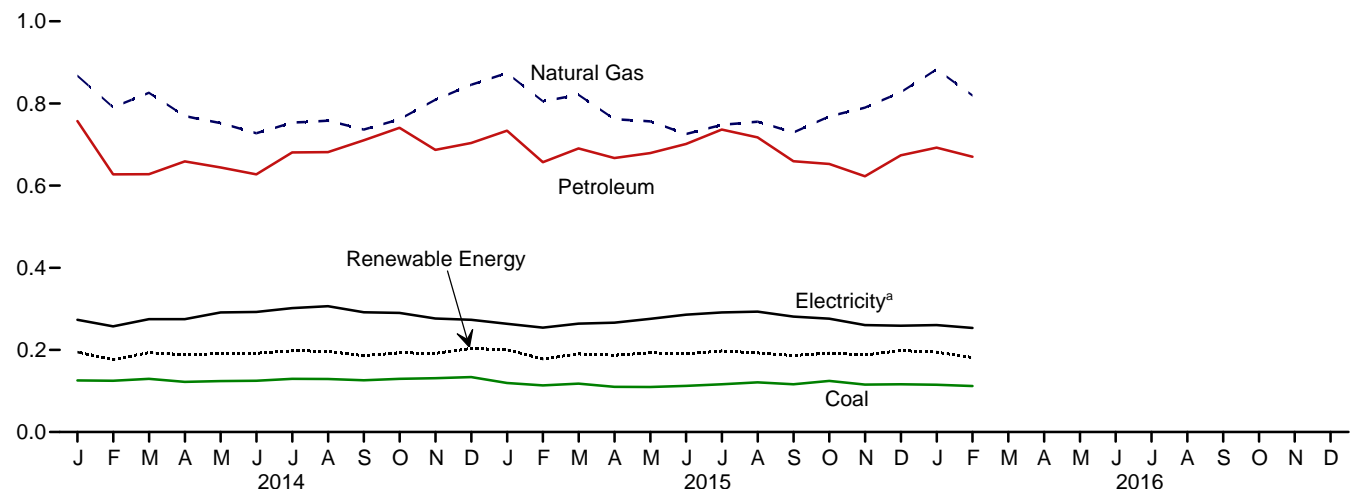
Sources: See end of section.

**Figure 2.4 Industrial Sector Energy Consumption**  
(Quadrillion Btu)

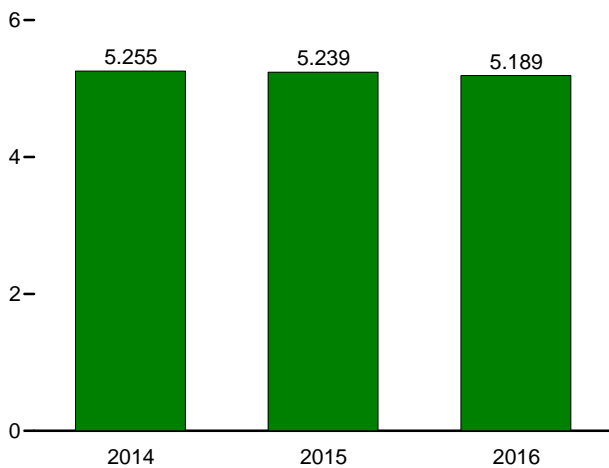
By Major Source, 1949–2015



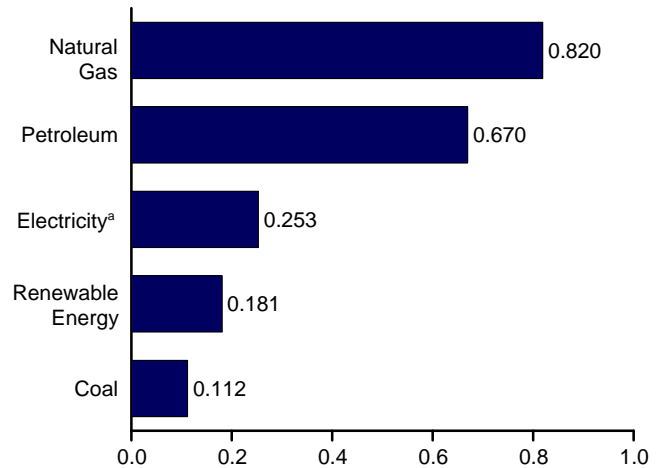
By Major Source, Monthly



Total, January–February



By Major Source, February 2016



<sup>a</sup> 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 <sup>a</sup>											Elec- tricity Retail Sales <sup>g</sup>	Electrical System Energy Losses <sup>h</sup>	Total <sup>e</sup>
	Fossil Fuels				Renewable Energy <sup>b</sup>									
	Coal	Natural Gas <sup>c</sup>	Petro- leum <sup>d</sup>	Total <sup>e</sup>	Hydro- electric Power <sup>f</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total	Total Primary			
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	8,451	8,251	19,463	31	2	—	—	1,684	1,717	21,180	3,226	7,404	31,810
1995 Total .....	2,488	9,592	8,585	20,726	55	3	—	—	1,934	1,992	22,718	3,455	7,796	33,970
2000 Total .....	2,256	9,500	9,073	20,895	42	4	—	—	1,881	1,928	22,823	3,631	8,208	34,662
2001 Total .....	2,192	8,676	9,177	20,074	33	5	—	—	1,681	1,719	21,793	3,400	7,526	32,719
2002 Total .....	2,019	8,832	9,167	20,078	39	5	—	—	1,676	1,720	21,798	3,379	7,484	32,661
2003 Total .....	2,041	8,488	9,229	19,809	43	3	—	—	1,678	1,724	21,533	3,454	7,565	32,553
2004 Total .....	2,047	8,550	9,825	20,560	43	4	—	—	1,815	1,851	22,411	3,473	7,631	33,515
2005 Total .....	1,954	7,907	9,634	19,540	32	4	—	—	1,834	1,870	21,410	3,477	7,554	32,441
2006 Total .....	1,914	7,861	9,767	19,603	29	4	—	—	1,892	1,925	21,528	3,451	7,411	32,390
2007 Total .....	1,865	8,074	9,442	19,405	16	5	—	—	1,937	1,957	21,362	3,507	7,515	32,385
2008 Total .....	1,793	8,083	8,576	18,493	17	5	—	—	2,012	2,034	20,527	3,444	7,362	31,333
2009 Total .....	1,392	7,609	7,806	16,784	18	4	—	—	1,948	1,971	18,754	3,130	6,580	28,464
2010 Total .....	1,631	8,278	8,167	18,070	16	4	(s)	—	2,185	2,205	20,275	3,314	6,934	30,523
2011 Total .....	1,561	8,481	8,131	18,184	17	4	(s)	(s)	2,246	2,268	20,452	3,382	7,005	30,839
2012 Total .....	1,513	8,819	8,147	18,482	22	4	(s)	(s)	2,226	2,253	20,735	3,363	6,810	30,908
2013 Total .....	1,546	9,140	8,321	18,991	33	4	(s)	(s)	2,226	2,264	21,254	3,362	6,785	31,401
2014 January .....	126	867	757	1,749	1	(s)	(s)	(s)	193	195	1,944	273	567	R 2,784
February .....	125	791	627	R 1,541	1	(s)	(s)	(s)	175	176	1,718	257	496	2,471
March .....	R 129	826	628	1,583	1	(s)	(s)	(s)	192	193	1,776	275	559	R 2,609
April .....	122	769	659	1,549	1	(s)	(s)	(s)	187	188	R 1,737	275	538	R 2,550
May .....	124	752	644	R 1,518	1	(s)	(s)	(s)	190	191	1,710	291	605	2,606
June .....	R 125	727	627	1,479	1	(s)	(s)	(s)	190	192	1,671	292	607	2,570
July .....	R 129	753	681	R 1,561	1	(s)	(s)	(s)	196	198	1,759	302	616	2,677
August .....	129	758	682	1,566	1	(s)	(s)	(s)	195	197	1,762	306	619	2,688
September .....	126	736	711	R 1,570	1	(s)	(s)	(s)	185	186	1,756	292	545	2,593
October .....	130	761	741	1,630	1	(s)	(s)	(s)	192	193	1,823	290	R 555	R 2,668
November .....	131	809	687	1,625	1	(s)	(s)	(s)	190	191	1,816	277	R 575	2,668
December .....	134	846	704	1,680	1	(s)	(s)	(s)	202	204	1,884	273	R 550	R 2,707
Total .....	R 1,530	9,397	8,147	R 19,052	12	4	(s)	1	2,287	2,304	R 21,356	3,404	R 6,832	R 31,592
2015 January .....	R 120	874	734	R 1,725	1	(s)	(s)	(s)	199	200	R 1,925	264	R 535	R 2,724
February .....	R 113	805	657	R 1,575	1	(s)	(s)	(s)	176	178	R 1,752	254	R 509	R 2,515
March .....	R 118	821	691	R 1,629	1	(s)	(s)	(s)	188	190	R 1,819	264	R 507	R 2,590
April .....	R 110	R 762	667	R 1,537	1	(s)	(s)	(s)	185	187	R 1,724	266	R 518	R 2,508
May .....	R 110	756	679	R 1,543	1	(s)	(s)	(s)	192	193	R 1,736	275	R 579	R 2,590
June .....	R 113	725	701	R 1,536	1	(s)	(s)	(s)	189	190	R 1,727	286	R 595	R 2,608
July .....	R 116	748	736	R 1,599	1	(s)	(s)	(s)	196	197	R 1,797	291	R 602	R 2,690
August .....	R 121	755	717	R 1,592	1	(s)	(s)	(s)	191	193	R 1,785	293	R 587	R 2,666
September .....	R 116	730	659	R 1,505	1	(s)	(s)	(s)	185	186	R 1,691	281	R 535	R 2,507
October .....	R 124	768	653	R 1,544	1	(s)	(s)	(s)	191	192	R 1,736	276	R 526	R 2,538
November .....	R 115	790	623	R 1,525	1	(s)	(s)	(s)	187	188	R 1,713	261	R 526	R 2,500
December .....	R 116	827	674	R 1,617	1	(s)	(s)	(s)	196	198	R 1,815	259	R 517	R 2,591
Total .....	R 1,393	9,362	R 8,191	R 18,928	13	4	(s)	1	2,275	2,293	R 21,221	3,271	R 6,537	R 31,029
2016 January .....	R 115	883	692	R 1,689	1	(s)	(s)	(s)	193	195	R 1,884	260	R 527	R 2,672
February .....	112	820	670	1,602	1	(s)	(s)	(s)	180	181	1,783	253	481	2,517
2-Month Total .....	227	1,702	1,363	3,291	2	1	(s)	(s)	373	376	3,667	514	1,008	5,189
2015 2-Month Total .....	233	1,679	1,391	3,300	2	1	(s)	(s)	375	378	3,678	518	1,044	5,239
2014 2-Month Total .....	250	1,658	1,384	3,290	2	1	(s)	(s)	368	371	3,661	531	1,063	5,255

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

<sup>b</sup> See Table 10.2b for notes on series components and estimation.

<sup>c</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

<sup>d</sup> Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

<sup>e</sup> Includes coal coke net imports, which are not separately displayed. See Tables 1.4a and 1.4b.

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

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

<sup>h</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of

section.

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

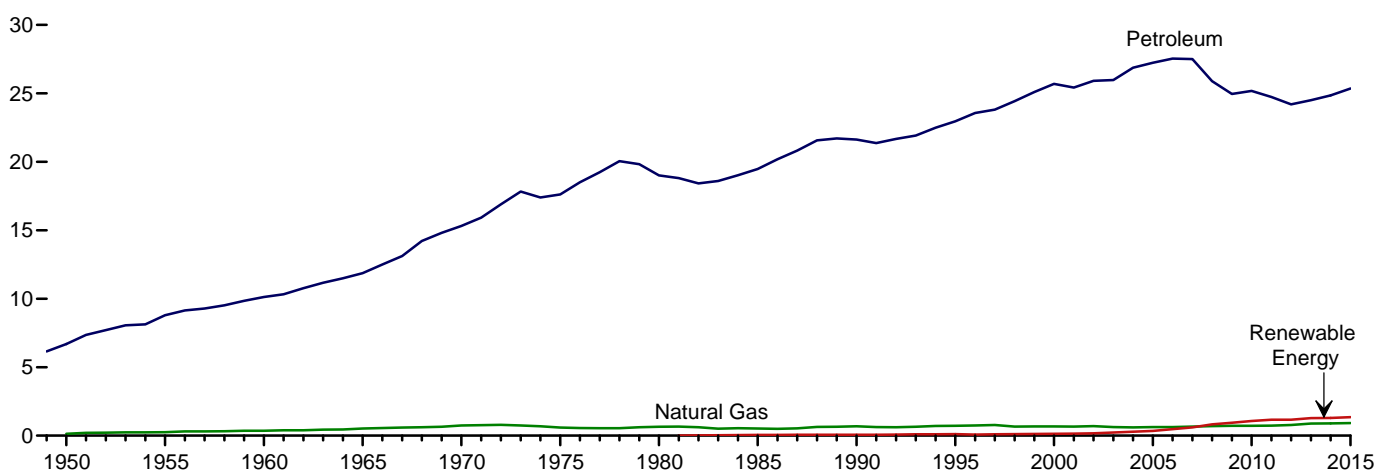
Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar/PV; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power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

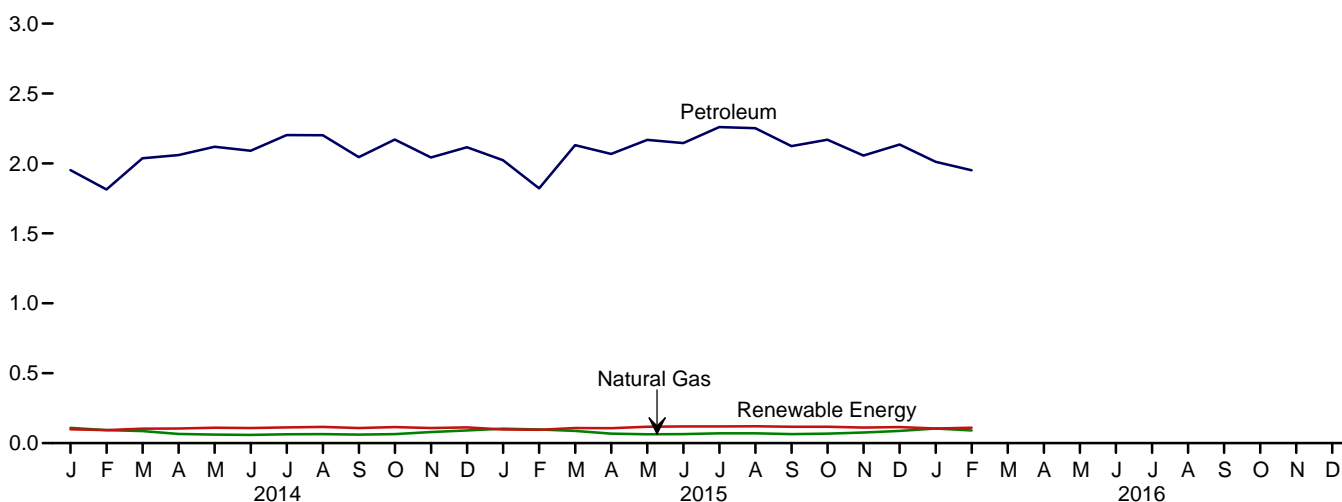
Sources: See end of section.

**Figure 2.5 Transportation Sector Energy Consumption**  
(Quadrillion Btu)

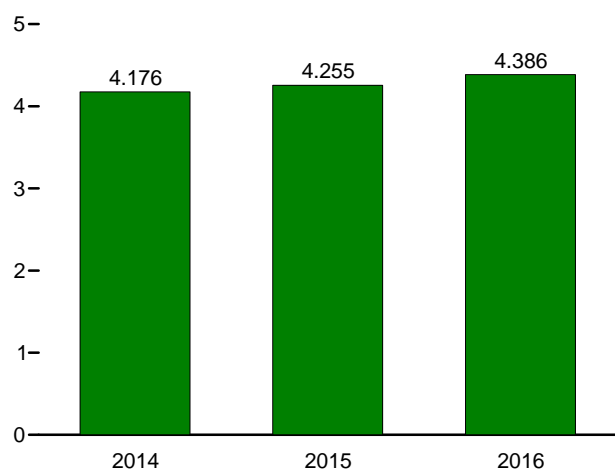
By Major Source, 1949–2015



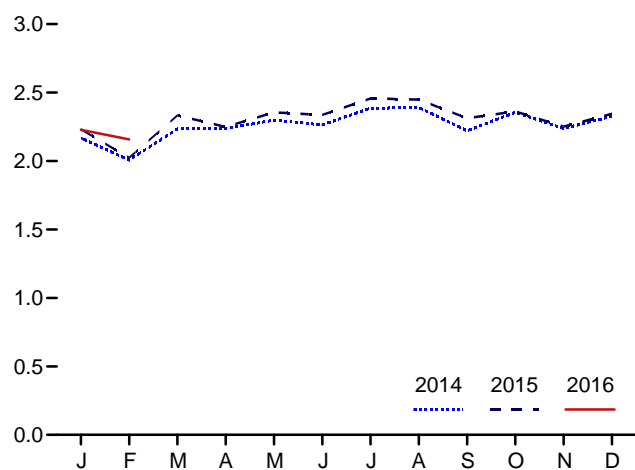
By Major Source, Monthly



Total, January–February



Total, Monthly



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 <sup>a</sup>						Electricity Retail Sales <sup>e</sup>	Electrical System Energy Losses <sup>f</sup>	Total
	Fossil Fuels				Renewable Energy <sup>b</sup>	Total Primary			
	Coal	Natural Gas <sup>c</sup>	Petroleum <sup>d</sup>	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)	680	21,626	22,306	60	22,366	16	37	22,420
1995 Total .....	(g)	724	22,959	23,683	112	23,796	17	38	23,851
2000 Total .....	(g)	672	25,689	26,361	135	26,495	18	42	26,555
2001 Total .....	(g)	658	25,419	26,077	142	26,219	20	43	26,282
2002 Total .....	(g)	699	25,917	26,616	170	26,785	19	42	26,846
2003 Total .....	(g)	627	25,969	26,596	230	26,826	23	51	26,900
2004 Total .....	(g)	602	26,872	27,474	290	27,764	25	54	27,843
2005 Total .....	(g)	624	27,236	27,860	339	28,199	26	56	28,280
2006 Total .....	(g)	625	27,538	28,163	475	28,638	25	54	28,717
2007 Total .....	(g)	663	27,506	28,170	602	28,772	28	60	28,859
2008 Total .....	(g)	692	25,888	26,580	825	27,404	26	56	27,486
2009 Total .....	(g)	715	24,955	25,670	935	26,605	27	56	26,687
2010 Total .....	(g)	719	25,184	25,903	1,075	26,978	26	55	27,059
2011 Total .....	(g)	734	24,740	25,474	1,158	26,632	26	54	26,712
2012 Total .....	(g)	780	24,202	24,982	1,162	26,144	25	51	26,219
2013 Total .....	(g)	887	24,506	25,394	1,278	26,671	26	53	26,750
2014 January .....	(g)	109	1,953	2,062	99	2,161	2	5	2,168
February .....	(g)	93	1,814	1,908	93	2,000	2	5	2,007
March .....	(g)	87	2,037	2,123	103	2,227	2	R 4	2,233
April .....	(g)	66	2,060	2,126	104	2,231	2	4	2,237
May .....	(g)	61	2,120	2,181	110	2,292	2	5	2,298
June .....	(g)	59	2,091	2,150	108	2,258	2	4	2,264
July .....	(g)	63	2,204	2,267	113	2,380	2	4	2,386
August .....	(g)	65	2,202	2,267	117	2,383	2	4	2,390
September .....	(g)	61	2,046	2,106	109	2,215	2	4	2,221
October .....	(g)	64	2,171	2,235	115	2,349	2	4	2,356
November .....	(g)	80	2,043	2,123	108	2,231	2	5	2,237
December .....	(g)	91	2,116	2,207	113	2,320	2	4	2,326
Total .....	(g)	899	24,856	25,755	1,291	27,046	26	53	27,126
2015 January .....	(g)	104	R 2,023	R 2,127	97	R 2,225	2	5	R 2,232
February .....	(g)	98	R 1,822	R 1,920	96	R 2,016	2	5	R 2,023
March .....	(g)	87	R 2,131	2,219	108	R 2,326	2	4	R 2,333
April .....	(g)	69	R 2,068	R 2,136	106	R 2,243	2	4	R 2,249
May .....	(g)	64	R 2,168	R 2,232	118	R 2,349	2	4	R 2,356
June .....	(g)	65	R 2,146	R 2,211	119	R 2,330	2	4	2,337
July .....	(g)	71	R 2,260	R 2,330	120	R 2,450	2	5	R 2,457
August .....	(g)	70	R 2,252	R 2,322	121	R 2,443	2	4	R 2,449
September .....	(g)	65	R 2,124	R 2,189	117	R 2,306	2	4	2,313
October .....	(g)	68	R 2,170	R 2,238	118	R 2,356	2	4	R 2,362
November .....	(g)	76	R 2,057	R 2,133	112	R 2,245	2	4	R 2,251
December .....	(g)	87	R 2,136	R 2,223	115	R 2,338	2	4	R 2,345
Total .....	(g)	923	R 25,358	R 26,281	1,347	R 27,628	26	52	R 27,707
2016 January .....	(g)	105	R 2,012	R 2,116	104	R 2,221	2	5	2,228
February .....	(g)	90	1,952	2,042	110	2,152	2	4	2,159
2-Month Total .....	(g)	195	3,963	4,158	214	4,373	4	9	4,386
2015 2-Month Total .....	(g)	202	3,846	4,048	193	4,241	5	9	4,255
2014 2-Month Total .....	(g)	202	3,768	3,970	191	4,161	5	10	4,176

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

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

<sup>c</sup> 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.

<sup>d</sup> Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

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

<sup>f</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of

section.

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

R=Revised. NA=Not available.

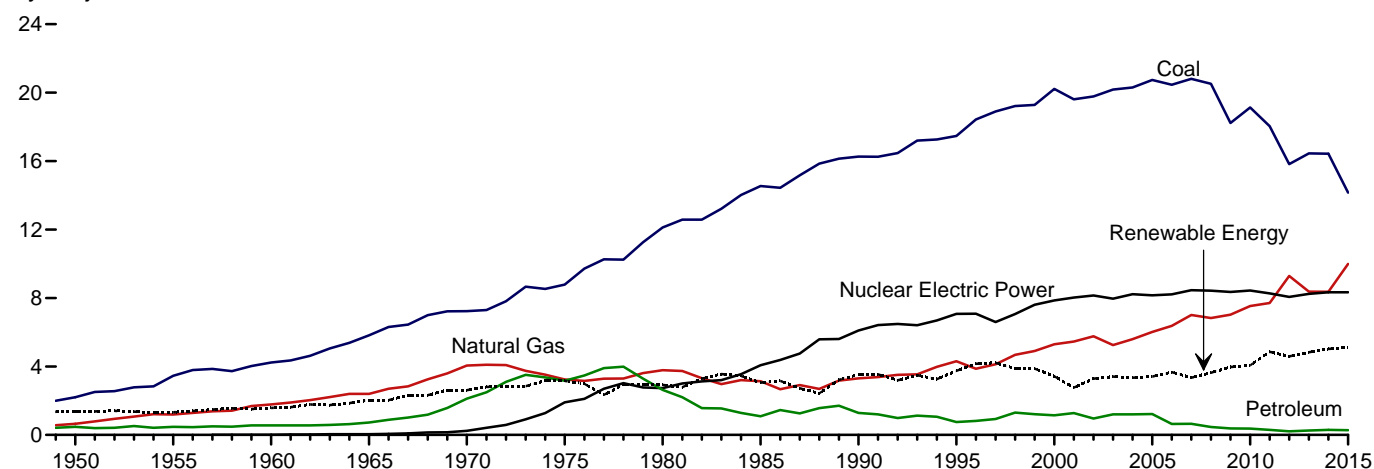
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the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

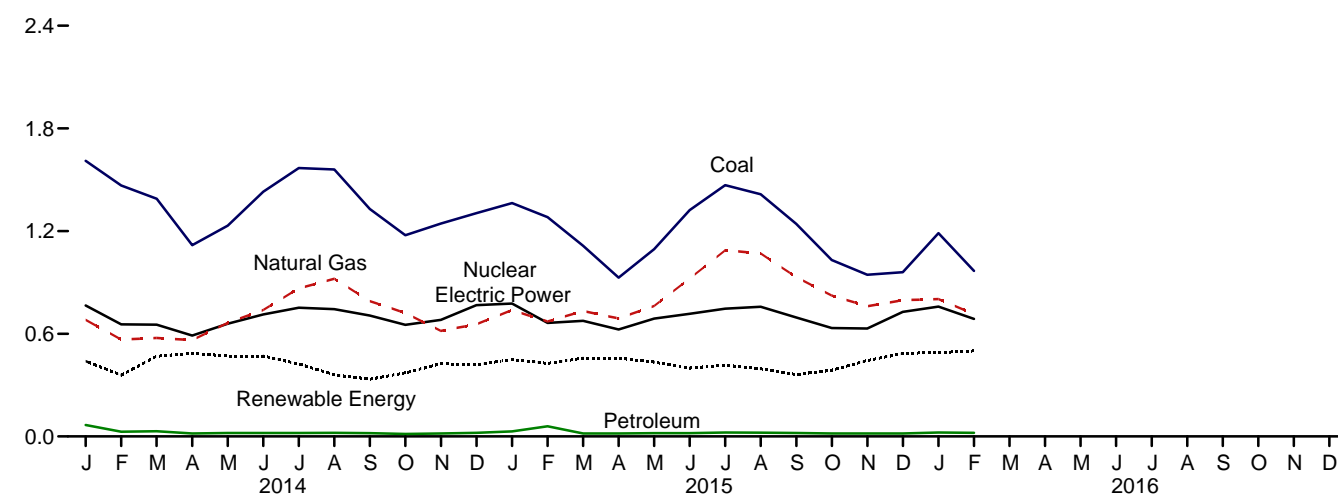
Sources: See end of section.

**Figure 2.6 Electric Power Sector Energy Consumption**  
(Quadrillion Btu)

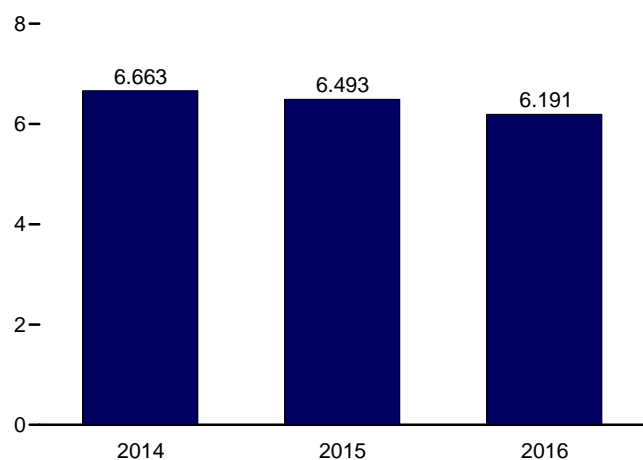
By Major Source, 1949–2015



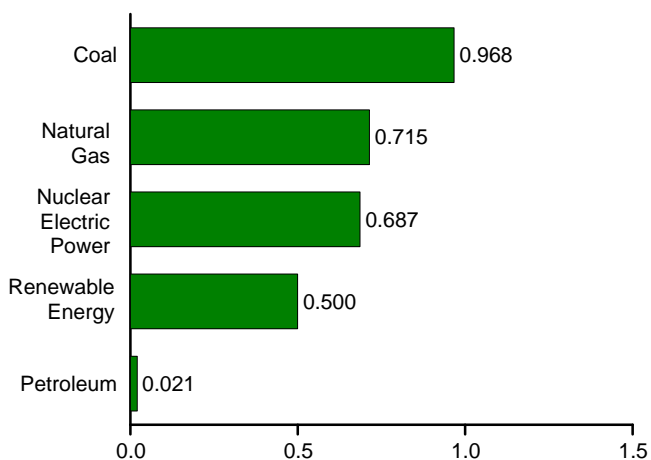
By Major Source, Monthly



Total, January–February



By Major Source, February 2016



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 <sup>a</sup>												
	Fossil Fuels				Nuclear Electric Power	Renewable Energy <sup>b</sup>						Elec- tricity Net Imports <sup>e</sup>	Total Primary
	Coal	Natural Gas <sup>c</sup>	Petro- leum	Total		Hydro- electric Power <sup>d</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total		
1950 Total .....	2,199	651	472	3,322	0	1,346	NA	NA	NA	5	1,351	6	4,679
1955 Total .....	3,458	1,194	471	5,123	0	1,322	NA	NA	NA	3	1,325	14	6,461
1960 Total .....	4,228	1,785	553	6,565	6	1,569	(s)	NA	NA	2	1,571	15	8,158
1965 Total .....	5,821	2,395	722	8,938	43	2,026	2	NA	NA	3	2,031	(s)	11,012
1970 Total .....	7,227	4,054	2,117	13,399	239	2,600	6	NA	NA	4	2,609	7	16,253
1975 Total .....	8,786	3,240	3,166	15,191	1,900	3,122	34	NA	NA	2	3,158	21	20,270
1980 Total .....	12,123	3,778	2,634	18,534	2,739	2,867	53	NA	NA	4	2,925	71	24,269
1985 Total .....	14,542	3,135	1,090	18,767	4,076	2,937	97	(s)	(s)	14	3,049	140	26,032
1990 Total .....	16,261	3,309	1,289	20,859	6,104	3,014	161	4	29	317	3,524	8	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 January .....	<sup>R</sup> 1,611	681	67	<sup>R</sup> 2,359	765	205	13	7	170	45	440	14	<sup>R</sup> 3,578
February .....	<sup>R</sup> 1,467	566	27	<sup>R</sup> 2,060	655	164	11	8	133	42	359	11	<sup>R</sup> 3,085
March .....	<sup>R</sup> 1,389	576	31	<sup>R</sup> 1,996	653	230	13	12	169	46	469	12	<sup>R</sup> 3,130
April .....	<sup>R</sup> 1,118	563	17	<sup>R</sup> 1,698	590	241	12	14	177	41	485	12	<sup>R</sup> 2,785
May .....	<sup>R</sup> 1,232	664	20	<sup>R</sup> 1,916	658	251	13	16	148	41	469	16	<sup>R</sup> 3,059
June .....	<sup>R</sup> 1,430	739	20	<sup>R</sup> 2,189	713	244	12	18	150	45	470	15	<sup>R</sup> 3,387
July .....	<sup>R</sup> 1,568	865	20	<sup>R</sup> 2,453	752	231	13	17	116	48	423	18	<sup>R</sup> 3,647
August .....	<sup>R</sup> 1,560	921	21	<sup>R</sup> 2,502	744	187	13	17	97	46	361	20	<sup>R</sup> 3,626
September .....	<sup>R</sup> 1,329	791	19	<sup>R</sup> 2,140	706	152	12	17	109	43	334	18	<sup>R</sup> 3,198
October .....	<sup>R</sup> 1,176	722	15	<sup>R</sup> 1,912	653	162	13	16	138	42	371	15	<sup>R</sup> 2,951
November .....	<sup>R</sup> 1,244	616	17	<sup>R</sup> 1,878	681	176	13	13	179	44	425	16	<sup>R</sup> 3,000
December .....	<sup>R</sup> 1,305	656	21	<sup>R</sup> 1,982	767	211	13	10	140	45	419	15	<sup>R</sup> 3,183
Total .....	<sup>R</sup> 16,427	8,362	295	<sup>R</sup> 25,085	8,338	2,454	151	165	1,726	530	5,026	182	<sup>R</sup> 38,629
2015 January .....	<sup>R</sup> 1,363	738	30	<sup>R</sup> 2,131	777	233	14	11	145	46	450	18	<sup>R</sup> 3,375
February .....	<sup>R</sup> 1,282	672	59	<sup>R</sup> 2,013	664	215	13	15	142	42	427	14	<sup>R</sup> 3,118
March .....	<sup>R</sup> 1,114	733	18	<sup>R</sup> 1,865	675	235	14	21	146	42	458	19	<sup>R</sup> 3,017
April .....	<sup>R</sup> 928	690	17	<sup>R</sup> 1,635	625	213	13	24	170	38	458	20	<sup>R</sup> 2,738
May .....	<sup>R</sup> 1,094	762	19	<sup>R</sup> 1,876	689	191	14	24	164	41	434	20	<sup>R</sup> 3,019
June .....	<sup>R</sup> 1,322	922	19	<sup>R</sup> 2,263	717	190	13	25	128	43	400	21	<sup>R</sup> 3,400
July .....	<sup>R</sup> 1,469	1,088	23	<sup>R</sup> 2,580	747	200	14	26	130	48	417	21	<sup>R</sup> 3,765
August .....	<sup>R</sup> 1,415	1,069	22	<sup>R</sup> 2,505	757	184	14	26	124	47	395	22	<sup>R</sup> 3,680
September .....	<sup>R</sup> 1,242	930	20	<sup>R</sup> 2,193	695	154	12	22	132	41	362	20	<sup>R</sup> 3,269
October .....	<sup>R</sup> 1,031	823	18	<sup>R</sup> 1,872	634	158	13	19	156	41	387	16	<sup>R</sup> 2,907
November .....	<sup>R</sup> 945	761	18	<sup>R</sup> 1,724	630	183	13	18	187	43	444	18	<sup>R</sup> 2,815
December .....	<sup>R</sup> 960	796	17	<sup>R</sup> 1,773	728	219	13	15	191	46	485	17	<sup>R</sup> 3,004
Total .....	<sup>R</sup> 14,164	9,986	279	<sup>R</sup> 24,429	8,338	2,376	159	246	1,814	520	5,116	227	<sup>R</sup> 38,109
2016 January .....	<sup>R</sup> 1,188	802	23	<sup>R</sup> 2,013	759	242	14	14	176	45	491	21	<sup>R</sup> 3,284
February .....	968	715	21	1,703	687	229	13	23	192	43	500	17	2,907
2-Month Total .....	2,156	1,517	44	3,717	1,445	471	26	37	368	88	991	39	6,191
2015 2-Month Total .....	2,645	1,410	89	4,144	1,441	448	27	27	287	88	877	32	6,493
2014 2-Month Total .....	3,077	1,247	94	4,419	1,420	369	24	15	303	87	799	25	6,663

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

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

<sup>c</sup> Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

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

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

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

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

Notes: • Data are for fuels consumed to produce electricity and useful thermal

output. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • See Note 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 <sup>a</sup>	Agri- culture	Defense	Energy	GSA <sup>b</sup>	HHS <sup>c</sup>	Interior	Justice	NASA <sup>d</sup>	Postal Service	Trans- portation	Veterans Affairs	Other <sup>e</sup>	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	31.9	18.5	10.1	7.3	22.7	10.8	50.9	5.5	30.6	41.0	1,132.3
2004 .....	7.0	960.7	31.4	18.3	8.8	8.7	17.5	9.9	50.5	5.2	29.9	44.0	1,191.7
2005 .....	7.5	933.2	29.6	18.4	9.6	8.6	18.8	10.3	53.5	5.0	30.0	42.1	1,166.4
2006 .....	6.8	843.7	32.9	18.2	9.3	8.1	23.5	10.2	51.8	4.6	29.3	38.1	1,076.4
2007 .....	6.8	864.6	31.5	19.1	9.9	7.5	20.7	10.6	45.8	5.6	30.0	38.1	1,090.2
2008 .....	6.5	910.8	32.1	18.8	10.3	7.1	19.0	10.8	47.1	7.7	29.0	41.6	1,140.7
2009 .....	6.6	874.3	31.1	18.6	10.8	7.9	16.5	10.2	44.2	4.3	29.9	40.2	1,094.6
2010 .....	6.8	889.9	31.7	18.8	10.4	7.3	15.7	10.1	43.3	5.7	30.2	42.9	1,112.7
2011 .....	8.3	890.3	33.1	18.5	10.5	7.3	13.9	10.1	43.0	6.7	30.6	41.7	1,114.1
2012 .....	6.7	828.5	30.3	16.3	10.0	6.7	15.1	8.9	40.8	5.6	29.7	40.6	1,039.3
2013 .....	7.3	749.5	28.9	16.4	10.5	6.2	15.3	8.7	41.9	5.3	29.9	39.3	959.3
2014 <sup>P</sup> .....	6.3	730.6	29.4	17.0	9.5	6.2	15.6	8.3	43.0	5.2	31.4	39.0	941.5

<sup>a</sup> 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).

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

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

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

<sup>e</sup> Includes all U.S. government agencies not separately displayed. See <http://ctsedwebweb.ee.doe.gov/Annual/Report/AgencyReference.aspx> for agency list.

P=Preliminary.

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://ctsedwebweb.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)" dataset.

**Table 2.8 U.S. Government Energy Consumption by Source, Fiscal Years**  
(Trillion Btu)

Fiscal Year <sup>a</sup>	Coal	Natural Gas <sup>b</sup>	Petroleum						Other Mobility Fuels <sup>f</sup>	Electricity	Purchased Steam and Other <sup>g</sup>	Total
			Aviation Gasoline	Fuel Oil <sup>c</sup>	Jet Fuel	LPG <sup>d</sup>	Motor Gasoline <sup>e</sup>	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	129.5	.4	198.3	524.3	2.3	48.7	773.8	3.6	195.3	17.7	1,140.7
2009 .....	20.3	131.7	.3	166.4	505.6	3.2	48.3	723.8	10.1	191.2	17.7	1,094.6
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 <sup>p</sup> .....	13.5	125.6	.3	133.5	414.3	1.8	44.9	594.8	3.6	182.1	21.9	941.5

<sup>a</sup> 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).

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

<sup>c</sup> Distillate fuel oil, including diesel fuel; and residual fuel oil, including Navy Special.

<sup>d</sup> Liquefied petroleum gases, primarily propane.

<sup>e</sup> Includes E10 (a mixture of 10% ethanol and 90% motor gasoline) and E15 (a mixture of 15% ethanol and 85% motor gasoline).

<sup>f</sup> 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.

<sup>g</sup> 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.

P=Preliminary.

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://ctsedwebweb.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)" dataset.

## Energy Consumption by Sector

**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," at end of section.

#### 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,” at end of section.

### 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," at end of section.

#### **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 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 refinery and blender net inputs of renewable fuels (excluding fuel ethanol) from U.S. Energy Information Administration, *Petroleum Supply Annual/Petroleum Supply Monthly*, Table 1 (for biomass-based diesel fuel, 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).

#### **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," at end of section.

#### **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.

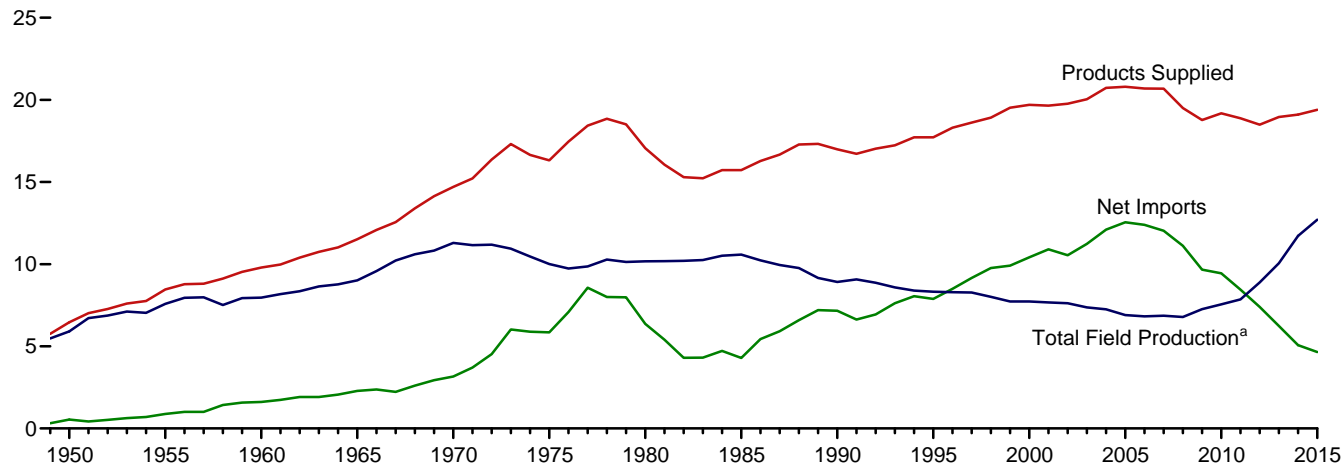
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### **3. Petroleum**

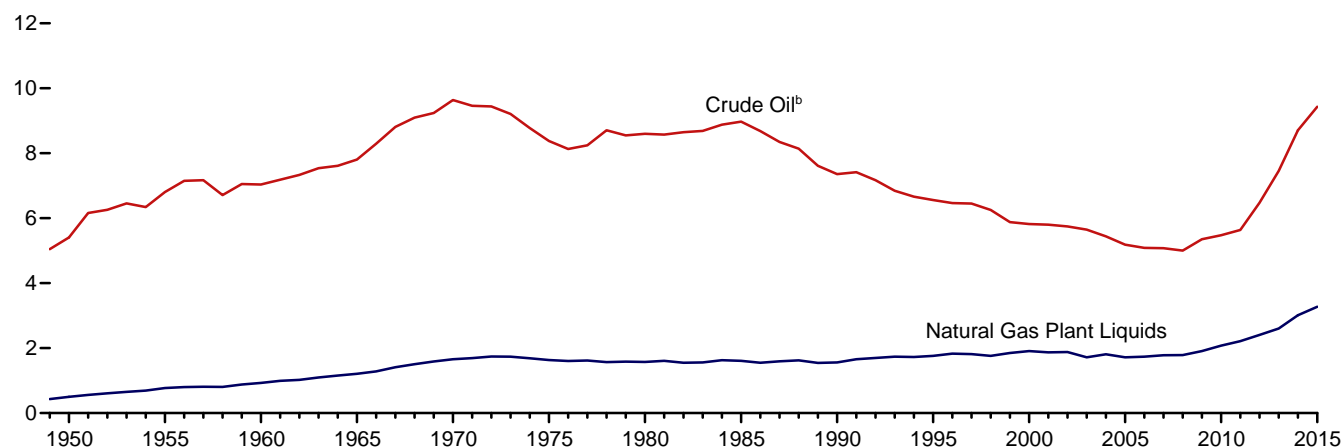
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**Figure 3.1 Petroleum Overview**  
(Million Barrels per Day)

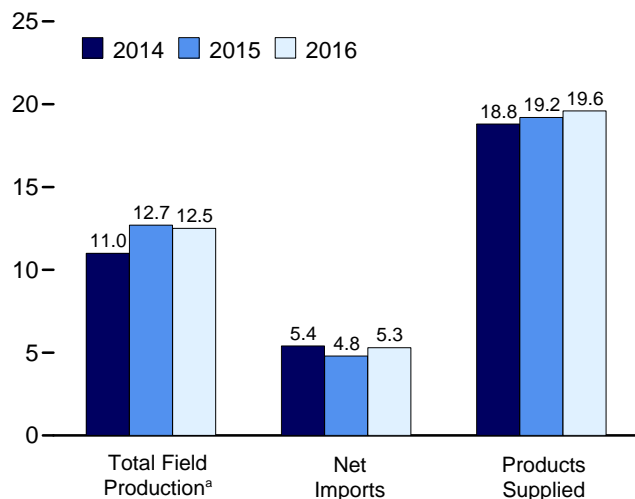
Overview, 1949–2015



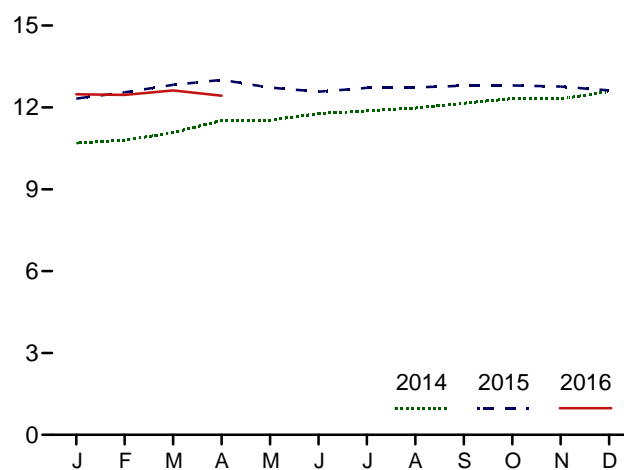
Crude Oil and Natural Gas Plant Liquids Field Production, 1949–2015



Overview, January–April



Total Field Production,<sup>a</sup> Monthly



<sup>a</sup> Crude oil, including lease condensate, and natural gas plant liquids field production.

<sup>b</sup> 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 <sup>a</sup>					Renewable Fuels and Oxygenates <sup>f</sup>	Processing Gain <sup>g</sup>	Trade			Stock Change <sup>j</sup>	Adjustments <sup>c,k</sup>	Petroleum Products Supplied
	Crude Oil <sup>b,c</sup>			NGPL <sup>e</sup>	Total <sup>c</sup>			Im-ports <sup>h</sup>	Ex-ports	Net Imports <sup>i</sup>			
	48 States <sup>d</sup>	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	145	508	20,802
2006 Average .....	4,346	741	5,087	1,739	6,825	NA	994	13,707	1,317	12,390	60	538	20,687
2007 Average .....	4,355	722	5,077	1,783	6,860	NA	996	13,468	1,433	12,036	-148	640	20,680
2008 Average .....	4,318	683	5,001	1,784	6,785	NA	993	12,915	1,802	11,114	195	802	19,498
2009 Average .....	4,709	645	5,354	1,910	7,264	746	979	11,691	2,024	9,667	109	225	18,771
2010 Average .....	4,876	600	5,476	2,074	7,550	907	1,068	11,793	2,353	9,441	49	264	19,180
2011 Average .....	5,076	561	5,637	2,216	7,853	1,016	1,076	11,436	2,986	8,450	-121	365	18,882
2012 Average .....	5,950	526	6,476	2,408	8,884	964	1,059	10,598	3,205	7,393	158	348	18,490
2013 Average .....	6,939	515	7,454	2,606	10,060	1,002	1,087	9,859	3,621	6,237	-127	448	18,961
2014 January .....	7,456	542	7,998	2,695	10,693	1,001	1,107	9,305	3,911	5,394	-396	511	19,102
February .....	7,572	516	8,087	2,710	10,798	1,000	1,064	9,155	3,658	5,497	62	610	18,908
March .....	7,714	530	8,244	2,829	11,073	1,026	991	9,256	3,993	5,263	263	373	18,464
April .....	8,031	537	8,568	2,950	11,518	1,040	1,078	9,600	3,974	5,626	920	507	18,849
May .....	8,053	524	8,577	2,956	11,533	1,057	1,013	9,387	4,113	5,274	942	649	18,585
June .....	8,194	485	8,678	3,094	11,772	1,091	1,122	8,837	4,155	4,682	111	333	18,890
July .....	8,332	422	8,754	3,115	11,869	1,088	1,107	9,496	4,464	5,032	106	292	19,283
August .....	8,437	398	8,835	3,142	11,976	1,051	1,163	9,319	4,457	4,861	152	501	19,400
September .....	8,482	478	8,959	3,195	12,154	1,059	1,015	9,181	3,947	5,234	421	204	19,246
October .....	8,629	500	9,129	3,196	12,325	1,044	1,028	8,924	4,134	4,790	-186	317	19,691
November .....	8,685	513	9,198	3,115	12,313	1,059	1,178	9,009	4,353	4,656	349	514	19,370
December .....	8,909	515	9,423	3,156	12,580	1,134	1,100	9,402	4,892	4,510	486	620	19,457
Average .....	8,211	496	8,708	3,015	11,722	1,055	1,081	9,241	4,176	5,065	269	452	19,106
2015 January .....	E 8,840	E 500	E 9,341	2,980	E 12,321	1,054	1,023	9,393	4,567	4,825	574	600	19,249
February .....	E 8,963	E 488	E 9,451	3,100	E 12,550	1,046	955	9,243	4,699	4,544	128	428	19,396
March .....	E 9,142	E 506	E 9,648	3,181	E 12,829	1,052	999	9,552	4,120	5,432	985	-88	19,238
April .....	E 9,184	E 510	E 9,694	3,313	E 13,008	1,065	1,042	9,307	4,943	4,364	900	458	19,037
May .....	E 9,006	E 473	E 9,479	3,249	E 12,727	1,106	1,041	9,470	4,874	4,596	728	373	19,117
June .....	RE 8,869	E 447	E 9,315	3,259	RE 12,575	1,148	990	9,552	4,668	4,884	443	438	19,591
July .....	RE 8,982	E 450	RE 9,432	3,284	RE 12,716	1,124	1,053	9,511	4,967	4,544	-85	R 458	19,979
August .....	RE 8,999	E 408	E 9,407	3,319	E 12,726	1,099	1,164	9,768	4,564	5,205	728	349	19,814
September .....	E 8,980	E 472	RE 9,453	3,343	RE 12,796	1,092	1,009	9,335	4,884	4,451	332	209	19,225
October .....	RE 8,882	E 497	RE 9,379	3,428	RE 12,807	1,112	1,017	8,800	4,628	4,172	257	R 499	19,350
November .....	RE 8,806	E 523	RE 9,329	3,436	RE 12,764	1,114	1,051	9,126	4,817	4,308	415	R 366	19,188
December .....	RE 8,723	E 522	RE 9,246	3,375	RE 12,621	1,124	1,102	9,726	5,275	4,451	-218	R 28	19,544
Average .....	RE 8,948	E 483	RE 9,431	3,273	RE 12,704	1,095	1,038	9,401	4,750	4,651	434	R 342	19,395
2016 January .....	RE 8,664	E 516	RE 9,180	3,303	RE 12,483	1,105	1,106	9,734	4,878	4,857	831	R 336	19,055
February .....	RE 8,622	RE 507	RE 9,129	R 3,329	RE 12,458	R 1,124	R 1,058	R 10,020	R 4,948	R 5,072	R 138	R 107	R 19,680
March .....	E 8,522	E 516	E 9,038	E 3,586	E 12,624	E 1,079	E 1,032	E 9,737	E 4,603	E 5,134	E 358	E 21	E 19,532
April .....	E 8,422	E 493	E 8,915	E 3,514	E 12,429	E 1,013	E 1,026	E 9,965	E 4,010	E 5,955	E 447	E 87	E 20,063
4-Month Average ...	E 8,558	E 508	E 9,066	E 3,434	E 12,500	E 1,080	E 1,056	E 9,861	E 4,609	E 5,252	E 449	E 139	E 19,577
2015 4-Month Average ...	E 9,033	E 501	E 9,534	3,143	E 12,677	1,054	1,006	9,378	4,576	4,801	658	347	19,227
2014 4-Month Average ...	7,693	531	8,225	2,797	11,022	1,017	1,060	9,331	3,889	5,442	210	498	18,829

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

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

<sup>c</sup> 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.

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

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

<sup>f</sup> Renewable fuels and oxygenate plant net production.

<sup>g</sup> Refinery and blender net production minus refinery and blender net inputs. See Table 3.2.

<sup>h</sup> Includes Strategic Petroleum Reserve imports. See Table 3.3b.

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

<sup>j</sup> 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.

<sup>k</sup> 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.

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

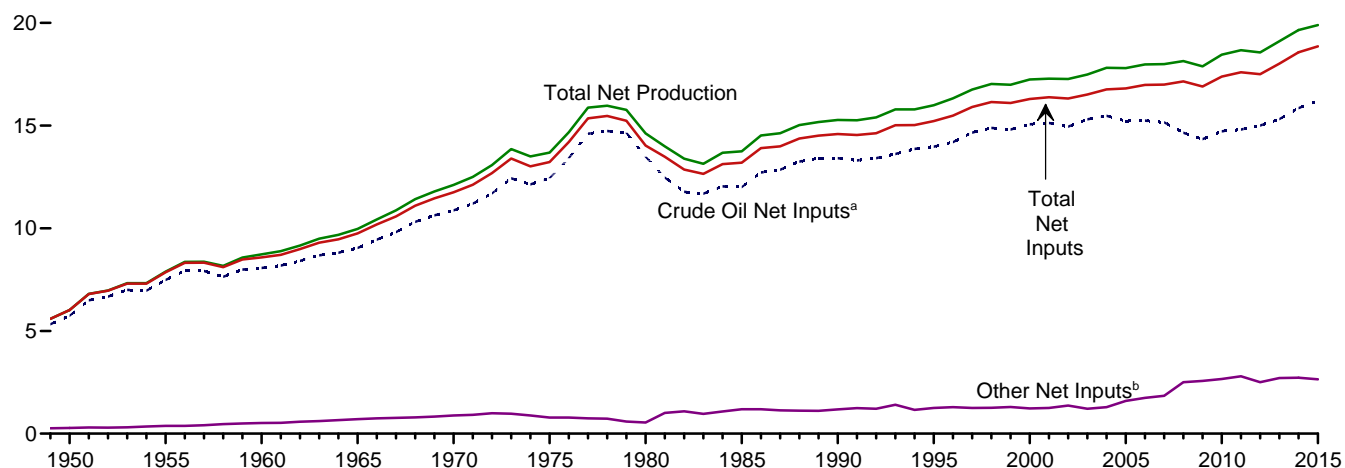
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

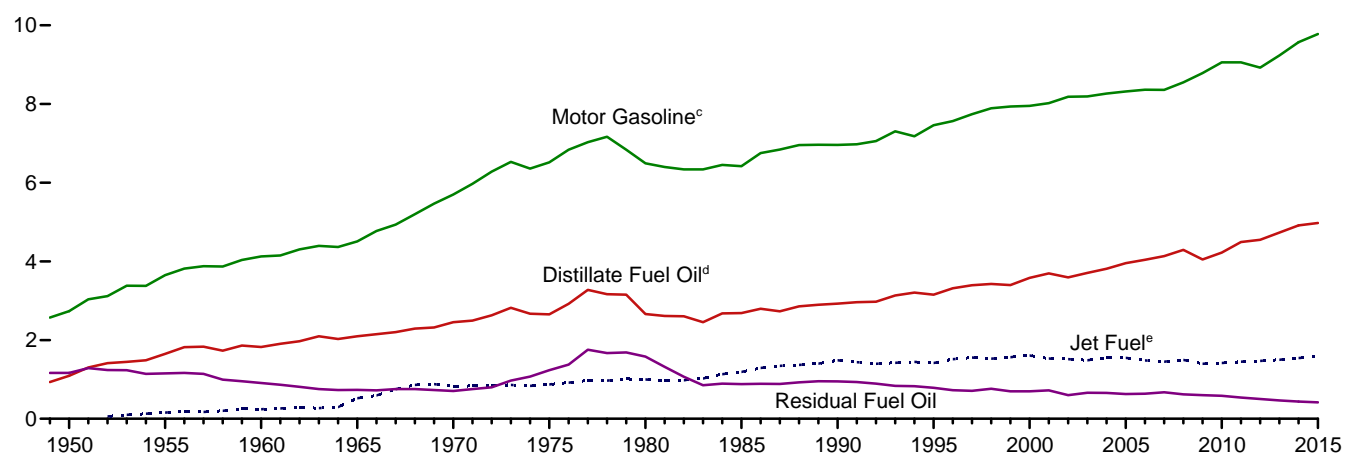
Sources: See end of section.

**Figure 3.2 Refinery and Blender Net Inputs and Net Production**  
(Million Barrels per Day)

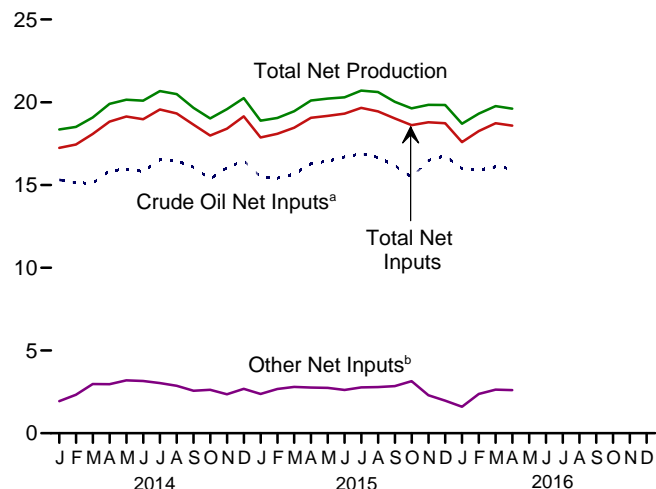
Net Inputs and Net Production, 1949–2015



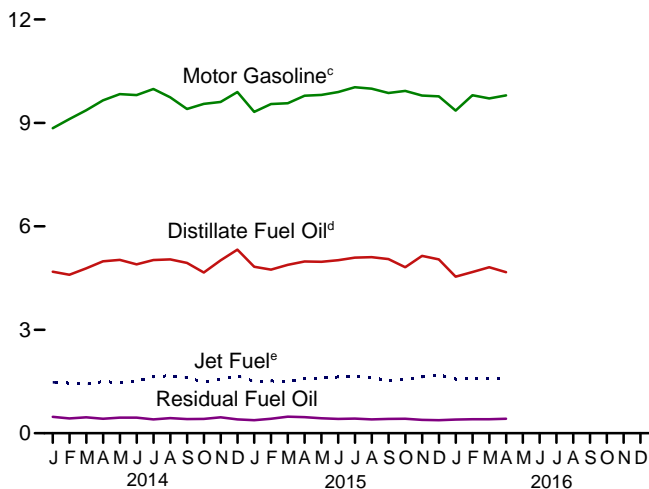
Net Production, Selected Products, 1949–2015



Net Inputs and Net Production, Monthly



Net Production, Selected Products, Monthly



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

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

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

<sup>d</sup> Beginning in 2009, includes renewable diesel fuel (including biodie-

sel) blended into distillate fuel oil.

<sup>e</sup> 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 <sup>a</sup>				Refinery and Blender Net Production <sup>b</sup>							
	Crude Oil <sup>d</sup>	NGLP <sup>e</sup>	Other Liquids <sup>f</sup>	Total	Distillate Fuel Oil <sup>g</sup>	Jet Fuel <sup>h</sup>	LPG <sup>c</sup>		Motor Gasoline <sup>i</sup>	Residual Fuel Oil	Other Products <sup>k</sup>	Total
							Propane <sup>j</sup>	Total				
<b>1950 Average</b>	5,739	259	19	6,018	1,093	( <sup>h</sup> )	NA	80	2,735	1,165	947	6,019
<b>1955 Average</b>	7,480	345	32	7,857	1,651	155	NA	119	3,648	1,152	1,166	7,891
<b>1960 Average</b>	8,067	455	61	8,583	1,823	241	NA	212	4,126	908	1,420	8,729
<b>1965 Average</b>	9,043	618	88	9,750	2,096	523	NA	293	4,507	736	1,814	9,970
<b>1970 Average</b>	10,870	763	121	11,754	2,454	827	NA	345	5,699	706	2,082	12,113
<b>1975 Average</b>	12,442	710	72	13,225	2,653	871	234	311	6,518	1,235	2,097	13,685
<b>1980 Average</b>	13,481	462	81	14,025	2,661	999	269	330	6,492	1,580	2,559	14,622
<b>1985 Average</b>	12,002	509	681	13,192	2,686	1,189	295	391	6,419	882	2,183	13,750
<b>1990 Average</b>	13,409	467	713	14,589	2,925	1,488	404	499	6,959	950	2,452	15,272
<b>1995 Average</b>	13,973	471	775	15,220	3,155	1,416	503	654	7,459	788	2,522	15,994
<b>2000 Average</b>	15,067	380	849	16,295	3,580	1,606	583	705	7,951	696	2,705	17,243
<b>2001 Average</b>	15,128	429	825	16,382	3,695	1,530	556	667	8,022	721	2,651	17,285
<b>2002 Average</b>	14,947	429	941	16,316	3,592	1,514	572	671	8,183	601	2,712	17,273
<b>2003 Average</b>	15,304	419	791	16,513	3,707	1,488	570	658	8,194	660	2,780	17,487
<b>2004 Average</b>	15,475	422	866	16,762	3,814	1,547	584	645	8,265	655	2,887	17,814
<b>2005 Average</b>	15,220	441	1,149	16,811	3,954	1,546	540	573	8,318	628	2,782	17,800
<b>2006 Average</b>	15,242	501	1,238	16,981	4,040	1,481	543	627	8,364	635	2,827	17,975
<b>2007 Average</b>	15,156	505	1,337	16,999	4,133	1,448	562	655	8,358	673	2,728	17,994
<b>2008 Average</b>	14,648	485	2,019	17,153	4,294	1,493	519	630	8,548	620	2,561	18,146
<b>2009 Average</b>	14,336	485	2,082	16,904	4,048	1,396	537	623	8,786	598	2,431	17,882
<b>2010 Average</b>	14,724	442	2,219	17,385	4,223	1,418	560	659	9,059	585	2,509	18,452
<b>2011 Average</b>	14,806	490	2,300	17,596	4,492	1,449	552	619	9,058	537	2,518	18,673
<b>2012 Average</b>	14,999	509	1,997	17,505	4,550	1,471	553	630	8,926	501	2,487	18,564
<b>2013 Average</b>	15,312	496	2,211	18,019	4,733	1,499	564	623	9,234	467	2,550	19,106
<b>2014 January</b>	15,311	524	1,412	17,247	4,685	1,479	584	406	8,849	476	2,459	18,354
<b>February</b>	15,128	531	1,790	17,448	4,594	1,453	572	505	9,111	427	2,423	18,513
<b>March</b>	15,116	495	2,476	18,087	4,780	1,421	564	666	9,368	461	2,383	19,078
<b>April</b>	15,864	433	2,529	18,826	4,988	1,498	600	860	9,652	420	2,485	19,904
<b>May</b>	15,946	432	2,761	19,139	5,026	1,468	596	887	9,834	454	2,483	20,152
<b>June</b>	15,817	431	2,727	18,975	4,896	1,521	596	870	9,809	455	2,545	20,097
<b>July</b>	16,534	414	2,615	19,563	5,021	1,637	613	909	9,983	402	2,718	20,670
<b>August</b>	16,460	424	2,440	19,325	5,042	1,675	602	888	9,741	439	2,703	20,488
<b>September</b>	16,074	543	2,026	18,642	4,940	1,619	552	610	9,404	410	2,676	19,658
<b>October</b>	15,361	594	2,035	17,990	4,662	1,485	529	444	9,552	416	2,460	19,018
<b>November</b>	16,043	658	1,701	18,402	5,012	1,570	603	387	9,607	462	2,542	19,580
<b>December</b>	16,469	659	2,019	19,147	5,323	1,665	635	398	9,898	401	2,563	20,247
<b>Average</b>	15,848	511	2,214	18,574	4,916	1,541	587	653	9,570	435	2,537	19,654
<b>2015 January</b>	15,493	587	1,786	17,866	4,828	1,505	561	395	9,321	377	2,464	18,889
<b>February</b>	15,414	544	2,132	18,090	4,746	1,517	529	398	9,546	421	2,417	19,045
<b>March</b>	15,657	494	2,308	18,459	4,882	1,492	537	609	9,571	478	2,424	19,458
<b>April</b>	16,299	405	2,353	19,057	4,981	1,587	589	823	9,787	469	2,453	20,099
<b>May</b>	16,435	393	2,345	19,174	4,974	1,600	582	884	9,811	436	2,511	20,216
<b>June</b>	16,695	414	2,201	19,310	5,021	1,632	569	858	9,894	413	2,482	20,300
<b>July</b>	16,884	432	2,338	19,654	5,091	1,663	581	850	10,037	426	2,640	20,707
<b>August</b>	16,662	449	2,340	19,450	5,108	1,598	575	836	9,993	404	2,675	20,614
<b>September</b>	16,174	546	2,297	19,017	5,053	1,541	529	580	9,866	414	2,572	20,026
<b>October</b>	15,465	603	2,547	18,615	4,815	1,551	520	437	9,926	419	2,484	19,632
<b>November</b>	16,489	676	1,622	18,787	5,144	1,633	552	330	9,794	386	2,551	19,838
<b>December</b>	16,765	649	1,317	18,732	5,044	1,698	578	330	9,772	376	2,613	19,833
<b>Average</b>	16,207	516	2,132	18,855	4,975	1,585	559	612	9,778	418	2,525	19,893
<b>2016 January</b>	15,994	668	930	17,592	4,541	1,572	581	346	9,355	397	2,487	18,698
<b>February</b>	R 15,884	R 567	R 1,803	R 18,254	R 4,677	R 1,575	R 566	R 418	R 9,804	R 405	R 2,433	R 19,312
<b>March</b>	E 16,100	F 483	RE 2,152	RF 18,735	E 4,814	E 1,582	RE 543	F 614	E 9,711	E 406	RE 2,640	RE 19,767
<b>April</b>	E 15,983	F 425	RE 2,176	F 18,584	E 4,672	E 1,614	E 577	F 822	E 9,796	E 421	E 2,286	E 19,610
<b>4-Month Average</b>	E 15,992	E 536	E 1,761	E 18,290	E 4,676	E 1,586	E 567	E 550	E 9,663	E 407	E 2,463	E 19,345
<b>2015 4-Month Average</b>	15,719	507	2,143	18,369	4,861	1,525	555	558	9,555	436	2,440	19,375
<b>2014 4-Month Average</b>	15,356	495	2,054	17,906	4,764	1,463	580	610	9,245	447	2,437	18,966

<sup>a</sup> See "Refinery and Blender Net Inputs" in Glossary.

<sup>b</sup> See "Refinery and Blender Net Production" in Glossary.

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

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

<sup>e</sup> Natural gas plant liquids (liquefied petroleum gases and pentanes plus).

<sup>f</sup> 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).

<sup>g</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>h</sup> 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.")

<sup>i</sup> Includes propylene.

<sup>j</sup> Finished motor gasoline. Through 1963, also includes aviation gasoline and special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor

gasoline.

<sup>k</sup> 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.

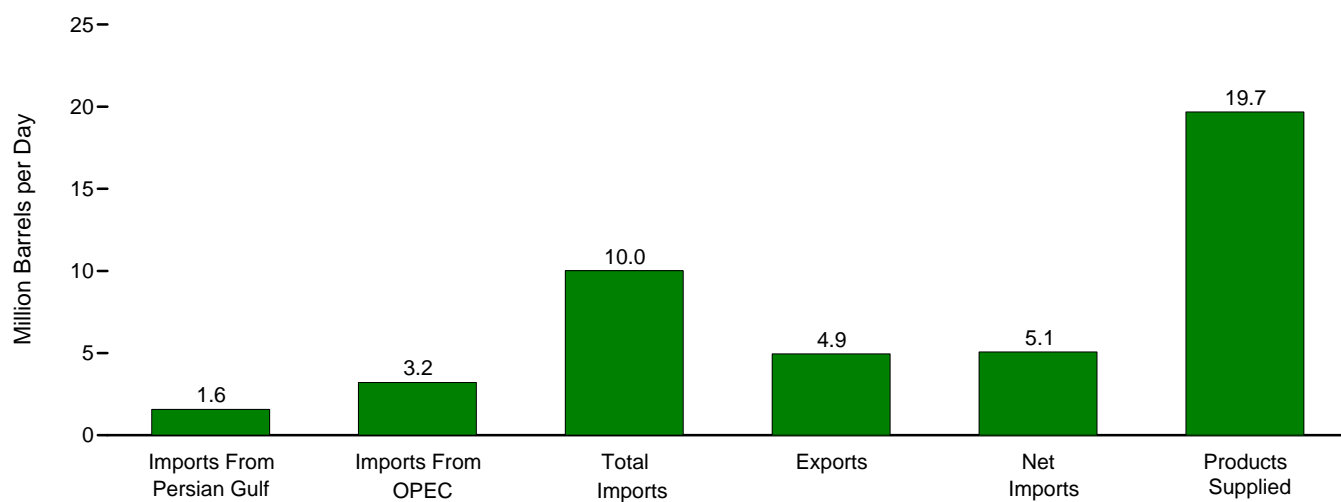
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

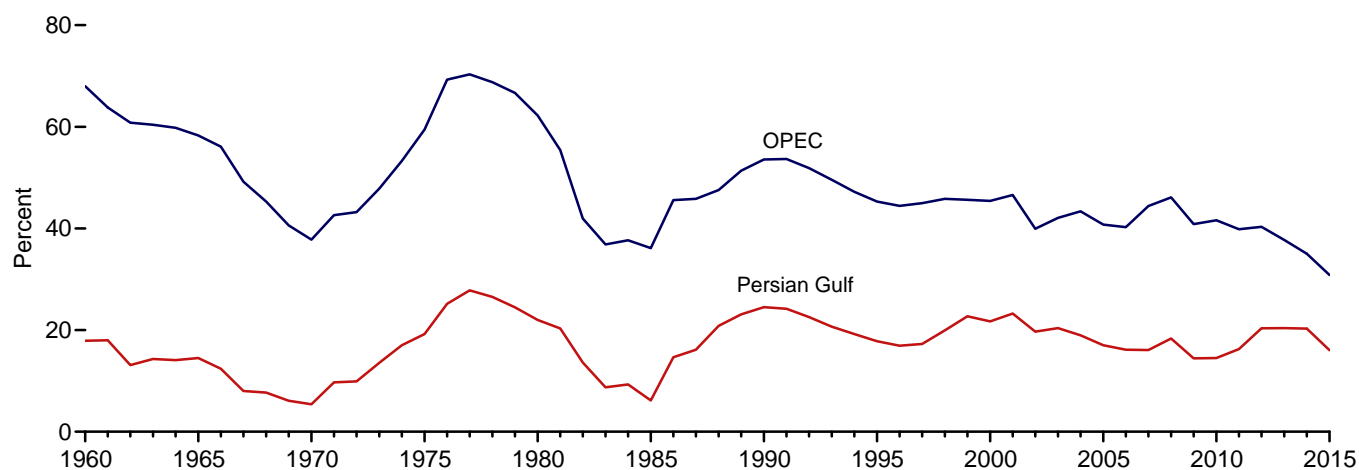
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports. • **2015 and 2016:** 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 3.3a Petroleum Trade: Overview

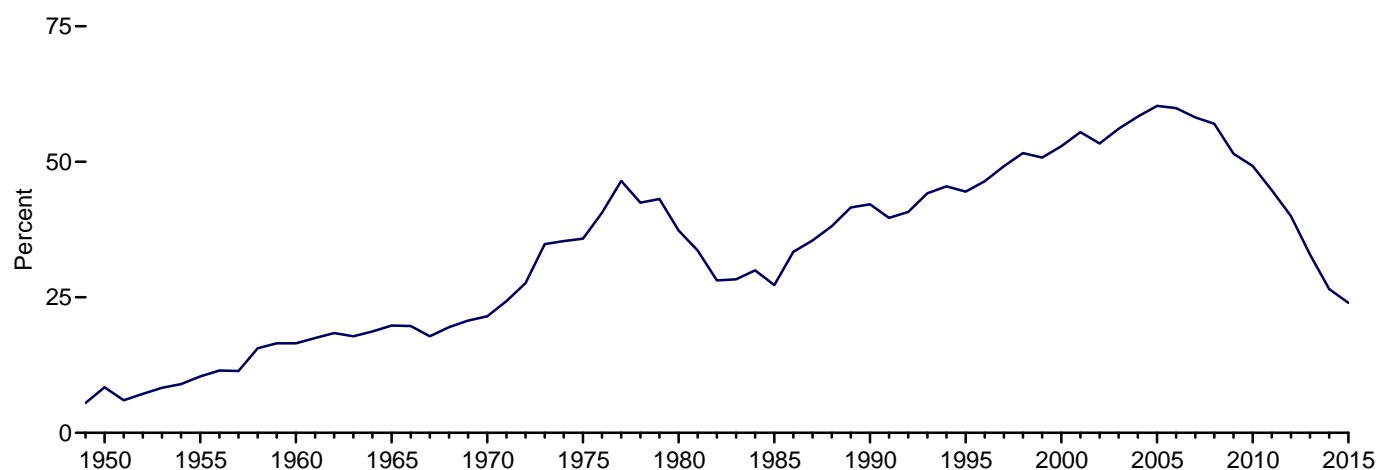
Overview, February 2016



Imports From OPEC and Persian Gulf as Share of Total Imports, 1960–2015



Net Imports as Share of Products Supplied, 1949–2015



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 <sup>a</sup>	Imports From OPEC <sup>b</sup>	Imports	Exports	Net Imports	Products Supplied	As Share of Products Supplied				As Share of Total Imports	
							Imports From Persian Gulf <sup>a</sup>	Imports From OPEC <sup>b</sup>	Imports	Net Imports	Imports From Persian Gulf <sup>a</sup>	Imports From OPEC <sup>b</sup>
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	18,882	9.9	24.1	60.6	44.8	16.3	39.8
2012 Average .....	2,156	4,271	10,598	3,205	7,393	18,490	11.7	23.1	57.3	40.0	20.3	40.3
2013 Average .....	2,009	3,720	9,859	3,621	6,237	18,961	10.6	19.6	52.0	32.9	20.4	37.7
2014 January .....	2,187	3,350	9,305	3,911	5,394	19,102	11.4	17.5	48.7	28.2	23.5	36.0
February .....	2,172	3,398	9,155	3,658	5,497	18,908	11.5	18.0	48.4	29.1	23.7	37.1
March .....	2,132	3,395	9,256	3,993	5,263	18,464	11.5	18.4	50.1	28.5	23.0	36.7
April .....	2,274	3,708	9,600	3,974	5,626	18,849	12.1	19.7	50.9	29.8	23.7	38.6
May .....	1,929	3,313	9,387	4,113	5,274	18,585	10.4	17.8	50.5	28.4	20.5	35.3
June .....	1,941	3,252	8,837	4,155	4,682	18,890	10.3	17.2	46.8	24.8	22.0	36.8
July .....	2,145	3,598	9,496	4,464	5,032	19,283	11.1	18.7	49.2	26.1	22.6	37.9
August .....	1,781	3,275	9,319	4,457	4,861	19,400	9.2	16.9	48.0	25.1	19.1	35.1
September .....	1,645	3,217	9,181	3,947	5,234	19,246	8.5	16.7	47.7	27.2	17.9	35.0
October .....	1,428	2,677	8,924	4,134	4,790	19,691	7.3	13.6	45.3	24.3	16.0	30.0
November .....	1,584	2,921	9,009	4,353	4,656	19,370	8.2	15.1	46.5	24.0	17.6	32.4
December .....	1,304	2,760	9,402	4,892	4,510	19,457	6.7	14.2	48.3	23.2	13.9	29.4
Average .....	1,875	3,237	9,241	4,176	5,065	19,106	9.8	16.9	48.4	26.5	20.3	35.0
2015 January .....	1,334	2,536	9,393	4,567	4,825	19,249	6.9	13.2	48.8	25.1	14.2	27.0
February .....	1,433	2,793	9,243	4,699	4,544	19,396	7.4	14.4	47.7	23.4	15.5	30.2
March .....	1,465	2,831	9,552	4,120	5,432	19,238	7.6	14.7	49.7	28.2	15.3	29.6
April .....	1,532	2,766	9,307	4,943	4,364	19,037	8.0	14.5	48.9	22.9	16.5	29.7
May .....	1,724	3,125	9,470	4,874	4,596	19,117	9.0	16.3	49.5	24.0	18.2	33.0
June .....	1,617	2,869	9,552	4,668	4,884	19,591	8.3	14.6	48.8	24.9	16.9	30.0
July .....	1,465	2,896	9,511	4,967	4,544	19,979	7.3	14.5	47.6	22.7	15.4	30.5
August .....	1,247	2,751	9,768	4,564	5,205	19,814	6.3	13.9	49.3	26.3	12.8	28.2
September .....	1,290	2,854	9,335	4,884	4,451	19,225	6.7	14.8	48.6	23.2	13.8	30.6
October .....	1,538	2,919	8,800	4,628	4,172	19,350	7.9	15.1	45.5	21.6	17.5	33.2
November .....	1,662	3,169	9,126	4,817	4,308	19,188	8.7	16.5	47.6	22.5	18.2	34.7
December .....	1,773	3,274	9,726	5,275	4,451	19,544	9.1	16.7	49.8	22.8	18.2	33.7
Average .....	1,507	2,899	9,401	4,750	4,651	19,395	7.8	14.9	48.5	24.0	16.0	30.8
2016 January .....	1,520	3,052	9,734	4,878	4,857	19,055	8.0	16.0	51.1	25.5	15.6	31.4
February .....	R 1,574	R 3,210	R 10,020	R 4,948	R 5,072	R 19,680	R 8.0	R 16.3	R 50.9	R 25.8	R 15.7	R 32.0
March .....	NA	NA	E 9,737	E 4,603	E 5,134	E 19,532	NA	NA	E 49.9	E 26.3	NA	NA
April .....	NA	NA	E 9,965	E 4,010	E 5,955	E 20,063	NA	NA	E 49.7	E 29.7	NA	NA
4-Month Average .....	NA	NA	E 9,861	E 4,609	E 5,252	E 19,577	NA	NA	E 50.4	E 26.8	NA	NA
2015 4-Month Average .....	1,440	2,730	9,378	4,576	4,801	19,227	7.5	14.2	48.8	25.0	15.4	29.1
2014 4-Month Average .....	2,191	3,462	9,331	3,889	5,442	18,829	11.6	18.4	49.6	28.9	23.5	37.1

<sup>a</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

<sup>b</sup> 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](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

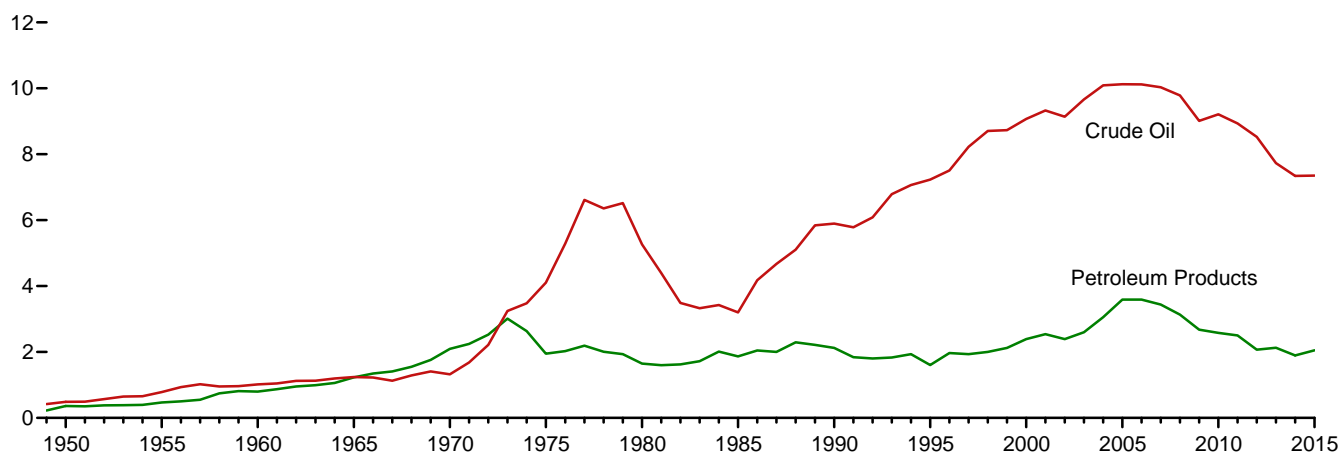
receipts from U.S. territories.

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.

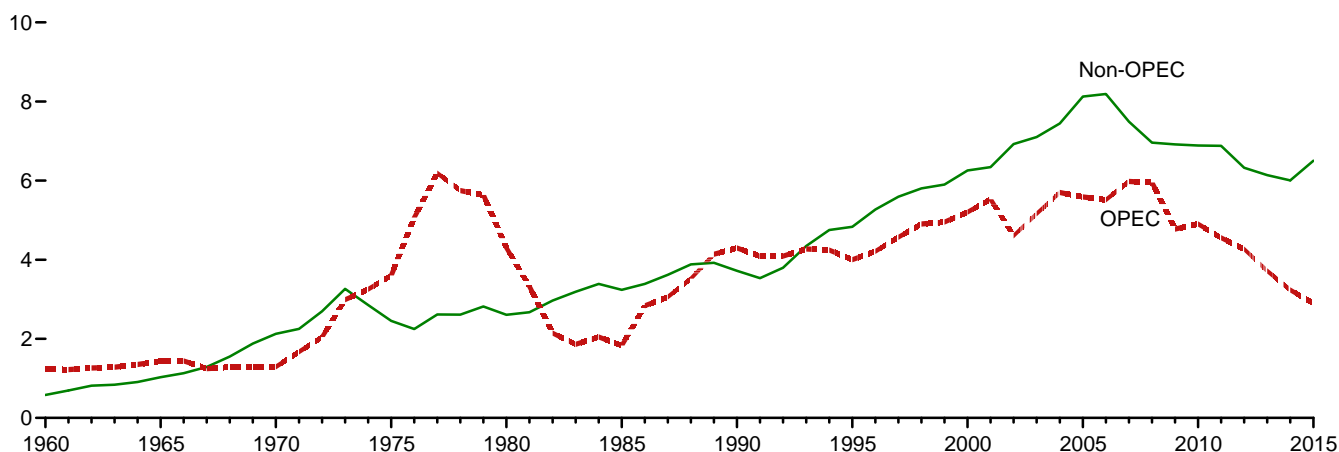
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports, and unpublished revisions. • **2015 and 2016:** 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**  
(Million Barrels per Day)

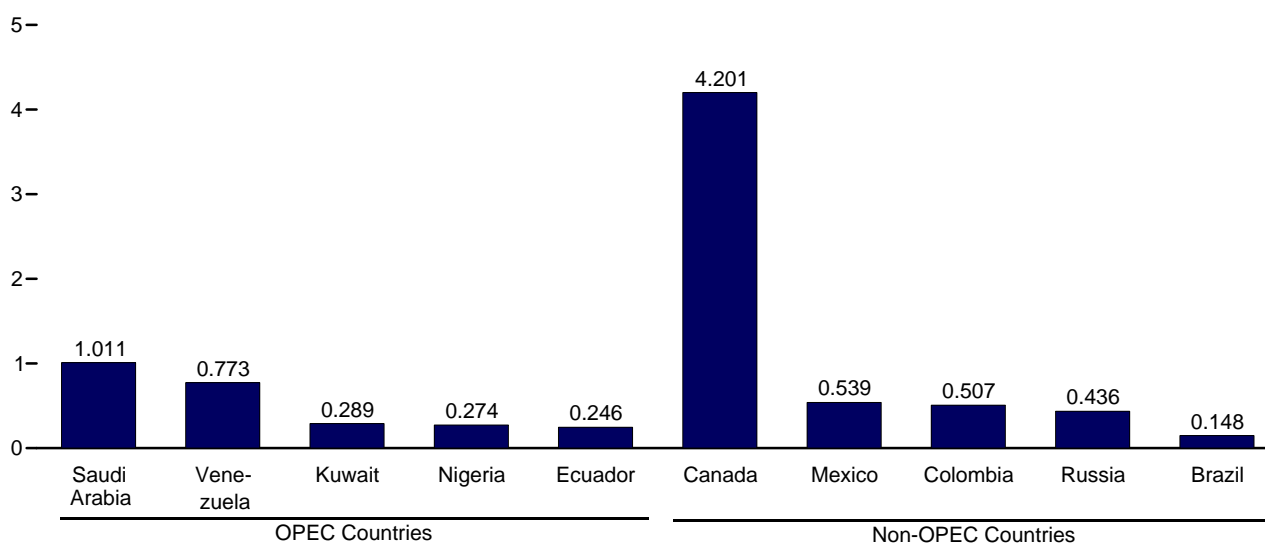
Overview, 1949–2015



OPEC and Non-OPEC, 1960–2015



From Selected Countries, February 2016



Note: OPEC=Organization of the Petroleum Exporting Countries.  
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#petroleum>.  
Sources: Tables 3.3b–3.3d.

**Table 3.3b Petroleum Trade: Imports and Exports by Type**  
(Thousand Barrels per Day)

	Imports										Exports		
	Crude Oil <sup>a</sup>		Distillate Fuel Oil	Jet Fuel <sup>d</sup>	LPG <sup>b</sup>		Motor Gasoline <sup>f</sup>	Residual Fuel Oil	Other <sup>g</sup>	Total	Crude Oil <sup>a</sup>	Petroleum Products	Total
	SPR <sup>c</sup>	Total			Propane <sup>e</sup>	Total							
1950 Average .....	--	487	7	( <sup>d</sup> )	--	--	(s)	329	27	850	95	210	305
1955 Average .....	--	782	12	( <sup>d</sup> )	--	--	13	417	24	1,248	32	336	368
1960 Average .....	--	1,015	35	34	NA	4	27	637	62	1,815	8	193	202
1965 Average .....	--	1,238	36	81	NA	21	28	946	119	2,468	3	184	187
1970 Average .....	--	1,324	147	144	26	52	67	1,528	157	3,419	14	245	259
1975 Average .....	--	4,105	155	133	60	112	184	1,223	144	6,056	6	204	209
1980 Average .....	44	5,263	142	80	69	216	140	939	130	6,909	287	258	544
1985 Average .....	118	3,201	200	39	67	187	381	510	550	5,067	204	577	781
1990 Average .....	27	5,894	278	108	115	188	342	504	705	8,018	109	748	857
1995 Average .....	--	7,230	193	106	102	146	265	187	708	8,835	95	855	949
2000 Average .....	8	9,071	295	162	161	215	427	352	938	11,459	50	990	1,040
2001 Average .....	11	9,328	344	148	145	206	454	295	1,095	11,871	20	951	971
2002 Average .....	16	9,140	267	107	145	183	498	249	1,085	11,530	9	975	984
2003 Average .....	--	9,665	333	109	168	225	518	327	1,087	12,264	12	1,014	1,027
2004 Average .....	77	10,088	325	127	209	263	496	426	1,419	13,145	27	1,021	1,048
2005 Average .....	52	10,126	329	190	233	328	603	530	1,609	13,714	32	1,133	1,165
2006 Average .....	8	10,118	365	186	228	332	475	350	1,881	13,707	25	1,292	1,317
2007 Average .....	7	10,031	304	217	182	247	413	372	1,885	13,468	27	1,405	1,433
2008 Average .....	19	9,783	213	103	185	253	302	349	1,913	12,915	29	1,773	1,802
2009 Average .....	56	9,013	225	81	147	182	223	331	1,635	11,691	44	1,980	2,024
2010 Average .....	--	9,213	228	98	121	153	134	366	1,600	11,793	42	2,311	2,353
2011 Average .....	--	8,935	179	69	110	135	105	328	1,686	11,436	47	2,939	2,986
2012 Average .....	--	8,527	126	55	116	141	44	256	1,450	10,598	67	3,137	3,205
2013 Average .....	--	7,730	155	84	127	148	45	225	1,471	9,859	134	3,487	3,621
<b>2014 January</b> .....	--	7,589	283	42	187	206	42	132	1,011	9,305	248	3,663	3,911
February .....	--	7,199	337	94	221	244	11	221	1,049	9,155	247	3,411	3,658
March .....	--	7,274	324	91	122	142	36	156	1,233	9,256	251	3,741	3,993
April .....	--	7,555	181	144	79	101	57	183	1,379	9,600	282	3,693	3,974
May .....	--	7,167	198	104	66	85	47	175	1,611	9,387	309	3,804	4,113
June .....	--	7,068	121	109	91	117	51	151	1,222	8,837	394	3,761	4,155
July .....	--	7,630	129	85	64	83	60	177	1,331	9,496	421	4,043	4,464
August .....	--	7,473	143	63	76	90	73	166	1,311	9,319	391	4,066	4,457
September .....	--	7,495	126	133	75	96	77	178	1,076	9,181	349	3,598	3,947
October .....	--	7,148	120	90	99	122	64	218	1,161	8,924	376	3,758	4,134
November .....	--	7,295	136	80	90	110	41	175	1,172	9,009	521	3,832	4,353
December .....	--	7,225	245	102	129	153	29	152	1,495	9,402	421	4,471	4,892
<b>Average</b> .....	--	<b>7,344</b>	<b>195</b>	<b>94</b>	<b>108</b>	<b>128</b>	<b>49</b>	<b>173</b>	<b>1,257</b>	<b>9,241</b>	<b>351</b>	<b>3,824</b>	<b>4,176</b>
<b>2015 January</b> .....	--	7,150	349	132	142	161	74	190	1,337	9,393	491	4,076	4,567
February .....	--	7,109	391	121	148	167	51	222	1,182	9,243	428	4,271	4,699
March .....	--	7,574	324	157	132	145	61	131	1,160	9,552	417	3,703	4,120
April .....	--	7,208	234	130	119	136	75	152	1,372	9,307	586	4,357	4,943
May .....	--	7,245	191	166	87	106	109	228	1,423	9,470	531	4,343	4,874
June .....	--	7,304	132	193	91	111	100	174	1,537	9,552	431	4,237	4,668
July .....	--	7,331	143	160	95	117	33	144	1,584	9,511	526	4,441	4,967
August .....	--	7,638	140	132	104	123	33	209	1,494	9,768	461	4,103	4,564
September .....	--	7,222	103	66	79	101	63	243	1,537	9,335	409	4,475	4,884
October .....	--	7,121	101	83	91	120	103	136	1,137	8,800	500	4,128	4,628
November .....	--	7,371	150	102	117	141	70	198	1,094	9,126	320	4,498	4,817
December .....	--	7,900	155	108	144	170	84	221	1,089	9,726	392	4,883	5,275
<b>Average</b> .....	--	<b>7,351</b>	<b>200</b>	<b>129</b>	<b>112</b>	<b>133</b>	<b>71</b>	<b>187</b>	<b>1,329</b>	<b>9,401</b>	<b>458</b>	<b>4,292</b>	<b>4,750</b>
<b>2016 January</b> .....	--	7,675	175	154	147	189	60	291	1,190	9,734	364	4,514	4,878
February .....	--	<sup>R</sup> 7,910	<sup>R</sup> 231	<sup>R</sup> 117	<sup>R</sup> 190	<sup>R</sup> 210	<sup>R</sup> 65	<sup>R</sup> 173	<sup>R</sup> 1,314	<sup>R</sup> 10,020	<sup>R</sup> 374	<sup>R</sup> 4,573	<sup>R</sup> 4,948
March .....	--	<sup>E</sup> 7,797	<sup>E</sup> 128	<sup>E</sup> 137	<sup>E</sup> 101	NA	<sup>E</sup> 81	<sup>E</sup> 248	NA	<sup>E</sup> 9,737	<sup>E</sup> 376	<sup>E</sup> 4,227	<sup>E</sup> 4,603
April .....	--	<sup>E</sup> 7,822	<sup>E</sup> 147	<sup>E</sup> 129	<sup>E</sup> 89	NA	<sup>E</sup> 140	<sup>E</sup> 206	NA	<sup>E</sup> 9,965	<sup>E</sup> 366	<sup>E</sup> 3,643	<sup>E</sup> 4,010
<b>4-Month Average</b> .....	--	<sup>E</sup> <b>7,799</b>	<sup>E</sup> <b>169</b>	<sup>E</sup> <b>135</b>	<sup>E</sup> <b>131</b>	<b>NA</b>	<sup>E</sup> <b>87</b>	<sup>E</sup> <b>231</b>	<b>NA</b>	<sup>E</sup> <b>9,861</b>	<sup>E</sup> <b>370</b>	<sup>E</sup> <b>4,239</b>	<sup>E</sup> <b>4,609</b>
<b>2015 4-Month Average</b> .....	--	<b>7,264</b>	<b>323</b>	<b>136</b>	<b>135</b>	<b>152</b>	<b>65</b>	<b>173</b>	<b>1,264</b>	<b>9,378</b>	<b>481</b>	<b>4,095</b>	<b>4,576</b>
<b>2014 4-Month Average</b> .....	--	<b>7,408</b>	<b>281</b>	<b>92</b>	<b>151</b>	<b>172</b>	<b>37</b>	<b>172</b>	<b>1,169</b>	<b>9,331</b>	<b>257</b>	<b>3,632</b>	<b>3,889</b>

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

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

<sup>c</sup> "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.

<sup>d</sup> 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.")

<sup>e</sup> Includes propylene.

<sup>f</sup> Finished motor gasoline. Through 1955, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components.

<sup>g</sup> Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, pentanes plus, 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.

<sup>R</sup>=Revised. <sup>E</sup>=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. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports, and unpublished revisions. • **2015 and 2016:** 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 <sup>a</sup>	Angola <sup>b</sup>	Ecuador <sup>c</sup>	Iraq	Kuwait <sup>d</sup>	Libya <sup>e</sup>	Nigeria <sup>f</sup>	Saudi Arabia <sup>d</sup>	Venezuela	Other <sup>g</sup>	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 January .....	68	94	227	249	474	—	89	1,462	687	1	3,350
February .....	79	114	207	290	348	—	59	1,464	807	31	3,398
March .....	92	117	173	306	360	—	112	1,444	772	19	3,395
April .....	69	157	170	321	342	—	187	1,607	853	1	3,708
May .....	102	178	217	351	334	—	118	1,241	772	1	3,313
June .....	147	166	138	529	355	—	115	1,017	748	38	3,252
July .....	118	159	214	496	375	—	61	1,232	901	40	3,598
August .....	137	129	305	543	263	10	48	897	867	76	3,275
September .....	185	202	305	350	245	—	57	1,005	824	42	3,217
October .....	101	147	242	286	304	—	59	830	702	6	2,677
November .....	98	209	120	421	137	57	55	1,014	800	10	2,921
December .....	125	180	255	282	197	11	144	813	744	10	2,760
Average .....	110	154	215	369	311	6	92	1,166	789	23	3,237
2015 January .....	82	54	331	227	266	20	51	820	668	17	2,536
February .....	112	181	245	222	241	4	38	945	782	24	2,793
March .....	76	93	244	122	277	—	109	1,047	849	15	2,831
April .....	106	102	114	139	186	3	54	1,205	857	—	2,766
May .....	150	119	169	283	222	12	58	1,210	897	7	3,125
June .....	126	113	237	214	314	—	21	1,077	757	10	2,869
July .....	109	108	281	133	144	—	130	1,173	808	11	2,896
August .....	121	102	256	117	113	4	86	1,005	935	11	2,751
September .....	145	182	264	203	211	5	114	863	855	11	2,854
October .....	76	193	230	375	170	17	65	983	802	7	2,919
November .....	124	231	191	269	140	6	114	1,236	843	17	3,169
December .....	74	166	197	447	193	12	155	1,122	899	10	3,274
Average .....	108	136	230	229	206	7	83	1,058	830	12	2,899
2016 January .....	126	166	334	252	205	10	132	1,054	702	72	3,052
February .....	174	133	246	245	289	5	274	1,011	773	61	3,210
2-Month Average .....	149	150	291	248	246	8	200	1,033	736	66	3,128
2015 2-Month Average .....	97	114	290	225	254	12	45	879	722	20	2,658
2014 2-Month Average .....	73	103	218	268	414	—	75	1,463	744	15	3,373

<sup>a</sup> Algeria joined OPEC in 1969. For 1960–1968, Algeria is included in "Total Non-OPEC" on Table 3.3d.

<sup>b</sup> Angola joined OPEC in January 2007. For 1960–2006, Angola is included in "Total Non-OPEC" on Table 3.3d.

<sup>c</sup> 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.

<sup>d</sup> 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.

<sup>e</sup> Libya joined OPEC in 1962. For 1960 and 1961, Libya is included in "Total Non-OPEC" on Table 3.3d.

<sup>f</sup> Nigeria joined OPEC in 1971. For 1960–1970, Nigeria is included in "Total Non-OPEC" on Table 3.3d.

<sup>g</sup> Includes these countries in the years indicated: Gabon (1975–1994), Indonesia (1962–2008 and 2016), Iran (1960 forward), Qatar (1961 forward), and United Arab Emirates (1967 forward).

— No data reported.

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. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports. • **2015 and 2016:** 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 <sup>a</sup>	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
<b>2014</b> January .....	128	3,412	381	1,030	106	36	212	142	—	508	5,955
February .....	181	3,213	320	864	105	88	365	68	—	554	5,757
March .....	72	3,201	382	871	90	70	424	131	—	620	5,861
April .....	100	3,140	334	753	110	72	405	170	—	809	5,893
May .....	136	3,276	247	799	127	39	351	179	—	921	6,074
June .....	143	3,258	210	777	15	30	274	97	—	781	5,585
July .....	157	3,289	202	753	32	55	405	128	—	877	5,897
August .....	214	3,432	336	798	61	44	394	84	—	680	6,044
September .....	113	3,543	333	859	56	7	282	57	—	713	5,964
October .....	258	3,429	354	834	119	28	316	109	—	801	6,247
November .....	224	3,466	427	945	68	35	170	110	—	644	6,088
December .....	198	3,971	287	821	129	42	355	119	—	720	6,642
<b>Average</b> .....	<b>160</b>	<b>3,388</b>	<b>318</b>	<b>842</b>	<b>85</b>	<b>45</b>	<b>330</b>	<b>117</b>	<b>—</b>	<b>720</b>	<b>6,004</b>
<b>2015</b> January .....	236	3,974	417	831	78	11	389	140	—	781	6,857
February .....	138	3,936	353	784	81	58	300	77	—	722	6,450
March .....	170	3,863	523	875	109	52	374	77	—	677	6,721
April .....	232	3,829	409	713	67	37	341	112	—	802	6,542
May .....	108	3,557	535	663	80	108	337	130	—	827	6,345
June .....	255	3,618	377	856	23	56	475	134	—	888	6,683
July .....	208	3,520	441	755	54	87	408	142	—	1,001	6,614
August .....	396	3,920	339	731	22	138	433	154	—	885	7,018
September .....	276	3,789	292	647	53	48	369	178	—	830	6,481
October .....	237	3,401	221	756	32	26	278	99	—	833	5,881
November .....	99	3,609	402	721	39	37	320	92	—	639	5,956
December .....	208	4,042	390	760	38	39	219	112	—	645	6,453
<b>Average</b> .....	<b>214</b>	<b>3,754</b>	<b>392</b>	<b>758</b>	<b>56</b>	<b>58</b>	<b>354</b>	<b>121</b>	<b>—</b>	<b>795</b>	<b>6,501</b>
<b>2016</b> January .....	168	4,111	509	710	57	58	384	115	—	569	6,683
February .....	148	4,201	507	539	73	61	436	71	—	773	6,810
<b>2-Month Average</b> .....	<b>159</b>	<b>4,155</b>	<b>508</b>	<b>627</b>	<b>65</b>	<b>60</b>	<b>409</b>	<b>94</b>	<b>—</b>	<b>668</b>	<b>6,744</b>
<b>2015 2-Month Average</b> .....	<b>190</b>	<b>3,956</b>	<b>387</b>	<b>809</b>	<b>79</b>	<b>34</b>	<b>347</b>	<b>110</b>	<b>—</b>	<b>753</b>	<b>6,664</b>
<b>2014 2-Month Average</b> .....	<b>153</b>	<b>3,318</b>	<b>352</b>	<b>951</b>	<b>105</b>	<b>61</b>	<b>285</b>	<b>107</b>	<b>—</b>	<b>530</b>	<b>5,861</b>

<sup>a</sup> 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

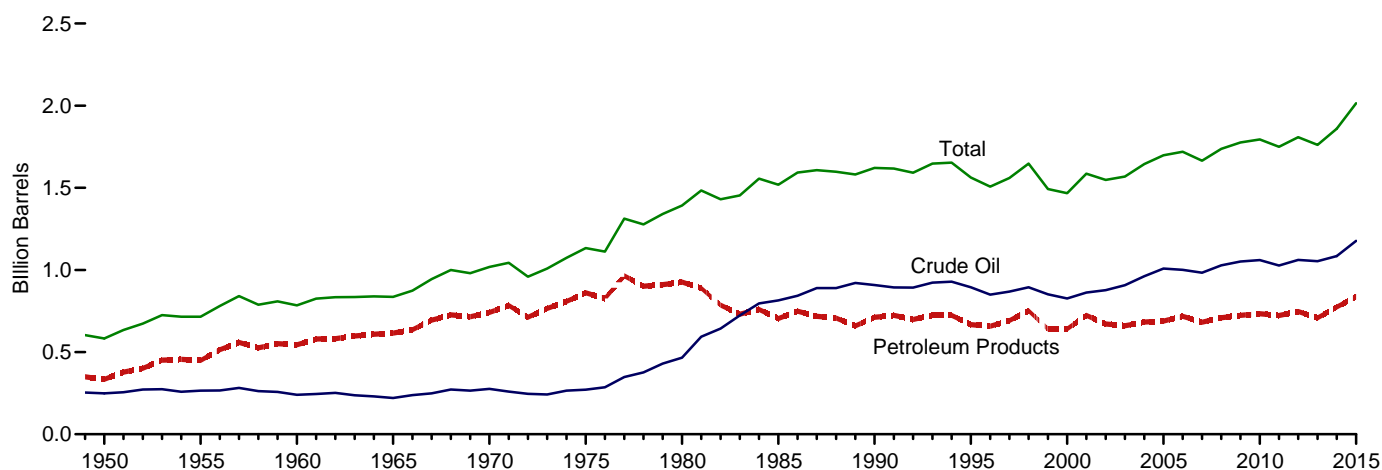
states and the District of Columbia.

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.

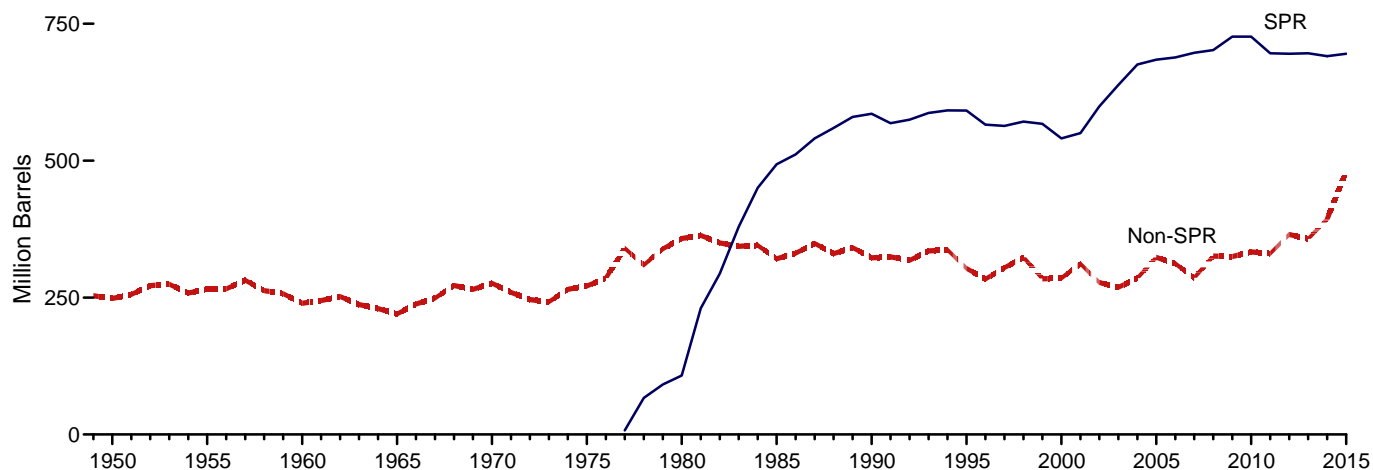
Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook*, annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports. • **2015 and 2016:** EIA, *Petroleum Supply Monthly*, monthly reports.

## Figure 3.4 Petroleum Stocks

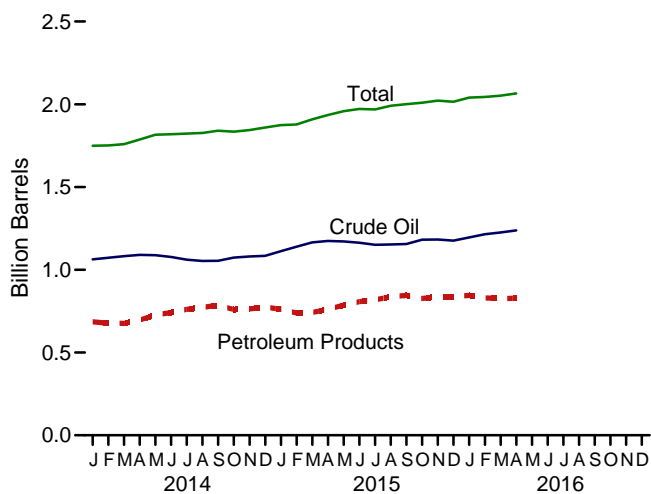
Overview, 1949–2015



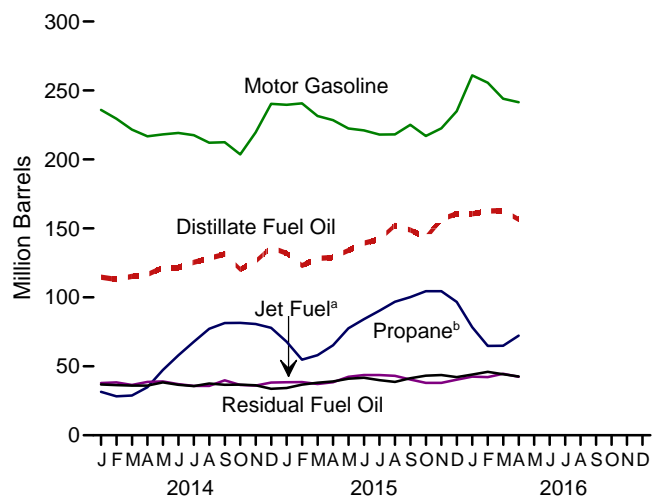
SPR and Non-SPR Crude Oil Stocks, 1949–2015



Overview, Monthly



Selected Products, Monthly



<sup>a</sup> Includes kerosene-type jet fuel only.

<sup>b</sup> Includes propylene.

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 <sup>a</sup>			Distillate Fuel Oil <sup>f</sup>	Jet Fuel <sup>g</sup>	LPG <sup>b</sup>		Motor Gasoline <sup>i</sup>	Residual Fuel Oil	Other <sup>j</sup>	Total
	SPR <sup>c</sup>	Non-SPR <sup>d,e</sup>	Total <sup>e</sup>			Propane <sup>h</sup>	Total				
1950 Year .....	--	248	248	72	( <sup>g</sup> )	NA	2	116	41	104	583
1955 Year .....	--	266	266	111	3	NA	7	165	39	123	715
1960 Year .....	--	240	240	138	7	NA	23	195	45	137	785
1965 Year .....	--	220	220	155	19	NA	30	175	56	181	836
1970 Year .....	--	276	276	195	28	NA	67	209	54	188	1,018
1975 Year .....	--	271	271	209	30	82	125	235	74	188	1,133
1980 Year .....	108	358	466	205	42	65	120	261	92	205	1,392
1985 Year .....	493	321	814	144	40	39	74	223	50	174	1,519
1990 Year .....	586	323	908	132	52	49	98	220	49	162	1,621
1995 Year .....	592	303	895	130	40	43	93	202	37	165	1,563
2000 Year .....	541	286	826	118	45	41	83	196	36	164	1,468
2001 Year .....	550	312	862	145	42	66	121	210	41	166	1,586
2002 Year .....	599	278	877	134	39	53	106	209	31	152	1,548
2003 Year .....	638	269	907	137	39	50	94	207	38	147	1,568
2004 Year .....	676	286	961	126	40	55	104	218	42	153	1,645
2005 Year .....	685	324	1,008	136	42	57	109	208	37	157	1,698
2006 Year .....	689	312	1,001	144	39	62	113	212	42	169	1,720
2007 Year .....	697	286	983	134	39	52	96	218	39	156	1,665
2008 Year .....	702	326	1,028	146	38	55	113	214	36	162	1,737
2009 Year .....	727	325	1,052	166	43	50	102	223	37	153	1,776
2010 Year .....	727	333	1,060	164	43	49	108	219	41	158	1,794
2011 Year .....	696	331	1,027	149	41	55	112	223	34	164	1,750
2012 Year .....	695	365	1,061	135	40	68	141	231	34	167	1,808
2013 Year .....	696	357	1,053	128	37	45	114	228	38	163	1,761
2014 January .....	696	367	1,063	115	38	32	90	236	37	171	1,749
February .....	696	377	1,073	113	38	28	82	229	36	179	1,751
March .....	696	387	1,083	115	36	29	86	222	36	182	1,759
April .....	693	397	1,090	117	39	35	103	217	36	186	1,787
May .....	691	397	1,088	122	39	47	126	218	38	185	1,816
June .....	691	386	1,077	122	37	58	150	219	37	177	1,819
July .....	691	370	1,061	125	36	68	172	218	36	174	1,822
August .....	691	363	1,053	128	36	77	187	212	38	172	1,827
September .....	691	363	1,054	131	40	81	191	212	37	174	1,840
October .....	691	383	1,074	120	36	82	186	204	37	177	1,834
November .....	691	389	1,080	126	36	81	171	220	36	175	1,844
December .....	691	393	1,084	136	38	78	155	240	34	172	1,860
2015 January .....	691	421	1,112	132	38	68	134	240	34	184	1,874
February .....	691	448	1,139	123	39	55	114	241	37	185	1,878
March .....	691	475	1,166	128	37	58	122	231	38	186	1,908
April .....	691	483	1,174	129	38	65	139	228	39	187	1,935
May .....	692	479	1,172	134	42	78	160	222	41	187	1,958
June .....	694	470	1,163	139	44	84	176	221	42	186	1,971
July .....	695	455	1,151	142	44	90	187	218	40	187	1,969
August .....	695	458	1,153	152	43	97	204	218	39	182	1,991
September .....	695	461	1,156	149	40	100	210	225	41	180	2,001
October .....	695	487	1,182	143	38	104	209	217	43	177	2,009
November .....	695	487	1,183	157	38	104	196	223	44	182	2,022
December .....	695	481	1,176	161	40	97	177	235	42	183	2,015
2016 January .....	695	500	1,195	161	42	78	145	261	44	192	2,041
February .....	695	520	1,215	163	42	<sup>R</sup> 65	127	<sup>R</sup> 256	46	<sup>R</sup> 196	<sup>R</sup> 2,045
March .....	<sup>E</sup> 695	<sup>E</sup> 530	<sup>E</sup> 1,225	<sup>E</sup> 163	<sup>E</sup> 45	<sup>E</sup> 65	<sup>RF</sup> 131	<sup>E</sup> 244	<sup>E</sup> 44	<sup>RE</sup> 200	<sup>E</sup> 2,052
April .....	<sup>E</sup> 695	<sup>E</sup> 542	<sup>E</sup> 1,238	<sup>E</sup> 157	<sup>E</sup> 42	<sup>E</sup> 72	<sup>F</sup> 143	<sup>E</sup> 241	<sup>E</sup> 43	<sup>E</sup> 202	<sup>E</sup> 2,066

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

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

<sup>c</sup> "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.

<sup>d</sup> All crude oil stocks other than those in "SPR."

<sup>e</sup> Beginning in 1981, includes stocks of Alaskan crude oil in transit.

<sup>f</sup> Excludes stocks in the Northeast Home Heating Oil Reserve. Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>g</sup> 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.")

<sup>h</sup> Includes propylene.

<sup>i</sup> Includes finished motor gasoline and motor gasoline blending components; excludes oxygenates. Through 1963, also includes aviation gasoline and special naphthas.

<sup>j</sup> Asphalt and road oil, aviation gasoline blending components, kerosene,

lubricants, pentanes plus, 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.

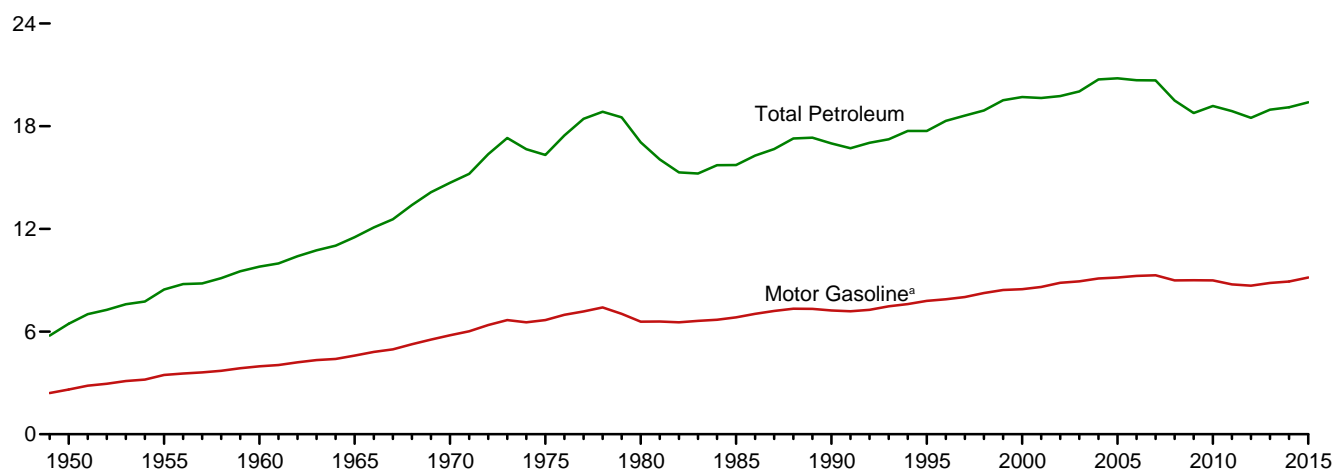
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

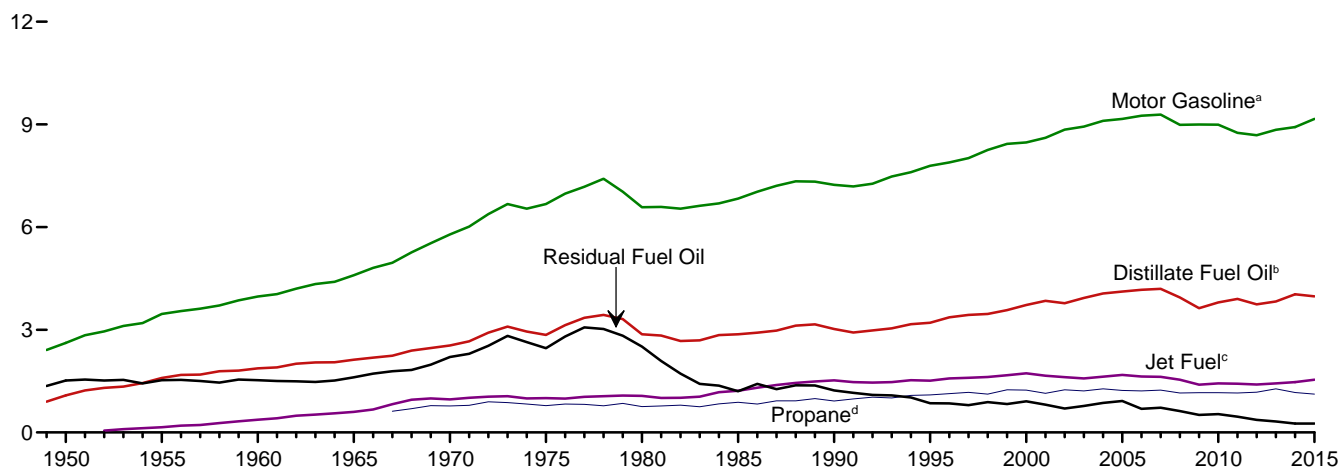
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual reports. • **2015 and 2016:** 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)

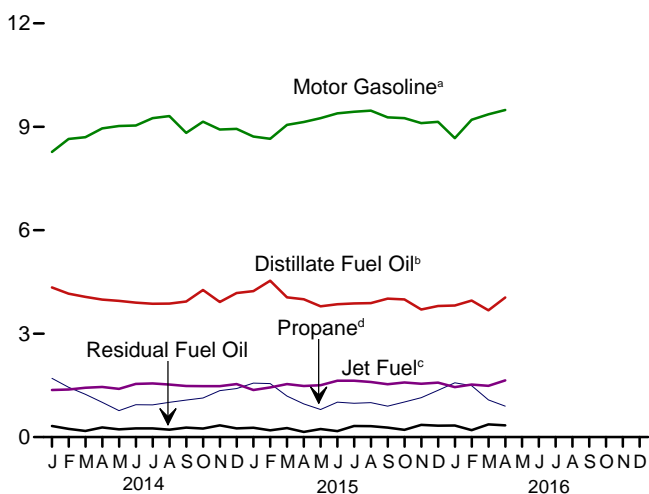
Total Petroleum and Motor Gasoline, 1949–2015



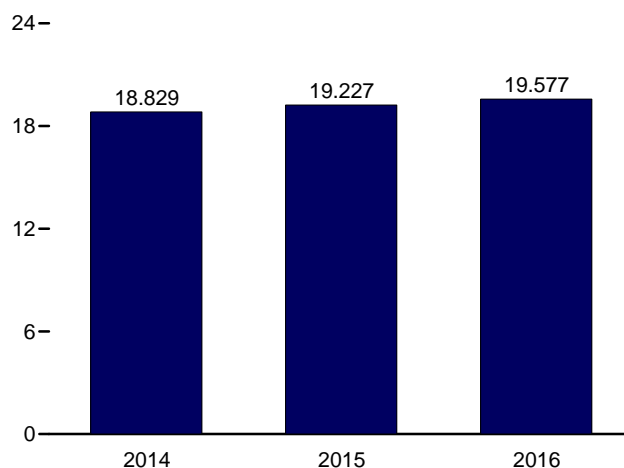
Selected Products, 1949–2015



Selected Products, Monthly



Total, January–April



<sup>a</sup> Beginning in 1993, includes fuel ethanol blended into motor gasoline.  
<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.  
<sup>c</sup> Beginning in 2005, includes kerosene-type jet fuel only.

<sup>d</sup> Includes propylene.  
 Note: SPR=Strategic Petroleum Reserve.  
 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 <sup>b</sup>	Jet Fuel <sup>c</sup>	Kero- sene	LPG <sup>a</sup>		Lubri- cants	Motor Gasoline <sup>e</sup>	Petro- leum Coke	Residual Fuel Oil	Other <sup>f</sup>	Total
						Propane <sup>d</sup>	Total						
1950 Average .....	180	108	1,082	( <sup>c</sup> )	323	NA	234	106	2,616	41	1,517	250	6,458
1955 Average .....	254	192	1,592	154	320	NA	404	116	3,463	67	1,526	366	8,455
1960 Average .....	302	161	1,872	371	271	NA	621	117	3,969	149	1,529	435	9,797
1965 Average .....	368	120	2,126	602	267	NA	841	129	4,593	202	1,608	657	11,512
1970 Average .....	447	55	2,540	967	263	776	1,224	136	5,785	212	2,204	866	14,697
1975 Average .....	419	39	2,851	1,001	159	783	1,333	137	6,675	247	2,462	1,001	16,322
1980 Average .....	396	35	2,866	1,068	158	754	1,469	159	6,579	237	2,508	1,581	17,056
1985 Average .....	425	27	2,868	1,218	114	883	1,599	145	6,831	264	1,202	1,032	15,726
1990 Average .....	483	24	3,021	1,522	43	917	1,556	164	7,235	339	1,229	1,373	16,988
1995 Average .....	486	21	3,207	1,514	54	1,096	1,899	156	7,789	365	852	1,381	17,725
2000 Average .....	525	20	3,722	1,725	67	1,235	2,231	166	8,472	406	909	1,458	19,701
2001 Average .....	519	19	3,847	1,655	72	1,142	2,044	153	8,610	437	811	1,481	19,649
2002 Average .....	512	18	3,776	1,614	43	1,248	2,163	151	8,848	463	700	1,474	19,761
2003 Average .....	503	16	3,927	1,578	55	1,215	2,074	140	8,935	455	772	1,579	20,034
2004 Average .....	537	17	4,058	1,630	64	1,276	2,132	141	9,105	524	865	1,657	20,731
2005 Average .....	546	19	4,118	1,679	70	1,229	2,030	141	9,159	515	920	1,605	20,802
2006 Average .....	521	18	4,169	1,633	54	1,215	2,052	137	9,253	522	689	1,640	20,687
2007 Average .....	494	17	4,196	1,622	32	1,235	2,085	142	9,286	490	723	1,593	20,680
2008 Average .....	417	15	3,945	1,539	14	1,154	1,954	131	8,989	464	622	1,408	19,498
2009 Average .....	360	14	3,631	1,393	18	1,160	2,051	118	8,997	427	511	1,251	18,771
2010 Average .....	362	15	3,800	1,432	20	1,160	2,173	131	8,993	376	535	1,343	19,180
2011 Average .....	355	15	3,899	1,425	12	1,153	2,204	125	8,753	361	461	1,272	18,882
2012 Average .....	340	14	3,741	1,398	5	1,175	2,251	114	8,682	360	369	1,215	18,490
2013 Average .....	323	12	3,827	1,434	5	1,275	2,440	121	8,843	354	319	1,282	18,961
2014 January .....	195	10	4,340	1,364	18	1,703	2,935	105	8,273	439	325	1,098	19,102
February .....	208	7	4,160	1,380	5	1,445	2,603	103	8,647	300	238	1,256	18,908
March .....	215	12	4,066	1,433	2	1,241	2,405	145	8,697	178	180	1,130	18,464
April .....	278	12	3,990	1,455	2	1,009	2,198	131	8,955	324	279	1,224	18,849
May .....	346	13	3,952	1,400	2	770	1,943	129	9,023	368	226	1,183	18,585
June .....	402	11	3,902	1,544	2	942	2,096	117	9,039	352	254	1,171	18,890
July .....	466	17	3,867	1,559	12	936	2,143	138	9,249	413	253	1,166	19,283
August .....	458	14	3,875	1,522	1	1,010	2,342	128	9,311	346	218	1,184	19,400
September .....	447	12	3,933	1,482	18	1,076	2,340	144	8,822	413	278	1,358	19,246
October .....	392	11	4,266	1,479	16	1,134	2,410	127	9,148	362	246	1,234	19,691
November .....	264	11	3,917	1,476	6	1,346	2,674	137	8,921	400	339	1,225	19,370
December .....	247	12	4,178	1,537	22	1,408	2,668	111	8,941	265	252	1,223	19,457
Average .....	327	12	4,037	1,470	9	1,167	2,396	126	8,921	347	257	1,204	19,106
2015 January .....	198	8	4,235	1,367	2	1,568	2,765	153	8,718	384	272	1,146	19,249
February .....	214	8	4,535	1,442	9	1,551	2,762	112	8,650	240	197	1,226	19,396
March .....	235	9	4,054	1,540	11	1,190	2,356	146	9,055	378	261	1,193	19,238
April .....	302	14	3,998	1,483	1	961	2,229	124	9,139	376	151	1,220	19,037
May .....	340	13	3,793	1,507	20	801	2,108	163	9,251	385	234	1,303	19,117
June .....	470	12	3,854	1,637	(s)	1,016	2,211	128	9,391	406	172	1,309	19,591
July .....	484	18	3,877	1,637	1	980	2,329	158	9,438	408	325	1,303	19,979
August .....	507	11	3,888	1,596	1	998	2,189	122	9,467	405	318	1,308	19,814
September .....	471	11	4,015	1,535	2	896	2,072	129	9,275	298	275	1,143	19,225
October .....	400	14	3,993	1,584	3	1,020	2,294	149	9,250	327	212	1,125	19,350
November .....	284	10	3,703	1,548	3	1,145	2,516	106	9,109	311	357	1,242	19,188
December .....	211	9	3,804	1,578	26	1,356	2,685	130	9,144	284	331	1,343	19,544
Average .....	344	11	3,976	1,539	7	1,121	2,375	135	9,161	351	259	1,239	19,395
2016 January .....	200	7	3,816	1,449	-3	1,577	2,898	134	8,670	349	339	1,195	19,055
February .....	R 219	R 11	R 3,959	R 1,525	R 1	R 1,490	R 2,723	R 141	R 9,206	R 362	R 200	R 1,333	R 19,680
March .....	F 257	F 9	F 3,678	F 1,486	RF 7	F 1,080	RF 2,408	RF 134	F 9,362	F 326	F 370	RE 1,495	E 19,532
April .....	F 319	F 15	F 4,047	F 1,645	F 3	F 899	F 2,329	F 130	F 9,486	F 352	F 342	E 1,396	E 20,063
4-Month Average ...	E 249	E 10	E 3,872	E 1,525	E 2	E 1,261	E 2,589	E 135	E 9,178	E 347	E 314	E 1,355	E 19,577
2015 4-Month Average ...	237	10	4,199	1,458	6	1,315	2,525	134	8,895	347	221	1,195	19,227
2014 4-Month Average ...	224	10	4,140	1,409	7	1,350	2,537	122	8,640	311	256	1,175	18,829

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

<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>c</sup> 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.")

<sup>d</sup> Includes propylene.

<sup>e</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>f</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 500

barrels per day and greater than -500 barrels per day.

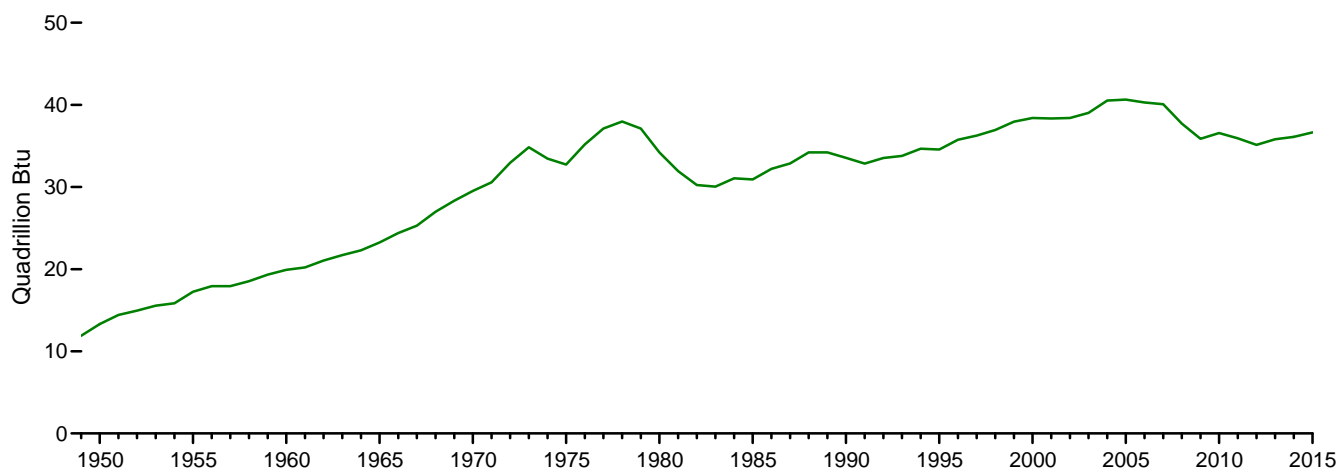
Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent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

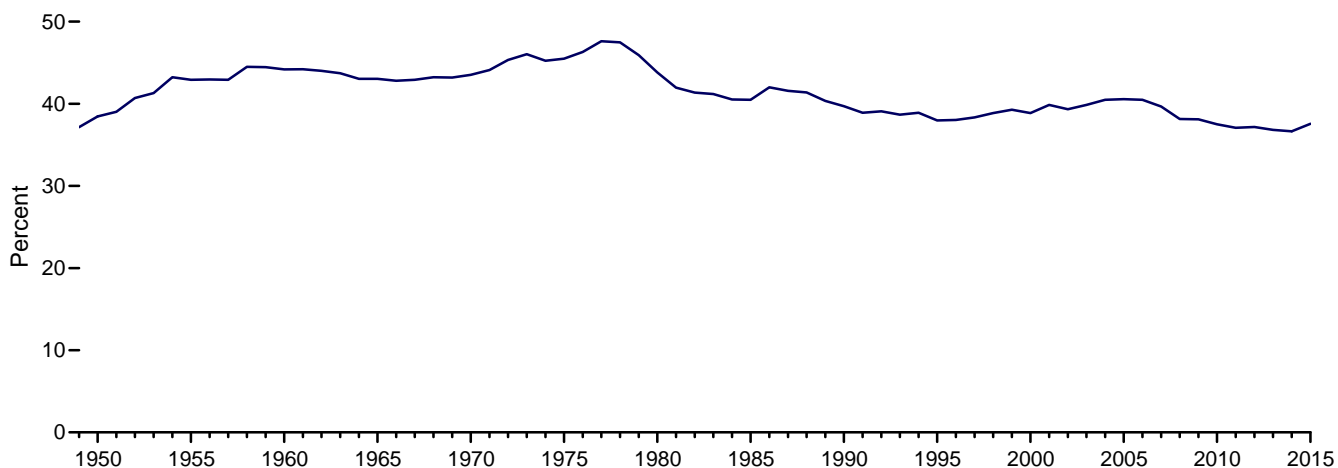
Sources: • 1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • 1976–1980: U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*, annual reports. • 1981–2014: EIA, *Petroleum Supply Annual*, annual reports, and unpublished revisions. • 2015 and 2016: 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 3.6 Heat Content of Petroleum Products Supplied by Type**

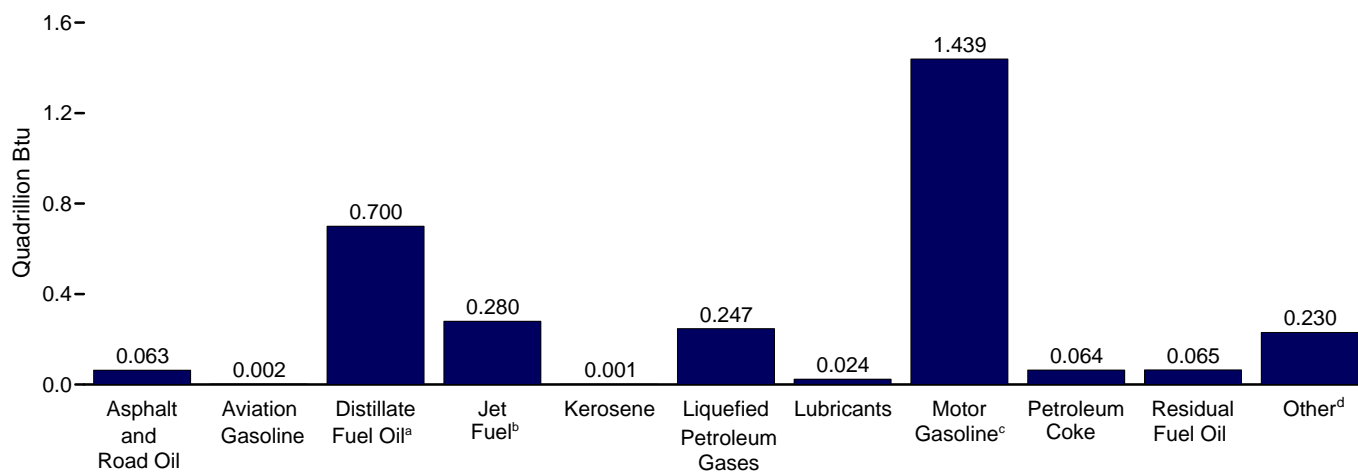
Total, 1949–2015



Petroleum Products Supplied as Share of Total Energy Consumption, 1949–2015



By Product, April 2016



<sup>a</sup> Includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>b</sup> Includes kerosene-type jet fuel only.

<sup>c</sup> Includes fuel ethanol blended into motor gasoline.

<sup>d</sup> 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 <sup>b</sup>	Jet Fuel <sup>c</sup>	Kero- sene	LPG <sup>a</sup>		Lubri- cants	Motor Gasoline <sup>e</sup>	Petro- leum Coke	Residual Fuel Oil	Other <sup>f</sup>	Total
						Propane <sup>d</sup>	Total						
1950 Total .....	435	199	2,300	( ° )	668	NA	343	236	5,015	90	3,482	546	13,315
1955 Total .....	615	354	3,385	301	662	NA	592	258	6,640	147	3,502	798	17,255
1960 Total .....	734	298	3,992	739	563	NA	912	259	7,631	328	3,517	947	19,919
1965 Total .....	890	222	4,519	1,215	553	NA	1,232	286	8,806	444	3,691	1,390	23,246
1970 Total .....	1,082	100	5,401	1,973	544	1,086	1,689	301	11,091	465	5,057	1,817	29,521
1975 Total .....	1,014	71	6,061	2,047	329	1,097	1,807	304	12,798	542	5,649	2,109	32,732
1980 Total .....	962	64	6,110	2,190	329	1,059	1,976	354	12,648	522	5,772	3,278	34,205
1985 Total .....	1,029	50	6,098	2,497	236	1,236	2,103	322	13,098	582	2,759	2,152	30,925
1990 Total .....	1,170	45	6,422	3,129	88	1,284	2,059	362	13,872	745	2,820	2,839	33,552
1995 Total .....	1,178	40	6,812	3,132	112	1,534	2,512	346	14,834	802	1,955	2,837	34,558
2000 Total .....	1,276	36	7,927	3,580	140	1,734	2,945	369	16,167	895	2,091	2,979	38,406
2001 Total .....	1,257	35	8,170	3,426	150	1,598	2,697	338	16,386	961	1,861	3,056	38,337
2002 Total .....	1,240	34	8,020	3,340	90	1,747	2,852	334	16,829	1,018	1,605	3,040	38,401
2003 Total .....	1,220	30	8,341	3,265	113	1,701	2,748	309	16,968	1,000	1,772	3,264	39,030
2004 Total .....	1,304	31	8,642	3,383	133	1,791	2,824	313	17,333	1,148	1,990	3,428	40,528
2005 Total .....	1,323	35	8,745	3,475	144	1,721	2,682	312	17,378	1,125	2,111	3,318	40,647
2006 Total .....	1,261	33	8,831	3,379	111	1,701	2,700	303	17,531	1,141	1,581	3,416	40,289
2007 Total .....	1,197	32	8,860	3,358	67	1,729	2,733	313	17,472	1,072	1,659	3,313	40,075
2008 Total .....	1,012	28	8,346	3,193	30	1,620	2,574	291	16,865	1,017	1,432	2,941	37,728
2009 Total .....	873	27	7,661	2,883	36	1,624	2,664	262	16,750	937	1,173	2,611	35,877
2010 Total .....	878	27	8,014	2,963	41	1,624	2,821	291	16,668	831	1,228	2,800	36,561
2011 Total .....	859	27	8,217	2,950	25	1,614	2,839	276	16,191	801	1,058	2,676	35,920
2012 Total .....	827	25	7,903	2,901	11	1,649	2,912	254	16,089	802	849	2,558	35,130
2013 Total .....	783	22	8,059	2,969	11	1,785	3,167	268	16,339	786	731	2,677	35,812
2014 January .....	40	2	776	240	3	203	326	20	1,298	83	63	195	3,045
February .....	39	1	672	219	1	155	260	18	1,225	51	42	201	2,727
March .....	44	2	727	252	(s)	148	263	27	1,364	34	35	202	2,950
April .....	55	2	690	248	(s)	116	233	24	1,359	59	53	212	2,936
May .....	71	2	707	246	(s)	92	210	24	1,415	70	44	212	3,001
June .....	80	2	675	263	(s)	108	220	21	1,372	64	48	201	2,946
July .....	96	3	691	274	2	111	232	26	1,451	78	49	209	3,111
August .....	94	2	693	268	(s)	120	254	24	1,461	65	42	211	3,115
September .....	89	2	681	252	3	124	246	26	1,339	75	52	233	2,999
October .....	81	2	763	260	3	135	265	24	1,435	69	48	218	3,166
November .....	53	2	678	251	1	155	286	25	1,354	73	64	211	2,997
December .....	51	2	747	270	4	167	295	21	1,402	50	49	215	3,106
Total .....	793	22	8,499	3,042	19	1,634	3,090	280	16,476	772	590	2,518	36,101
2015 January .....	41	1	757	240	(s)	186	307	29	1,367	72	53	202	R 3,070
February .....	40	1	733	229	1	167	275	19	R 1,225	41	35	195	R 2,793
March .....	48	1	725	271	2	141	258	27	1,420	71	51	209	3,084
April .....	60	2	692	252	(s)	111	235	23	R 1,386	69	28	208	R 2,955
May .....	70	2	678	265	4	95	230	31	R 1,450	73	46	232	R 3,079
June .....	94	2	667	279	(s)	117	235	23	1,425	74	33	225	R 3,055
July .....	100	3	693	288	(s)	117	255	30	1,480	77	63	232	R 3,220
August .....	104	2	695	281	(s)	119	240	23	R 1,484	76	62	229	R 3,197
September .....	94	2	695	261	(s)	103	216	23	R 1,407	54	52	196	R 3,000
October .....	82	2	714	278	1	121	250	28	R 1,450	62	41	197	R 3,105
November .....	57	1	641	263	(s)	132	265	19	R 1,382	57	67	214	R 2,967
December .....	43	1	680	277	5	161	294	24	R 1,433	54	65	238	R 3,115
Total .....	832	21	8,369	3,184	14	1,570	3,060	299	R 16,909	780	595	2,577	R 36,640
2016 January .....	41	1	682	255	(s)	188	321	25	R 1,359	66	66	212	R 3,028
February .....	R 42	R 2	R 662	R 251	R (s)	R 166	R 280	R 25	R 1,350	R 64	36	R 224	R 2,936
March .....	F 53	F 1	E 657	E 261	RF 1	E 128	RF 264	RF 25	RE 1,468	F 61	E 72	RE 269	RE 3,133
April .....	F 63	F 2	E 700	E 280	F 1	E 103	F 247	F 24	E 1,439	F 64	E 65	E 230	E 3,114
4-Month Total .....	E 200	E 6	E 2,702	E 1,047	E 1	E 585	E 1,111	E 99	E 5,616	E 255	E 239	E 935	E 12,212
2015 4-Month Total .....	189	6	2,907	992	4	605	1,075	98	5,398	253	167	814	11,902
2014 4-Month Total .....	178	6	2,865	958	5	621	1,082	88	5,246	227	193	809	11,659

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

<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>c</sup> 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.")

<sup>d</sup> Includes propylene.

<sup>e</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>f</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components.

Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

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

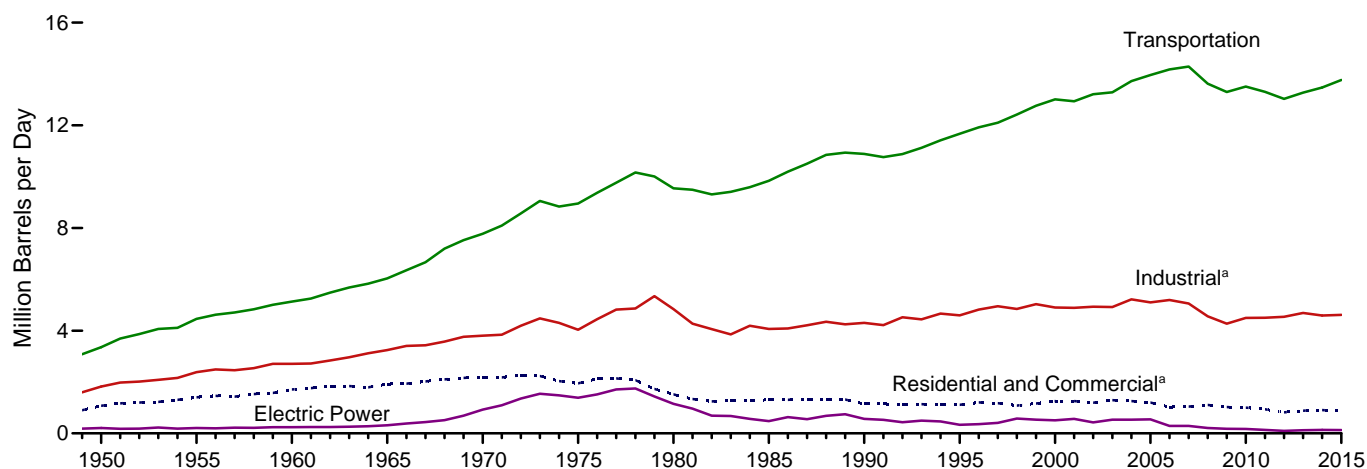
Notes: • Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent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

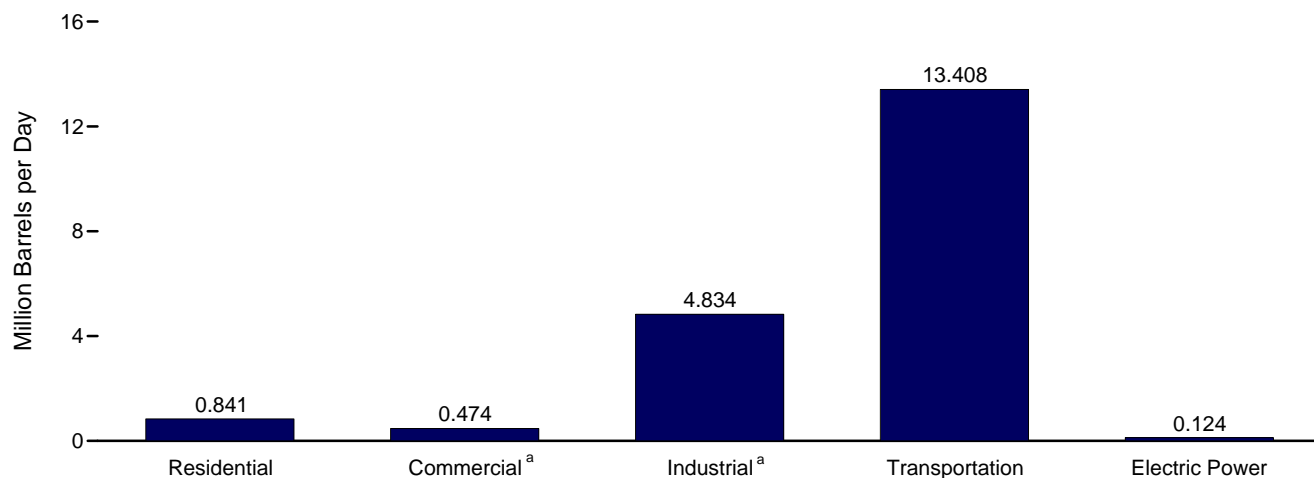
Sources: See end of section.

**Figure 3.7 Petroleum Consumption by Sector**

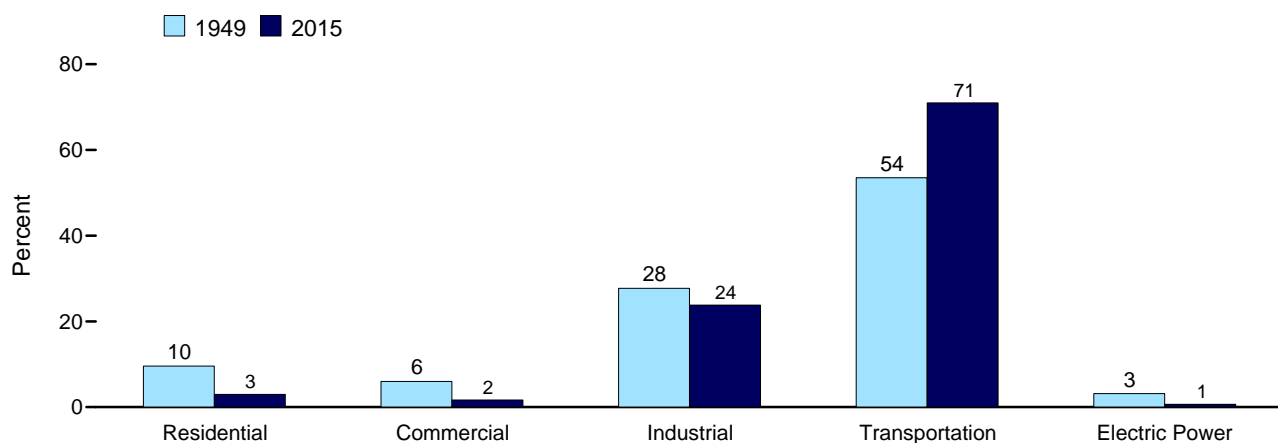
By Sector, 1949–2015



By Sector, February 2016



Sector Shares 1949 and 2015



<sup>a</sup> 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 <sup>a</sup>						
	Distillate Fuel Oil	Kero-sene	Liquefied Petroleum Gases	Total	Distillate Fuel Oil	Kero-sene	Liquefied Petroleum Gases	Motor Gasoline <sup>b</sup>	Petro-leum Coke	Residual Fuel Oil	Total
1950 Average .....	390	168	104	662	123	23	28	52	NA	185	411
1955 Average .....	562	179	144	885	177	24	38	69	NA	209	519
1960 Average .....	736	171	217	1,123	232	23	58	35	NA	243	590
1965 Average .....	805	161	275	1,242	251	26	74	40	NA	281	672
1970 Average .....	883	144	392	1,419	276	30	102	45	NA	311	764
1975 Average .....	850	78	365	1,293	276	24	92	46	NA	214	653
1980 Average .....	617	51	222	890	243	20	63	56	NA	245	626
1985 Average .....	514	77	224	815	297	16	68	50	NA	99	530
1990 Average .....	460	31	252	742	252	6	73	58	0	100	489
1995 Average .....	426	36	282	743	225	11	78	10	(s)	62	385
2000 Average .....	424	46	395	865	230	14	107	23	(s)	40	415
2001 Average .....	427	46	375	849	239	15	102	20	(s)	30	406
2002 Average .....	404	29	384	817	209	8	101	24	(s)	35	376
2003 Average .....	438	34	389	861	233	9	112	32	(s)	48	434
2004 Average .....	433	41	364	839	221	10	108	23	(s)	53	416
2005 Average .....	402	40	366	809	210	10	94	24	(s)	50	389
2006 Average .....	335	32	318	685	189	7	88	26	(s)	33	343
2007 Average .....	342	21	345	708	181	4	87	32	(s)	33	337
2008 Average .....	354	10	394	758	181	2	113	24	(s)	31	351
2009 Average .....	276	13	391	680	187	2	99	28	(s)	31	348
2010 Average .....	266	14	379	659	185	2	100	28	(s)	27	343
2011 Average .....	248	9	347	604	186	2	100	24	(s)	23	335
2012 Average .....	228	4	286	518	168	1	98	21	(s)	14	301
2013 Average .....	233	4	336	573	163	(s)	110	22	(s)	11	306
2014 January .....	330	14	404	748	221	2	133	30	(s)	5	391
February .....	406	4	358	768	272	1	118	32	(s)	6	427
March .....	328	2	331	661	219	(s)	109	32	(s)	4	365
April .....	164	1	303	469	110	(s)	99	33	(s)	2	245
May .....	215	1	268	484	144	(s)	88	33	(s)	3	268
June .....	191	1	289	481	128	(s)	95	33	0	3	258
July .....	155	9	295	459	104	1	97	34	(s)	2	237
August .....	162	1	323	486	108	(s)	106	34	(s)	2	251
September .....	234	14	322	569	156	2	106	32	(s)	3	300
October .....	244	12	332	588	164	2	109	33	(s)	3	311
November .....	297	5	368	670	199	1	121	33	(s)	4	357
December .....	319	16	367	703	213	2	120	33	(s)	4	374
Average .....	253	7	330	589	169	1	108	33	(s)	3	315
2015 January .....	396	2	381	778	265	(s)	125	32	(s)	5	428
February .....	379	7	380	766	253	1	125	32	(s)	5	416
March .....	271	8	324	604	181	1	106	33	(s)	4	326
April .....	169	1	307	476	113	(s)	101	33	(s)	2	250
May .....	163	15	290	469	109	2	95	34	(s)	2	243
June .....	99	(s)	304	403	66	(s)	100	34	0	1	202
July .....	110	1	321	432	74	(s)	105	34	0	2	215
August .....	137	1	301	439	92	(s)	99	35	(s)	2	227
September .....	135	1	285	421	90	(s)	94	34	(s)	2	220
October .....	329	2	316	648	220	(s)	104	34	(s)	5	363
November .....	365	2	347	714	244	(s)	114	33	(s)	5	397
December .....	384	19	370	773	257	3	121	33	(s)	5	420
Average .....	244	5	327	576	163	1	107	33	(s)	3	308
2016 January .....	445	-2	399	842	298	(s)	131	32	(s)	6	466
February .....	465	1	375	841	311	(s)	123	34	(s)	6	474
2-Month Average .....	455	(s)	387	842	304	(s)	127	33	(s)	6	470
2015 2-Month Average .....	388	4	381	772	259	1	125	32	(s)	5	422
2014 2-Month Average .....	366	9	383	758	245	1	125	31	(s)	5	408

<sup>a</sup> Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>b</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

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 <sup>a</sup>									
	Asphalt and Road Oil	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>b</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>c</sup>	Total
1950 Average .....	180	328	132	100	43	131	41	617	250	1,822
1955 Average .....	254	466	116	212	47	173	67	686	366	2,387
1960 Average .....	302	476	78	333	48	198	149	689	435	2,708
1965 Average .....	368	541	80	470	62	179	202	689	657	3,247
1970 Average .....	447	577	89	699	70	150	203	708	866	3,808
1975 Average .....	419	630	58	844	68	116	246	658	1,001	4,038
1980 Average .....	396	621	87	1,172	82	82	234	586	1,581	4,842
1985 Average .....	425	526	21	1,285	75	114	261	326	1,032	4,065
1990 Average .....	483	541	6	1,215	84	97	325	179	1,373	4,304
1995 Average .....	486	532	7	1,527	80	105	328	147	1,381	4,594
2000 Average .....	525	563	8	1,720	86	79	361	105	1,458	4,903
2001 Average .....	519	611	11	1,557	79	155	390	89	1,481	4,892
2002 Average .....	512	566	7	1,668	78	163	383	83	1,474	4,934
2003 Average .....	503	551	12	1,560	72	171	375	96	1,579	4,918
2004 Average .....	537	570	14	1,646	73	195	423	108	1,657	5,222
2005 Average .....	546	594	19	1,549	72	187	404	123	1,605	5,100
2006 Average .....	521	594	14	1,627	71	198	425	104	1,640	5,193
2007 Average .....	494	595	6	1,637	73	161	412	84	1,593	5,056
2008 Average .....	417	637	2	1,419	67	131	394	84	1,408	4,559
2009 Average .....	360	509	2	1,541	61	128	363	57	1,251	4,272
2010 Average .....	362	547	4	1,673	68	140	310	52	1,343	4,500
2011 Average .....	355	586	2	1,733	64	138	295	59	1,272	4,503
2012 Average .....	340	602	1	1,841	59	136	319	30	1,215	4,543
2013 Average .....	323	601	1	1,962	62	142	295	21	1,282	4,690
<b>2014 January</b> .....	195	913	3	2,357	54	107	372	19	1,098	5,119
February .....	208	712	1	2,090	53	112	240	17	1,256	4,690
March .....	215	669	(s)	1,932	75	113	114	12	1,130	4,260
April .....	278	714	(s)	1,765	68	116	278	19	1,224	4,463
May .....	346	586	(s)	1,560	67	117	308	16	1,183	4,184
June .....	402	517	(s)	1,684	60	117	287	18	1,171	4,258
July .....	466	513	2	1,721	71	120	356	17	1,166	4,432
August .....	458	497	(s)	1,881	66	121	288	14	1,184	4,510
September .....	447	555	3	1,879	74	114	354	19	1,358	4,803
October .....	392	768	2	1,935	65	119	328	17	1,234	4,860
November .....	264	575	1	2,147	71	116	354	24	1,225	4,777
December .....	247	757	3	2,142	57	116	200	18	1,223	4,763
<b>Average</b> .....	<b>327</b>	<b>648</b>	<b>1</b>	<b>1,924</b>	<b>65</b>	<b>116</b>	<b>290</b>	<b>18</b>	<b>1,204</b>	<b>4,593</b>
<b>2015 January</b> .....	198	850	(s)	2,220	79	113	323	19	1,146	4,948
February .....	214	926	1	2,218	57	112	169	10	1,226	4,933
March .....	235	735	2	1,892	75	118	335	19	1,193	4,603
April .....	302	716	(s)	1,790	64	119	328	11	1,220	4,550
May .....	340	540	3	1,693	84	120	332	17	1,303	4,431
June .....	470	583	(s)	1,775	66	122	356	12	1,309	4,694
July .....	484	565	(s)	1,871	81	122	343	22	1,303	4,792
August .....	507	533	(s)	1,758	63	123	344	21	1,308	4,658
September .....	471	715	(s)	1,664	66	120	237	20	1,143	4,435
October .....	400	503	(s)	1,842	77	120	279	14	1,125	4,360
November .....	284	365	(s)	2,021	54	118	269	24	1,242	4,379
December .....	211	448	4	2,156	67	119	241	22	1,343	4,610
<b>Average</b> .....	<b>344</b>	<b>621</b>	<b>1</b>	<b>1,907</b>	<b>70</b>	<b>119</b>	<b>297</b>	<b>18</b>	<b>1,239</b>	<b>4,615</b>
<b>2016 January</b> .....	200	533	(s)	2,327	69	113	296	24	1,195	4,756
February .....	219	584	(s)	2,187	72	119	306	13	1,333	4,834
<b>2-Month Average</b> .....	<b>209</b>	<b>557</b>	<b>(s)</b>	<b>2,259</b>	<b>70</b>	<b>116</b>	<b>301</b>	<b>19</b>	<b>1,262</b>	<b>4,794</b>
<b>2015 2-Month Average</b> .....	<b>206</b>	<b>886</b>	<b>1</b>	<b>2,219</b>	<b>69</b>	<b>113</b>	<b>250</b>	<b>14</b>	<b>1,184</b>	<b>4,941</b>
<b>2014 2-Month Average</b> .....	<b>201</b>	<b>818</b>	<b>2</b>	<b>2,231</b>	<b>54</b>	<b>110</b>	<b>309</b>	<b>18</b>	<b>1,173</b>	<b>4,915</b>

<sup>a</sup> Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>b</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>c</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

(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 <sup>a</sup>				
	Aviation Gasoline	Distillate Fuel Oil <sup>b</sup>	Jet Fuel <sup>c</sup>	Liquefied Petroleum Gases	Lubri-cants	Motor Gasoline <sup>d</sup>	Residual Fuel Oil	Total	Distillate Fuel Oil <sup>e</sup>	Petro-leum Coke	Residual Fuel Oil <sup>f</sup>	Total
1950 Average .....	108	226	( <sup>c</sup> )	2	64	2,433	524	3,356	15	NA	192	207
1955 Average .....	192	372	154	9	70	3,221	440	4,458	15	NA	191	206
1960 Average .....	161	418	371	13	68	3,736	367	5,135	10	NA	231	241
1965 Average .....	120	514	602	23	67	4,374	336	6,036	14	NA	302	316
1970 Average .....	55	738	967	32	66	5,589	332	7,778	66	9	853	928
1975 Average .....	39	998	992	31	70	6,512	310	8,951	107	1	1,280	1,388
1980 Average .....	35	1,311	1,062	13	77	6,441	608	9,546	79	2	1,069	1,151
1985 Average .....	27	1,491	1,218	21	71	6,667	342	9,838	40	3	435	478
1990 Average .....	24	1,722	1,522	16	80	7,080	443	10,888	45	14	507	566
1995 Average .....	21	1,973	1,514	13	76	7,674	397	11,668	51	37	247	334
2000 Average .....	20	2,422	1,725	8	81	8,370	386	13,012	82	45	378	505
2001 Average .....	19	2,489	1,655	10	74	8,435	255	12,938	80	47	437	564
2002 Average .....	18	2,536	1,614	10	73	8,662	295	13,208	60	80	287	427
2003 Average .....	16	2,629	1,578	13	68	8,733	249	13,286	76	79	379	534
2004 Average .....	17	2,783	1,630	14	69	8,887	321	13,720	52	101	382	535
2005 Average .....	19	2,858	1,679	20	68	8,948	365	13,957	54	111	382	547
2006 Average .....	18	3,017	1,633	20	67	9,029	395	14,178	35	97	157	289
2007 Average .....	17	3,037	1,622	16	69	9,093	433	14,287	42	78	173	293
2008 Average .....	15	2,738	1,539	29	64	8,834	402	13,621	34	70	104	209
2009 Average .....	14	2,626	1,393	20	57	8,841	344	13,297	33	63	79	175
2010 Average .....	15	2,764	1,432	21	64	8,824	389	13,508	38	65	67	170
2011 Average .....	15	2,849	1,425	24	61	8,591	338	13,303	30	66	41	137
2012 Average .....	14	2,719	1,398	26	56	8,525	291	13,029	25	41	33	99
2013 Average .....	12	2,804	1,434	32	59	8,679	253	13,274	26	59	34	119
2014 January .....	10	2,716	1,364	41	51	8,136	162	12,481	159	66	138	364
February .....	7	2,723	1,380	37	50	8,503	160	12,859	48	60	55	164
March .....	12	2,803	1,433	34	70	8,552	107	13,011	47	64	57	168
April .....	12	2,979	1,455	31	64	8,806	229	13,577	22	46	28	96
May .....	13	2,980	1,400	27	63	8,873	182	13,539	27	60	24	110
June .....	11	3,042	1,544	29	57	8,889	207	13,779	23	64	27	114
July .....	17	3,074	1,559	30	67	9,095	203	14,045	21	58	31	110
August .....	14	3,084	1,522	33	62	9,156	169	14,040	23	58	33	113
September .....	12	2,965	1,482	33	70	8,675	228	13,464	23	59	28	110
October .....	11	3,069	1,479	34	61	8,996	200	13,850	21	34	26	81
November .....	11	2,819	1,476	38	67	8,773	285	13,468	27	45	26	98
December .....	12	2,862	1,537	38	54	8,792	206	13,501	27	65	24	116
Average .....	12	2,928	1,470	34	61	8,773	195	13,472	39	57	41	137
2015 January .....	8	2,681	1,367	39	74	8,573	191	12,934	42	61	57	161
February .....	8	2,843	1,442	39	54	8,507	33	12,926	135	71	149	355
March .....	9	2,840	1,540	33	71	8,905	211	13,608	27	43	28	97
April .....	14	2,980	1,483	31	60	8,987	110	13,666	21	47	28	96
May .....	13	2,954	1,507	30	79	9,097	189	13,869	27	53	25	106
June .....	12	3,079	1,637	31	62	9,234	129	14,186	26	50	30	106
July .....	18	3,104	1,637	33	77	9,281	263	14,412	25	65	38	128
August .....	11	3,104	1,596	31	59	9,310	261	14,372	23	61	34	119
September .....	11	3,054	1,535	29	62	9,121	222	14,034	22	61	31	114
October .....	14	2,920	1,584	32	72	9,096	165	13,884	20	48	28	96
November .....	10	2,701	1,548	35	51	8,958	296	13,600	27	41	31	99
December .....	9	2,689	1,578	38	63	8,992	278	13,646	26	43	26	95
Average .....	11	2,912	1,539	33	66	9,008	197	13,767	34	54	41	129
2016 January .....	7	2,502	1,449	41	65	8,526	274	12,865	38	53	34	126
February .....	11	2,570	1,525	38	68	9,053	141	13,408	29	55	39	124
2-Month Average .....	9	2,535	1,486	40	67	8,781	210	13,127	34	54	37	125
2015 2-Month Average .....	8	2,758	1,403	39	65	8,541	116	12,930	86	66	101	253
2014 2-Month Average .....	8	2,719	1,372	39	51	8,310	161	12,660	106	64	99	269

<sup>a</sup> 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.

<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>c</sup> 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.)

<sup>d</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>e</sup> 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.

<sup>f</sup> Fuel oil nos. 5 and 6. Through 1979, data are for steam plant use of petroleum. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

NA=Not available.

Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section.

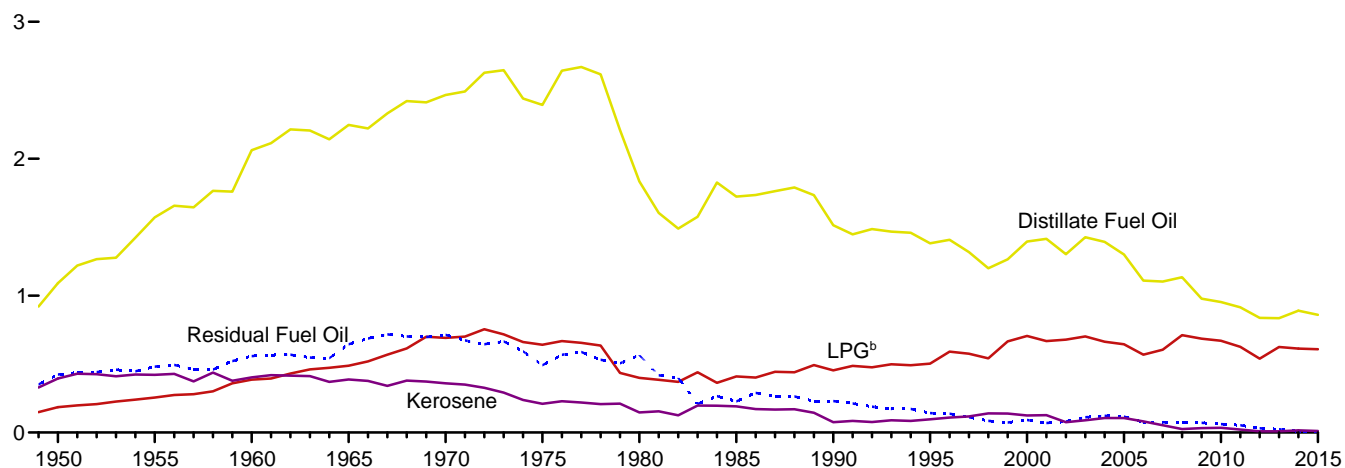
• Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

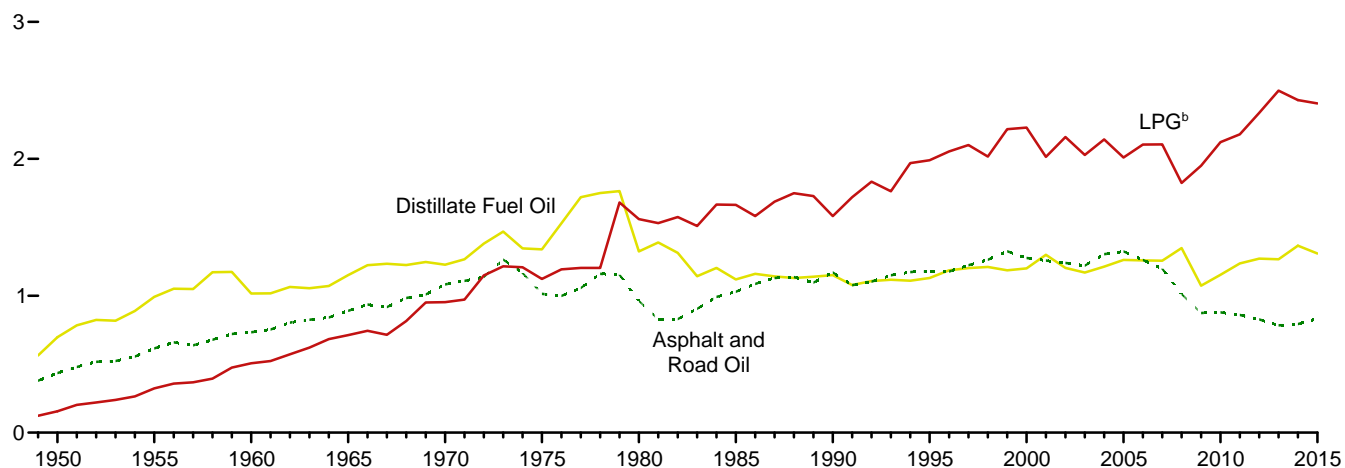
Sources: See end of section.

**Figure 3.8a Heat Content of Petroleum Consumption by End-Use Sector, 1949–2015**  
(Quadrillion Btu)

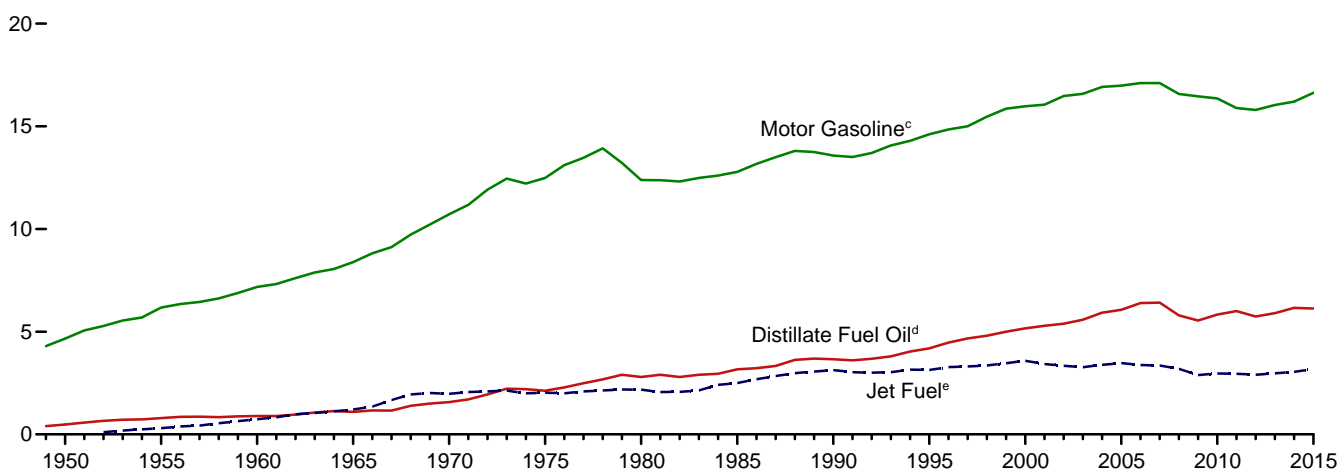
Residential and Commercial<sup>a</sup> Sectors, Selected Products



Industrial<sup>a</sup> Sector, Selected Products



Transportation Sector, Selected Products



<sup>a</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

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

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

<sup>d</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel).

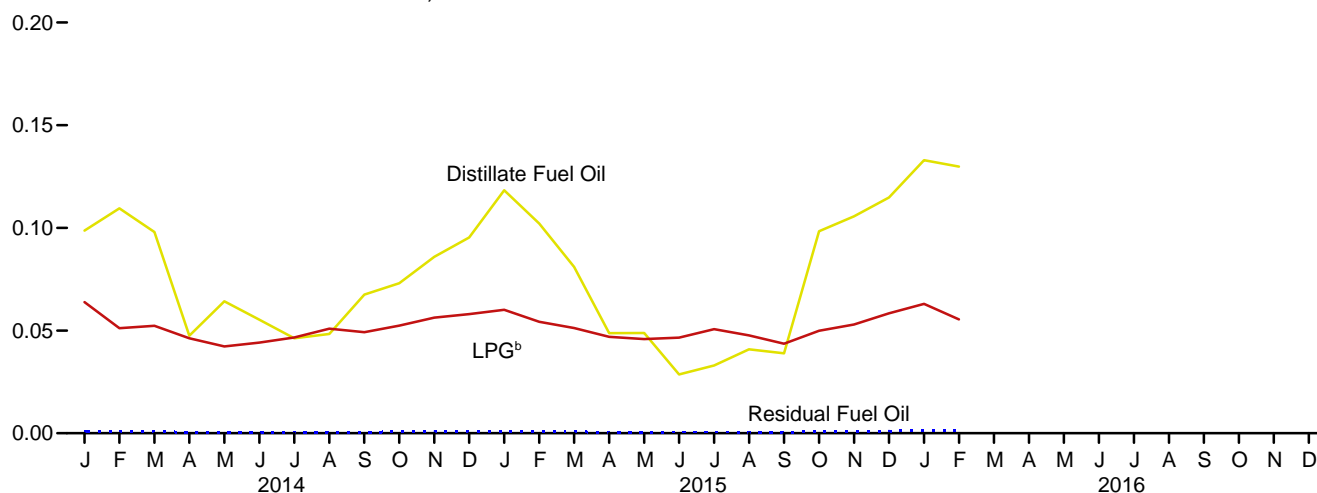
<sup>e</sup> Beginning in 2005, includes kerosene-type jet fuel only.

Web Page: <http://www.eia.gov/totalenergy/data/monthly/#petroleum>.

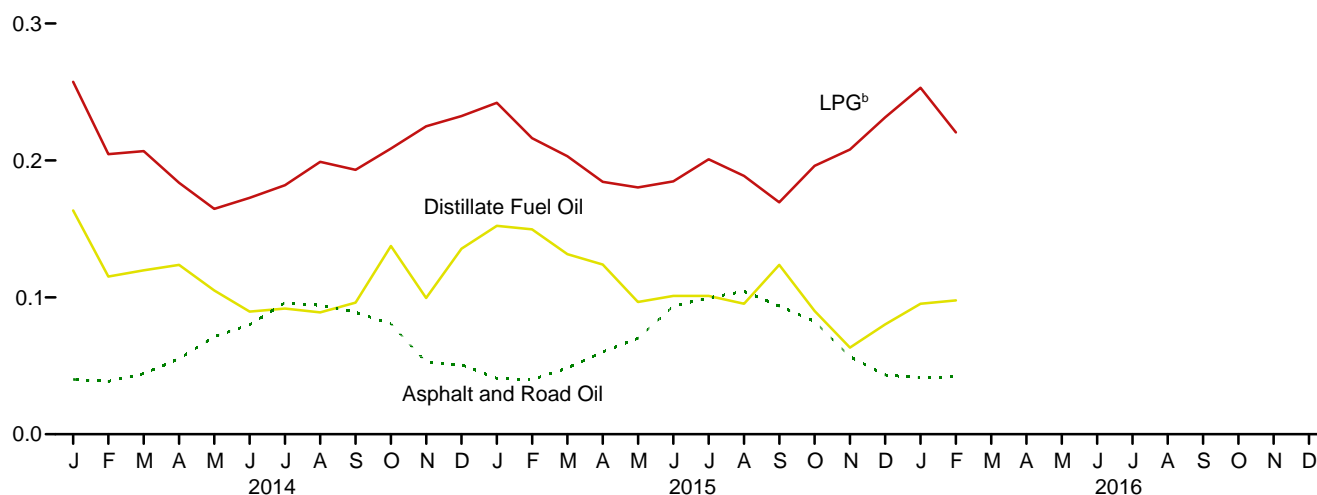
Sources: Tables 3.8a–3.8c.

**Figure 3.8b Heat Content of Petroleum Consumption by End-Use Sector, Monthly**  
(Quadrillion Btu)

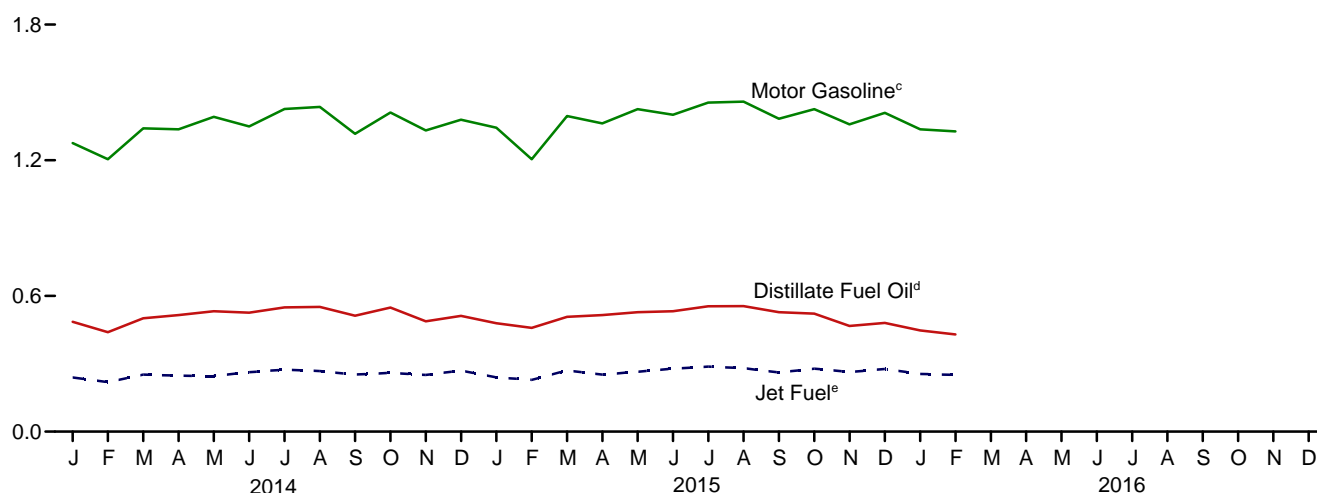
Residential and Commercial<sup>a</sup> Sectors, Selected Products



Industrial<sup>a</sup> Sector, Selected Products



Transportation Sector, Selected Products



<sup>a</sup> Includes combined-heat-and-power plants and a small number of electricity-only plants.

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

<sup>c</sup> Includes fuel ethanol blended into motor gasoline.

<sup>d</sup> Includes renewable diesel fuel (including biodiesel) blended into

distillate fuel oil.

<sup>e</sup> Includes kerosene-type jet fuel only.

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 <sup>a</sup>						
	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Total	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Motor Gasoline <sup>b</sup>	Petroleum Coke	Residual Fuel Oil	Total
1950 Total .....	829	347	146	1,322	262	47	39	100	NA	424	872
1955 Total .....	1,194	371	202	1,767	377	51	54	133	NA	480	1,095
1960 Total .....	1,568	354	305	2,227	494	48	81	67	NA	559	1,248
1965 Total .....	1,713	334	385	2,432	534	54	103	77	NA	645	1,413
1970 Total .....	1,878	298	549	2,725	587	61	143	86	NA	714	1,592
1975 Total .....	1,807	161	512	2,479	587	49	129	89	NA	492	1,346
1980 Total .....	1,316	107	311	1,734	518	41	88	107	NA	565	1,318
1985 Total .....	1,092	159	314	1,565	631	33	95	96	NA	228	1,083
1990 Total .....	978	64	352	1,394	536	12	102	111	0	230	991
1995 Total .....	904	74	395	1,373	478	22	109	18	(s)	141	769
2000 Total .....	904	95	555	1,553	490	30	150	45	(s)	92	807
2001 Total .....	907	95	526	1,528	508	31	143	37	(s)	70	789
2002 Total .....	859	60	537	1,456	444	16	141	45	(s)	80	726
2003 Total .....	931	70	544	1,546	496	19	157	60	(s)	111	842
2004 Total .....	923	85	512	1,519	470	20	152	45	(s)	122	810
2005 Total .....	853	84	513	1,450	447	22	131	46	(s)	116	762
2006 Total .....	709	66	446	1,221	400	15	123	48	(s)	75	662
2007 Total .....	721	44	484	1,249	381	9	121	60	(s)	75	648
2008 Total .....	750	21	553	1,324	384	4	158	45	(s)	71	663
2009 Total .....	582	28	547	1,157	395	4	139	52	(s)	71	662
2010 Total .....	562	29	530	1,121	391	5	140	52	(s)	62	650
2011 Total .....	523	19	486	1,027	391	3	141	44	(s)	54	633
2012 Total .....	482	8	402	892	355	1	138	39	(s)	31	564
2013 Total .....	491	8	470	970	344	1	154	40	(s)	24	563
2014 January .....	59	2	48	110	40	(s)	16	5	(s)	1	61
February .....	66	1	39	105	44	(s)	13	4	(s)	1	62
March .....	59	(s)	39	98	39	(s)	13	5	(s)	1	58
April .....	28	(s)	35	64	19	(s)	11	5	(s)	(s)	36
May .....	38	(s)	32	71	26	(s)	10	5	(s)	1	42
June .....	33	(s)	33	67	22	(s)	11	5	0	(s)	39
July .....	28	2	35	64	19	(s)	12	5	(s)	(s)	36
August .....	29	(s)	38	68	19	(s)	13	5	(s)	(s)	38
September .....	40	2	37	80	27	(s)	12	5	(s)	1	45
October .....	44	2	39	85	29	(s)	13	5	(s)	1	48
November .....	51	1	42	95	34	(s)	14	5	(s)	1	54
December .....	57	3	44	104	38	(s)	14	5	(s)	1	59
Total .....	533	14	462	1,009	357	2	151	60	1	8	579
2015 January .....	71	(s)	45	116	47	(s)	15	5	(s)	1	68
February .....	61	1	41	103	41	(s)	13	4	(s)	1	60
March .....	49	1	39	89	32	(s)	13	5	(s)	1	51
April .....	29	(s)	35	65	20	(s)	12	5	(s)	(s)	37
May .....	29	3	35	66	20	(s)	11	5	(s)	(s)	37
June .....	17	(s)	35	52	11	(s)	11	5	0	(s)	28
July .....	20	(s)	38	58	13	(s)	13	5	0	(s)	31
August .....	24	(s)	36	60	16	(s)	12	5	(s)	(s)	34
September .....	23	(s)	33	56	16	(s)	11	5	(s)	(s)	32
October .....	59	(s)	38	97	39	(s)	12	5	(s)	1	58
November .....	63	(s)	40	104	42	(s)	13	5	(s)	1	61
December .....	69	3	44	116	46	(s)	14	5	(s)	1	67
Total .....	515	10	458	983	344	1	150	62	1	8	566
2016 January .....	80	(s)	47	127	53	(s)	16	5	(s)	1	75
February .....	78	(s)	42	120	52	(s)	14	5	(s)	1	72
2-Month Total .....	157	(s)	89	246	105	(s)	29	10	(s)	2	147
2015 2-Month Total .....	132	1	86	220	88	(s)	28	9	(s)	2	128
2014 2-Month Total .....	125	3	87	214	83	(s)	28	9	(s)	2	123

<sup>a</sup> Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>b</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

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 <sup>a</sup>									
	Asphalt and Road Oil	Distillate Fuel Oil	Kerosene	Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>b</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>c</sup>	Total
<b>1950 Total</b> .....	435	698	274	156	94	251	90	1,416	546	3,960
<b>1955 Total</b> .....	615	991	241	323	103	332	147	1,573	798	5,123
<b>1960 Total</b> .....	734	1,016	161	507	107	381	328	1,584	947	5,766
<b>1965 Total</b> .....	890	1,150	165	712	137	342	444	1,582	1,390	6,813
<b>1970 Total</b> .....	1,082	1,226	185	953	155	288	446	1,624	1,817	7,776
<b>1975 Total</b> .....	1,014	1,339	119	1,123	149	223	540	1,509	2,109	8,127
<b>1980 Total</b> .....	962	1,324	181	1,559	182	158	516	1,349	3,278	9,509
<b>1985 Total</b> .....	1,029	1,119	44	1,664	166	218	575	748	2,152	7,714
<b>1990 Total</b> .....	1,170	1,150	12	1,582	186	185	714	411	2,839	8,251
<b>1995 Total</b> .....	1,178	1,130	15	1,990	178	200	721	337	2,837	8,587
<b>2000 Total</b> .....	1,276	1,199	16	2,228	190	150	796	241	2,979	9,075
<b>2001 Total</b> .....	1,257	1,299	23	2,014	174	295	858	203	3,056	9,179
<b>2002 Total</b> .....	1,240	1,203	14	2,160	172	309	842	190	3,040	9,170
<b>2003 Total</b> .....	1,220	1,169	24	2,028	159	324	825	220	3,264	9,233
<b>2004 Total</b> .....	1,304	1,213	28	2,141	161	371	937	249	3,428	9,832
<b>2005 Total</b> .....	1,323	1,262	39	2,009	160	355	894	281	3,318	9,641
<b>2006 Total</b> .....	1,261	1,258	30	2,104	156	374	938	239	3,416	9,777
<b>2007 Total</b> .....	1,197	1,256	13	2,106	161	302	910	193	3,313	9,452
<b>2008 Total</b> .....	1,012	1,348	4	1,823	150	246	870	194	2,941	8,588
<b>2009 Total</b> .....	873	1,073	4	1,950	135	238	805	130	2,611	7,819
<b>2010 Total</b> .....	878	1,153	7	2,121	149	260	694	120	2,800	8,183
<b>2011 Total</b> .....	859	1,236	4	2,179	142	255	663	135	2,676	8,148
<b>2012 Total</b> .....	827	1,271	2	2,335	130	252	717	70	2,558	8,163
<b>2013 Total</b> .....	783	1,266	1	2,498	138	263	663	48	2,677	8,339
<b>2014 January</b> .....	40	163	(s)	257	10	17	71	4	195	758
February .....	39	115	(s)	205	9	16	42	3	201	629
March .....	44	120	(s)	207	14	18	22	2	202	629
April .....	55	124	(s)	184	12	18	51	4	212	660
May .....	71	105	(s)	165	13	18	59	3	212	645
June .....	80	90	(s)	173	11	18	53	3	201	629
July .....	96	92	(s)	182	13	19	68	3	209	682
August .....	94	89	(s)	199	12	19	55	3	211	683
September .....	89	96	(s)	193	13	17	65	4	233	712
October .....	81	137	(s)	209	12	19	62	3	218	742
November .....	53	100	(s)	225	13	18	65	5	211	688
December .....	51	135	1	232	11	18	39	4	215	705
<b>Total</b> .....	<b>793</b>	<b>1,366</b>	<b>3</b>	<b>2,430</b>	<b>144</b>	<b>214</b>	<b>653</b>	<b>41</b>	<b>2,518</b>	<b>8,161</b>
<b>2015 January</b> .....	41	152	(s)	242	15	18	62	4	202	735
February .....	40	150	(s)	216	10	16	29	2	195	658
March .....	48	131	(s)	203	14	18	64	4	209	692
April .....	60	124	(s)	184	12	18	60	2	208	668
May .....	70	97	1	180	16	19	63	3	232	680
June .....	94	101	(s)	185	12	<sup>R</sup> 18	66	2	225	703
July .....	100	101	(s)	201	15	19	65	4	232	738
August .....	104	95	(s)	189	12	19	66	4	229	719
September .....	94	124	(s)	169	12	18	44	4	196	661
October .....	82	90	(s)	196	14	19	53	3	197	654
November .....	57	63	(s)	208	10	18	50	5	214	624
December .....	43	80	1	231	13	19	46	4	238	675
<b>Total</b> .....	<b>832</b>	<b>1,309</b>	<b>2</b>	<b>2,405</b>	<b>154</b>	<sup>R</sup> <b>219</b>	<b>667</b>	<b>40</b>	<b>2,577</b>	<b>8,206</b>
<b>2016 January</b> .....	41	95	(s)	253	13	18	56	5	212	<sup>R</sup> 693
February .....	42	98	(s)	221	13	18	55	2	224	671
<b>2-Month Total</b> .....	<b>83</b>	<b>193</b>	<b>(s)</b>	<b>474</b>	<b>26</b>	<b>35</b>	<b>111</b>	<b>7</b>	<b>436</b>	<b>1,365</b>
<b>2015 2-Month Total</b> .....	<b>81</b>	<b>302</b>	<b>(s)</b>	<b>458</b>	<b>25</b>	<b>34</b>	<b>91</b>	<b>5</b>	<b>398</b>	<b>1,393</b>
<b>2014 2-Month Total</b> .....	<b>79</b>	<b>279</b>	<b>1</b>	<b>462</b>	<b>19</b>	<b>33</b>	<b>113</b>	<b>7</b>	<b>395</b>	<b>1,387</b>

<sup>a</sup> Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>b</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>c</sup> Pentanes plus, petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. (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 <sup>a</sup>			
	Aviation Gasoline	Distillate Fuel Oil <sup>b</sup>	Jet Fuel <sup>c</sup>	Liquefied Petroleum Gases	Lubricants	Motor Gasoline <sup>d</sup>	Residual Fuel Oil	Total	Distillate Fuel Oil <sup>e</sup>	Petroleum Coke	Residual Fuel Oil <sup>f</sup>	Total
1950 Total .....	199	480	( )	3	141	4,664	1,201	6,690	32	NA	440	472
1955 Total .....	354	791	301	13	155	6,175	1,009	8,799	32	NA	439	471
1960 Total .....	298	892	739	19	152	7,183	844	10,125	22	NA	530	553
1965 Total .....	222	1,093	1,215	32	149	8,386	770	11,866	29	NA	693	722
1970 Total .....	100	1,569	1,973	44	147	10,716	761	15,310	141	19	1,958	2,117
1975 Total .....	71	2,121	2,029	43	155	12,485	711	17,615	226	2	2,937	3,166
1980 Total .....	64	2,795	2,179	18	172	12,383	1,398	19,009	169	5	2,459	2,634
1985 Total .....	50	3,170	2,497	30	156	12,784	786	19,472	85	7	998	1,090
1990 Total .....	45	3,661	3,129	23	176	13,575	1,016	21,626	97	30	1,163	1,289
1995 Total .....	40	4,191	3,132	18	168	14,616	911	23,075	108	81	566	755
2000 Total .....	36	5,159	3,580	12	179	15,973	888	25,827	175	99	871	1,144
2001 Total .....	35	5,286	3,426	14	164	16,053	586	25,564	170	103	1,003	1,276
2002 Total .....	34	5,387	3,340	14	162	16,474	677	26,089	127	175	659	961
2003 Total .....	30	5,584	3,265	18	150	16,585	571	26,203	161	175	869	1,205
2004 Total .....	31	5,925	3,383	19	152	16,917	740	27,166	111	211	879	1,201
2005 Total .....	35	6,068	3,475	28	151	16,977	837	27,573	114	231	876	1,222
2006 Total .....	33	6,390	3,379	27	147	17,108	906	27,991	73	203	361	637
2007 Total .....	32	6,413	3,358	22	152	17,109	994	28,078	89	163	397	648
2008 Total .....	28	5,792	3,193	40	141	16,574	926	26,695	73	146	240	459
2009 Total .....	27	5,541	2,883	28	127	16,460	791	25,857	70	132	181	382
2010 Total .....	27	5,828	2,963	29	141	16,356	892	26,236	80	137	154	370
2011 Total .....	27	6,003	2,950	34	134	15,892	776	25,817	64	138	93	295
2012 Total .....	25	5,741	2,901	37	123	15,798	671	25,297	52	85	77	214
2013 Total .....	22	5,902	2,969	44	130	16,036	581	25,685	55	123	77	255
<b>2014 January .....</b>	<b>2</b>	<b>485</b>	<b>240</b>	<b>5</b>	<b>10</b>	<b>1,276</b>	<b>32</b>	<b>2,049</b>	<b>29</b>	<b>12</b>	<b>27</b>	<b>67</b>
February .....	1	440	219	4	9	1,205	28	1,905	8	10	10	27
March .....	2	501	252	4	13	1,341	21	2,134	8	11	11	31
April .....	2	515	248	4	12	1,337	43	2,160	4	8	5	17
May .....	2	533	246	3	12	1,392	36	2,223	5	11	5	20
June .....	2	526	263	3	10	1,349	39	2,193	4	11	5	20
July .....	3	550	274	4	13	1,427	39	2,309	4	10	6	20
August .....	2	551	268	4	12	1,436	33	2,306	4	10	6	21
September .....	2	513	252	4	13	1,317	43	2,143	4	10	5	19
October .....	2	549	260	4	12	1,411	39	2,276	4	6	5	15
November .....	2	488	251	4	12	1,332	54	2,142	5	8	5	17
December .....	2	512	270	4	10	1,379	40	2,218	5	12	5	21
<b>Total .....</b>	<b>22</b>	<b>6,162</b>	<b>3,042</b>	<b>47</b>	<b>136</b>	<b>16,202</b>	<b>447</b>	<b>26,057</b>	<b>82</b>	<b>118</b>	<b>95</b>	<b>295</b>
<b>2015 January .....</b>	<b>1</b>	<b>479</b>	<b>240</b>	<b>5</b>	<b>14</b>	<b>R 1,344</b>	<b>37</b>	<b>2,121</b>	<b>8</b>	<b>11</b>	<b>11</b>	<b>30</b>
February .....	1	459	229	4	9	R 1,204	6	R 1,913	22	11	26	59
March .....	1	508	271	4	13	R 1,396	41	R 2,234	5	8	5	18
April .....	2	515	252	4	11	R 1,363	21	R 2,168	4	8	5	17
May .....	2	528	265	4	15	R 1,426	37	R 2,276	5	9	5	19
June .....	2	533	279	4	11	R 1,401	24	R 2,253	5	9	6	19
July .....	3	555	288	4	14	R 1,455	51	R 2,370	4	11	7	23
August .....	2	555	281	4	11	R 1,459	51	R 2,362	4	11	7	22
September .....	2	528	261	3	11	R 1,384	42	R 2,231	4	10	6	20
October .....	2	522	278	4	14	R 1,426	32	R 2,278	4	9	5	18
November .....	1	467	263	4	9	R 1,359	56	R 2,160	5	7	6	18
December .....	1	481	277	4	12	R 1,410	54	R 2,239	5	8	5	17
<b>Total .....</b>	<b>21</b>	<b>6,129</b>	<b>3,184</b>	<b>47</b>	<b>145</b>	<b>R 16,628</b>	<b>452</b>	<b>R 26,606</b>	<b>72</b>	<b>112</b>	<b>95</b>	<b>279</b>
<b>2016 January .....</b>	<b>1</b>	<b>447</b>	<b>255</b>	<b>5</b>	<b>12</b>	<b>1,337</b>	<b>53</b>	<b>R 2,110</b>	<b>7</b>	<b>9</b>	<b>7</b>	<b>23</b>
February .....	2	430	251	4	12	1,328	26	2,052	5	9	7	21
<b>2-Month Total .....</b>	<b>3</b>	<b>877</b>	<b>506</b>	<b>9</b>	<b>24</b>	<b>2,664</b>	<b>79</b>	<b>4,162</b>	<b>12</b>	<b>19</b>	<b>14</b>	<b>44</b>
<b>2015 2-Month Total .....</b>	<b>2</b>	<b>938</b>	<b>469</b>	<b>9</b>	<b>23</b>	<b>2,548</b>	<b>43</b>	<b>4,034</b>	<b>29</b>	<b>22</b>	<b>37</b>	<b>89</b>
<b>2014 2-Month Total .....</b>	<b>2</b>	<b>925</b>	<b>459</b>	<b>9</b>	<b>18</b>	<b>2,481</b>	<b>60</b>	<b>3,954</b>	<b>36</b>	<b>21</b>	<b>37</b>	<b>94</b>

<sup>a</sup> 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.

<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>c</sup> 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.)

<sup>d</sup> Finished motor gasoline. Through 1963, also includes special naphthas. Beginning in 1993, also includes fuel ethanol blended into motor gasoline.

<sup>e</sup> 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.

<sup>f</sup> 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. 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. For each of these except crude oil, product supplied is calculated by adding refinery production, natural gas plant liquids production, new supply of other liquids, imports, and stock withdrawals, and subtracting stock additions, refinery inputs, and exports. Crude oil product supplied is the sum of crude oil burned on leases and at pipeline pump stations as reported on Form EIA-813, “Monthly Crude Oil Report.” Prior to 1983, crude oil burned on leases and 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 3.6 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 factors 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 forward: Data for refinery and blender net inputs of renewable diesel fuel are from U.S. Energy Information Administration (EIA), *Petroleum Supply Annual (PSA)/Petroleum Supply Monthly (PSM)*, Table 1 (for biomass-based diesel fuel, 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). Product supplied data for distillate fuel oil from Table 3.5, minus data for renewable diesel fuel from the PSA/PSM, 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 distillate fuel oil (excluding renewable diesel fuel) and renewable diesel fuel.

### **Jet Fuel**

Product supplied data in thousand barrels per day for kerosene-type jet fuel and, through 2004, naphtha-type jet fuel are from EIA's 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.

### **Liquefied Petroleum Gases (LPG) Total**

Prior to the current two months, product supplied data in thousand barrels per day for the component products of LPG (ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane/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 LPG product supplied is the sum of the data in trillion Btu for the LPG component products.

For the current two months, product supplied data in thousand barrels per day for total LPG are from Table 3.5, and are converted to trillion Btu by multiplying by the LPG heat content factors in Table A3.

### **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 pentanes plus, 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 LPG, 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.

### **Propane**

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

### **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.

1981–2014: EIA, *Petroleum Supply Annual*, annual reports, and unpublished revisions.

2015 and 2016: EIA, *Petroleum Supply Monthly*, 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 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 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 supplied minus the amount consumed by the residential, commercial, industrial, and electric power sectors.

### **Jet Fuel**

Through 1982, small amounts of kerosene-type jet fuel were consumed by the electric power sector. Kerosene-type jet fuel deliveries to the electric power sector as reported on Form FERC-423 (formerly Form FPC-423) were used as estimates of this consumption. Through 2004, all remaining jet fuel (kerosene-type and naphtha-type) is assigned to the transportation sector. Beginning in 2005, kerosene-type jet fuel is assigned to the transportation sector, while naphtha-type jet fuel is classified under “Other Petroleum Products,” which is assigned to the industrial sector.

### **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.

### **Liquefied Petroleum Gases (LPG)**

The annual shares of LPG’s 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.

Sales of LPG to the residential and commercial sectors combined are converted from thousand gallons per year to thousand barrels per year and are assumed to be the annual consumption of LPG by the combined sectors. Beginning in 2003, residential sector LPG consumption is assumed to equal propane retail sales, with the remainder of the combined residential and commercial LPG consumption being assigned to the commercial sector. Through 2002, residential sector LPG consumption is based on the average of the state residential shares for 2003–2008, with the remainder of the combined residential and commercial LPG consumption being assigned to the commercial sector.

The quantity of LPG sold each year for consumption in internal combustion engines is allocated between the transportation and industrial sectors on the basis of data for special fuels used on highways published by the U.S. Department of Transportation, Federal Highway Administration, in *Highway Statistics*.

LPG consumed annually by the industrial sector 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 sales data for creating annual energy 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 forward: American Petroleum Institute (API), “Sales of Natural Gas Liquids and Liquefied Refinery Gases,” which is based on an LPG sales survey jointly sponsored by API, the Gas Processors Association, and the National Liquefied Petroleum Gas Association. EIA adjusts the data to remove quantities of pentanes plus and to estimate withheld values.

### **Lubricants**

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 forward.

### **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:

Commercial sales are the sum of sales for public non-highway use and miscellaneous and unclassified uses.

Industrial sales are the sum of sales for agriculture, construction, and industrial and commercial use as classified in the *Highway Statistics*.

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.

### **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 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 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 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 pentanes plus, 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.

### 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.

### Liquefied Petroleum Gases (LPG)

Residential and commercial sector consumption data in thousand barrels per day for LPG are from Table 3.7a, and are converted to trillion Btu by multiplying by the propane/propylene 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.

### 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.

### Liquefied Petroleum Gases (LPG)

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

### 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 forward: Data for refinery and blender net inputs of renewable diesel fuel are from U.S. Energy Information Administration (EIA), *Petroleum Supply Annual (PSA)/Petroleum Supply Monthly (PSM)*, Table 1 (for biomass-based diesel fuel, 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). Transportation sector consumption data from Table 3.7c, minus data for renewable diesel fuel from the PSA/PSM, 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 distillate fuel oil (excluding renewable diesel fuel) and renewable diesel fuel.

### **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.

### **Liquefied Petroleum Gases (LPG)**

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

### **Lubricants**

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

### **Motor Gasoline**

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

### **Petroleum Coke**

1949–2003: Electric power sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7c, and are converted to trillion Btu by multiplying by the total petroleum coke heat content factor in Table A1. 2004 forward: Electric power sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7c, and are converted to trillion Btu by multiplying by the marketable petroleum coke heat content factor in Table A1.

### **Residual Fuel Oil**

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

### **Total Petroleum**

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

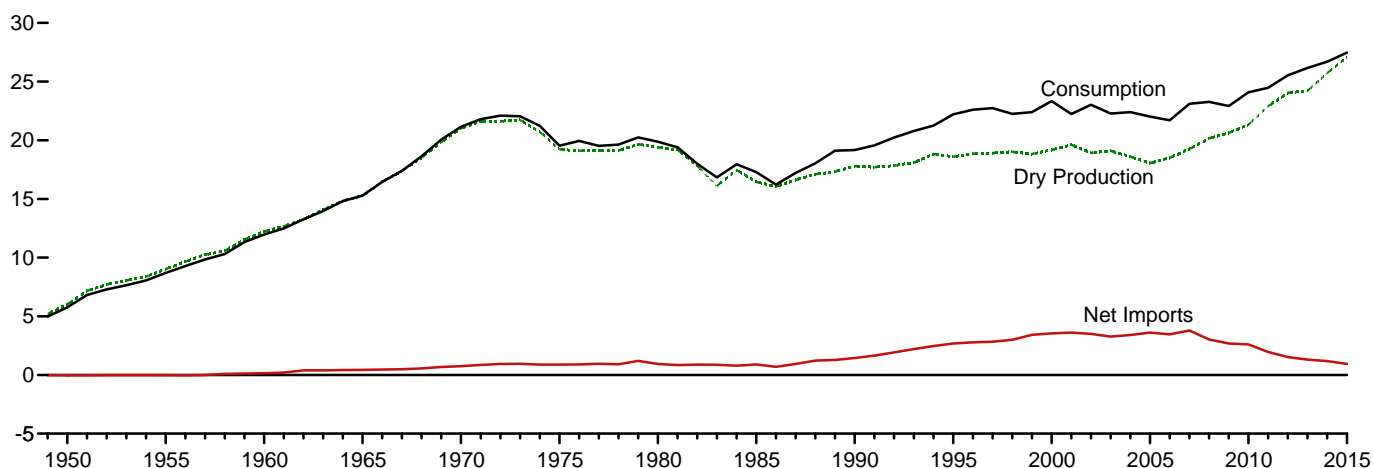
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## 4. Natural Gas

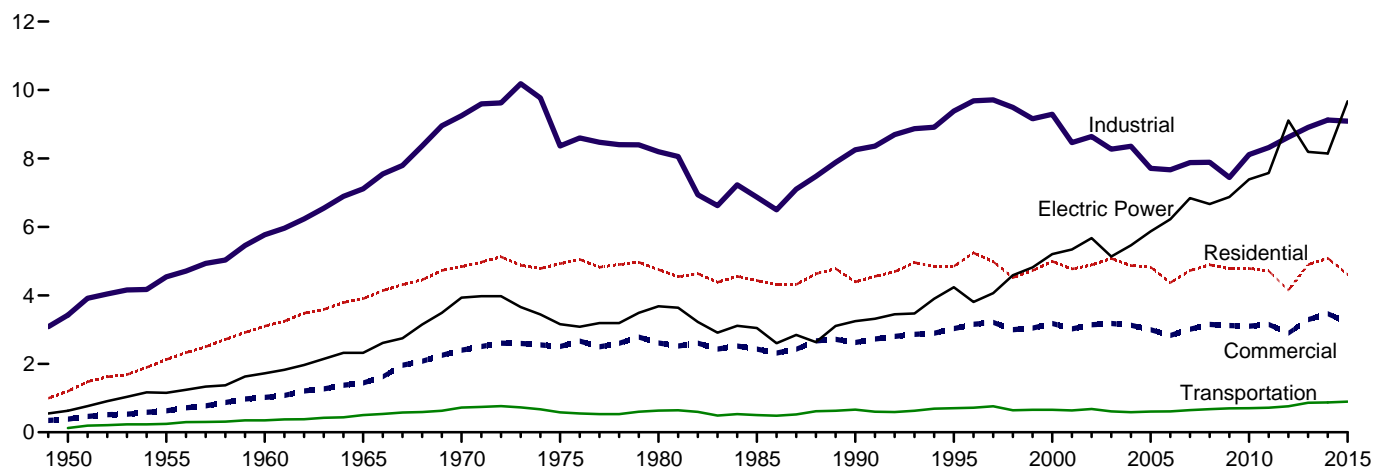
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**Figure 4.1 Natural Gas**  
(Trillion Cubic Feet)

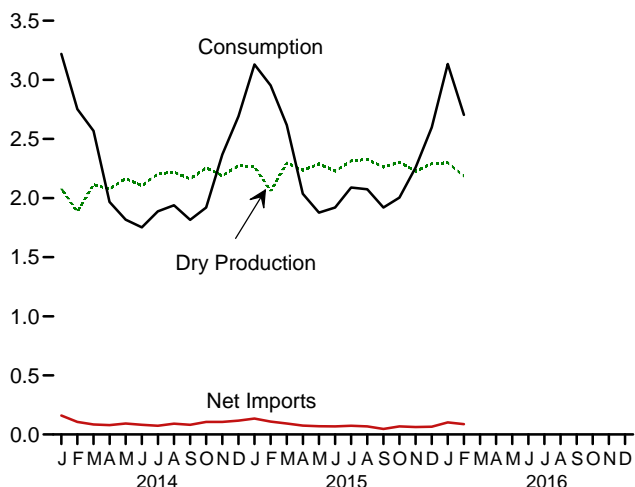
Overview, 1949–2015



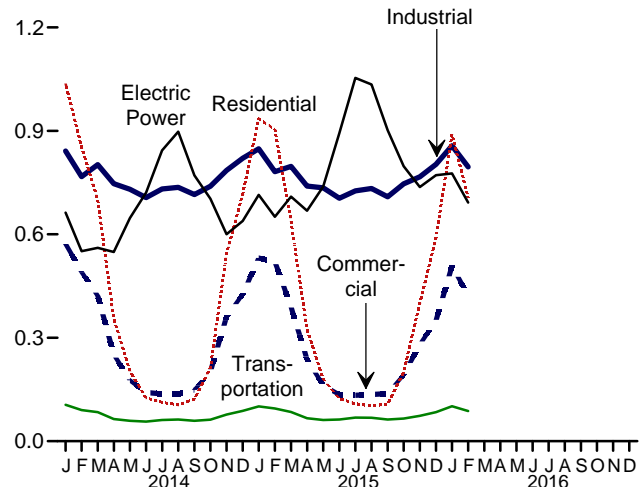
Consumption by Sector, 1949–2015



Overview, Monthly



Consumption by Sector, Monthly



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 <sup>a</sup>	Marketed Production (Wet) <sup>b</sup>	NGPL Production <sup>c</sup>	Dry Gas Production <sup>d</sup>	Supplemental Gaseous Fuels <sup>e</sup>	Trade			Net Storage Withdrawals <sup>f</sup>	Balancing Item <sup>g</sup>	Consumption <sup>h</sup>
						Imports	Exports	Net Imports			
1950 Total .....	8,480	<sup>i</sup> 6,282	260	<sup>i</sup> 6,022	NA	0	26	-26	-54	-175	5,767
1955 Total .....	11,720	<sup>i</sup> 9,405	377	<sup>i</sup> 9,029	NA	11	31	-20	-68	-247	8,694
1960 Total .....	15,088	<sup>i</sup> 12,771	543	<sup>i</sup> 12,228	NA	156	11	144	-132	-274	11,967
1965 Total .....	17,963	<sup>i</sup> 16,040	753	<sup>i</sup> 15,286	NA	456	26	430	-118	-319	15,280
1970 Total .....	23,786	<sup>i</sup> 21,921	906	<sup>i</sup> 21,014	NA	821	70	751	-398	-228	21,139
1975 Total .....	21,104	<sup>i</sup> 20,109	872	<sup>i</sup> 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	<sup>j</sup> 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 January .....	2,594	2,209	130	2,079	5	295	135	161	991	-17	3,219
February .....	2,346	2,002	118	1,885	4	245	139	107	745	11	2,752
March .....	2,630	2,246	132	2,114	5	234	150	85	363	1	2,568
April .....	2,564	2,206	130	2,077	5	201	122	79	-224	31	1,967
May .....	2,642	2,300	135	2,165	5	207	114	93	-488	43	1,817
June .....	2,561	2,235	132	2,104	5	202	120	82	-473	34	1,752
July .....	2,617	2,342	138	2,205	5	201	127	74	-409	12	1,887
August .....	2,628	2,358	139	2,219	5	207	115	91	-382	6	1,939
September .....	2,621	2,297	135	2,162	5	202	120	82	-431	-2	1,816
October .....	2,732	2,396	141	2,255	5	221	115	106	-409	-37	1,920
November .....	2,644	2,325	137	2,189	5	227	121	107	168	-100	2,368
December .....	2,767	2,418	142	2,276	5	254	137	117	295	-2	2,691
Total .....	31,346	27,337	1,608	25,728	60	2,695	1,514	1,181	-253	-21	26,695
2015 January .....	<sup>E</sup> 2,769	<sup>E</sup> 2,399	133	<sup>E</sup> 2,266	5	279	145	135	725	(s)	3,130
February .....	<sup>E</sup> 2,512	<sup>E</sup> 2,185	125	<sup>E</sup> 2,060	6	254	145	109	741	37	2,952
March .....	<sup>E</sup> 2,820	<sup>E</sup> 2,439	142	<sup>E</sup> 2,297	5	257	164	93	194	29	2,617
April .....	<sup>E</sup> 2,742	<sup>E</sup> 2,378	142	<sup>E</sup> 2,236	5	205	130	75	-321	42	2,036
May .....	<sup>E</sup> 2,776	<sup>E</sup> 2,432	145	<sup>E</sup> 2,287	5	204	134	70	-497	11	<sup>R</sup> 1,877
June .....	<sup>E</sup> 2,677	<sup>E</sup> 2,370	141	<sup>E</sup> 2,229	5	206	138	68	-362	-20	1,920
July .....	<sup>E</sup> 2,767	<sup>E</sup> 2,459	146	<sup>E</sup> 2,314	4	217	144	73	-283	-19	2,090
August .....	<sup>E</sup> 2,766	<sup>E</sup> 2,474	148	<sup>E</sup> 2,326	4	214	145	69	-309	-15	2,074
September .....	<sup>E</sup> 2,750	<sup>E</sup> 2,407	144	<sup>E</sup> 2,263	5	209	163	46	-372	-23	1,919
October .....	<sup>E</sup> 2,818	<sup>E</sup> 2,456	153	<sup>E</sup> 2,303	5	226	159	68	-331	-42	2,003
November .....	<sup>E</sup> 2,744	<sup>E</sup> 2,376	149	<sup>E</sup> 2,227	6	218	156	63	13	-50	2,258
December .....	<sup>RE</sup> 2,824	<sup>RE</sup> 2,441	151	<sup>RE</sup> 2,290	6	227	162	66	265	<sup>R</sup> -28	2,598
Total .....	<sup>RE</sup> 32,965	<sup>RE</sup> 28,814	1,718	<sup>RE</sup> 27,096	60	2,718	1,784	935	-539	<sup>R</sup> -78	<sup>R</sup> 27,474
2016 January .....	<sup>RE</sup> 2,823	<sup>RE</sup> 2,448	148	<sup>RE</sup> 2,299	5	273	<sup>R</sup> 170	<sup>R</sup> 103	728	<sup>R</sup> -1	<sup>R</sup> 3,134
February .....	<sup>E</sup> 2,669	<sup>E</sup> 2,323	140	<sup>E</sup> 2,183	5	251	164	87	403	25	2,703
2-Month Total .....	<sup>E</sup> 5,492	<sup>E</sup> 4,770	288	<sup>E</sup> 4,482	11	524	334	189	1,131	23	5,837
2015 2-Month Total .....	<sup>E</sup> 5,281	<sup>E</sup> 4,583	258	<sup>E</sup> 4,325	11	534	289	244	1,466	36	6,082
2014 2-Month Total .....	4,940	4,212	248	3,964	9	541	273	267	1,736	-6	5,971

<sup>a</sup> 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.

<sup>b</sup> Gross withdrawals minus natural gas repressuring, nonhydrocarbon gases removed, and vented and flared. See Note 1, "Natural Gas Production," at end of section.

<sup>c</sup> 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.

<sup>d</sup> Marketed production (wet) minus NGPL production.

<sup>e</sup> See Note 3, "Supplemental Gaseous Fuels," at end of section.

<sup>f</sup> Net withdrawals from underground storage. For 1980–2014, also includes net withdrawals of liquefied natural gas in above-ground tanks. See Note 4, "Natural Gas Storage," at end of section.

<sup>g</sup> 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).

<sup>h</sup> See Note 6, "Natural Gas Consumption," at end of section.

<sup>i</sup> Through 1979, may include unknown quantities of nonhydrocarbon gases.

<sup>j</sup> For 1989–1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector" on

Table 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:** 1949–2013—U.S. Energy Information Administration (EIA), *Natural Gas Annual*, annual reports. 2014 forward—EIA, *Natural Gas Monthly*, April 2016, Table 1.

**Table 4.2 Natural Gas Trade by Country**  
(Billion Cubic Feet)

	Imports									Exports				
	Algeria <sup>a</sup>	Canada <sup>b</sup>	Egypt <sup>a</sup>	Mexico <sup>b</sup>	Nigeria <sup>a</sup>	Qatar <sup>a</sup>	Trinidad and Tobago <sup>a</sup>	Other <sup>a,c</sup>	Total	Canada <sup>b</sup>	Japan <sup>a</sup>	Mexico <sup>b</sup>	Other <sup>a,d</sup>	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	0	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
<b>2014 January</b> .....	0	287	0	(s)	0	0	6	2	295	82	0	53	0	135
February .....	0	242	0	(s)	0	0	4	0	245	85	0	51	3	139
March .....	0	231	0	(s)	0	0	3	0	234	91	0	58	0	150
April .....	0	198	0	(s)	0	0	3	0	201	65	0	57	0	122
May .....	0	204	0	(s)	0	0	0	3	207	50	2	62	0	114
June .....	0	192	0	(s)	0	0	7	3	202	55	0	65	0	120
July .....	0	195	0	(s)	0	0	6	0	201	55	3	69	0	127
August .....	0	205	0	(s)	0	0	2	0	207	47	3	66	0	115
September .....	0	196	0	(s)	0	0	3	3	202	52	3	65	0	120
October .....	0	214	0	(s)	0	0	4	3	221	52	3	60	0	115
November .....	0	227	0	(s)	0	0	0	0	227	62	0	59	0	121
December .....	0	246	0	(s)	0	0	5	3	254	73	0	64	0	137
<b>Total</b> .....	<b>0</b>	<b>2,635</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>16</b>	<b>2,695</b>	<b>770</b>	<b>13</b>	<b>729</b>	<b>3</b>	<b>1,514</b>
<b>2015 January</b> .....	0	268	0	(s)	0	0	9	2	279	73	0	69	3	145
February .....	0	242	0	(s)	0	0	10	2	254	78	0	65	3	145
March .....	0	243	0	(s)	0	0	12	3	257	90	0	74	0	164
April .....	0	202	0	(s)	0	0	3	0	205	53	0	77	0	130
May .....	0	203	0	(s)	0	0	2	0	204	45	0	87	3	134
June .....	0	204	0	(s)	0	0	3	0	206	45	0	91	3	138
July .....	0	210	0	(s)	0	0	7	0	217	40	3	101	0	144
August .....	0	203	0	(s)	0	0	11	0	214	41	3	101	0	145
September .....	0	203	0	(s)	0	0	6	0	209	60	0	100	3	163
October .....	0	218	0	(s)	0	0	3	6	226	57	3	98	0	159
November .....	0	211	0	(s)	0	0	4	3	218	61	0	92	3	156
December .....	0	222	0	(s)	0	0	2	3	227	59	0	100	3	162
<b>Total</b> .....	<b>0</b>	<b>2,626</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>20</b>	<b>2,718</b>	<b>701</b>	<b>8</b>	<b>1,054</b>	<b>20</b>	<b>1,784</b>
<b>2016 January</b> .....	0	261	0	(s)	0	0	12	0	273	<sup>R</sup> 70	0	101	0	<sup>R</sup> 170
February .....	0	241	0	(s)	0	0	10	0	251	62	0	99	3	164
<b>2-Month Total</b> .....	<b>0</b>	<b>502</b>	<b>0</b>	<b>(s)</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>524</b>	<b>132</b>	<b>0</b>	<b>199</b>	<b>3</b>	<b>334</b>
<b>2015 2-Month Total</b> .....	<b>0</b>	<b>510</b>	<b>0</b>	<b>(s)</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>5</b>	<b>534</b>	<b>151</b>	<b>0</b>	<b>133</b>	<b>6</b>	<b>289</b>
<b>2014 2-Month Total</b> .....	<b>0</b>	<b>528</b>	<b>0</b>	<b>(s)</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>541</b>	<b>167</b>	<b>0</b>	<b>104</b>	<b>3</b>	<b>273</b>

<sup>a</sup> As liquefied natural gas.

<sup>b</sup> 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.

<sup>c</sup> 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 2008–2015; Oman in 2000–2005; Peru in 2010 and 2011; United Arab Emirates in 1996–2000; Yemen in 2010–2015; and Other (unassigned) in 2004–2015.

<sup>d</sup> Brazil in 2010–2012, and 2014 forward; Chile in 2011; China in 2011; Egypt in 2015; India in 2010–2012; Portugal in 2012; Russia in 2007; South Korea in 2009–2011; Spain in 2010 and 2011; Taiwan in 2015; Turkey in 2015; and United Kingdom in 2010 and 2011.

<sup>R</sup>=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."  
• **1988–2013:** EIA, *Natural Gas Annual*, annual reports. • **2014 forward:** EIA, *Natural Gas Monthly*, April 2016, 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										Electric Power Sector <sup>f,g</sup>	Total	
	Residential	Commercial <sup>a</sup>	Lease and Plant Fuel	Industrial			Transportation						
				Other Industrial			Pipelines <sup>d</sup> and Dis-tribution <sup>e</sup>	Vehicle Fuel	Total				
				CHP <sup>b</sup>	Non-CHP <sup>c</sup>	Total				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	1,593	7,018	8,255	660	(s)	660	3,245	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 January .....	1,037	572	121	106	615	720	842	103	3	106	663	3,219	
February .....	853	490	110	89	569	657	767	88	3	90	551	2,752	
March .....	700	421	123	94	584	679	802	81	3	84	561	2,568	
April .....	356	251	121	89	537	626	747	61	3	64	549	1,967	
May .....	203	177	126	92	512	604	730	56	3	59	647	1,817	
June .....	126	141	123	91	493	584	707	54	3	57	721	1,752	
July .....	113	138	129	99	504	603	732	58	3	61	843	1,887	
August .....	105	137	129	101	506	607	736	60	3	63	898	1,939	
September .....	122	149	126	95	495	589	715	56	3	59	771	1,816	
October .....	212	202	131	95	514	608	740	59	3	62	703	1,920	
November .....	544	362	128	94	564	658	785	74	3	77	600	2,368	
December .....	717	427	133	100	588	688	821	85	3	88	639	2,691	
Total .....	5,087	3,467	1,500	1,145	6,479	7,624	9,124	836	35	871	8,146	26,695	
2015 January .....	936	532	E 132	102	614	716	848	E 98	E 3	E 101	714	3,130	
February .....	904	520	E 120	90	571	662	782	E 92	E 3	E 95	651	2,952	
March .....	637	389	E 134	97	566	663	797	E 82	E 3	E 85	709	2,617	
April .....	325	237	E 131	90	519	R 610	740	E 64	E 3	E 67	668	2,036	
May .....	180	162	E 133	94	507	601	735	E 59	E 3	E 62	739	R 1,877	
June .....	124	135	E 130	96	478	574	704	E 60	E 3	E 63	893	1,920	
July .....	108	134	E 135	101	490	591	726	E 65	E 3	E 68	1,054	2,090	
August .....	102	136	E 136	103	494	597	733	E 65	E 3	E 68	1,035	2,074	
September .....	108	138	E 132	96	481	577	709	E 60	E 3	E 63	902	1,919	
October .....	201	193	E 135	94	517	612	746	E 63	E 3	E 66	798	2,003	
November .....	400	280	E 130	100	537	637	767	E 71	E 3	E 74	737	2,258	
December .....	589	351	E 134	107	563	669	803	E 81	E 3	E 84	771	2,598	
Total .....	4,612	3,206	E 1,581	1,170	6,338	R 7,509	R 9,090	E 860	E 34	E 894	9,671	R 27,474	
2016 January .....	R 891	R 509	E 134	104	619	R 722	857	E 98	E 3	E 101	777	R 3,134	
February .....	707	421	E 127	96	573	668	796	E 85	E 3	E 88	692	2,703	
2-Month Total .....	1,598	930	E 262	199	1,191	1,391	1,652	E 183	E 6	E 189	1,469	5,837	
2015 2-Month Total .....	1,840	1,052	E 252	192	1,186	1,378	1,630	E 190	E 5	E 196	1,365	6,082	
2014 2-Month Total .....	1,890	1,062	231	194	1,183	1,378	1,609	190	6	196	1,214	5,971	

<sup>a</sup> 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.

<sup>b</sup> Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.

<sup>c</sup> All industrial sector fuel use other than that in "Lease and Plant Fuel" and "CHP."

<sup>d</sup> 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.

<sup>e</sup> 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.

<sup>f</sup> 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.

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

<sup>h</sup> Included in "Non-CHP."

<sup>i</sup> For 1989–1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector." See Note 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: 1949–2013**—U.S. Energy Information Administration (EIA), *Natural Gas Annual* (NGA), annual reports and unpublished revisions. **2014 forward**—EIA, *Natural Gas Monthly* (NGM), April 2016, 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). **1999–2013**—EIA, NGA, annual reports. **2014 forward**—EIA, NGM, April 2016, 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 <sup>a</sup>	Volume	Percent	Withdrawals	Injections	Net <sup>b,c</sup>
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 January .....	4,363	1,925	6,288	-774	-28.7	1,039	68	971
February .....	4,360	1,200	5,560	-899	-42.8	833	104	728
March .....	4,350	857	5,207	-863	-50.2	488	134	353
April .....	4,357	1,066	5,423	-789	-42.5	105	323	-217
May .....	4,353	1,548	5,901	-722	-31.8	51	529	-478
June .....	4,358	2,005	6,364	-637	-24.1	44	506	-463
July .....	4,361	2,400	6,761	-537	-18.3	63	463	-400
August .....	4,366	2,768	7,135	-444	-13.8	73	447	-374
September .....	4,369	3,187	7,556	-377	-10.6	47	469	-422
October .....	4,367	3,587	7,955	-230	-6.0	52	452	-400
November .....	4,367	3,427	7,794	-178	-5.0	361	200	161
December .....	4,365	3,141	7,506	251	8.7	429	143	286
Total .....	4,365	3,141	7,506	251	8.7	3,586	3,839	-253
2015 January .....	4,360	2,417	6,777	492	25.5	795	70	725
February .....	4,359	1,677	6,036	477	39.7	803	62	741
March .....	4,360	1,483	5,843	625	72.9	376	182	194
April .....	4,360	1,805	6,164	738	69.2	84	405	-321
May .....	4,362	2,299	6,661	751	48.5	44	542	-497
June .....	4,366	2,658	7,025	653	32.6	68	430	-362
July .....	4,371	2,935	7,306	535	22.3	96	378	-283
August .....	4,363	3,252	7,616	484	17.5	85	394	-309
September .....	4,364	3,625	7,989	438	13.7	63	435	-372
October .....	4,365	3,953	8,318	366	10.2	70	401	-331
November .....	4,367	3,938	8,305	511	14.9	214	201	13
December .....	4,363	3,677	8,040	536	17.1	403	138	265
Total .....	4,363	3,677	8,040	536	17.1	3,100	3,639	-539
2016 January .....	4,361	R 2,948	R 7,309	R 531	R 22.0	794	66	728
February .....	4,360	2,545	6,905	869	51.8	515	111	403
2-Month Total .....	--	--	--	--	--	1,309	178	1,131
2015 2-Month Total .....	--	--	--	--	--	1,598	132	1,466
2014 2-Month Total .....	--	--	--	--	--	1,871	173	1,699

<sup>a</sup> For total underground storage capacity at the end of each calendar year, see Note 4, "Natural Gas Storage," at end of section.

<sup>b</sup> For 1980–2014, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.

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

R=Revised. NA=Not available. --=Not applicable.

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. **1996–2013**—EIA, *Natural Gas Monthly (NGM)*, monthly issues. **2014 forward**—EIA, NGM, April 2016, 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." **1996–2013**—EIA, NGA, annual reports. **2014 forward**—EIA, NGM, April 2016, Table 8.

# Natural Gas

**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:

1975 ...	6,280	1989 ...	8,120	2003 ...	8,206
1976 ...	6,544	1990 ...	7,794	2004 ...	8,255
1977 ...	6,678	1991 ...	7,993	2005 ...	8,268
1978 ...	6,890	1992 ...	7,932	2006 ...	8,330
1979 ...	6,929	1993 ...	7,989	2007 ...	8,402
1980 ...	7,434	1994 ...	8,043	2008 ...	8,499
1981 ...	7,805	1995 ...	7,953	2009 ...	8,656
1982 ...	7,915	1996 ...	7,980	2010 ...	8,764
1983 ...	7,985	1997 ...	8,332	2011 ...	8,849
1984 ...	8,043	1998 ...	8,179	2012 ...	8,991
1985 ...	8,087	1999 ...	8,229	2013 ...	9,173
1986 ...	8,145	2000 ...	8,241	2014 ...	9,233
1987 ...	8,124	2001 ...	8,182	2015 ...	P9,288
1988 ...	8,124	2002 ...	8,207		

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 1980–2014 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; "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](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, 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), and 2016 (213 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 Brazil, Chile, China, Egypt, India, Japan, Portugal, Russia, South Korea, Spain, Taiwan, Turkey, 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.

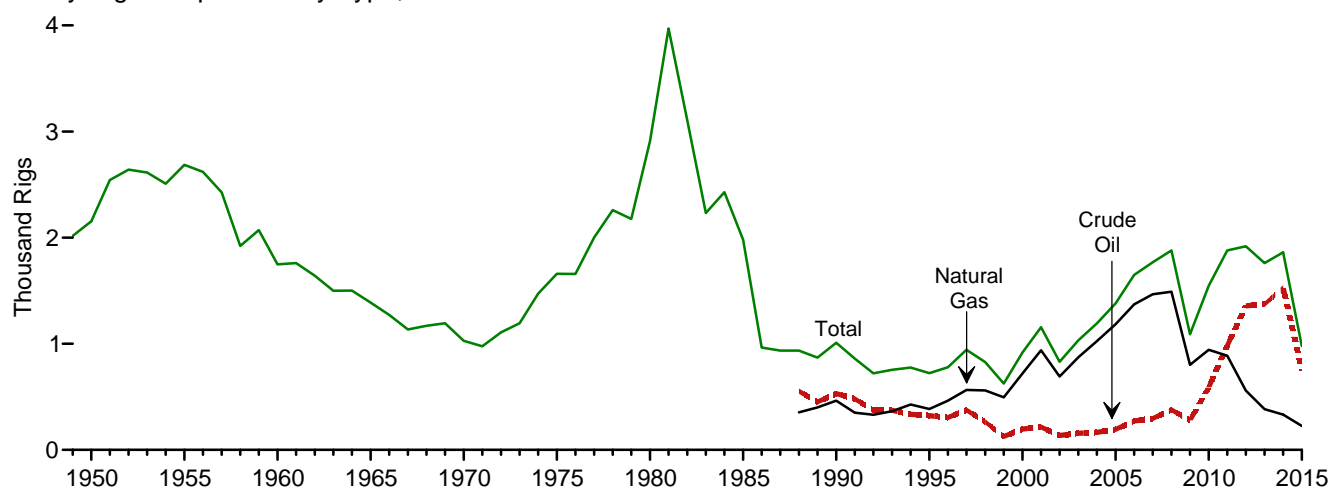
Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see EIA's *Natural Gas Monthly*. Preliminary data are revised after publication of EIA's *U.S. Imports and Exports of Natural Gas*.

## **5. Crude Oil and Natural Gas Resource Development**

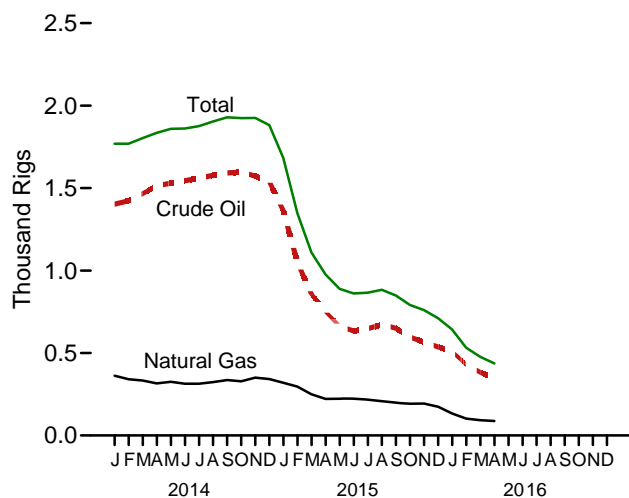
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**Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators**

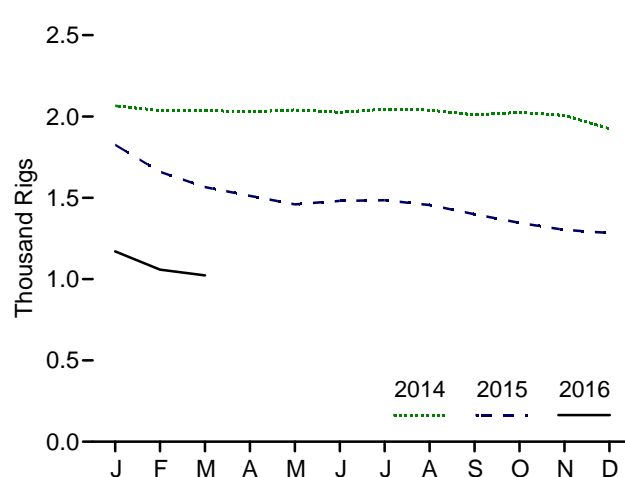
Rotary Rigs in Operation by Type, 1949–2015



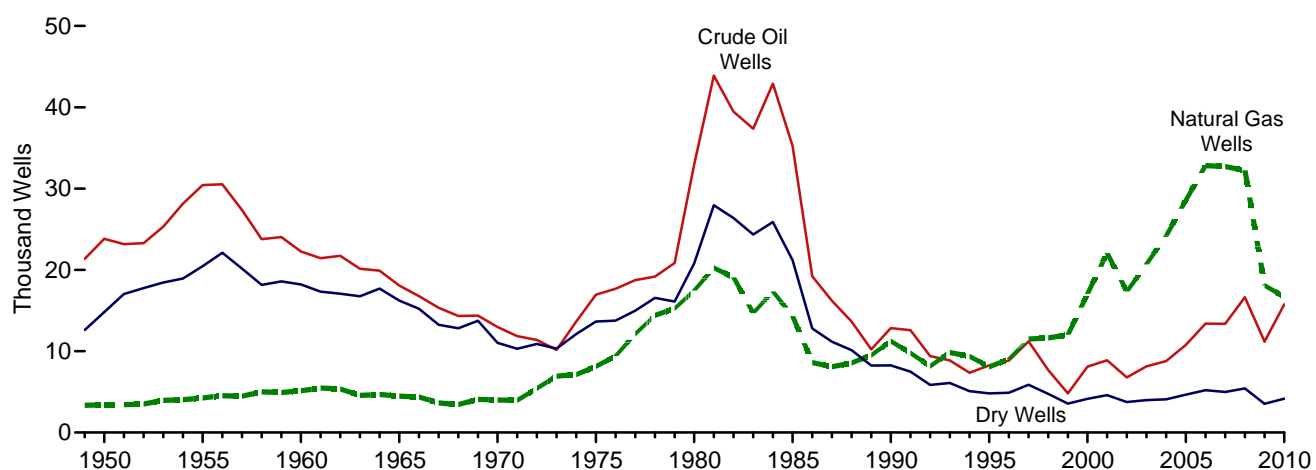
Rotary Rigs in Operation by Type, Monthly



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 <sup>a</sup>					Active Well Service Rig Count <sup>c</sup>
	By Site		By Type		Total <sup>b</sup>	
	Onshore	Offshore	Crude Oil	Natural Gas		
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 January .....	1,711	58	1,403	362	1,769	2,066
February .....	1,714	55	1,424	341	1,769	2,036
March .....	1,750	54	1,466	333	1,803	2,037
April .....	1,784	52	1,515	316	1,835	2,028
May .....	1,801	58	1,530	325	1,859	2,040
June .....	1,804	58	1,545	314	1,861	2,026
July .....	1,819	57	1,560	314	1,876	2,044
August .....	1,842	62	1,578	324	1,904	2,039
September .....	1,866	64	1,592	336	1,930	2,010
October .....	1,867	58	1,596	328	1,924	2,024
November .....	1,872	53	1,573	351	1,925	2,007
December .....	1,824	59	1,539	342	1,882	1,925
Average .....	1,804	57	1,527	333	1,862	2,024
2015 January .....	1,629	53	1,362	320	1,683	1,826
February .....	1,296	52	1,050	296	1,348	1,659
March .....	1,066	43	857	250	1,109	1,566
April .....	943	33	750	222	976	1,512
May .....	858	32	662	223	889	1,460
June .....	833	28	634	224	861	1,481
July .....	835	31	649	216	866	1,485
August .....	849	34	673	209	883	1,456
September .....	816	32	650	198	848	1,399
October .....	758	33	597	193	791	1,345
November .....	729	31	566	194	760	1,303
December .....	686	24	537	174	711	1,283
Average .....	943	35	750	226	978	1,481
2016 January .....	615	28	510	133	643	1,170
February .....	506	26	430	102	532	1,058
March .....	451	27	384	93	477	1,023
April .....	411	26	348	88	437	NA
4-Month Average .....	491	26	414	103	517	NA
2015 4-Month Average .....	1,257	46	1,026	275	1,302	1,641
2014 4-Month Average .....	1,738	55	1,449	339	1,793	2,042

<sup>a</sup> Rotary rigs in operation are reported weekly. Monthly data are averages of 4- or 5-week reporting periods, not calendar months. Multi-month data are averages of the reported data over the covered months, not averages of the weekly data. Annual data are averages over 52 or 53 weeks, not calendar years. Published data are rounded to the nearest whole number.

<sup>b</sup> Sum of rigs drilling for crude oil, rigs drilling for natural gas, and other rigs (not shown) drilling for miscellaneous purposes, such as service wells, injection wells, and stratigraphic tests. "Total" values may not equal the sum of "Onshore" and "Offshore" due to independent rounding.

<sup>c</sup> 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:** Cameron International Corporation, Houston, TX. See <http://www.c-i-m.com/products-and-services/drilling/well-service-equipment-and-rig-count/types/guiberson-rig-count>.

**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												
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.

## Crude Oil and Natural Gas Resource Development

**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.

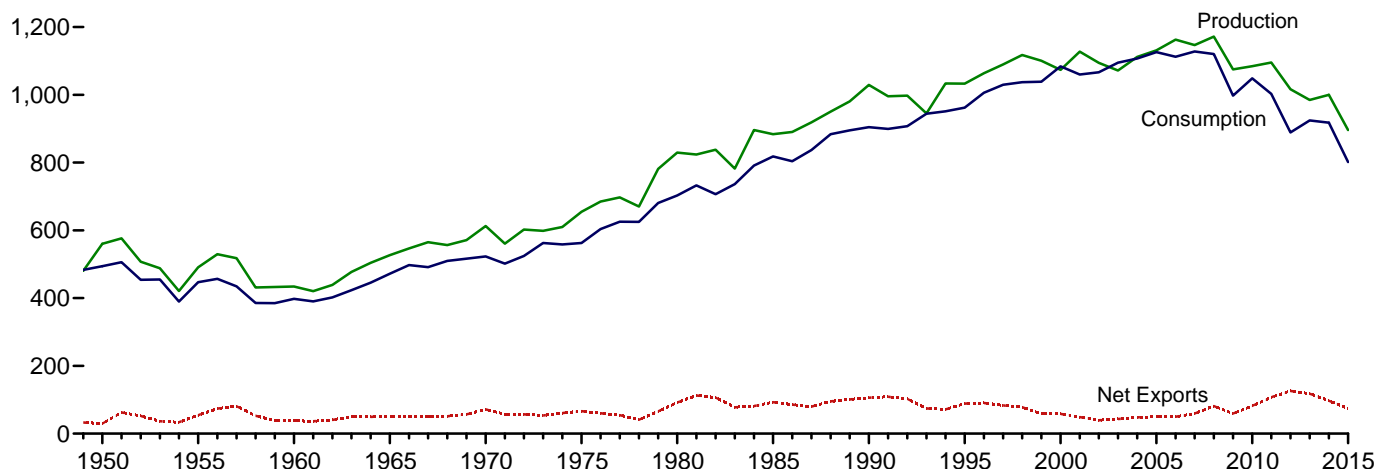
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## 6. Coal

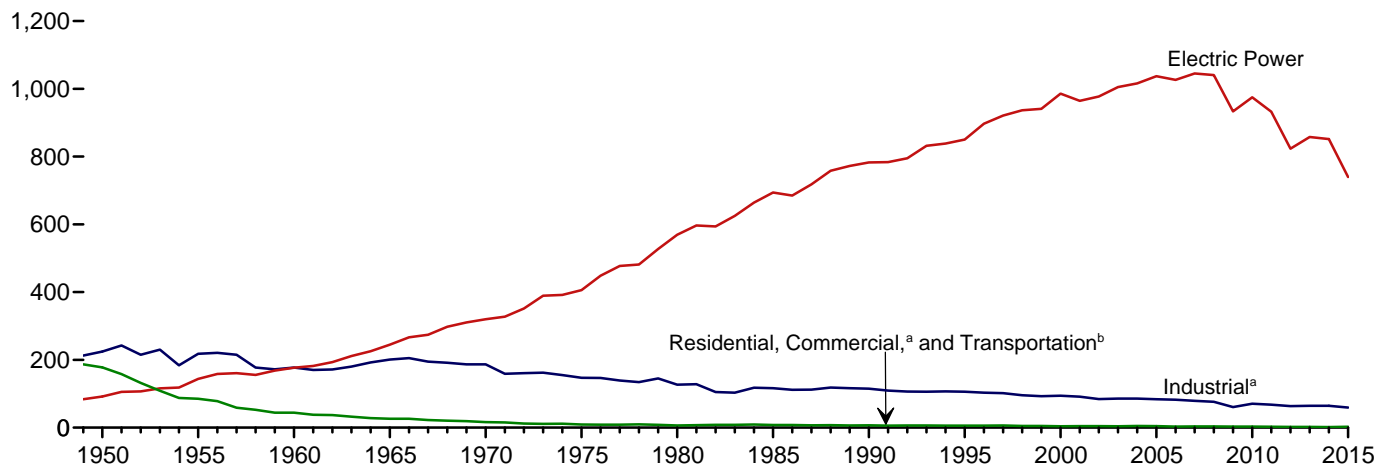
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**Figure 6.1 Coal**  
(Million Short Tons)

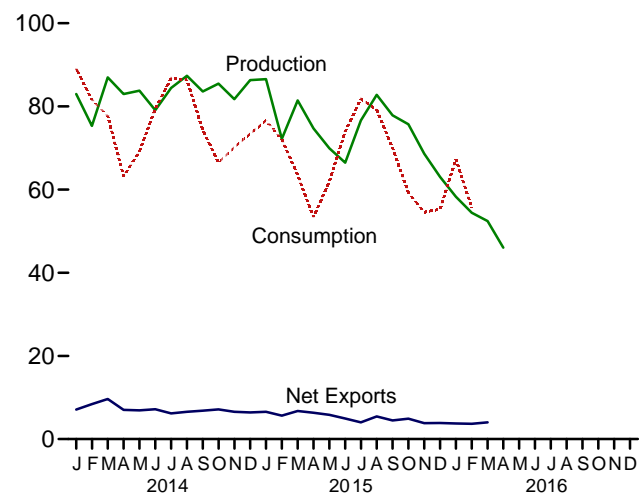
Overview, 1949–2015



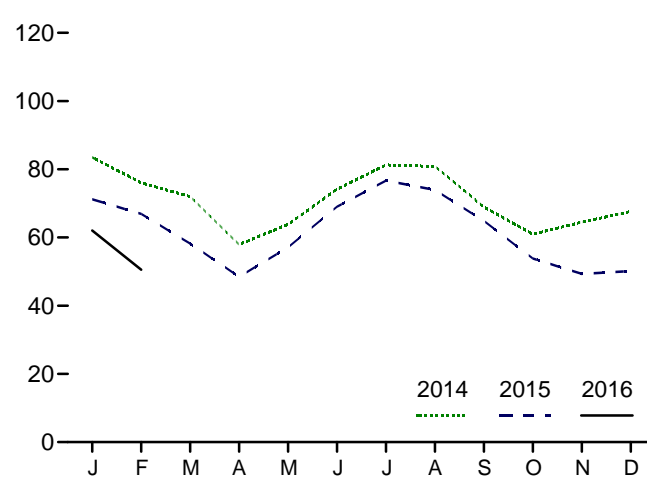
Consumption by Sector, 1949–2015



Overview, Monthly



Electric Power Sector Consumption, Monthly



<sup>a</sup> Includes combined-heat-and-power (CHP) plants and a small number of electricity-only-plants.

<sup>b</sup> 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 6.1–6.2.

**Table 6.1 Coal Overview**  
(Thousand Short Tons)

	Production <sup>a</sup>	Waste Coal Supplied <sup>b</sup>	Trade			Stock Change <sup>d,e</sup>	Losses and Unaccounted for <sup>e,f</sup>	Consumption
			Imports	Exports	Net Imports <sup>c</sup>			
<b>1950 Total</b> .....	560,388	NA	365	29,360	-28,995	27,829	9,462	494,102
<b>1955 Total</b> .....	490,838	NA	337	54,429	-54,092	-3,974	-6,292	447,012
<b>1960 Total</b> .....	434,329	NA	262	37,981	-37,719	-3,194	1,722	398,081
<b>1965 Total</b> .....	526,954	NA	184	51,032	-50,848	1,897	2,244	471,965
<b>1970 Total</b> .....	612,661	NA	36	71,733	-71,697	11,100	6,633	523,231
<b>1975 Total</b> .....	654,641	NA	940	66,309	-65,369	32,154	-5,522	562,640
<b>1980 Total</b> .....	829,700	NA	1,194	91,742	-90,548	25,595	10,827	702,730
<b>1985 Total</b> .....	883,638	NA	1,952	92,680	-90,727	-27,934	2,796	818,049
<b>1990 Total</b> .....	1,029,076	3,339	2,699	105,804	-103,104	26,542	-1,730	904,498
<b>1995 Total</b> .....	1,032,974	8,561	9,473	88,547	-79,074	-275	632	962,104
<b>2000 Total</b> .....	1,073,612	9,089	12,513	58,489	-45,976	-48,309	938	1,084,095
<b>2001 Total</b> .....	1,127,689	10,085	19,787	48,666	-28,879	41,630	7,120	1,060,146
<b>2002 Total</b> .....	1,094,283	9,052	16,875	39,601	-22,726	10,215	4,040	1,066,355
<b>2003 Total</b> .....	1,071,753	10,016	25,044	43,014	-17,970	-26,659	-4,403	1,094,861
<b>2004 Total</b> .....	1,112,099	11,299	27,280	47,998	-20,718	-11,462	6,887	1,107,255
<b>2005 Total</b> .....	1,131,498	13,352	30,460	49,942	-19,482	-9,702	9,092	1,125,978
<b>2006 Total</b> .....	1,162,750	14,409	36,246	49,647	-13,401	42,642	8,824	1,112,292
<b>2007 Total</b> .....	1,146,635	14,076	36,347	59,163	-22,816	5,812	4,085	1,127,998
<b>2008 Total</b> .....	1,171,809	14,146	34,208	81,519	-47,311	12,354	5,740	1,120,548
<b>2009 Total</b> .....	1,074,923	13,666	22,639	59,097	-36,458	39,668	14,985	997,478
<b>2010 Total</b> .....	1,084,368	13,651	19,353	81,716	-62,363	-13,039	182	1,048,514
<b>2011 Total</b> .....	1,095,628	13,209	13,088	107,259	-94,171	211	11,506	1,002,948
<b>2012 Total</b> .....	1,016,458	11,196	9,159	125,746	-116,586	6,902	14,980	889,185
<b>2013 Total</b> .....	984,842	11,279	8,906	117,659	-108,753	-38,525	1,451	924,442
<b>2014 January</b> .....	82,992	1,199	1,065	8,152	-7,087	-15,235	3,277	89,063
February .....	75,320	1,019	582	8,972	-8,390	-14,302	670	81,581
March .....	86,959	1,059	803	10,460	-9,657	-2,074	2,749	77,685
April .....	82,981	914	930	7,952	-7,022	10,837	2,826	63,210
May .....	83,793	927	1,280	8,182	-6,902	7,141	1,493	69,185
June .....	79,069	1,054	1,365	8,540	-7,175	-4,543	-1,996	79,487
July .....	84,448	1,122	928	7,119	-6,192	-8,070	646	86,802
August .....	87,346	1,105	1,076	7,637	-6,561	-6,265	1,798	86,357
September .....	83,582	1,029	1,148	7,966	-6,818	2,396	1,103	74,294
October .....	85,462	715	584	7,738	-7,154	12,005	524	66,494
November .....	81,755	973	1,005	7,557	-6,552	5,673	349	70,155
December .....	86,341	974	586	6,981	-6,396	9,836	-2,337	73,419
<b>Total</b> .....	<b>1,000,049</b>	<b>12,090</b>	<b>11,350</b>	<b>97,257</b>	<b>-85,907</b>	<b>-2,601</b>	<b>11,101</b>	<b>917,731</b>
<b>2015 January</b> .....	86,548	F 792	1,293	7,871	-6,579	8,634	-4,473	76,599
February .....	72,210	F 792	866	6,496	-5,630	-4,634	-49	72,055
March .....	81,430	F 792	850	7,612	-6,762	4,917	7,083	63,461
April .....	74,704	F 792	879	7,216	-6,337	13,569	2,187	53,402
May .....	69,942	F 792	919	6,761	-5,842	5,572	-2,660	61,980
June .....	66,484	F 792	842	5,789	-4,947	-6,705	-4,953	73,987
July .....	76,618	F 792	1,091	5,117	-4,026	-8,668	253	81,798
August .....	82,777	F 792	970	6,409	-5,439	-3,479	2,421	79,188
September .....	77,868	F 792	904	5,388	-4,485	5,273	-1,094	69,996
October .....	75,705	F 792	854	5,744	-4,889	7,767	4,591	59,250
November .....	68,613	F 792	882	4,709	-3,827	13,375	-2,322	54,524
December .....	63,036	F 792	969	4,846	-3,877	9,414	-4,785	55,322
<b>Total</b> .....	<b>895,936</b>	<b>F 9,500</b>	<b>11,318</b>	<b>73,958</b>	<b>-62,640</b>	<b>45,034</b>	<b>-3,801</b>	<b>801,563</b>
<b>2016 January</b> .....	58,282	F 833	693	4,433	-3,740	-2,470	-9,441	67,286
February .....	54,410	RF 833	819	4,511	-3,693	R -5,599	R 1,527	R 55,623
March .....	52,441	NA	R 1,186	R 5,208	R -4,023	NA	NA	NA
April .....	46,040	NA	NA	NA	NA	NA	NA	NA
<b>4-Month Total</b> .....	<b>211,174</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>2015 4-Month Total</b> .....	<b>314,892</b>	<b>3,167</b>	<b>3,888</b>	<b>29,195</b>	<b>-25,307</b>	<b>22,486</b>	<b>4,748</b>	<b>265,517</b>
<b>2014 4-Month Total</b> .....	<b>328,253</b>	<b>4,191</b>	<b>3,380</b>	<b>35,536</b>	<b>-32,156</b>	<b>-20,773</b>	<b>9,521</b>	<b>311,539</b>

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

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

<sup>c</sup> Net imports equal imports minus exports. A minus sign indicates exports are greater than imports.

<sup>d</sup> A negative value indicates a decrease in stocks and a positive value indicates an increase. See Table 6.3 for stocks data coverage.

<sup>e</sup> In 1949, stock change is included in "Losses and Unaccounted for."

<sup>f</sup> 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 <sup>e,f</sup>	Total
	Residential	Commercial			Coke Plants	Industrial			Total	Transportation		
		CHP <sup>a</sup>	Other <sup>b</sup>	Total		Other Industrial						
						CHP <sup>c</sup>	Non-CHP <sup>d</sup>	Total				
1950 Total	51,562	(g)	63,021	63,021	104,014	(h)	120,623	120,623	224,637	63,011	91,871	494,102
1955 Total	35,590	(g)	32,852	32,852	107,743	(h)	110,096	110,096	217,839	16,972	143,759	447,012
1960 Total	24,159	(g)	16,789	16,789	81,385	(h)	96,017	96,017	177,402	3,046	176,685	398,081
1965 Total	14,635	(g)	11,041	11,041	95,286	(h)	105,560	105,560	200,846	655	244,788	471,965
1970 Total	9,024	(g)	7,090	7,090	96,481	(h)	90,156	90,156	186,637	298	320,182	523,231
1975 Total	2,823	(g)	6,587	6,587	83,598	(h)	63,646	63,646	147,244	24	405,962	562,640
1980 Total	1,355	(g)	5,097	5,097	66,657	(h)	60,347	60,347	127,004	(h)	569,274	702,730
1985 Total	1,711	(g)	6,068	6,068	41,056	(h)	75,372	75,372	116,429	(h)	693,841	818,049
1990 Total	1,345	1,191	4,189	5,379	38,877	27,781	48,549	76,330	115,207	(h)	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 January	(i)	132	120	252	1,621	1,791	1,901	3,692	5,313	(h)	83,498	89,063
February	(i)	131	120	251	1,559	1,633	2,101	3,734	5,294	(h)	76,036	81,581
March	(i)	118	108	226	1,705	1,729	2,027	3,755	5,460	(h)	72,000	77,685
April	(i)	82	50	132	1,660	1,472	2,011	3,482	5,142	(h)	57,936	63,210
May	(i)	72	43	115	1,743	1,549	1,915	3,464	5,207	(h)	63,863	69,185
June	(i)	78	47	126	1,771	1,540	1,928	3,467	5,238	(h)	74,123	79,487
July	(i)	85	41	126	1,925	1,589	1,876	3,465	5,390	(h)	81,287	86,802
August	(i)	72	34	106	1,913	1,591	1,885	3,476	5,389	(h)	80,863	86,357
September	(i)	64	30	94	1,799	1,502	1,982	3,484	5,283	(h)	68,916	74,294
October	(i)	58	58	116	1,818	1,482	2,131	3,613	5,431	(h)	60,947	66,494
November	(i)	82	82	164	1,850	1,554	2,091	3,645	5,495	(h)	64,495	70,155
December	(i)	90	90	180	1,933	1,644	2,023	3,667	5,600	(h)	67,638	73,419
Total	(i)	1,063	824	1,887	21,297	19,076	23,870	42,946	64,243	(h)	851,602	917,731
2015 January	(i)	96	F 181	F 277	F 1,497	1,676	F 1,950	F 3,625	F 5,122	(h)	71,200	76,599
February	(i)	91	F 174	F 266	F 1,414	1,491	F 1,957	F 3,448	F 4,862	(h)	66,927	72,055
March	(i)	88	F 167	F 255	F 1,518	1,586	F 1,925	F 3,511	F 5,029	(h)	58,177	63,461
April	(i)	64	F 129	F 193	F 1,289	1,394	F 2,062	F 3,456	F 4,745	(h)	48,464	53,402
May	(i)	62	F 123	F 185	F 1,477	1,444	F 1,742	F 3,187	F 4,664	(h)	57,131	61,980
June	(i)	64	F 124	F 188	F 1,584	1,437	F 1,739	F 3,176	F 4,760	(h)	69,039	73,987
July	(i)	68	F 125	F 193	F 1,640	1,565	F 1,706	F 3,270	F 4,910	(h)	76,695	81,798
August	(i)	63	F 151	F 213	F 1,796	1,560	F 1,727	F 3,287	F 5,083	(h)	73,892	79,188
September	(i)	58	F 142	F 200	F 1,625	1,477	F 1,824	F 3,301	F 4,927	(h)	64,870	69,996
October	(i)	61	F 168	F 229	F 1,975	1,372	F 1,839	F 3,211	F 5,186	(h)	53,835	59,250
November	(i)	70	F 175	F 245	F 1,482	1,507	F 1,942	F 3,449	F 4,931	(h)	49,348	54,524
December	(i)	77	F 178	F 255	F 1,553	1,520	F 1,884	F 3,404	F 4,957	(h)	50,111	55,322
Total	(i)	861	F 1,836	F 2,697	F 18,851	18,028	F 22,297	F 40,325	F 59,176	(h)	739,689	801,563
2016 January	(i)	79	F 218	F 297	F 1,425	1,539	F 1,975	F 3,514	F 4,939	(h)	62,049	67,286
February	(i)	81	F 188	F 269	F 1,337	1,438	F 2,053	F 3,491	F 4,828	(h)	50,525	55,623
2-Month Total	(i)	160	F 407	F 567	F 2,762	2,977	F 4,028	F 7,005	F 9,767	(h)	112,575	122,909
2015 2-Month Total	(i)	187	F 355	F 543	F 2,911	3,167	F 3,906	F 7,073	F 9,984	(h)	138,128	148,654
2014 2-Month Total	(i)	263	240	503	3,181	3,424	4,002	7,426	10,607	(h)	159,534	170,644

<sup>a</sup> 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.

<sup>b</sup> All commercial sector fuel use other than that in "Commercial CHP."

<sup>c</sup> Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

<sup>d</sup> All industrial sector fuel use other than that in "Coke Plants" and "Industrial CHP."

<sup>e</sup> 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.

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

<sup>g</sup> Included in "Commercial Other."

<sup>h</sup> Included in "Industrial Non-CHP."

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

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 <sup>c,d</sup>	Total
		Residential <sup>a</sup> and Commercial	Industrial			Total		
			Coke Plants	Other <sup>b</sup>	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 January .....	44,951	465	2,064	3,909	5,973	6,438	133,705	185,093
February .....	44,804	435	1,927	3,721	5,649	6,083	119,904	170,792
March .....	44,728	405	1,791	3,534	5,325	5,729	118,260	168,718
April .....	44,813	413	1,840	3,564	5,404	5,817	128,925	179,555
May .....	43,871	421	1,888	3,595	5,483	5,904	136,921	186,696
June .....	42,682	429	1,937	3,626	5,563	5,992	133,479	182,153
July .....	41,939	440	2,060	3,774	5,834	6,274	125,870	174,083
August .....	39,892	451	2,184	3,922	6,106	6,557	121,369	167,818
September .....	38,828	462	2,307	4,070	6,377	6,840	124,546	170,214
October .....	38,266	458	2,418	4,112	6,530	6,988	136,964	182,218
November .....	38,159	454	2,529	4,154	6,683	7,136	142,595	187,891
December .....	38,894	449	2,640	4,196	6,836	7,285	151,548	197,727
2015 January .....	RF 38,864	F 467	F 1,845	F 4,582	F 6,427	F 6,894	154,749	R 200,506
February .....	RF 39,571	F 460	F 1,704	F 4,371	F 6,075	F 6,535	149,765	R 195,871
March .....	RF 39,621	F 453	F 1,563	F 4,148	F 5,711	F 6,164	155,004	R 200,789
April .....	RF 40,279	F 454	F 1,684	F 4,259	F 5,944	F 6,397	167,681	R 214,357
May .....	RF 39,855	F 454	F 1,813	F 4,372	F 6,185	F 6,639	173,436	R 219,930
June .....	RF 39,302	F 454	F 1,946	F 4,484	F 6,430	F 6,884	167,039	R 213,225
July .....	RF 38,887	F 456	F 1,912	F 4,706	F 6,618	F 7,074	158,596	R 204,557
August .....	RF 37,270	F 457	F 1,885	F 4,922	F 6,807	F 7,264	156,545	R 201,078
September .....	RF 36,223	F 459	F 1,851	F 5,134	F 6,986	F 7,444	162,684	R 206,351
October .....	F 36,262	F 460	F 1,854	F 5,257	F 7,110	F 7,571	176,140	219,973
November .....	F 36,539	F 462	F 1,850	F 5,377	F 7,227	F 7,689	189,120	233,348
December .....	F 37,831	F 458	F 1,850	F 5,495	F 7,345	F 7,802	197,128	242,762
2016 January .....	RF 37,783	F 490	F 1,839	F 5,250	F 7,089	F 7,579	189,073	R 234,436
February .....	F 38,525	F 483	F 1,694	F 5,017	F 6,710	F 7,193	188,975	234,693

<sup>a</sup> Through 1979, data are for the residential and commercial sectors. Beginning in 2008, data are for the commercial sector only.

<sup>b</sup> 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.

<sup>c</sup> 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.

<sup>d</sup> Excludes waste coal. Through 1998, data are for electric utilities only.

Beginning in 1999, data are for electric utilities and independent power producers.

R=Revised. 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.

## Coal

**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.

**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.”

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.”

2008 forward: EIA, Form EIA-923, “Power Plant Operations Report,” and Form EIA-3, “Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Coal Users”; 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 Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Coal Users” (data for “Commercial and Institutional Coal Users”); 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, “Monthly Coal Consumption Report—Manufacturing Plants.”

1980–1997: EIA, Form EIA-3, “Quarterly Coal Consumption Report—Manufacturing Plants,” and Form EIA-6, “Coal Distribution Report,” quarterly.

1998–2007: EIA, Form EIA-3, “Quarterly Coal Consumption Report—Manufacturing Plants,” Form EIA-6A, “Coal Distribution Report,” annual, and Form EIA-7A, “Coal Production Report,” annual.

2008 forward: EIA, Form EIA-3, “Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Coal Users,” 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-7A, “Coal Production Report,” annual, and Form EIA-8A, “Coal Stocks Report,” annual; and, for forecast values, EIA, Short-Term Integrated Forecasting System (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 Coal Consumption and Quality Report, Manufacturing and

Transformation/Processing Coal Plants and Commercial and Institutional Coal Users” (data for “Commercial and Institutional Coal Users”); 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 1977–1979: EIA, Form EIA-3, “Monthly Coal Consumption Report—Manufacturing Plants.”

1998–2007: EIA, Form EIA-3, “Quarterly Coal Consumption Report—Manufacturing Plants.”

2008 forward: EIA, Form EIA-3, “Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Coal Users”; and, for forecast values, EIA, STIFS.

#### **Electric Power**

1949 forward: Table 7.5.

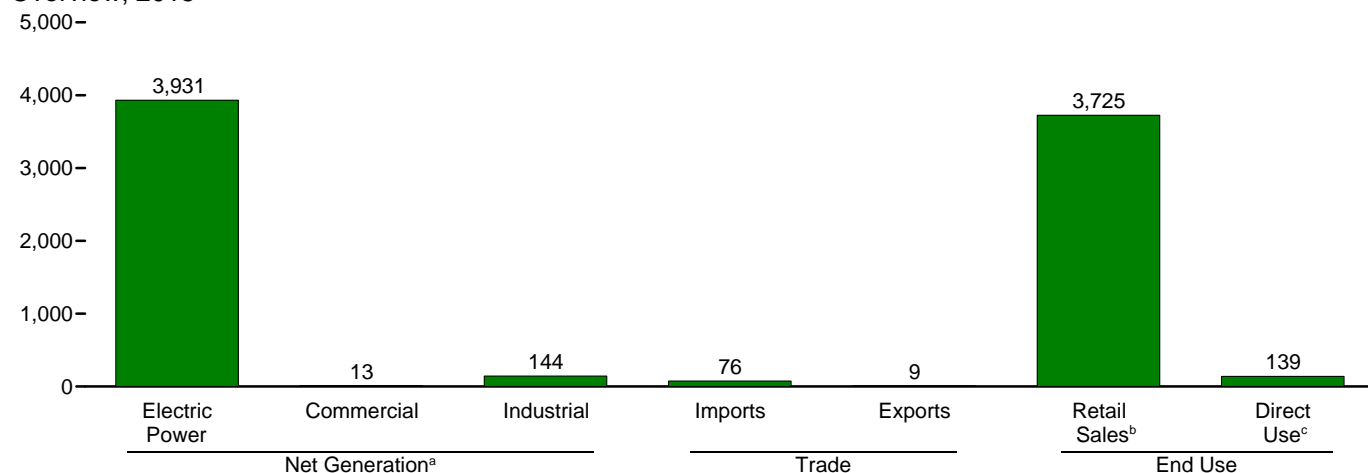
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## 7. Electricity

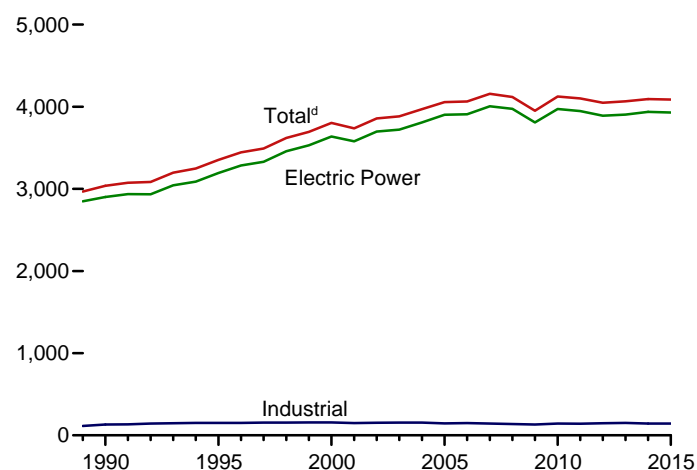
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**Figure 7.1 Electricity Overview**  
(Billion Kilowatthours)

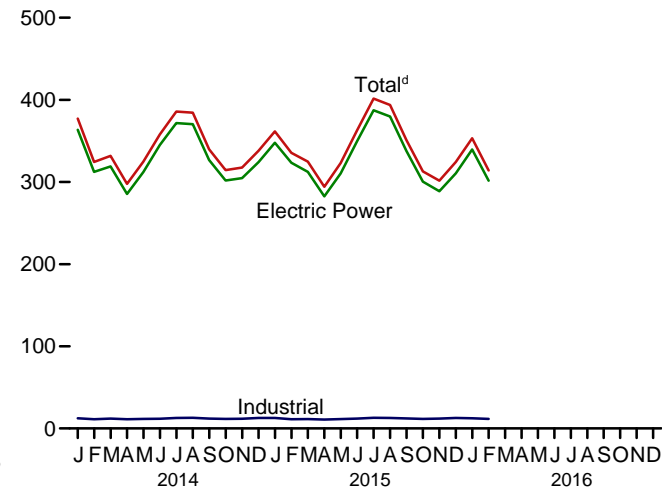
Overview, 2015



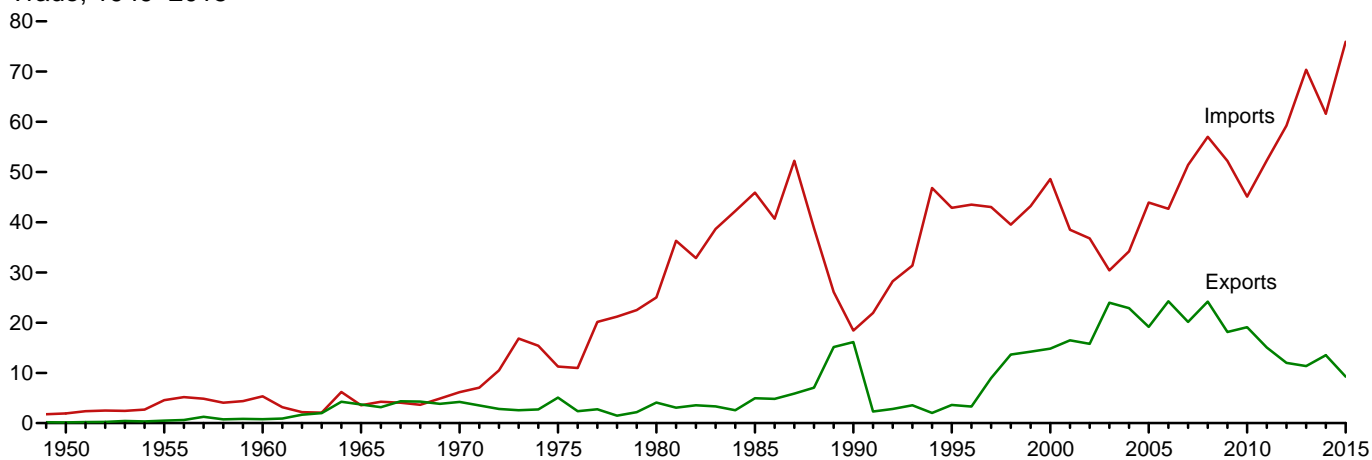
Net Generation<sup>a</sup> by Sector, 1989–2015



Net Generation<sup>a</sup> by Sector, Monthly



Trade, 1949–2015



<sup>a</sup> Data are for utility-scale facilities.

<sup>b</sup> Electricity retail sales to ultimate customers reported by electric utilities and other energy service providers.

<sup>c</sup> See "Direct Use" in Glossary.

<sup>d</sup> 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 <sup>a</sup>				Trade			T&D Losses <sup>f</sup> and Unaccounted for <sup>g</sup>	End Use		
	Electric Power Sector <sup>b</sup>	Com- mercial Sector <sup>c</sup>	Indus- trial Sector <sup>d</sup>	Total	Imports <sup>e</sup>	Exports <sup>e</sup>	Net Imports <sup>e</sup>		Retail Sales <sup>h</sup>	Direct Use <sup>i</sup>	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	<sup>c</sup> 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 January .....	364	1	12	377	5	1	4	28	341	<sup>E</sup> 12	353
February .....	312	1	11	324	4	1	3	8	309	<sup>E</sup> 11	320
March .....	319	1	12	332	6	2	4	22	302	<sup>E</sup> 11	314
April .....	285	1	11	298	5	1	3	14	276	<sup>E</sup> 11	287
May .....	312	1	12	325	5	1	5	27	291	<sup>E</sup> 11	303
June .....	345	1	12	358	5	1	4	28	323	<sup>E</sup> 11	334
July .....	372	1	13	386	6	1	5	27	352	<sup>E</sup> 12	364
August .....	370	1	13	384	7	1	6	26	352	<sup>E</sup> 12	364
September .....	327	1	12	340	6	1	5	7	327	<sup>E</sup> 12	339
October .....	302	1	12	315	5	1	4	11	297	<sup>E</sup> 11	308
November .....	305	1	12	317	6	1	5	26	285	<sup>E</sup> 11	297
December .....	324	1	13	338	5	1	4	20	310	<sup>E</sup> 12	322
Total .....	3,937	13	144	4,094	67	13	53	244	3,765	139	3,903
2015 January .....	348	1	13	362	6	1	5	28	326	<sup>E</sup> 12	339
February .....	323	1	11	336	6	1	4	25	305	<sup>E</sup> 11	315
March .....	312	1	11	325	7	1	6	17	303	<sup>E</sup> 11	314
April .....	282	1	11	294	7	1	6	17	273	<sup>E</sup> 10	283
May .....	310	1	11	323	7	1	6	32	285	<sup>E</sup> 11	296
June .....	350	1	12	363	7	1	6	34	323	<sup>E</sup> 12	335
July .....	387	1	13	402	7	1	6	35	360	<sup>E</sup> 13	372
August .....	380	1	13	394	7	1	6	29	359	<sup>E</sup> 12	371
September .....	338	1	12	351	7	1	6	15	330	<sup>E</sup> 12	342
October .....	300	1	12	313	5	1	5	13	293	<sup>E</sup> 11	305
November .....	289	1	12	302	6	1	5	22	273	<sup>E</sup> 11	285
December .....	311	1	13	324	6	1	5	23	294	<sup>E</sup> 12	306
Total .....	3,931	13	144	4,087	76	9	66	291	3,725	<sup>E</sup> 139	3,863
2016 January .....	340	1	12	353	7	1	6	29	318	<sup>E</sup> 12	330
February .....	302	1	12	314	6	1	5	14	294	<sup>E</sup> 11	305
2-Month Total .....	641	2	24	667	13	2	11	43	612	<sup>E</sup> 23	635
2015 2-Month Total .....	671	2	24	697	12	2	9	53	631	<sup>E</sup> 23	654
2014 2-Month Total .....	676	2	24	702	10	3	7	36	650	<sup>E</sup> 23	673

<sup>a</sup> Electricity net generation at utility-scale facilities. Does not include estimated distributed solar photovoltaic generation, which was 10 billion kilowatthours in 2014 and 12 billion kilowatthours in 2015. See Note 1, "Coverage of Electricity Statistics," at end of section.

<sup>b</sup> 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.

<sup>c</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>d</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. Through 1988, data are for industrial hydroelectric power only.

<sup>e</sup> Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

<sup>f</sup> Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note 2, "Electrical System Energy Losses," at end of Section 2.

<sup>g</sup> Data collection frame differences and nonsampling error.

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

<sup>i</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

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

Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section.

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

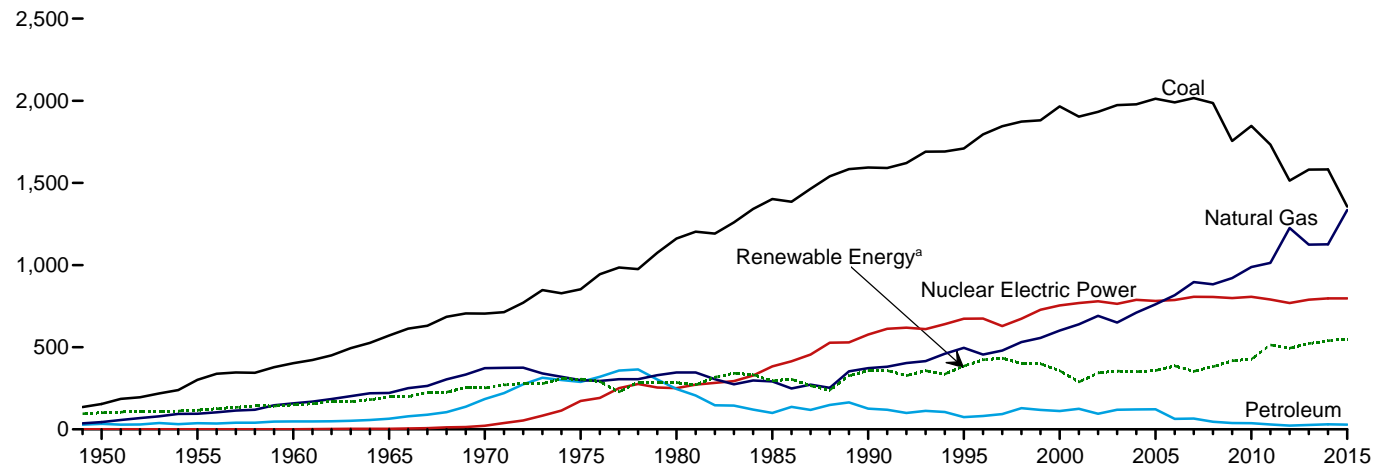
• Geographic coverage is the 50 states and the District of Columbia.

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.

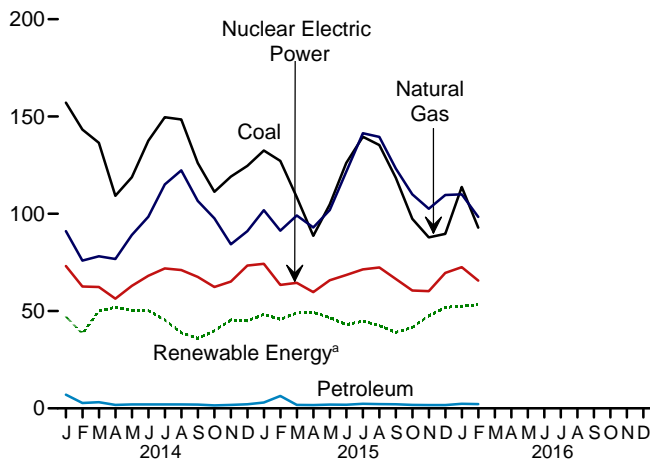
Sources: See end of section.

**Figure 7.2 Electricity Net Generation**  
(Billion Kilowatthours)

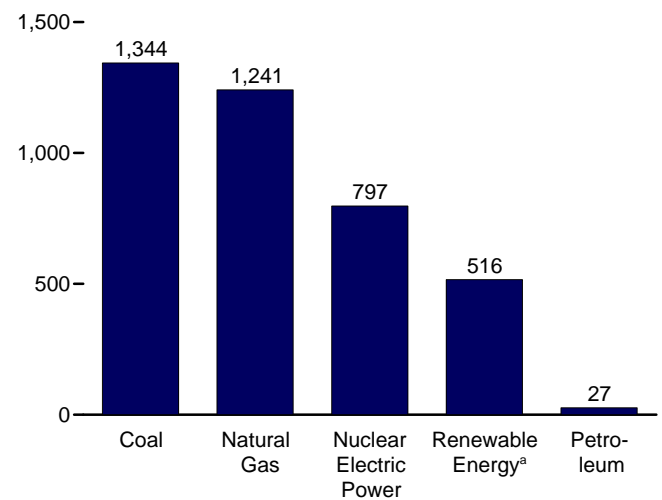
Total (All Sectors), Major Sources, 1949–2015



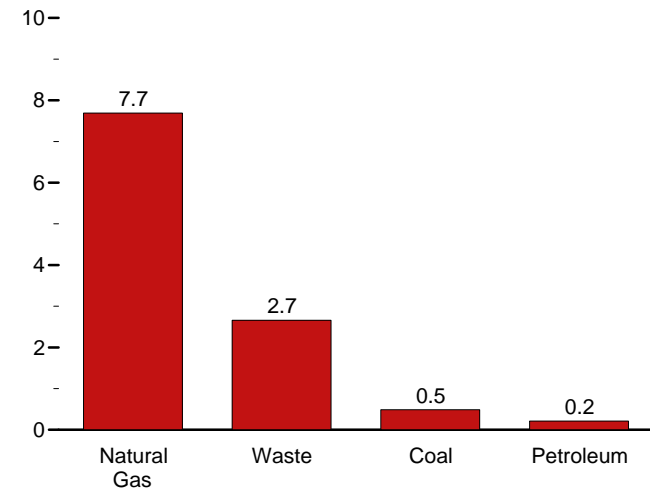
Total (All Sectors), Major Sources, Monthly



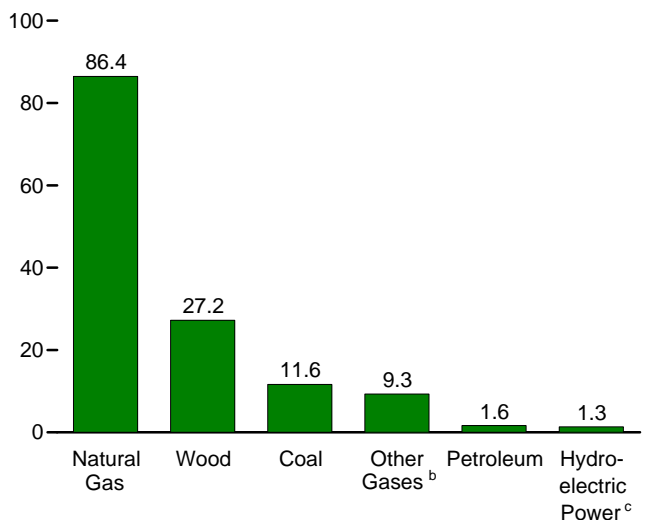
Electric Power Sector, Major Sources, 2015



Commercial Sector, Major Sources, 2015



Industrial Sector, Major Sources, 2015



<sup>a</sup> Conventional hydroelectric power, wood, waste, geothermal, solar/PV, and wind.

<sup>b</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels.

<sup>c</sup> 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				Nuclear Electric Power	Hydro-electric Pumped Storage <sup>e</sup>	Renewable Energy						Total <sup>j</sup>
	Coal <sup>a</sup>	Petro- leum <sup>b</sup>	Natural Gas <sup>c</sup>	Other Gases <sup>d</sup>			Conven- tional Hydro- electric Power <sup>f</sup>	Biomass		Geo- thermal	Solar/ PV <sup>g</sup>	Wind	
								Wood <sup>g</sup>	Waste <sup>h</sup>				
1950 Total .....	154,520	33,734	44,559	NA	0	( )	100,885	390	NA	NA	NA	NA	334,088
1955 Total .....	301,363	37,138	95,285	NA	0	( )	116,236	276	NA	NA	NA	NA	550,299
1960 Total .....	403,067	47,987	157,970	NA	518	( )	149,440	140	NA	33	NA	NA	759,156
1965 Total .....	570,926	64,801	221,559	NA	3,657	( )	196,984	269	NA	189	NA	NA	1,058,386
1970 Total .....	704,394	184,183	372,890	NA	21,804	( )	250,957	136	220	525	NA	NA	1,535,111
1975 Total .....	852,786	289,095	299,778	NA	172,505	( )	303,153	18	174	3,246	NA	NA	1,920,755
1980 Total .....	1,161,562	245,994	346,240	NA	251,116	( )	279,182	275	158	5,073	NA	NA	2,289,600
1985 Total .....	1,402,128	100,202	291,946	NA	383,691	( )	284,311	743	640	9,325	11	6	2,473,002
1990 Total <sup>k</sup> .....	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 January .....	157,097	7,072	91,061	933	73,163	-290	21,634	3,626	1,850	1,355	751	17,911	377,255
February .....	143,294	2,763	75,942	817	62,639	-445	17,396	3,265	1,686	1,206	835	14,009	324,348
March .....	136,443	3,188	78,151	866	62,397	-421	24,257	3,609	1,851	1,338	1,317	17,736	331,823
April .....	109,281	1,753	76,782	854	56,385	-378	25,440	3,230	1,810	1,314	1,487	18,636	297,631
May .....	118,786	2,044	89,120	944	62,947	-601	26,544	3,290	1,849	1,332	1,750	15,601	324,724
June .....	137,577	2,021	98,468	969	68,138	-653	25,744	3,622	1,826	1,293	1,923	15,799	357,844
July .....	149,627	2,042	115,081	1,069	71,940	-545	24,357	3,807	1,942	1,320	1,788	12,187	385,780
August .....	148,452	2,050	122,348	1,135	71,129	-840	19,807	3,761	1,880	1,329	1,879	10,171	384,341
September .....	126,110	1,948	106,582	1,126	67,535	-542	16,074	3,462	1,772	1,308	1,832	11,520	339,887
October .....	111,296	1,518	97,683	1,082	62,391	-448	17,159	3,422	1,726	1,345	1,717	14,508	314,522
November .....	119,127	1,738	84,354	1,073	65,140	-531	18,625	3,508	1,691	1,362	1,380	18,867	317,495
December .....	124,620	2,095	91,038	1,153	73,363	-480	22,329	3,737	1,767	1,375	1,032	14,711	337,957
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 January .....	132,498	2,970	101,811	1,293	74,270	-551	24,631	3,794	1,899	1,475	1,218	15,262	361,634
February .....	127,152	6,342	91,357	1,080	63,462	-456	22,770	3,418	1,603	1,346	1,633	14,959	335,576
March .....	108,537	1,806	99,130	1,058	64,547	-411	24,884	3,447	1,732	1,456	2,240	15,331	324,743
April .....	88,653	1,717	92,979	931	59,757	-214	22,558	3,244	1,739	1,338	2,567	17,881	294,218
May .....	104,795	1,940	101,919	1,016	65,833	-370	20,210	3,366	1,815	1,466	2,602	17,221	322,949
June .....	126,122	1,848	121,546	1,106	68,546	-398	20,089	3,539	1,805	1,381	2,717	13,477	362,917
July .....	139,598	2,348	141,365	1,274	71,412	-513	21,114	3,913	1,932	1,436	2,754	13,686	401,536
August .....	135,285	2,181	139,493	1,216	72,415	-626	19,434	3,834	1,902	1,427	2,834	13,073	393,704
September .....	118,485	2,060	123,230	1,212	66,466	-544	16,242	3,469	1,746	1,281	2,358	13,916	351,040
October .....	97,431	1,792	110,025	847	60,571	-443	16,702	3,300	1,836	1,363	2,030	16,390	312,972
November .....	87,852	1,711	102,566	848	60,264	-285	19,381	3,404	1,866	1,380	1,896	19,663	301,647
December .....	89,649	1,726	109,646	1,081	69,634	-281	23,154	3,629	1,957	1,418	1,623	20,067	324,445
Total .....	1,356,057	28,443	1,335,068	12,963	797,178	-5,094	251,168	42,358	21,833	16,767	26,473	190,927	4,087,381
2016 January .....	113,751	2,339	109,980	1,254	72,536	-312	25,535	3,573	1,884	1,436	1,546	18,511	353,153
February .....	92,900	2,146	98,368	1,139	65,638	-399	24,257	3,392	1,677	1,342	2,423	20,214	314,079
2-Month Total .....	206,651	4,486	208,348	2,393	138,174	-710	49,792	6,964	3,561	2,778	3,969	38,725	667,231
2015 2-Month Total .....	259,650	9,312	193,168	2,373	137,732	-1,007	47,401	7,212	3,502	2,821	2,851	30,221	697,210
2014 2-Month Total .....	300,392	9,834	167,003	1,750	135,802	-735	39,030	6,891	3,536	2,561	1,586	31,920	701,603

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal symfuel.

<sup>b</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

<sup>d</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

<sup>e</sup> Pumped storage facility production minus energy used for pumping.

<sup>f</sup> Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

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

<sup>h</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>i</sup> Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include estimated distributed solar photovoltaic generation, which was 9,536 million kilowatthours in 2014 and 12,141 million

kilowatthours in 2015.

<sup>j</sup> 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).

<sup>k</sup> Through 1988, all data except hydroelectric are for electric utilities only; hydroelectric data through 1988 include industrial plants as well as electric utilities. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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					Nuclear Electric Power	Hydro- electric Pumped Storage <sup>e</sup>	Renewable Energy						Total <sup>j</sup>
	Coal <sup>a</sup>	Petro- leum <sup>b</sup>	Natural Gas <sup>c</sup>	Other Gases <sup>d</sup>	Conven- tional Hydro- electric Power <sup>f</sup>			Biomass		Geo- thermal	Solar/ PV <sup>g</sup>	Wind		
								Wood <sup>g</sup>	Waste <sup>h</sup>					
1950 Total .....	154,520	33,734	44,559	NA	0	( )	95,938	390	NA	NA	NA	NA	329,141	
1955 Total .....	301,363	37,138	95,285	NA	0	( )	112,975	276	NA	NA	NA	NA	547,038	
1960 Total .....	403,067	47,987	157,970	NA	518	( )	145,833	140	NA	33	NA	NA	755,549	
1965 Total .....	570,926	64,801	221,559	NA	3,657	( )	193,851	269	NA	189	NA	NA	1,055,252	
1970 Total .....	704,394	184,183	372,890	NA	21,804	( )	247,714	136	220	525	NA	NA	1,531,868	
1975 Total .....	852,786	289,095	299,778	NA	172,505	( )	300,047	18	174	3,246	NA	NA	1,917,649	
1980 Total .....	1,161,562	245,994	346,240	NA	251,116	( )	276,021	275	158	5,073	NA	NA	2,286,439	
1985 Total .....	1,402,128	100,202	291,946	NA	383,691	( )	281,149	743	640	9,325	11	6	2,469,841	
1990 Total <sup>k</sup> .....	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 January .....	155,916	6,784	82,969	266	73,163	-290	21,510	1,273	1,490	1,355	734	17,895	363,645	
February .....	142,218	2,578	68,730	211	62,639	-445	17,289	1,150	1,385	1,206	814	13,997	312,276	
March .....	135,290	2,999	70,517	215	62,397	-421	24,139	1,291	1,514	1,338	1,286	17,722	318,914	
April .....	108,279	1,583	69,583	231	56,385	-378	25,310	1,040	1,466	1,314	1,453	18,621	285,453	
May .....	117,738	1,870	81,645	283	62,947	-601	26,410	1,007	1,520	1,332	1,710	15,591	312,072	
June .....	136,470	1,845	90,902	257	68,138	-653	25,640	1,317	1,491	1,293	1,883	15,786	344,988	
July .....	148,472	1,867	106,696	283	71,940	-545	24,265	1,374	1,574	1,320	1,748	12,176	371,817	
August .....	147,329	1,873	113,910	315	71,129	-840	19,708	1,372	1,526	1,329	1,839	10,162	370,304	
September .....	125,062	1,777	98,690	298	67,535	-542	15,986	1,288	1,439	1,308	1,795	11,510	326,756	
October .....	110,322	1,368	90,053	334	62,391	-448	17,063	1,238	1,393	1,345	1,680	14,492	301,847	
November .....	118,118	1,577	76,711	302	65,140	-531	18,524	1,331	1,373	1,362	1,351	18,848	304,738	
December .....	123,561	1,921	82,766	363	73,363	-480	22,202	1,347	1,432	1,375	1,011	14,696	324,193	
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 January .....	131,453	2,786	93,506	399	74,270	-551	24,497	1,342	1,551	1,475	1,193	15,247	347,781	
February .....	126,138	6,074	84,239	333	63,462	-456	22,654	1,260	1,299	1,346	1,600	14,945	323,416	
March .....	107,479	1,650	91,849	316	64,547	-411	24,738	1,231	1,385	1,456	2,191	15,316	312,288	
April .....	87,822	1,573	86,077	263	59,757	-214	22,419	1,045	1,426	1,338	2,511	17,865	282,458	
May .....	103,848	1,799	94,402	315	65,833	-370	20,093	1,174	1,487	1,466	2,544	17,205	310,405	
June .....	125,061	1,725	113,687	302	68,546	-398	19,986	1,285	1,484	1,381	2,654	13,464	349,791	
July .....	138,472	2,194	132,930	326	71,412	-513	20,997	1,464	1,588	1,436	2,694	13,673	387,331	
August .....	134,142	2,030	131,034	349	72,415	-626	19,350	1,478	1,579	1,427	2,771	13,061	379,678	
September .....	117,438	1,915	115,270	342	66,466	-544	16,178	1,220	1,422	1,281	2,306	13,904	337,797	
October .....	96,440	1,662	102,431	207	60,571	-443	16,602	1,082	1,495	1,363	1,986	16,375	300,382	
November .....	86,926	1,585	94,513	211	60,264	-285	19,268	1,182	1,512	1,380	1,853	19,645	288,664	
December .....	88,717	1,592	101,001	293	69,634	-281	23,023	1,310	1,601	1,418	1,587	20,048	310,587	
Total .....	1,343,937	26,584	1,240,938	3,655	797,178	-5,094	249,806	15,074	17,830	16,767	25,890	190,748	3,930,579	
2016 January .....	112,803	2,177	101,772	369	72,536	-312	25,402	1,251	1,555	1,436	1,515	18,493	339,624	
February .....	92,006	2,018	90,761	333	65,638	-399	24,128	1,226	1,386	1,342	2,373	20,194	301,570	
2-Month Total .....	204,809	4,194	192,533	703	138,174	-710	49,531	2,477	2,941	2,778	3,889	38,687	641,194	
2015 2-Month Total .....	257,592	8,859	177,745	732	137,732	-1,007	47,151	2,602	2,850	2,821	2,793	30,193	671,197	
2014 2-Month Total .....	298,134	9,362	151,699	477	135,802	-735	38,799	2,423	2,875	2,561	1,548	31,891	675,921	

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal syngas.

<sup>b</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

<sup>d</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

<sup>e</sup> Pumped storage facility production minus energy used for pumping.

<sup>f</sup> Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

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

<sup>h</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>i</sup> Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include estimated distributed solar photovoltaic

generation.

<sup>j</sup> 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).

<sup>k</sup> Through 1988, data are for electric utilities only. Beginning in 1989, 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. • 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 <sup>a</sup>					Industrial Sector <sup>b</sup>							
	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Biomass	Total <sup>g</sup>	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Other Gases <sup>h</sup>	Hydroelectric Power <sup>i</sup>	Biomass		Total <sup>k</sup>
				Waste <sup>f</sup>							Wood <sup>j</sup>	Waste <sup>f</sup>	
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 January .....	76	103	651	243	1,218	1,105	185	7,441	667	120	2,343	116	12,391
February .....	79	38	533	199	961	998	147	6,680	606	104	2,105	103	11,112
March .....	66	30	529	214	927	1,087	159	7,105	651	114	2,311	123	11,937
April .....	47	10	509	219	927	955	160	6,690	624	127	2,188	125	11,251
May .....	39	8	557	224	986	1,009	165	6,918	662	130	2,276	105	11,667
June .....	42	8	605	225	1,041	1,065	167	6,960	711	100	2,295	110	11,814
July .....	50	9	701	248	1,173	1,105	166	7,685	786	89	2,426	120	12,790
August .....	42	8	722	244	1,181	1,081	169	7,716	820	96	2,384	111	12,856
September .....	36	9	657	231	1,086	1,013	162	7,234	828	86	2,171	102	12,044
October .....	31	10	601	215	1,008	942	140	7,028	748	93	2,180	118	11,667
November .....	44	10	560	202	960	966	151	7,083	772	99	2,175	115	11,797
December .....	45	11	602	216	1,007	1,015	163	7,670	790	125	2,386	119	12,757
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 January .....	53	27	619	227	1,062	992	157	7,685	894	130	2,446	121	12,791
February .....	59	81	533	199	1,005	955	187	6,586	747	113	2,152	104	11,155
March .....	51	13	616	229	1,067	1,007	143	6,666	743	142	2,212	118	11,387
April .....	33	9	539	212	968	798	135	6,363	668	136	2,195	102	10,793
May .....	35	11	655	221	1,102	912	131	6,863	701	113	2,186	107	11,442
June .....	42	11	652	218	1,101	1,018	113	7,207	804	100	2,252	103	12,025
July .....	44	13	720	231	1,196	1,083	140	7,716	948	113	2,441	113	13,008
August .....	35	12	732	220	1,184	1,108	138	7,727	867	81	2,354	103	12,842
September .....	32	10	674	221	1,113	1,015	135	7,286	870	61	2,244	104	12,130
October .....	34	8	638	221	1,057	956	122	6,956	641	97	2,213	120	11,533
November .....	33	7	650	232	1,079	893	120	7,402	637	109	2,220	122	11,904
December .....	37	8	661	230	1,095	895	126	7,984	788	127	2,315	126	12,763
Total .....	488	210	7,690	2,660	13,029	11,632	1,648	86,440	9,308	1,323	27,230	1,343	143,773
2016 January .....	41	12	656	212	1,065	907	151	7,551	885	127	2,315	117	12,464
February .....	46	14	577	185	968	848	115	7,031	805	124	2,159	107	11,540
2-Month Total .....	87	26	1,233	397	2,034	1,755	265	14,582	1,690	251	4,474	224	24,004
2015 2-Month Total .....	111	108	1,152	427	2,067	1,946	344	14,271	1,641	243	4,597	225	23,946
2014 2-Month Total .....	155	141	1,184	442	2,179	2,103	332	14,120	1,273	223	4,448	219	23,503

<sup>a</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>b</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>c</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>d</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

<sup>f</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>g</sup> Includes a small amount of conventional hydroelectric power, other gases, photovoltaic (PV) energy, wind, wood, and other, which are not separately displayed. Does not include estimated distributed solar photovoltaic generation, which in the commercial sector was 4,349 million kilowatthours in 2014 and 5,024 million kilowatthours in 2015.

<sup>h</sup> Blast furnace gas, and other manufactured and waste gases derived from

fossil fuels. Through 2010, also includes propane gas.

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

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

<sup>k</sup> 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 estimated distributed solar photovoltaic generation, which in the industrial sector was 943 million kilowatthours in 2014 and 1,190 million kilowatthours in 2015.

NA=Not available.

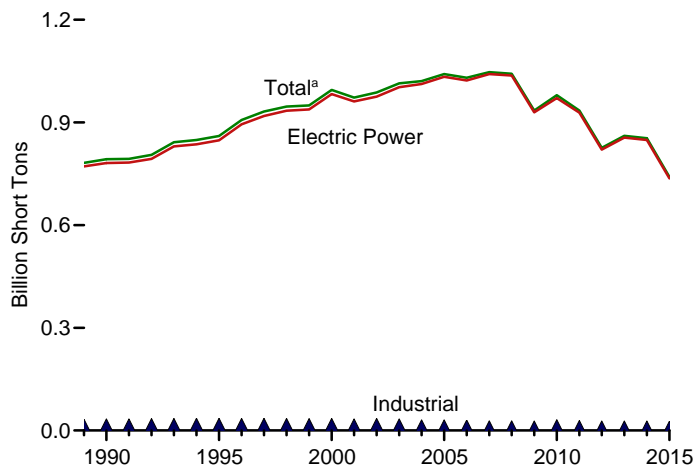
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

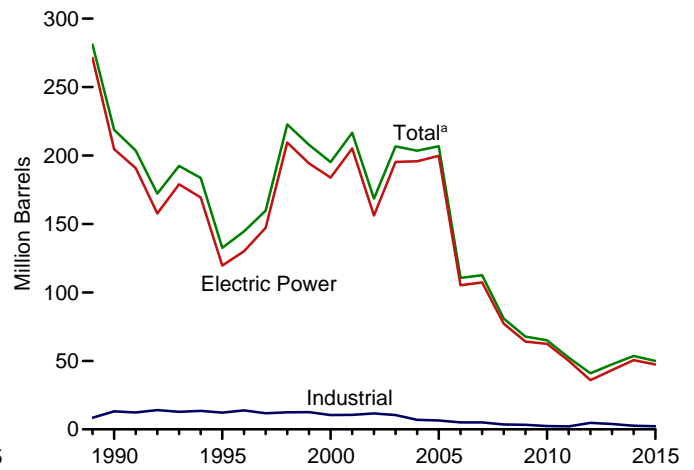
Sources: See end of section.

**Figure 7.3 Consumption of Selected Combustible Fuels for Electricity Generation**

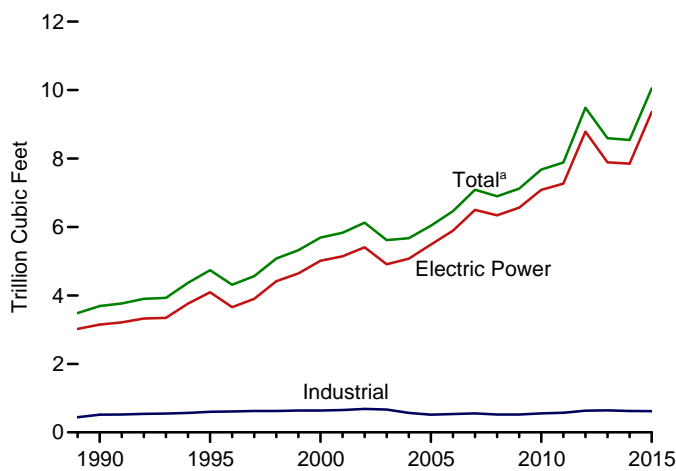
**Coal by Sector, 1989–2015**



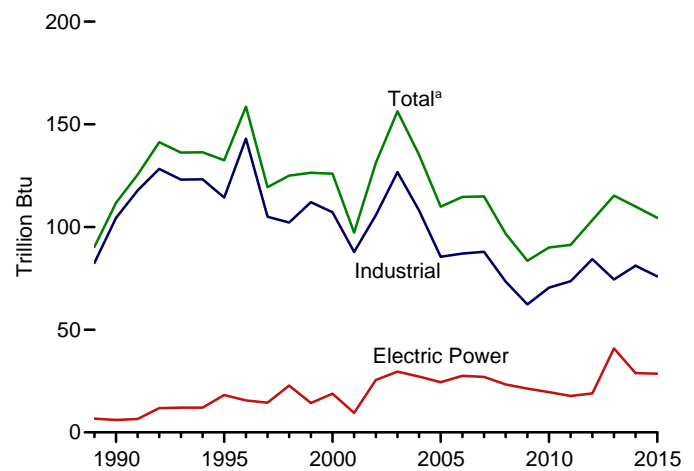
**Petroleum by Sector, 1989–2015**



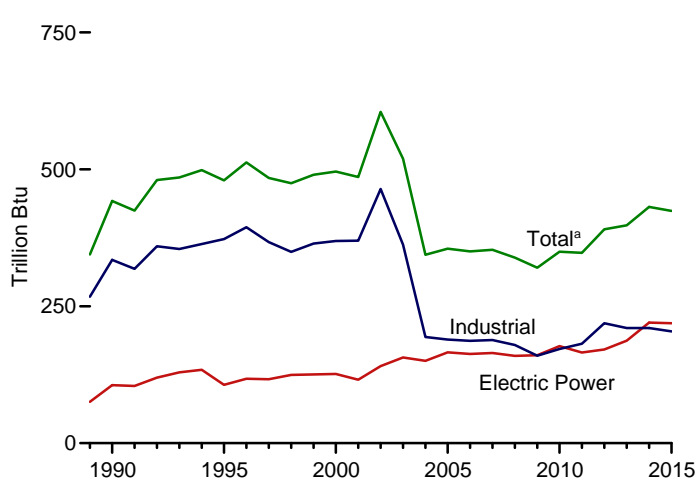
**Natural Gas by Sector, 1989–2015**



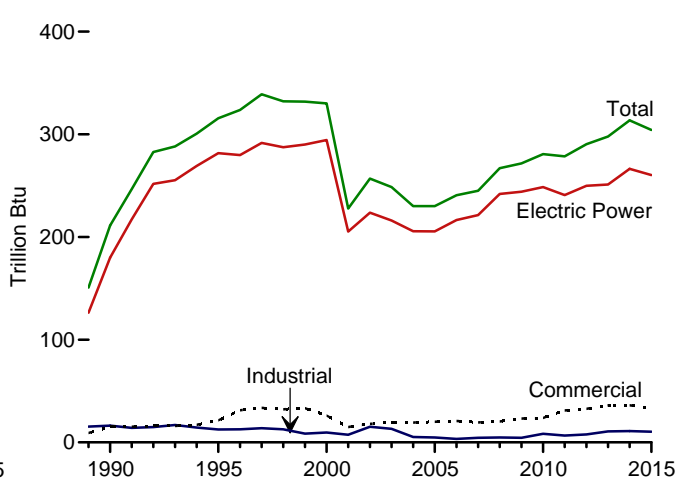
**Other Gases<sup>b</sup> by Sector, 1989–2015**



**Wood by Sector, 1989–2015**



**Waste by Sector, 1989–2015**



<sup>a</sup>Includes commercial sector.

<sup>b</sup>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 <sup>a</sup>	Petroleum					Natural Gas <sup>f</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</sup>
		Distillate Fuel Oil <sup>b</sup>	Residual Fuel Oil <sup>c</sup>	Other Liquids <sup>d</sup>	Petroleum Coke <sup>e</sup>	Total <sup>e</sup>			Wood <sup>h</sup>	Waste <sup>i</sup>	
	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 <sup>k</sup> .....	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 January .....	83,647	4,958	4,278	954	436	12,369	695	9	37	27	17
February .....	76,160	1,380	1,538	199	361	4,924	580	8	34	25	15
March .....	72,124	1,480	1,731	264	421	5,578	591	8	37	27	16
April .....	58,065	672	801	83	303	3,070	579	8	32	26	16
May .....	64,033	840	698	109	393	3,614	680	9	32	27	17
June .....	74,328	690	762	50	418	3,591	754	9	37	27	17
July .....	81,495	673	921	102	385	3,621	881	10	39	28	17
August .....	81,074	700	954	97	382	3,661	935	10	38	27	18
September .....	69,127	718	805	121	372	3,504	806	10	36	26	17
October .....	61,129	675	753	123	230	2,701	736	9	35	25	16
November .....	64,651	841	734	106	288	3,121	633	10	36	24	17
December .....	67,799	837	730	153	424	3,840	674	10	38	25	18
Total .....	853,634	14,465	14,704	2,363	4,412	53,593	8,544	110	431	314	200
2015 January .....	71,302	1,327	1,784	246	400	5,354	748	11	38	27	15
February .....	67,056	3,775	4,212	738	419	10,822	678	9	34	23	13
March .....	58,308	861	815	152	278	3,217	736	8	35	25	14
April .....	48,549	642	797	111	301	3,053	694	8	31	24	15
May .....	57,217	856	746	138	343	3,452	769	8	34	25	16
June .....	69,166	810	850	113	305	3,299	927	9	36	25	16
July .....	76,833	790	1,128	122	421	4,145	1,088	10	39	27	17
August .....	74,067	740	1,004	117	397	3,847	1,069	10	39	26	17
September .....	65,008	670	877	172	381	3,625	934	9	35	24	16
October .....	53,985	650	781	123	312	3,115	827	7	33	25	15
November .....	49,173	816	865	79	253	3,027	770	7	34	26	15
December .....	50,191	818	728	91	278	3,026	808	9	37	27	16
Total .....	740,855	12,756	14,588	2,201	4,088	49,983	10,048	104	424	304	186
2016 January .....	62,151	1,207	1,023	150	346	4,112	808	10	36	27	16
February .....	50,649	849	1,110	171	331	3,782	722	9	35	24	14
2-Month Total .....	112,800	2,056	2,133	321	677	7,894	1,531	19	70	51	30
2015 2-Month Total .....	138,359	5,102	5,996	983	819	16,176	1,426	19	72	50	28
2014 2-Month Total .....	159,807	6,338	5,815	1,154	797	17,292	1,274	17	71	51	32

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>b</sup> Fuel oil nos. 1, 2, and 4. For 1949–1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>c</sup> Fuel oil nos. 5 and 6. For 1949–1979, data are for steam plant use of petroleum. For 1980–2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>d</sup> Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

<sup>e</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and

tire-derived fuels).

<sup>j</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

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

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 end of section, "Table 7.3b Sources" and "Table 7.3c Sources."

**Table 7.3b Consumption of Combustible Fuels for Electricity Generation:  
Electric Power Sector** (Subset of Table 7.3a)

		Petroleum					Natural Gas <sup>f</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</sup>
		Distillate Fuel Oil <sup>b</sup>	Residual Fuel Oil <sup>c</sup>	Other Liquids <sup>d</sup>	Petroleum Coke <sup>e</sup>	Total <sup>e</sup>			Wood <sup>h</sup>	Waste <sup>j</sup>	
	Coal <sup>a</sup>	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 <sup>k</sup> .....	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 January .....	83,213	4,836	4,188	931	404	11,973	634	2	19	23	10
February .....	75,772	1,325	1,472	181	331	4,636	527	2	17	21	9
March .....	71,706	1,439	1,676	246	389	5,305	535	2	19	23	11
April .....	57,692	648	766	70	267	2,817	526	2	16	22	10
May .....	63,635	819	660	91	363	3,383	624	2	15	23	11
June .....	73,907	672	717	36	385	3,350	697	2	19	23	11
July .....	81,059	653	879	87	352	3,380	818	3	20	24	11
August .....	80,644	683	920	80	349	3,427	872	3	20	23	11
September .....	68,726	698	769	103	343	3,285	747	2	19	22	10
October .....	60,759	651	713	106	201	2,476	679	3	18	21	10
November .....	64,281	816	686	90	261	2,895	576	3	19	21	11
December .....	67,410	812	686	137	395	3,610	612	3	20	22	11
Total .....	848,803	14,052	14,132	2,157	4,039	50,537	7,849	29	220	266	127
2015 January .....	70,934	1,288	1,700	228	369	5,061	687	3	20	22	10
February .....	66,692	3,675	4,043	724	388	10,384	626	2	18	19	9
March .....	57,928	830	774	128	255	3,006	682	2	18	21	9
April .....	48,260	616	766	94	272	2,835	644	2	15	21	10
May .....	56,883	830	709	111	320	3,248	713	2	18	21	10
June .....	68,779	783	821	91	288	3,136	868	2	19	22	11
July .....	76,422	756	1,096	110	392	3,925	1,026	3	21	24	11
August .....	73,649	707	981	101	370	3,639	1,007	3	21	23	11
September .....	64,625	647	852	159	355	3,434	875	3	17	21	10
October .....	53,630	625	768	109	288	2,942	772	2	16	22	10
November .....	48,855	793	848	54	236	2,877	712	2	18	22	10
December .....	49,866	790	713	69	257	2,855	745	2	19	23	11
Total .....	736,523	12,340	14,072	1,979	3,790	47,342	9,357	29	219	260	123
2016 January .....	61,819	1,178	986	140	319	3,898	749	3	19	23	10
February .....	50,338	823	1,089	152	311	3,620	667	2	18	21	10
2-Month Total .....	112,157	2,002	2,076	292	630	7,517	1,416	5	37	43	20
2015 2-Month Total .....	137,626	4,963	5,744	952	757	15,445	1,312	6	38	42	19
2014 2-Month Total .....	158,985	6,161	5,660	1,112	735	16,608	1,161	4	36	44	20

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>b</sup> Fuel oil nos. 1, 2, and 4. For 1949–1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>c</sup> Fuel oil nos. 5 and 6. For 1949–1979, data are for steam plant use of petroleum. For 1980–2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>d</sup> Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

<sup>e</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>j</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>k</sup> 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 <sup>a</sup>				Industrial Sector <sup>b</sup>						
	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Biomass	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</sup>
				Waste <sup>f</sup>					Wood <sup>h</sup>	Waste <sup>f</sup>	
	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 January .....	27	113	6	3	407	283	54	6	18	1	5
February .....	27	58	5	3	362	229	48	6	16	1	4
March .....	22	44	5	3	396	229	51	6	17	1	4
April .....	16	32	5	3	357	220	48	6	16	1	4
May .....	12	23	6	3	385	208	51	7	17	1	4
June .....	15	27	6	3	406	214	51	7	18	1	4
July .....	16	24	7	3	420	216	55	7	19	1	4
August .....	14	24	7	3	417	210	56	8	18	1	5
September .....	12	25	6	3	389	194	52	8	17	1	5
October .....	11	29	6	3	359	196	51	7	17	1	4
November .....	14	29	5	3	356	197	52	7	17	1	5
December .....	16	32	6	3	373	198	55	7	19	1	5
Total .....	202	462	72	36	4,629	2,594	623	81	210	11	54
2015 January .....	17	56	6	3	351	237	55	8	18	1	3
February .....	19	165	5	3	345	273	47	6	16	1	3
March .....	17	26	6	3	363	185	48	6	17	1	3
April .....	11	18	5	2	278	200	45	6	16	1	4
May .....	12	20	6	2	321	185	49	6	16	1	4
June .....	14	20	6	2	373	144	52	7	17	1	4
July .....	15	24	7	3	396	196	55	8	18	1	4
August .....	12	23	7	3	406	185	55	7	18	1	4
September .....	11	17	6	2	372	174	52	7	17	1	4
October .....	11	10	6	3	344	163	49	5	17	1	4
November .....	11	9	6	3	306	140	52	5	17	1	4
December .....	12	12	6	3	313	159	56	6	17	1	4
Total .....	163	402	74	33	4,169	2,239	618	76	204	10	44
2016 January .....	13	13	6	3	319	201	53	7	17	1	4
February .....	14	15	6	3	297	148	50	7	16	1	3
2-Month Total .....	27	28	12	6	616	348	103	14	33	2	7
2015 2-Month Total .....	36	222	11	6	696	509	102	14	34	2	6
2014 2-Month Total .....	54	172	12	6	769	512	102	12	35	2	9

<sup>a</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>b</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>c</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal syngas.

<sup>d</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

<sup>f</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous

technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

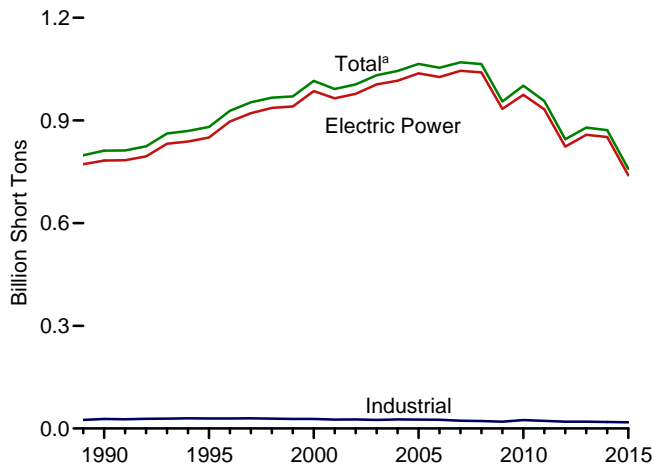
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data are for fuels consumed to produce electricity. Through 1988, data are not available. • 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.

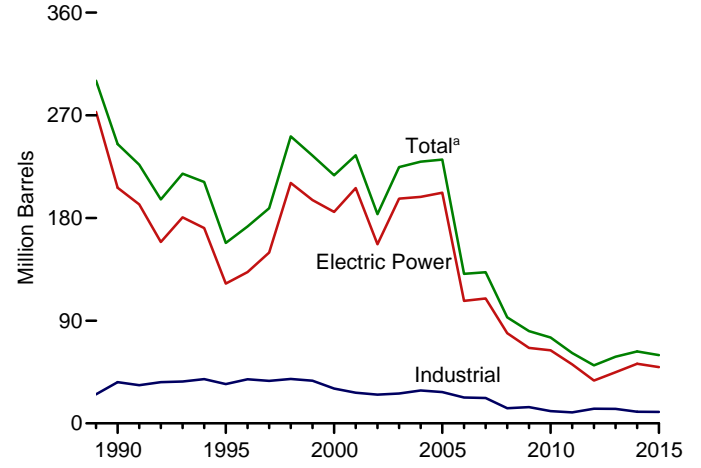
Sources: • **1989–1997:** U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "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**

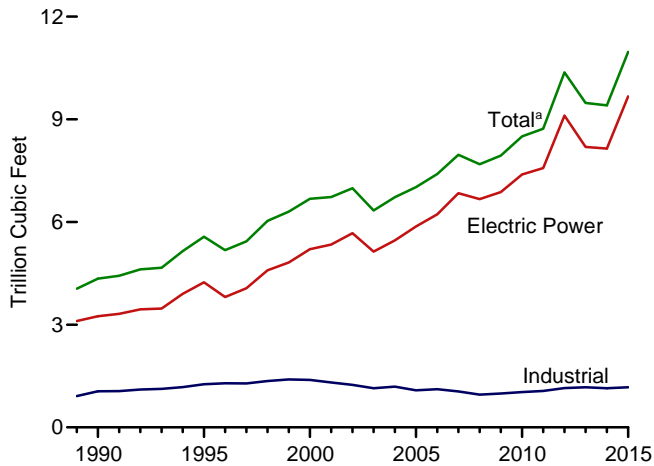
**Coal by Sector, 1989–2015**



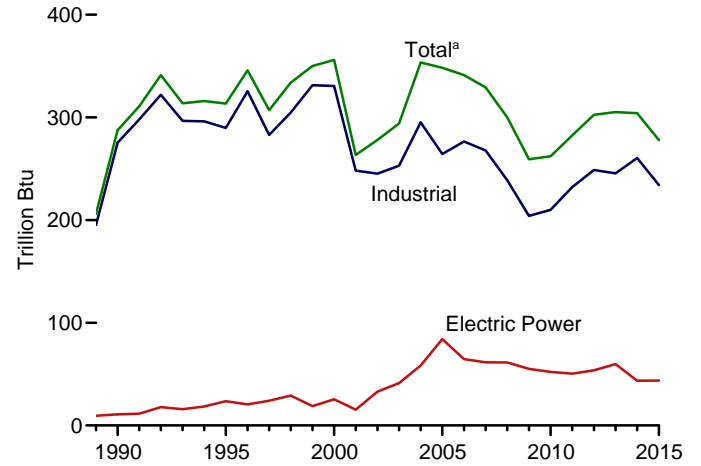
**Petroleum by Sector, 1989–2015**



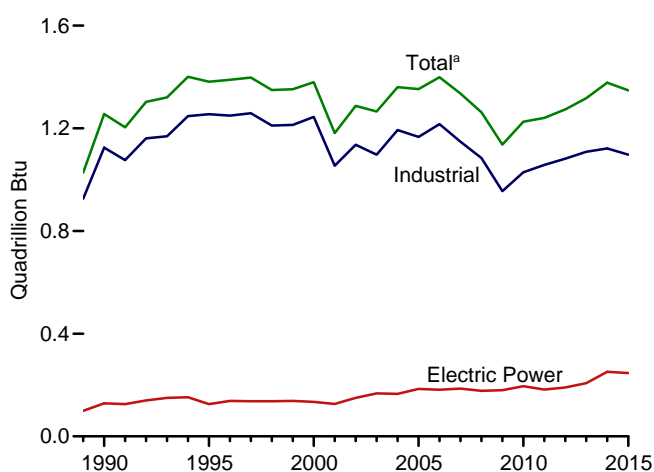
**Natural Gas by Sector, 1989–2015**



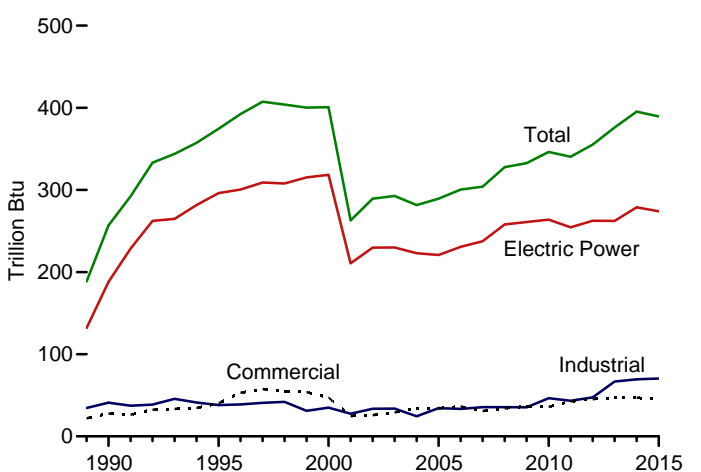
**Other Gases<sup>b</sup> by Sector, 1989–2015**



**Wood by Sector, 1989–2015**



**Waste by Sector, 1989–2015**



<sup>a</sup> Includes commercial sector.

<sup>b</sup> 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 <sup>a</sup>	Petroleum					Natural Gas <sup>f</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>j</sup>
		Distillate Fuel Oil <sup>b</sup>	Residual Fuel Oil <sup>c</sup>	Other Liquids <sup>d</sup>	Petroleum Coke <sup>e</sup>	Total <sup>e</sup>			Wood <sup>h</sup>	Waste <sup>i</sup>	
	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 <sup>k</sup> .....	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 January .....	85,420	5,177	4,609	1,046	541	13,536	782	25	118	35	20
February .....	77,801	1,460	1,746	247	454	5,722	649	23	107	32	17
March .....	73,846	1,528	1,932	316	527	6,410	664	25	117	34	19
April .....	59,489	710	932	118	418	3,852	646	24	109	34	19
May .....	65,483	869	835	153	504	4,376	748	24	109	33	19
June .....	75,741	726	904	81	527	4,343	822	24	116	33	20
July .....	82,961	702	1,050	138	499	4,386	953	26	120	35	20
August .....	82,526	741	1,073	137	494	4,422	1,010	27	121	33	21
September .....	70,482	752	908	158	485	4,243	876	26	112	31	20
October .....	62,488	701	893	165	316	3,339	808	26	114	32	19
November .....	66,131	870	878	152	393	3,863	704	27	115	32	20
December .....	69,372	871	853	196	538	4,612	749	27	121	33	21
Total .....	871,741	15,107	16,615	2,908	5,695	63,106	9,410	304	1,378	395	236
2015 January .....	72,972	1,402	1,965	319	540	6,384	827	27	122	34	18
February .....	68,510	3,952	4,526	798	555	12,050	751	23	109	29	15
March .....	59,851	903	960	206	425	4,196	817	23	110	32	17
April .....	49,922	677	921	159	420	3,857	768	22	107	31	17
May .....	58,637	890	874	191	444	4,173	843	23	111	32	18
June .....	70,540	848	984	156	422	4,096	1,000	24	112	31	18
July .....	78,327	837	1,270	153	525	4,884	1,165	25	118	35	19
August .....	75,514	776	1,133	152	501	4,569	1,149	25	116	33	19
September .....	66,404	700	1,045	214	488	4,401	1,009	22	109	31	18
October .....	55,268	691	917	167	396	3,752	902	21	109	33	18
November .....	50,925	854	995	137	370	3,837	848	20	109	33	18
December .....	51,707	857	854	143	365	3,677	889	23	116	35	19
Total .....	758,578	13,388	16,444	2,793	5,450	59,876	10,968	278	1,348	389	213
2016 January .....	63,667	1,255	1,182	186	429	4,768	892	24	116	33	18
February .....	52,045	898	1,222	227	431	4,500	798	21	108	31	16
2-Month Total .....	115,712	2,153	2,404	413	860	9,268	1,690	45	223	64	35
2015 2-Month Total .....	141,482	5,354	6,491	1,116	1,094	18,434	1,578	50	231	63	33
2014 2-Month Total .....	163,221	6,637	6,355	1,293	994	19,258	1,431	48	225	66	37

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>b</sup> Fuel oil nos. 1, 2, and 4. For 1949–1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>c</sup> Fuel oil nos. 5 and 6. For 1949–1979, data are for steam plant use of petroleum. For 1980–2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>d</sup> Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

<sup>e</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes

non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>j</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

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

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 end of section, "Table 7.4b Sources" and "Table 7.4c Sources."

**Table 7.4b Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Electric Power Sector** (Subset of Table 7.4a)

	Coal <sup>a</sup>	Petroleum					Natural Gas <sup>f</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</sup>
		Distillate Fuel Oil <sup>b</sup>	Residual Fuel Oil <sup>c</sup>	Other Liquids <sup>d</sup>	Petroleum Coke <sup>e</sup>	Total <sup>e</sup>			Wood <sup>h</sup>	Waste <sup>i</sup>	
	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 <sup>k</sup> .....	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 January .....	83,498	4,938	4,284	967	412	12,250	663	4	21	24	11
February .....	76,036	1,338	1,552	181	339	4,766	551	3	20	22	10
March .....	72,000	1,446	1,770	253	397	5,456	561	3	22	24	12
April .....	57,936	653	845	70	276	2,948	549	3	18	23	11
May .....	63,863	823	744	92	371	3,513	647	4	17	24	12
June .....	74,123	679	801	36	385	3,442	721	3	22	24	12
July .....	81,287	656	970	87	357	3,497	843	4	23	25	12
August .....	80,863	703	1,009	80	358	3,581	898	4	23	24	12
September .....	68,916	701	829	103	352	3,392	771	4	21	22	11
October .....	60,947	652	804	106	211	2,615	703	4	20	22	11
November .....	64,495	820	772	90	271	3,036	600	4	22	22	11
December .....	67,638	825	752	141	404	3,740	639	4	22	23	12
Total .....	851,602	14,235	15,132	2,208	4,132	52,235	8,146	44	251	279	137
2015 January .....	71,200	1,317	1,770	247	379	5,231	714	5	22	24	11
February .....	66,927	3,778	4,173	743	398	10,681	651	4	21	21	10
March .....	58,177	837	853	132	264	3,144	709	4	20	22	10
April .....	48,464	622	842	95	282	2,968	668	3	17	22	10
May .....	57,131	837	786	112	330	3,387	739	3	19	22	11
June .....	69,039	790	898	91	299	3,272	893	4	21	22	11
July .....	76,695	764	1,186	111	402	4,071	1,054	4	23	24	12
August .....	73,892	714	1,067	102	379	3,777	1,035	4	24	24	12
September .....	64,870	653	940	160	364	3,572	902	4	20	22	11
October .....	53,835	631	864	111	297	3,092	798	3	18	23	11
November .....	49,348	800	930	55	249	3,029	737	3	20	23	11
December .....	50,111	798	799	70	267	3,002	771	4	22	25	12
Total .....	739,689	12,543	15,108	2,027	3,910	49,225	9,671	44	246	274	133
2016 January .....	62,049	1,189	1,066	141	329	4,040	777	4	21	24	11
February .....	50,525	837	1,144	163	321	3,748	692	3	21	22	11
2-Month Total .....	112,575	2,026	2,211	304	650	7,788	1,469	7	42	46	22
2015 2-Month Total .....	138,128	5,095	5,942	990	777	15,912	1,365	8	43	45	21
2014 2-Month Total .....	159,534	6,276	5,837	1,149	751	17,016	1,214	7	41	46	21

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>b</sup> Fuel oil nos. 1, 2, and 4. For 1949–1979, data are for gas turbine and internal combustion plant use of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>c</sup> Fuel oil nos. 5 and 6. For 1949–1979, data are for steam plant use of petroleum. For 1980–2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>d</sup> Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

<sup>e</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and

tire-derived fuels).

<sup>j</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>k</sup> 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 <sup>a</sup>				Industrial Sector <sup>b</sup>						
	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Biomass	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</sup>
				Waste <sup>f</sup>					Wood <sup>h</sup>	Waste <sup>f</sup>	
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 January .....	132	237	14	4	1,791	1,049	106	21	96	6	6
February .....	131	109	9	3	1,633	848	89	20	87	6	5
March .....	118	79	9	4	1,729	875	94	22	94	6	5
April .....	82	44	8	4	1,472	861	89	20	90	7	6
May .....	72	31	9	4	1,549	832	92	21	92	5	6
June .....	78	30	10	4	1,540	871	91	21	94	5	6
July .....	85	29	11	4	1,589	861	99	22	97	6	6
August .....	72	37	11	4	1,591	804	101	23	98	5	7
September .....	64	36	10	4	1,502	815	95	23	91	4	6
October .....	58	38	10	4	1,482	686	95	22	93	6	6
November .....	82	42	9	4	1,554	784	94	23	93	6	6
December .....	90	45	10	4	1,644	827	100	23	98	6	7
Total .....	1,063	758	119	47	19,076	10,112	1,145	260	1,122	70	72
2015 January .....	96	93	11	4	1,676	1,060	102	22	99	6	4
February .....	91	237	10	4	1,491	1,131	90	19	88	4	4
March .....	88	48	11	4	1,586	1,004	97	19	90	6	4
April .....	64	32	9	3	1,394	858	90	19	90	6	4
May .....	62	31	10	3	1,444	755	94	19	92	6	5
June .....	64	30	10	3	1,437	794	96	20	90	6	5
July .....	68	36	11	4	1,565	777	101	21	94	6	5
August .....	63	41	11	3	1,560	751	103	21	92	6	5
September .....	58	36	11	3	1,477	793	96	19	89	6	5
October .....	61	28	10	4	1,372	632	94	18	90	6	5
November .....	70	26	11	4	1,507	783	100	17	89	5	4
December .....	77	29	11	4	1,520	646	107	19	94	6	4
Total .....	861	666	127	45	18,028	9,984	1,170	234	1,097	70	53
2016 January .....	79	42	11	4	1,539	686	104	20	94	5	4
February .....	81	41	10	4	1,438	712	96	18	86	5	4
2-Month Total .....	160	83	22	8	2,977	1,398	199	38	180	10	8
2015 2-Month Total .....	187	331	21	8	3,167	2,191	192	41	187	10	8
2014 2-Month Total .....	263	346	22	8	3,424	1,896	194	41	183	12	12

<sup>a</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>b</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

<sup>c</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>d</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

<sup>f</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>g</sup> Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

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

<sup>i</sup> Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

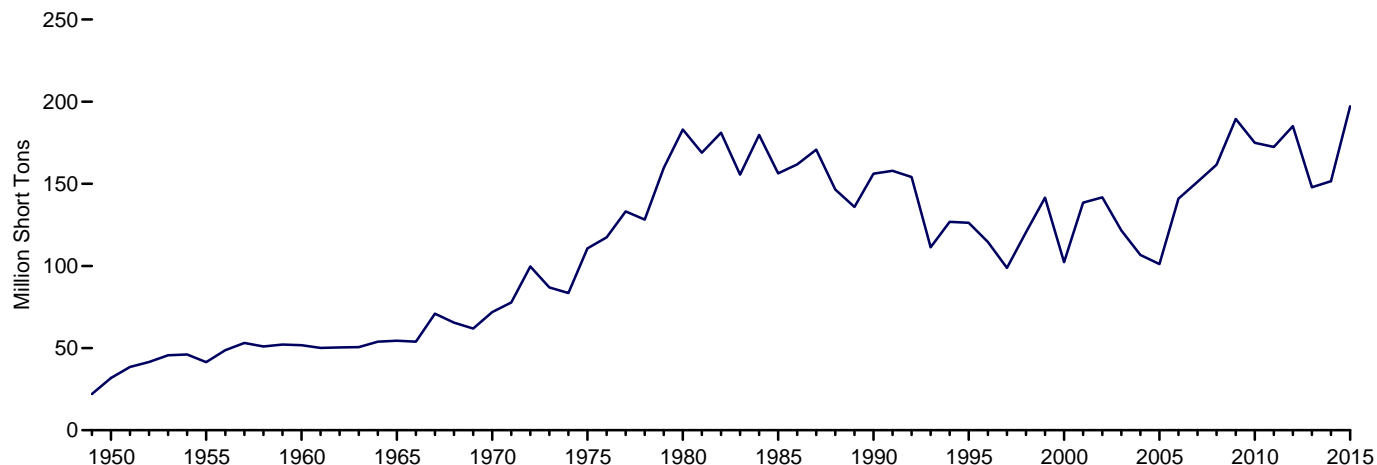
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is 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.

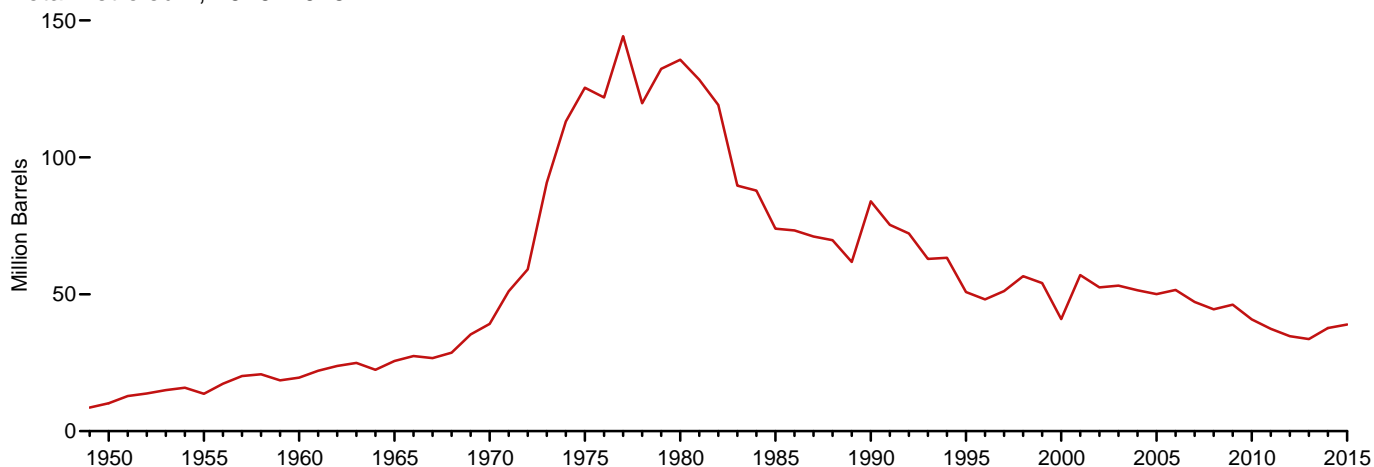
Sources: • **1989–1997:** U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "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**

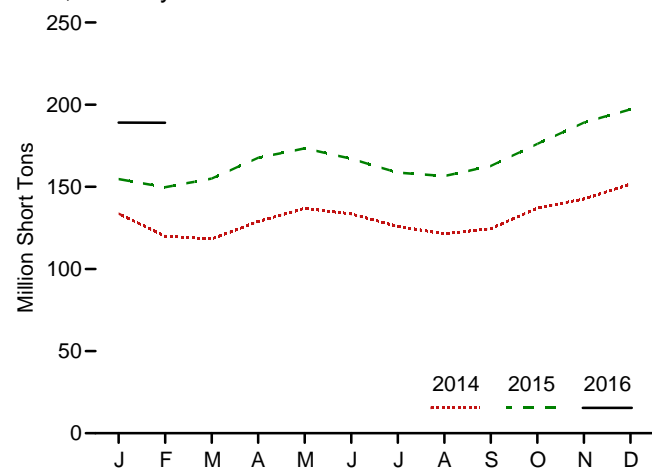
Coal, 1949–2015



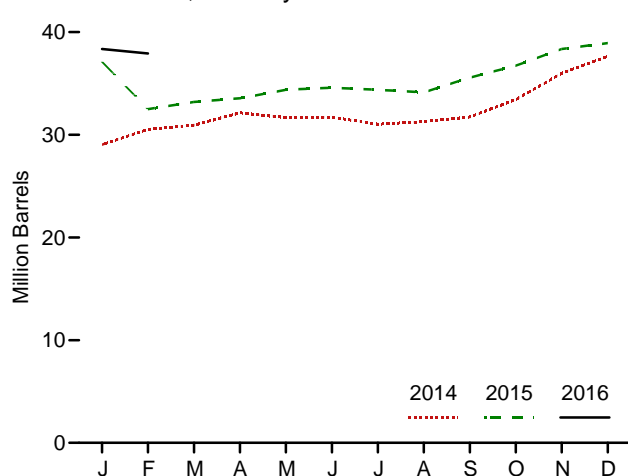
Total Petroleum, 1949–2015



Coal, Monthly



Total Petroleum, Monthly



Note: Data are for utility-scale 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 <sup>a</sup>	Petroleum				
		Distillate Fuel Oil <sup>b</sup>	Residual Fuel Oil <sup>c</sup>	Other Liquids <sup>d</sup>	Petroleum Coke <sup>e</sup>	Total <sup>e,f</sup>
	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 <sup>g</sup> .....	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 January .....	133,705	15,058	10,057	2,439	298	29,044
February .....	119,904	16,003	10,677	2,479	277	30,541
March .....	118,260	16,148	10,606	2,443	350	30,946
April .....	128,925	16,483	10,608	2,477	515	32,143
May .....	136,921	16,285	10,581	2,511	458	31,665
June .....	133,479	16,583	10,659	2,495	397	31,724
July .....	125,870	16,490	10,250	2,380	381	31,025
August .....	121,369	16,510	10,460	2,375	388	31,286
September .....	124,546	16,863	10,532	2,394	389	31,734
October .....	136,964	17,429	10,891	2,564	510	33,433
November .....	142,595	18,166	11,978	2,685	633	35,994
December .....	151,548	18,309	12,764	2,432	827	37,643
2015 January .....	154,749	18,043	12,142	2,459	892	37,103
February .....	149,765	16,278	9,781	2,182	850	32,492
March .....	155,004	16,676	10,167	2,262	818	33,196
April .....	167,681	16,718	10,045	2,233	912	33,555
May .....	173,436	16,734	10,417	2,234	999	34,381
June .....	167,039	16,703	10,463	2,269	1,031	34,592
July .....	158,596	16,661	10,157	2,247	1,065	34,387
August .....	156,545	16,777	9,968	2,248	1,029	34,136
September .....	162,684	17,211	10,617	2,226	1,102	35,562
October .....	176,140	17,422	11,323	2,249	1,149	36,739
November .....	189,120	17,470	12,133	2,291	1,292	38,352
December .....	197,128	17,439	12,449	2,334	1,342	38,935
2016 January .....	189,073	17,254	12,192	2,309	1,321	38,358
February .....	188,975	17,175	11,827	2,296	1,324	37,917

<sup>a</sup> Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.

<sup>b</sup> Fuel oil nos. 1, 2 and 4. For 1973–1979, data are for gas turbine and internal combustion plant stocks of petroleum. For 1980–2000, electric utility data also include small amounts of kerosene and jet fuel.

<sup>c</sup> Fuel oil nos. 5 and 6. For 1973–1979, data are for steam plant stocks of petroleum. For 1980–2000, electric utility data also include a small amount of fuel oil no. 4.

<sup>d</sup> Jet fuel and kerosene. Through 2003, data also include a small amount of waste oil.

<sup>e</sup> Petroleum coke is converted from short tons to barrels by multiplying by 5.

<sup>f</sup> Distillate fuel oil and residual fuel oil. Beginning in 1970, also includes petroleum coke. Beginning in 2002, also includes other liquids.

<sup>g</sup> 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

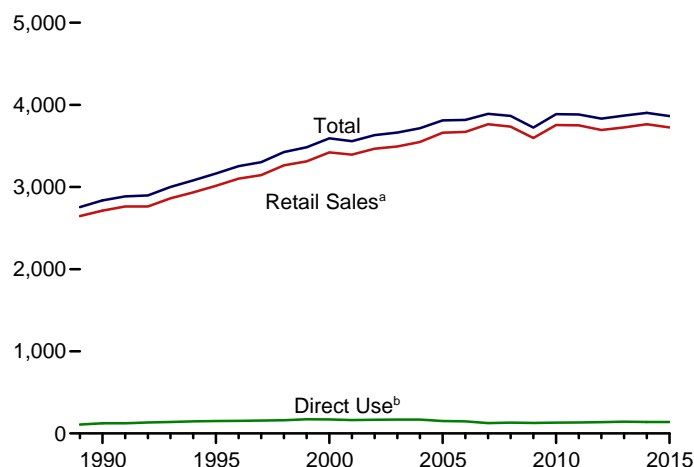
primary business is to sell electricity, or electricity and heat, to the public. • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

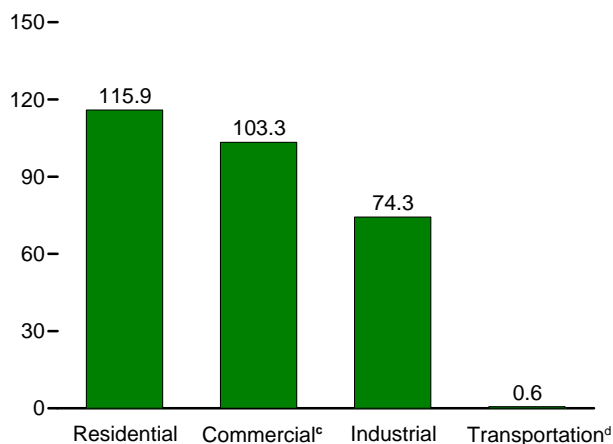
Sources: • **1949–September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977–1981:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1982–1988:** U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power 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)

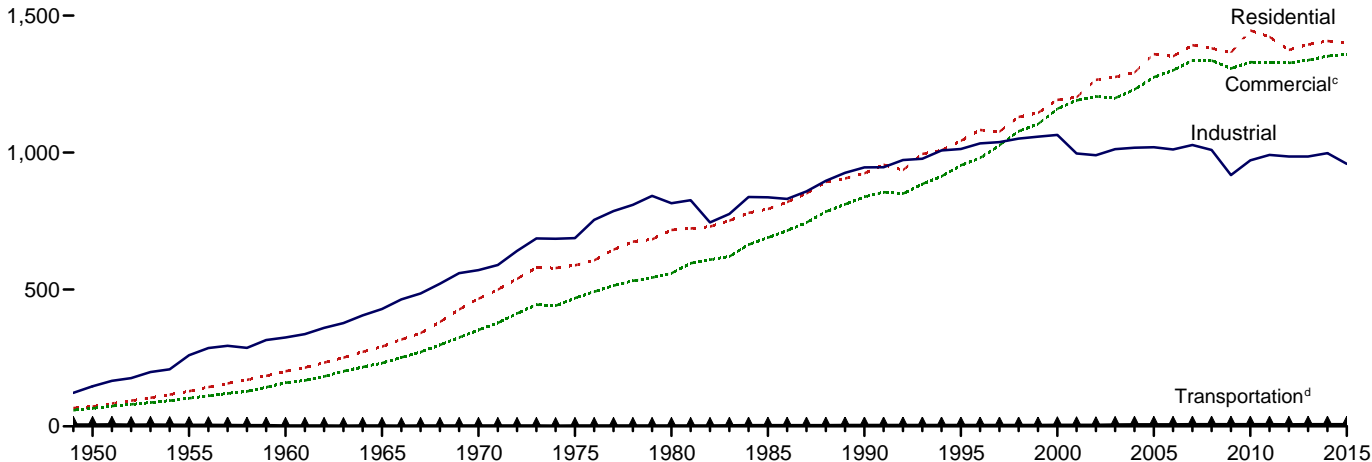
Electricity End Use Overview, 1989–2015



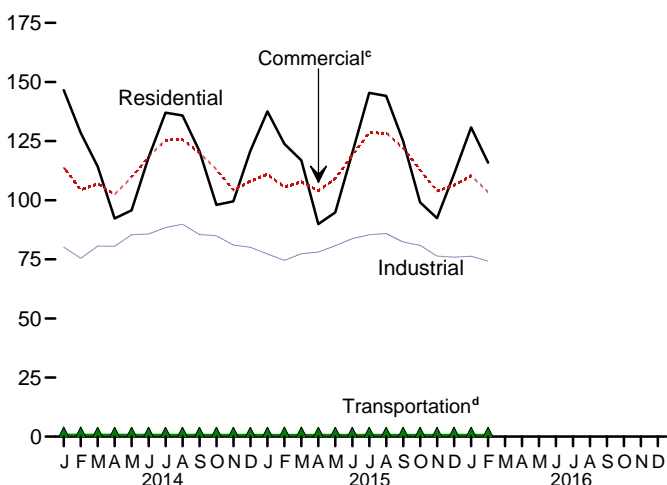
Retail Sales<sup>a</sup> by Sector, February 2016



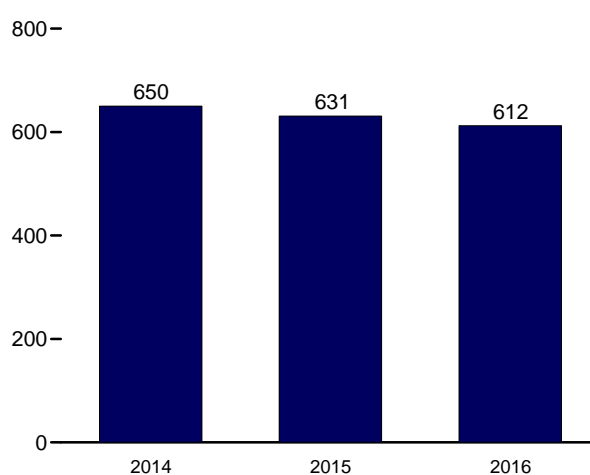
Retail Sales<sup>a</sup> by Sector, 1949–2015



Retail Sales<sup>a</sup> by Sector, Monthly



Retail Sales<sup>a</sup> Total, January–February



<sup>a</sup> Electricity retail sales to ultimate customers reported by utilities and other energy service providers.

<sup>b</sup> See “Direct Use” in Glossary.

<sup>c</sup> Commercial sector, including public street and highway lighting, inter-

departmental sales, and other sales to public authorities.

<sup>d</sup> 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 <sup>a</sup>					Direct Use <sup>f</sup>	Total End Use <sup>g</sup>	Discontinued Retail Sales Series	
	Residential	Commercial <sup>b</sup>	Industrial <sup>c</sup>	Transportation <sup>d</sup>	Total Retail Sales <sup>e</sup>			Commercial (Old) <sup>h</sup>	Other (Old) <sup>i</sup>
1950 Total .....	72,200	E 65,971	146,479	E 6,793	291,443	NA	291,443	50,637	22,127
1955 Total .....	128,401	E 102,547	259,974	E 5,826	496,748	NA	496,748	79,389	28,984
1960 Total .....	201,463	E 159,144	324,402	E 3,066	688,075	NA	688,075	130,702	31,508
1965 Total .....	291,013	E 231,126	428,727	E 2,923	953,789	NA	953,789	200,470	33,580
1970 Total .....	466,291	E 352,041	570,854	E 3,115	1,392,300	NA	1,392,300	306,703	48,452
1975 Total .....	588,140	E 468,296	687,680	E 2,974	1,747,091	NA	1,747,091	403,049	68,222
1980 Total .....	717,495	558,643	815,067	3,244	2,094,449	NA	2,094,449	488,155	73,732
1985 Total .....	793,934	689,121	836,772	4,147	2,323,974	NA	2,323,974	605,989	87,279
1990 Total .....	924,019	838,263	945,522	4,751	2,712,555	124,529	2,837,084	751,027	91,988
1995 Total .....	1,042,501	953,117	1,012,693	4,975	3,013,287	150,677	3,163,963	862,685	95,407
2000 Total .....	1,192,446	1,159,347	1,064,239	5,382	3,421,414	170,943	3,592,357	1,055,232	109,496
2001 Total .....	1,201,607	1,190,518	996,609	5,724	3,394,458	162,649	3,557,107	1,083,069	113,174
2002 Total .....	1,265,180	1,204,531	990,238	5,517	3,465,466	166,184	3,631,650	1,104,497	105,552
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	--	--
<b>2014 January .....</b>	<b>146,511</b>	<b>113,866</b>	<b>80,149</b>	<b>712</b>	<b>341,238</b>	<b>E 12,043</b>	<b>353,281</b>	<b>--</b>	<b>--</b>
February .....	128,475	104,353	75,413	700	308,941	E 10,683	319,624	--	--
March .....	114,233	106,968	80,539	648	302,388	E 11,423	313,811	--	--
April .....	92,290	102,459	80,505	640	275,894	E 10,776	286,669	--	--
May .....	95,727	109,666	85,383	646	291,421	E 11,196	302,617	--	--
June .....	118,049	118,423	85,711	609	322,792	E 11,376	334,168	--	--
July .....	137,028	125,434	88,417	645	351,524	E 12,355	363,879	--	--
August .....	135,830	125,603	89,808	642	351,883	E 12,421	364,304	--	--
September .....	120,741	120,049	85,489	628	326,907	E 11,619	338,526	--	--
October .....	98,038	113,023	84,994	625	296,680	E 11,216	307,896	--	--
November .....	99,486	104,245	81,044	637	285,413	E 11,288	296,701	--	--
December .....	120,801	108,070	80,123	626	309,620	E 12,179	321,799	--	--
<b>Total .....</b>	<b>1,407,208</b>	<b>1,352,158</b>	<b>997,576</b>	<b>7,758</b>	<b>3,764,700</b>	<b>E 138,574</b>	<b>3,903,274</b>	<b>--</b>	<b>--</b>
<b>2015 January .....</b>	<b>137,531</b>	<b>110,941</b>	<b>77,242</b>	<b>670</b>	<b>326,384</b>	<b>E 12,258</b>	<b>338,642</b>	<b>--</b>	<b>--</b>
February .....	123,777	105,514	74,512	702	304,505	E 10,760	315,266	--	--
March .....	116,865	107,786	77,394	682	302,727	E 11,021	313,748	--	--
April .....	89,926	103,973	78,056	623	272,578	E 10,406	282,984	--	--
May .....	94,863	109,127	80,738	611	285,339	E 11,100	296,439	--	--
June .....	119,926	119,112	83,772	612	323,422	E 11,615	335,037	--	--
July .....	145,418	128,448	85,400	650	359,916	E 12,569	372,486	--	--
August .....	144,091	128,387	85,891	627	358,996	E 12,411	371,407	--	--
September .....	124,992	122,116	82,342	617	330,068	E 11,719	341,787	--	--
October .....	99,076	112,761	80,915	638	293,390	E 11,140	304,530	--	--
November .....	92,383	103,942	76,378	606	273,309	E 11,488	284,797	--	--
December .....	111,033	106,312	75,923	622	293,890	E 12,262	306,153	--	--
<b>Total .....</b>	<b>1,399,884</b>	<b>1,358,419</b>	<b>958,563</b>	<b>7,659</b>	<b>3,724,525</b>	<b>E 138,750</b>	<b>3,863,275</b>	<b>--</b>	<b>--</b>
<b>2016 January .....</b>	<b>130,795</b>	<b>110,334</b>	<b>76,287</b>	<b>659</b>	<b>318,075</b>	<b>E 11,971</b>	<b>330,046</b>	<b>--</b>	<b>--</b>
February .....	115,913	103,340	74,291	650	294,194	E 11,069	305,263	--	--
<b>2-Month Total .....</b>	<b>246,708</b>	<b>213,674</b>	<b>150,578</b>	<b>1,309</b>	<b>612,269</b>	<b>E 23,040</b>	<b>635,309</b>	<b>--</b>	<b>--</b>
<b>2015 2-Month Total .....</b>	<b>261,309</b>	<b>216,455</b>	<b>151,754</b>	<b>1,372</b>	<b>630,890</b>	<b>E 23,018</b>	<b>653,908</b>	<b>--</b>	<b>--</b>
<b>2014 2-Month Total .....</b>	<b>274,987</b>	<b>218,219</b>	<b>155,562</b>	<b>1,412</b>	<b>650,179</b>	<b>E 22,725</b>	<b>672,905</b>	<b>--</b>	<b>--</b>

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

<sup>b</sup> Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>c</sup> Industrial sector. Through 2002, excludes agriculture and irrigation; beginning in 2003, includes agriculture and irrigation.

<sup>d</sup> Transportation sector, including sales to railroads and railways.

<sup>e</sup> The sum of "Residential," "Commercial," "Industrial," and "Transportation."

<sup>f</sup> Use of electricity that is 1) self-generated, 2) produced by either the same entity that consumes the power or an affiliate, and 3) used in direct support of a service or industrial process located within the same facility or group of facilities that house the generating equipment. Direct use is exclusive of station use.

<sup>g</sup> The sum of "Total Retail Sales" and "Direct Use."

<sup>h</sup> "Commercial (Old)" is a discontinued series—data are for the commercial

sector, excluding public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>i</sup> "Other (Old)" is a discontinued series—data are for public street and highway lighting, interdepartmental sales, other sales to public authorities, agriculture and irrigation, and transportation including railroads and railways.

E=Estimate. NA=Not available. -- =Not applicable.

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.

## Electricity

**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 facilities with a combined generator nameplate capacity of 1 megawatt or greater; these data exclude small-scale facilities (those with a combined generator nameplate capacity of under 1 megawatt). Data for small-scale solar photovoltaic generation in the residential, commercial, and industrial sectors are available in the *Electric Power Monthly*.

**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](http://www.eia.gov/survey/form/eia_860/instructions.pdf).

### 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 forward: National Energy Board of Canada; California Independent System Operator; and EIA estimates for Texas transfers.

#### 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)*, April 2016, Table 5.1.

##### **Retail Sales, Commercial**

1949–2002: Estimated by EIA as the sum of “Commercial (Old)” and the non-transportation portion of “Other (Old).”

See estimation methodology at

[http://www.eia.gov/state/seds/sep\\_use/notes/use\\_elec.pdf](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, April 2016, Table 5.1.

##### **Retail Sales, Transportation**

1949–2002: Estimated by EIA as the transportation portion of “Other (Old).” See estimation methodology at [http://www.eia.gov/state/seds/sep\\_use/notes/use\\_elec.pdf](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, April 2016, 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.”

2001–2014: EIA, *Electric Power Annual 2014*, March 2016, Table 2.2.

2015: 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 2015 and 2016, the 2014 annual share is used.

##### **Discontinued Retail Sales Series Commercial (Old) and Other (Old)**

1949–2002: See sources for “Residential” and “Industrial.”

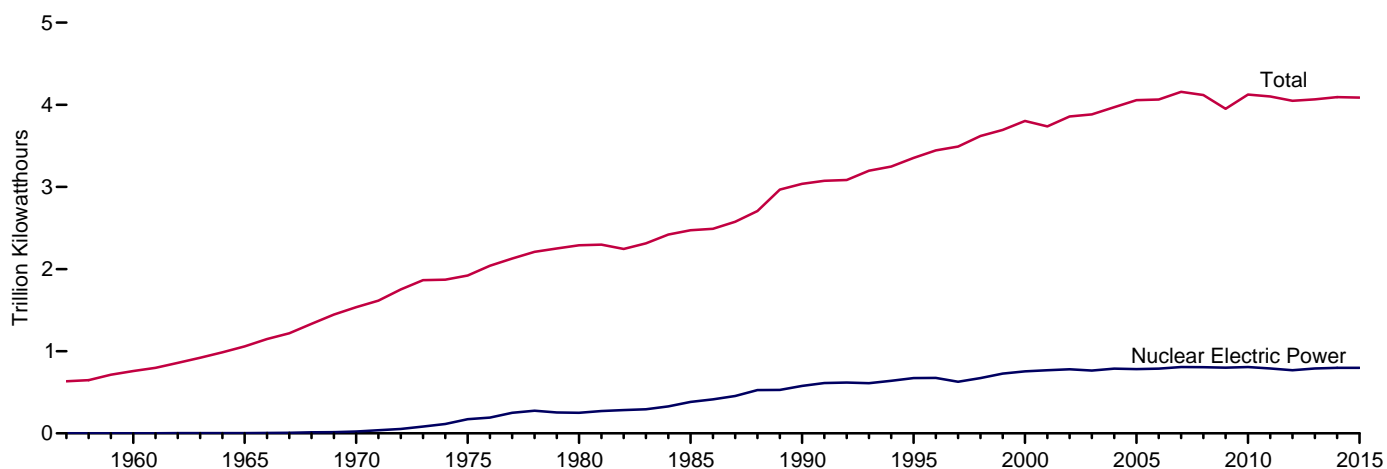
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## 8. Nuclear Energy

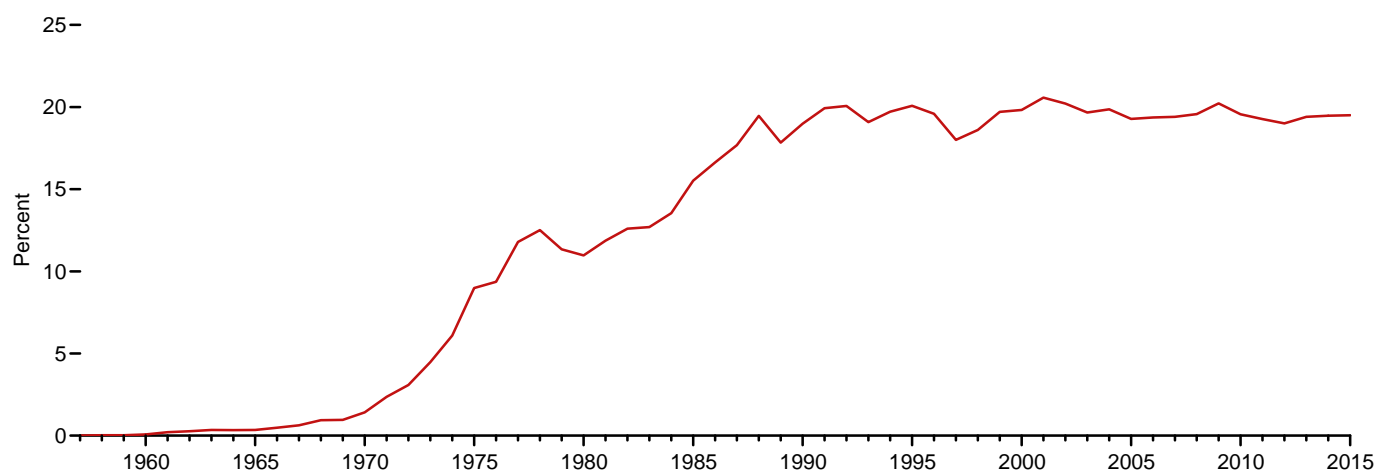
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## Figure 8.1 Nuclear Energy Overview

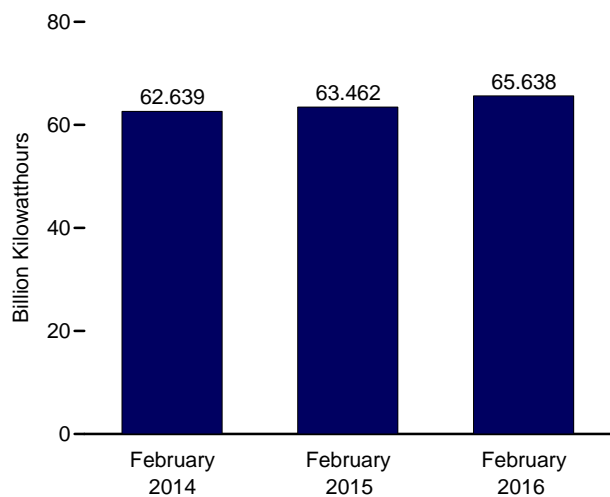
Electricity Net Generation, 1957–2015



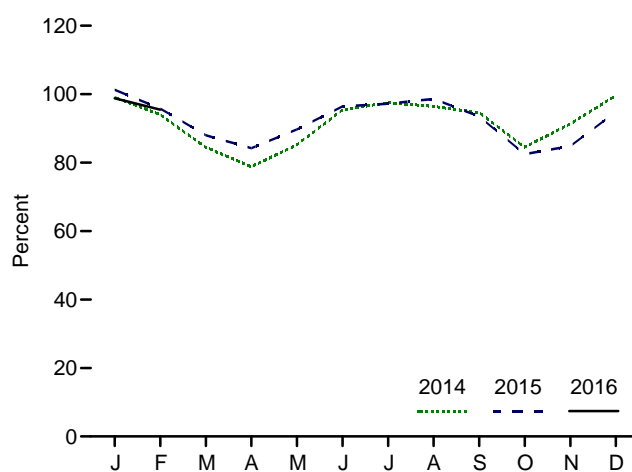
Nuclear Share of Electricity Net Generation, 1957–2015



Nuclear Electricity Net Generation



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 <sup>a,b</sup>	Net Summer Capacity of Operable Units <sup>b,c</sup>	Nuclear Electricity Net Generation	Nuclear Share of Electricity Net Generation	Capacity Factor <sup>d</sup>
	Number	Million Kilowatts	Million Kilowatthours	Percent	
<b>1957 Total</b> .....	<b>1</b>	<b>0.055</b>	<b>10</b>	<b>(s)</b>	<b>NA</b>
<b>1960 Total</b> .....	<b>3</b>	<b>.411</b>	<b>518</b>	<b>.1</b>	<b>NA</b>
<b>1965 Total</b> .....	<b>13</b>	<b>.793</b>	<b>3,657</b>	<b>.3</b>	<b>NA</b>
<b>1970 Total</b> .....	<b>20</b>	<b>7.004</b>	<b>21,804</b>	<b>1.4</b>	<b>NA</b>
<b>1975 Total</b> .....	<b>57</b>	<b>37.267</b>	<b>172,505</b>	<b>9.0</b>	<b>55.9</b>
<b>1980 Total</b> .....	<b>71</b>	<b>51.810</b>	<b>251,116</b>	<b>11.0</b>	<b>56.3</b>
<b>1985 Total</b> .....	<b>96</b>	<b>79.397</b>	<b>383,691</b>	<b>15.5</b>	<b>58.0</b>
<b>1990 Total</b> .....	<b>112</b>	<b>99.624</b>	<b>576,862</b>	<b>19.0</b>	<b>66.0</b>
<b>1995 Total</b> .....	<b>109</b>	<b>99.515</b>	<b>673,402</b>	<b>20.1</b>	<b>77.4</b>
<b>2000 Total</b> .....	<b>104</b>	<b>97.860</b>	<b>753,893</b>	<b>19.8</b>	<b>88.1</b>
<b>2001 Total</b> .....	<b>104</b>	<b>98.159</b>	<b>768,826</b>	<b>20.6</b>	<b>89.4</b>
<b>2002 Total</b> .....	<b>104</b>	<b>98.657</b>	<b>780,064</b>	<b>20.2</b>	<b>90.3</b>
<b>2003 Total</b> .....	<b>104</b>	<b>99.209</b>	<b>763,733</b>	<b>19.7</b>	<b>87.9</b>
<b>2004 Total</b> .....	<b>104</b>	<b>99.628</b>	<b>788,528</b>	<b>19.9</b>	<b>90.1</b>
<b>2005 Total</b> .....	<b>104</b>	<b>99.988</b>	<b>781,986</b>	<b>19.3</b>	<b>89.3</b>
<b>2006 Total</b> .....	<b>104</b>	<b>100.334</b>	<b>787,219</b>	<b>19.4</b>	<b>89.6</b>
<b>2007 Total</b> .....	<b>104</b>	<b>100.266</b>	<b>806,425</b>	<b>19.4</b>	<b>91.8</b>
<b>2008 Total</b> .....	<b>104</b>	<b>100.755</b>	<b>806,208</b>	<b>19.6</b>	<b><sup>d</sup> 91.1</b>
<b>2009 Total</b> .....	<b>104</b>	<b>101.004</b>	<b>798,855</b>	<b>20.2</b>	<b>90.3</b>
<b>2010 Total</b> .....	<b>104</b>	<b>101.167</b>	<b>806,968</b>	<b>19.6</b>	<b>91.1</b>
<b>2011 Total</b> .....	<b>104</b>	<b><sup>c</sup> 101.419</b>	<b>790,204</b>	<b>19.3</b>	<b>89.1</b>
<b>2012 Total</b> .....	<b>104</b>	<b>101.885</b>	<b>769,331</b>	<b>19.0</b>	<b>86.1</b>
<b>2013 Total</b> .....	<b>100</b>	<b>99.240</b>	<b>789,016</b>	<b>19.4</b>	<b>89.9</b>
<b>2014 January</b> .....	<b>100</b>	<b>99.182</b>	<b>73,163</b>	<b>19.4</b>	<b>99.1</b>
February .....	100	99.182	62,639	19.3	94.0
March .....	100	99.182	62,397	18.8	84.5
April .....	100	99.182	56,385	18.9	78.8
May .....	100	99.182	62,947	19.4	85.2
June .....	100	99.182	68,138	19.0	95.4
July .....	100	99.182	71,940	18.6	97.5
August .....	100	99.182	71,129	18.5	96.4
September .....	100	99.182	67,535	19.9	94.6
October .....	100	99.182	62,391	19.8	84.5
November .....	100	99.182	65,140	20.5	91.3
December .....	99	98.569	73,363	21.7	99.6
<b>Total</b> .....	<b>99</b>	<b>98.569</b>	<b>797,166</b>	<b>19.5</b>	<b>91.7</b>
<b>2015 January</b> .....	<b>99</b>	<b><sup>E</sup> 98.590</b>	<b>74,270</b>	<b>20.5</b>	<b><sup>E</sup> 101.3</b>
February .....	99	<sup>E</sup> 98.590	63,462	18.9	<sup>E</sup> 95.8
March .....	99	<sup>E</sup> 98.590	64,547	19.9	<sup>E</sup> 88.0
April .....	99	<sup>E</sup> 98.590	59,757	20.3	<sup>E</sup> 84.2
May .....	99	<sup>E</sup> 98.590	65,833	20.4	<sup>E</sup> 89.7
June .....	99	<sup>E</sup> 98.729	68,546	18.9	<sup>E</sup> 96.4
July .....	99	<sup>E</sup> 98.729	71,412	17.8	<sup>E</sup> 97.2
August .....	99	<sup>E</sup> 98.729	72,415	18.4	<sup>E</sup> 98.6
September .....	99	<sup>E</sup> 98.729	66,466	18.9	<sup>E</sup> 93.5
October .....	99	<sup>E</sup> 98.729	60,571	19.4	<sup>E</sup> 82.5
November .....	99	<sup>E</sup> 98.729	60,264	20.0	<sup>E</sup> 84.8
December .....	99	<sup>E</sup> 98.729	69,634	21.5	<sup>E</sup> 94.8
<b>Total</b> .....	<b>99</b>	<b><sup>E</sup> 98.729</b>	<b>797,178</b>	<b>19.5</b>	<b><sup>E</sup> 92.2</b>
<b>2016 January</b> .....	<b>99</b>	<b><sup>E</sup> 98.707</b>	<b>72,536</b>	<b>20.5</b>	<b><sup>E</sup> 98.8</b>
February .....	99	<sup>E</sup> 98.732	65,638	20.9	<sup>E</sup> 95.5
<b>2-Month Total</b> .....	<b>99</b>	<b><sup>E</sup> 98.732</b>	<b>138,174</b>	<b>20.7</b>	<b><sup>E</sup> 97.2</b>
<b>2015 2-Month Total</b> .....	<b>99</b>	<b><sup>E</sup> 98.590</b>	<b>137,732</b>	<b>19.8</b>	<b><sup>E</sup> 98.7</b>
<b>2014 2-Month Total</b> .....	<b>100</b>	<b>99.182</b>	<b>135,802</b>	<b>19.4</b>	<b>96.7</b>

<sup>a</sup> 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.

<sup>b</sup> At end of period.

<sup>c</sup> 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.

<sup>d</sup> 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.

<sup>E</sup>=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.

# Nuclear Energy

**Note 1. Operable Nuclear Reactors.** A reactor is generally defined as operable while it possessed a full-power license from the Nuclear Regulatory Commission or its predecessor the Atomic Energy Commission, or equivalent permission to operate, at the end of the year or month shown. The definition is liberal in that it does not exclude units retaining full-power licenses during long, non-routine shutdowns that for a time rendered them unable to generate electricity. Examples are:

(a) In 1985 the five then-active Tennessee Valley Authority (TVA) units (Browns Ferry 1, 2, and 3, and Sequoyah 1 and 2) were shut down under a regulatory forced outage. All five units were idle for several years, restarting in 2007, 1991, 1995, 1988, and 1988, respectively and were counted as operable during the shutdowns.

(b) Shippingport was shut down from 1974 through 1976 for conversion to a light-water breeder reactor, but is counted as operable from 1957 until its retirement in 1982.

(c) Calvert Cliffs 2 was shut down in 1989 and 1990 for replacement of pressurizer heater sleeves but is counted as operable during those years.

Exceptions to the definition are Shoreham and Three Mile Island 2. Shoreham was granted a full-power license in April 1989, but was shut down two months later and never restarted. In 1991, the license was changed to Possession Only. Although not operable at the end of the year, Shoreham is counted as operable during 1989. A major accident closed Three Mile Island 2 in 1979, and although the unit retained its full-power license for several years, it is considered permanently shut down since that year.

The following nuclear generating units were retired in 2013: Crystal River 3 in February; Kewaunee in May; and San Onofre 2 and 3 in June. Vermont Yankee was retired in December 2014.

**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. For a list of operable units as of November 2011, see [http://www.eia.gov/nuclear/reactors/stats\\_table1.html](http://www.eia.gov/nuclear/reactors/stats_table1.html).

### 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.”

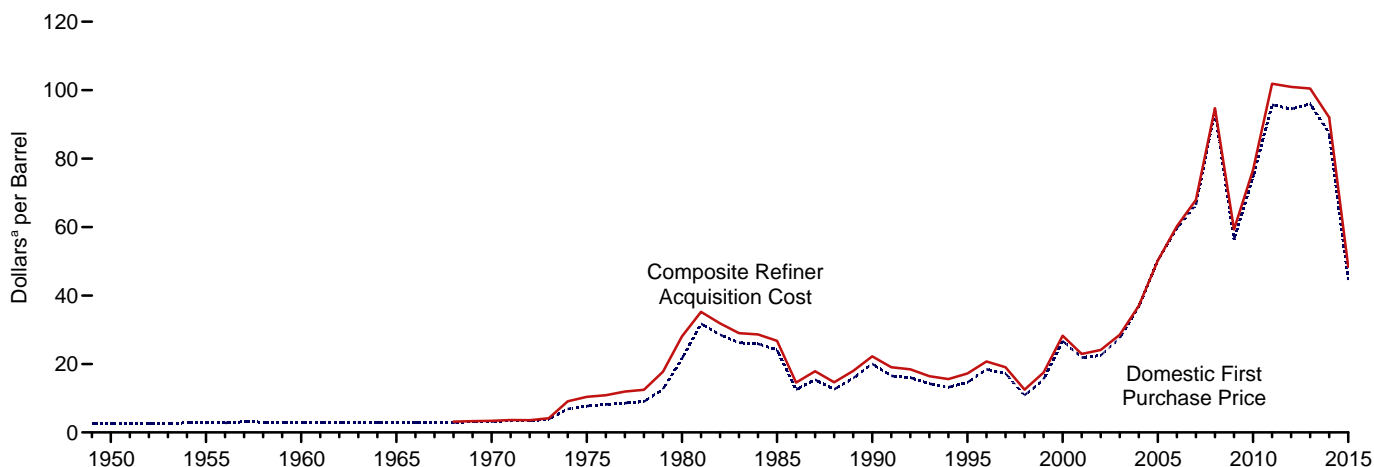


## 9. Energy Prices

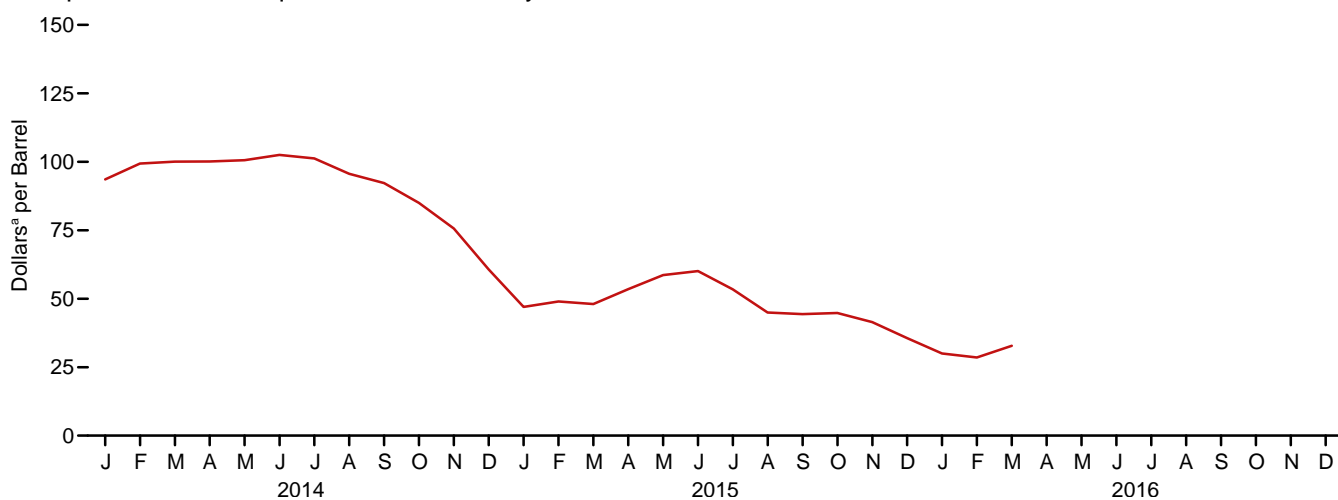
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## Figure 9.1 Petroleum Prices

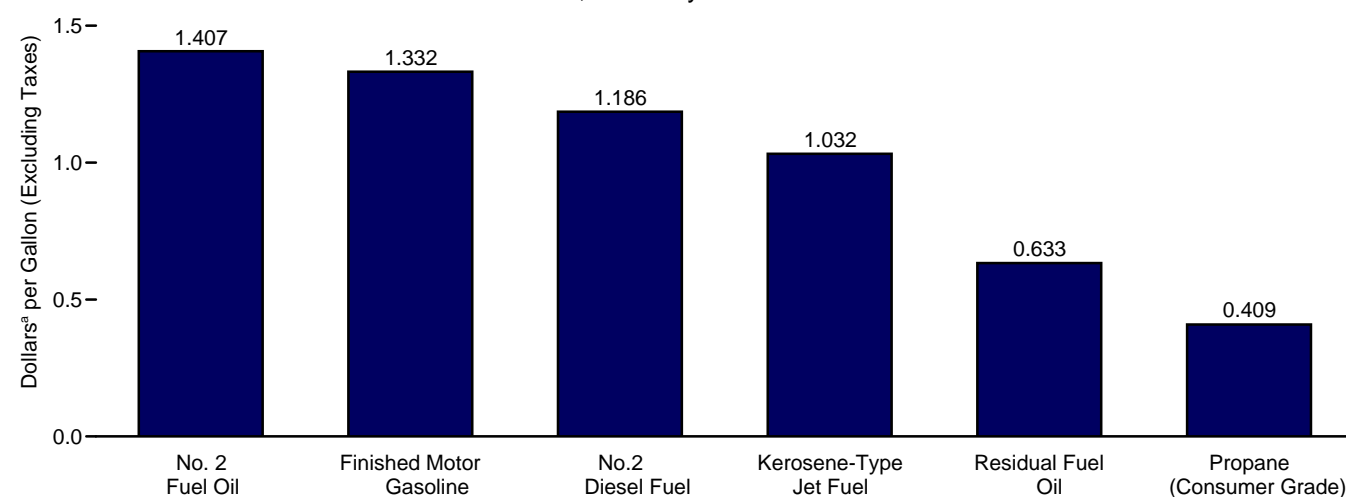
Crude Oil Prices, 1949–2015



Composite Refiner Acquisition Cost, Monthly



Refiner Prices to End Users: Selected Products, February 2016



<sup>a</sup> 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<sup>a</sup> per Barrel)

	Domestic First Purchase Price <sup>c</sup>	F.O.B. Cost of Imports <sup>d</sup>	Landed Cost of Imports <sup>e</sup>	Refiner Acquisition Cost <sup>b</sup>		
				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 January .....	89.57	90.93	90.97	97.21	89.71	93.58
February .....	96.86	92.76	95.38	102.35	96.10	99.36
March .....	96.17	93.05	95.54	102.61	97.13	100.09
April .....	96.49	94.15	96.51	102.53	97.33	100.15
May .....	95.74	96.16	97.99	102.40	98.46	100.61
June .....	98.68	97.57	99.27	104.21	100.26	102.51
July .....	96.70	93.79	96.59	103.21	98.75	101.22
August .....	90.72	89.28	91.53	97.60	93.23	95.61
September .....	86.87	85.26	87.31	94.62	89.38	92.26
October .....	78.84	76.73	80.13	86.73	82.75	84.99
November .....	71.07	67.48	70.94	76.67	74.34	75.66
December .....	54.86	50.01	54.86	63.26	57.36	60.70
Average .....	87.39	85.65	88.16	94.05	89.56	92.02
2015 January .....	43.06	40.09	44.38	48.90	44.74	47.00
February .....	44.35	43.86	47.16	50.30	47.20	48.97
March .....	42.66	43.58	47.15	48.69	47.27	48.06
April .....	49.30	48.31	51.79	54.86	51.63	53.51
May .....	54.38	53.45	56.94	59.39	57.66	58.66
June .....	55.88	53.57	56.60	61.06	58.90	60.12
July .....	47.70	45.53	49.71	54.15	52.42	53.41
August .....	39.98	37.17	41.39	46.30	43.23	44.97
September .....	41.60	36.90	40.02	46.68	41.13	44.38
October .....	42.33	37.21	40.39	47.02	42.03	44.78
November .....	38.19	33.59	37.14	43.30	39.06	41.43
December .....	32.26	R 28.23	R 31.59	37.76	33.16	35.63
Average .....	44.39	R 41.56	R 45.18	49.95	46.40	48.40
2016 January .....	R 27.02	R 23.53	R 26.79	R 32.17	R 27.48	R 29.99
February .....	R 25.51	R 24.28	R 25.95	R 30.34	R 26.67	R 28.57
March .....	NA	NA	NA	E 35.54	E 29.45	E 32.79

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> See Note 1, "Crude Oil Refinery Acquisition Costs," at end of section.

<sup>c</sup> See Note 2, "Crude Oil Domestic First Purchase Prices," at end of section.

<sup>d</sup> See Note 3, "Crude Oil F.O.B. Costs," at end of section.

<sup>e</sup> 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<sup>a</sup> per Barrel)

	Selected Countries							Persian Gulf Nations <sup>b</sup>	Total OPEC <sup>c</sup>	Total Non-OPEC <sup>c</sup>
	Angola	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average <sup>d</sup>	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 January	W	95.84	89.30	—	99.21	—	89.69	98.44	94.85	87.56
February	W	96.04	91.77	—	102.26	—	92.88	100.70	97.51	89.73
March	W	W	91.38	W	101.25	—	92.27	100.67	97.19	90.59
April	W	98.61	93.22	W	99.76	—	95.26	99.02	99.15	90.49
May	W	98.75	95.31	—	100.58	—	96.67	98.89	98.29	94.58
June	W	99.03	98.20	—	104.95	—	98.19	102.49	100.67	95.67
July	W	100.11	94.65	—	105.25	—	92.45	103.81	97.43	91.37
August	W	92.38	91.17	—	99.74	—	89.22	98.95	93.30	86.68
September	W	86.08	88.50	—	94.98	—	83.20	93.59	88.39	83.11
October	W	72.47	79.79	—	85.77	—	74.19	85.04	79.29	75.20
November	W	70.25	71.87	—	W	—	65.55	W	71.14	65.49
December	W	50.95	53.20	—	W	—	45.33	60.65	52.49	48.59
Average	W	80.75	86.55	W	95.60	—	84.51	94.03	89.76	82.95
2015 January	—	42.49	40.70	—	48.14	—	37.99	52.21	42.64	38.64
February	W	51.02	47.75	W	—	—	45.85	46.60	47.12	42.31
March	W	47.32	46.15	—	W	—	43.51	49.25	45.17	42.69
April	W	55.92	50.28	—	58.87	—	49.03	52.28	50.12	47.39
May	W	59.04	56.14	—	W	—	51.99	57.52	54.12	53.09
June	W	57.39	56.56	—	W	—	50.34	59.62	53.96	53.35
July	W	46.62	50.75	—	W	—	44.44	50.08	46.33	45.18
August	W	42.35	40.40	—	43.38	—	35.47	43.01	38.21	36.63
September	W	W	40.50	—	44.50	—	36.23	43.87	39.81	35.06
October	W	41.56	40.18	—	42.51	—	37.77	40.68	39.33	36.02
November	—	W	36.16	—	39.87	—	31.68	38.17	33.98	33.34
December	W	28.98	<sup>R</sup> 30.12	W	<sup>R</sup> 34.75	—	24.91	<sup>R</sup> 33.79	<sup>R</sup> 29.35	27.57
Average	W	46.92	<sup>R</sup> 44.41	W	<sup>R</sup> 46.39	—	40.73	<sup>R</sup> 46.04	<sup>R</sup> 42.87	<sup>R</sup> 40.84
2016 January	W	W	<sup>R</sup> 24.12	W	26.24	—	<sup>R</sup> 20.73	<sup>R</sup> 25.73	<sup>R</sup> 24.95	<sup>R</sup> 22.51
February	W	24.91	24.41	33.49	27.45	—	22.46	26.58	25.78	23.35

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

<sup>c</sup> See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; for 1973–2008, also includes Indonesia; for 1973–1992 and again beginning in 2008, also includes Ecuador (although Ecuador rejoined OPEC in November 2007, on this table Ecuador is included in "Total Non-OPEC" for 2007); for 1974–1995, also includes Gabon (although Gabon was a member of OPEC for only 1975–1994); and beginning in 2007, also includes Angola. Data for all countries not included in "Total OPEC" are included in "Total Non-OPEC."

<sup>d</sup> Based on October, November, and December data only.

<sup>R</sup> = 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<sup>a</sup> per Barrel)

	Selected Countries								Persian Gulf Nations <sup>b</sup>	Total OPEC <sup>c</sup>	Total Non-OPEC <sup>c</sup>
	Angola	Canada	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average <sup>d</sup>	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 January	W	78.21	97.87	90.85	—	101.30	—	92.53	100.18	98.30	84.91
February	110.96	87.98	98.59	92.92	W	102.62	W	95.33	101.54	100.41	91.27
March	107.52	89.40	98.71	92.44	W	102.15	—	94.63	101.68	100.36	92.15
April	108.70	89.01	99.68	94.01	W	102.48	W	97.08	102.07	101.81	91.99
May	W	91.77	101.24	96.12	W	103.03	—	98.35	102.03	101.54	94.96
June	W	93.03	102.61	99.36	—	104.11	W	99.78	102.78	102.39	97.01
July	W	90.27	101.68	95.61	—	103.01	W	94.12	102.39	100.17	94.03
August	103.69	83.93	95.70	92.07	—	98.80	—	91.64	99.98	97.19	88.15
September	99.49	81.27	91.03	89.25	—	93.39	—	84.78	93.81	91.07	85.08
October	90.74	76.38	80.37	80.42	W	79.85	W	75.72	83.84	82.50	78.56
November	80.21	66.85	73.37	73.18	W	72.72	—	67.59	75.10	73.17	69.65
December	61.33	50.82	56.17	53.54	W	58.56	W	47.86	62.29	58.35	52.75
Average	99.25	81.30	88.29	87.48	102.16	94.91	W	86.88	95.30	93.10	84.67
2015 January	W	40.23	45.57	41.18	W	50.10	—	40.08	52.99	48.17	42.14
February	W	42.17	53.18	48.00	W	52.36	—	47.93	52.12	51.38	44.56
March	W	41.62	51.25	46.99	W	55.32	W	45.90	54.38	51.07	44.63
April	W	46.43	57.67	51.89	—	59.87	W	52.17	56.96	55.29	49.50
May	60.84	53.83	60.46	56.75	W	61.94	W	53.78	60.74	58.94	55.68
June	61.45	55.25	58.08	57.15	W	58.56	—	52.43	58.27	56.79	56.48
July	53.22	47.78	52.53	51.26	W	51.53	—	46.74	51.92	50.38	49.33
August	54.02	38.30	43.87	41.94	—	45.24	W	38.75	45.70	43.17	40.41
September	53.46	35.29	42.87	40.71	W	44.89	—	37.91	44.94	43.31	37.82
October	47.49	37.64	42.37	40.67	W	42.15	W	39.55	41.84	41.59	39.41
November	47.56	35.69	39.70	36.73	W	39.62	—	33.79	39.43	37.86	36.70
December	<sup>R</sup> 38.54	<sup>R</sup> 30.25	32.50	<sup>R</sup> 30.54	W	<sup>R</sup> 34.51	W	26.73	<sup>R</sup> 34.60	<sup>R</sup> 32.70	<sup>R</sup> 30.91
Average	<sup>R</sup> 51.73	41.82	49.01	<sup>R</sup> 45.05	54.70	<sup>R</sup> 49.70	W	42.87	<sup>R</sup> 49.31	<sup>R</sup> 47.34	<sup>R</sup> 43.82
2016 January	W	<sup>R</sup> 25.56	<sup>R</sup> 26.22	<sup>R</sup> 24.82	W	<sup>R</sup> 29.80	—	<sup>R</sup> 21.64	<sup>R</sup> 30.23	<sup>R</sup> 28.29	<sup>R</sup> 25.86
February	33.04	24.17	26.28	25.04	35.63	30.38	—	23.37	29.26	27.78	25.10

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

<sup>c</sup> See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; for 1973–2008, also includes Indonesia; for 1973–1992 and again beginning in 2008, also includes Ecuador (although Ecuador rejoined OPEC in November 2007, on this table Ecuador is included in "Total Non-OPEC" for 2007); for 1974–1995, also includes Gabon (although Gabon was a member of OPEC for only 1975–1994); and beginning in 2007, also includes Angola. Data for all countries not included in "Total OPEC" are included in "Total Non-OPEC."

<sup>d</sup> Based on October, November, and December data only.

<sup>R</sup>=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*, May 2016, Table 22.

**Table 9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices**  
(Dollars<sup>a</sup> 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			On-Highway Diesel Fuel
	Leaded Regular	Unleaded Regular	Unleaded Premium <sup>b</sup>	All Grades <sup>c</sup>	Conventional Gasoline Areas <sup>d</sup>	Reformulated Gasoline Areas <sup>e</sup>	All Areas	
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
<b>2014</b> January .....	--	3.320	3.651	3.378	3.252	3.438	3.313	3.893
February .....	--	3.364	3.694	3.422	3.305	3.464	3.356	3.984
March .....	--	3.532	3.858	3.590	3.474	3.658	3.533	4.001
April .....	--	3.659	3.986	3.717	3.590	3.809	3.661	3.964
May .....	--	3.691	4.020	3.745	3.601	3.824	3.673	3.943
June .....	--	3.695	4.027	3.750	3.626	3.831	3.692	3.906
July .....	--	3.633	3.976	3.690	3.539	3.763	3.611	3.884
August .....	--	3.481	3.835	3.540	3.425	3.616	3.487	3.838
September .....	--	3.403	3.758	3.463	3.354	3.516	3.406	3.792
October .....	--	3.182	3.547	3.241	3.120	3.277	3.171	3.681
November .....	--	2.887	3.262	2.945	2.875	2.990	2.912	3.647
December .....	--	2.560	2.940	2.618	2.488	2.657	2.543	3.411
<b>Average</b> .....	--	<b>3.367</b>	<b>3.713</b>	<b>3.425</b>	<b>3.299</b>	<b>3.481</b>	<b>3.358</b>	<b>3.825</b>
<b>2015</b> January .....	--	2.110	2.497	2.170	2.046	2.262	2.116	2.997
February .....	--	2.249	2.621	2.308	2.152	2.351	2.216	2.858
March .....	--	2.483	2.867	2.544	2.352	2.697	2.464	2.897
April .....	--	2.485	2.868	2.545	2.369	2.679	2.469	2.782
May .....	--	2.775	3.166	2.832	2.578	3.014	2.718	2.888
June .....	--	2.832	3.218	2.889	2.700	3.014	2.802	2.873
July .....	--	2.832	3.252	2.893	2.666	3.061	2.794	2.788
August .....	--	2.679	3.120	2.745	2.522	2.876	2.636	2.595
September .....	--	2.394	2.860	2.463	2.275	2.555	2.365	2.505
October .....	--	2.289	2.749	2.357	2.230	2.414	2.290	2.519
November .....	--	2.185	2.640	2.249	2.088	2.304	2.158	2.467
December .....	--	2.060	2.532	2.125	1.946	2.230	2.038	2.310
<b>Average</b> .....	--	<b>2.448</b>	<b>2.866</b>	<b>2.510</b>	<b>2.334</b>	<b>2.629</b>	<b>2.429</b>	<b>2.707</b>
<b>2016</b> January .....	--	1.967	2.455	2.034	1.843	2.170	1.949	2.143
February .....	--	1.767	2.248	1.833	1.681	1.936	1.764	1.998
March .....	--	1.958	2.411	2.021	1.895	2.124	1.969	2.090
April .....	--	2.134	2.585	2.196	2.027	2.293	2.113	2.152

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> The 1981 average (available in Web file) is based on September through December data only.

<sup>c</sup> Also includes grades of motor gasoline not shown separately.

<sup>d</sup> Any area that does not require the sale of reformulated gasoline.

<sup>e</sup> "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<sup>a</sup> 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
<b>1978 Average</b> .....	0.293	0.314	0.245	0.275	0.263	0.298
<b>1980 Average</b> .....	.608	.675	.479	.523	.528	.607
<b>1985 Average</b> .....	.610	.644	.560	.582	.577	.610
<b>1990 Average</b> .....	.472	.505	.372	.400	.413	.444
<b>1995 Average</b> .....	.383	.436	.338	.377	.363	.392
<b>2000 Average</b> .....	.627	.708	.512	.566	.566	.602
<b>2001 Average</b> .....	.523	.642	.428	.492	.476	.531
<b>2002 Average</b> .....	.546	.640	.508	.544	.530	.569
<b>2003 Average</b> .....	.728	.804	.588	.651	.661	.698
<b>2004 Average</b> .....	.764	.835	.601	.692	.681	.739
<b>2005 Average</b> .....	1.115	1.168	.842	.974	.971	1.048
<b>2006 Average</b> .....	1.202	1.342	1.085	1.173	1.136	1.218
<b>2007 Average</b> .....	1.406	1.436	1.314	1.350	1.350	1.374
<b>2008 Average</b> .....	1.918	2.144	1.843	1.889	1.866	1.964
<b>2009 Average</b> .....	1.337	1.413	1.344	1.306	1.342	1.341
<b>2010 Average</b> .....	1.756	1.920	1.679	1.619	1.697	1.713
<b>2011 Average</b> .....	2.389	2.736	2.316	2.257	2.336	2.401
<b>2012 Average</b> .....	2.548	3.025	2.429	2.433	2.457	2.592
<b>2013 Average</b> .....	2.363	2.883	2.249	2.353	2.278	2.482
<b>2014 January</b> .....	2.337	NA	2.117	2.400	2.173	2.481
February .....	2.459	NA	2.139	2.459	2.207	2.532
March .....	2.470	NA	2.175	2.376	2.255	2.476
April .....	2.401	NA	2.149	2.323	2.226	2.464
May .....	2.350	2.902	2.198	2.304	2.267	2.420
June .....	2.358	2.888	2.247	2.314	2.293	2.423
July .....	2.287	2.977	2.186	2.324	2.223	2.455
August .....	2.148	W	2.130	2.350	2.136	2.471
September .....	2.100	2.756	2.068	2.255	2.077	2.362
October .....	1.893	2.573	1.858	2.099	1.866	2.194
November .....	1.639	2.294	1.604	1.848	1.611	1.946
December .....	1.237	1.916	1.310	1.611	1.287	1.676
<b>Average</b> .....	<b>2.153</b>	<b>2.694</b>	<b>1.996</b>	<b>2.221</b>	<b>2.044</b>	<b>2.325</b>
<b>2015 January</b> .....	.936	NA	1.038	1.192	1.023	1.264
February .....	1.150	NA	1.124	1.342	1.126	1.376
March .....	1.093	NA	1.131	1.436	1.126	1.465
April .....	1.124	1.704	1.114	1.465	1.114	1.516
May .....	1.198	NA	1.242	1.443	1.234	1.543
June .....	1.175	W	1.239	1.474	1.233	1.549
July .....	1.080	W	1.130	1.245	1.122	1.363
August .....	.797	W	.928	1.150	.918	1.207
September .....	.819	W	.856	1.063	.852	1.107
October .....	.812	NA	.840	1.041	.836	1.094
November .....	.766	W	.791	1.001	.787	1.043
December .....	.552	W	.639	.861	.633	.919
<b>Average</b> .....	<b>.971</b>	<b>1.529</b>	<b>.999</b>	<b>1.227</b>	<b>.996</b>	<b>1.285</b>
<b>2016 January</b> .....	.477	W	.502	.641	.499	.710
February .....	.475	NA	.498	.608	.495	.633

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

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

Notes:

- Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and commercial consumers.
- Values for the current month are preliminary.
- Through 1982, prices are U.S. Energy Information Administration (EIA)

estimates. See Note 6, "Historical Petroleum Prices," at end of section.

• Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#prices> (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007*, Table 17.• **2008 forward:** EIA, *Petroleum Marketing Monthly*, May 2016, Table 16.

**Table 9.6 Refiner Prices of Petroleum Products for Resale**  
(Dollars<sup>a</sup> per Gallon, Excluding Taxes)

	Finished Motor Gasoline <sup>b</sup>	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
<b>2014</b> January .....	2.604	3.538	2.964	3.237	3.059	2.981	1.641
February .....	2.699	3.712	2.981	3.353	3.051	3.091	1.654
March .....	2.855	3.865	2.939	3.153	2.979	3.031	1.198
April .....	2.981	3.940	2.911	2.938	2.911	3.027	1.121
May .....	2.951	3.881	2.932	2.939	2.883	2.987	1.057
June .....	3.001	4.056	2.917	2.926	2.878	2.973	1.054
July .....	2.855	3.914	2.882	2.863	2.825	2.921	1.075
August .....	2.759	3.799	2.882	2.922	2.784	2.900	1.055
September .....	2.669	3.803	2.823	2.851	2.701	2.806	1.097
October .....	2.333	3.548	2.547	2.687	2.476	2.639	1.044
November .....	2.111	3.163	2.410	2.594	2.371	2.558	.966
December .....	1.634	2.635	1.998	2.195	2.050	1.980	.819
<b>Average</b> .....	<b>2.618</b>	<b>3.687</b>	<b>2.763</b>	<b>2.882</b>	<b>2.741</b>	<b>2.812</b>	<b>1.165</b>
<b>2015</b> January .....	1.366	2.324	1.612	1.900	1.669	1.616	.713
February .....	1.637	2.529	1.722	2.233	1.850	1.861	.748
March .....	1.770	2.801	1.731	2.098	1.847	1.815	.689
April .....	1.835	2.827	1.709	1.800	1.740	1.805	.566
May .....	2.080	3.050	1.933	1.929	1.852	1.973	.475
June .....	2.121	3.259	1.813	1.871	1.813	1.881	.404
July .....	2.072	3.217	1.655	1.701	1.654	1.729	.405
August .....	1.838	2.980	1.479	1.494	1.461	1.562	.402
September .....	1.609	2.586	1.443	1.509	1.438	1.551	.469
October .....	1.558	2.475	1.451	1.555	1.411	1.572	.524
November .....	1.426	2.385	1.400	1.554	1.356	1.456	.505
December .....	1.356	2.252	1.207	1.275	1.126	1.176	.499
<b>Average</b> .....	<b>1.726</b>	<b>2.764</b>	<b>1.592</b>	<b>1.735</b>	<b>1.565</b>	<b>1.667</b>	<b>.555</b>
<b>2016</b> January .....	<sup>R</sup> 1.187	2.122	1.022	1.183	.976	1.015	.460
February .....	1.046	1.908	1.019	1.155	.948	1.043	.470

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> See Note 5, "Motor Gasoline Prices," at end of section.

R=Revised.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are shown in Table 9.7; they are sales made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy

Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#prices> (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007*, Table 4.  
• **2008 forward:** EIA, *Petroleum Marketing Monthly*, May 2016, Table 4.



**Table 9.7 Refiner Prices of Petroleum Products to End Users**

(Dollars<sup>a</sup> per Gallon, Excluding Taxes)

	Finished Motor Gasoline <sup>b</sup>	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
<b>2014</b> January .....	2.816	W	2.987	W	3.591	3.024	1.457
February .....	2.913	4.142	2.994	W	3.687	3.139	1.513
March .....	3.104	W	2.942	4.067	3.621	3.115	1.137
April .....	3.214	W	2.931	4.108	3.572	3.109	1.122
May .....	3.245	W	2.965	4.056	3.546	3.081	1.056
June .....	3.265	W	2.945	W	3.493	3.064	1.072
July .....	3.128	W	2.906	3.965	3.428	3.030	1.063
August .....	3.016	W	2.916	3.903	3.408	3.012	1.038
September .....	2.936	W	2.834	W	3.324	2.925	1.074
October .....	2.670	W	2.576	W	NA	2.802	.994
November .....	2.406	W	2.433	W	3.213	2.700	.904
December .....	2.013	W	2.028	W	2.901	2.193	.690
<b>Average</b> .....	<b>2.855</b>	<b>3.986</b>	<b>2.772</b>	<b>W</b>	<b>3.329</b>	<b>2.923</b>	<b>1.097</b>
<b>2015</b> January .....	1.673	W	1.633	W	NA	1.819	.566
February .....	1.858	W	1.747	W	2.204	1.979	.671
March .....	2.054	W	1.766	W	2.141	1.962	.619
April .....	2.058	W	1.739	W	NA	1.939	.575
May .....	2.322	W	1.979	W	2.308	2.090	.465
June .....	2.374	W	1.855	W	2.321	2.021	.393
July .....	2.338	W	1.694	W	2.207	1.913	.405
August .....	2.218	W	1.516	W	2.046	1.737	.387
September .....	1.920	W	1.465	2.996	1.949	1.693	.468
October .....	1.849	W	1.473	W	NA	1.702	.479
November .....	1.711	W	1.424	W	1.814	1.603	.447
December .....	1.604	W	1.232	W	1.695	1.365	.422
<b>Average</b> .....	<b>2.003</b>	<b>W</b>	<b>1.629</b>	<b>W</b>	<b>2.016</b>	<b>1.819</b>	<b>.481</b>
<b>2016</b> January .....	1.505	W	1.038	W	1.450	1.198	<sup>R</sup> .377
February .....	1.332	W	1.032	W	1.407	1.186	.409

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> 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

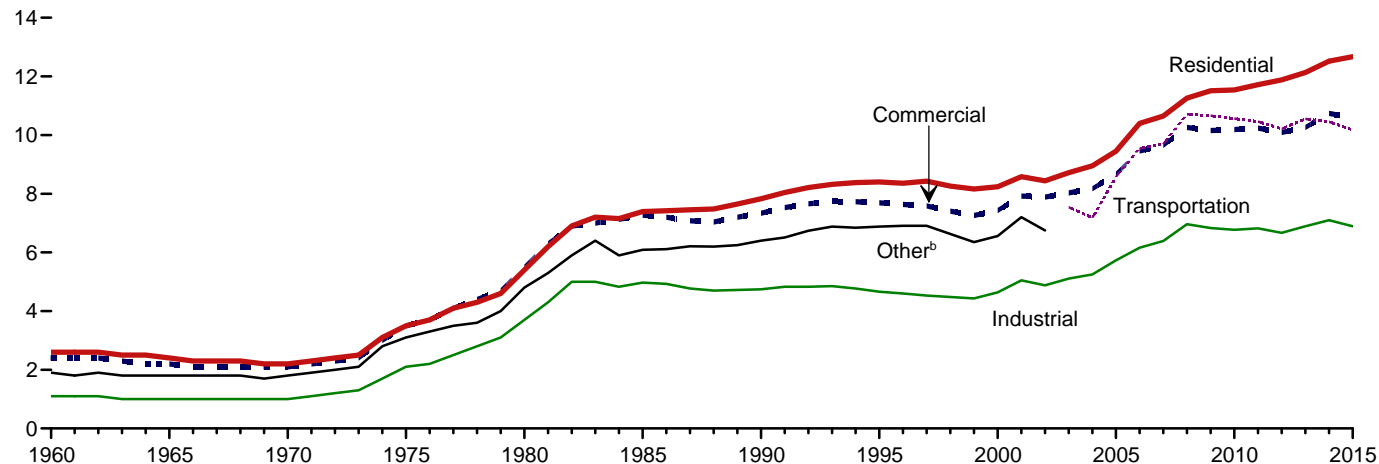
Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

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.

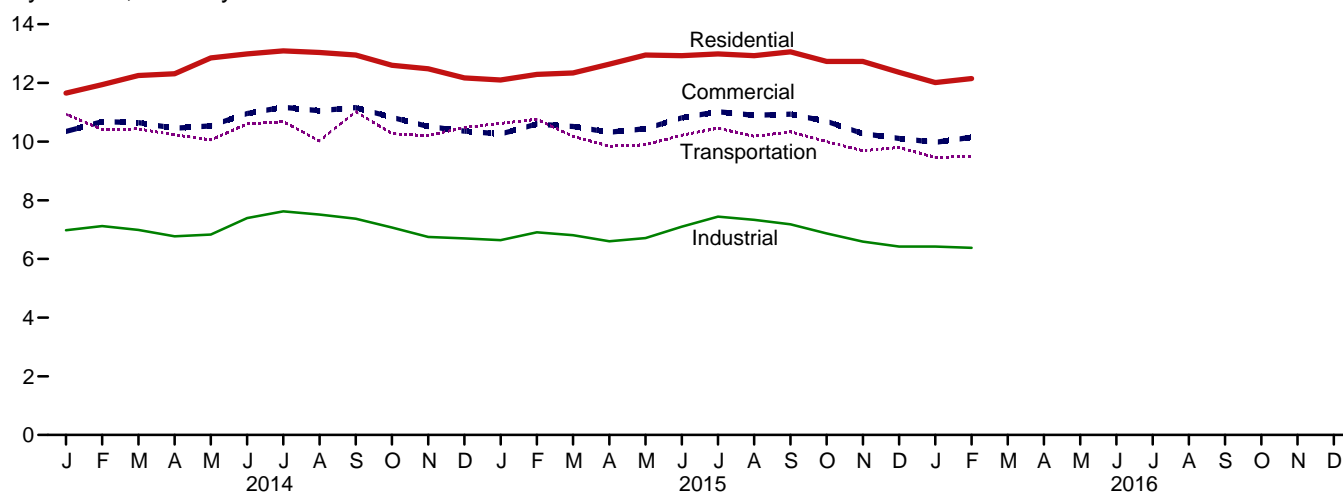
Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007*, Table 2. • **2008 forward:** EIA, *Petroleum Marketing Monthly*, May 2016, Table 2.

**Figure 9.2 Average Retail Prices of Electricity**  
(Cents<sup>a</sup> per Kilowatthour)

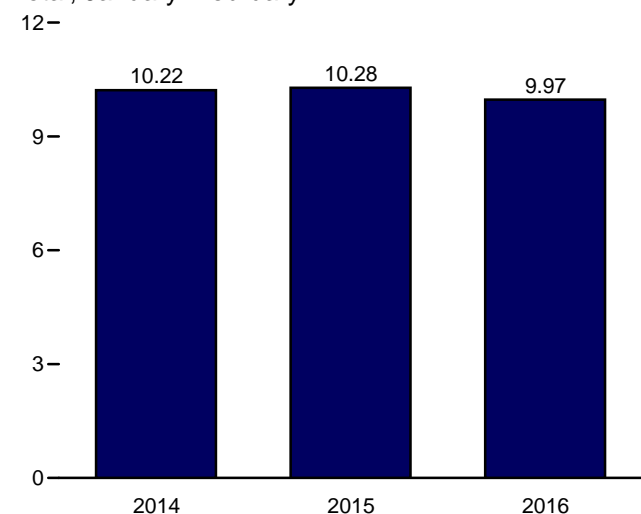
By Sector, 1960–2015



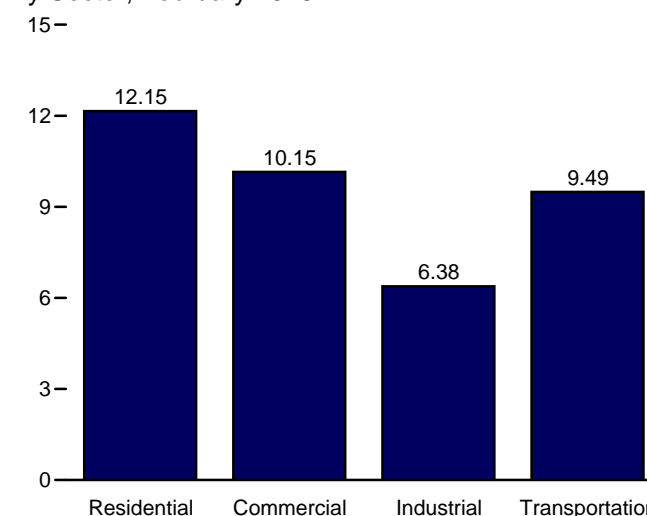
By Sector, Monthly



Total, January–February



By Sector, February 2016



<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Price" in Glossary.

<sup>b</sup> 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<sup>a</sup> per Kilowatthour, Including Taxes)

	Residential	Commercial <sup>b</sup>	Industrial <sup>c</sup>	Transportation <sup>d</sup>	Other <sup>e</sup>	Total
<b>1960 Average</b> .....	2.60	2.40	1.10	NA	1.90	1.80
<b>1965 Average</b> .....	2.40	2.20	1.00	NA	1.80	1.70
<b>1970 Average</b> .....	2.20	2.10	1.00	NA	1.80	1.70
<b>1975 Average</b> .....	3.50	3.50	2.10	NA	3.10	2.90
<b>1980 Average</b> .....	5.40	5.50	3.70	NA	4.80	4.70
<b>1985 Average</b> .....	7.39	7.27	4.97	NA	6.09	6.44
<b>1990 Average</b> .....	7.83	7.34	4.74	NA	6.40	6.57
<b>1995 Average</b> .....	8.40	7.69	4.66	NA	6.88	6.89
<b>2000 Average</b> .....	8.24	7.43	4.64	NA	6.56	6.81
<b>2001 Average</b> .....	8.58	7.92	5.05	NA	7.20	7.29
<b>2002 Average</b> .....	8.44	7.89	4.88	NA	6.75	7.20
<b>2003 Average</b> .....	8.72	8.03	5.11	7.54	--	7.44
<b>2004 Average</b> .....	8.95	8.17	5.25	7.18	--	7.61
<b>2005 Average</b> .....	9.45	8.67	5.73	8.57	--	8.14
<b>2006 Average</b> .....	10.40	9.46	6.16	9.54	--	8.90
<b>2007 Average</b> .....	10.65	9.65	6.39	9.70	--	9.13
<b>2008 Average</b> .....	11.26	10.26	6.96	10.71	--	9.74
<b>2009 Average</b> .....	11.51	10.16	6.83	10.66	--	9.82
<b>2010 Average</b> .....	11.54	10.19	6.77	10.56	--	9.83
<b>2011 Average</b> .....	11.72	10.24	6.82	10.46	--	9.90
<b>2012 Average</b> .....	11.88	10.09	6.67	10.21	--	9.84
<b>2013 Average</b> .....	12.13	10.26	6.89	10.55	--	10.07
<b>2014 January</b> .....	11.65	10.35	6.98	10.93	--	10.12
February .....	11.94	10.68	7.12	10.41	--	10.33
March .....	12.25	10.65	6.99	10.43	--	10.28
April .....	12.31	10.46	6.77	10.23	--	10.00
May .....	12.85	10.54	6.83	10.06	--	10.21
June .....	12.99	10.96	7.39	10.60	--	10.75
July .....	13.09	11.17	7.62	10.68	--	11.03
August .....	13.04	11.05	7.51	10.02	--	10.91
September .....	12.95	11.16	7.37	11.02	--	10.83
October .....	12.60	10.83	7.07	10.27	--	10.34
November .....	12.48	10.52	6.75	10.20	--	10.13
December .....	12.17	10.36	6.70	10.48	--	10.12
<b>Average</b> .....	<b>12.52</b>	<b>10.74</b>	<b>7.10</b>	<b>10.45</b>	--	<b>10.44</b>
<b>2015 January</b> .....	12.10	10.26	6.64	10.62	--	10.18
February .....	12.29	10.60	6.91	10.76	--	10.38
March .....	12.34	10.52	6.81	10.18	--	10.27
April .....	12.64	10.32	6.60	9.84	--	10.02
May .....	12.95	10.44	6.71	9.89	--	10.22
June .....	12.93	10.81	7.10	10.22	--	10.64
July .....	12.99	11.02	7.44	10.46	--	10.96
August .....	12.93	10.90	7.33	10.18	--	10.86
September .....	13.06	10.94	7.18	10.33	--	10.80
October .....	12.73	10.69	6.87	10.00	--	10.32
November .....	12.73	10.27	6.59	9.69	--	10.07
December .....	12.36	10.11	6.42	9.80	--	10.00
<b>Average</b> .....	<b>12.67</b>	<b>10.59</b>	<b>6.89</b>	<b>10.17</b>	--	<b>10.42</b>
<b>2016 January</b> .....	12.01	9.98	6.42	9.46	--	9.96
February .....	12.15	10.15	6.38	9.49	--	9.99
<b>2-Month Average</b> .....	<b>12.07</b>	<b>10.06</b>	<b>6.40</b>	<b>9.47</b>	--	<b>9.97</b>
<b>2015 2-Month Average</b> .....	<b>12.19</b>	<b>10.43</b>	<b>6.77</b>	<b>10.69</b>	--	<b>10.28</b>
<b>2014 2-Month Average</b> .....	<b>11.79</b>	<b>10.51</b>	<b>7.05</b>	<b>10.67</b>	--	<b>10.22</b>

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Price" in Glossary.

<sup>b</sup> Commercial sector. For 1960–2002, prices exclude public street and highway lighting, interdepartmental sales, and other sales to public authorities.

<sup>c</sup> Industrial sector. For 1960–2002, prices exclude agriculture and irrigation.

<sup>d</sup> Transportation sector, including railroads and railways.

<sup>e</sup> 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.

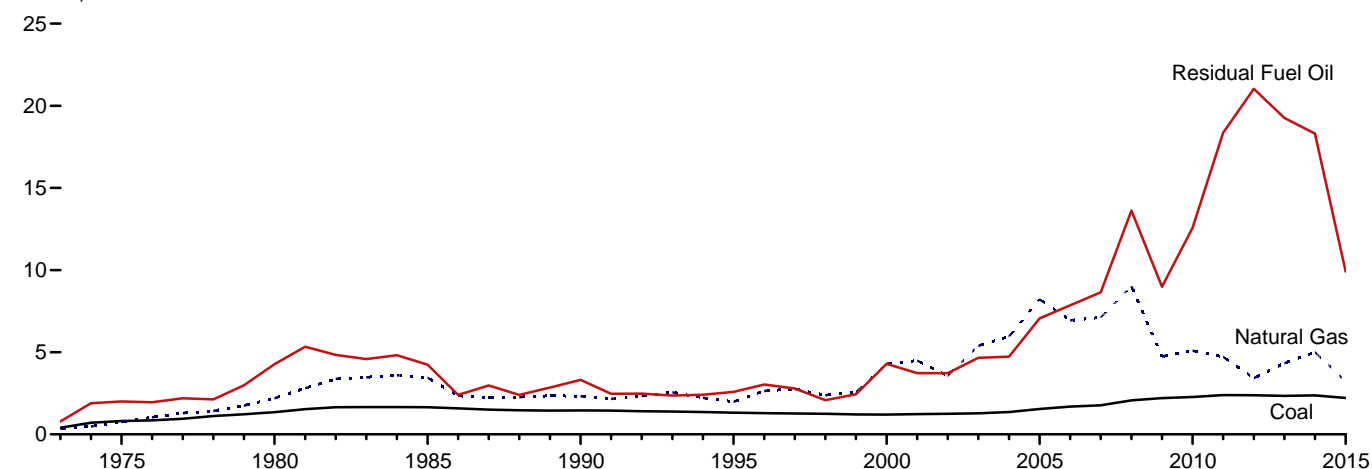
(Class A utilities are those with operating revenues of \$2.5 million or more; Class B utilities are those with operating revenues between \$1 million and \$2.5 million.) For 1980–1982, data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous 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.

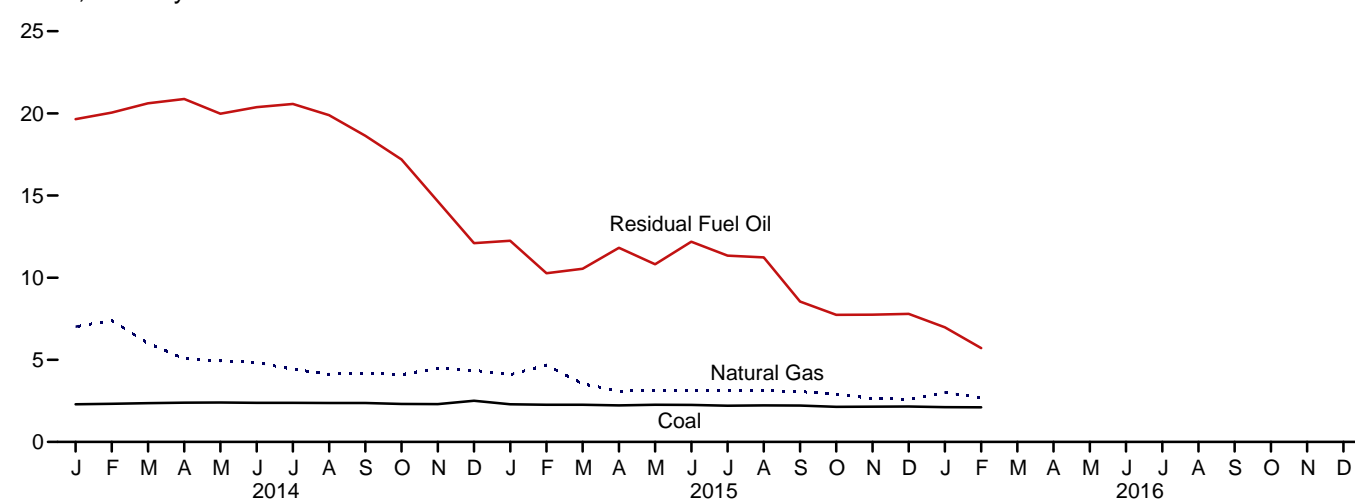
Sources: • **1960–September 1977:** Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **October 1977–February 1980:** Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **March 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*, April 2016, Table 5.3.

**Figure 9.3 Cost of Fossil-Fuel Receipts at Electric Generating Plants**  
(Dollars<sup>a</sup> per Million Btu, Including Taxes)

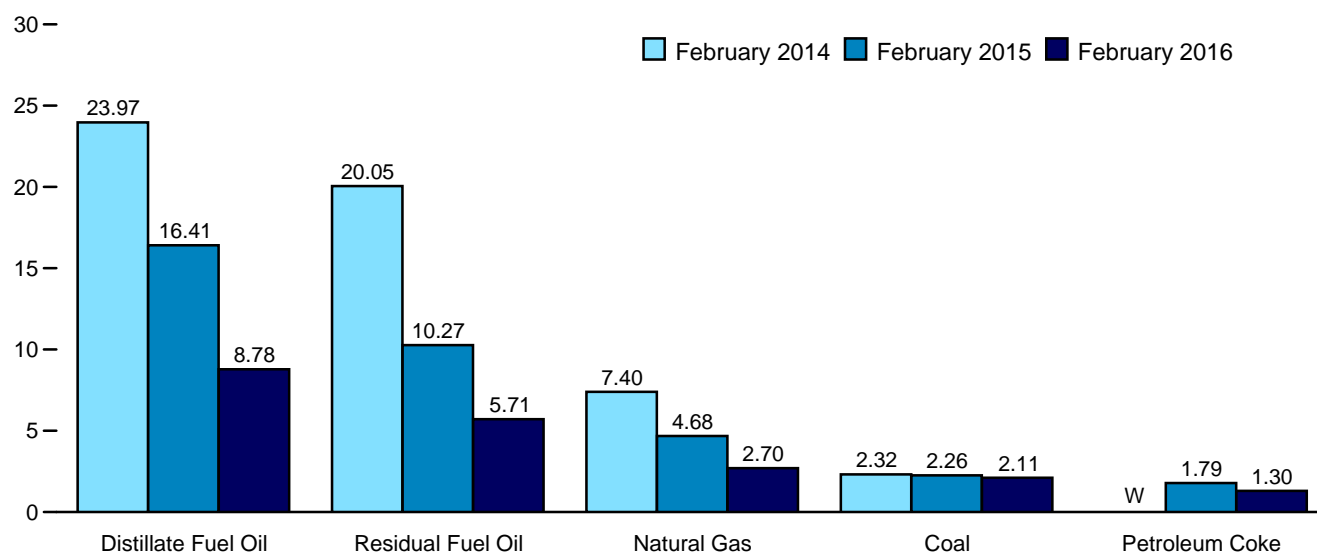
Costs, 1973–2015



Costs, Monthly



By Fuel Type



<sup>a</sup> 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<sup>a</sup> per Million Btu, Including Taxes)

	Coal	Petroleum				Natural Gas <sup>e</sup>	All Fossil Fuels <sup>f</sup>
		Residual Fuel Oil <sup>b</sup>	Distillate Fuel Oil <sup>c</sup>	Petroleum Coke	Total <sup>d</sup>		
<b>1973 Average</b> .....	0.41	0.79	NA	NA	0.80	0.34	0.48
<b>1975 Average</b> .....	.81	2.01	NA	NA	2.02	.75	1.04
<b>1980 Average</b> .....	1.35	4.27	NA	NA	4.35	2.20	1.93
<b>1985 Average</b> .....	1.65	4.24	NA	NA	4.32	3.44	2.09
<b>1990 Average</b> .....	1.45	3.32	5.38	.80	3.35	2.32	1.69
<b>1995 Average</b> .....	1.32	2.59	3.99	.65	2.57	1.98	1.45
<b>2000 Average</b> .....	1.20	4.29	6.65	.58	4.18	4.30	1.74
<b>2001 Average</b> .....	1.23	3.73	6.30	.78	3.69	4.49	1.73
<b>2002 Average<sup>g</sup></b> .....	1.25	3.73	5.34	.78	3.34	3.56	1.86
<b>2003 Average</b> .....	1.28	4.66	6.82	.72	4.33	5.39	2.28
<b>2004 Average</b> .....	1.36	4.73	8.02	.83	4.29	5.96	2.48
<b>2005 Average</b> .....	1.54	7.06	11.72	1.11	6.44	8.21	3.25
<b>2006 Average</b> .....	1.69	7.85	13.28	1.33	6.23	6.94	3.02
<b>2007 Average</b> .....	1.77	8.64	14.85	1.51	7.17	7.11	3.23
<b>2008 Average</b> .....	2.07	13.62	21.46	2.11	10.87	9.01	4.12
<b>2009 Average</b> .....	2.21	8.98	13.22	1.61	7.02	4.74	3.04
<b>2010 Average</b> .....	2.27	12.57	16.61	2.28	9.54	5.09	3.26
<b>2011 Average</b> .....	2.39	18.35	22.46	3.03	12.48	4.72	3.29
<b>2012 Average</b> .....	2.38	21.03	23.49	2.24	12.48	3.42	2.83
<b>2013 Average</b> .....	2.34	19.26	23.03	2.18	11.57	4.33	3.09
<b>2014 January</b> .....	2.29	19.65	23.12	1.82	16.63	7.02	4.07
February .....	2.32	20.05	23.97	W	16.38	7.40	W
March .....	2.36	20.61	23.83	2.02	12.63	6.00	3.52
April .....	2.39	20.88	22.82	2.13	10.14	5.07	3.23
May .....	2.40	19.98	22.77	2.19	9.91	4.93	3.25
June .....	2.38	20.38	22.72	2.07	10.67	4.84	3.27
July .....	2.38	20.57	22.36	1.90	10.07	4.43	3.17
August .....	2.37	19.89	21.94	1.97	9.77	4.12	3.06
September .....	2.37	18.64	21.38	1.92	9.93	4.20	3.06
October .....	2.31	17.19	20.09	1.79	10.67	4.10	2.96
November .....	2.30	14.64	19.68	1.86	10.50	4.48	3.06
December .....	2.51	12.10	16.50	2.00	8.15	4.36	3.14
<b>Average</b> .....	2.37	18.30	21.88	1.98	11.60	5.00	3.31
<b>2015 January</b> .....	2.29	12.25	13.35	2.03	7.12	4.10	2.93
February .....	2.26	10.27	16.41	1.79	9.02	4.68	3.20
March .....	2.26	10.54	15.53	2.03	8.51	3.54	W
April .....	2.23	11.82	14.81	1.99	6.91	3.09	2.58
May .....	2.26	10.82	15.31	2.05	7.03	3.14	2.64
June .....	2.25	12.19	15.30	1.89	7.83	3.12	2.66
July .....	2.21	11.34	14.34	1.93	6.16	3.11	2.63
August .....	2.23	11.23	13.04	1.85	6.42	3.11	2.62
September .....	2.22	8.55	12.01	1.76	5.79	3.06	2.58
October .....	2.14	7.74	12.44	W	5.82	2.91	W
November .....	2.15	7.75	12.37	1.61	5.59	2.65	2.38
December .....	2.16	7.80	10.56	1.59	5.04	2.59	2.36
<b>Average</b> .....	2.22	9.91	14.04	1.87	6.81	3.22	2.65
<b>2016 January</b> .....	2.12	6.98	8.92	1.38	4.50	3.01	2.52
February .....	2.11	5.71	8.78	1.30	3.63	2.70	2.37
<b>2-Month Average</b> .....	2.12	6.34	8.86	1.33	4.06	2.86	2.44
<b>2015 2-Month Average</b> .....	2.27	10.99	15.11	1.93	8.12	4.37	3.05
<b>2014 2-Month Average</b> .....	2.31	19.90	23.44	1.92	16.51	7.19	4.08

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> For 1973–2001, electric utility data are for heavy oil (fuel oil nos. 5 and 6, and small amounts of fuel oil no. 4).

<sup>c</sup> For 1973–2001, electric utility data are for light oil (fuel oil nos. 1 and 2).

<sup>d</sup> 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.

<sup>e</sup> 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.

<sup>f</sup> Weighted average of costs shown under "Coal," "Petroleum," and "Natural Gas."

<sup>g</sup> Through 2001, data are for electric utilities only. Beginning in 2002, data also include independent power producers, and electric generating plants in the

commercial and industrial sectors.

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

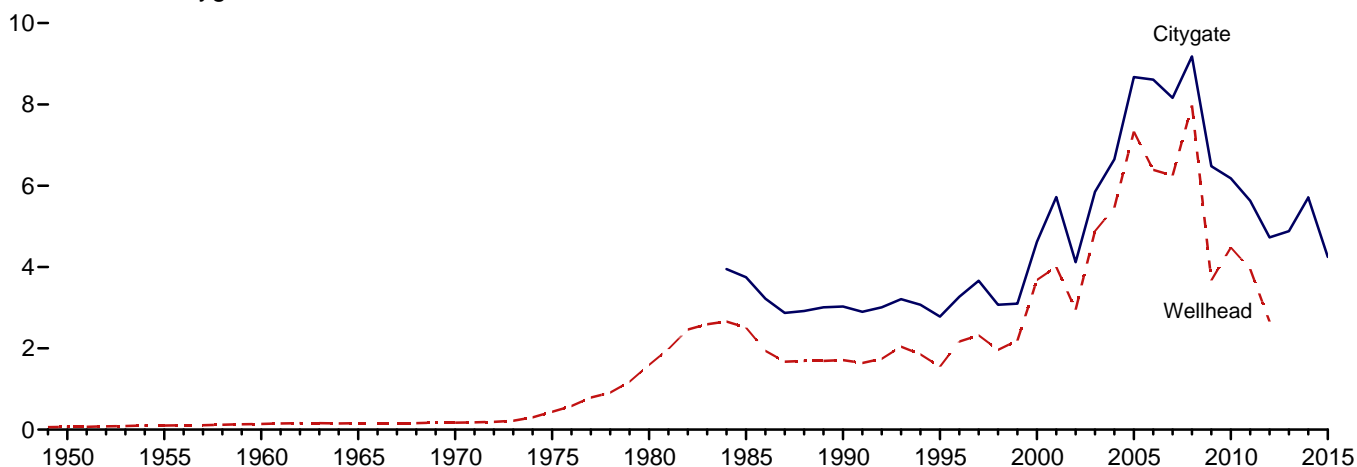
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated plants whose total fossil-fueled nameplate generating capacity is 50 megawatts or more for coal, and 200 megawatts or more for natural gas, residual fuel oil, distillate fuel oil, and petroleum coke. For data coverage before 2013, see EIA, *Electric Power Monthly*, Appendix C, Form EIA-923 notes, "Receipts and cost and quality of fossil fuels" section. • Geographic coverage is the 50 states and the District of Columbia.

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

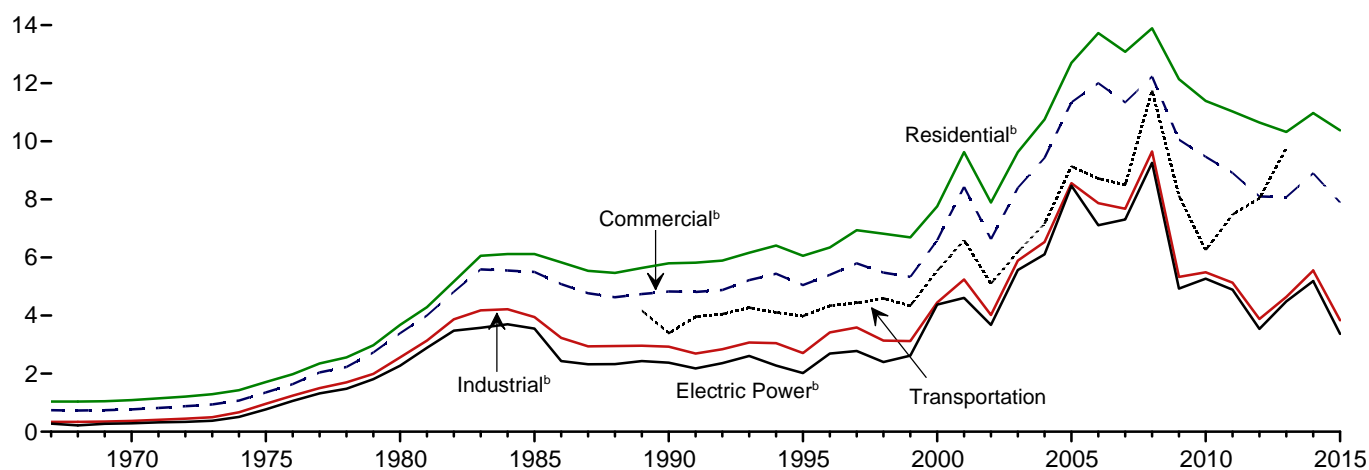
Sources: See end of section.

**Figure 9.4 Natural Gas Prices**  
(Dollars<sup>a</sup> per Thousand Cubic Feet)

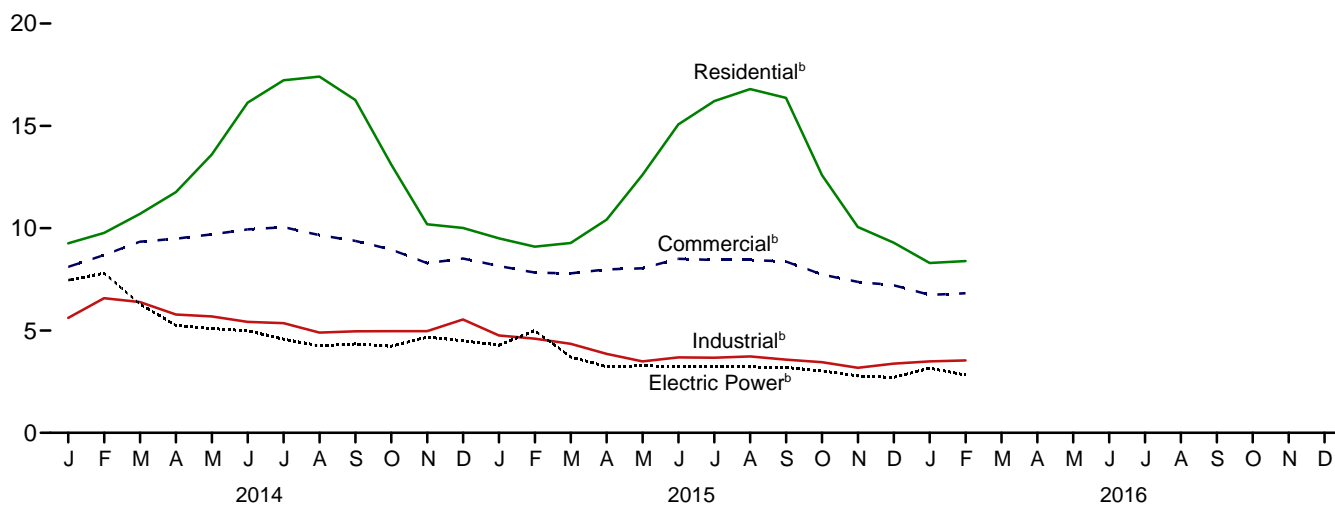
Wellhead and Citygate, 1949–2015



Consuming Sectors, 1967–2015



Consuming Sectors, Monthly



<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> Includes taxes.

Web Page: <http://www.eia.gov/totalenergy/data/monthly/#prices>.

Source: Table 9.10.

**Table 9.10 Natural Gas Prices**  
(Dollars<sup>a</sup> per Thousand Cubic Feet)

	Wellhead Price <sup>f</sup>	City-gate Price <sup>g</sup>	Consuming Sectors <sup>b</sup>								Price <sup>h</sup>	Percentage of Sector <sup>i,k</sup>
			Residential		Commercial <sup>c</sup>		Industrial <sup>d</sup>		Transportation	Electric Power <sup>e</sup>		
			Price <sup>h</sup>	Percentage of Sector <sup>i</sup>	Price <sup>h</sup>	Percentage of Sector <sup>i</sup>	Price <sup>h</sup>	Percentage of Sector <sup>i</sup>	Vehicle Fuel Price <sup>h</sup>	Price <sup>h</sup>		
1950 Average .....	0.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1955 Average .....	.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1960 Average .....	.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1965 Average .....	.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1970 Average .....	.17	NA	1.09	NA	.77	NA	.37	NA	NA	.29	NA	NA
1975 Average .....	.44	NA	1.71	NA	1.35	NA	.96	NA	NA	.77	96.1	NA
1980 Average .....	1.59	NA	3.68	NA	3.39	NA	2.56	NA	NA	2.27	96.9	NA
1985 Average .....	2.51	3.75	6.12	NA	5.50	NA	3.95	68.8	NA	3.55	94.0	NA
1990 Average .....	1.71	3.03	5.80	99.2	4.83	86.6	2.93	35.2	3.39	2.38	76.8	NA
1995 Average .....	1.55	2.78	6.06	99.0	5.05	76.7	2.71	24.5	3.98	2.02	71.4	NA
2000 Average .....	3.68	4.62	7.76	92.6	6.59	63.9	4.45	19.8	5.54	4.38	50.5	NA
2001 Average .....	4.00	5.72	9.63	92.4	8.43	66.0	5.24	20.8	6.60	4.61	40.2	NA
2002 Average .....	2.95	4.12	7.89	97.9	6.63	77.4	4.02	22.7	5.10	<sup>e</sup> 3.68	83.9	NA
2003 Average .....	4.88	5.85	9.63	97.5	8.40	78.2	5.89	22.1	6.19	5.57	91.2	NA
2004 Average .....	5.46	6.65	10.75	97.7	9.43	78.0	6.53	23.6	7.16	6.11	89.8	NA
2005 Average .....	7.33	8.67	12.70	98.1	11.34	82.1	8.56	24.0	9.14	8.47	91.3	NA
2006 Average .....	6.39	8.61	13.73	98.1	12.00	80.8	7.87	23.4	8.72	7.11	93.4	NA
2007 Average .....	6.25	8.16	13.08	98.0	11.34	80.4	7.68	22.2	8.50	7.31	92.2	NA
2008 Average .....	7.97	9.18	13.89	97.5	12.23	79.7	9.65	20.4	11.75	9.26	101.1	NA
2009 Average .....	3.67	6.48	12.14	97.4	10.06	77.8	5.33	18.8	8.13	4.93	101.1	NA
2010 Average .....	4.48	6.18	11.39	97.4	9.47	77.5	5.49	18.0	6.25	5.27	100.8	NA
2011 Average .....	3.95	5.63	11.03	96.3	8.91	67.3	5.13	16.3	7.48	4.89	101.2	NA
2012 Average .....	<sup>E</sup> 2.66	4.73	10.65	95.8	8.10	65.2	3.88	16.2	8.04	3.54	95.5	NA
2013 Average .....	NA	4.88	10.32	95.7	8.08	65.8	4.64	16.6	9.76	4.49	94.9	NA
2014 January .....	NA	5.56	9.26	95.7	8.11	70.7	5.62	16.6	NA	7.46	94.5	NA
February .....	NA	6.41	9.77	95.5	8.69	70.6	6.58	17.1	NA	7.80	93.6	NA
March .....	NA	6.57	10.70	95.4	9.34	69.4	6.39	16.9	NA	6.29	94.1	NA
April .....	NA	5.64	11.76	95.3	9.49	65.1	5.78	16.0	NA	5.25	95.0	NA
May .....	NA	5.90	13.60	95.4	9.70	60.5	5.69	15.8	NA	5.09	94.7	NA
June .....	NA	6.05	16.13	95.5	9.94	58.1	5.42	15.6	NA	4.99	94.4	NA
July .....	NA	5.99	17.23	95.5	10.05	55.7	5.36	15.7	NA	4.58	94.7	NA
August .....	NA	5.49	17.41	95.6	9.66	55.2	4.90	15.4	NA	4.25	95.1	NA
September .....	NA	5.51	16.27	95.6	9.38	55.7	4.96	14.9	NA	4.34	94.8	NA
October .....	NA	5.16	13.11	95.3	8.96	58.8	4.97	14.8	NA	4.23	94.6	NA
November .....	NA	4.91	10.19	95.8	8.29	66.1	4.97	15.7	NA	4.68	94.7	NA
December .....	NA	5.15	10.01	95.6	8.52	68.4	5.54	15.9	NA	4.50	94.8	NA
Average .....	NA	5.71	10.97	95.5	8.90	65.8	5.55	15.9	NA	5.19	94.6	NA
2015 January .....	NA	4.48	9.50	95.8	8.15	71.0	4.76	15.9	NA	4.29	94.6	NA
February .....	NA	4.54	9.10	95.7	7.83	71.1	4.60	16.1	NA	4.99	94.3	NA
March .....	NA	4.35	9.28	95.5	7.79	70.1	4.35	16.6	NA	3.71	94.4	NA
April .....	NA	3.93	10.42	95.5	7.99	64.7	3.86	15.8	NA	3.23	95.3	NA
May .....	NA	4.24	12.61	95.5	8.04	61.5	<sup>R</sup> 3.49	16.4	NA	3.28	95.1	NA
June .....	NA	4.43	15.07	95.5	8.50	57.8	3.69	15.6	NA	3.24	94.4	NA
July .....	NA	4.65	16.21	95.7	8.45	57.1	3.67	15.6	NA	3.23	94.4	NA
August .....	NA	4.58	16.80	95.5	8.45	55.1	3.73	15.3	NA	3.22	94.2	NA
September .....	NA	4.54	16.37	95.9	8.37	56.0	3.58	15.5	NA	3.19	94.0	NA
October .....	NA	4.00	12.59	95.5	7.74	60.4	3.45	15.7	NA	3.03	94.1	NA
November .....	NA	3.68	10.06	96.0	7.38	64.0	3.18	15.9	NA	2.78	94.7	NA
December .....	NA	3.76	9.29	96.1	7.21	67.8	3.38	16.0	NA	2.71	93.5	NA
Average .....	NA	4.25	10.38	95.7	7.89	65.9	3.84	15.9	NA	3.37	94.4	NA
2016 January .....	NA	3.44	<sup>R</sup> 8.30	96.0	<sup>R</sup> 6.74	<sup>R</sup> 70.5	<sup>R</sup> 3.49	16.3	NA	3.16	94.3	NA
February .....	NA	3.46	8.39	95.9	6.82	69.2	3.54	16.1	NA	2.83	94.5	NA
2-Month Average .....	NA	3.45	8.34	96.0	6.78	69.9	3.51	16.2	NA	3.01	94.4	NA
2015 2-Month Average .....	NA	4.51	9.30	95.7	7.99	71.0	4.68	16.0	NA	4.63	94.5	NA
2014 2-Month Average .....	NA	5.94	9.50	95.6	8.39	70.6	6.09	16.8	NA	7.61	94.1	NA

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.

<sup>b</sup> See Note 8, "Natural Gas Prices," at end of section.

<sup>c</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

<sup>d</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

<sup>e</sup> 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.

<sup>f</sup> See "Natural Gas Wellhead Price" in Glossary.

<sup>g</sup> See "Citygate" in Glossary.

<sup>h</sup> Includes taxes.

<sup>i</sup> 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.

<sup>j</sup> Much of the natural gas delivered for vehicle fuel represents deliveries to fueling stations that are used primarily or exclusively by fleet vehicles. Thus, the prices are often those associated with the cost of gas in the operation of fleet vehicles.

<sup>k</sup> 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.

<sup>R</sup> = 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.

## Energy Prices

**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-826, “Monthly Electric Sales and Revenue Report With State Distributions 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-826 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*, May 2016, 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*, May 2016, 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*, May 2016, 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*, May 2016, 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*, April 2016, Table 4.1; and Form EIA-923, “Power Plant Operations Report.”

## Table 9.10 Sources

### All Prices Except Vehicle Fuel and Electric Power

1949–2013: U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports and unpublished revisions.  
 2014 forward: EIA, *Natural Gas Monthly (NGM)*, April 2016, Table 3.

### Vehicle Fuel Price

1989–2014: 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, October 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

1987–2013: 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.

2014 forward: EIA, NGM, April 2016, Table 3.

### Percentage of Industrial Sector

1982–2013: 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.

2014 forward: EIA, NGM, April 2016, 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).

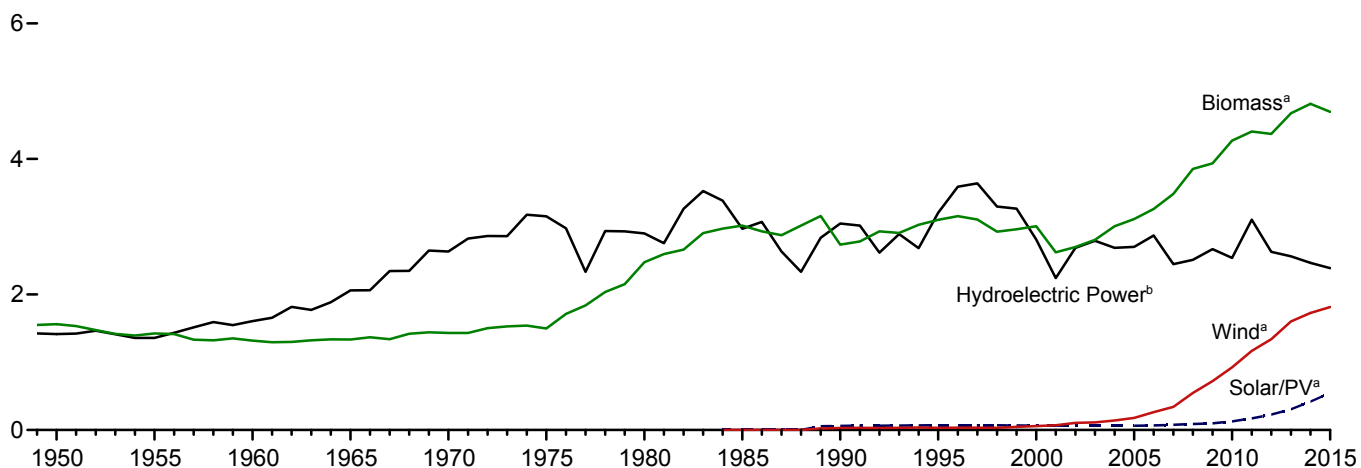
2008 forward: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form EIA-923, “Power Plant Operations Report,” divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

# 10. Renewable Energy

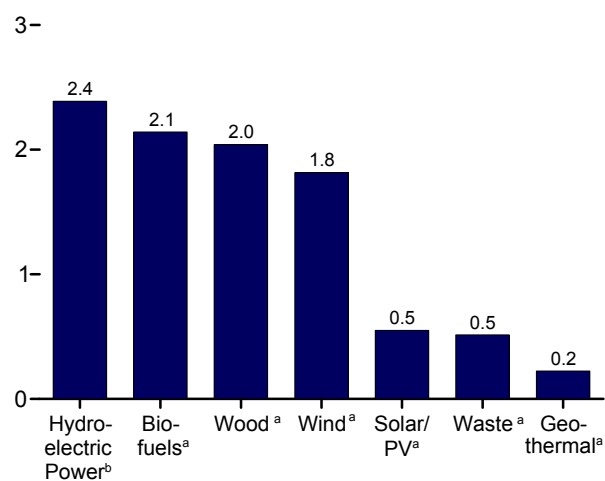
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**Figure 10.1 Renewable Energy Consumption**  
(Quadrillion Btu)

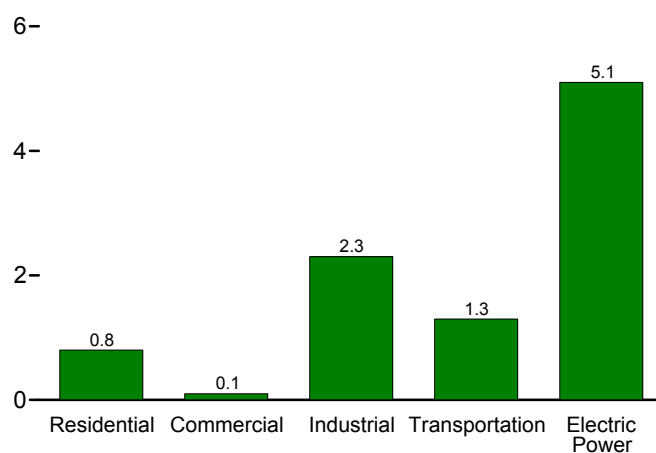
Major Sources, 1949–2015



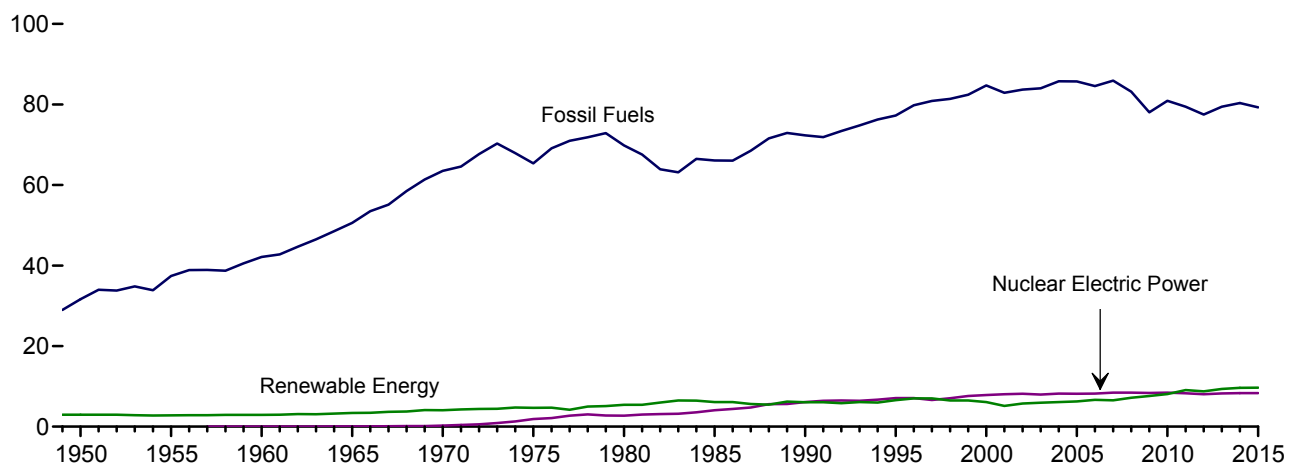
By Source, 2015



By Sector, 2015



Compared With Other Resources, 1949–2015



<sup>a</sup> See Table 10.1 for definition.

<sup>b</sup> 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 <sup>a</sup>			Consumption								
	Biomass		Total Renewable Energy <sup>d</sup>	Hydro-electric Power <sup>e</sup>	Geo-thermal <sup>f</sup>	Solar/ PV <sup>g</sup>	Wind <sup>h</sup>	Biomass				Total Renewable Energy
	Bio-fuels <sup>b</sup>	Total <sup>c</sup>						Wood <sup>i</sup>	Waste <sup>j</sup>	Bio-fuels <sup>k</sup>	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	6,041	3,046	171	59	29	2,216	408	111	2,735	6,041
1995 Total .....	198	3,099	6,558	3,205	152	69	33	2,370	531	200	3,101	6,560
2000 Total .....	233	3,006	6,104	2,811	164	66	57	2,262	511	236	3,008	6,106
2001 Total .....	254	2,624	5,164	2,242	164	64	70	2,006	364	253	2,622	5,163
2002 Total .....	308	2,705	5,734	2,689	171	63	105	1,995	402	303	2,701	5,729
2003 Total .....	401	2,805	5,946	2,793	173	62	113	2,002	401	403	2,806	5,948
2004 Total .....	486	2,996	6,067	2,688	178	63	142	2,121	389	498	3,008	6,079
2005 Total .....	561	3,101	6,226	2,703	181	63	178	2,137	403	574	3,114	6,239
2006 Total .....	716	3,212	6,594	2,869	181	68	264	2,099	397	766	3,262	6,645
2007 Total .....	970	3,472	6,520	2,446	186	76	341	2,089	413	983	3,485	6,533
2008 Total .....	1,374	3,868	7,206	2,511	192	89	546	2,059	435	1,357	3,851	7,189
2009 Total .....	1,570	3,953	7,641	2,669	200	98	721	1,931	452	1,553	3,936	7,624
2010 Total .....	1,868	4,316	8,112	2,539	208	126	923	1,981	468	1,821	4,270	8,066
2011 Total .....	2,029	4,501	9,155	3,103	212	171	1,168	2,010	462	1,933	4,405	9,059
2012 Total .....	1,929	4,406	8,813	2,629	212	227	1,340	2,010	467	1,892	4,369	8,777
2013 Total .....	1,981	4,647	9,330	2,562	214	305	1,601	2,170	496	2,007	4,673	9,356
2014 January .....	170	404	827	206	18	29	170	190	45	163	397	820
February .....	153	367	709	165	16	27	133	173	41	150	364	706
March .....	173	406	858	231	18	34	169	189	45	167	401	852
April .....	170	392	864	242	18	35	177	179	44	167	390	862
May .....	178	403	860	252	18	38	148	182	43	176	401	858
June .....	177	406	858	245	18	39	150	186	42	173	402	853
July .....	183	420	824	232	18	38	116	192	45	180	417	821
August .....	179	416	758	188	18	39	97	193	43	182	418	761
September .....	173	396	714	153	18	38	110	182	41	172	394	713
October .....	179	407	764	163	18	38	138	186	42	180	408	765
November .....	177	403	811	177	18	34	179	185	42	173	399	808
December .....	191	428	830	212	18	31	140	194	44	183	420	822
Total .....	2,103	4,849	9,678	2,467	214	420	1,728	2,230	516	2,067	4,812	9,641
2015 January .....	178	403	839	234	20	37	145	181	45	164	390	826
February .....	162	362	777	217	18	38	142	162	39	156	357	772
March .....	180	391	840	237	19	47	146	169	43	174	386	834
April .....	172	378	829	215	18	49	170	164	41	169	375	826
May .....	183	396	821	192	19	50	164	170	42	185	397	822
June .....	184	394	782	191	18	50	128	169	42	186	397	785
July .....	187	409	811	201	19	52	130	177	45	188	410	812
August .....	184	402	783	185	19	52	124	175	43	188	406	787
September .....	176	383	734	154	17	47	132	166	41	182	389	740
October .....	185	396	774	159	18	45	156	168	44	186	397	774
November .....	181	390	823	184	18	43	187	166	43	179	388	820
December .....	190	410	881	220	19	41	191	175	46	185	406	876
Total .....	2,161	4,715	9,694	2,389	224	550	1,816	2,040	514	2,142	4,696	9,675
2016 January .....	184	399	881	243	19	44	176	171	44	172	386	869
February .....	175	375	867	231	18	51	192	159	41	174	374	865
2-Month Total .....	360	773	1,748	474	38	95	368	329	84	346	760	1,734
2015 2-Month Total .....	339	766	1,617	451	37	75	287	343	84	320	747	1,597
2014 2-Month Total .....	323	771	1,536	371	35	56	304	363	86	313	761	1,526

<sup>a</sup> Production equals consumption for all renewable energy sources except biofuels.

<sup>b</sup> Total biomass inputs to the production of fuel ethanol and biodiesel.

<sup>c</sup> Wood and wood-derived fuels, biomass waste, and total biomass inputs to the production of fuel ethanol and biodiesel.

<sup>d</sup> Hydroelectric power, geothermal, solar thermal/photovoltaic, wind, and biomass.

<sup>e</sup> Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>f</sup> 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.

<sup>g</sup> Solar thermal and photovoltaic (PV) 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.

<sup>h</sup> Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

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

<sup>j</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>k</sup> Fuel ethanol (minus denaturant) and biodiesel consumption, plus losses and co-products from the production of fuel ethanol and biodiesel.

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

Notes: • Most data for the residential, commercial, industrial, and transportation sectors are estimates. See notes and sources for Tables 10.2a and 10.2b. • 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: Tables 10.2a–10.4.

**Table 10.2a Renewable Energy Consumption: Residential and Commercial Sectors**  
(Trillion Btu)

	Residential Sector				Commercial Sector <sup>a</sup>								
	Geo-thermal <sup>b</sup>	Solar/ PV <sup>c</sup>	Biomass	Total	Hydro- electric Power <sup>e</sup>	Geo- thermal <sup>b</sup>	Solar/ PV <sup>f</sup>	Wind <sup>g</sup>	Biomass				Total
			Wood <sup>d</sup>						Wood <sup>d</sup>	Waste <sup>h</sup>	Fuel Ethanol <sup>i</sup>	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	56	580	641	1	3	—	—	66	28	(s)	94	98
1995 Total .....	7	64	520	591	1	5	—	—	72	40	(s)	113	118
2000 Total .....	9	61	420	489	1	8	—	—	71	47	(s)	119	128
2001 Total .....	9	59	370	438	1	8	—	—	67	25	(s)	92	101
2002 Total .....	10	57	380	448	(s)	9	—	—	69	26	(s)	95	104
2003 Total .....	13	57	400	470	1	11	—	—	71	29	1	101	113
2004 Total .....	14	57	410	481	1	12	—	—	70	34	1	105	118
2005 Total .....	16	58	430	504	1	14	—	—	70	34	1	105	120
2006 Total .....	18	63	380	462	1	14	—	—	65	36	1	103	118
2007 Total .....	22	70	420	512	1	14	—	—	70	31	2	103	118
2008 Total .....	26	80	470	577	1	15	(s)	—	73	34	2	109	125
2009 Total .....	33	89	500	622	1	17	(s)	(s)	73	36	3	112	129
2010 Total .....	37	114	440	591	1	19	(s)	(s)	72	36	3	111	130
2011 Total .....	40	153	450	643	(s)	20	1	(s)	69	43	3	115	136
2012 Total .....	40	186	420	646	(s)	20	1	1	61	45	3	108	130
2013 Total .....	40	219	580	839	(s)	20	3	1	70	47	3	120	143
2014 January .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	11	13
February .....	3	19	44	67	(s)	2	(s)	(s)	6	3	(s)	9	11
March .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	10	12
April .....	3	21	48	72	(s)	2	(s)	(s)	6	4	(s)	10	12
May .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	11	13
June .....	3	21	48	72	(s)	2	(s)	(s)	6	4	(s)	10	13
July .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	11	13
August .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	11	13
September .....	3	21	48	72	(s)	2	(s)	(s)	6	4	(s)	10	12
October .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	10	12
November .....	3	21	48	72	(s)	2	(s)	(s)	6	4	(s)	10	12
December .....	3	21	49	74	(s)	2	(s)	(s)	6	4	(s)	10	12
Total .....	40	252	580	871	(s)	20	4	1	73	47	4	124	149
2015 January .....	3	25	37	65	(s)	2	(s)	(s)	6	4	(s)	11	13
February .....	3	23	33	59	(s)	2	(s)	(s)	6	4	(s)	10	12
March .....	3	25	37	65	(s)	2	(s)	(s)	6	4	(s)	11	13
April .....	3	25	35	63	(s)	2	1	(s)	6	3	(s)	10	12
May .....	3	25	37	65	(s)	2	1	(s)	6	3	(s)	10	12
June .....	3	25	35	63	(s)	2	1	(s)	6	3	(s)	10	12
July .....	3	25	37	65	(s)	2	1	(s)	6	4	(s)	10	13
August .....	3	25	37	65	(s)	2	1	(s)	6	3	(s)	10	12
September .....	3	25	35	63	(s)	2	(s)	(s)	6	3	(s)	10	12
October .....	3	25	37	65	(s)	2	(s)	(s)	6	4	(s)	10	12
November .....	3	25	35	63	(s)	2	(s)	(s)	6	4	(s)	11	13
December .....	3	25	37	65	(s)	2	(s)	(s)	6	4	(s)	11	13
Total .....	41	298	432	770	(s)	20	5	1	73	45	4	122	149
2016 January .....	4	30	33	66	(s)	2	(s)	(s)	6	4	(s)	11	13
February .....	3	28	31	62	(s)	2	(s)	(s)	6	4	(s)	10	12
2-Month Total .....	7	57	63	128	(s)	3	1	(s)	12	8	1	21	25
2015 2-Month Total .....	7	48	70	125	(s)	3	1	(s)	12	8	1	21	25
2014 2-Month Total .....	6	41	94	141	(s)	3	(s)	(s)	12	8	1	21	24

<sup>a</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

<sup>b</sup> Geothermal heat pump and direct use energy.

<sup>c</sup> Solar thermal direct use energy, and photovoltaic (PV) electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6). Includes distributed solar thermal and PV energy used in the commercial, industrial, and electric power sectors.

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

<sup>e</sup> Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>f</sup> Photovoltaic (PV) electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6) at commercial plants with capacity of 1 megawatt or greater.

<sup>g</sup> Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>h</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>i</sup> The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the commercial sector.

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

Notes: • Data are estimates, except for commercial sector solar/PV, hydroelectric power, wind, and 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 <sup>a</sup>										Transportation Sector		
	Hydro-electric Power <sup>b</sup>	Geo-thermal <sup>c</sup>	Solar/PV <sup>d</sup>	Wind <sup>e</sup>	Biomass					Total	Biomass		
					Wood <sup>f</sup>	Waste <sup>g</sup>	Fuel Ethanol <sup>h</sup>	Losses and Co-products <sup>i</sup>	Total		Fuel Ethanol <sup>j</sup>	Bio-diesel <sup>k</sup>	Total <sup>l</sup>
1950 Total .....	69	NA	NA	NA	532	NA	NA	NA	532	602	NA	NA	NA
1955 Total .....	38	NA	NA	NA	631	NA	NA	NA	631	669	NA	NA	NA
1960 Total .....	39	NA	NA	NA	680	NA	NA	NA	680	719	NA	NA	NA
1965 Total .....	33	NA	NA	NA	855	NA	NA	NA	855	888	NA	NA	NA
1970 Total .....	34	NA	NA	NA	1,019	NA	NA	NA	1,019	1,053	NA	NA	NA
1975 Total .....	32	NA	NA	NA	1,063	NA	NA	NA	1,063	1,096	NA	NA	NA
1980 Total .....	33	NA	NA	NA	1,600	NA	NA	NA	1,600	1,633	NA	NA	NA
1985 Total .....	33	NA	NA	NA	1,645	230	1	42	1,918	1,951	50	NA	50
1990 Total .....	31	2	—	—	1,442	192	1	49	1,684	1,717	60	NA	60
1995 Total .....	55	3	—	—	1,652	195	2	86	1,934	1,992	112	NA	112
2000 Total .....	42	4	—	—	1,636	145	1	99	1,881	1,928	135	NA	135
2001 Total .....	33	5	—	—	1,443	129	3	108	1,681	1,719	141	1	142
2002 Total .....	39	5	—	—	1,396	146	3	130	1,676	1,720	168	2	170
2003 Total .....	43	3	—	—	1,363	142	4	168	1,678	1,724	228	2	230
2004 Total .....	33	4	—	—	1,476	132	6	201	1,815	1,851	286	3	290
2005 Total .....	32	4	—	—	1,452	148	7	227	1,834	1,870	327	12	339
2006 Total .....	29	4	—	—	1,472	130	10	280	1,892	1,925	442	33	475
2007 Total .....	16	5	—	—	1,413	145	10	369	1,937	1,957	557	45	602
2008 Total .....	17	5	—	—	1,339	143	12	519	2,012	2,034	786	39	825
2009 Total .....	18	4	—	—	1,178	154	13	603	1,948	1,971	894	41	935
2010 Total .....	16	4	(s)	—	1,273	168	17	727	2,185	2,205	1,041	33	1,075
2011 Total .....	17	4	(s)	(s)	1,309	165	17	756	2,246	2,268	1,045	113	1,158
2012 Total .....	22	4	(s)	(s)	1,339	159	17	711	2,226	2,253	1,045	115	1,162
2013 Total .....	33	4	(s)	(s)	1,312	187	18	709	2,226	2,264	1,072	182	1,278
2014 January .....	1	(s)	(s)	(s)	113	16	1	63	193	195	87	10	99
February .....	1	(s)	(s)	(s)	102	15	1	56	175	176	82	10	93
March .....	1	(s)	(s)	(s)	112	17	1	62	192	193	88	14	103
April .....	1	(s)	(s)	(s)	107	17	1	62	187	188	89	12	104
May .....	1	(s)	(s)	(s)	109	15	1	64	190	191	94	15	110
June .....	1	(s)	(s)	(s)	111	15	1	64	190	192	92	16	108
July .....	1	(s)	(s)	(s)	114	16	1	65	196	198	96	15	113
August .....	1	(s)	(s)	(s)	115	15	1	64	195	197	95	19	117
September .....	1	(s)	(s)	(s)	107	14	1	62	185	186	89	19	109
October .....	1	(s)	(s)	(s)	110	17	1	64	192	193	96	16	115
November .....	1	(s)	(s)	(s)	109	16	1	64	190	191	92	17	108
December .....	1	(s)	(s)	(s)	116	17	1	68	202	204	94	18	113
Total .....	12	4	(s)	1	1,325	190	14	757	2,287	2,304	1,093	181	1,291
2015 January .....	1	(s)	(s)	(s)	116	16	1	65	199	200	90	7	97
February .....	1	(s)	(s)	(s)	103	14	1	59	176	178	83	11	96
March .....	1	(s)	(s)	(s)	106	16	1	65	188	190	94	12	108
April .....	1	(s)	(s)	(s)	106	17	1	61	185	187	90	14	106
May .....	1	(s)	(s)	(s)	108	17	1	65	192	193	98	18	118
June .....	1	(s)	(s)	(s)	106	16	1	65	189	190	97	20	119
July .....	1	(s)	(s)	(s)	111	17	1	67	196	197	99	18	120
August .....	1	(s)	(s)	(s)	109	16	1	65	191	193	100	19	121
September .....	1	(s)	(s)	(s)	105	16	1	63	185	186	96	19	117
October .....	1	(s)	(s)	(s)	107	17	1	66	191	192	98	17	118
November .....	1	(s)	(s)	(s)	105	16	1	65	187	188	94	14	112
December .....	1	(s)	(s)	(s)	110	17	1	68	196	198	95	17	115
Total .....	13	4	(s)	1	1,290	195	15	776	2,275	2,293	1,133	188	1,347
2016 January .....	1	(s)	(s)	(s)	110	16	1	66	193	195	90	13	104
February .....	1	(s)	(s)	(s)	101	15	1	62	180	181	93	15	110
2-Month Total .....	2	1	(s)	(s)	212	30	2	128	373	376	183	28	214
2015 2-Month Total .....	2	1	(s)	(s)	218	30	2	124	375	378	173	19	193
2014 2-Month Total .....	2	1	(s)	(s)	215	32	2	119	368	371	169	20	191

<sup>a</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

<sup>b</sup> Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>c</sup> Geothermal heat pump and direct use energy.

<sup>d</sup> Photovoltaic (PV) electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6) at industrial plants with capacity of 1 megawatt or greater.

<sup>e</sup> Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

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

<sup>g</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

<sup>h</sup> The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the industrial sector.

<sup>i</sup> 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.

<sup>j</sup> The fuel ethanol (minus denaturant) portion of motor fuels, such as E10 and E85, consumed by the transportation sector.

<sup>k</sup> Although there is biodiesel use in other sectors, all biodiesel consumption is assigned to the transportation sector.

<sup>l</sup> Beginning in 2009, includes imports minus stock change of other renewable diesel fuel and other renewable fuels. 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: • Data are estimates, except for industrial sector hydroelectric power in 1949–1978 and 1989 forward, solar/PV, and wind. • 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 <sup>a</sup>	Geo-thermal <sup>b</sup>	Solar/PV <sup>c</sup>	Wind <sup>d</sup>	Biomass			Total
					Wood <sup>e</sup>	Waste <sup>f</sup>	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 .....	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 January .....	205	13	7	170	21	24	45	440
February .....	164	11	8	133	20	22	42	359
March .....	230	13	12	169	22	24	46	469
April .....	241	12	14	177	18	23	41	485
May .....	251	13	16	148	17	24	41	469
June .....	244	12	18	150	22	24	45	470
July .....	231	13	17	116	23	25	48	423
August .....	187	13	17	97	23	24	46	361
September .....	152	12	17	109	21	22	43	334
October .....	162	13	16	138	20	22	42	371
November .....	176	13	13	179	22	22	44	425
December .....	211	13	10	140	22	23	45	419
Total .....	2,454	151	165	1,726	251	279	530	5,026
2015 January .....	233	14	11	145	22	24	46	450
February .....	215	13	15	142	21	21	42	427
March .....	235	14	21	146	20	22	42	458
April .....	213	13	24	170	17	22	38	458
May .....	191	14	24	164	19	22	41	434
June .....	190	13	25	128	21	22	43	400
July .....	200	14	26	130	23	24	48	417
August .....	184	14	26	124	24	24	47	395
September .....	154	12	22	132	20	22	41	362
October .....	158	13	19	156	18	23	41	387
November .....	183	13	18	187	20	23	43	444
December .....	219	13	15	191	22	25	46	485
Total .....	2,376	159	246	1,814	246	274	520	5,116
2016 January .....	242	14	14	176	21	24	45	491
February .....	229	13	23	192	21	22	43	500
2-Month Total .....	471	26	37	368	42	46	88	991
2015 2-Month Total .....	448	27	27	287	43	45	88	877
2014 2-Month Total .....	369	24	15	303	41	46	87	799

<sup>a</sup> Conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>b</sup> Geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>c</sup> Solar thermal and photovoltaic (PV) electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

<sup>d</sup> Wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

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

<sup>f</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and

tire-derived fuels).

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 <sup>a</sup>	Losses and Co-products <sup>b</sup>	Denaturant <sup>c</sup>	Production <sup>d</sup>			Trade <sup>d</sup>	Stocks <sup>d,f</sup>	Stock Change <sup>d,g</sup>	Consumption <sup>d</sup>			Consumption Minus Denaturant <sup>h</sup>
							Net Imports <sup>e</sup>						
	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 January .....	160	62	558	28,194	1,184	100	-2,024	17,153	729	25,441	1,069	91	88
February .....	144	56	498	25,269	1,061	90	-1,473	16,865	-288	24,084	1,012	86	84
March .....	160	62	544	28,120	1,181	100	-1,985	17,310	445	25,690	1,079	91	89
April .....	158	61	551	27,733	1,165	99	-1,202	17,610	300	26,231	1,102	93	91
May .....	164	64	565	28,888	1,213	103	-704	18,330	720	27,464	1,153	98	95
June .....	163	63	524	28,629	1,202	102	-1,278	18,785	455	26,896	1,130	96	93
July .....	167	65	542	29,413	1,235	105	-1,495	18,696	-89	28,007	1,176	100	97
August .....	163	64	534	28,665	1,204	102	-1,283	18,218	-478	27,860	1,170	99	97
September .....	158	62	509	27,807	1,168	99	-1,346	18,724	506	25,955	1,090	92	90
October .....	163	64	502	28,644	1,203	102	-1,919	17,341	-1,383	28,108	1,181	100	98
November .....	163	63	540	28,588	1,201	102	-2,081	17,035	-306	26,813	1,126	95	93
December .....	175	68	609	30,831	1,295	110	-1,580	18,739	1,704	27,547	1,157	98	96
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 January .....	168	65	588	29,755	1,250	106	-1,630	20,543	1,804	26,321	1,105	94	91
February .....	152	59	534	26,788	1,125	95	-1,992	20,979	436	24,360	1,023	87	84
March .....	167	65	567	29,489	1,239	105	-1,992	20,865	-114	27,611	1,160	98	96
April .....	158	61	527	27,910	1,172	99	-1,529	20,787	-78	26,459	1,111	94	92
May .....	168	65	545	29,666	1,246	106	-1,532	20,120	-667	28,801	1,210	102	100
June .....	168	65	528	29,684	1,247	106	-1,428	20,029	-91	28,347	1,191	101	99
July .....	172	66	539	30,256	1,271	108	-1,802	19,594	-435	28,889	1,213	103	100
August .....	168	65	523	29,621	1,244	105	-830	19,259	-335	29,126	1,223	104	101
September .....	162	63	519	28,543	1,199	102	-933	18,904	-355	27,965	1,175	99	97
October .....	171	66	566	30,139	1,266	107	-1,583	18,889	-15	28,571	1,200	102	99
November .....	168	65	580	29,594	1,243	105	-952	19,945	1,056	27,586	1,159	98	96
December .....	176	68	625	31,075	1,305	111	-1,721	21,438	1,493	27,861	1,170	99	97
Total .....	1,998	774	6,641	352,520	14,806	1,254	-17,924	21,438	2,699	331,897	13,940	1,181	1,152
2016 January .....	171	66	615	30,319	1,273	108	-2,073	23,168	1,730	26,516	1,114	94	92
February .....	162	62	583	28,678	1,204	102	-1,595	23,004	-164	27,247	1,144	97	94
2-Month Total .....	333	128	1,198	58,997	2,478	210	-3,668	23,004	1,566	53,763	2,258	191	186
2015 2-Month Total .....	320	124	1,122	56,543	2,375	201	-3,622	20,979	2,240	50,681	2,129	180	176
2014 2-Month Total .....	304	118	1,056	53,463	2,245	190	-3,497	16,865	441	49,525	2,080	176	172

<sup>a</sup> Total corn and other biomass inputs to the production of undenatured ethanol used for fuel ethanol.

<sup>b</sup> 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.

<sup>c</sup> The amount of denaturant in fuel ethanol produced.

<sup>d</sup> Includes denaturant.

<sup>e</sup> 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.

<sup>f</sup> Stocks are at end of period.

<sup>g</sup> A negative value indicates a decrease in stocks and a positive value indicates an increase.

<sup>h</sup> 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.

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 Renew- able Fuels <sup>f</sup>
	Feed- stock <sup>a</sup>	Losses and Co- products <sup>b</sup>	Production			Trade			Stocks <sup>d</sup>	Stock Change <sup>e</sup>	Consumption			
						Imports	Exports	Net Imports <sup>c</sup>						
			TBtu	TBtu	Mbbl	MMgal	TBtu	Mbbl			Mbbl	Mbbl	Mbbl	
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	<sup>g</sup> 7,663	322	41	(s)
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	<sup>h</sup> 1,028	21,099	886	113	(s)
2012 Total .....	128	2	23,588	991	126	853	3,056	-2,203	1,984	-20	21,406	899	115	3
2013 Total .....	176	2	32,368	1,359	173	8,152	4,675	3,477	3,810	1,825	34,020	1,429	182	24
2014 January .....	9	(s)	1,727	73	9	222	134	88	3,708	-101	1,916	80	10	2
February .....	10	(s)	1,801	76	10	161	141	20	3,726	18	1,803	76	10	1
March .....	13	(s)	2,361	99	13	240	91	149	3,604	-122	2,632	111	14	2
April .....	12	(s)	2,223	93	12	135	261	-126	3,402	-202	2,299	97	12	3
May .....	14	(s)	2,531	106	14	133	208	-75	3,135	-267	2,724	114	15	2
June .....	14	(s)	2,645	111	14	235	263	-28	2,798	-337	2,953	124	16	(s)
July .....	16	(s)	2,926	123	16	493	320	173	3,082	284	2,815	118	15	2
August .....	16	(s)	2,987	125	16	571	264	307	2,786	-297	3,590	151	19	2
September .....	15	(s)	2,754	116	15	352	136	216	2,293	-492	3,462	145	19	1
October .....	16	(s)	2,928	123	16	507	40	467	2,641	347	3,048	128	16	2
November .....	14	(s)	2,610	110	14	989	65	924	3,084	444	3,091	130	17	(s)
December .....	16	(s)	2,958	124	16	540	51	489	3,131	46	3,401	143	18	1
Total .....	165	2	30,452	1,279	163	4,578	1,974	2,604	3,131	-679	33,735	1,417	181	18
2015 January .....	9	(s)	1,706	72	9	372	22	350	3,713	<sup>i</sup> 677	1,379	58	7	(s)
February .....	10	(s)	1,827	77	10	416	23	393	3,827	114	2,105	88	11	1
March .....	13	(s)	2,323	98	12	311	190	121	3,996	169	2,275	96	12	1
April .....	14	(s)	2,565	108	14	294	240	54	3,950	-45	2,664	112	14	2
May .....	15	(s)	2,755	116	15	307	255	52	3,464	-487	3,294	138	18	2
June .....	16	(s)	2,897	122	16	673	263	410	2,948	-516	3,823	161	20	2
July .....	16	(s)	2,875	121	15	1,157	255	902	3,284	336	3,441	145	18	3
August .....	16	(s)	2,933	123	16	858	275	583	3,227	-57	3,573	150	19	2
September .....	14	(s)	2,553	107	14	927	200	727	2,948	-279	3,558	149	19	3
October .....	14	(s)	2,537	107	14	863	161	702	2,981	33	3,206	135	17	3
November .....	14	(s)	2,521	106	14	701	76	625	3,458	477	2,669	112	14	3
December .....	14	(s)	2,573	108	14	1,078	133	945	3,815	357	3,160	133	17	3
Total .....	163	2	30,064	1,263	161	7,957	2,093	5,864	3,815	<sup>i</sup> 779	35,149	1,476	188	25
2016 January .....	14	(s)	2,490	105	13	211	42	169	4,036	221	2,437	102	13	1
February .....	14	(s)	2,503	105	13	287	55	232	3,937	-99	2,834	119	15	2
2-Month Total .....	27	(s)	4,992	210	27	498	98	400	3,937	122	5,271	221	28	3
2015 2-Month Total .....	19	(s)	3,533	148	19	788	45	743	3,827	792	3,484	146	19	1
2014 2-Month Total .....	19	(s)	3,528	148	19	383	275	108	3,726	-83	3,719	156	20	3

<sup>a</sup> 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.

<sup>b</sup> 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.

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

<sup>d</sup> Stocks are at end of period. Through 2010, includes stocks at bulk terminals only. Beginning in 2011, includes stocks at bulk terminals and biodiesel production plants.

<sup>e</sup> A negative value indicates a decrease in stocks and a positive value indicates an increase.

<sup>f</sup> Imports minus stock change of other renewable diesel fuel and other renewable fuels. See "Renewable Diesel Fuel (Other)" and "Renewable Fuels (Other)" in Glossary.

<sup>g</sup> 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.

<sup>h</sup> 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."

<sup>i</sup> Derived from the preliminary 2014 stocks value (3,036 thousand barrels), not the final 2014 value (3,131 thousand barrels) that is shown under "Stocks."

NA=Not available. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

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.

## Renewable Energy

### 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) and biodiesel 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 (biofuels production comprises biomass inputs to the production of fuel ethanol and biodiesel).

### 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.

2012–2014: Annual estimates assumed by EIA to be equal to that of 2011.

2015 and 2016: Annual estimates are from EIA, *Short-Term Energy Outlook (STEO)*.

(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/PV

1989–2009: Annual estimates are based on EIA, Form EIA-63A, “Annual Solar Thermal Collector Manufacturers Survey,” and Form EIA-63B, “Annual Photovoltaic Module/Cell Manufacturers Survey.”

2010–2013: Annual estimates are based on EIA, Form EIA-63B, “Annual Photovoltaic Cell/Module Shipments Report”; Form EIA-63A, “Annual Solar Thermal Collector Manufacturers Survey” (pre-2010 data); and SEIA/GTM Research, *U.S. Solar Market Insight: 2010 Year in Review*.

2014 forward: Annual estimates are from EIA, STEO. (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, Wood

1949–1979: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption from 1949 to 1981*, Table A2.

1980–2013: Annual estimates are based on EIA, Form EIA-457, “Residential Energy Consumption Survey”; and National Oceanic and Atmospheric Administration regional heating degree-day data.

2014: Annual estimate assumed by EIA to be equal to that of 2013.

2015 and 2016: Annual estimates are from EIA, STEO.

(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/PV, 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

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, Solar/PV

2008 forward: Commercial sector solar thermal and photovoltaic (PV) 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, 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 forward, the annual estimates are assumed by EIA to be equal to that of 2013). 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.

### **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/PV, 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/PV, 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/PV**

2010 forward: Industrial sector solar thermal and photovoltaic (PV) 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, 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 2014, the annual estimate is assumed by EIA to be equal to that of 2013; for 2015, the annual estimate is from EIA, STEO; for 2016, the annual estimate is assumed by EIA to be equal to that of 2015). 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 1990*, 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, the annual estimate is assumed by EIA to be equal to that of 2013; for 2015, the annual estimate is from EIA, STEO; for 2016, the annual estimate is assumed by EIA to be equal to that of 2015). 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.

### **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/PV, 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/PV, 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.

### **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 pentanes plus and conventional motor gasoline used as denaturant).

2009–2014: U.S. Energy Information Administration (EIA), *Petroleum Supply Annual (PSA)*, annual reports, Table 1. Data in thousand barrels for net production of pentanes plus 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 pentanes plus). 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 5.253 million Btu per barrel (the approximate heat content of conventional motor gasoline). Total denaturant is the sum of the values for pentanes plus, conventional motor gasoline, and motor gasoline blending components.

2015 and 2016: EIA, *Petroleum Supply Monthly (PSM)*, monthly reports, Table 1. Data in thousand barrels for net production of pentanes plus 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 pentanes plus). 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 5.253 million Btu per barrel (the approximate heat content of conventional motor gasoline). Total denaturant is the sum of the values for pentanes plus, 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."

2009–2014: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

2015 and 2016: EIA, PSM, monthly reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

### Trade, Stocks, and Stock Change

1992–2014: EIA, PSA, annual reports, Table 1.

2015 and 2016: 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).

2009–2014: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2015 and 2016: 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 Table A3).

### 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.

2011–2014: EIA, *Petroleum Supply Annual (PSA)*, annual reports, Table 1, data for renewable fuels except fuel ethanol.

2015 and 2016: 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.

2012–2014: EIA, PSA, annual reports, Tables 25 and 31, data for biomass-based diesel fuel.

2015 and 2016: 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: Imports data for “Other Renewable Diesel Fuel” are from EIA, PSA Table 25 and PSM Table 37 (data are converted to Btu by multiplying by the other renewable diesel fuel heat content factor in Table A1). Imports data for “Other Renewable Fuels” are from EIA, PSA Table 25 and PSM Table 37 (data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Stock change data for “Other Renewable Diesel Fuel” are from EIA, EIA-810, “Monthly Refinery Report,” EIA-812, “Monthly Product Pipeline Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (data are converted to Btu by multiplying by the other renewable diesel heat content factor in Table A1). “Other Renewable Fuels” in Table 10.4 is calculated as other renewable diesel fuel imports plus other renewable fuels imports minus other renewable diesel fuel stock change.

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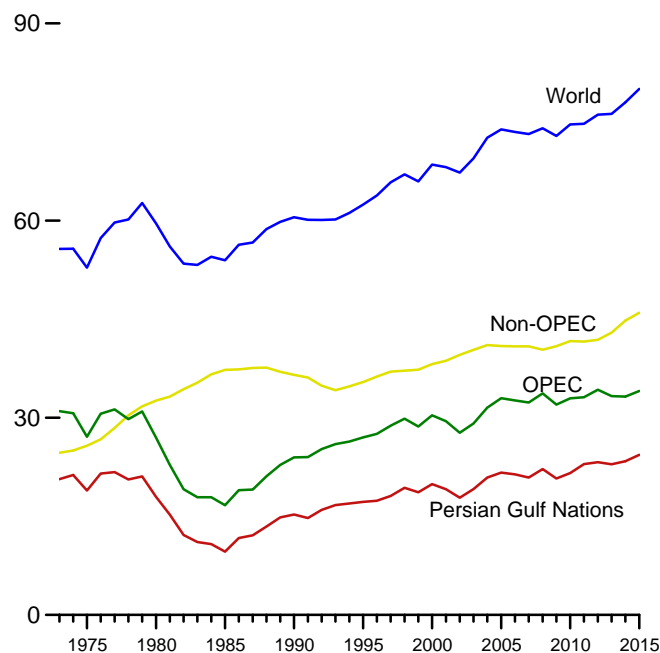


# **11. International Petroleum**

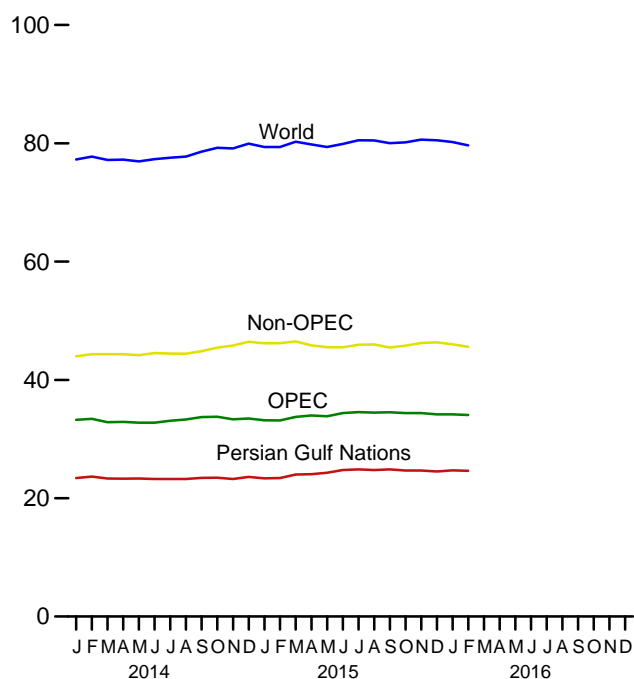
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**Figure 11.1a World Crude Oil Production Overview**  
(Million Barrels per Day)

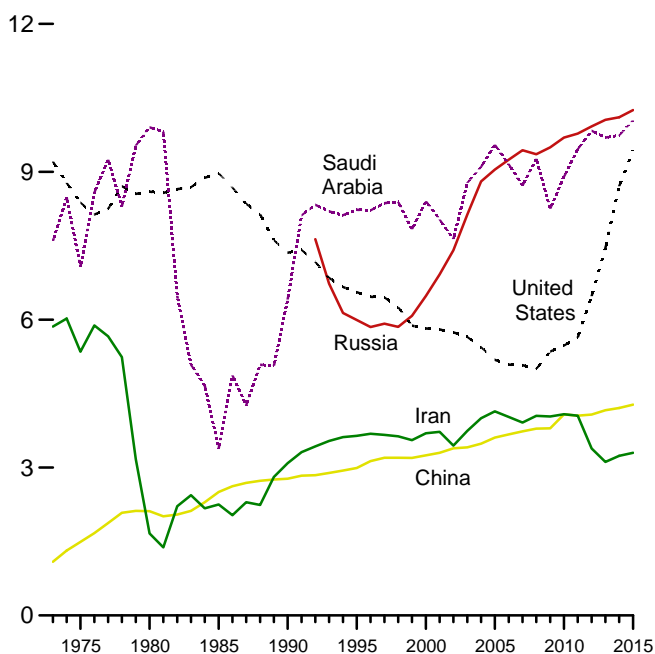
World Production, 1973–2015



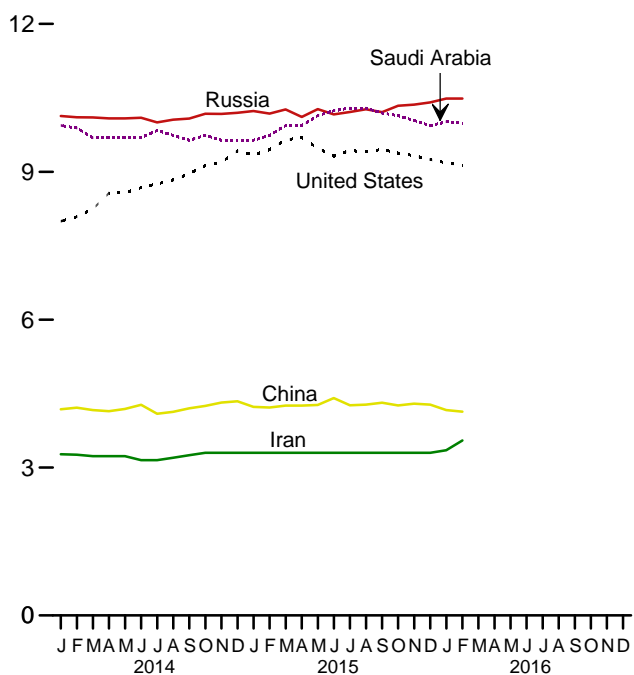
World Production, Monthly



Selected Producers, 1973–2015



Selected Producers, Monthly



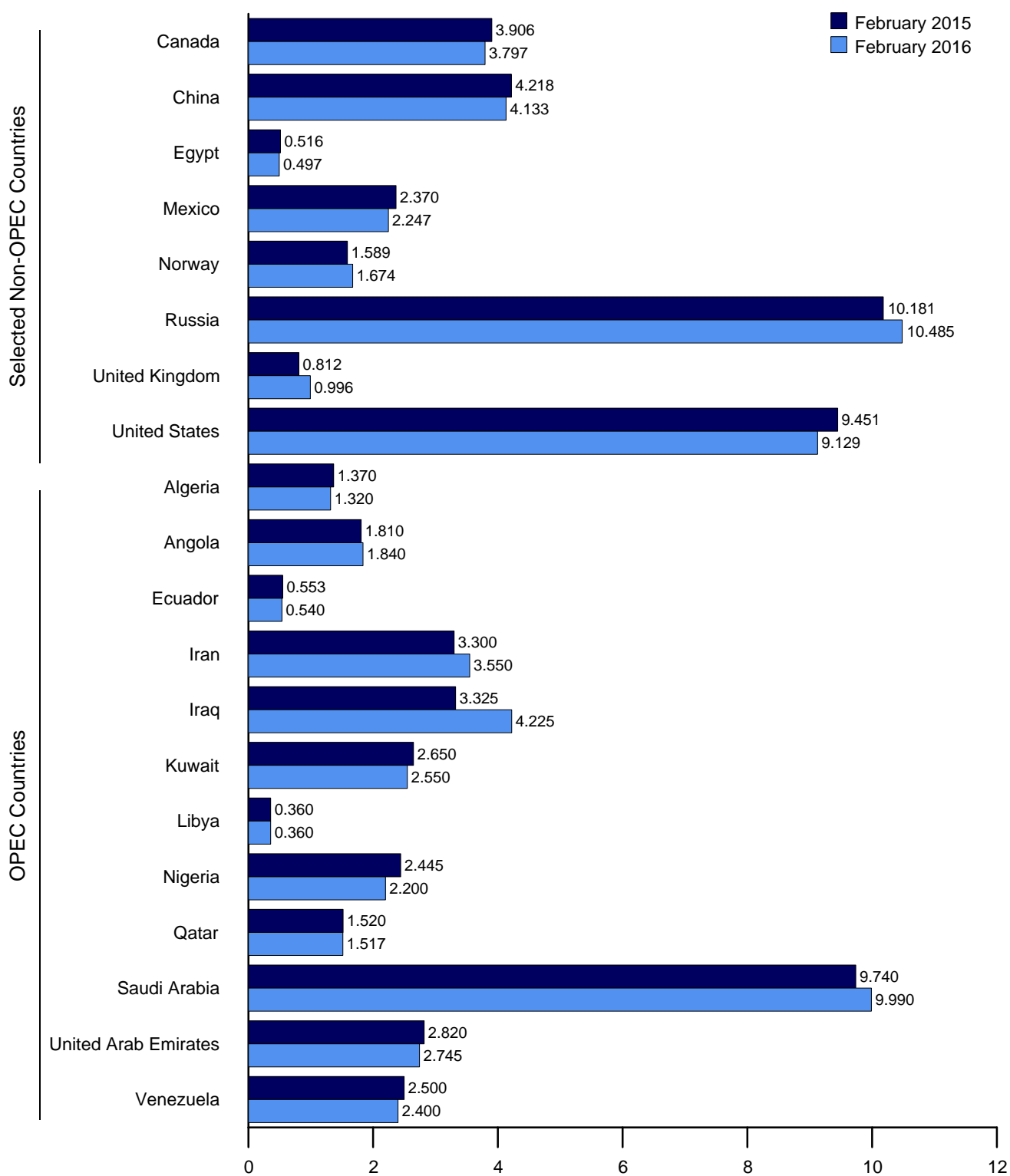
Notes: • OPEC is the Organization of the Petroleum Exporting Countries. • The Persian Gulf Nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates. Production from the Neutral Zone between Kuwait and Saudi Arabia is included in "Per-

sian 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 Country**  
(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: OPEC Members**

(Thousand Barrels per Day)

	Algeria	Angola	Ecuador	Indonesia	Iran	Iraq	Kuwait <sup>a</sup>	Libya	Nigeria	Qatar	Saudi Arabia <sup>a</sup>	United Arab Emirates	Venezuela	Total OPEC <sup>b</sup>
1973 Average	1,097	162	209	1,339	5,861	2,018	3,020	2,175	2,054	570	7,596	1,533	3,366	31,000
1975 Average	983	165	161	1,307	5,350	2,262	2,084	1,480	1,783	438	7,075	1,664	2,346	27,096
1980 Average	1,106	150	204	1,577	1,662	2,514	1,656	1,787	2,055	472	9,900	1,709	2,168	26,960
1985 Average	1,036	231	281	1,325	2,250	1,433	1,023	1,059	1,495	301	3,388	1,193	1,677	16,692
1990 Average	1,180	475	285	1,462	3,088	2,040	1,175	1,375	1,810	406	6,410	2,117	2,137	23,960
1995 Average	1,162	646	392	1,503	3,643	560	2,057	1,390	1,993	442	8,231	2,233	2,750	27,002
1996 Average	1,227	709	396	1,547	3,686	579	2,062	1,401	2,001	510	8,218	2,278	2,938	27,551
1997 Average	1,259	714	388	1,520	3,664	1,155	2,007	1,446	2,132	550	8,362	2,316	3,280	28,794
1998 Average	1,226	735	375	1,518	3,634	2,150	2,085	1,390	2,153	696	8,389	2,345	3,167	29,865
1999 Average	1,177	745	373	1,472	3,557	2,508	1,898	1,319	2,130	665	7,833	2,169	2,826	28,671
2000 Average	1,214	746	395	1,428	3,696	2,571	2,079	1,410	2,165	742	8,404	2,368	3,155	30,372
2001 Average	1,265	742	412	1,340	3,724	2,390	1,998	1,367	2,256	730	8,031	2,205	3,010	29,469
2002 Average	1,349	896	393	1,249	3,444	2,023	1,894	1,319	2,118	709	7,634	2,082	2,604	27,714
2003 Average	1,516	903	411	1,155	3,743	1,308	2,136	1,421	2,275	807	8,775	2,348	2,335	29,132
2004 Average	1,582	1,052	528	1,096	4,001	2,011	2,376	1,515	2,329	901	9,101	2,478	2,557	31,528
2005 Average	1,692	1,239	532	1,067	4,139	1,878	2,529	1,633	2,627	978	9,550	2,535	2,565	32,964
2006 Average	1,699	1,398	536	1,019	4,028	1,996	2,535	1,681	2,440	996	9,152	2,636	2,511	32,626
2007 Average	1,708	1,724	511	964	3,912	2,086	2,464	1,702	2,350	1,083	8,722	2,603	2,490	32,318
2008 Average	1,705	1,951	505	974	4,050	2,375	2,586	1,736	2,165	1,198	9,261	2,681	2,510	33,697
2009 Average	1,585	1,877	486	949	4,037	2,391	2,350	1,650	2,208	1,279	8,250	2,413	2,520	31,994
2010 Average	1,540	1,909	486	945	4,080	2,399	2,300	1,650	2,455	1,459	8,900	2,415	2,410	32,948
2011 Average	1,540	1,756	500	902	4,054	2,626	2,530	465	2,550	1,571	9,458	2,679	2,500	33,131
2012 Average	1,532	1,787	504	860	3,387	2,983	2,635	1,367	2,520	1,551	9,832	2,804	2,500	34,262
2013 Average	1,462	1,803	526	828	3,113	3,054	2,650	918	2,367	1,553	9,693	2,820	2,500	33,288
2014 January	1,420	1,663	550	789	3,270	3,125	2,650	510	2,470	1,563	9,940	2,820	2,500	33,270
February	1,420	1,733	551	800	3,260	3,425	2,650	380	2,420	1,563	9,890	2,820	2,500	33,412
March	1,420	1,673	557	798	3,230	3,325	2,650	250	2,370	1,563	9,690	2,820	2,500	32,846
April	1,420	1,743	560	797	3,230	3,300	2,650	210	2,420	1,553	9,690	2,820	2,500	32,893
May	1,420	1,683	554	796	3,230	3,325	2,650	230	2,320	1,553	9,690	2,820	2,500	32,771
June	1,420	1,663	555	792	3,150	3,325	2,650	235	2,420	1,553	9,690	2,820	2,500	32,773
July	1,420	1,713	558	798	3,150	3,195	2,650	435	2,470	1,553	9,840	2,820	2,500	33,102
August	1,420	1,813	558	787	3,200	3,225	2,650	530	2,520	1,553	9,740	2,820	2,500	33,316
September	1,420	1,823	551	786	3,250	3,515	2,650	785	2,470	1,513	9,640	2,820	2,500	33,723
October	1,420	1,848	557	772	3,300	3,465	2,575	950	2,320	1,513	9,740	2,820	2,500	33,780
November	1,420	1,813	563	786	3,300	3,425	2,500	615	2,440	1,503	9,640	2,820	2,500	33,325
December	1,420	1,733	561	778	3,300	3,775	2,500	510	2,440	1,503	9,640	2,820	2,500	33,480
Average	1,420	1,742	556	790	3,239	3,368	2,619	471	2,423	1,540	9,735	2,820	2,500	33,223
2015 January	1,370	1,860	558	R 768	3,300	3,475	2,550	370	2,445	1,514	9,640	2,820	2,500	R 33,170
February	1,370	1,810	553	R 764	3,300	3,325	2,650	360	2,445	1,520	9,740	2,820	2,500	R 33,157
March	1,370	1,760	553	R 765	3,300	3,725	2,650	475	2,370	1,525	9,940	2,820	2,500	R 33,753
April	1,370	1,830	548	R 785	3,300	3,775	2,650	505	2,420	1,531	9,940	2,820	2,500	R 33,974
May	1,370	1,810	543	R 793	3,300	3,925	2,550	430	2,145	1,532	10,140	2,820	2,500	R 33,858
June	1,370	1,860	541	R 798	3,300	4,275	2,550	410	2,195	1,537	10,240	2,820	2,500	R 34,396
July	1,370	1,890	538	R 797	3,300	4,325	2,550	400	2,245	1,537	10,290	2,820	2,500	R 34,562
August	1,370	1,910	537	R 779	3,300	4,225	2,550	360	2,295	1,537	10,290	2,820	2,500	R 34,473
September	1,370	1,840	539	R 798	3,300	4,425	2,550	375	2,295	1,537	10,190	2,820	2,500	R 34,539
October	1,370	1,810	538	R 798	3,300	4,275	2,550	415	2,345	1,537	10,140	2,820	2,500	R 34,398
November	1,370	1,860	537	791	3,300	4,425	2,500	375	2,345	1,537	10,040	2,820	2,500	34,400
December	1,370	1,860	533	794	3,300	4,425	2,450	370	2,270	1,537	9,935	2,820	2,500	34,164
Average	1,370	1,842	543	R 786	3,300	4,054	2,562	404	2,317	1,532	10,046	2,820	2,500	R 34,075
2016 January	1,320	1,845	534	R 818	3,350	4,475	2,500	370	2,245	1,497	R 10,015	2,820	2,400	R 34,189
February	1,320	1,840	540	837	3,550	4,225	2,550	360	2,200	1,517	9,990	2,745	2,400	34,074
2-Month Average	1,320	1,843	537	827	3,447	4,354	2,524	365	2,223	1,507	10,003	2,784	2,400	34,133
2015 2-Month Average	1,370	1,836	556	766	3,300	3,404	2,597	365	2,445	1,517	9,687	2,820	2,500	33,164
2014 2-Month Average	1,420	1,696	550	794	3,265	3,267	2,650	448	2,446	1,563	9,916	2,820	2,500	33,337

<sup>a</sup> 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.

<sup>b</sup> 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, Ecuador rejoined OPEC in 2007 and is thus included in "Total OPEC" for all years; Gabon

left OPEC in 1994 and is thus included in "Total Non-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 <sup>b</sup>	Selected Non-OPEC <sup>a</sup> Producers									Total Non-OPEC <sup>a</sup>	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	NA	2	9,208	24,679	55,679
1975 Average .....	18,934	1,430	1,490	235	705	189	9,523	NA	12	8,375	25,732	52,828
1980 Average .....	17,961	1,435	2,114	595	1,936	486	11,706	NA	1,622	8,597	32,598	59,558
1985 Average .....	9,630	1,471	2,505	887	2,745	773	11,585	NA	2,530	8,971	37,273	53,965
1990 Average .....	15,278	1,553	2,774	873	2,553	1,630	10,975	NA	1,820	7,355	36,537	60,497
1995 Average .....	17,208	1,805	2,990	920	2,711	2,766	--	5,995	2,489	6,560	35,431	62,434
1996 Average .....	17,367	1,837	3,131	922	2,944	3,091	--	5,850	2,568	6,465	36,267	63,818
1997 Average .....	18,095	1,922	3,200	856	3,104	3,142	--	5,920	2,518	6,452	37,012	65,806
1998 Average .....	19,337	1,981	3,198	834	3,160	3,011	--	5,854	2,616	6,252	37,167	67,032
1999 Average .....	18,667	1,907	3,195	852	2,998	3,019	--	6,079	2,684	5,881	37,296	65,967
2000 Average .....	19,897	1,977	3,249	768	3,104	3,222	--	6,479	2,275	5,822	38,154	68,527
2001 Average .....	19,114	2,029	3,300	720	3,218	3,226	--	6,917	2,282	5,801	38,663	68,132
2002 Average .....	17,824	2,171	3,390	715	3,263	3,131	--	7,408	2,292	5,744	39,576	67,290
2003 Average .....	19,154	2,306	3,409	713	3,459	3,042	--	8,132	2,093	5,649	40,328	69,460
2004 Average .....	20,906	2,398	3,485	673	3,476	2,954	--	8,805	1,845	5,441	41,068	72,595
2005 Average .....	21,644	2,369	3,609	623	3,423	2,698	--	9,043	1,649	5,184	40,902	73,866
2006 Average .....	21,377	2,525	3,673	535	3,345	2,491	--	9,247	1,490	5,087	40,851	73,477
2007 Average .....	20,904	2,628	3,736	530	3,143	2,270	--	9,437	1,498	5,077	40,858	73,176
2008 Average .....	22,186	2,579	3,790	566	2,839	2,182	--	9,357	1,391	5,001	40,352	74,049
2009 Average .....	20,754	2,579	3,796	587	2,646	2,067	--	9,495	1,328	5,354	40,877	72,870
2010 Average .....	21,589	2,741	4,078	568	2,621	1,871	--	9,694	1,233	5,476	41,673	74,621
2011 Average .....	22,953	2,901	4,052	551	2,600	1,760	--	9,774	1,026	5,637	41,584	74,715
2012 Average .....	23,233	3,138	4,074	539	2,593	1,612	--	9,922	888	6,476	41,848	76,110
2013 Average .....	22,932	3,325	4,164	524	2,562	1,533	--	10,054	801	7,454	42,946	76,234
2014 January .....	23,417	3,568	4,182	518	2,545	1,629	--	10,131	825	7,998	43,988	77,258
February .....	23,657	3,578	4,215	513	2,541	1,611	--	10,106	929	8,087	44,350	77,762
March .....	23,327	3,685	4,167	513	2,511	1,597	--	10,103	909	8,244	44,334	77,180
April .....	23,292	3,556	4,142	507	2,518	1,613	--	10,083	820	8,568	44,354	77,247
May .....	23,317	3,467	4,189	514	2,530	1,358	--	10,083	869	8,577	44,177	76,948
June .....	23,237	3,548	4,272	510	2,476	1,459	--	10,095	752	8,678	44,540	77,314
July .....	23,258	3,589	4,091	516	2,427	1,588	--	10,003	705	8,754	44,453	77,556
August .....	23,238	3,547	4,129	509	2,455	1,546	--	10,056	468	8,835	44,425	77,742
September .....	23,438	3,595	4,202	517	2,430	1,517	--	10,079	748	8,959	44,854	78,577
October .....	23,463	3,727	4,252	522	2,402	1,615	--	10,176	790	9,129	45,469	79,249
November .....	23,238	3,714	4,319	537	2,401	1,600	--	10,173	798	9,198	45,809	79,134
December .....	23,588	3,780	4,344	527	2,392	1,616	--	10,197	846	9,423	46,455	79,935
Average .....	23,371	3,613	4,208	517	2,469	1,562	--	10,107	787	8,708	44,770	77,993
2015 January .....	23,349	3,885	4,232	508	2,290	1,579	--	10,231	872	9,341	46,197	79,367
February .....	23,405	3,906	4,218	516	2,370	1,589	--	10,181	812	9,451	46,205	79,362
March .....	24,010	3,775	4,256	525	2,356	1,586	--	10,264	867	9,648	46,504	80,257
April .....	24,066	3,463	4,258	503	2,235	1,614	--	10,111	925	9,694	45,845	79,818
May .....	24,317	3,212	4,271	512	2,263	1,555	--	10,270	1,016	9,479	45,526	79,384
June .....	24,772	3,457	4,408	504	2,283	1,596	--	10,166	870	9,315	45,501	79,897
July .....	24,872	3,821	4,263	524	2,308	1,611	--	10,213	839	9,432	45,952	80,513
August .....	24,772	3,922	4,278	523	2,291	1,599	--	10,268	788	9,407	45,999	80,472
September .....	24,872	3,422	4,317	501	2,306	1,581	--	10,209	862	9,453	45,490	80,029
October .....	24,672	3,582	4,259	517	2,314	1,685	--	10,341	912	9,379	45,772	80,169
November .....	24,672	3,819	4,297	494	2,310	1,644	--	10,361	972	9,329	46,230	80,630
December .....	24,517	3,866	4,275	509	2,308	1,682	--	10,407	979	9,246	46,353	80,517
Average .....	24,363	3,677	4,278	511	2,302	1,610	--	10,253	893	9,431	45,964	80,039
2016 January .....	24,707	3,877	4,166	498	2,294	1,667	--	10,485	980	9,180	46,024	80,213
February .....	24,627	3,797	4,133	497	2,247	1,674	--	10,485	996	9,129	45,579	79,653
2-Month Average .....	24,668	3,838	4,150	498	2,271	1,670	--	10,485	988	9,155	45,809	79,942
2015 2-Month Average .....	23,376	3,895	4,225	512	2,328	1,584	--	10,207	844	9,393	46,201	79,364
2014 2-Month Average .....	23,531	3,573	4,198	516	2,543	1,620	--	10,119	875	8,040	44,160	77,497

<sup>a</sup> 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, Ecuador rejoined OPEC in 2007 and is thus included in "Total OPEC" for all years; Gabon left OPEC in 1994 and is thus included in "Total Non-OPEC" for all years.

<sup>b</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).

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

Notes: • Data are for crude oil and lease condensate; they exclude natural gas

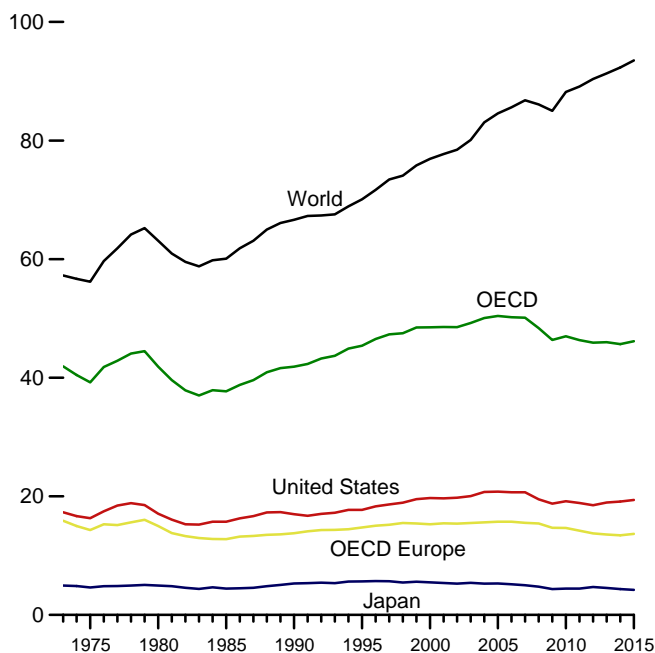
plant liquids. • Monthly data are often preliminary figures and may not average to the annual totals because of rounding or because updates to the preliminary monthly data are not available. • Data for countries may not sum to World totals due to independent rounding. • U.S. geographic coverage is the 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.

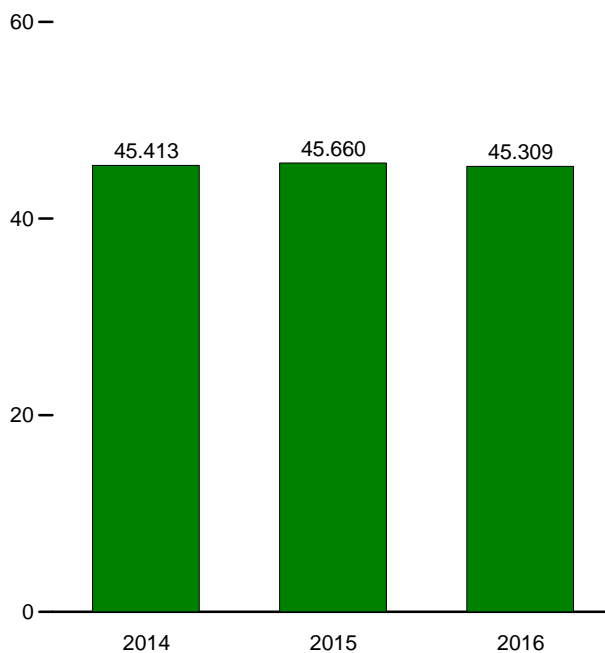
Sources: See end of section.

**Figure 11.2 Petroleum Consumption in OECD Countries**  
(Million Barrels per Day)

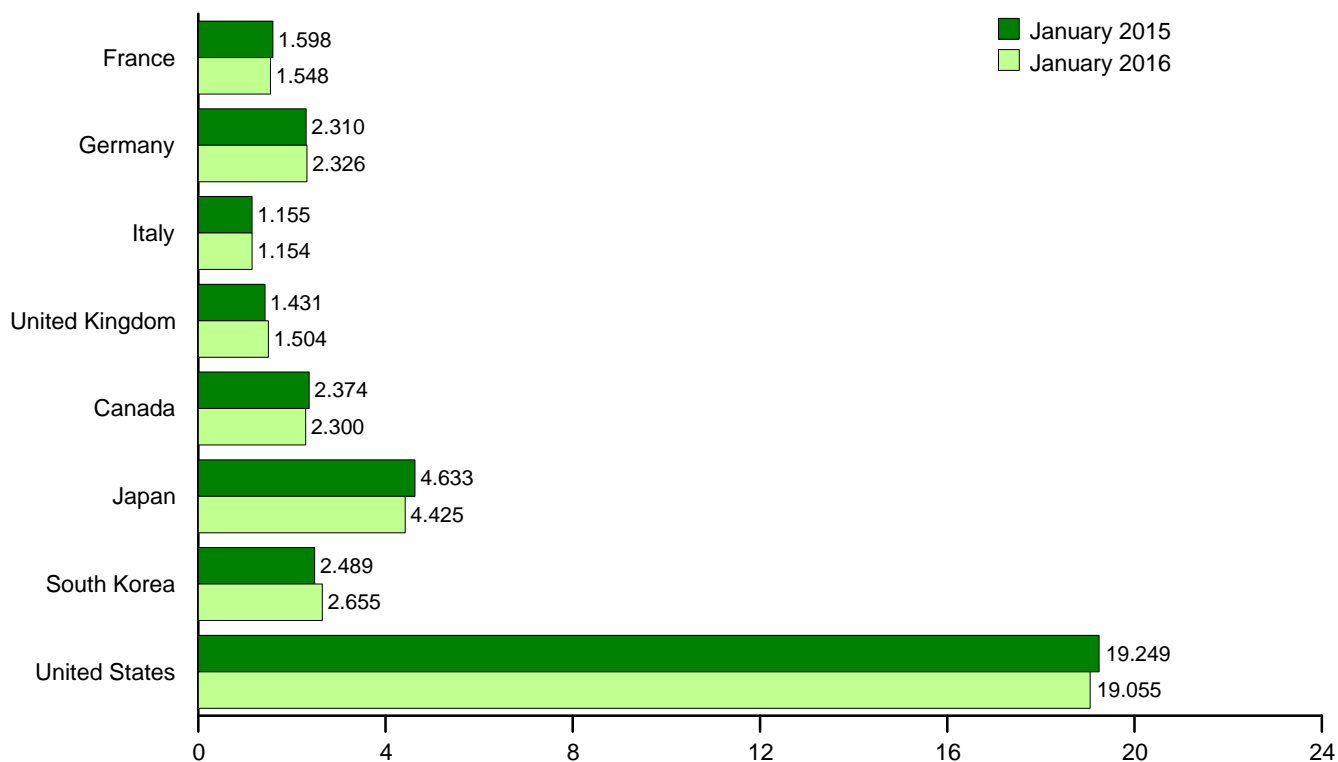
Overview, 1973–2015



OECD Total, January



By Selected OECD Country



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 <sup>a</sup>	Italy	United Kingdom	OECD Europe <sup>b</sup>	Canada	Japan	South Korea	United States	Other OECD <sup>c</sup>	OECD <sup>d</sup>	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	12,770	1,514	4,436	552	15,726	2,699	37,697	60,083
1990 Average .....	1,827	2,682	1,868	1,776	13,763	1,722	5,293	1,048	16,988	3,038	41,852	66,627
1995 Average .....	1,915	2,882	1,942	1,816	14,758	1,799	5,659	2,008	17,725	3,452	45,401	70,094
1996 Average .....	1,943	2,922	1,920	1,852	15,051	1,853	5,704	2,101	18,309	3,509	46,527	71,675
1997 Average .....	1,962	2,917	1,934	1,810	15,193	1,940	5,667	2,255	18,620	3,629	47,305	73,427
1998 Average .....	2,040	2,923	1,943	1,792	15,498	1,931	5,472	1,917	18,917	3,757	47,492	74,080
1999 Average .....	2,034	2,836	1,891	1,811	15,410	2,016	5,606	2,084	19,519	3,842	48,478	75,796
2000 Average .....	2,001	2,767	1,854	1,765	15,277	2,008	5,480	2,135	19,701	3,905	48,506	76,928
2001 Average .....	2,054	2,807	1,835	1,747	15,453	2,029	5,380	2,132	19,649	3,903	48,546	77,732
2002 Average .....	1,991	2,710	1,870	1,739	15,393	2,040	5,287	2,149	19,761	3,891	48,522	78,457
2003 Average .....	2,001	2,679	1,860	1,759	15,515	2,155	5,397	2,175	20,034	3,960	49,235	80,089
2004 Average .....	2,008	2,648	1,829	1,789	15,603	2,233	5,288	2,155	20,731	4,054	50,064	83,063
2005 Average .....	1,990	2,624	1,781	1,819	15,714	2,296	5,298	2,191	20,802	4,114	50,416	84,588
2006 Average .....	1,991	2,636	1,777	1,806	15,718	2,294	5,168	2,180	20,687	4,150	50,197	85,592
2007 Average .....	1,978	2,407	1,729	1,751	15,534	2,389	5,009	2,240	20,680	4,268	50,121	86,788
2008 Average .....	1,940	2,533	1,667	1,731	15,415	2,317	4,770	2,142	19,498	4,227	48,368	86,082
2009 Average .....	1,863	2,434	1,544	1,635	14,686	2,230	4,363	2,188	18,771	4,120	46,358	85,021
2010 Average .....	1,822	2,467	1,544	1,618	14,678	2,326	4,429	2,269	19,180	4,116	46,998	88,205
2011 Average .....	1,779	2,392	1,494	1,577	14,207	2,357	4,439	2,259	18,882	4,200	46,345	89,114
2012 Average .....	1,739	2,389	1,370	1,527	13,743	2,403	4,697	2,322	18,490	4,264	45,919	90,376
2013 Average .....	1,713	2,435	1,260	1,502	13,570	2,374	4,557	2,328	18,961	4,189	45,980	91,333
2014 January .....	1,592	2,291	1,179	R 1,406	R 12,561	2,403	5,042	2,353	19,102	R 3,952	R 45,413	NA
February .....	1,691	2,309	1,223	R 1,611	R 13,276	2,515	5,291	2,374	18,908	R 4,152	R 46,517	NA
March .....	1,625	2,458	1,186	R 1,453	R 13,224	2,327	4,906	2,327	18,464	R 4,085	R 45,334	NA
April .....	1,687	2,411	1,193	R 1,534	R 13,457	2,247	4,125	2,278	18,849	R 4,027	R 44,982	NA
May .....	1,535	2,348	1,231	R 1,446	R 13,141	2,317	3,840	2,328	18,585	R 4,101	R 44,313	NA
June .....	1,681	2,289	1,219	R 1,587	R 13,609	2,398	3,833	2,319	18,890	R 4,029	R 45,078	NA
July .....	1,787	2,485	1,307	R 1,489	R 13,971	2,469	3,982	2,303	19,283	R 4,131	R 46,140	NA
August .....	1,623	2,435	1,177	R 1,561	R 13,545	2,383	3,954	2,370	19,400	R 3,971	R 45,622	NA
September .....	1,728	2,499	1,274	R 1,553	R 14,015	2,477	3,851	2,294	19,246	R 4,018	R 45,901	NA
October .....	1,724	2,506	1,268	R 1,527	R 13,912	2,426	3,984	2,247	19,691	R 4,106	R 46,365	NA
November .....	1,474	2,390	1,166	R 1,526	R 13,026	2,366	4,354	2,360	19,370	R 4,016	R 45,492	NA
December .....	1,691	2,323	1,272	R 1,560	R 13,361	2,423	5,096	2,526	19,457	R 4,154	R 47,017	NA
Average .....	1,653	2,396	1,225	R 1,520	R 13,425	2,395	4,350	2,340	19,106	R 4,062	R 45,678	R 92,318
2015 January .....	R 1,598	2,310	1,155	1,431	R 12,970	2,374	4,633	2,489	19,249	3,943	R 45,660	NA
February .....	R 1,734	2,462	1,262	1,653	R 13,860	2,452	5,158	2,532	19,396	4,178	R 47,576	NA
March .....	R 1,647	2,405	1,251	1,477	R 13,470	2,270	4,617	2,427	19,238	4,057	R 46,080	NA
April .....	1,674	2,385	1,340	1,568	R 13,689	2,211	4,246	2,402	19,037	R 4,023	R 45,607	NA
May .....	1,497	2,190	1,256	1,485	12,975	2,252	3,678	2,224	19,117	R 4,036	R 44,282	NA
June .....	1,727	2,337	1,326	1,558	13,942	2,322	3,760	2,328	19,591	R 4,114	R 46,057	NA
July .....	1,766	2,422	1,422	1,494	R 14,118	2,372	3,880	2,313	19,979	R 4,226	R 46,888	NA
August .....	1,631	2,435	1,272	1,578	13,879	2,388	3,998	2,466	19,814	R 4,075	R 46,620	NA
September .....	1,746	2,532	1,361	1,623	14,312	2,389	3,942	2,379	19,225	R 4,117	R 46,364	NA
October .....	1,620	2,437	1,317	1,528	R 13,767	2,373	3,917	2,431	19,350	R 4,061	R 45,898	NA
November .....	1,452	2,412	1,283	1,578	R 13,395	2,334	4,061	2,546	19,188	R 4,083	R 45,608	NA
December .....	1,673	2,377	1,335	R 1,569	R 13,786	2,299	4,696	2,642	19,544	4,249	R 47,216	NA
Average .....	R 1,646	2,391	1,298	R 1,544	R 13,677	2,336	4,210	2,431	19,395	R 4,096	R 46,146	R 93,514
2016 January .....	1,548	2,326	1,154	1,504	12,896	2,300	4,425	2,655	19,055	3,978	45,309	NA

<sup>a</sup> Data are for unified Germany, i.e., the former East Germany and West Germany.

<sup>b</sup> "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.

<sup>c</sup> "Other OECD" consists of Australia, New Zealand, and the U.S. Territories; for 1984 forward, Mexico; and, for 2000 forward, Chile, Estonia, and Israel.

<sup>d</sup> 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

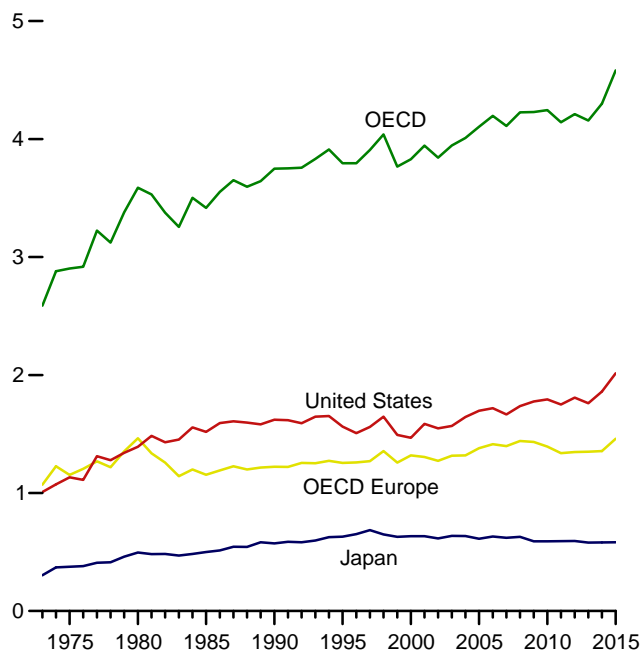
rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

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.

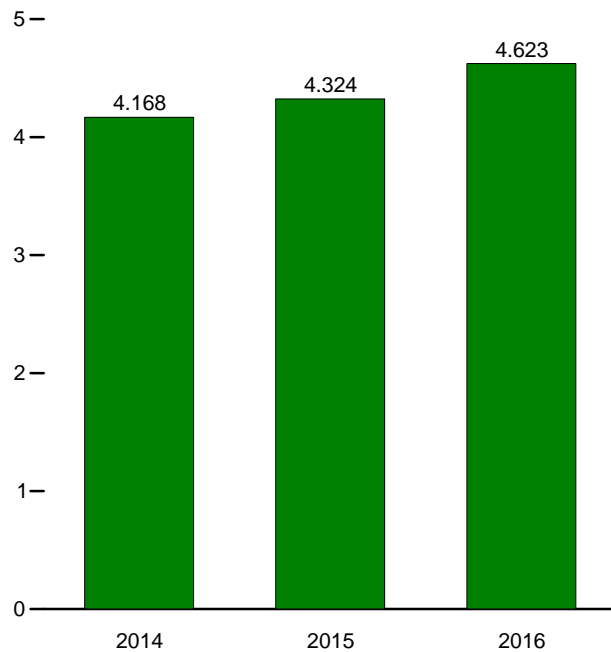
Sources: • **United States:** Table 3.1. • **Chile, East Germany, Former Czechoslovakia, Hungary, Mexico, Poland, South Korea, Non-OECD Countries, U.S. Territories, and World: 1973–1979—**U.S. Energy Information Administration (EIA), International Energy Database. • **Countries Other Than United States: 1980–2008—**EIA, International Energy Statistics (IES). • **OECD Countries, and U.S. Territories: 2009 forward—**EIA, IES. • **World: 2009 forward—**EIA, *Short Term Energy Outlook*, May 2016, Table 3a. • **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)

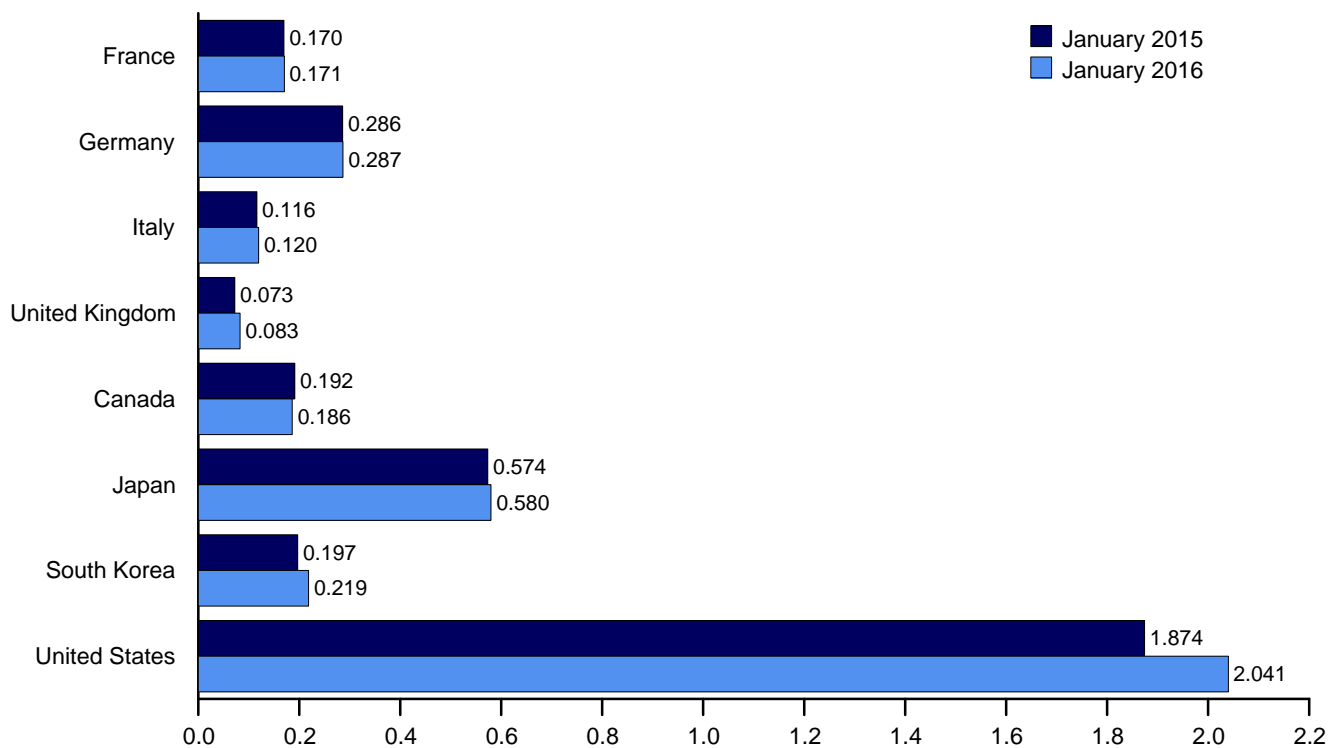
Overview, End of Year, 1973–2015



OECD Stocks, End of Month, January



By Selected OECD Country, End of Month



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 <sup>a</sup>	Italy	United Kingdom	OECD Europe <sup>b</sup>	Canada	Japan	South Korea	United States	Other OECD <sup>c</sup>	OECD <sup>d</sup>
<b>1973 Year</b> .....	201	181	152	156	1,070	140	303	NA	1,008	67	2,588
<b>1975 Year</b> .....	225	187	143	165	1,154	174	375	NA	1,133	67	2,903
<b>1980 Year</b> .....	243	319	170	168	1,464	164	495	NA	1,392	72	3,587
<b>1985 Year</b> .....	139	277	156	131	1,154	112	500	13	1,519	119	3,417
<b>1990 Year</b> .....	143	280	171	103	1,222	143	572	64	1,621	126	3,749
<b>1995 Year</b> .....	155	302	162	101	1,256	132	631	92	1,563	122	3,795
<b>1996 Year</b> .....	154	303	152	103	1,259	127	651	123	1,507	127	3,794
<b>1997 Year</b> .....	161	299	147	100	1,271	144	685	124	1,560	123	3,907
<b>1998 Year</b> .....	169	323	153	104	1,355	139	649	129	1,647	120	4,039
<b>1999 Year</b> .....	160	290	148	101	1,258	141	629	132	1,493	114	3,766
<b>2000 Year</b> .....	170	272	157	100	1,318	143	634	140	1,468	126	3,829
<b>2001 Year</b> .....	165	273	151	113	1,306	154	634	143	1,586	120	3,944
<b>2002 Year</b> .....	170	253	156	104	1,273	155	615	140	1,548	112	3,843
<b>2003 Year</b> .....	179	273	153	100	1,316	165	636	155	1,568	105	3,945
<b>2004 Year</b> .....	177	267	154	101	1,319	154	635	149	1,645	108	4,010
<b>2005 Year</b> .....	185	283	151	95	1,380	168	612	135	1,698	112	4,105
<b>2006 Year</b> .....	182	283	153	103	1,413	169	631	152	1,720	113	4,197
<b>2007 Year</b> .....	180	275	152	92	1,398	163	621	143	1,665	121	4,112
<b>2008 Year</b> .....	179	279	148	93	1,441	162	629	135	1,737	124	4,227
<b>2009 Year</b> .....	175	284	146	89	1,432	157	591	155	1,776	118	4,230
<b>2010 Year</b> .....	168	287	143	83	1,393	184	590	165	1,794	119	4,246
<b>2011 Year</b> .....	165	281	135	80	1,338	178	592	167	1,750	117	4,143
<b>2012 Year</b> .....	162	288	126	80	1,347	174	594	181	1,808	107	4,212
<b>2013 Year</b> .....	167	290	125	78	1,350	170	580	185	1,761	111	4,157
<b>2014 January</b> .....	171	290	128	76	1,370	170	583	184	1,749	112	4,168
<b>February</b> .....	167	295	124	77	1,365	176	580	188	1,751	114	4,174
<b>March</b> .....	167	288	123	76	1,353	174	589	193	1,759	110	4,179
<b>April</b> .....	167	290	122	75	1,349	178	578	187	1,787	112	4,191
<b>May</b> .....	172	292	128	75	<sup>R</sup> 1,372	176	587	191	1,816	115	4,256
<b>June</b> .....	168	290	122	<sup>R</sup> 75	<sup>R</sup> 1,357	179	589	188	1,819	112	4,244
<b>July</b> .....	170	286	120	72	1,351	187	595	190	1,822	114	4,259
<b>August</b> .....	173	286	125	<sup>R</sup> 77	<sup>R</sup> 1,371	187	605	197	1,827	117	<sup>R</sup> 4,304
<b>September</b> .....	171	283	123	<sup>R</sup> 75	<sup>R</sup> 1,365	186	608	197	1,840	116	<sup>R</sup> 4,311
<b>October</b> .....	169	280	117	<sup>R</sup> 73	<sup>R</sup> 1,349	185	609	196	1,834	114	<sup>R</sup> 4,288
<b>November</b> .....	168	282	124	76	1,351	188	597	202	1,844	112	4,295
<b>December</b> .....	<b>168</b>	<b>284</b>	<b>119</b>	<b>78</b>	<sup>R</sup> <b>1,355</b>	<b>193</b>	<b>581</b>	<b>197</b>	<b>1,860</b>	<b>114</b>	<b>4,299</b>
<b>2015 January</b> .....	170	286	116	73	1,373	192	574	197	1,874	114	4,324
<b>February</b> .....	170	288	113	75	1,385	184	568	198	1,878	112	4,324
<b>March</b> .....	173	286	121	76	1,410	183	568	201	1,908	110	4,380
<b>April</b> .....	170	286	124	85	1,413	185	558	210	1,935	110	4,410
<b>May</b> .....	175	290	122	78	1,420	181	582	224	1,958	107	4,472
<b>June</b> .....	170	287	117	77	1,411	176	578	225	1,971	113	4,473
<b>July</b> .....	168	283	116	74	1,402	184	589	223	1,969	113	4,479
<b>August</b> .....	167	284	123	77	1,430	185	594	227	1,991	110	4,538
<b>September</b> .....	167	283	117	79	1,433	182	590	226	2,001	110	4,542
<b>October</b> .....	165	282	118	80	1,437	183	588	223	2,009	107	4,547
<b>November</b> .....	164	283	117	83	1,448	187	582	222	2,022	104	4,564
<b>December</b> .....	<sup>R</sup> <b>168</b>	<b>285</b>	<b>117</b>	<b>81</b>	<sup>R</sup> <b>1,460</b>	<b>188</b>	<b>582</b>	<b>228</b>	<b>2,015</b>	<b>108</b>	<sup>R</sup> <b>4,582</b>
<b>2016 January</b> .....	171	287	120	83	1,486	186	580	219	2,041	111	4,623

<sup>a</sup> 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.

<sup>b</sup> "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.

<sup>c</sup> "Other OECD" consists of Australia, New Zealand, and the U.S. Territories; for 1984 forward, Mexico; and, for 2000 forward, Chile, Estonia, and Israel.

<sup>d</sup> 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 plant 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, May 12, 2016.

# International Petroleum

## 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, May 2016.

### 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.

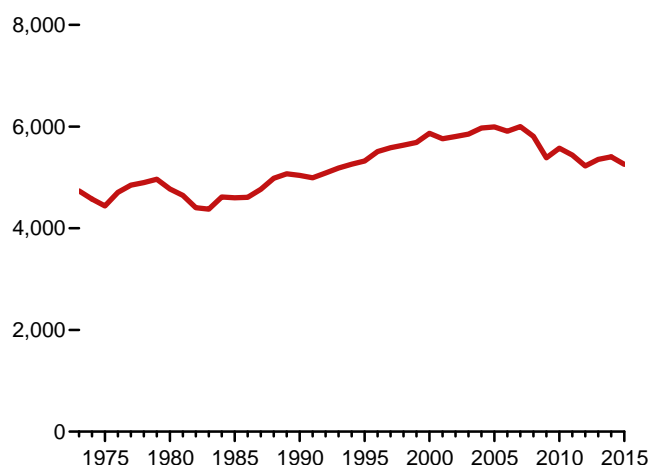
1994 forward: EIA, International Energy Statistics Database, May 2016.

## **12. Environment**

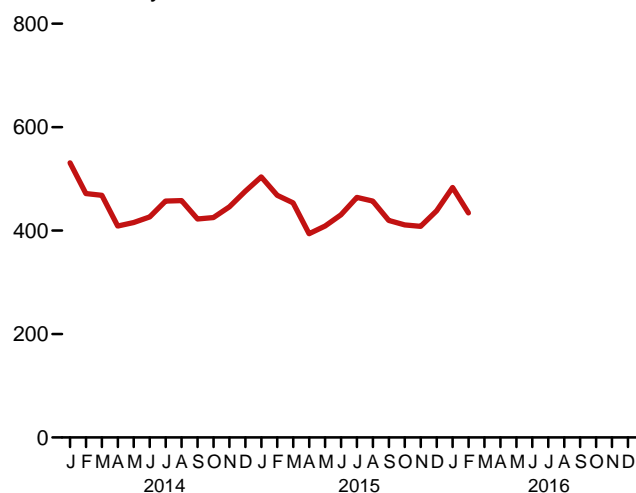
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**Figure 12.1 Carbon Dioxide Emissions From Energy Consumption by Source**  
(Million Metric Tons of Carbon Dioxide)

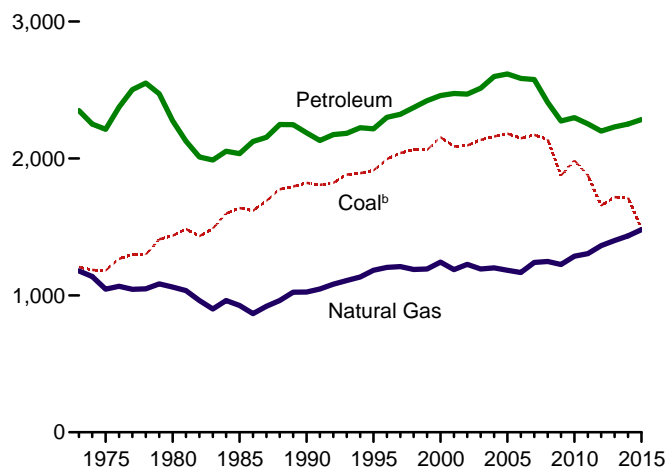
Total,<sup>a</sup> 1973–2015



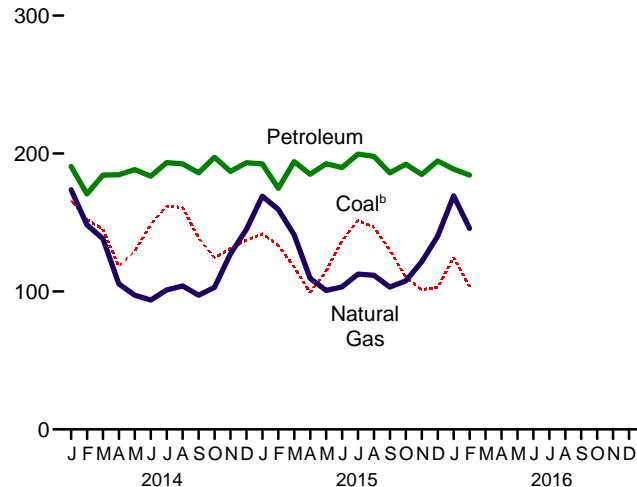
Total,<sup>a</sup> Monthly



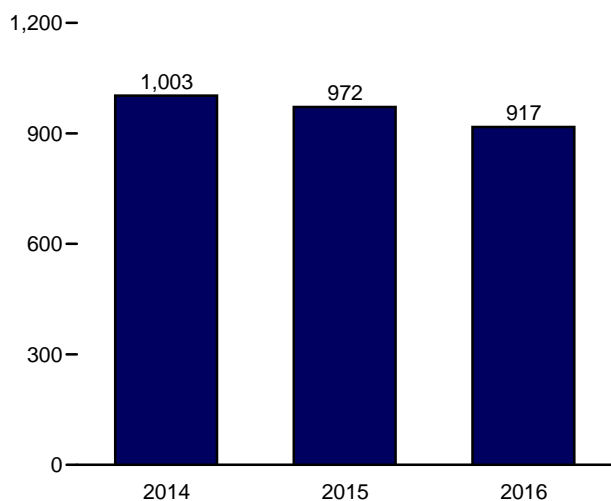
By Major Source, 1973–2015



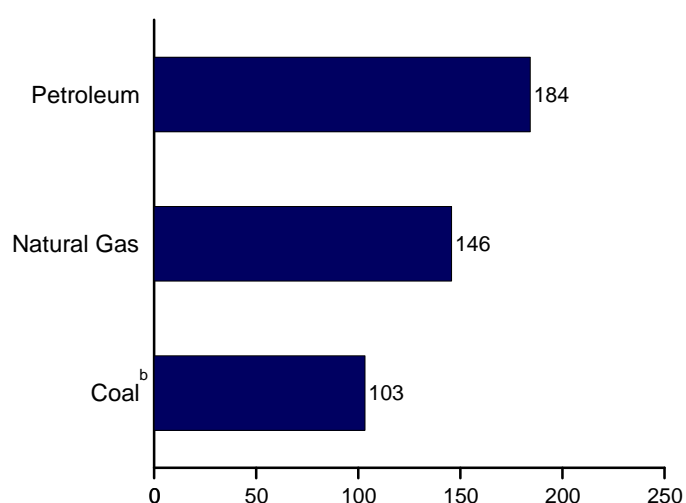
By Major Source, Monthly



Total,<sup>a</sup> January–February



By Major Source, February 2016



<sup>a</sup>Excludes emissions from biomass energy consumption.

<sup>b</sup>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<sup>a</sup>)

	Coal <sup>b</sup>	Natural Gas <sup>c</sup>	Petroleum										Total <sup>h,i</sup>
			Aviation Gasoline	Distillate Fuel Oil <sup>d</sup>	Jet Fuel	Kero-sene	LPG <sup>e</sup>	Lubri-cants	Motor Gasoline <sup>f</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>g</sup>	
1973 Total .....	1,207	1,178	6	480	155	32	92	13	911	54	508	100	4,735
1975 Total .....	1,181	1,046	5	443	146	24	82	11	911	51	443	97	4,439
1980 Total .....	1,436	1,061	4	446	156	24	87	13	900	49	453	142	4,771
1985 Total .....	1,638	926	3	445	178	17	87	12	930	54	216	93	4,600
1990 Total .....	1,821	1,024	3	470	223	6	67	13	988	70	220	127	5,039
1995 Total .....	1,913	1,183	3	498	222	8	80	13	1,045	76	152	121	5,323
1996 Total .....	1,995	1,204	3	524	232	9	86	12	1,063	79	152	139	5,510
1997 Total .....	2,040	1,210	3	534	234	10	87	13	1,075	80	142	145	5,584
1998 Total .....	2,064	1,189	2	537	238	12	82	14	1,107	93	158	128	5,635
1999 Total .....	2,062	1,193	3	555	245	11	90	14	1,128	96	148	133	5,688
2000 Total .....	2,155	1,243	3	579	254	10	97	14	1,136	86	163	118	5,868
2001 Total .....	2,088	1,188	2	597	243	11	88	13	1,152	89	144	135	5,761
2002 Total .....	2,095	1,227	2	586	237	6	91	12	1,183	96	125	130	5,804
2003 Total .....	2,136	1,193	2	610	231	8	87	11	1,187	96	138	142	5,853
2004 Total .....	2,160	1,200	2	632	240	10	87	12	1,210	107	155	144	5,970
2005 Total .....	2,182	1,183	2	639	246	10	84	12	1,209	106	165	143	5,993
2006 Total .....	2,147	1,167	2	645	240	8	80	11	1,217	106	122	152	5,910
2007 Total .....	2,172	1,241	2	647	238	5	83	12	1,211	100	128	150	6,001
2008 Total .....	2,140	1,248	2	610	226	2	79	11	1,143	93	110	132	5,809
2009 Total .....	1,876	1,225	2	559	204	3	78	10	1,129	87	90	112	5,386
2010 Total .....	1,986	1,286	2	585	210	3	79	11	1,112	82	93	122	5,576
2011 Total .....	1,876	1,305	2	599	209	2	78	10	1,078	79	79	117	5,439
2012 Total .....	1,657	1,363	2	574	206	1	81	9	1,071	79	65	113	5,227
2013 Total .....	1,718	1,400	2	581	210	1	88	10	1,087	77	56	119	5,355
2014 January .....	166	174	(s)	56	17	(s)	10	1	86	8	5	8	531
February .....	152	148	(s)	49	16	(s)	7	1	81	5	3	9	472
March .....	145	138	(s)	52	18	(s)	7	1	91	3	3	9	468
April .....	118	105	(s)	50	18	(s)	6	1	90	6	4	10	409
May .....	129	97	(s)	51	17	(s)	5	1	94	7	3	9	415
June .....	R 148	94	(s)	49	19	(s)	6	1	91	6	4	9	426
July .....	162	101	(s)	50	19	(s)	6	1	96	8	4	9	457
August .....	161	104	(s)	50	19	(s)	6	1	97	6	3	9	458
September .....	139	97	(s)	49	18	(s)	6	1	89	7	4	11	422
October .....	R 124	103	(s)	55	18	(s)	7	1	95	7	4	10	425
November .....	131	127	(s)	49	18	(s)	8	1	90	7	5	9	446
December .....	137	145	(s)	54	19	(s)	8	1	93	5	4	9	476
Total .....	R 1,713	1,434	2	614	216	1	83	10	1,095	76	45	110	5,406
2015 January .....	R 142	169	(s)	55	17	(s)	9	1	91	7	4	8	504
February .....	R 133	159	(s)	53	16	(s)	8	1	81	4	3	9	468
March .....	R 118	141	(s)	52	19	(s)	7	1	94	7	4	9	454
April .....	R 99	109	(s)	50	18	(s)	6	1	92	7	2	9	394
May .....	R 115	101	(s)	49	19	(s)	6	1	96	7	3	11	409
June .....	R 137	103	(s)	48	20	(s)	6	1	95	7	2	11	431
July .....	R 151	113	(s)	50	20	(s)	6	1	98	8	5	11	464
August .....	R 147	112	(s)	50	20	(s)	6	1	99	8	5	10	457
September .....	R 130	103	(s)	50	19	(s)	6	1	93	5	4	8	420
October .....	R 110	108	(s)	51	20	(s)	7	1	96	6	3	8	411
November .....	R 101	122	(s)	46	19	(s)	7	1	92	6	5	10	408
December .....	R 103	140	(s)	49	20	(s)	8	1	95	5	5	11	438
Total .....	R 1,486	1,480	1	604	226	1	82	11	R 1,123	77	46	115	5,257
2016 January .....	R 125	169	(s)	49	18	(s)	9	1	90	6	5	9	483
February .....	103	146	(s)	48	18	(s)	8	1	89	6	3	11	434
2-Month Total .....	228	315	(s)	97	36	(s)	17	2	180	13	8	20	917
2015 2-Month Total .....	275	328	(s)	108	33	(s)	17	2	172	11	7	17	972
2014 2-Month Total .....	318	322	(s)	105	33	(s)	17	1	168	13	8	17	1,003

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Includes coal coke net imports.

<sup>c</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>d</sup> Distillate fuel oil, excluding biodiesel.

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

<sup>f</sup> Finished motor gasoline, excluding fuel ethanol.

<sup>g</sup> Aviation gasoline blending components, crude oil, motor gasoline blending components, pentanes plus, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.

<sup>h</sup> Includes electric power sector use of geothermal energy and non-biomass waste. See Table 12.6.

<sup>i</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

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

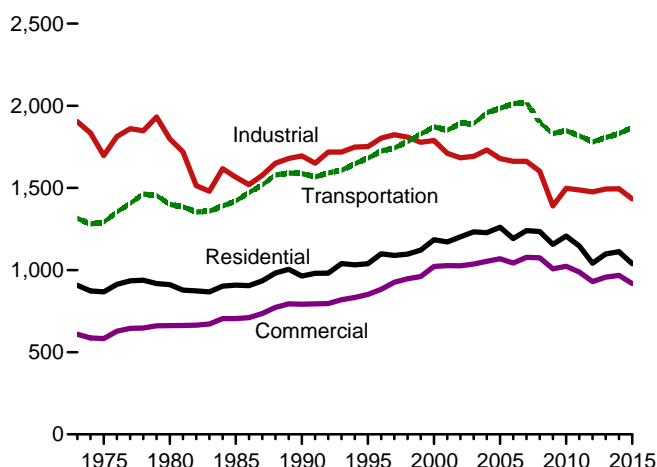
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, including the nonfuel use of fossil fuels. See "Section 12 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of 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.

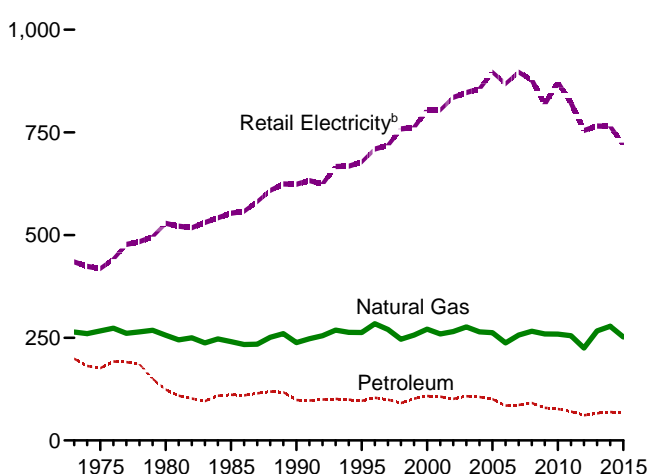
Sources: See end of section.

**Figure 12.2 Carbon Dioxide Emissions From Energy Consumption by Sector**  
(Million Metric Tons of Carbon Dioxide)

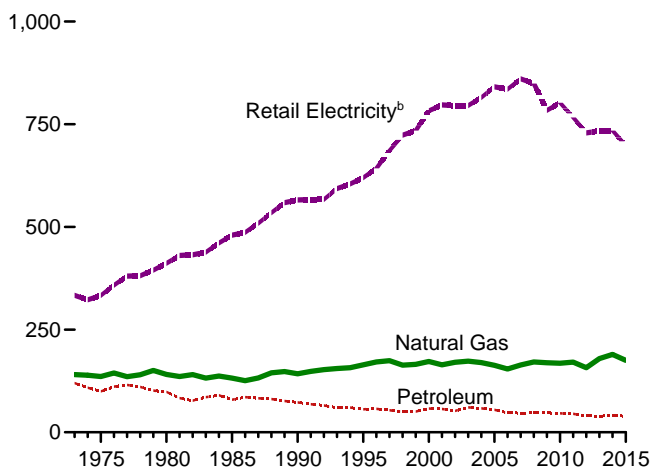
Total<sup>a</sup> by End-Use Sector,<sup>b</sup> 1973–2015



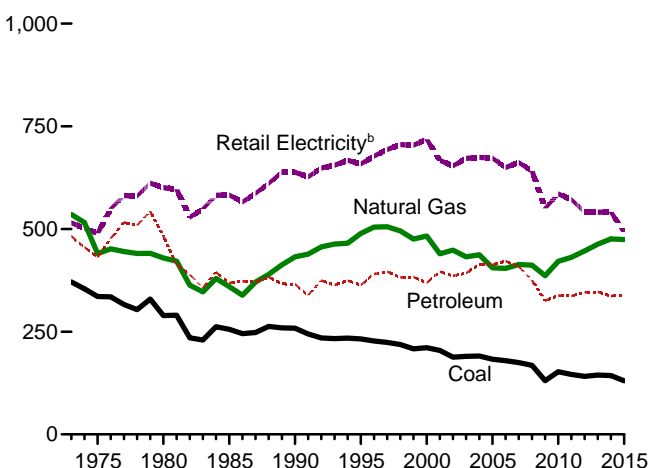
Residential Sector by Major Source, 1973–2015



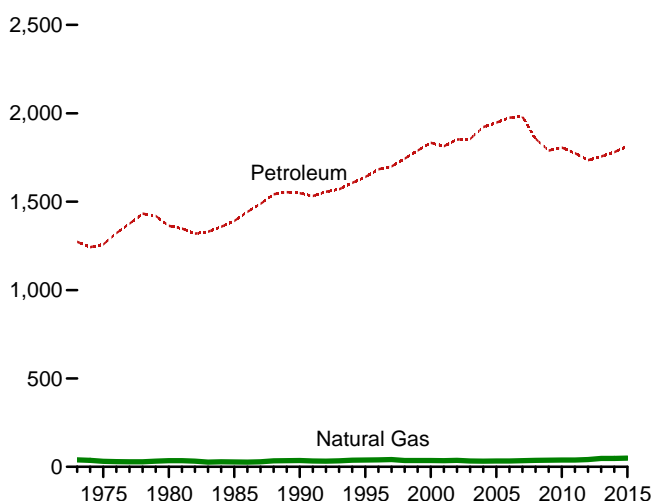
Commercial Sector by Major Source, 1973–2015



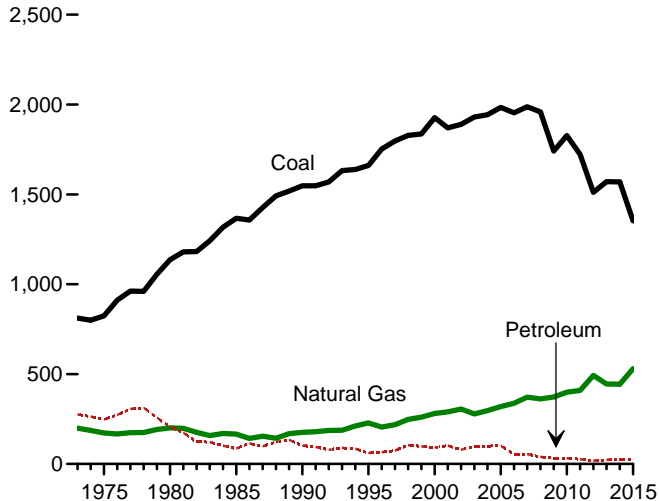
Industrial Sector by Major Source, 1973–2015



Transportation Sector by Major Source, 1973–2015



Electric Power Sector by Major Source, 1973–2015



<sup>a</sup> Excludes emissions from biomass energy consumption.

<sup>b</sup> Emissions from energy consumption in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of

total electricity retail sales.

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<sup>a</sup>)

	Coal	Natural Gas <sup>b</sup>	Petroleum				Retail Electricity <sup>e</sup>	Total <sup>f</sup>
			Distillate Fuel Oil <sup>c</sup>	Kerosene	LPG <sup>d</sup>	Total		
1973 Total .....	9	264	147	16	36	199	435	907
1975 Total .....	6	266	132	12	32	176	419	867
1980 Total .....	3	256	96	8	20	124	529	911
1985 Total .....	4	241	80	11	20	111	553	909
1990 Total .....	3	238	72	5	22	98	624	963
1995 Total .....	2	263	66	5	25	96	678	1,039
1996 Total .....	2	284	68	6	30	104	710	1,099
1997 Total .....	2	270	64	7	29	99	719	1,090
1998 Total .....	1	247	56	8	27	91	759	1,097
1999 Total .....	1	257	60	8	33	102	762	1,122
2000 Total .....	1	271	66	7	35	108	805	1,185
2001 Total .....	1	259	66	7	33	106	805	1,171
2002 Total .....	1	265	63	4	34	101	835	1,203
2003 Total .....	1	276	68	5	34	108	847	1,232
2004 Total .....	1	264	67	6	32	106	856	1,227
2005 Total .....	1	262	62	6	32	101	897	1,261
2006 Total .....	1	237	52	5	28	85	869	1,191
2007 Total .....	1	257	53	3	31	86	897	1,241
2008 Total .....	NA	266	55	2	35	91	877	1,234
2009 Total .....	NA	259	43	2	35	79	819	1,157
2010 Total .....	NA	259	41	2	33	77	872	1,207
2011 Total .....	NA	255	38	1	31	70	821	1,146
2012 Total .....	NA	225	35	1	25	61	755	1,041
2013 Total .....	NA	267	36	1	30	66	766	1,098
2014 January .....	NA	57	4	(s)	3	8	84	148
February .....	NA	47	5	(s)	2	7	72	126
March .....	NA	38	4	(s)	2	7	63	108
April .....	NA	19	2	(s)	2	4	46	70
May .....	NA	11	3	(s)	2	5	51	67
June .....	NA	7	2	(s)	2	5	65	77
July .....	NA	6	2	(s)	2	4	77	88
August .....	NA	6	2	(s)	2	5	77	88
September .....	NA	7	3	(s)	2	5	63	75
October .....	NA	12	3	(s)	2	6	50	68
November .....	NA	30	4	(s)	3	6	54	90
December .....	NA	39	4	(s)	3	7	63	R 109
Total .....	NA	278	39	1	29	69	R 764	R 1,111
2015 January .....	NA	51	5	(s)	3	8	73	132
February .....	NA	49	4	(s)	3	7	R 66	123
March .....	NA	35	4	(s)	2	6	57	98
April .....	NA	18	2	(s)	2	4	42	64
May .....	NA	10	2	(s)	2	5	49	R 63
June .....	NA	7	1	(s)	2	3	66	76
July .....	NA	6	1	(s)	2	4	R 81	91
August .....	NA	6	2	(s)	2	4	78	88
September .....	NA	6	2	(s)	2	4	65	R 74
October .....	NA	11	4	(s)	2	7	49	R 66
November .....	NA	22	5	(s)	3	7	45	74
December .....	NA	32	5	(s)	3	8	R 51	92
Total .....	NA	252	38	1	29	67	R 719	R 1,038
2016 January .....	NA	49	6	(s)	3	9	R 65	123
February .....	NA	39	6	(s)	3	8	52	99
2-Month Total .....	NA	87	12	(s)	6	17	118	222
2015 2-Month Total .....	NA	101	10	(s)	5	15	139	255
2014 2-Month Total .....	NA	103	9	(s)	5	15	156	274

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>c</sup> Distillate fuel oil, excluding biodiesel.

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

<sup>e</sup> Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 12.6.

<sup>f</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

R=Revised. 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<sup>a</sup>)

	Coal	Natural Gas <sup>b</sup>	Petroleum							Retail Electricity <sup>f</sup>	Total <sup>g</sup>
			Distillate Fuel Oil <sup>c</sup>	Kerosene	LPG <sup>d</sup>	Motor Gasoline <sup>e</sup>	Petroleum Coke	Residual Fuel Oil	Total		
1973 Total .....	15	141	47	5	9	6	NA	52	120	334	609
1975 Total .....	14	136	43	4	8	6	NA	39	100	333	583
1980 Total .....	11	141	38	3	6	8	NA	44	98	412	662
1985 Total .....	13	132	46	2	6	7	NA	18	79	480	704
1990 Total .....	12	142	39	1	6	8	0	18	73	566	793
1995 Total .....	11	164	35	2	7	1	(s)	11	56	620	851
1996 Total .....	12	171	35	2	8	2	(s)	11	57	643	883
1997 Total .....	12	174	32	2	8	3	(s)	9	54	686	926
1998 Total .....	9	164	31	2	7	3	(s)	7	50	724	947
1999 Total .....	10	165	32	2	9	2	(s)	6	51	735	960
2000 Total .....	9	173	36	2	9	3	(s)	7	58	783	1,022
2001 Total .....	9	164	37	2	9	3	(s)	6	57	797	1,027
2002 Total .....	9	170	32	1	9	3	(s)	6	52	795	1,026
2003 Total .....	8	173	36	1	10	4	(s)	9	60	796	1,037
2004 Total .....	10	170	34	1	10	3	(s)	10	58	815	1,053
2005 Total .....	9	163	33	2	8	3	(s)	9	55	841	1,069
2006 Total .....	6	154	29	1	8	3	(s)	6	47	835	1,043
2007 Total .....	7	164	28	1	8	4	(s)	6	46	861	1,078
2008 Total .....	8	171	28	(s)	10	3	(s)	6	47	849	1,075
2009 Total .....	7	169	29	(s)	9	4	(s)	6	47	784	1,007
2010 Total .....	7	168	29	(s)	9	3	(s)	5	46	802	1,023
2011 Total .....	6	171	29	(s)	9	3	(s)	4	45	767	988
2012 Total .....	4	157	26	(s)	9	3	(s)	2	40	729	930
2013 Total .....	4	179	25	(s)	10	3	(s)	2	40	734	957
2014 January .....	1	31	3	(s)	1	(s)	(s)	(s)	4	65	R 101
February .....	1	27	3	(s)	1	(s)	(s)	(s)	4	58	90
March .....	(s)	23	3	(s)	1	(s)	(s)	(s)	4	59	86
April .....	(s)	14	1	(s)	1	(s)	(s)	(s)	2	R 51	68
May .....	(s)	10	2	(s)	1	(s)	(s)	(s)	3	58	71
June .....	(s)	8	2	(s)	1	(s)	0	(s)	3	65	76
July .....	(s)	8	1	(s)	1	(s)	(s)	(s)	2	71	81
August .....	(s)	7	1	(s)	1	(s)	(s)	(s)	3	R 71	82
September .....	(s)	8	2	(s)	1	(s)	(s)	(s)	3	63	74
October .....	(s)	11	2	(s)	1	(s)	(s)	(s)	3	58	73
November .....	(s)	20	3	(s)	1	(s)	(s)	(s)	4	56	80
December .....	(s)	23	3	(s)	1	(s)	(s)	(s)	4	57	84
Total .....	4	189	26	(s)	10	4	(s)	1	40	R 734	R 968
2015 January .....	1	29	3	(s)	1	(s)	(s)	(s)	5	59	93
February .....	1	28	3	(s)	1	(s)	(s)	(s)	4	57	90
March .....	1	21	2	(s)	1	(s)	(s)	(s)	4	R 52	78
April .....	(s)	13	1	(s)	1	(s)	(s)	(s)	3	49	R 64
May .....	(s)	9	1	(s)	1	(s)	(s)	(s)	3	R 56	68
June .....	(s)	7	1	(s)	1	(s)	0	(s)	2	R 65	75
July .....	(s)	7	1	(s)	1	(s)	0	(s)	2	72	R 81
August .....	(s)	7	1	(s)	1	(s)	(s)	(s)	2	70	80
September .....	(s)	8	1	(s)	1	(s)	(s)	(s)	2	63	R 73
October .....	(s)	11	3	(s)	1	(s)	(s)	(s)	4	R 55	71
November .....	R (s)	15	3	(s)	1	(s)	(s)	(s)	4	R 50	71
December .....	1	19	3	(s)	1	(s)	(s)	(s)	5	49	74
Total .....	R 5	175	25	(s)	9	4	(s)	1	40	R 698	R 918
2016 January .....	1	28	4	(s)	1	(s)	(s)	(s)	5	55	89
February .....	1	23	4	(s)	1	(s)	(s)	(s)	5	47	75
2-Month Total .....	1	51	8	(s)	2	1	(s)	(s)	10	102	164
2015 2-Month Total .....	1	57	6	(s)	2	1	(s)	(s)	9	115	183
2014 2-Month Total .....	1	58	6	(s)	2	1	(s)	(s)	9	124	192

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>c</sup> Distillate fuel oil, excluding biodiesel.

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

<sup>e</sup> Finished motor gasoline, excluding fuel ethanol.

<sup>f</sup> Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 12.6.

<sup>g</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

R=Revised. 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<sup>a</sup>)

	Coal	Coal Coke Net Imports	Natural Gas <sup>b</sup>	Petroleum									Retail Elec- tricity <sup>g</sup>	Total <sup>h</sup>
				Distillate Fuel Oil <sup>c</sup>	Kero- sene	LPG <sup>d</sup>	Lubri- cants	Motor Gasoline <sup>e</sup>	Petroleum Coke	Residual Fuel Oil	Other <sup>f</sup>	Total		
1973 Total .....	371	-1	536	106	11	44	7	18	52	144	100	483	515	1,904
1975 Total .....	336	2	440	97	9	39	6	16	51	117	97	431	490	1,697
1980 Total .....	289	-4	429	96	13	61	7	11	48	105	142	483	601	1,798
1985 Total .....	256	-2	360	81	3	59	6	15	54	57	93	369	583	1,566
1990 Total .....	258	1	432	84	1	37	7	13	67	31	127	366	638	1,695
1995 Total .....	233	7	489	82	1	47	7	14	67	25	121	364	659	1,751
1996 Total .....	227	3	505	86	1	48	6	14	71	24	139	391	678	1,803
1997 Total .....	224	5	505	88	1	50	7	15	70	21	145	396	694	1,824
1998 Total .....	219	8	495	88	2	47	7	14	80	16	128	382	706	1,809
1999 Total .....	208	7	475	86	1	47	7	11	85	14	133	383	704	1,778
2000 Total .....	211	7	483	87	1	52	7	11	76	17	118	369	719	1,788
2001 Total .....	204	3	440	95	2	45	6	21	79	14	135	396	667	1,711
2002 Total .....	188	7	448	88	1	47	6	22	79	13	130	386	654	1,683
2003 Total .....	190	6	432	85	2	41	6	23	78	16	142	392	672	1,692
2004 Total .....	191	16	437	88	2	44	6	26	85	18	144	413	674	1,731
2005 Total .....	183	5	405	92	3	42	6	25	82	20	143	413	672	1,678
2006 Total .....	179	7	404	91	2	43	6	26	85	16	152	422	650	1,662
2007 Total .....	175	3	414	91	1	43	6	21	83	13	150	408	662	1,661
2008 Total .....	168	5	412	98	(s)	32	6	17	78	13	132	376	642	1,602
2009 Total .....	131	-3	386	78	(s)	33	5	16	73	8	112	325	550	1,390
2010 Total .....	153	-1	421	84	1	35	6	17	68	6	122	338	586	1,497
2011 Total .....	146	1	431	90	(s)	36	5	17	65	6	117	337	572	1,488
2012 Total .....	141	(s)	447	93	(s)	45	5	17	70	3	113	346	541	1,476
2013 Total .....	144	-2	463	92	(s)	46	5	17	65	2	119	347	541	1,493
2014 January .....	12	(s)	44	12	(s)	5	(s)	1	7	(s)	8	34	46	135
February .....	12	(s)	40	8	(s)	4	(s)	1	4	(s)	9	27	42	120
March .....	12	(s)	42	9	(s)	4	1	1	2	(s)	9	25	44	123
April .....	11	(s)	39	9	(s)	3	(s)	1	5	(s)	10	29	40	119
May .....	12	(s)	38	8	(s)	2	(s)	1	6	(s)	9	27	R 45	122
June .....	12	(s)	37	7	(s)	3	(s)	1	5	(s)	9	25	47	121
July .....	12	(s)	38	7	(s)	3	(s)	1	7	(s)	9	27	50	127
August .....	12	(s)	38	6	(s)	3	(s)	1	5	(s)	9	26	51	127
September .....	12	(s)	37	7	(s)	3	1	1	6	(s)	11	29	45	123
October .....	12	(s)	39	10	(s)	3	(s)	1	6	(s)	10	31	44	125
November .....	12	(s)	41	7	(s)	4	(s)	1	6	(s)	9	29	44	R 125
December .....	13	(s)	43	10	(s)	4	(s)	1	4	(s)	9	29	42	125
Total .....	143	-2	476	100	(s)	42	5	14	64	2	110	337	542	R 1,495
2015 January .....	11	(s)	44	11	(s)	5	1	1	6	(s)	8	32	41	R 128
February .....	11	(s)	41	11	(s)	4	(s)	1	3	(s)	9	28	40	R 119
March .....	11	(s)	42	10	(s)	4	1	1	6	(s)	9	30	38	121
April .....	10	(s)	39	9	(s)	3	(s)	1	6	(s)	9	29	R 36	114
May .....	10	(s)	38	7	(s)	2	1	1	6	(s)	11	29	42	119
June .....	11	(s)	37	7	(s)	3	(s)	1	6	(s)	11	29	46	R 122
July .....	11	(s)	38	7	(s)	3	1	1	6	(s)	11	30	48	126
August .....	11	(s)	38	7	(s)	3	(s)	1	6	(s)	10	28	R 46	R 124
September .....	11	(s)	37	9	(s)	3	(s)	1	4	(s)	8	26	R 42	R 116
October .....	12	(s)	39	7	(s)	3	1	1	5	(s)	8	25	40	115
November .....	11	(s)	40	5	(s)	3	(s)	1	5	(s)	10	24	37	112
December .....	11	(s)	42	6	(s)	4	(s)	1	4	(s)	11	27	35	115
Total .....	R 130	-2	474	95	(s)	40	6	15	65	2	115	338	R 492	R 1,433
2016 January .....	11	(s)	45	7	(s)	5	(s)	1	6	(s)	9	29	38	122
February .....	10	(s)	41	7	(s)	4	(s)	1	5	(s)	11	30	34	115
2-Month Total .....	21	(s)	86	14	(s)	9	1	2	11	(s)	20	58	72	237
2015 2-Month Total .....	22	(s)	85	22	(s)	9	1	2	9	(s)	17	61	81	248
2014 2-Month Total .....	23	(s)	84	20	(s)	9	1	2	11	(s)	17	60	88	256

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>c</sup> Distillate fuel oil, excluding biodiesel.

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

<sup>e</sup> Finished motor gasoline, excluding fuel ethanol.

<sup>f</sup> Aviation gasoline blending components, crude oil, motor gasoline blending components, pentanes plus, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.

<sup>g</sup> Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 12.6.

<sup>h</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

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

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, including the nonfuel 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<sup>a</sup>)

		Natural Gas <sup>b</sup>	Petroleum							Retail Elec- tricity <sup>f</sup>	Total <sup>g</sup>	
			Aviation Gasoline	Distillate Fuel Oil <sup>c</sup>	Jet Fuel	LPG <sup>d</sup>	Lubri- cants	Motor Gasoline <sup>e</sup>	Residual Fuel Oil			Total
1973 Total .....	(s)	39	6	163	152	3	6	886	57	1,273	2	1,315
1975 Total .....	(s)	32	5	155	145	3	6	889	56	1,258	2	1,292
1980 Total .....	(h)	34	4	204	155	1	6	881	110	1,363	2	1,400
1985 Total .....	(h)	28	3	232	178	2	6	908	62	1,391	3	1,421
1990 Total .....	(h)	36	3	268	223	1	7	967	80	1,548	3	1,588
1995 Total .....	(h)	38	3	307	222	1	6	1,029	72	1,640	3	1,681
1996 Total .....	(h)	39	3	327	232	1	6	1,047	67	1,683	3	1,725
1997 Total .....	(h)	41	3	341	234	1	6	1,057	56	1,700	3	1,744
1998 Total .....	(h)	35	2	352	238	1	7	1,090	53	1,743	3	1,782
1999 Total .....	(h)	36	3	365	245	1	7	1,115	52	1,789	3	1,828
2000 Total .....	(h)	36	3	377	254	1	7	1,122	70	1,833	4	1,873
2001 Total .....	(h)	35	2	387	243	1	6	1,128	46	1,813	4	1,852
2002 Total .....	(h)	37	2	394	237	1	6	1,158	53	1,852	4	1,892
2003 Total .....	(h)	33	2	408	231	1	6	1,161	45	1,854	5	1,892
2004 Total .....	(h)	32	2	433	240	1	6	1,181	58	1,922	5	1,959
2005 Total .....	(h)	33	2	444	246	2	6	1,182	66	1,948	5	1,986
2006 Total .....	(h)	33	2	467	240	2	5	1,188	71	1,976	5	2,014
2007 Total .....	(h)	35	2	469	238	1	6	1,186	78	1,981	5	2,021
2008 Total .....	(h)	37	2	424	226	3	5	1,124	73	1,856	5	1,898
2009 Total .....	(h)	38	2	405	204	2	5	1,109	62	1,789	5	1,832
2010 Total .....	(h)	38	2	426	210	2	5	1,091	70	1,806	5	1,849
2011 Total .....	(h)	39	2	437	209	2	5	1,058	61	1,774	4	1,818
2012 Total .....	(h)	41	2	416	206	2	5	1,051	53	1,735	4	1,780
2013 Total .....	(h)	47	2	424	210	3	5	1,066	46	1,756	4	1,807
2014 January .....	(h)	6	(s)	35	17	(s)	(s)	85	2	140	(s)	146
February .....	(h)	5	(s)	32	16	(s)	(s)	80	2	130	(s)	135
March .....	(h)	5	(s)	36	18	(s)	(s)	89	2	146	(s)	151
April .....	(h)	4	(s)	37	18	(s)	(s)	89	3	148	(s)	151
May .....	(h)	3	(s)	38	17	(s)	(s)	93	3	152	(s)	155
June .....	(h)	3	(s)	38	19	(s)	(s)	90	3	150	(s)	153
July .....	(h)	3	(s)	40	19	(s)	(s)	95	3	158	(s)	162
August .....	(h)	3	(s)	40	19	(s)	(s)	96	3	158	(s)	161
September .....	(h)	3	(s)	37	18	(s)	(s)	88	3	146	(s)	150
October .....	(h)	3	(s)	39	18	(s)	(s)	94	3	155	(s)	159
November .....	(h)	4	(s)	35	18	(s)	(s)	88	4	146	(s)	151
December .....	(h)	5	(s)	37	19	(s)	(s)	92	3	152	(s)	157
Total .....	(h)	48	2	443	216	3	5	1,077	35	1,780	4	1,832
2015 January .....	(h)	6	(s)	35	17	(s)	1	89	3	145	(s)	151
February .....	(h)	5	(s)	33	16	(s)	(s)	80	(s) 3	130	(s)	136
March .....	(h)	5	(s)	37	19	(s)	(s)	93	3	153	(s)	158
April .....	(h)	4	(s)	37	18	(s)	(s)	91	2	148	(s)	152
May .....	(h)	3	(s)	38	19	(s)	1	95	3	155	(s)	159
June .....	(h)	3	(s)	38	20	(s)	(s)	93	2	154	(s)	157
July .....	(h)	4	(s)	40	20	(s)	1	97	4	162	(s)	166
August .....	(h)	4	(s)	40	20	(s)	(s)	97	4	161	(s)	165
September .....	(h)	3	(s)	38	19	(s)	(s)	92	3	152	(s)	156
October .....	(h)	4	(s)	37	20	(s)	1	95	3	155	(s)	159
November .....	(h)	4	(s)	34	19	(s)	(s)	90	4	147	(s)	152
December .....	(h)	5	(s)	35	20	(s)	(s)	94	4	153	(s)	158
Total .....	(h)	49	1	440	226	3	5	R 1,104	36	R 1,815	4	R 1,868
2016 January .....	(h)	6	(s)	32	18	(s)	(s)	89	4	144	(s)	150
February .....	(h)	5	(s)	31	18	(s)	(s)	88	2	140	(s)	145
2-Month Total .....	(h)	10	(s)	63	36	1	1	177	6	284	1	295
2015 2-Month Total .....	(h)	11	(s)	68	33	1	1	169	3	275	1	287
2014 2-Month Total .....	(h)	11	(s)	66	33	1	1	165	5	270	1	281

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>c</sup> Distillate fuel oil, excluding biodiesel.

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

<sup>e</sup> Finished motor gasoline, excluding fuel ethanol.

<sup>f</sup> Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 12.6.

<sup>g</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

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

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

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, including the nonfuel 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<sup>a</sup>)

	Coal	Natural Gas <sup>b</sup>	Petroleum				Geo-thermal	Non-Biomass Waste <sup>d</sup>	Total <sup>e</sup>
			Distillate Fuel Oil <sup>c</sup>	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)	5	2,265
2011 Total .....	1,723	409	5	14	7	26	(s)	6	2,165
2012 Total .....	1,511	493	4	9	6	19	(s)	6	2,029
2013 Total .....	1,571	444	4	13	6	23	(s)	6	2,045
2014 January .....	154	36	2	1	2	5	(s)	1	196
February .....	140	30	1	1	1	2	(s)	(s)	173
March .....	133	31	1	1	1	3	(s)	1	R 166
April .....	107	30	(s)	1	(s)	1	(s)	1	139
May .....	118	35	(s)	1	(s)	2	(s)	1	155
June .....	137	39	(s)	1	(s)	2	(s)	1	178
July .....	150	46	(s)	1	(s)	2	(s)	1	198
August .....	149	49	(s)	1	(s)	2	(s)	1	200
September .....	127	42	(s)	1	(s)	2	(s)	1	171
October .....	112	38	(s)	1	(s)	1	(s)	1	R 152
November .....	119	33	(s)	1	(s)	2	(s)	1	154
December .....	125	35	(s)	1	(s)	2	(s)	1	162
Total .....	R 1,569	444	6	12	7	26	(s)	6	R 2,045
2015 January .....	R 130	39	1	1	1	3	(s)	1	R 172
February .....	R 122	36	2	1	2	5	(s)	(s)	R 163
March .....	R 106	39	(s)	1	(s)	2	(s)	1	R 147
April .....	89	37	(s)	1	(s)	2	(s)	1	R 127
May .....	R 104	40	(s)	1	(s)	2	(s)	1	R 147
June .....	R 126	49	(s)	1	(s)	2	(s)	1	R 177
July .....	R 140	58	(s)	1	1	2	(s)	1	R 201
August .....	R 135	57	(s)	1	1	2	(s)	1	R 194
September .....	R 119	49	(s)	1	(s)	2	(s)	1	R 170
October .....	R 98	44	(s)	1	(s)	2	(s)	1	R 144
November .....	R 90	40	(s)	1	(s)	2	(s)	1	R 133
December .....	92	42	(s)	1	(s)	2	(s)	1	R 136
Total .....	R 1,353	530	5	11	7	24	(s)	6	R 1,914
2016 January .....	R 113	43	1	1	1	2	(s)	1	R 159
February .....	92	38	(s)	1	1	2	(s)	(s)	133
2-Month Total .....	206	80	1	2	1	4	(s)	1	291
2015 2-Month Total .....	253	75	2	2	3	7	(s)	1	336
2014 2-Month Total .....	294	66	3	2	3	8	(s)	1	369

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>b</sup> Natural gas, excluding supplemental gaseous fuels.

<sup>c</sup> Distillate fuel oil, excluding biodiesel.

<sup>d</sup> 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. Through 2009, also includes municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.

<sup>e</sup> Excludes emissions from biomass energy consumption. See Table 12.7.

R=Revised. 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<sup>a</sup>)

	By Source					By Sector					
	Wood <sup>b</sup>	Biomass Waste <sup>c</sup>	Fuel Ethanol <sup>d</sup>	Bio-diesel	Total	Residential	Commercial <sup>e</sup>	Industrial <sup>f</sup>	Transportation	Electric Power <sup>g</sup>	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 .....	181	41	62	3	287	47	10	125	64	41	287
2010 Total .....	186	42	73	2	303	41	10	136	74	42	303
2011 Total .....	189	42	73	8	312	42	11	139	80	40	312
2012 Total .....	189	42	73	8	312	39	10	141	80	42	312
2013 Total .....	204	45	75	13	337	54	11	141	87	43	337
2014 January .....	18	4	6	1	29	5	1	12	7	4	29
February .....	16	4	6	1	26	4	1	11	6	4	26
March .....	18	4	6	1	29	5	1	12	7	4	29
April .....	17	4	6	1	28	4	1	12	7	4	28
May .....	17	4	7	1	29	5	1	12	7	4	29
June .....	17	4	6	1	29	4	1	12	7	4	29
July .....	18	4	7	1	30	5	1	12	8	4	30
August .....	18	4	7	1	30	5	1	12	8	4	30
September .....	17	4	6	1	28	4	1	11	7	4	28
October .....	17	4	7	1	29	5	1	12	8	4	29
November .....	17	4	6	1	29	4	1	12	7	4	29
December .....	18	4	7	1	30	5	1	12	8	4	30
Total .....	209	47	76	13	345	54	11	143	88	49	345
2015 January .....	17	4	6	1	28	3	1	12	7	4	28
February .....	15	4	6	1	25	3	1	11	7	4	25
March .....	16	4	7	1	27	3	1	12	7	4	27
April .....	15	4	6	1	26	3	1	12	7	4	26
May .....	16	4	7	1	28	3	1	12	8	4	28
June .....	16	4	7	2	28	3	1	12	8	4	28
July .....	17	4	7	1	29	3	1	12	8	4	29
August .....	16	4	7	1	29	3	1	12	8	4	29
September .....	16	4	7	1	27	3	1	11	8	4	27
October .....	16	4	7	1	28	3	1	12	8	4	28
November .....	16	4	7	1	27	3	1	11	7	4	27
December .....	16	4	7	1	28	3	1	12	8	4	28
Total .....	191	47	79	14	331	40	11	140	91	48	331
2016 January .....	16	4	6	1	27	3	1	12	7	4	27
February .....	15	4	6	1	26	3	1	11	7	4	26
2-Month Total .....	31	8	13	2	53	6	2	23	15	8	53
2015 2-Month Total .....	32	8	12	1	53	7	2	23	13	8	53
2014 2-Month Total .....	34	8	12	1	55	9	2	23	13	8	55

<sup>a</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

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

<sup>c</sup> Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.

<sup>d</sup> Fuel ethanol minus denaturant.

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

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

<sup>g</sup> 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.

## Environment

**Note 1. Emissions of Carbon Dioxide and Other Greenhouse Gases.** Greenhouse gases are those gases—such as water vapor, carbon dioxide (CO<sub>2</sub>), 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. CO<sub>2</sub> emissions. The vast majority of CO<sub>2</sub> emissions come from fossil fuel combustion, with smaller amounts from the nonfuel use of fossil fuels, as well as from electricity generation using geothermal energy and non-biomass waste. Other sources of CO<sub>2</sub> 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. CO<sub>2</sub> emissions from energy consumption, including the nonfuel use of fossil fuels (excluded are estimates for CO<sub>2</sub> emissions from biomass energy consumption, which appear in MER Table 12.7).

For annual U.S. estimates for emissions of CO<sub>2</sub> 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/](http://www.eia.gov/environment/emissions/ghg_report/).

**Note 2. Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion.** Carbon dioxide (CO<sub>2</sub>) emissions from the combustion of biomass to produce energy are excluded from the energy-related CO<sub>2</sub> 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 CO<sub>2</sub> emissions from biomass can potentially lead to confusion in accounting for and understanding the flow of CO<sub>2</sub> emissions within energy and non-energy systems. In recognition of this issue, reporting of CO<sub>2</sub> emissions from biomass combustion alongside other energy-related CO<sub>2</sub> 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 CO<sub>2</sub> emissions from biomass and energy-related CO<sub>2</sub> 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, jet fuel, kerosene, liquefied petroleum gases (LPG), 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 LPG (ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane/isobutylene) and "other petroleum" (aviation gasoline blending components, crude oil, motor gasoline blending components, naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, pentanes plus, 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, a non-fossil renewable fuel. To remove the biodiesel portion from distillate fuel oil, data in thousand barrels per day for refinery and blender net inputs of renewable diesel fuel (from the PSA/PSM) 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.

**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., pentanes plus—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 Nonfuel Use

The following fuels have industrial nonfuel uses as chemical feedstocks and other products: coal, natural gas, asphalt and road oil, distillate fuel oil, liquefied petroleum gases (ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane/isobutylene), lubricants (which have industrial and transportation nonfuel uses), naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, pentanes plus, petroleum coke, residual fuel oil, special naphthas, still gas, waxes, and miscellaneous petroleum products. In the nonfuel 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 nonfuel 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 [http://www.eia.gov/oiaf/1605/ggrrpt/documentation/pdf/0638\(2008\).pdf](http://www.eia.gov/oiaf/1605/ggrrpt/documentation/pdf/0638(2008).pdf).

To obtain monthly estimates of nonfuel use and associated carbon sequestration, monthly patterns for industrial consumption and product supplied data series are used. For coal nonfuel 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.

## Step 4. Determine Carbon Dioxide Emissions From Energy Consumption

Carbon dioxide (CO<sub>2</sub>) 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 nonfuel use in Step 3) by the CO<sub>2</sub> emissions factors at [http://www.eia.gov/oiaf/1605/ggrrpt/excel/CO2\\_coeffs\\_09\\_v2.xls](http://www.eia.gov/oiaf/1605/ggrrpt/excel/CO2_coeffs_09_v2.xls). Beginning in 2010, the 2009 factors are used.

**Coal**—CO<sub>2</sub> 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**—CO<sub>2</sub> emissions for coal coke net imports are calculated.

**Natural Gas**—CO<sub>2</sub> 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**—CO<sub>2</sub> emissions are calculated for each petroleum product. Total petroleum emissions are the sum of the product emissions. Total LPG emissions are the sum of the emissions for the component products (ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane/isobutylene); residential, commercial, and transportation sector LPG 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 LPG emissions are estimated as total LPG emissions minus emissions by the other sectors.

**Geothermal and Non-Biomass Waste**—Annual CO<sub>2</sub> 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—CO<sub>2</sub> 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 CO<sub>2</sub> per quadrillion Btu, are used: wood—93.80; biomass waste—90.70; fuel ethanol—68.44; and biodiesel—73.84. For 1973–1988, the biomass portion

of waste in MER Tables 10.2a–10.2c is estimated as 67%; for 1989–2000, the biomass portion of waste is estimated as 67% in 1989 to 58% in 2000, based on the biogenic shares of total municipal solid waste shown in EIA’s “Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy,” Table 1 at <http://www.eia.gov/totalenergy/data/monthly/pdf/historical/msw.pdf>.

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# Appendix A

## British Thermal Unit Conversion Factors

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	<sup>a</sup> 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	<sup>b</sup> 5.359
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	<sup>c</sup> 6.000
Hydrogen	<sup>a</sup> 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			

<sup>a</sup> Per residual fuel oil equivalent barrel (6.287 million Btu per barrel).

<sup>b</sup> 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.”

<sup>c</sup> Per fuel oil equivalent barrel (6.000 million Btu per barrel).

Note: The values in this table are for gross heat contents. See “Heat Content” in Glossary.

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

Sources: See “Thermal Conversion Factor Source Documentation,” which follows Table A6.

**Table A2. Approximate Heat Content of Petroleum Production, Imports, and Exports**  
(Million Btu per Barrel)

	Production		Imports				Exports			
			Crude Oil <sup>a</sup>	Petroleum Products		Total	Crude Oil <sup>a</sup>	Petroleum Products		Total
	Crude Oil <sup>a</sup>	Natural Gas Plant Liquids		Motor Gasoline <sup>b</sup>	Total Products			Motor Gasoline <sup>c</sup>	Total Products	
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 <sup>P</sup> .....	<sup>R</sup> 5.729	3.745	<sup>R</sup> 6.077	5.222	<sup>R</sup> 5.511	<sup>R</sup> 5.954	<sup>R</sup> 5.694	5.218	<sup>R</sup> 5.280	<sup>R</sup> 5.320
2016 <sup>E</sup> .....	<sup>R</sup> 5.729	3.745	<sup>R</sup> 6.077	5.222	<sup>R</sup> 5.511	<sup>R</sup> 5.954	<sup>R</sup> 5.694	5.218	<sup>R</sup> 5.280	<sup>R</sup> 5.320

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

<sup>b</sup> Excludes fuel ethanol, methyl tertiary butyl ether (MTBE), and other oxygenates blended into motor gasoline.

<sup>c</sup> 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.

R=Revised. 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 <sup>a</sup> Consumption by Sector						Distillate Fuel Oil Consumption <sup>f</sup>	Liquefied Petroleum Gases Consumption <sup>g</sup>	Motor Gasoline (Finished) Consumption <sup>h</sup>	Petroleum Coke Consumption <sup>i</sup>	Fuel Ethanol <sup>j</sup>	Fuel Ethanol Feed-stock Factor <sup>k</sup>
	Residential	Commercial <sup>b</sup>	Industrial <sup>b</sup>	Transportation <sup>b,c</sup>	Electric Power <sup>d,e</sup>	Total <sup>b,c</sup>						
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	<sup>g</sup> 3.779	5.253	6.024	NA	NA
1975 .....	5.253	5.649	5.513	5.392	6.250	5.494	5.825	3.715	5.253	6.024	NA	NA
1980 .....	5.321	5.751	5.366	5.441	6.254	5.479	5.825	3.674	5.253	6.024	3.563	6.586
1981 .....	5.283	5.693	5.299	5.433	6.258	5.448	5.825	3.643	5.253	6.024	3.563	6.562
1982 .....	5.266	5.698	5.247	5.423	6.258	5.415	5.825	3.615	5.253	6.024	3.563	6.539
1983 .....	5.140	5.591	5.254	5.416	6.255	5.406	5.825	3.614	5.253	6.024	3.563	6.515
1984 .....	5.307	5.657	5.207	5.418	6.251	5.395	5.825	3.599	5.253	6.024	3.563	6.492
1985 .....	5.263	5.598	5.199	5.423	6.247	5.387	5.825	3.603	5.253	6.024	3.563	6.469
1986 .....	5.268	5.632	5.269	5.426	6.257	5.418	5.825	3.640	5.253	6.024	3.563	6.446
1987 .....	5.239	5.594	5.233	5.429	6.249	5.403	5.825	3.659	5.253	6.024	3.563	6.423
1988 .....	5.257	5.597	5.228	5.433	6.250	5.410	5.825	3.652	5.253	6.024	3.563	6.400
1989 .....	5.194	5.549	5.219	5.438	<sup>d</sup> 6.240	5.410	5.825	3.683	5.253	6.024	3.563	6.377
1990 .....	5.145	5.553	5.253	5.442	6.244	5.411	5.825	3.625	5.253	6.024	3.563	6.355
1991 .....	5.094	5.528	5.167	5.441	6.246	5.384	5.825	3.614	5.253	6.024	3.563	6.332
1992 .....	5.124	5.513	5.168	5.443	6.238	5.378	5.825	3.624	5.253	6.024	3.563	6.309
1993 .....	5.102	<sup>b</sup> 5.504	<sup>b</sup> 5.177	<sup>b</sup> 5.422	6.230	<sup>b</sup> 5.370	5.825	3.606	<sup>h</sup> 5.232	6.024	3.563	6.287
1994 .....	5.095	5.512	5.149	5.424	6.213	5.360	<sup>f</sup> 5.820	3.635	5.231	6.024	3.563	6.264
1995 .....	5.060	5.475	5.121	5.418	6.187	5.342	5.820	3.623	5.218	6.024	3.563	6.242
1996 .....	4.995	5.430	5.114	5.420	6.194	5.336	5.820	3.613	5.218	6.024	3.563	6.220
1997 .....	4.986	5.388	5.119	5.416	6.198	5.336	5.820	3.616	5.215	6.024	3.563	6.198
1998 .....	4.972	5.362	5.136	5.414	6.210	5.349	5.819	3.614	5.215	6.024	3.563	6.176
1999 .....	4.899	5.288	5.091	5.413	6.204	5.328	5.819	3.616	5.213	6.024	3.563	6.167
2000 .....	4.905	5.313	5.056	5.423	6.188	5.326	5.819	3.607	5.214	6.024	3.563	6.159
2001 .....	4.934	5.322	5.141	5.413	6.199	5.346	5.819	3.614	5.214	6.024	3.563	6.151
2002 .....	4.883	5.290	5.092	5.411	6.172	5.324	5.819	3.613	5.211	6.024	3.563	6.143
2003 .....	4.918	5.312	5.143	5.404	6.182	5.338	5.819	3.629	5.203	6.024	3.563	6.106
2004 .....	4.949	5.323	5.144	5.410	6.134	5.341	5.818	3.618	5.201	<sup>i</sup> 5.982	3.563	6.069
2005 .....	4.913	5.359	5.179	5.412	6.126	5.353	5.818	3.620	5.198	5.982	3.563	6.032
2006 .....	4.883	5.296	5.159	5.409	6.038	5.336	5.803	3.605	5.191	5.987	3.563	5.995
2007 .....	4.831	5.271	5.122	5.385	6.064	5.309	5.785	3.591	5.155	5.996	3.563	5.959
2008 .....	4.769	5.156	5.147	5.355	6.013	5.287	5.780	3.600	5.126	5.992	3.563	5.922
2009 .....	4.661	5.216	5.014	<sup>c</sup> 5.328	5.987	<sup>c</sup> 5.236	5.781	3.558	5.101	6.017	3.563	5.901
2010 .....	4.660	5.193	4.983	5.321	5.956	5.222	5.778	3.557	5.078	6.059	3.561	5.880
2011 .....	4.660	5.180	4.957	5.317	5.900	5.212	5.776	3.528	5.068	6.077	3.560	5.859
2012 .....	4.703	5.117	4.909	5.305	5.925	5.191	5.774	3.534	5.063	6.084	3.560	5.838
2013 .....	4.637	5.045	4.871	5.301	5.892	5.174	5.774	3.556	5.062	6.089	3.559	5.817
2014 .....	4.688	5.039	4.868	5.299	5.906	5.178	5.773	3.534	5.060	6.100	3.558	5.797
2015 .....	<sup>E</sup> 4.673	<sup>RE</sup> 5.027	<sup>E</sup> 4.872	<sup>RE</sup> 5.295	<sup>P</sup> 5.915	<sup>RP</sup> 5.174	<sup>P</sup> 5.773	<sup>P</sup> 3.530	<sup>RP</sup> 5.057	<sup>P</sup> 6.083	<sup>P</sup> 3.558	5.776
2016 .....	<sup>E</sup> 4.673	<sup>RE</sup> 5.027	<sup>E</sup> 4.872	<sup>RE</sup> 5.295	<sup>E</sup> 5.915	<sup>RE</sup> 5.174	<sup>E</sup> 5.773	<sup>E</sup> 3.530	<sup>RE</sup> 5.057	<sup>E</sup> 6.083	<sup>E</sup> 3.558	5.755

<sup>a</sup> 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.

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

<sup>c</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

<sup>d</sup> 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.

<sup>e</sup> Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

<sup>f</sup> 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.

<sup>g</sup> There is a discontinuity in this time series between 1966 and 1967; beginning in 1967, the single constant factor is replaced by a quantity-weighted factor.

Quantity-weighted averages of the major components of liquefied petroleum gases are calculated by using heat content values shown in Table A1.

<sup>h</sup> 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.

<sup>i</sup> 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.

<sup>j</sup> 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 (pentanes plus, 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.

<sup>k</sup> 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.

R=Revised, 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 <sup>a</sup>			Imports	Exports
	Marketed	Dry	End-Use Sectors <sup>b</sup>	Electric Power Sector <sup>c</sup>	Total		
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	1,031	<sup>c</sup> 1,028	1,031	1,004	1,019
1990 .....	1,105	1,029	1,030	1,027	1,029	1,012	1,018
1991 .....	1,108	1,030	1,031	1,025	1,030	1,014	1,022
1992 .....	1,110	1,030	1,031	1,025	1,030	1,011	1,018
1993 .....	1,106	1,027	1,028	1,025	1,027	1,020	1,016
1994 .....	1,105	1,028	1,029	1,025	1,028	1,022	1,011
1995 .....	1,106	1,026	1,027	1,021	1,026	1,021	1,011
1996 .....	1,109	1,026	1,027	1,020	1,026	1,022	1,011
1997 .....	1,107	1,026	1,027	1,020	1,026	1,023	1,011
1998 .....	1,109	1,031	1,033	1,024	1,031	1,023	1,011
1999 .....	1,107	1,027	1,028	1,022	1,027	1,022	1,006
2000 .....	1,107	1,025	1,026	1,021	1,025	1,023	1,006
2001 .....	1,105	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	1,032	1,029	1,032	1,025	1,009
2015 .....	<sup>E</sup> 1,116	<sup>E</sup> 1,033	<sup>E</sup> 1,032	<sup>P</sup> 1,035	<sup>E</sup> 1,033	<sup>E</sup> 1,025	<sup>E</sup> 1,009
2016 .....	<sup>E</sup> 1,116	<sup>E</sup> 1,033	<sup>E</sup> 1,032	<sup>E</sup> 1,035	<sup>E</sup> 1,033	<sup>E</sup> 1,025	<sup>E</sup> 1,009

<sup>a</sup> Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels.

<sup>b</sup> Residential, commercial, industrial, and transportation sectors.

<sup>c</sup> 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
	Production <sup>a</sup>	Waste Coal Supplied <sup>b</sup>	Consumption					Imports	Exports	Imports and Exports
			Residential and Commercial Sectors <sup>c</sup>	Industrial Sector		Electric Power Sector <sup>e,f</sup>	Total			
				Coke Plants	Other <sup>d</sup>					
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	<sup>b</sup> 10.391	23.650	26.800	22.347	<sup>e</sup> 20.898	21.307	25.000	26.160	24.800
1990 .....	21.822	9.303	23.137	26.799	22.457	20.779	21.197	25.000	26.202	24.800
1991 .....	21.681	10.758	23.114	26.799	22.460	20.730	21.120	25.000	26.188	24.800
1992 .....	21.682	10.396	23.105	26.799	22.250	20.709	21.068	25.000	26.161	24.800
1993 .....	21.418	10.638	22.994	26.800	22.123	20.677	21.010	25.000	26.335	24.800
1994 .....	21.394	11.097	23.112	26.800	22.068	20.589	20.929	25.000	26.329	24.800
1995 .....	21.326	11.722	23.118	26.800	21.950	20.543	20.880	25.000	26.180	24.800
1996 .....	21.322	12.147	23.011	26.800	22.105	20.547	20.870	25.000	26.174	24.800
1997 .....	21.296	12.158	22.494	26.800	22.172	20.518	20.830	25.000	26.251	24.800
1998 .....	21.418	12.639	21.620	27.426	23.164	20.516	20.881	25.000	26.800	24.800
1999 .....	21.070	12.552	23.880	27.426	22.489	20.490	20.818	25.000	26.081	24.800
2000 .....	21.072	12.360	25.020	27.426	22.433	20.511	20.828	25.000	26.117	24.800
2001 .....	<sup>a</sup> 20.772	12.169	24.909	27.426	22.622	20.337	20.671	25.000	25.998	24.800
2002 .....	20.673	12.165	22.962	27.426	22.562	20.238	20.541	25.000	26.062	24.800
2003 .....	20.499	12.360	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	<sup>c</sup> 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 .....	<sup>R</sup> 20.146	<sup>R</sup> 11.474	<sup>R</sup> 21.307	<sup>R</sup> 28.458	<sup>R</sup> 21.525	<sup>R</sup> 19.290	<sup>R</sup> 19.611	<sup>R</sup> 22.187	<sup>R</sup> 25.032	24.800
2015 .....	<sup>RP</sup> 19.882	<sup>RE</sup> 11.973	<sup>RE</sup> 20.943	<sup>RE</sup> 28.493	<sup>RE</sup> 21.215	<sup>RP</sup> 19.149	<sup>RE</sup> 19.479	<sup>RP</sup> 22.494	<sup>RP</sup> 25.031	<sup>P</sup> 24.800
2016 .....	<sup>RE</sup> 19.882	<sup>RE</sup> 11.973	<sup>RE</sup> 20.943	<sup>RE</sup> 28.493	<sup>RE</sup> 21.215	<sup>RE</sup> 19.149	<sup>RE</sup> 19.479	<sup>RE</sup> 22.494	<sup>RE</sup> 25.031	<sup>E</sup> 24.800

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

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

<sup>c</sup> 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.

<sup>d</sup> Includes transportation. Excludes coal synfuel plants.

<sup>e</sup> 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.

<sup>f</sup> Electric power sector factors are for anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and, beginning in 1998, coal synfuel.

R=Revised. P=Preliminary. 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 <sup>a</sup> for Electricity Net Generation						Heat Content <sup>j</sup> of Electricity <sup>k</sup>
	Fossil Fuels <sup>b</sup>				Nuclear <sup>h</sup>	Noncombustible Renewable Energy <sup>g,i</sup>	
	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Total Fossil Fuels <sup>f,g</sup>			
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	<sup>b</sup> 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 .....	<sup>E</sup> 10,428	<sup>E</sup> 10,814	<sup>E</sup> 7,907	<sup>E</sup> 9,510	<sup>E</sup> 10,459	<sup>E</sup> 9,510	3,412
2016 .....	<sup>E</sup> 10,428	<sup>E</sup> 10,814	<sup>E</sup> 7,907	<sup>E</sup> 9,510	<sup>E</sup> 10,459	<sup>E</sup> 9,510	3,412

<sup>a</sup> The values in columns 1–6 of this table are for net heat rates. See "Heat Rate" in Glossary.

<sup>b</sup> Through 2000, heat rates are for fossil-fueled steam-electric plants at electric utilities. Beginning in 2001, heat rates are for all fossil-fueled plants at electric utilities and electricity-only independent power producers.

<sup>c</sup> Includes anthracite, bituminous coal, subbituminous coal, lignite, and, beginning in 2002, waste coal and coal synfuel.

<sup>d</sup> Includes distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

<sup>e</sup> Includes natural gas and supplemental gaseous fuels.

<sup>f</sup> 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).

<sup>g</sup> 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.

<sup>h</sup> Used as the thermal conversion factor for nuclear electricity net generation.

<sup>i</sup> 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.

<sup>j</sup> See "Heat Content" in Glossary.

<sup>k</sup> The value of 3,412 Btu per kilowatthour is a constant. It is used as the thermal conversion factor for electricity retail sales, and electricity imports and exports.

<sup>E</sup>=Estimate. NA=Not available. --=Not applicable.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

# Thermal Conversion Factor Source Documentation

## Approximate Heat Content of Petroleum and Natural Gas Plant 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 the American Petroleum Institute (API) gravity of crude oil exports data compiled from tariff and trade data from: the U.S. Department of Commerce, U.S. Census Bureau; and the U.S. International Trade Commission.

**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 the American Petroleum Institute (API) gravity of crude oil production data

reported on Form EIA-914, “Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report.”

**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**.

**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.”

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

**Lubricants.** EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Miscellaneous Products.** EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

**Motor Gasoline 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.

**Pentanes Plus.** Assumed by EIA to be 4.620 million Btu per barrel or equal to the thermal conversion factor for **Natural Gasoline**.

**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 6.000 million Btu per barrel or 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](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](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](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](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.** EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel, first published in the *Petroleum Statement, Annual, 1970*.

**Total Petroleum Exports.** Calculated annually by EIA as the average of the thermal conversion factors for crude oil and each petroleum product exported weighted by the quantities exported. See **Crude Oil Exports** and **Petroleum Products Exports**.

**Total Petroleum Imports.** Calculated annually by EIA as the average of the thermal conversion factors for each type of crude oil and petroleum product imported weighted by the quantities imported. See **Crude Oil Imports** and **Petroleum Products Imports**.

**Unfinished Oils.** EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel or equal to that for **Distillate Fuel Oil** 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, D.C., 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), pentanes plus 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 pentanes plus used as denaturant is from PSA/PSM, Table 1, data for renewable fuels and oxygenate plant net production of pentanes plus, 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. Data are from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

**Natural Gas Consumption, Total.** • 1949–1962: EIA adopted the thermal conversion factor of 1,035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*. • 1963–1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts*, an AGA annual publication. • 1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity consumed.

**Natural Gas Exports.** • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973

forward: Calculated annually by EIA by dividing the heat content of natural gas exported by the quantity exported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

**Natural Gas Imports.** • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas imported by the quantity imported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

**Natural Gas Production, Dry.** Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed. See **Natural Gas Consumption, Total**.

**Natural Gas Production, Marketed.** Calculated annually by EIA by dividing the heat content of dry natural gas produced (see **Natural Gas Production, Dry**) and natural gas plant liquids produced (see **Natural Gas Plant Liquids Production**) by the total quantity of marketed natural gas produced.

## Approximate Heat Content of Coal and Coal Coke

**Coal Coke Imports and Exports.** EIA adopted the Bureau of Mines estimate of 24,800 million Btu per short ton.

**Coal Consumption, Electric Power Sector.** Calculated annually by EIA by dividing the heat content of coal consumed by the electric power sector by the quantity consumed. Data are from Form EIA-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. Data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants."

**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 Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users.”

**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 Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users.”

**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 Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users,” and Form EIA-923, “Power Plant Operations Report.” The average heat content of metallurgical coal is derived from receipts data from Form EIA-5, “Quarterly Coal Consumption and Quality Report—Coke Plants.” 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 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”; 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 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”; 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 Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users,” and predecessor form. 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.

**Electricity Net Generation, Nuclear.** • 1957–1984: Calculated annually by dividing the total heat content consumed in nuclear generating units by the total (net) electricity generated by nuclear generating units. The heat content and electricity generation were reported on Form FERC-1, “Annual Report of Major Electric Utilities, Licensees, and Others”; Form EIA-412, “Annual Report of Public Electric Utilities”; and predecessor forms. For 1982, the factors were published in EIA, *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants 1982*, page 215. For 1983 and 1984, the factors were published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 13. • 1985 forward: Calculated annually by EIA by using the heat rate data reported on Form EIA-860, “Annual Electric Generator Report,” and predecessor forms.

**Electricity Net Generation, Petroleum.** • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The

computation includes data for all electric utilities and electricity-only independent power producers using distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

**Electricity Net Generation, Total Fossil Fuels.**

• 1949–1955: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Thermal-Electric Plant Construction Cost and Annual Production Expenses—1981* and *Steam-Electric Plant Construction Cost and Annual Production Expenses—1978*. • 1956–1988: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 9. • 1989–2000: Calculated annually by EIA by using heat rate data reported on Form EIA-860, “Annual Electric Generator Report,” and predecessor forms; and net generation data reported on Form EIA-759, “Monthly Power Plant Report.” The computation includes data for all electric utility steam-electric plants using fossil fuels. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using coal, petroleum, natural gas, and other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

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# Appendix B

## Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

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

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

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

Web Page: <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 Std 268-1992, pp. 28 and 29.



**Table B2. Metric Prefixes**

Unit Multiple	Prefix	Symbol	Unit Subdivision	Prefix	Symbol
10 <sup>1</sup>	deka	da	10 <sup>-1</sup>	deci	d
10 <sup>2</sup>	hecto	h	10 <sup>-2</sup>	centi	c
10 <sup>3</sup>	kilo	k	10 <sup>-3</sup>	milli	m
10 <sup>6</sup>	mega	M	10 <sup>-6</sup>	micro	μ
10 <sup>9</sup>	giga	G	10 <sup>-9</sup>	nano	n
10 <sup>12</sup>	tera	T	10 <sup>-12</sup>	pico	p
10 <sup>15</sup>	peta	P	10 <sup>-15</sup>	femto	f
10 <sup>18</sup>	exa	E	10 <sup>-18</sup>	atto	a
10 <sup>21</sup>	zetta	Z	10 <sup>-21</sup>	zepto	z
10 <sup>24</sup>	yotta	Y	10 <sup>-24</sup>	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
<b>Petroleum</b>	1 barrel (bbl)	=	42 <sup>a</sup> U.S. gallons (gal)
<b>Coal</b>	1 short ton	=	2,000 <sup>a</sup> pounds (lb)
	1 long ton	=	2,240 <sup>a</sup> pounds (lb)
	1 metric ton (t)	=	1,000 <sup>a</sup> kilograms (kg)
<b>Wood</b>	1 cord (cd)	=	1.25 <sup>b</sup> shorts tons
	1 cord (cd)	=	128 <sup>a</sup> cubic feet (ft <sup>3</sup> )

<sup>a</sup>Exact conversion.

<sup>b</sup>Calculated by the 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

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

	Population			U.S. Gross Domestic Product			U.S. Gross Output <sup>a</sup>
	United States <sup>b</sup>	World	United States as Share of World	Billion Nominal Dollars <sup>d</sup>	Billion Chained (2009) Dollars <sup>e</sup>	Implicit Price Deflator <sup>c</sup> (2009 = 1.00000)	Billion Nominal Dollars <sup>d</sup>
	Million People		Percent				
1950 .....	152.3	2,557.6	6.0	300.2	2,184.0	0.13745	NA
1955 .....	165.9	2,782.1	6.0	426.2	2,739.0	.15559	NA
1960 .....	180.7	3,043.0	5.9	543.3	3,108.7	.17476	NA
1965 .....	194.3	3,350.4	5.8	743.7	3,976.7	.18702	NA
1970 .....	205.1	3,712.7	5.5	1,075.9	4,722.0	.22784	NA
1975 .....	216.0	4,089.1	5.3	1,688.9	5,385.4	.31361	NA
1980 .....	227.2	4,451.4	5.1	2,862.5	6,450.4	.44377	NA
1981 .....	229.5	4,534.4	5.1	3,211.0	6,617.7	.48520	NA
1982 .....	231.7	4,614.6	5.0	3,345.0	6,491.3	.51530	NA
1983 .....	233.8	4,695.7	5.0	3,638.1	6,792.0	.53565	NA
1984 .....	235.8	4,774.6	4.9	4,040.7	7,285.0	.55466	NA
1985 .....	237.9	4,856.5	4.9	4,346.7	7,593.8	.57240	NA
1986 .....	240.1	4,940.6	4.9	4,590.2	7,860.5	.58395	NA
1987 .....	242.3	5,027.2	4.8	4,870.2	8,132.6	.59885	8,639.9
1988 .....	244.5	5,114.6	4.8	5,252.6	8,474.5	.61982	9,359.5
1989 .....	246.8	5,201.4	4.7	5,657.7	8,786.4	.64392	9,969.6
1990 .....	249.6	5,289.0	4.7	5,979.6	8,955.0	.66773	10,511.1
1991 .....	253.0	5,371.6	4.7	6,174.0	8,948.4	.68996	10,676.5
1992 .....	256.5	5,456.1	4.7	6,539.3	9,266.6	.70569	11,242.4
1993 .....	259.9	5,538.3	4.7	6,878.7	9,521.0	.72248	11,857.6
1994 .....	263.1	5,618.7	4.7	7,308.8	9,905.4	.73785	12,647.2
1995 .....	266.3	5,699.2	4.7	7,664.1	10,174.8	.75324	13,451.6
1996 .....	269.4	5,779.4	4.7	8,100.2	10,561.0	.76699	14,259.9
1997 .....	272.6	5,858.0	4.7	8,608.5	11,034.9	.78012	15,355.4
1998 .....	275.9	5,935.2	4.6	9,089.2	11,525.9	.78859	16,171.3
1999 .....	279.0	6,012.1	4.6	9,660.6	12,065.9	.80065	17,244.8
2000 .....	282.2	6,088.6	4.6	10,284.8	12,559.7	.81887	18,564.6
2001 .....	285.0	6,165.2	4.6	10,621.8	12,682.2	.83754	18,863.1
2002 .....	287.6	6,242.0	4.6	10,977.5	12,908.8	.85039	19,175.0
2003 .....	290.1	6,318.6	4.6	11,510.7	13,271.1	.86735	20,135.1
2004 .....	292.8	6,395.7	4.6	12,274.9	13,773.5	.89120	21,697.3
2005 .....	295.5	6,473.0	4.6	13,093.7	14,234.2	.91988	23,514.9
2006 .....	298.4	6,551.3	4.6	13,855.9	14,613.8	.94814	24,888.0
2007 .....	301.2	6,629.9	4.5	14,477.6	14,873.7	.97337	26,151.3
2008 .....	304.1	6,709.0	4.5	14,718.6	14,830.4	.99246	26,825.7
2009 .....	306.8	6,788.2	4.5	14,418.7	14,418.7	1.00000	24,657.2
2010 .....	309.3	6,866.3	4.5	14,964.4	14,783.8	1.01221	26,093.5
2011 .....	311.7	6,944.1	4.5	15,517.9	15,020.6	1.03311	27,536.0
2012 .....	314.1	7,022.3	4.5	16,155.3	15,354.6	1.05214	<sup>R</sup> 28,663.2
2013 .....	316.4	7,101.0	4.5	16,663.2	15,583.3	1.06929	<sup>R</sup> 29,571.6
2014 .....	318.9	7,178.7	4.4	17,348.1	15,961.7	1.08686	<sup>R</sup> 30,971.0
2015 .....	321.4	7,256.5	4.4	17,947.0	16,348.9	1.09775	31,386.5

<sup>a</sup> Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.

<sup>b</sup> Resident population of the 50 states and the District of Columbia estimated for July 1 of each year.

<sup>c</sup> The gross domestic product implicit price deflator is used to convert nominal dollars to chained (2009) dollars.

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

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

R=Revised. NA=Not available.

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 2015). • **World Population: 1950 forward**—DOC, U.S. Census Bureau, International Database (July 2015). • **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 (April 2016), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1987 forward**—DOC, BEA, GDP by Industry data (April 2016).

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# Appendix D

**Table D1. Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945** (Quadrillion Btu)

	Fossil Fuels				Renewable Energy			Electricity Net Imports <sup>b</sup>	Total
	Coal	Natural Gas	Petroleum	Total	Conventional Hydroelectric Power	Biomass	Total		
						Wood <sup>a</sup>			
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	<sup>a</sup> 1.261	2.703	.009	32.665

<sup>a</sup> 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.

<sup>b</sup> Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

NA=Not available. --=Not applicable. (s)=Less than 0.0005 quadrillion 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 kilowatt-hour).

**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.

# 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;  $\text{CH}(3)\text{-(CH}(2))_n\text{-OH}$  (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 **pentanes plus**. 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 non-fossil material of biological origin constituting a **renewable energy** source. See **Biodiesel**, **Biofuels**, **Biomass Waste**, **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<sub>4</sub>H<sub>10</sub>):** 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<sub>4</sub>H<sub>10</sub>):** 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<sub>4</sub>H<sub>10</sub>):** 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<sub>4</sub>H<sub>8</sub>):** 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<sub>2</sub>):** 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> for further information on conversion factors.) 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 (casinghead) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in

lease or field separation facilities and later mixed into the crude stream is also included; 2) small amounts of nonhydrocarbons produced with the oil, such as sulfur and various metals; and 3) drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

**Crude Oil 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 pentanes plus 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**.

**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<sub>2</sub>H<sub>6</sub>):** 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<sub>2</sub>H<sub>5</sub>OH):** 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<sub>2</sub>H<sub>4</sub>):** 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 **pentanes plus** 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<sub>4</sub>H<sub>10</sub>):** 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<sub>4</sub>H<sub>8</sub>):** 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<sub>5</sub>H<sub>12</sub>):** 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<sub>4</sub>):** 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<sub>3</sub>OH):** A light, volatile **alcohol** eligible for gasoline blending. See **Motor Gasoline Blending and Oxygenates**.

**Methyl Tertiary Butyl Ether (MTBE) ((CH<sub>3</sub>)<sub>3</sub>COCH<sub>3</sub>):** 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 pentanes plus. *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.

**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<sub>4</sub>H<sub>10</sub>):** 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 C<sub>n</sub>H<sub>2n</sub> 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 members (with years of membership) include Algeria (1969–present), Angola (2007–present), Ecuador (1973–1992 and 2007–present), Indonesia (1962–2008 and 2016), Iran (1960–present), Iraq

(1960–present), Kuwait (1960–present), Libya (1962–present), Nigeria (1971–present), Qatar (1961–present), Saudi Arabia (1960–present), United Arab Emirates (1967–present), and Venezuela (1960–present). Gabon (1975–1994) is no longer a member of OPEC.

**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 (CO<sub>2</sub>)**. 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, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous 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.

**Photovoltaic Energy:** Direct-current electricity generated from sunlight through solid-state semiconductor devices that have no moving parts.

**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**. (Energy sources that are 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. Thus, U.S. primary energy consumption does include net imports of coal coke, but not the coal coke produced from domestic coal.) 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**, including **natural gas plant liquids** and **crude oil** burned as fuel); **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 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** 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). See **Total Energy Consumption**.

**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** consumption; **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<sub>3</sub>H<sub>8</sub>):** 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<sub>3</sub>H<sub>6</sub>):** 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 plant 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 power**, **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, 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)**.

**Solar Energy:** See **Solar Thermal Energy** and **Photovoltaic Energy**.

**Solar Thermal Energy:** The radiant energy of the sun that can be converted into other forms of energy, such as heat or 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."

**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.)**.

**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, 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.

