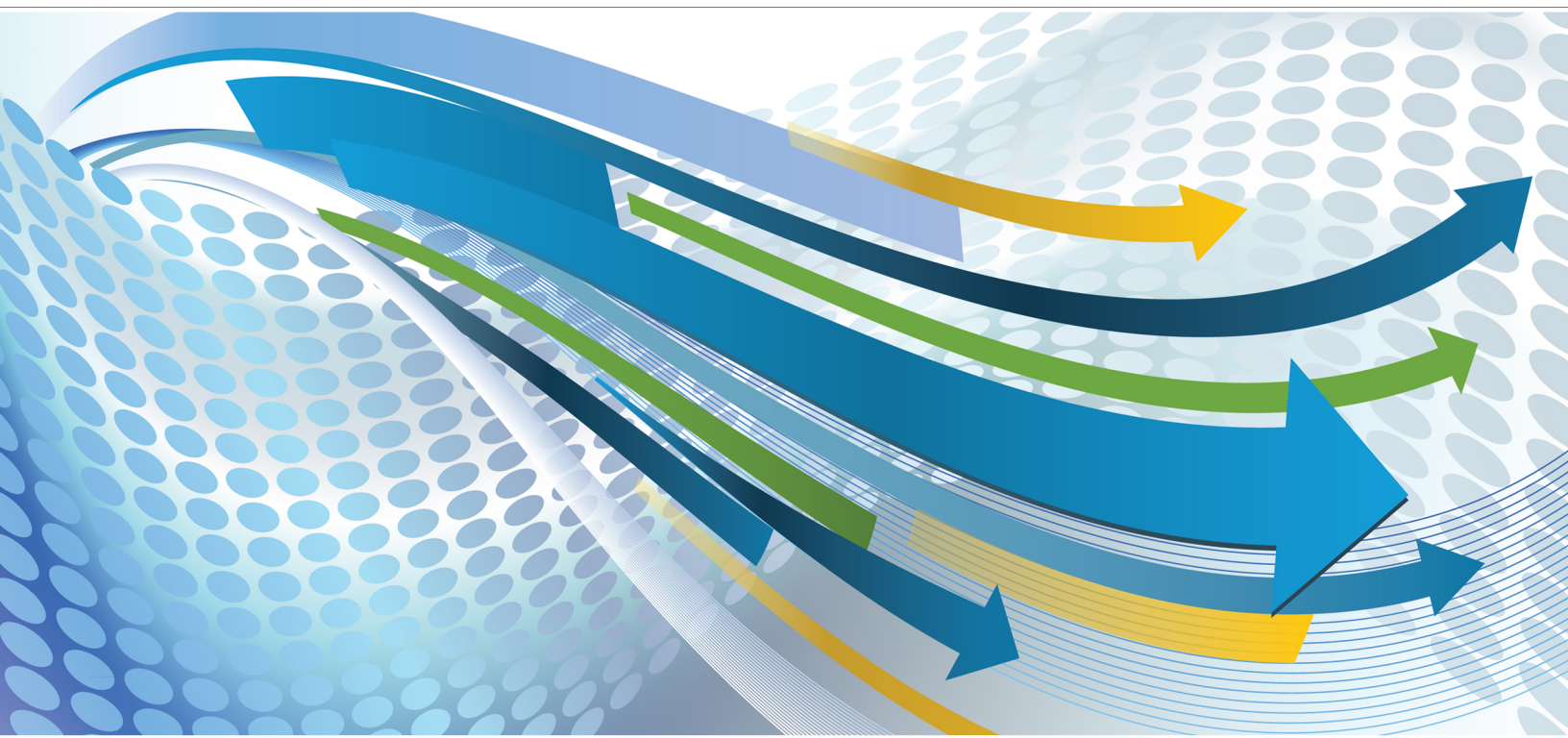


February 2016

# 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).

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***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

## February 2016

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

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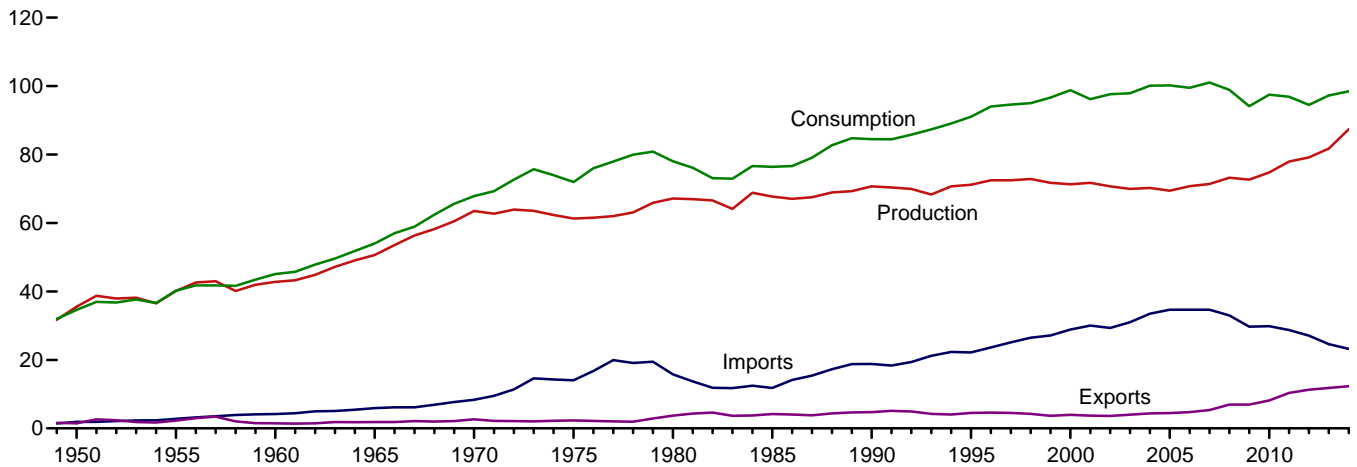
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# 1. Energy Overview

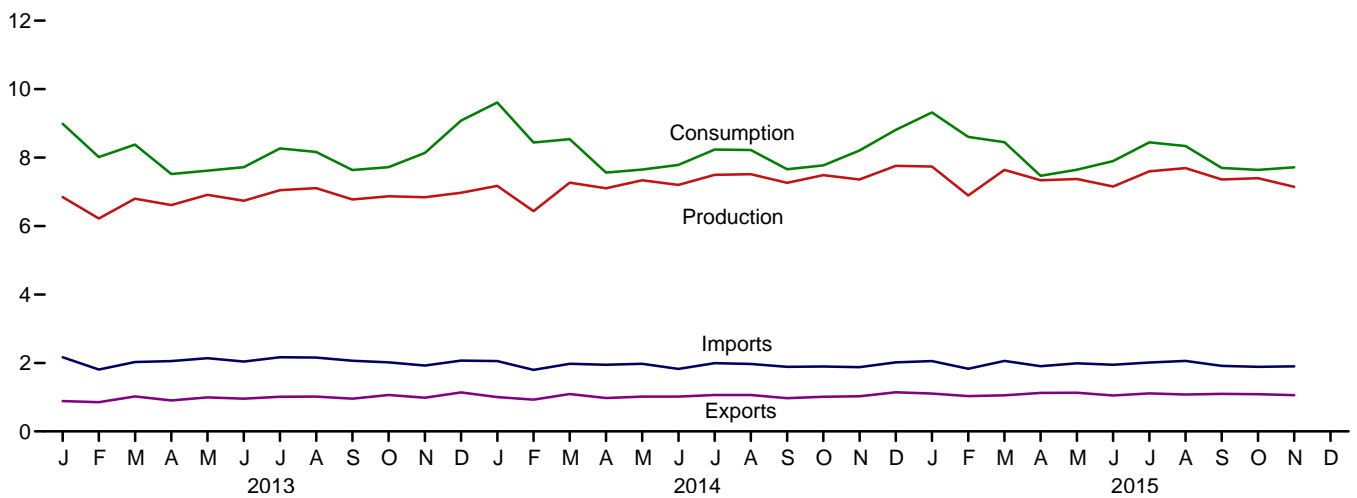
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**Figure 1.1 Primary Energy Overview**  
(Quadrillion Btu)

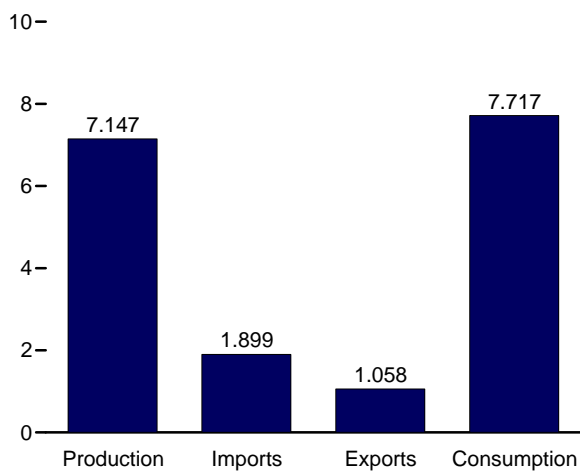
Overview, 1949–2014



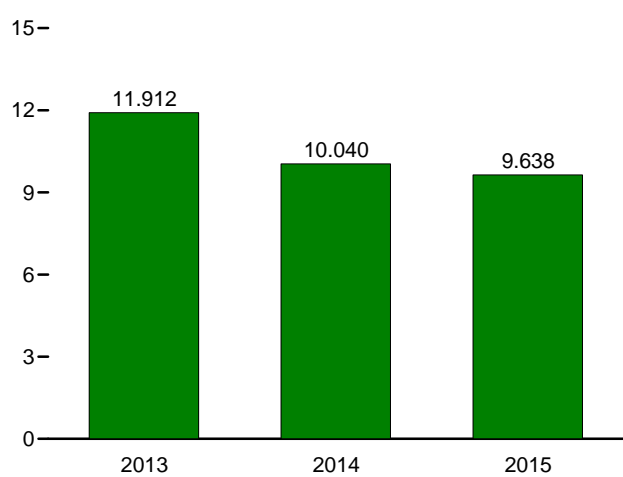
Overview, Monthly



Overview, November 2015



Net Imports, January–November



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

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

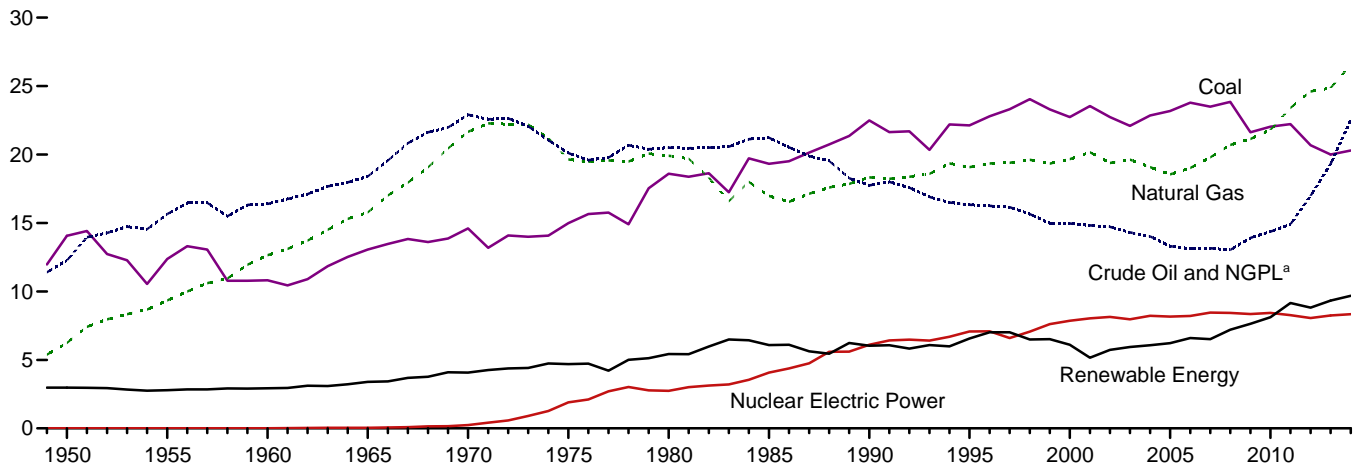
	Production				Trade			Stock Change and Other <sup>d</sup>	Consumption			
	Fossil Fuels <sup>a</sup>	Nuclear Electric Power	Renewable Energy <sup>b</sup>	Total	Imports	Exports	Net Imports <sup>c</sup>		Fossil Fuels <sup>e</sup>	Nuclear Electric Power	Renewable Energy <sup>b</sup>	Total <sup>f</sup>
1950 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	94.487
2013 January	5.305	.746	.795	6.846	2.165	.885	1.280	.860	7.430	.746	.794	8.985
February	4.870	.642	.708	6.220	1.805	.854	.951	.845	6.649	.642	.710	8.016
March	5.371	.658	.772	6.801	2.027	1.020	1.007	.573	6.933	.658	.774	8.381
April	5.201	.593	.820	6.614	2.055	.905	1.150	-.245	6.091	.593	.822	7.519
May	5.396	.657	.860	6.913	2.137	.995	1.142	-.439	6.082	.657	.860	7.616
June	5.220	.694	.823	6.737	2.039	.958	1.081	-.099	6.179	.694	.828	7.719
July	5.496	.737	.813	7.046	2.168	1.014	1.154	.067	6.697	.737	.814	8.267
August	5.624	.745	.741	7.110	2.157	1.017	1.140	-.086	6.655	.745	.744	8.165
September	5.394	.688	.697	6.778	2.065	.955	1.110	-.252	6.227	.688	.704	7.636
October	5.471	.660	.741	6.872	2.017	1.062	.955	-.105	6.299	.660	.746	7.721
November	5.400	.679	.762	6.840	1.925	.983	.942	.353	6.678	.679	.761	8.135
December	5.426	.745	.800	6.971	2.066	1.139	.927	1.183	7.520	.745	.799	9.081
Total	64.173	8.244	9.330	81.747	24.626	11.787	12.839	2.655	79.440	8.244	9.356	97.241
2014 January	5.581	R .765	R .827	R 7.174	2.056	1.003	1.054	1.383	8.012	R .765	R .820	R 9.610
February	5.071	R .655	R .709	R 6.435	1.797	.927	.870	1.135	7.071	R .655	R .706	R 8.441
March	5.757	R .653	R .858	R 7.267	1.975	1.092	.883	.386	7.020	R .653	R .852	R 8.536
April	5.647	R .590	R .864	R 7.101	1.947	.975	.972	-.512	6.100	R .590	R .862	R 7.562
May	5.817	R .658	R .860	R 7.335	1.977	1.016	.961	-.643	6.122	R .658	R .858	R 7.652
June	5.633	R .713	R .858	R 7.203	1.827	1.018	.809	-.228	6.205	R .713	R .853	R 7.784
July	5.922	R .752	R .824	R 7.498	1.993	1.064	.929	-.194	6.645	R .752	R .821	R 8.294
August	6.013	R .744	R .758	7.515	1.970	1.064	.906	-.202	6.697	R .744	R .761	8.219
September	5.842	R .706	R .714	7.262	1.887	.969	.918	-.522	6.223	R .706	R .713	7.658
October	6.071	R .653	R .764	7.488	1.898	1.012	.886	-.602	6.341	R .653	R .765	R 7.772
November	5.866	R .681	R .811	7.359	1.879	1.027	.852	-.003	6.702	R .681	R .808	8.208
December	6.159	R .767	R .830	7.757	2.016	1.142	.873	.178	7.204	R .767	R .822	8.808
Total	69.379	R 8.338	R 9.678	R 87.394	23.221	12.308	10.913	.177	80.341	R 8.338	R 9.641	R 98.484
2015 January	6.121	R .777	R .839	7.737	2.057	1.107	.950	.633	R 7.699	R .777	R .826	R 9.320
February	5.454	R .664	R .777	6.895	1.830	1.029	.801	R .910	R 7.156	R .664	R .771	R 8.606
March	6.128	R .675	R .840	7.643	2.060	1.054	1.006	-.198	6.922	R .675	R .834	8.451
April	5.885	R .625	R .829	R 7.339	1.904	1.123	.782	-.653	5.996	R .625	R .826	7.468
May	5.864	R .689	R .820	7.373	1.988	1.130	.858	R -.583	6.116	R .689	R .822	7.647
June	5.657	R .717	R .782	7.156	1.947	1.049	.898	-.159	R 6.374	R .717	R .784	7.896
July	R 6.040	R .747	R .810	R 7.597	2.015	1.112	.903	R -.054	6.866	R .747	R .811	R 8.445
August	R 6.154	R .757	R .783	R 7.694	2.058	1.078	.980	R -.338	R 6.769	R .757	R .787	R 8.336
September	R 5.933	R .695	R .733	R 7.362	1.915	1.097	.818	R -.483	6.243	R .695	R .739	7.697
October	R 5.991	R .634	R .773	R 7.398	1.888	1.087	.801	R -.558	6.218	R .634	R .774	R 7.641
November	5.694	.630	.823	7.147	1.899	1.058	.841	-.271	6.248	.630	.820	7.717
11-Month Total	64.919	7.609	8.810	81.339	21.562	11.924	9.638	-1.754	72.608	7.609	8.796	89.223
2014 11-Month Total	63.219	7.570	8.847	79.637	21.205	11.165	10.040	-.001	73.138	7.570	8.819	89.676
2013 11-Month Total	58.747	7.499	8.530	74.777	22.560	10.648	11.912	1.472	71.919	7.499	8.557	88.161

<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.

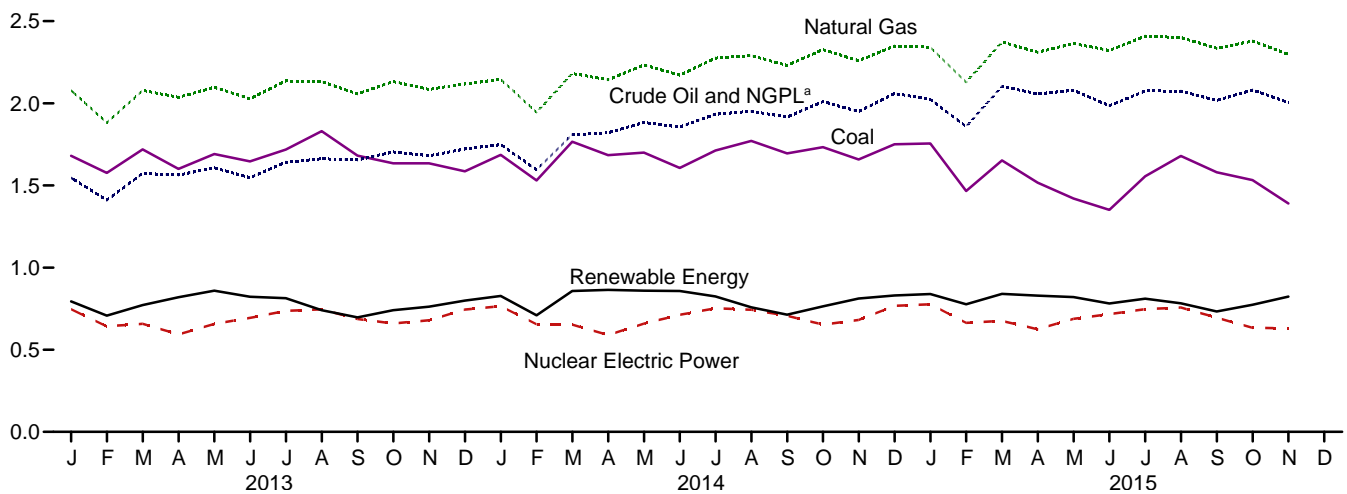
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#summary> (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)

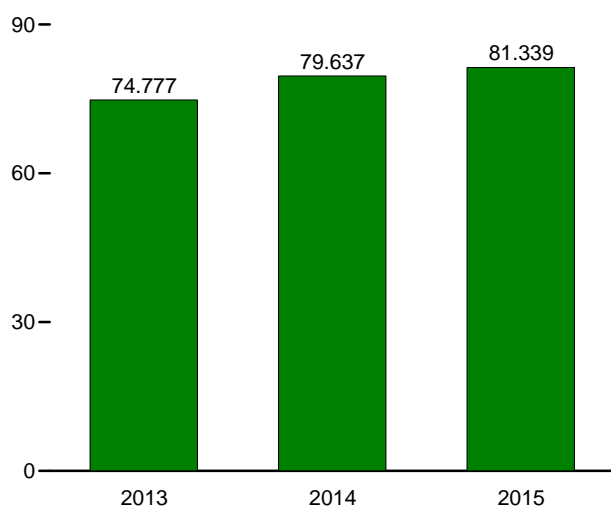
By Source, 1949–2014



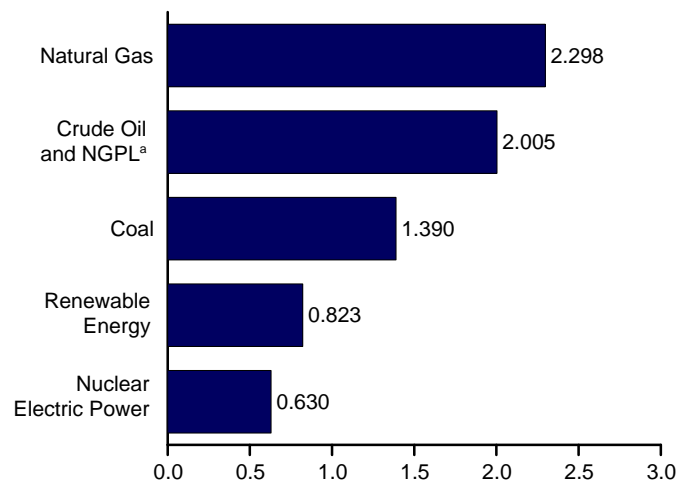
By Source, Monthly



Total, January–November



By Source, November 2015



<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 January	1.681	2.078	1.273	.274	5.305	.746	.237	.019	.022	.141	.377	.795	6.846
February	1.576	1.882	1.152	.259	4.870	.642	.195	.017	.021	.134	.341	.708	6.220
March	1.720	2.078	1.288	.286	5.371	.658	.196	.019	.025	.150	.383	.772	6.801
April	1.600	2.037	1.283	.280	5.201	.593	.239	.017	.024	.167	.372	.820	6.614
May	1.692	2.098	1.313	.294	5.396	.657	.271	.018	.026	.155	.390	.860	6.913
June	1.646	2.027	1.264	.283	5.220	.694	.261	.017	.026	.131	.387	.823	6.737
July	1.718	2.136	1.340	.301	5.496	.737	.260	.018	.027	.106	.403	.813	7.046
August	1.831	2.131	1.349	.313	5.624	.745	.206	.018	.028	.092	.397	.741	7.110
September	1.681	2.057	1.345	.311	5.394	.688	.162	.018	.027	.111	.379	.697	6.778
October	1.635	2.132	1.385	.319	5.471	.660	.164	.018	.028	.130	.400	.741	6.872
November	1.635	2.085	1.374	.306	5.400	.679	.169	.017	.026	.151	.399	.762	6.840
December	1.586	2.118	1.416	.306	5.426	.745	.202	.018	.027	.133	.420	.800	6.971
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	1.686	2.146	1.438	.311	5.581	R .765	.206	.018	.029	R .170	.404	R .827	7.174
February	1.530	1.945	1.313	.283	5.071	R .655	R .165	.016	.027	R .133	.367	R .709	R 6.435
March	1.766	2.182	1.482	.327	5.757	R .653	.231	.018	.034	.169	.406	R .858	R 7.267
April	1.684	2.143	1.491	.330	5.647	R .590	R .242	.018	.035	R .177	.392	R .864	R 7.101
May	1.699	2.234	1.542	.341	5.817	R .658	R .252	.018	.038	R .148	.403	R .860	7.335
June	1.606	2.171	1.510	.346	5.633	R .713	R .245	.018	.039	R .150	.406	R .858	R 7.203
July	1.713	2.275	1.574	.359	5.922	R .752	.232	.018	.038	.116	.420	R .824	R 7.498
August	1.771	2.291	1.588	.363	6.013	R .744	R .188	.018	.039	.097	.416	R .758	7.515
September	1.695	2.231	1.559	.357	5.842	R .706	.153	.018	.038	.110	.396	R .714	7.262
October	1.733	2.327	1.641	.369	6.071	R .653	R .163	.018	.038	.138	.407	R .764	7.488
November	1.659	2.259	1.601	.348	5.866	R .681	R .177	.018	.034	R .179	.403	R .811	7.359
December	1.751	2.349	1.695	.364	6.159	R .767	R .212	R .018	.031	.140	.428	R .830	7.757
Total	20.295	26.552	18.436	4.096	69.379	R 8.338	R 2.467	R .214	R .420	R 1.728	4.849	R 9.678	R 87.394
2015 January	1.756	E 2.341	E 1.680	.344	6.121	R .777	R .234	.020	.035	R .145	.405	R .839	7.737
February	1.467	E 2.128	E 1.536	.323	5.454	R .664	R .216	.018	.037	R .142	.364	R .777	6.895
March	1.652	E 2.373	E 1.736	.367	6.128	R .675	.237	.019	.045	.146	.393	R .840	7.643
April	1.517	E 2.311	E 1.687	.370	5.885	R .625	.215	.018	R .047	.170	.380	R .829	R 7.339
May	1.421	E 2.364	E 1.704	.375	5.864	R .689	R .192	.019	.049	R .163	.397	R .820	7.373
June	1.351	E 2.321	E 1.621	.364	5.657	R .717	.191	.018	.049	.128	.396	R .782	7.156
July	R 1.555	E 2.409	E 1.696	.379	R 6.040	R .747	R .200	.019	.050	.130	.411	R .810	R 7.597
August	R 1.680	E 2.400	E 1.691	.383	R 6.154	.757	.185	.019	.051	.124	.404	R .783	R 7.694
September	R 1.581	RE 2.335	RE 1.644	.373	R 5.933	.695	R .154	.018	.045	.132	.384	R .733	R 7.362
October	1.532	RE 2.378	RE 1.685	.396	R 5.991	R .634	.159	.019	.043	.156	.397	R .773	R 7.398
November	1.390	E 2.298	E 1.621	.384	5.694	.630	.184	.018	.041	.187	.392	.823	7.147
11-Month Total	16.901	E 25.659	E 18.301	4.058	64.919	7.609	2.167	.205	.493	1.622	4.323	8.810	81.339
2014 11-Month Total	18.544	24.203	16.740	3.732	63.219	7.570	2.254	.196	.389	1.588	4.421	8.847	79.637
2013 11-Month Total	18.415	22.741	14.365	3.226	58.747	7.499	2.361	.196	.278	1.468	4.227	8.530	74.777

<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.

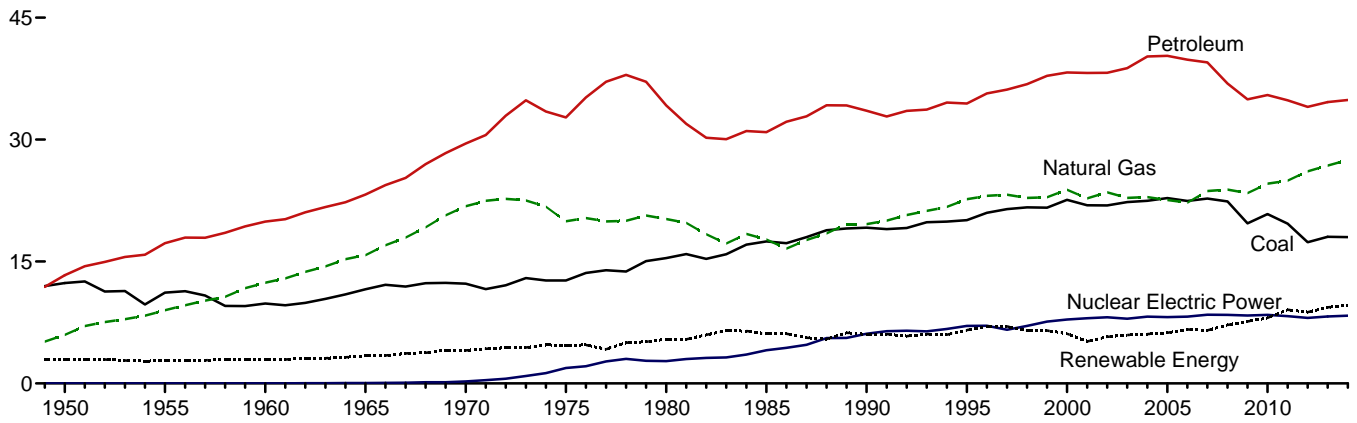
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

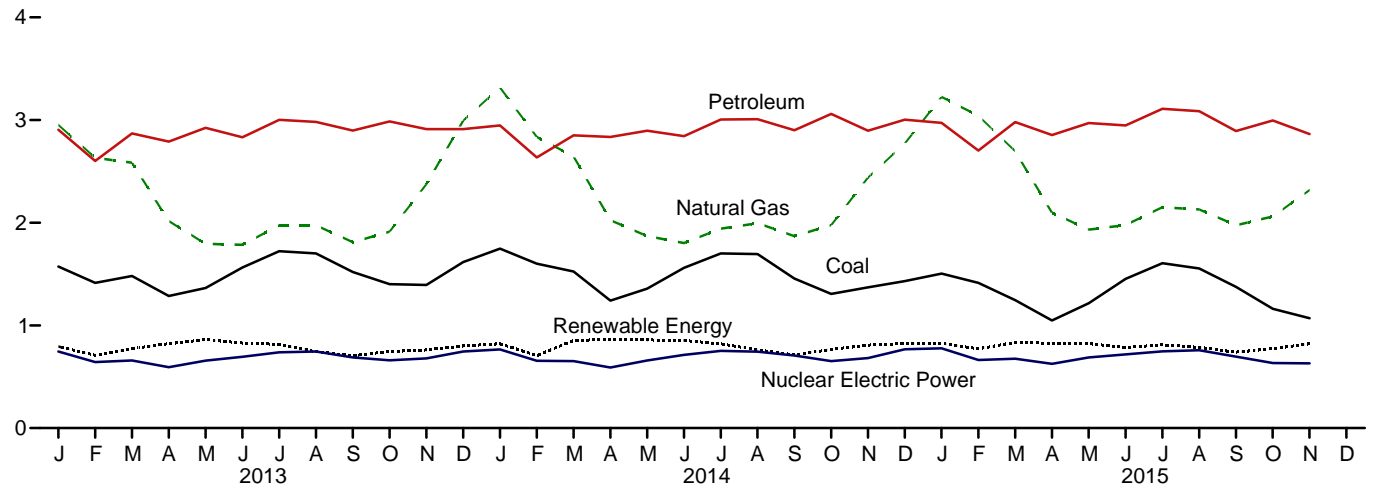
Sources: See end of section.

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

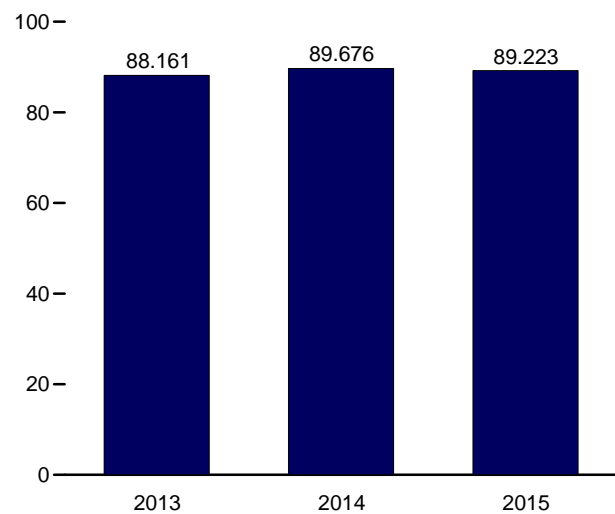
By Source,<sup>a</sup> 1949–2014



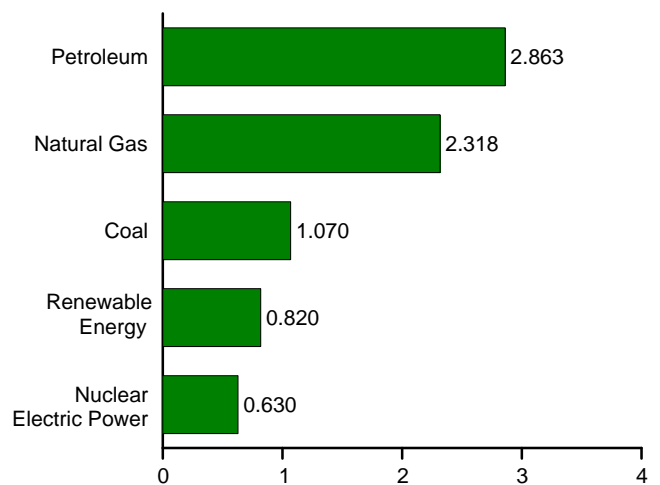
By Source,<sup>a</sup> Monthly



Total, January–November



By Source,<sup>a</sup> November 2015



<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)

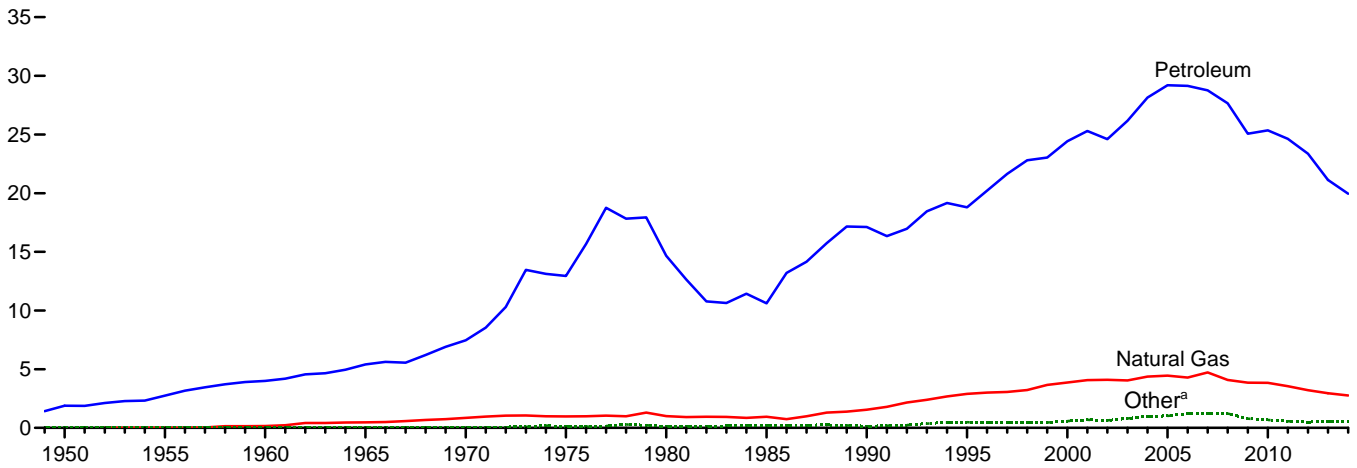
	Fossil Fuels				Nuclear Electric Power	Renewable Energy <sup>a</sup>						Total <sup>f</sup>
	Coal	Natural Gas <sup>b</sup>	Petro- leum <sup>c</sup>	Total <sup>d</sup>		Hydro- electric Power <sup>e</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total	
1950 Total	12.347	5.968	13.315	31.632	0.000	1.415	NA	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 January	1.572	2.952	2.906	7.430	.746	.237	.019	.022	.141	.376	.794	8.985
February	1.414	2.632	2.601	6.649	.642	.195	.017	.021	.134	.343	.710	8.016
March	1.481	2.584	2.870	6.933	.658	.196	.019	.025	.150	.385	.774	8.381
April	1.287	2.016	2.789	6.091	.593	.239	.017	.024	.167	.374	.822	7.519
May	1.364	1.795	2.923	6.082	.657	.271	.018	.026	.155	.390	.860	7.616
June	1.564	1.785	2.833	6.179	.694	.261	.017	.026	.131	.392	.828	7.719
July	1.723	1.974	3.002	6.697	.737	.260	.018	.027	.106	.403	.814	8.267
August	1.701	1.975	2.981	6.655	.745	.206	.018	.028	.092	.400	.744	8.165
September	1.520	1.810	2.898	6.227	.688	.162	.018	.027	.111	.387	.704	7.636
October	1.402	1.912	2.986	6.299	.660	.164	.018	.028	.130	.406	.746	7.721
November	1.394	2.375	2.912	6.678	.679	.169	.017	.026	.151	.398	.761	8.135
December	1.616	2.995	2.911	7.520	.745	.202	.018	.027	.133	.420	.799	9.081
Total	18.039	26.805	34.613	79.440	8.244	2.562	.214	.305	1.601	4.673	9.356	97.241
2014 January	1.748	3.317	2.948	8.012	R .765	.206	.018	.029	R .170	.397	R .820	R 9.610
February	1.601	2.835	2.636	7.071	R .655	R .165	.016	.027	R .133	.364	R .706	R 8.441
March	1.525	2.645	2.851	7.020	R .653	.231	.018	.034	R .169	.401	R .852	R 8.536
April	1.241	2.025	2.835	6.100	R .590	R .242	.018	.035	R .177	.390	R .862	R 7.562
May	1.358	1.870	2.896	6.122	R .658	R .252	.018	.038	R .148	.401	R .858	R 7.652
June	1.560	1.803	2.843	6.205	R .713	R .245	.018	.039	R .150	.402	R .853	R 7.784
July	1.700	1.942	3.004	6.645	.752	.232	.018	.038	.116	.417	R .821	8.234
August	1.695	1.996	3.009	6.697	R .744	R .188	.018	.039	.097	.418	R .761	8.219
September	1.457	1.869	2.900	6.223	.706	.153	.018	.038	.110	.394	R .713	7.658
October	1.307	1.976	3.059	6.341	R .653	R .163	.018	.038	.138	.408	R .765	R 7.772
November	1.370	2.439	2.896	6.702	.681	R .177	.018	.034	R .179	.399	R .808	8.208
December	1.432	2.772	3.003	7.204	.767	R .212	R .018	.031	.140	.420	R .822	8.808
Total	17.994	27.488	34.881	80.341	R 8.338	R 2.467	R .214	R .420	R 1.728	4.812	R 9.641	R 98.484
2015 January	1.504	R 3.225	2.972	R 7.699	R .777	R .234	.020	.035	R .145	.392	R .826	R 9.320
February	1.414	3.041	2.702	R 7.156	R .664	R .216	.018	.037	R .142	.358	R .771	R 8.606
March	1.246	2.696	2.980	6.922	R .675	.237	.019	.045	.146	.388	R .834	8.451
April	1.048	2.096	2.854	5.996	R .625	.215	.018	R .047	.170	.377	R .826	7.468
May	1.216	R 1.932	2.971	6.116	R .689	R .192	.019	.049	R .163	.399	R .822	7.647
June	1.452	1.977	2.947	6.374	R .717	.191	.018	.049	.128	.398	R .784	7.896
July	1.606	R 2.150	3.110	6.866	R .747	R .200	.019	.050	.130	.412	R .811	R 8.445
August	1.555	R 2.130	3.086	6.769	.757	.185	.019	.051	.124	.408	R .787	R 8.336
September	1.374	R 1.976	2.893	6.243	.695	R .154	.018	.045	.132	.390	R .739	7.697
October	1.162	2.061	2.996	6.218	R .634	.159	.019	.043	.156	.398	R .774	R 7.641
November	1.070	2.318	2.863	6.248	.630	.184	.018	.041	.187	.389	.820	7.717
11-Month Total	14.648	25.603	32.374	72.608	7.609	2.167	.205	.493	1.622	4.309	8.796	89.223
2014 11-Month Total	16.562	24.716	31.878	73.138	7.570	2.254	.196	.389	1.588	4.392	8.819	89.676
2013 11-Month Total	16.423	23.810	31.702	71.919	7.499	2.361	.196	.278	1.468	4.254	8.557	88.161

<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

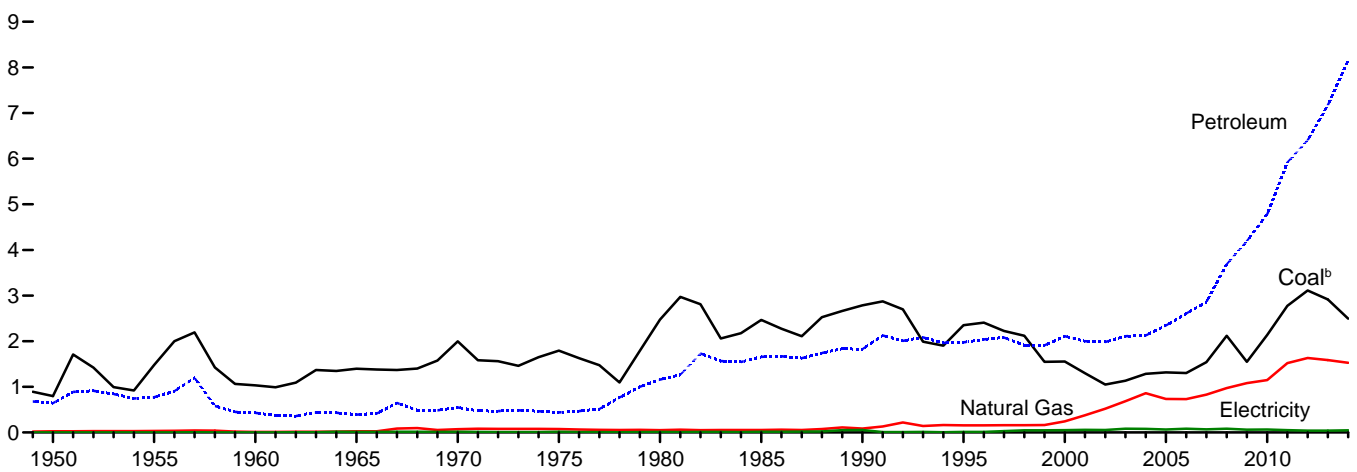
separately displayed. See Tables 1.4a and 1.4b.  
R=Revised. NA=Not available. (s)=Less than 0.5 trillion Btu.  
Notes: • See "Primary Energy Consumption" in Glossary.  
• See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding.  
• 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)

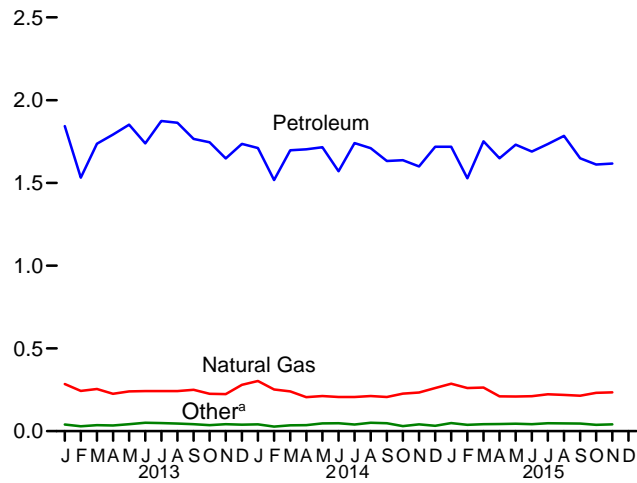
Imports by Source, 1949–2014



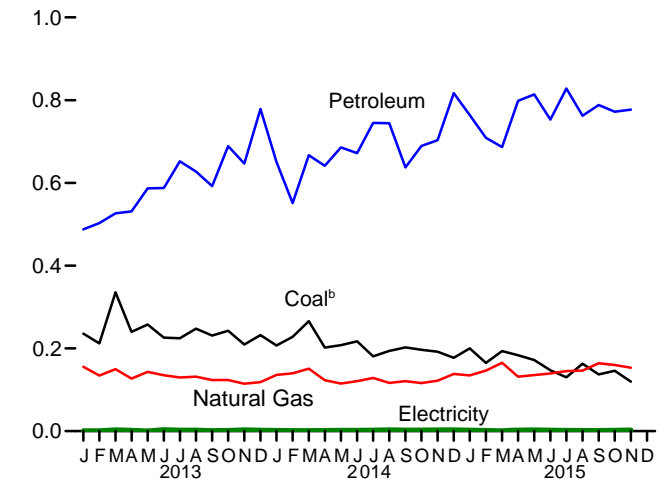
Exports by Source, 1949–2014



Imports by Source, Monthly



Exports by Major Source, Monthly



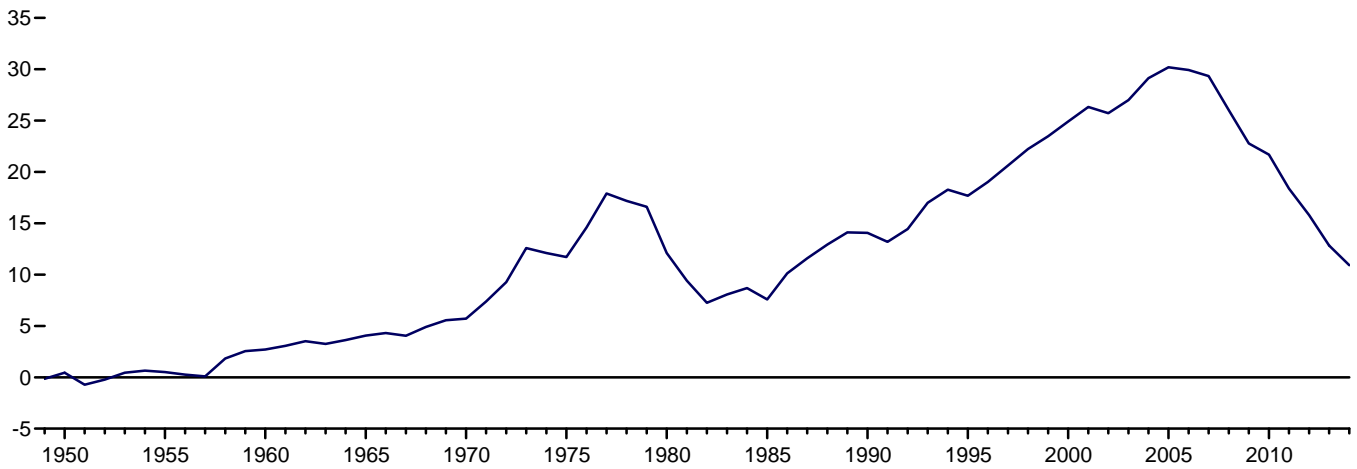
<sup>a</sup> Coal, coal coke, biofuels, and electricity.

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

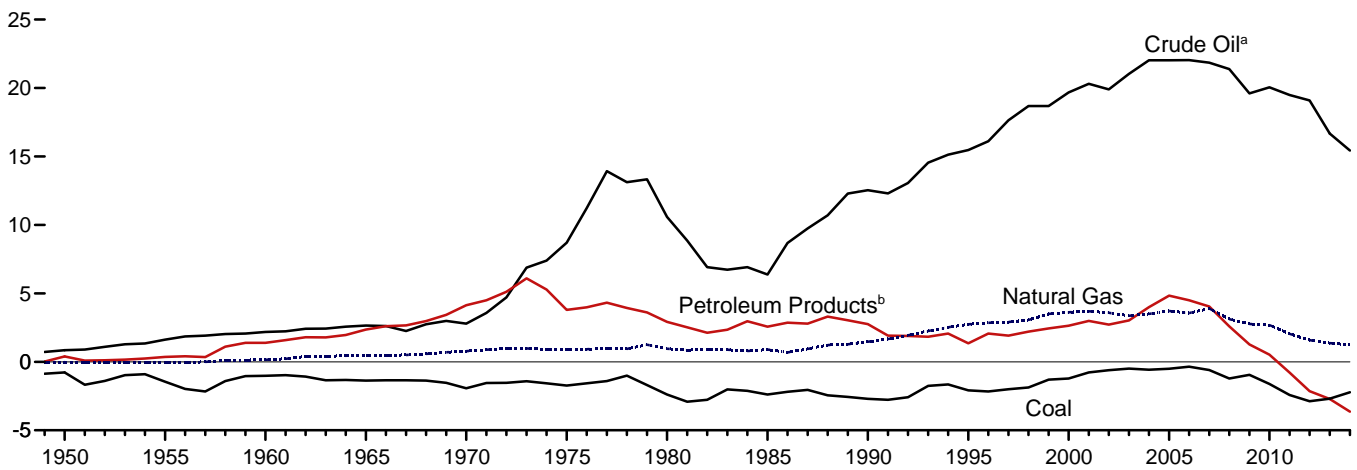
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#summary>.  
Sources: Tables 1.4a and 1.4b.

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

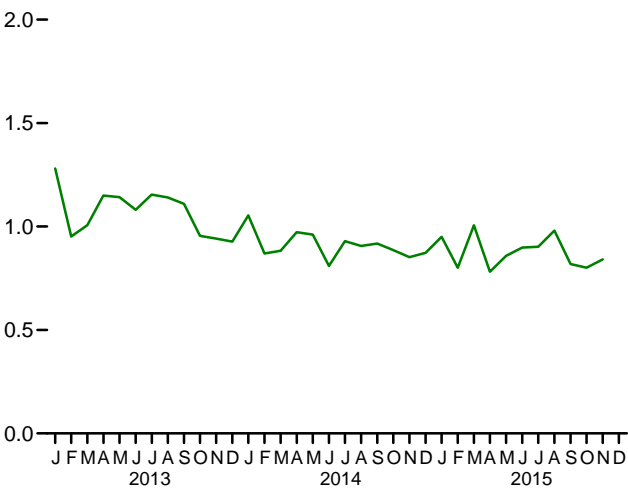
Total, 1949–2014



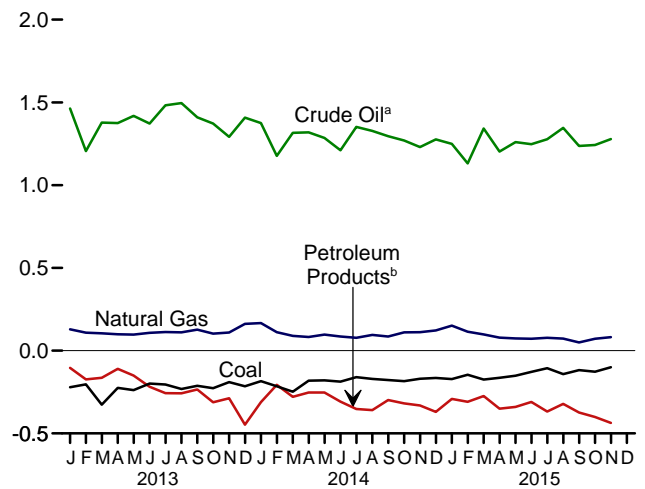
By Major Source, 1949–2014



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
<b>2013 Total</b>	<b>.199</b>	<b>.003</b>	<b>2.955</b>	<b>16.957</b>	<b>4.169</b>	<b>21.126</b>	<b>.102</b>	<b>.240</b>	<b>24.626</b>
2013 January	.015	(s)	.285	1.482	.361	1.843	.003	.020	2.165
February	.009	.001	.243	1.227	.304	1.531	.003	.018	1.805
March	.009	(s)	.254	1.397	.340	1.737	.007	.020	2.027
April	.015	(s)	.226	1.399	.393	1.792	.004	.017	2.055
May	.019	.001	.240	1.442	.410	1.852	.005	.020	2.137
June	.027	(s)	.243	1.394	.345	1.739	.010	.020	2.039
July	.020	(s)	.242	1.501	.373	1.874	.009	.023	2.168
August	.016	.001	.242	1.509	.354	1.863	.012	.023	2.157
September	.018	(s)	.250	1.429	.337	1.766	.011	.019	2.065
October	.016	(s)	.226	1.393	.353	1.746	.010	.019	2.017
November	.019	(s)	.224	1.336	.312	1.648	.014	.020	1.925
December	.017	(s)	.280	1.448	.288	1.736	.013	.020	2.066
2014 Total	.248	.002	2.763	16.178	3.773	19.951	.046	.210	23.221
2014 January	.023	(s)	.303	1.420	.291	1.710	.003	.017	2.056
February	.013	(s)	.252	1.216	.300	1.517	.002	.014	1.797
March	.018	(s)	.240	1.361	.336	1.697	.003	.017	1.975
April	.020	(s)	.206	1.368	.335	1.703	.004	.015	1.947
May	.028	(s)	.212	1.341	.375	1.716	.005	.017	1.977
June	.030	.001	.207	1.280	.291	1.571	.002	.017	1.827
July	.020	(s)	.206	1.427	.313	1.740	.006	.020	1.993
August	.024	(s)	.212	1.398	.312	1.710	.004	.021	1.970
September	.025	(s)	.207	1.357	.276	1.633	.003	.019	1.887
October	.013	.001	.226	1.337	.300	1.637	.004	.017	1.898
November	.022	(s)	.233	1.321	.278	1.599	.005	.019	1.879
December	.013	(s)	.260	1.352	.367	1.719	.005	.019	2.016
2015 Total	.226	.002	2.564	14.714	3.749	18.462	.068	.239	21.562
2015 January	.028	(s)	.286	1.338	.381	1.718	.003	.021	2.057
February	.019	(s)	.261	1.201	.326	1.528	.003	.019	1.830
March	.019	(s)	.264	1.417	.334	1.751	.004	.023	2.060
April	.019	(s)	.210	1.305	.344	1.649	.004	.022	1.904
May	.020	(s)	.209	1.355	.376	1.731	.005	.023	1.988
June	.018	(s)	.211	1.322	.366	1.689	.006	.023	1.947
July	.024	(s)	.223	1.371	.364	1.735	.009	.023	2.015
August	.021	(s)	.219	1.429	.355	1.784	.009	.024	2.058
September	.020	.002	.214	1.308	.341	1.649	.008	.023	1.915
October	.019	(s)	.232	1.332	.279	1.611	.009	.018	1.888
November	.019	(s)	.235	1.334	.282	1.617	.008	.020	1.899
2014 11-Month Total	.235	.002	2.503	14.826	3.406	18.232	.041	.192	21.205
2013 11-Month Total	.182	.003	2.675	15.509	3.881	19.390	.089	.220	22.560

<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.

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)

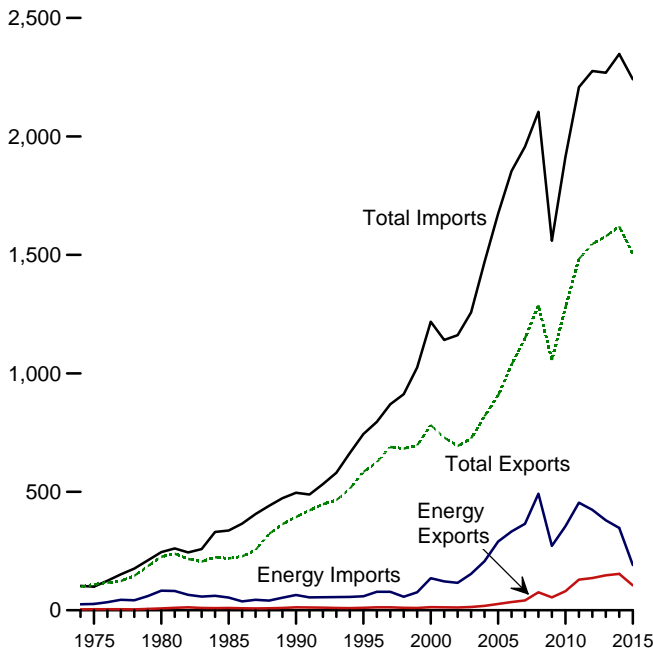
	Exports									Net Imports <sup>a</sup>
	Coal	Coal Coke	Natural Gas	Petroleum			Biofuels <sup>d</sup>	Electricity	Total	
				Crude Oil <sup>b</sup>	Petroleum Products <sup>c</sup>	Total				
<b>1950 Total</b> .....	<b>0.786</b>	<b>0.010</b>	<b>0.027</b>	<b>0.202</b>	<b>0.440</b>	<b>0.642</b>	NA	<b>0.001</b>	<b>1.465</b>	<b>0.448</b>
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
<b>2013 January</b> .....	<b>.236</b>	<b>.001</b>	<b>.156</b>	<b>.020</b>	<b>.465</b>	<b>.484</b>	<b>.005</b>	<b>.004</b>	<b>.885</b>	<b>1.280</b>
February .....	.212	.001	.134	.021	.478	.500	.004	.003	.854	.951
March .....	.336	.003	.150	.019	.504	.523	.005	.003	1.020	1.007
April .....	.240	.002	.127	.024	.503	.527	.005	.004	.905	1.150
May .....	.258	(s)	.143	.023	.560	.584	.006	.003	.995	1.142
June .....	.226	.003	.135	.022	.563	.585	.006	.003	.958	1.081
July .....	.225	.002	.130	.019	.630	.649	.005	.003	1.014	1.154
August .....	.248	.002	.131	.013	.612	.625	.008	.003	1.017	1.140
September .....	.231	.001	.124	.018	.571	.590	.007	.002	.955	1.110
October .....	.242	.001	.124	.021	.664	.686	.006	.003	1.062	.955
November .....	.209	.003	.115	.044	.600	.644	.010	.003	.983	.942
December .....	.232	.002	.118	.040	.735	.775	.008	.004	1.139	.927
<b>Total</b> .....	<b>2.895</b>	<b>.021</b>	<b>1.587</b>	<b>.284</b>	<b>6.886</b>	<b>7.170</b>	<b>.076</b>	<b>.039</b>	<b>11.787</b>	<b>12.839</b>
<b>2014 January</b> .....	<b>.207</b>	<b>.001</b>	<b>.136</b>	<b>.045</b>	<b>.602</b>	<b>.646</b>	<b>.008</b>	<b>.004</b>	<b>1.003</b>	<b>1.054</b>
February .....	.228	.002	.140	.040	.507	.547	.006	.004	.927	.870
March .....	.266	.001	.151	.045	.615	.660	.008	.007	1.092	.883
April .....	.202	.001	.123	.049	.588	.637	.007	.005	.975	.972
May .....	.208	.002	.115	.055	.628	.683	.006	.003	1.016	.961
June .....	.217	.002	.121	.069	.600	.668	.006	.004	1.018	.809
July .....	.181	.002	.128	.076	.666	.741	.007	.004	1.064	.929
August .....	.194	.003	.116	.070	.671	.741	.006	.003	1.064	.906
September .....	.202	.003	.121	.061	.574	.635	.005	.003	.969	.918
October .....	.197	.002	.116	.068	.618	.686	.007	.003	1.012	.886
November .....	.192	.002	.122	.091	.610	.700	.008	.003	1.027	.852
December .....	.177	.003	.138	.076	.737	.813	.007	.004	1.142	.873
<b>Total</b> .....	<b>2.472</b>	<b>.023</b>	<b>1.528</b>	<b>.744</b>	<b>7.414</b>	<b>8.158</b>	<b>.081</b>	<b>.046</b>	<b>12.308</b>	<b>10.913</b>
<b>2015 January</b> .....	<b>.200</b>	<b>.002</b>	<b>.135</b>	<b>.088</b>	<b>.673</b>	<b>.761</b>	<b>.006</b>	<b>.003</b>	<b>1.107</b>	<b>.950</b>
February .....	.165	.001	.146	.070	.635	.704	.007	.005	1.029	.801
March .....	.193	.001	.165	.075	.608	.683	.008	.003	1.054	1.006
April .....	.183	.002	.132	.102	.694	.796	.007	.002	1.123	.782
May .....	.172	.003	.135	.095	.716	.812	.007	.002	1.130	.858
June .....	.147	.003	.139	.075	.676	.751	.006	.002	1.049	.898
July .....	.130	.001	.145	.095	.731	.826	.008	.002	1.112	.903
August .....	.163	.001	.146	.083	.677	.760	.006	.002	1.078	.980
September .....	.137	.002	.164	.071	.715	.786	.006	.002	1.097	.818
October .....	.146	.002	.160	.090	.680	.770	.007	.002	1.087	.801
November .....	.120	.002	.153	.056	.719	.775	.005	.002	1.058	.841
<b>11-Month Total</b> .....	<b>1.756</b>	<b>.019</b>	<b>1.622</b>	<b>.900</b>	<b>7.524</b>	<b>8.424</b>	<b>.074</b>	<b>.029</b>	<b>11.924</b>	<b>9.638</b>
<b>2014 11-Month Total</b> .....	<b>2.294</b>	<b>.020</b>	<b>1.390</b>	<b>.668</b>	<b>6.677</b>	<b>7.345</b>	<b>.074</b>	<b>.042</b>	<b>11.165</b>	<b>10.040</b>
<b>2013 11-Month Total</b> .....	<b>2.663</b>	<b>.019</b>	<b>1.468</b>	<b>.244</b>	<b>6.151</b>	<b>6.395</b>	<b>.068</b>	<b>.035</b>	<b>10.648</b>	<b>11.912</b>

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

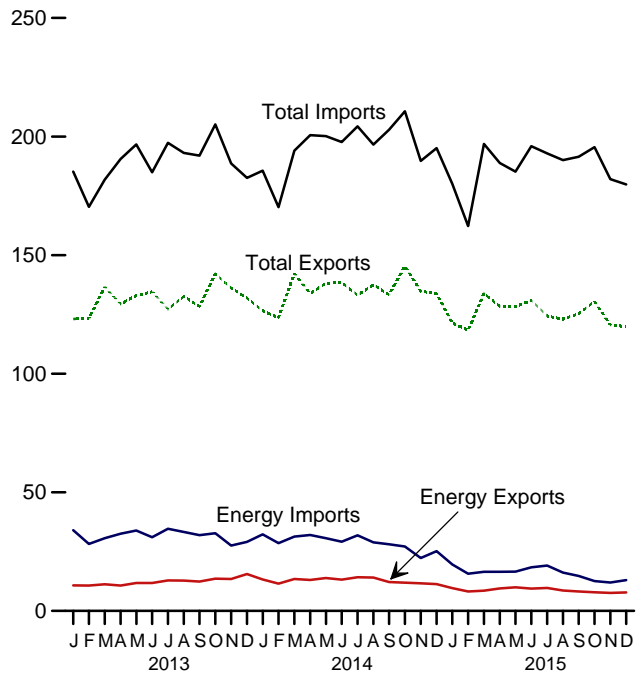
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
 Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#summary> (Excel and CSV files) for all available annual 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>)

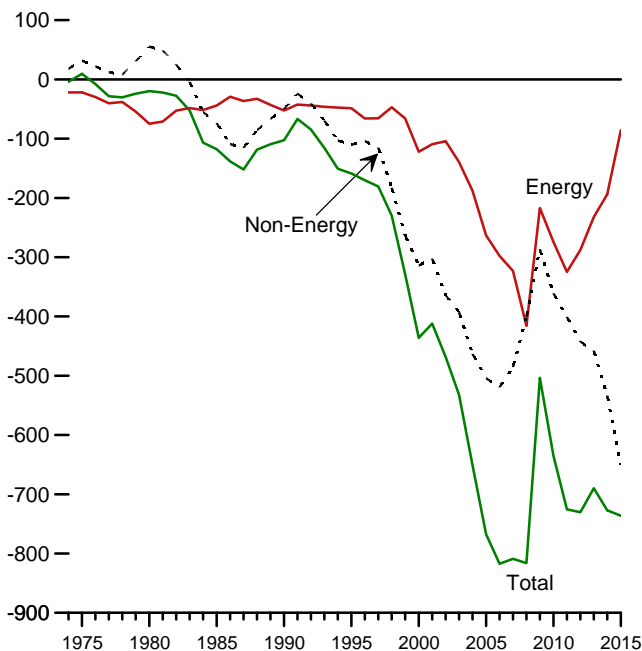
Imports and Exports, 1974–2015



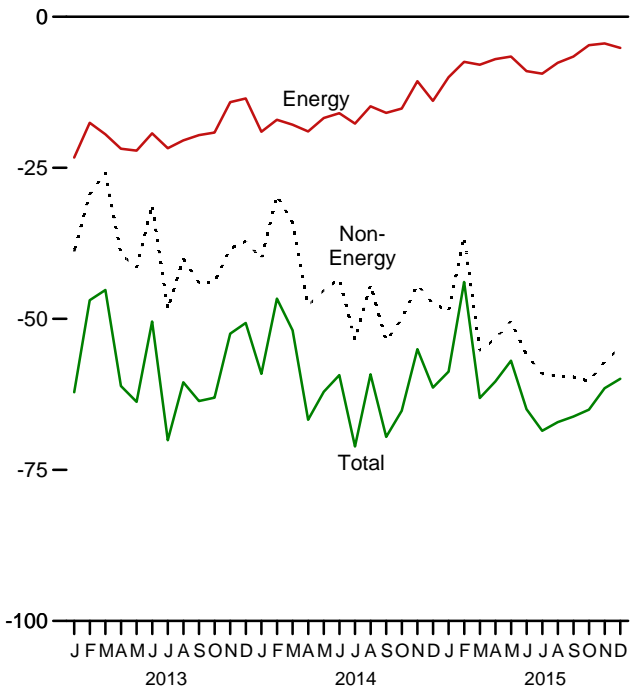
Imports and Exports, Monthly



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
1974 Total	792	24,668	-23,876	3,444	25,454	-22,010	18,126	99,437	103,321	-3,884
1975 Total	907	25,197	-24,289	4,470	26,476	-22,006	31,557	108,856	99,305	9,551
1980 Total	2,833	78,637	-75,803	7,982	82,924	-74,942	55,246	225,566	245,262	-19,696
1985 Total	4,707	50,475	-45,768	9,971	53,917	-43,946	-73,765	218,815	336,526	-117,712
1990 Total	6,901	61,583	-54,682	12,233	64,661	-52,428	-50,068	393,592	496,088	-102,496
1995 Total	6,321	54,368	-48,047	10,358	59,109	-48,751	-110,050	584,742	743,543	-158,801
2000 Total	10,192	119,251	-109,059	13,179	135,367	-122,188	-313,916	781,918	1,218,022	-436,104
2001 Total	8,868	102,747	-93,879	12,494	121,923	-109,429	-302,470	729,100	1,140,999	-411,899
2002 Total	8,569	102,663	-94,094	11,541	115,748	-104,207	-364,056	693,103	1,161,366	-468,263
2003 Total	10,209	132,433	-122,224	13,768	153,298	-139,530	-392,820	724,771	1,257,121	-532,350
2004 Total	13,130	179,266	-166,136	18,642	206,660	-188,018	-462,912	818,775	1,469,704	-650,930
2005 Total	19,155	250,068	-230,913	26,488	289,723	-263,235	-504,242	905,978	1,673,455	-767,477
2006 Total	28,171	299,714	-271,543	34,711	332,500	-297,789	-519,515	1,036,635	1,853,938	-817,304
2007 Total	33,293	327,620	-294,327	41,725	364,987	-323,262	-485,501	1,148,199	1,956,962	-808,763
2008 Total	61,695	449,847	-388,152	76,075	491,885	-415,810	-400,389	1,287,442	2,103,641	-816,199
2009 Total	44,509	251,833	-207,324	54,536	271,739	-217,203	-286,379	1,056,043	1,559,625	-503,582
2010 Total	64,753	333,472	-268,719	80,625	354,982	-274,357	-361,005	1,278,495	1,913,857	-635,362
2011 Total	<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
2012 Total	111,951	408,509	-296,558	136,054	423,862	-287,808	-442,638	1,545,821	2,276,267	-730,446
2013 January	8,787	32,448	-23,661	10,747	34,049	-23,302	-38,832	123,053	185,186	-62,134
February	9,027	26,828	-17,801	10,724	28,256	-17,532	-29,388	123,439	170,359	-46,920
March	8,909	29,265	-20,356	11,235	30,687	-19,452	-25,769	136,635	181,856	-45,221
April	8,586	31,204	-22,618	10,670	32,518	-21,848	-39,273	129,438	190,559	-61,121
May	9,679	32,590	-22,911	11,754	33,916	-22,162	-41,562	132,965	196,689	-63,724
June	9,851	29,673	-19,822	11,755	31,047	-19,292	-31,136	134,528	184,956	-50,428
July	10,860	33,327	-22,467	12,876	34,625	-21,749	-48,350	127,268	197,367	-70,099
August	10,817	32,044	-21,227	12,808	33,274	-20,466	-40,028	132,574	193,069	-60,494
September	10,398	30,754	-20,356	12,367	31,963	-19,596	-43,994	128,387	191,977	-63,590
October	11,495	31,590	-20,095	13,620	32,781	-19,161	-43,894	142,076	205,130	-63,055
November	11,375	26,226	-14,851	13,428	27,559	-14,131	-38,324	136,191	188,647	-52,455
December	13,434	27,192	-13,758	15,555	29,083	-13,528	-37,160	131,887	182,575	-50,688
<b>Total</b>	<b>123,218</b>	<b>363,141</b>	<b>-239,923</b>	<b>147,539</b>	<b>379,758</b>	<b>-232,219</b>	<b>-457,712</b>	<b>1,578,439</b>	<b>2,268,370</b>	<b>-689,931</b>
2014 January	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	210,650	-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>R 153,697</b>	<b>347,477</b>	<b>R -193,780</b>	<b>R -533,373</b>	<b>1,620,532</b>	<b>2,347,685</b>	<b>-727,153</b>
2015 January	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	<sup>R</sup> -57,085	<sup>R</sup> 120,570	<sup>R</sup> 182,056	<sup>R</sup> -61,486
December	6,505	12,150	-5,645	7,817	12,968	-5,151	-54,767	119,909	179,828	-59,918
<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>-650,336</b>	<b>1,504,914</b>	<b>2,241,086</b>	<b>-736,172</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

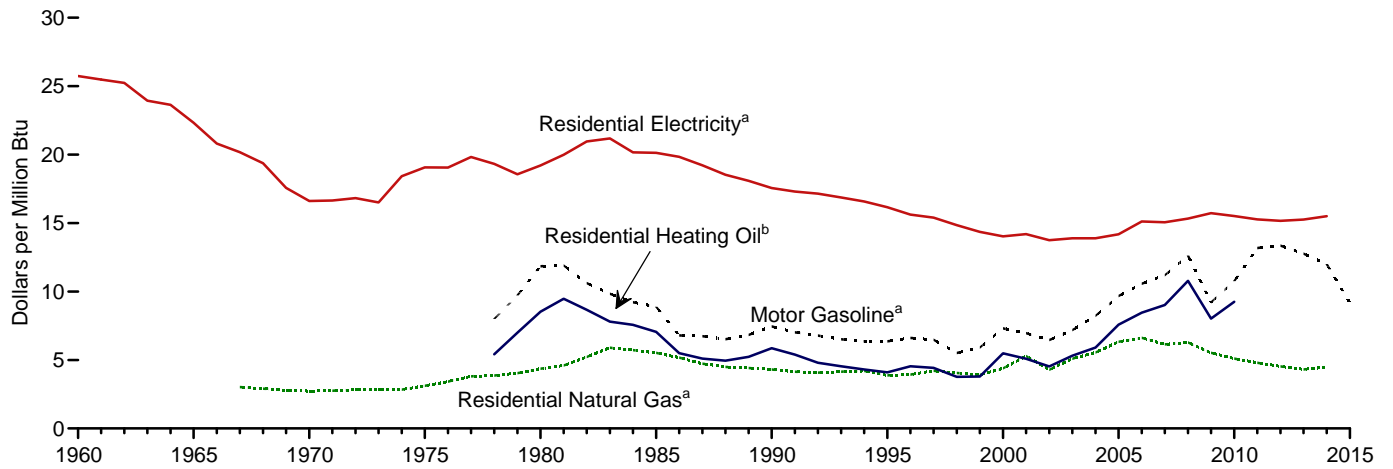
components due to independent rounding. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory, which comprises the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands.

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.

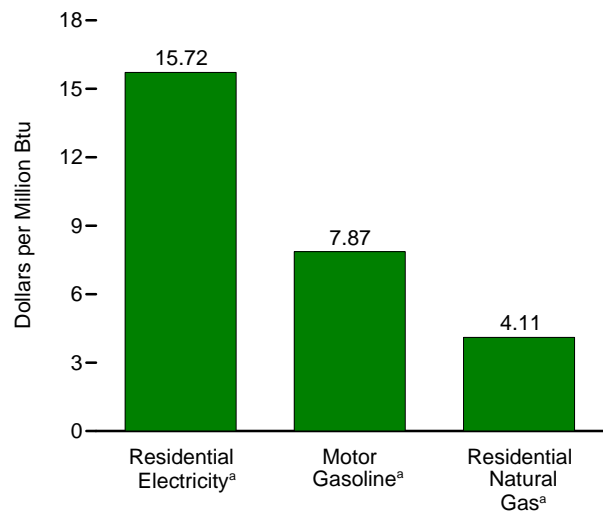
Sources: See end of section.

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

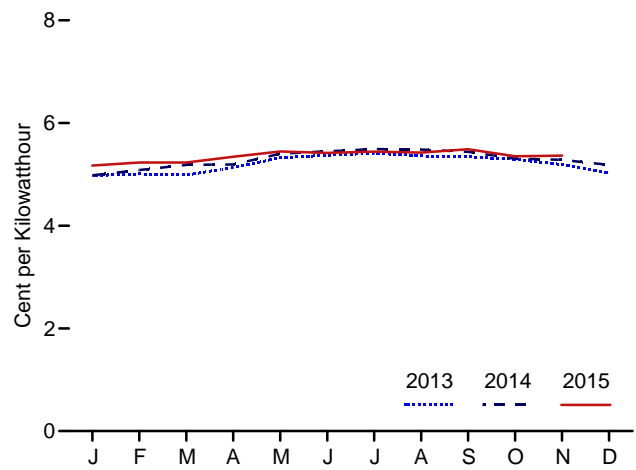
Costs, 1960–2015



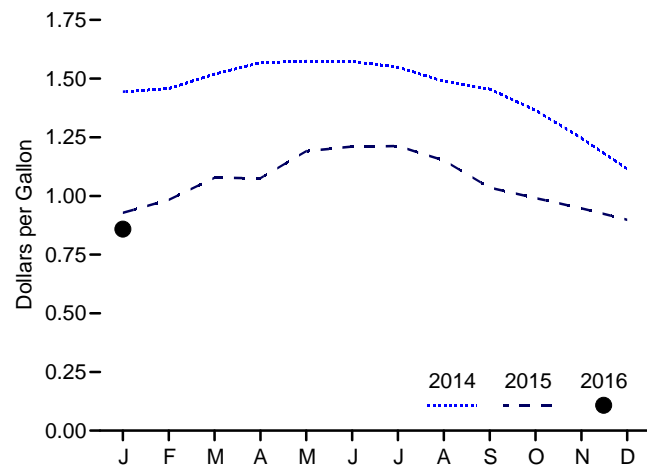
Costs, November 2015



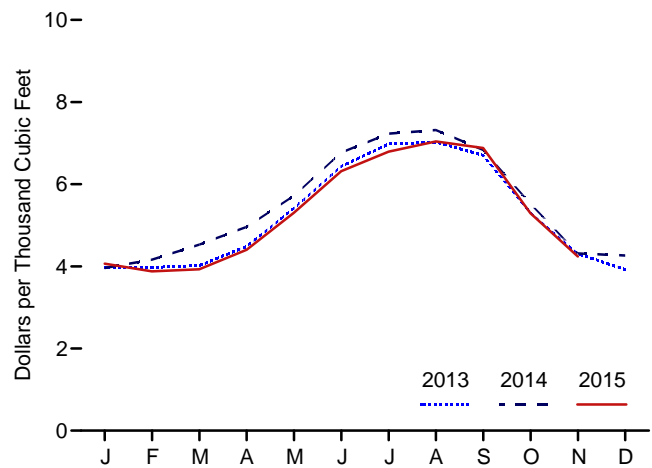
Residential Electricity,<sup>a</sup> Monthly



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 Kilowatt-hour	Dollars per Million Btu
1960 Average	29.6	NA	NA	NA	NA	NA	NA	8.8	25.74
1965 Average	31.5	NA	NA	NA	NA	NA	NA	7.6	22.33
1970 Average	38.8	NA	NA	NA	NA	2.81	2.72	5.7	16.62
1975 Average	53.8	NA	NA	NA	NA	3.18	3.12	6.5	19.07
1980 Average	82.4	1.482	11.85	1.182	8.52	4.47	4.36	6.6	19.21
1985 Average	107.6	1.112	8.89	0.979	7.06	5.69	5.52	6.87	20.13
1990 Average	130.7	0.931	7.44	0.813	5.86	4.44	4.31	5.99	17.56
1995 Average	152.4	0.791	6.36	0.569	4.10	3.98	3.87	5.51	16.15
2000 Average	172.2	0.908	7.31	0.761	5.49	4.51	4.39	4.79	14.02
2001 Average	177.1	0.864	6.96	0.706	5.09	5.44	5.28	4.84	14.20
2002 Average	179.9	0.801	6.46	0.628	4.52	4.39	4.28	4.69	13.75
2003 Average	184.0	0.890	7.19	0.736	5.31	5.23	5.09	4.74	13.89
2004 Average	188.9	1.018	8.22	0.819	5.91	5.69	5.55	4.74	13.89
2005 Average	195.3	1.197	9.67	1.051	7.58	6.50	6.33	4.84	14.18
2006 Average	201.6	1.307	10.58	1.173	8.46	6.81	6.63	5.16	15.12
2007 Average	207.342	1.374	11.20	1.250	9.01	6.31	6.14	5.14	15.05
2008 Average	215.303	1.541	12.62	1.495	10.78	6.45	6.28	5.23	15.33
2009 Average	214.537	1.119	9.21	1.112	8.02	5.66	5.52	5.37	15.72
2010 Average	218.056	1.301	10.76	1.283	9.25	5.22	5.11	5.29	15.51
2011 Average	224.939	1.590	13.18	NA	NA	4.90	4.80	5.21	15.27
2012 Average	229.594	1.609	13.35	NA	NA	4.64	4.53	5.17	15.17
2013 January	230.280	1.480	12.28	NA	NA	3.97	3.87	4.98	14.59
February	232.166	1.614	13.39	NA	NA	3.98	3.87	5.01	14.68
March	232.773	1.629	13.52	NA	NA	4.02	3.91	4.99	14.62
April	232.531	1.568	13.01	NA	NA	4.49	4.36	5.13	15.04
May	232.945	1.581	13.11	NA	NA	5.41	5.27	5.32	15.60
June	233.504	1.582	13.12	NA	NA	6.43	6.26	5.37	15.74
July	233.596	1.578	13.10	NA	NA	6.98	6.79	5.42	15.87
August	233.877	1.564	12.98	NA	NA	7.03	6.83	5.36	15.70
September	234.149	1.544	12.81	NA	NA	6.70	6.52	5.34	15.66
October	233.546	1.470	12.20	NA	NA	5.30	5.16	5.29	15.51
November	233.069	1.420	11.78	NA	NA	4.31	4.19	5.19	15.22
December	233.049	1.430	11.87	NA	NA	3.92	3.82	5.03	14.74
Average	232.957	1.538	12.76	NA	NA	4.43	4.31	5.21	15.26
2014 January	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
Average	236.736	1.447	12.01	NA	NA	4.63	4.49	5.29	15.50
2015 January	233.707	0.929	7.71	NA	NA	4.07	3.94	5.17	15.16
February	234.722	0.983	8.16	NA	NA	3.88	3.76	5.23	15.33
March	236.119	1.077	8.94	NA	NA	3.93	3.81	5.23	15.33
April	236.599	1.076	8.93	NA	NA	4.40	4.27	5.34	15.66
May	237.805	1.191	9.88	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	10.06	NA	NA	6.79	6.58	5.44	15.95
August	238.316	1.152	9.56	NA	NA	7.04	6.82	5.43	15.90
September	237.945	1.035	8.59	NA	NA	R 6.88	R 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	R 4.24	R 4.11	R 5.36	R 15.72
December	236.525	0.898	7.46	NA	NA	NA	NA	NA	NA
Average	237.017	R 1.059	R 8.79	NA	NA	NA	NA	NA	NA
2016 January	236.916	0.859	7.13	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.

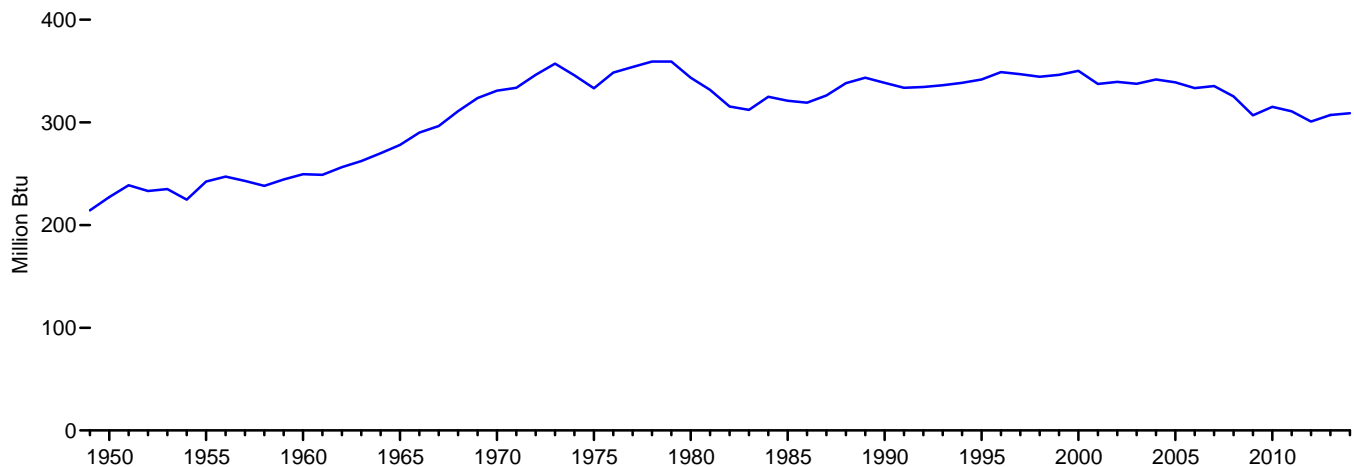
Notes: • See "Real Dollars" in Glossary. • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. • Annual averages may not equal average of months due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

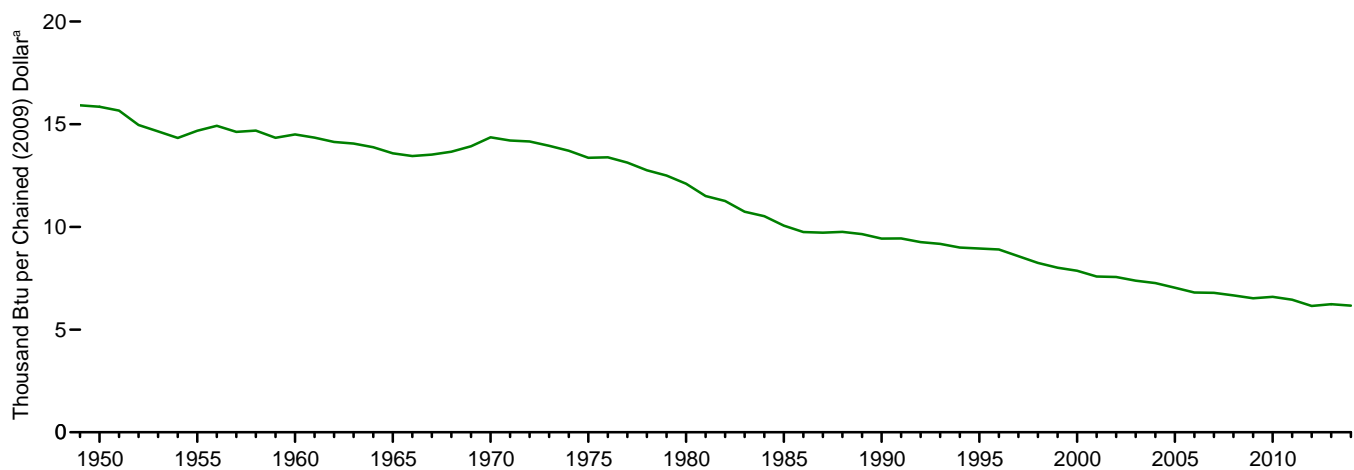
Sources: • **Fuel Prices:** Tables 9.4 (All Grades), 9.8, and 9.10, adjusted by the CPI; and *Monthly Energy Review*, September 2012, Table 9.8c. • **Consumer Price Index, All Urban Consumers:** U.S. Department of Labor, Bureau of Labor Statistics, series ID CUUR0000SA0. • **Conversion Factors:** Tables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

## Figure 1.7 Primary Energy Consumption and Energy Expenditures Indicators

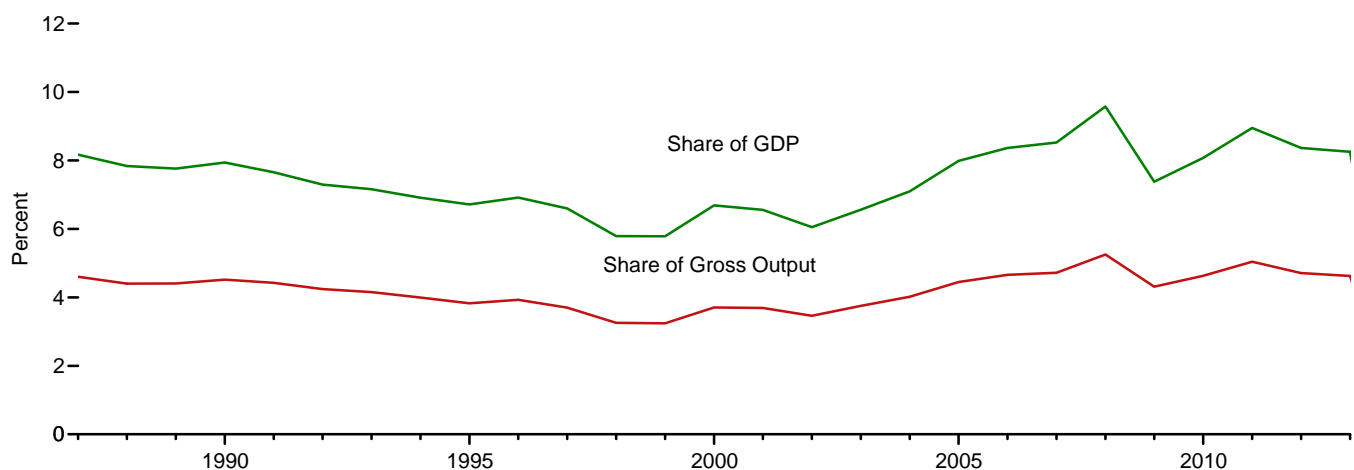
### Energy Consumption per Capita, 1949–2014



### Primary Energy Consumption per Real Dollar<sup>a</sup> of Gross Domestic Product, 1949–2014



### 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.

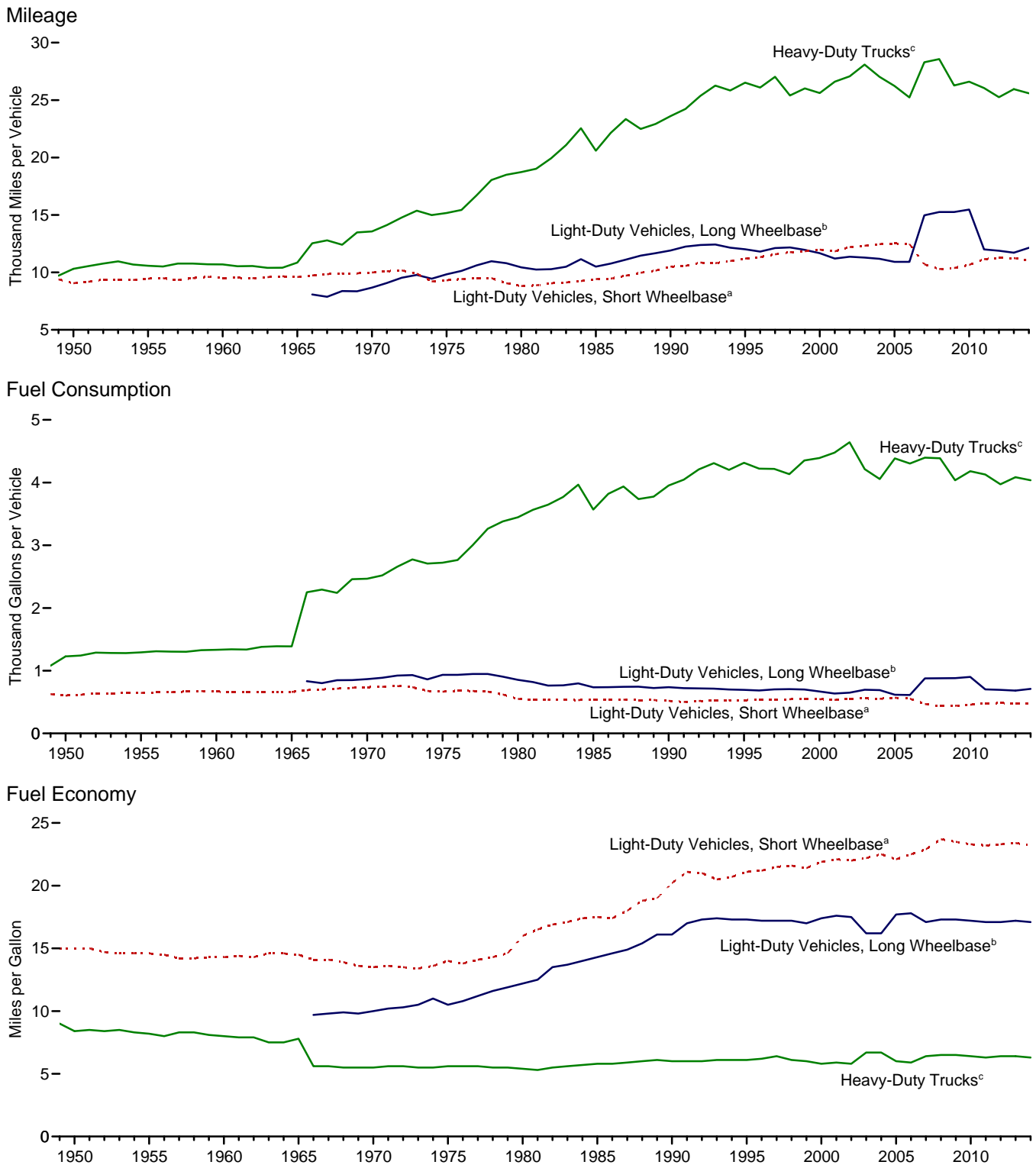
**Table 1.7 Primary Energy Consumption, Energy Expenditures, and Carbon Dioxide Emissions Indicators**

	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	411,617	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 .....	97.241	307	6.24	1,375,306	4,345	8.3	4.6	5,355	16.9	344
2014 .....	<sup>R</sup> 98.484	309	6.17	NA	NA	NA	NA	5,406	17.0	339

<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.  
R=Revised. NA=Not available.  
Notes: • Data are estimates. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#summary> (Excel and CSV files) for all available annual data beginning in 1949.  
Sources: • **Consumption:** Table 1.3. • **Consumption per Capita:** Calculated as energy consumption divided by U.S. population (see Table C1).

• **Consumption per Real Dollar of GDP:** Calculated as energy consumption divided by U.S. gross domestic product in chained (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."

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
<b>2013</b>										
January	1,170	1,064	1,178	1,263	506	681	497	1,018	645	828
February	1,026	990	1,090	1,097	506	623	368	808	520	733
March	920	897	1,021	1,048	505	628	311	592	392	660
April	566	480	543	630	151	216	123	R 459	289	348
May	245	192	174	227	60	70	15	217	158	136
June	36	22	40	48	1	1	0	57	51	26
July	1	1	8	15	0	0	0	11	12	5
August	27	17	21	18	1	0	0	16	14	12
September	R 139	111	89	67	19	16	1	99	55	59
October	R 398	315	392	439	125	169	67	414	239	257
November	785	748	837	879	385	544	347	613	390	572
December	1,113	1,002	1,228	1,404	477	700	597	970	596	829
Total	<b>6,426</b>	<b>5,838</b>	<b>6,621</b>	<b>7,135</b>	<b>2,736</b>	<b>3,648</b>	<b>2,326</b>	<b>R 5,273</b>	<b>3,362</b>	<b>4,465</b>
<b>2014</b>										
January	R 1,304	1,305	1,518	R 1,483	R 760	R 1,014	650	834	437	R 970
February	1,141	R 1,104	1,322	R 1,347	R 494	690	R 478	705	R 449	R 799
March	R 1,116	1,026	R 1,094	1,031	461	564	R 351	R 583	R 375	683
April	R 582	R 505	496	R 512	R 158	R 182	R 81	405	276	325
May	254	R 179	205	200	37	R 49	11	218	131	127
June	46	20	27	41	1	1	0	86	61	28
July	4	7	29	30	1	R 1	0	11	9	10
August	32	19	19	21	1	0	0	37	11	13
September	110	74	120	126	R 11	R 17	4	100	37	57
October	R 358	R 311	R 418	389	119	R 162	37	273	R 122	R 221
November	R 785	R 757	937	R 1,021	442	R 626	R 390	R 654	353	614
December	R 941	R 896	1,009	R 1,102	R 478	627	R 421	R 837	R 511	706
Total	<b>R 6,674</b>	<b>R 6,203</b>	<b>7,194</b>	<b>R 7,304</b>	<b>2,963</b>	<b>R 3,932</b>	<b>R 2,422</b>	<b>R 4,743</b>	<b>R 2,773</b>	<b>R 4,552</b>
<b>2015</b>										
January	R 1,336	R 1,260	1,335	1,267	R 644	R 837	R 624	R 818	R 468	890
February	R 1,415	1,319	R 1,406	1,306	R 668	R 866	499	R 600	R 331	R 867
March	1,103	R 1,003	953	R 803	R 360	446	277	483	284	584
April	R 590	481	456	R 399	133	R 147	R 56	R 396	293	300
May	146	R 100	159	215	R 22	R 38	14	R 267	R 207	119
June	R 85	R 31	R 46	40	1	1	0	42	R 24	24
July	7	4	12	12	0	0	0	24	8	6
August	8	9	25	33	0	1	0	21	13	11
September	43	27	39	50	8	13	1	78	57	32
October	R 459	392	365	355	144	R 166	42	R 248	R 110	227
November	610	528	604	651	238	314	216	685	464	444
11-Month Total	<b>5,801</b>	<b>5,155</b>	<b>5,399</b>	<b>5,130</b>	<b>2,218</b>	<b>2,828</b>	<b>1,730</b>	<b>3,662</b>	<b>2,260</b>	<b>3,506</b>
2014 11-Month Total	<b>5,733</b>	<b>5,307</b>	<b>6,185</b>	<b>6,201</b>	<b>2,484</b>	<b>3,304</b>	<b>2,001</b>	<b>3,906</b>	<b>2,262</b>	<b>3,846</b>
2013 11-Month Total	<b>5,312</b>	<b>4,836</b>	<b>5,393</b>	<b>5,731</b>	<b>2,259</b>	<b>2,948</b>	<b>1,729</b>	<b>4,303</b>	<b>2,766</b>	<b>3,636</b>

<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
<b>1950 Total</b> .....	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
<b>2013</b> January .....	0	0	0	0	58	9	18	0	7	15
February .....	0	0	0	0	35	2	22	0	7	11
March .....	0	0	0	0	16	2	34	23	13	11
April .....	0	0	0	1	91	20	64	47	25	34
May .....	8	23	71	49	154	113	229	122	58	100
June .....	88	134	142	181	349	319	490	309	135	245
July .....	304	326	218	263	414	339	519	390	252	339
August .....	123	160	181	251	370	342	563	337	209	288
September .....	17	36	72	141	255	235	433	186	137	177
October .....	0	6	6	7	134	55	145	39	27	56
November .....	0	0	0	0	66	1	15	9	13	18
December .....	0	0	0	0	58	2	4	0	9	13
<b>Total</b> .....	<b>540</b>	<b>683</b>	<b>690</b>	<b>892</b>	<b>2,000</b>	<b>1,441</b>	<b>2,536</b>	<b>1,462</b>	<b>892</b>	<b>1,306</b>
<b>2014</b> January .....	0	0	0	0	20	0	5	3	14	7
February .....	0	0	0	0	R 45	1	8	7	10	12
March .....	0	0	0	0	R 43	5	21	20	15	15
April .....	0	0	1	4	82	26	96	47	R 26	37
May .....	R 8	26	54	65	209	147	226	119	R 72	113
June .....	69	R 131	176	194	350	R 329	457	272	127	242
July .....	R 201	219	133	R 200	399	R 307	R 502	391	R 274	301
August .....	109	150	197	R 261	380	376	557	272	R 228	292
September .....	R 32	65	46	78	279	R 236	381	206	190	183
October .....	0	6	2	12	R 126	R 60	R 195	R 85	86	74
November .....	0	0	0	0	31	0	10	9	R 19	11
December .....	0	0	0	0	36	4	R 15	0	7	10
<b>Total</b> .....	<b>R 420</b>	<b>596</b>	<b>R 610</b>	<b>R 814</b>	<b>2,001</b>	<b>R 1,493</b>	<b>2,474</b>	<b>1,432</b>	<b>1,068</b>	<b>1,297</b>
<b>2015</b> January .....	0	0	0	0	R 34	3	R 5	2	11	9
February .....	0	0	0	0	18	0	6	11	14	7
March .....	0	0	0	3	85	21	40	R 33	28	30
April .....	0	0	1	8	130	52	R 140	R 40	23	53
May .....	32	R 72	R 81	56	240	R 174	R 260	R 76	R 28	125
June .....	39	113	138	R 203	392	351	R 454	R 314	R 180	255
July .....	R 192	249	202	R 289	453	442	586	R 327	R 223	R 336
August .....	207	228	169	202	R 410	R 339	R 562	R 363	R 266	R 316
September .....	R 86	135	128	168	295	R 234	R 423	R 231	R 200	224
October .....	0	1	7	13	134	R 57	189	83	R 101	77
November .....	0	0	0	0	103	15	53	3	12	30
<b>11-Month Total</b> ...	<b>556</b>	<b>798</b>	<b>726</b>	<b>942</b>	<b>2,293</b>	<b>1,688</b>	<b>2,718</b>	<b>1,483</b>	<b>1,085</b>	<b>1,463</b>
<b>2014 11-Month Total</b> ...	<b>420</b>	<b>596</b>	<b>610</b>	<b>814</b>	<b>1,965</b>	<b>1,490</b>	<b>2,460</b>	<b>1,432</b>	<b>1,061</b>	<b>1,287</b>
<b>2013 11-Month Total</b> ...	<b>540</b>	<b>683</b>	<b>690</b>	<b>892</b>	<b>1,942</b>	<b>1,439</b>	<b>2,532</b>	<b>1,462</b>	<b>883</b>	<b>1,293</b>

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

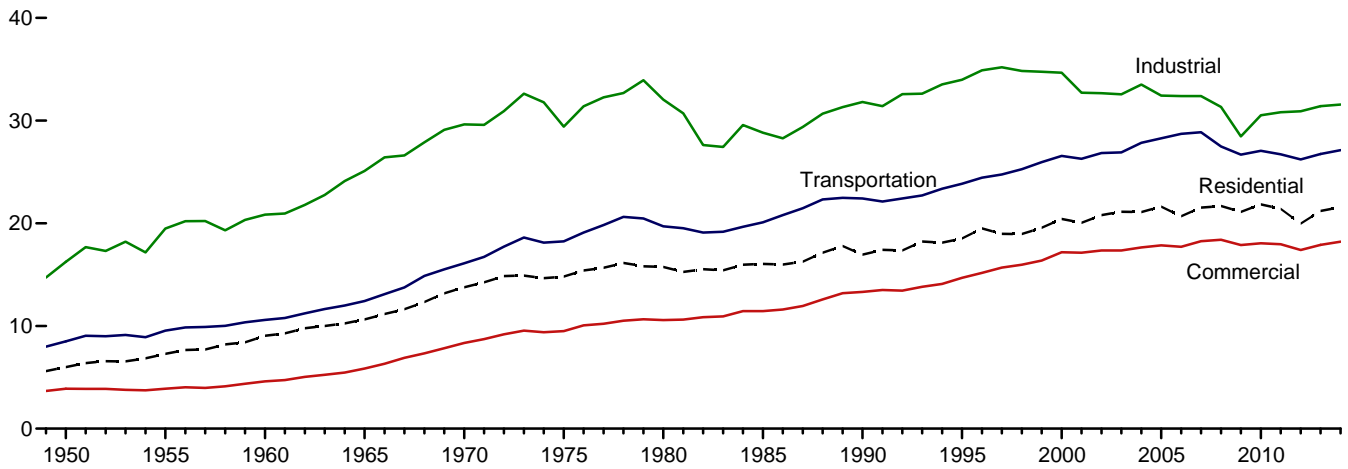
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## **2. Energy Consumption by Sector**

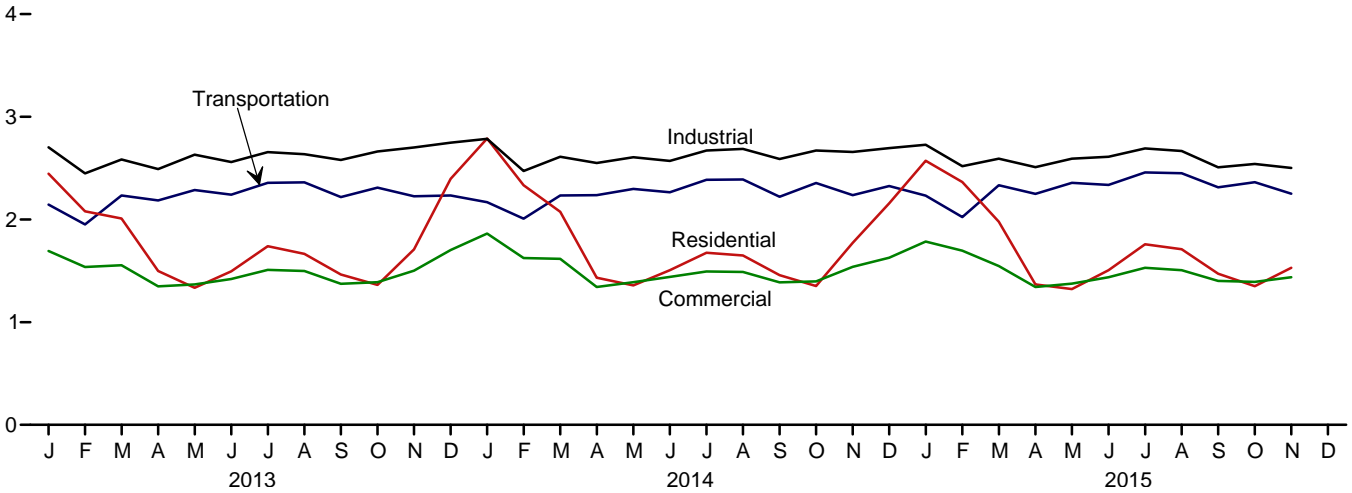
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**Figure 2.1 Energy Consumption by Sector**  
(Quadrillion Btu)

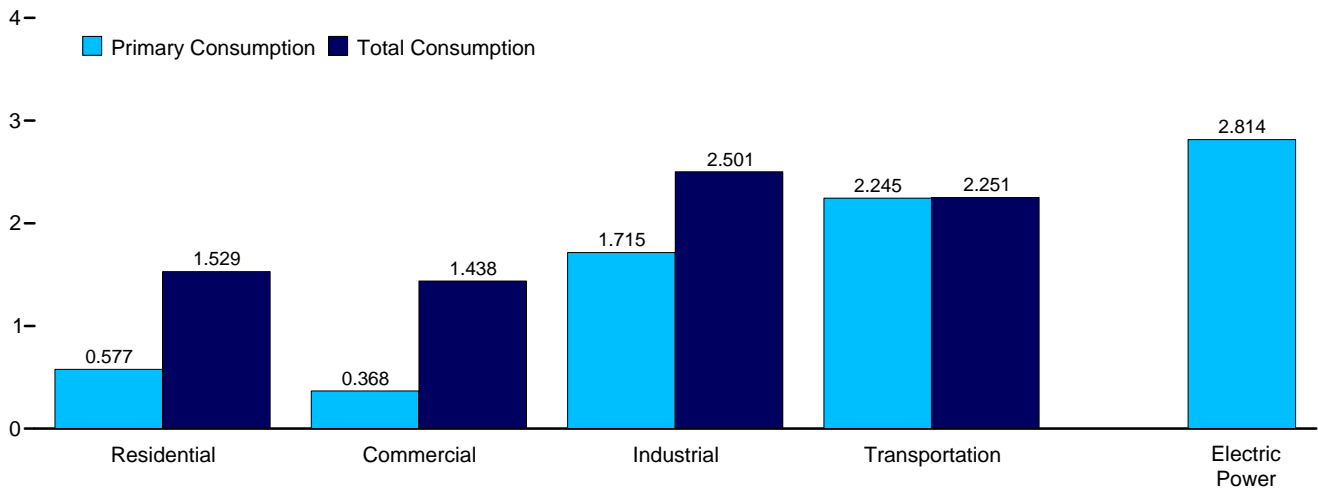
Total Consumption by End-Use Sector, 1949–2014



Total Consumption by End-Use Sector, Monthly



By Sector, November 2015

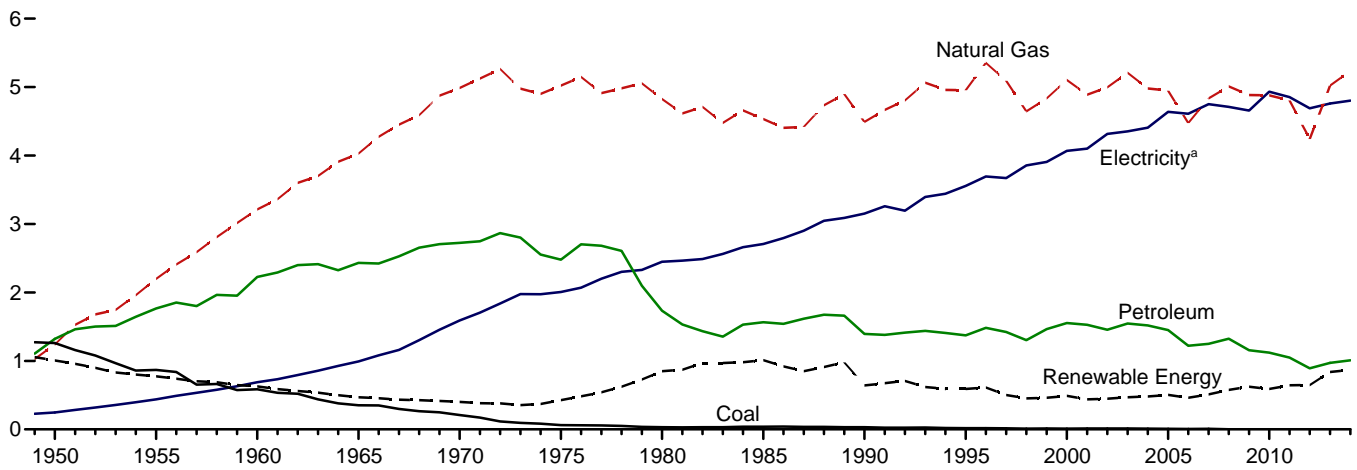


Web Page: <http://www.eia.gov/totalenergy/data/monthly/#consumption>.  
Source: Table 2.1.

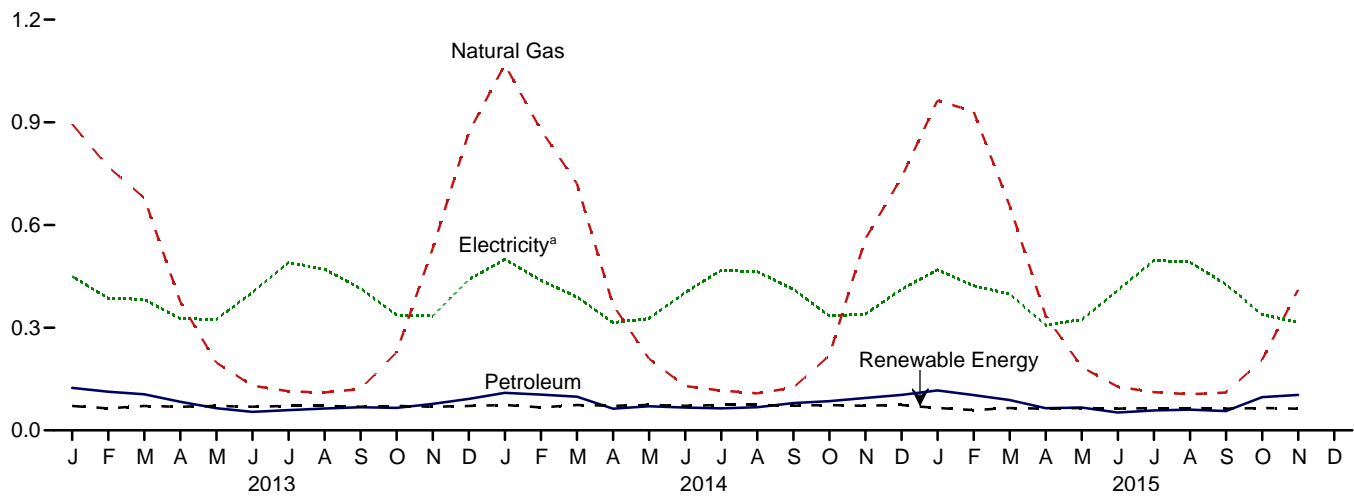


**Figure 2.2 Residential Sector Energy Consumption**  
(Quadrillion Btu)

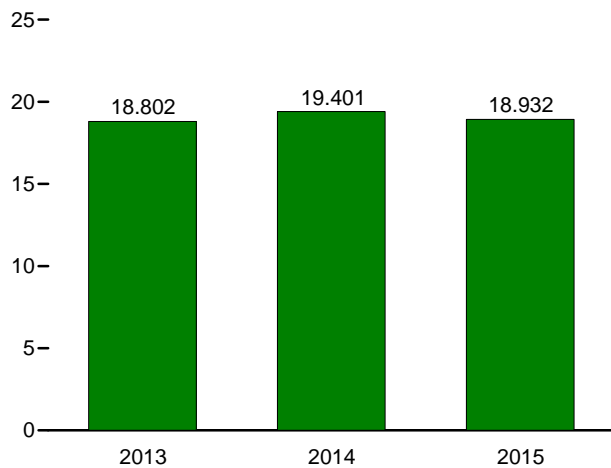
By Major Source, 1949–2014



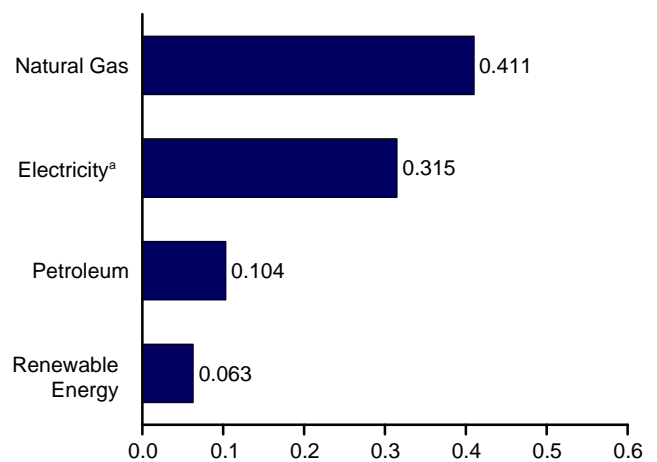
By Major Source, Monthly



Total, January–November



By Major Source, November 2015



<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>	Petroleum	Total	Geo-thermal	Solar/ <sup>d</sup> PV	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	1,048	5,852	40	153	450	643	6,495	4,855	10,054	21,404
2012 Total	NA	4,242	892	5,134	40	186	420	646	5,779	4,690	9,496	19,965
2013 January	NA	895	124	1,019	3	19	49	71	1,090	450	906	2,446
February	NA	770	113	883	3	17	44	64	947	386	746	2,079
March	NA	679	105	785	3	19	49	71	856	382	771	2,009
April	NA	376	84	459	3	18	48	69	528	326	644	1,498
May	NA	198	65	263	3	19	49	71	334	325	675	1,334
June	NA	131	54	185	3	18	48	69	254	403	839	1,496
July	NA	114	59	174	3	19	49	71	245	491	1,005	1,740
August	NA	110	64	174	3	19	49	71	246	471	949	1,665
September	NA	121	67	188	3	18	48	69	257	414	792	1,463
October	NA	228	66	294	3	19	49	71	365	337	659	1,362
November	NA	531	77	608	3	18	48	69	677	334	698	1,709
December	NA	870	92	962	3	19	49	71	1,033	440	922	2,396
Total	NA	5,023	970	5,993	40	219	580	839	6,832	4,759	9,605	21,196
2014 January	NA	1,069	110	1,178	3	21	49	74	1,252	500	R 1,036	R 2,789
February	NA	879	105	983	3	19	44	67	1,050	438	844	R 2,333
March	NA	721	98	819	3	21	49	74	893	390	R 792	R 2,075
April	NA	367	64	430	3	21	48	72	502	315	R 616	R 1,433
May	NA	209	71	280	3	21	49	74	354	327	678	R 1,358
June	NA	129	67	196	3	21	48	72	267	403	R 835	R 1,506
July	NA	116	64	180	3	21	49	74	254	468	954	1,676
August	NA	108	68	176	3	21	49	74	250	463	936	1,649
September	NA	125	80	205	3	21	48	72	277	412	769	1,458
October	NA	218	85	304	3	21	49	74	378	335	R 640	R 1,352
November	NA	560	95	654	3	21	48	72	726	339	707	1,772
December	NA	738	104	842	3	21	49	74	916	412	830	2,158
Total	NA	5,237	1,009	R 6,246	40	252	580	871	R 7,117	4,801	R 9,637	R 21,555
2015 January	NA	964	116	R 1,080	3	24	38	65	1,146	469	R 957	R 2,572
February	NA	931	103	1,034	3	22	34	59	1,093	422	849	2,365
March	NA	656	89	745	3	24	38	65	810	399	R 769	1,978
April	NA	334	65	399	3	23	37	63	462	307	599	1,368
May	NA	185	R 66	251	3	24	38	65	R 317	324	682	1,323
June	NA	127	52	R 180	3	23	37	63	R 243	409	855	1,507
July	NA	111	58	169	3	24	38	65	235	496	1,028	1,759
August	NA	R 105	60	166	3	24	38	65	231	492	987	1,710
September	NA	111	56	167	3	23	37	63	230	426	815	1,472
October	NA	206	R 97	R 303	3	24	38	65	R 368	338	R 644	R 1,351
November	NA	411	104	514	3	23	37	63	577	315	636	1,529
11-Month Total	NA	4,142	867	5,009	37	257	409	703	5,712	4,397	8,822	18,932
2014 11-Month Total	NA	4,500	905	5,406	36	230	531	797	6,203	4,389	8,809	19,401
2013 11-Month Total	NA	4,154	879	5,032	36	200	531	767	5,800	4,319	8,684	18,802

<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.

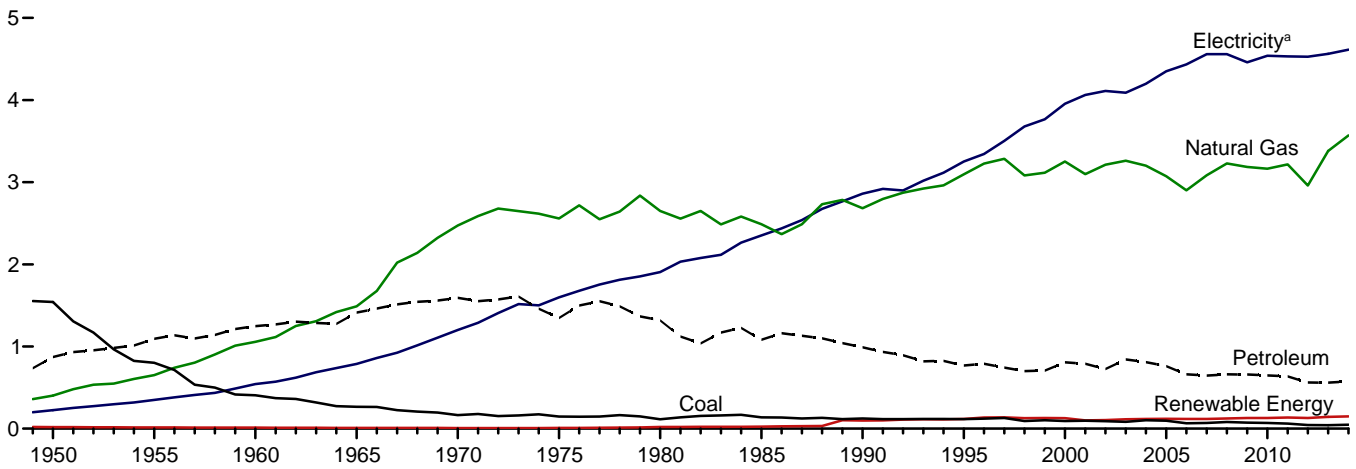
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

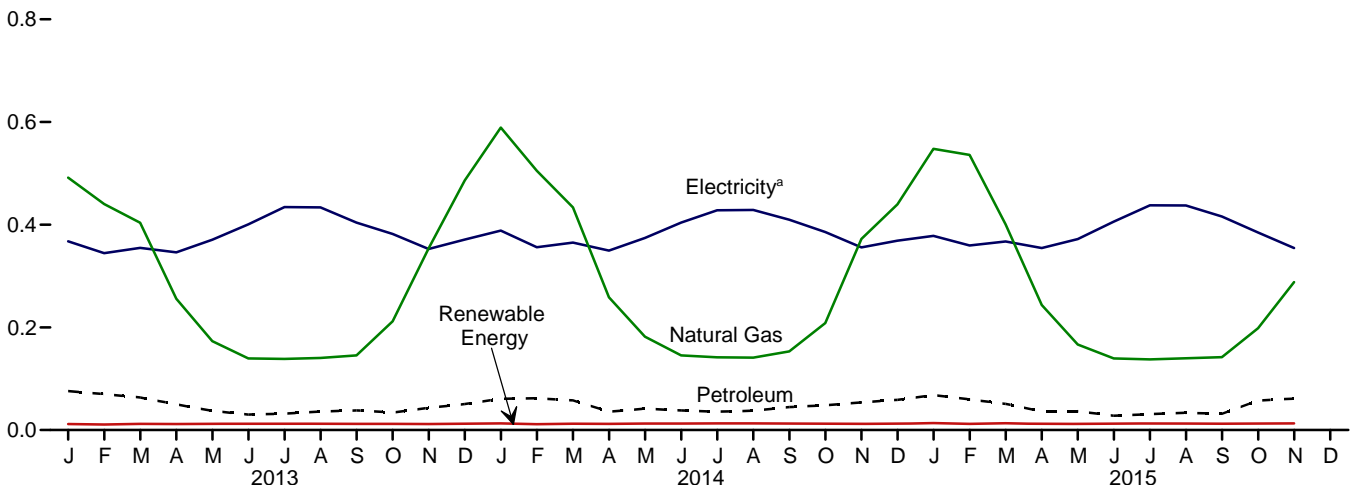
Sources: See end of section.

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

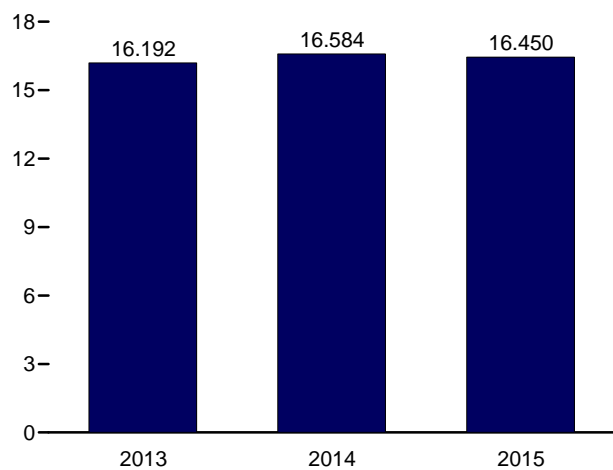
By Major Source, 1949–2014



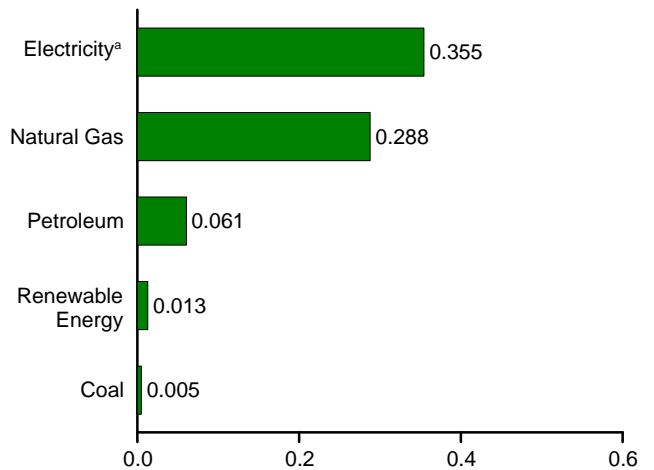
By Major Source, Monthly



Total, January–November



By Major Source, November 2015

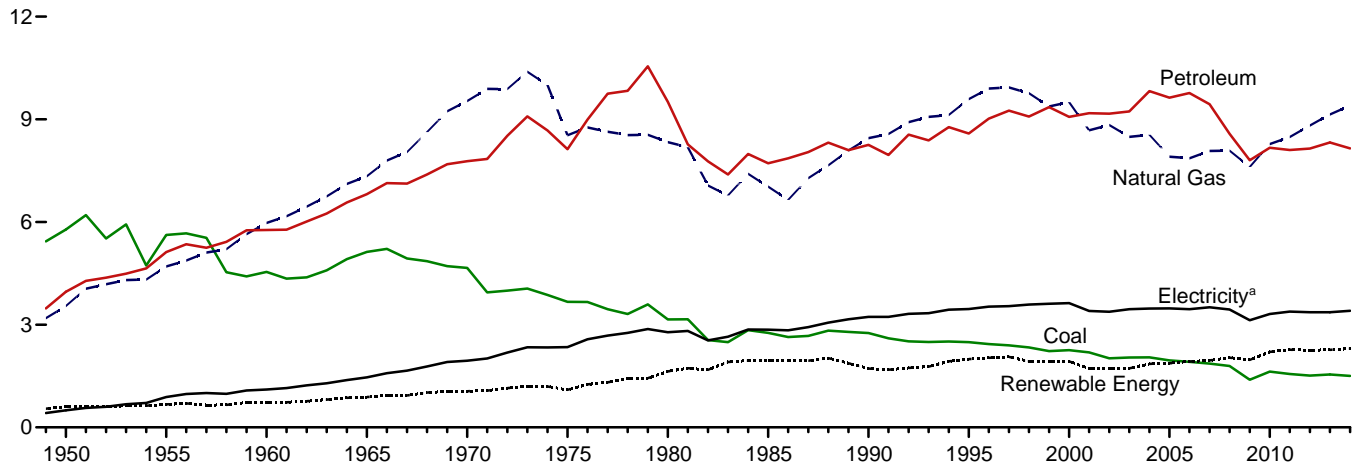


<sup>a</sup> Electricity retail sales.  
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#consumption>.  
Source: Table 2.3.

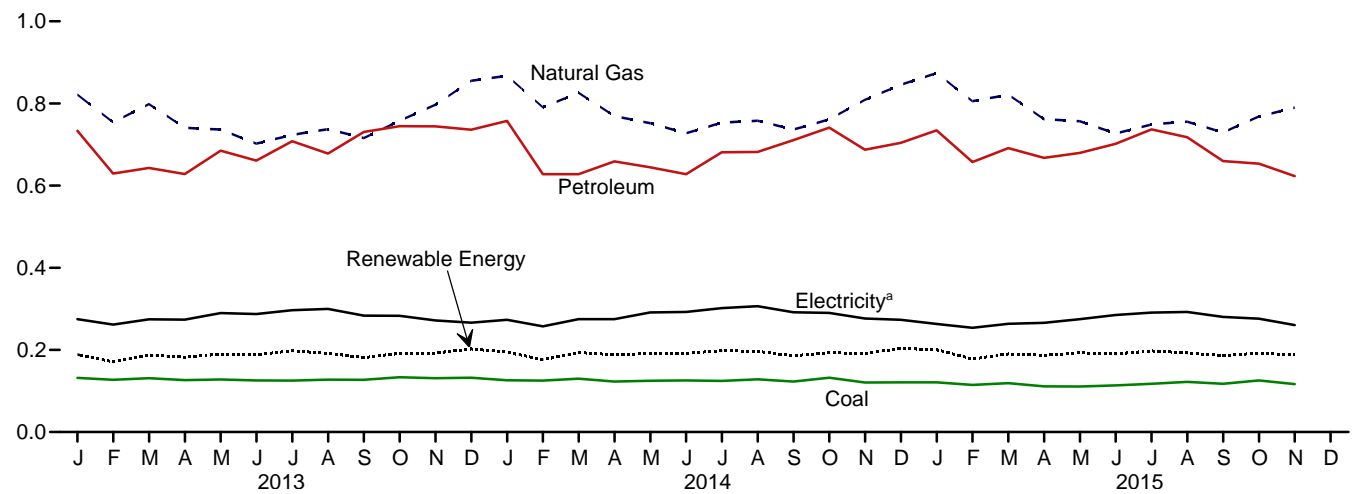


**Figure 2.4 Industrial Sector Energy Consumption**  
(Quadrillion Btu)

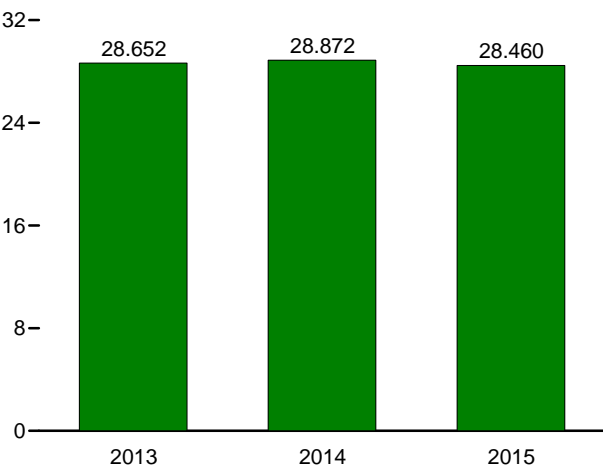
By Major Source, 1949–2014



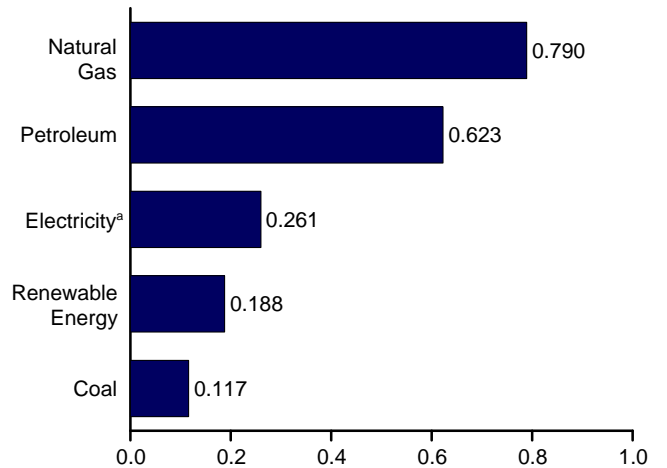
By Major Source, Monthly



Total, January–November



By Major Source, November 2015



<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)

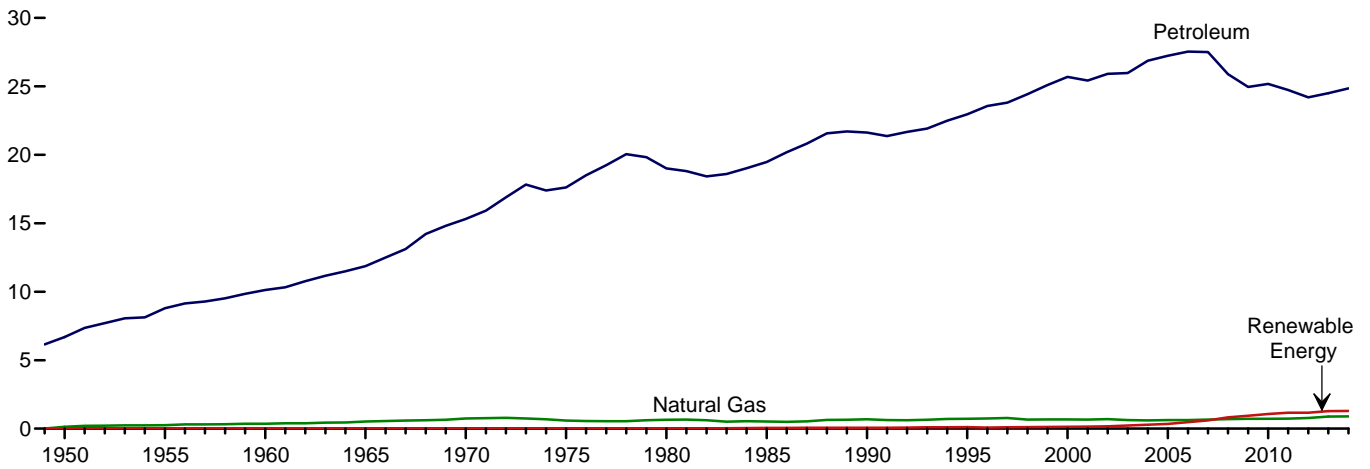
	Primary Consumption <sup>a</sup>											Elec- tricity Retail Sales <sup>g</sup>	Electrical System Energy Losses <sup>h</sup>	Total <sup>e</sup>
	Fossil Fuels				Renewable Energy <sup>b</sup>						Total Primary			
	Coal	Natural Gas <sup>c</sup>	Petro- leum <sup>d</sup>	Total <sup>e</sup>	Hydro- electric Power <sup>f</sup>	Geo- thermal	Solar/ PV	Wind	Bio- mass	Total				
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	33	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	8,105	18,157	17	4	(s)	(s)	2,246	2,268	20,425	3,382	7,005	30,812
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
<b>2013 Total</b>	<b>1,546</b>	<b>9,140</b>	<b>8,321</b>	<b>18,990</b>	<b>33</b>	<b>4</b>	<b>(s)</b>	<b>(s)</b>	<b>2,226</b>	<b>2,264</b>	<b>21,254</b>	<b>3,362</b>	<b>6,786</b>	<b>31,402</b>
2013 January	132	821	733	1,686	3	(s)	(s)	(s)	185	189	1,875	275	553	2,703
February	127	754	629	1,511	3	(s)	(s)	(s)	167	171	1,682	262	506	2,450
March	131	798	643	1,570	3	(s)	(s)	(s)	184	187	1,757	275	554	2,585
April	126	741	628	1,494	2	(s)	(s)	(s)	179	182	1,676	274	541	2,490
May	128	736	685	1,549	3	(s)	(s)	(s)	186	190	1,739	290	602	2,631
June	125	702	661	1,485	3	(s)	(s)	(s)	185	188	1,674	287	599	2,560
July	125	723	708	1,555	3	(s)	(s)	(s)	194	198	1,752	296	607	2,655
August	127	737	678	1,541	2	(s)	(s)	(s)	189	192	1,733	300	603	2,636
September	127	716	731	1,573	2	(s)	(s)	(s)	179	181	1,754	283	542	2,579
October	133	758	745	1,635	2	(s)	(s)	(s)	189	192	1,826	283	553	2,663
November	131	797	744	1,670	2	(s)	(s)	(s)	190	192	1,862	272	568	2,701
December	132	855	736	1,721	3	(s)	(s)	(s)	199	202	1,924	286	558	2,748
<b>2014 Total</b>	<b>1,505</b>	<b>9,397</b>	<b>8,150</b>	<b>19,030</b>	<b>12</b>	<b>4</b>	<b>(s)</b>	<b>1</b>	<b>2,287</b>	<b>2,304</b>	<b>21,334</b>	<b>3,404</b>	<b>6,831</b>	<b>31,569</b>
2014 January	126	867	757	1,750	1	(s)	(s)	(s)	193	195	1,945	273	567	2,785
February	125	791	628	1,542	1	(s)	(s)	(s)	175	176	1,718	257	496	2,471
March	130	826	628	1,583	1	(s)	(s)	(s)	192	193	1,777	275	559	2,610
April	123	769	659	1,550	1	(s)	(s)	(s)	187	188	1,738	275	538	2,551
May	125	752	644	1,519	1	(s)	(s)	(s)	190	191	1,711	291	605	2,607
June	126	727	628	1,480	1	(s)	(s)	(s)	190	192	1,672	292	607	2,571
July	124	753	681	1,557	1	(s)	(s)	(s)	196	198	1,755	302	615	2,672
August	129	758	682	1,565	1	(s)	(s)	(s)	195	197	1,762	306	619	2,687
September	123	736	711	1,567	1	(s)	(s)	(s)	185	186	1,753	292	544	2,589
October	132	761	741	1,633	1	(s)	(s)	(s)	192	193	1,826	290	555	2,671
November	121	809	687	1,615	1	(s)	(s)	(s)	190	191	1,806	277	576	2,658
December	121	846	704	1,667	1	(s)	(s)	(s)	202	204	1,871	273	551	2,695
<b>2015 Total</b>	<b>1,289</b>	<b>8,538</b>	<b>7,523</b>	<b>17,332</b>	<b>11</b>	<b>4</b>	<b>(s)</b>	<b>(s)</b>	<b>2,079</b>	<b>2,095</b>	<b>19,427</b>	<b>3,006</b>	<b>6,026</b>	<b>28,460</b>
<b>2014 11-Month Total</b>	<b>1,384</b>	<b>8,550</b>	<b>7,446</b>	<b>17,362</b>	<b>11</b>	<b>4</b>	<b>(s)</b>	<b>(s)</b>	<b>2,085</b>	<b>2,100</b>	<b>19,462</b>	<b>3,130</b>	<b>6,280</b>	<b>28,872</b>
<b>2013 11-Month Total</b>	<b>1,414</b>	<b>8,285</b>	<b>7,585</b>	<b>17,269</b>	<b>30</b>	<b>4</b>	<b>(s)</b>	<b>(s)</b>	<b>2,027</b>	<b>2,061</b>	<b>19,330</b>	<b>3,096</b>	<b>6,227</b>	<b>28,652</b>

a See "Primary Energy Consumption" in Glossary.  
b See Table 10.2b for notes on series components and estimation.  
c Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.  
d Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."  
e Includes coal coke net imports, which are not separately displayed. See Tables 1.4a and 1.4b.  
f Conventional hydroelectric power.  
g Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.  
h Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of

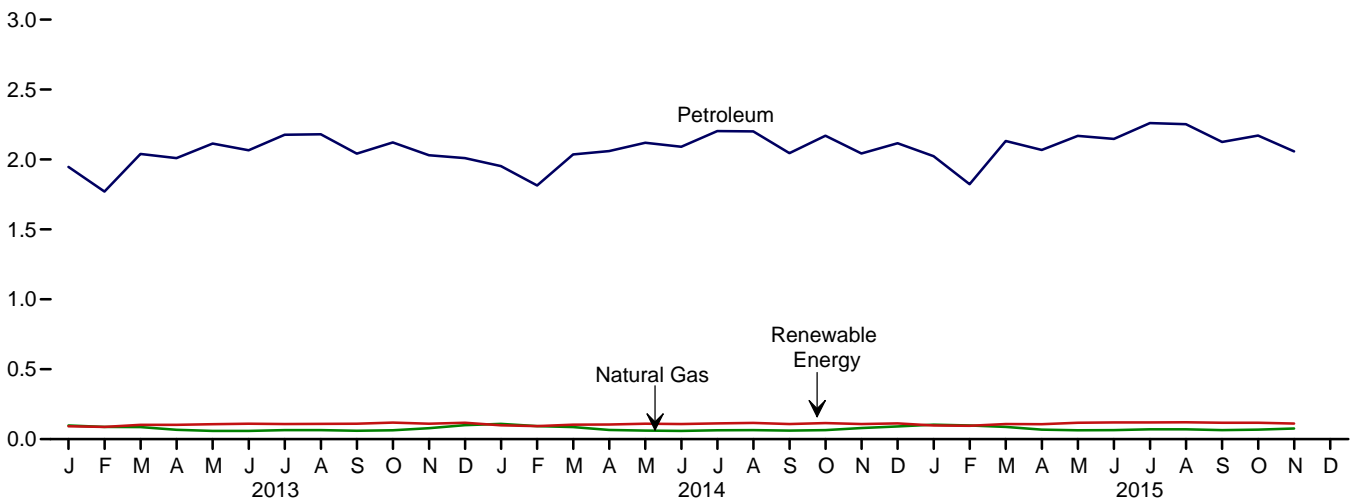
section.  
R=Revised. NA=Not available. --=No data reported. (s)=Less than 0.5 trillion Btu.  
Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar/PV; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (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)

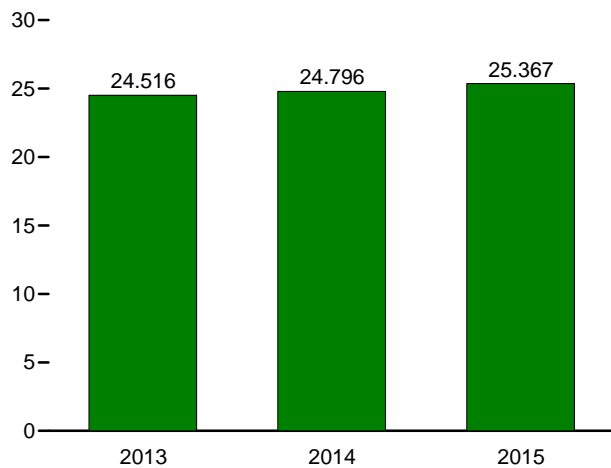
By Major Source, 1949–2014



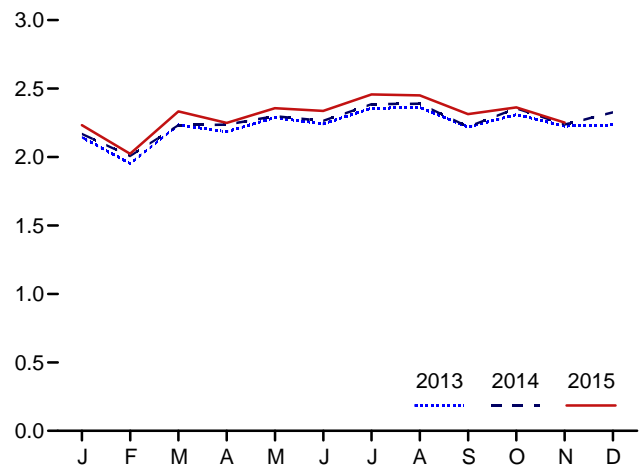
By Major Source, Monthly



Total, January–November



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	(9)	650	19,009	19,659	NA	19,659	11	27	19,697
1985 Total	(9)	519	19,472	19,992	50	20,041	14	32	20,088
1990 Total	(9)	680	21,626	22,306	60	22,366	16	37	22,420
1995 Total	(9)	724	22,959	23,683	112	23,796	17	38	23,851
2000 Total	(9)	672	25,689	26,361	135	26,495	18	42	26,555
2001 Total	(9)	658	25,419	26,077	142	26,219	20	43	26,282
2002 Total	(9)	699	25,917	26,616	170	26,785	19	42	26,846
2003 Total	(9)	627	25,969	26,596	230	26,826	23	51	26,900
2004 Total	(9)	602	26,872	27,474	290	27,764	25	54	27,843
2005 Total	(9)	624	27,236	27,860	339	28,199	26	56	28,280
2006 Total	(9)	625	27,538	28,163	475	28,638	25	54	28,717
2007 Total	(9)	663	27,506	28,170	602	28,772	28	60	28,859
2008 Total	(9)	692	25,888	26,580	825	27,404	26	56	27,486
2009 Total	(9)	715	24,955	25,670	935	26,605	27	56	26,687
2010 Total	(9)	719	25,184	25,903	1,075	26,978	26	55	27,059
2011 Total	(9)	734	24,740	25,474	1,158	26,632	26	54	26,712
2012 Total	(9)	780	24,202	24,982	1,162	26,144	25	51	26,219
2013 January	(9)	98	1,947	2,045	92	2,137	2	5	2,144
February	(9)	88	1,770	1,858	87	1,945	2	4	1,952
March	(9)	86	2,040	2,125	102	2,227	2	4	2,234
April	(9)	67	R 2,010	2,076	103	2,179	2	4	2,185
May	(9)	59	2,114	2,173	107	2,281	2	4	2,287
June	(9)	59	2,066	2,125	111	R 2,236	2	5	2,242
July	(9)	65	2,177	2,242	109	2,350	2	5	2,357
August	(9)	65	2,180	2,245	109	2,355	2	4	2,361
September	(9)	60	2,041	2,101	111	2,212	2	4	2,218
October	(9)	63	2,122	2,185	118	R 2,304	2	4	R 2,310
November	(9)	79	2,030	R 2,109	111	2,219	2	4	2,225
December	(9)	100	2,009	2,109	118	2,226	2	5	R 2,234
Total	(9)	887	R 24,506	R 25,394	1,278	R 26,671	26	53	R 26,750
2014 January	(9)	109	R 1,953	R 2,062	R 99	R 2,160	2	5	R 2,168
February	(9)	93	R 1,814	R 1,907	93	R 2,000	2	5	R 2,007
March	(9)	87	R 2,036	R 2,123	103	R 2,226	2	4	R 2,233
April	(9)	66	R 2,060	R 2,126	104	R 2,230	2	4	R 2,237
May	(9)	61	R 2,120	R 2,181	110	R 2,291	2	5	R 2,298
June	(9)	59	R 2,091	R 2,150	108	R 2,258	2	4	R 2,264
July	(9)	63	R 2,203	R 2,267	113	R 2,379	2	4	R 2,386
August	(9)	65	R 2,201	R 2,266	R 117	R 2,383	2	4	R 2,390
September	(9)	61	R 2,045	R 2,106	R 109	R 2,215	2	4	R 2,221
October	(9)	64	R 2,170	R 2,235	R 115	R 2,349	2	4	R 2,355
November	(9)	80	R 2,043	R 2,122	108	R 2,230	2	5	R 2,237
December	(9)	91	R 2,116	R 2,206	113	R 2,319	2	4	R 2,326
Total	(9)	899	R 24,852	R 25,751	R 1,291	R 27,043	26	53	R 27,122
2015 January	(9)	104	R 2,024	R 2,128	97	R 2,225	2	5	R 2,232
February	(9)	98	R 1,823	R 1,921	R 96	R 2,016	2	5	R 2,024
March	(9)	R 87	R 2,132	R 2,219	108	R 2,327	2	4	R 2,334
April	(9)	69	R 2,068	R 2,137	106	R 2,243	2	4	R 2,250
May	(9)	64	R 2,169	R 2,232	R 118	R 2,350	2	4	R 2,357
June	(9)	65	R 2,146	R 2,211	119	R 2,331	2	4	R 2,337
July	(9)	71	R 2,260	R 2,331	120	R 2,451	2	5	R 2,458
August	(9)	70	R 2,252	R 2,322	121	R 2,443	2	4	R 2,450
September	(9)	65	R 2,125	R 2,190	117	R 2,307	2	4	R 2,313
October	(9)	68	R 2,171	R 2,239	R 118	R 2,356	2	4	R 2,362
November	(9)	76	2,058	2,133	112	2,245	2	4	2,251
11-Month Total	(9)	836	23,228	24,064	1,232	25,295	24	48	25,367
2014 11-Month Total	(9)	808	22,737	23,545	1,178	24,723	24	49	24,796
2013 11-Month Total	(9)	788	22,497	23,285	1,160	24,445	24	48	24,516

<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.

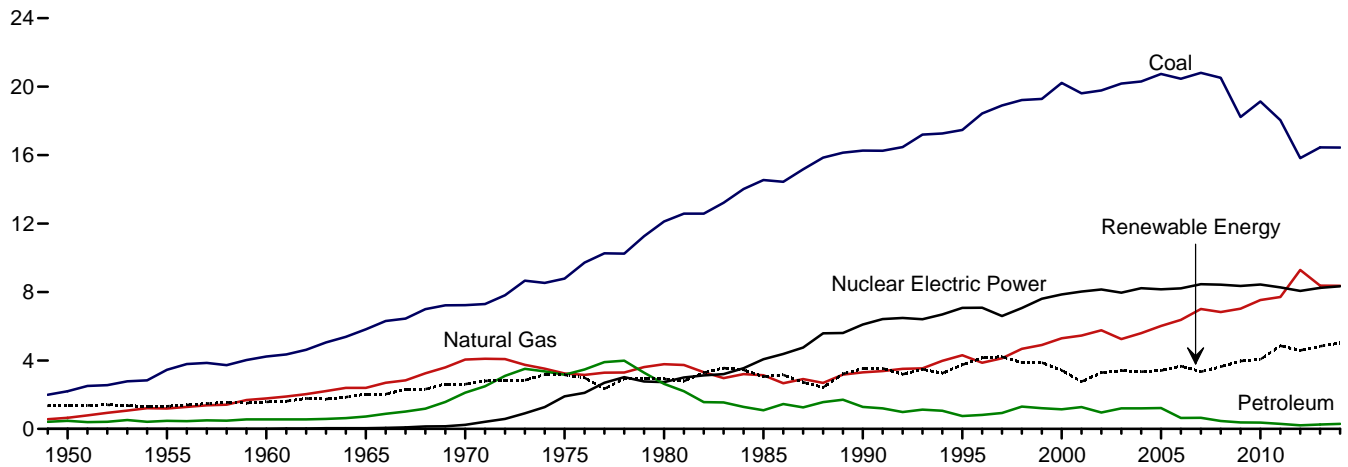
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the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

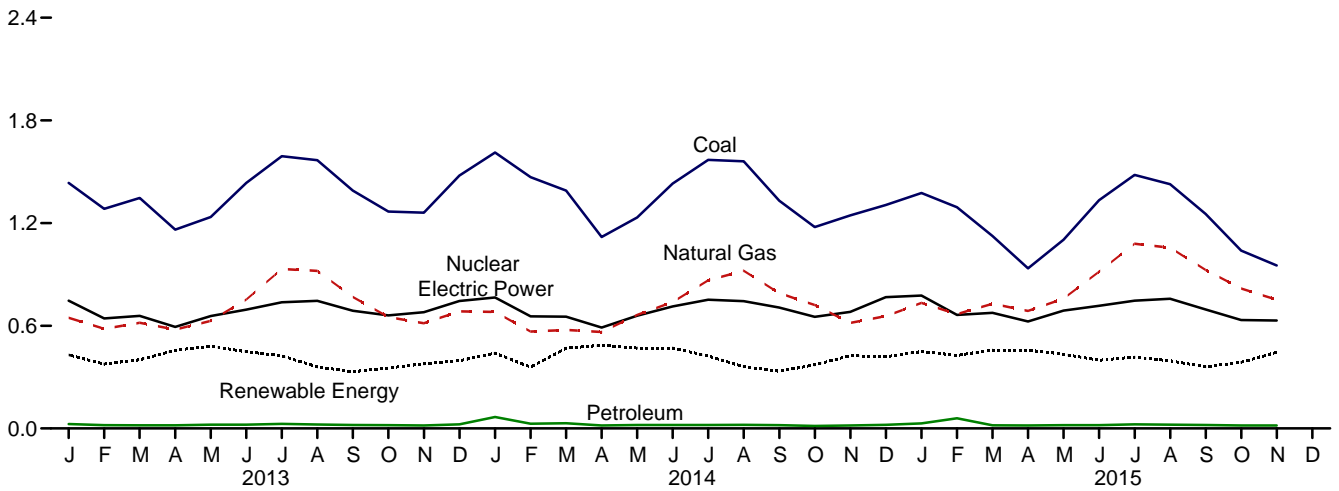
Sources: See end of section.

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

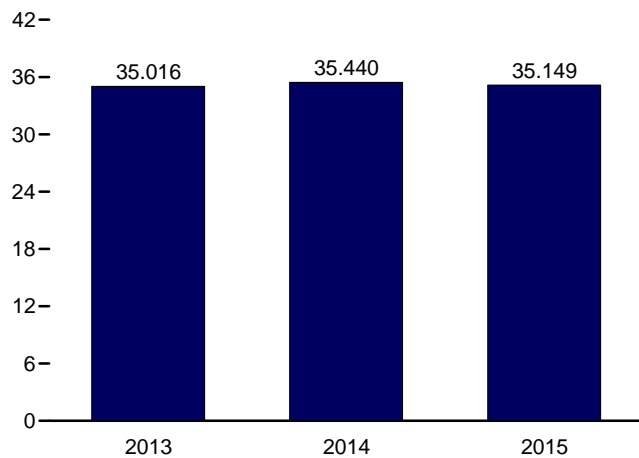
By Major Source, 1949–2014



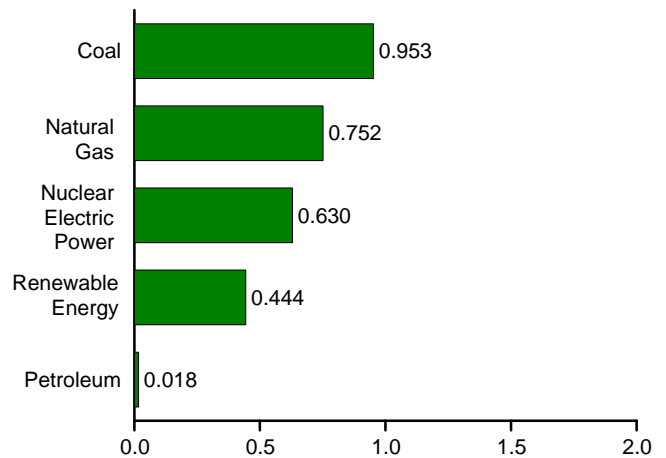
By Major Source, Monthly



Total, January–November



By Major Source, November 2015



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>												Elec- tricity Net Imports <sup>e</sup>	Total Primary
	Fossil Fuels				Nuclear Electric Power	Renewable Energy <sup>d</sup>								
	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	
<b>2013</b>														
January	1,435	646	25	2,107	746	234	13	3	141	39	429	16	3,298	
February	1,283	582	19	1,884	642	191	12	4	134	35	376	15	2,917	
March	1,346	618	18	1,983	658	193	13	6	150	39	402	17	3,058	
April	1,162	577	18	1,757	593	237	12	6	167	35	457	13	2,820	
May	1,236	628	22	1,886	657	268	12	7	155	37	480	17	3,040	
June	1,435	753	22	2,210	694	258	12	8	131	39	448	18	3,370	
July	1,591	931	27	2,549	737	257	13	8	106	41	424	19	3,729	
August	1,567	921	23	2,510	745	204	13	9	92	42	360	20	3,636	
September	1,390	768	20	2,179	688	160	12	9	111	39	331	17	3,214	
October	1,268	651	20	1,938	660	162	13	9	130	39	353	16	2,967	
November	1,261	615	18	1,893	679	167	12	8	151	41	377	17	2,967	
December	1,478	684	24	2,186	745	198	13	8	133	43	396	16	3,343	
<b>Total</b>	<b>16,451</b>	<b>8,376</b>	<b>255</b>	<b>25,082</b>	<b>8,244</b>	<b>2,529</b>	<b>151</b>	<b>83</b>	<b>1,600</b>	<b>470</b>	<b>4,833</b>	<b>201</b>	<b>38,360</b>	
<b>2014</b>														
January	1,612	681	67	2,360	R 765	205	13	7	R 170	45	R 440	13	R 3,578	
February	1,468	566	27	2,061	R 655	R 164	R 11	8	R 133	42	R 359	9	R 3,084	
March	1,390	576	31	1,997	R 653	230	13	12	R 169	46	R 469	11	R 3,129	
April	1,119	563	17	1,699	R 590	241	R 12	14	R 177	41	R 485	10	R 2,784	
May	1,233	664	20	1,917	R 658	R 251	13	16	R 148	41	R 469	14	R 3,058	
June	1,431	739	20	2,190	R 713	R 244	12	18	R 150	45	R 470	13	3,386	
July	1,569	865	20	2,455	R 752	R 231	13	17	116	48	R 423	16	R 3,646	
August	1,561	921	21	2,503	R 744	R 187	13	R 17	97	46	R 361	18	R 3,625	
September	1,331	791	19	2,141	R 706	R 152	12	17	R 109	43	R 334	16	R 3,197	
October	1,177	722	15	1,913	R 653	R 162	13	16	138	42	R 371	14	R 2,950	
November	1,245	616	17	1,879	R 681	R 176	13	13	R 179	44	R 425	16	R 3,001	
December	1,306	656	21	1,983	R 767	R 211	13	10	140	45	R 419	15	3,184	
<b>Total</b>	<b>16,441</b>	<b>8,362</b>	<b>295</b>	<b>25,098</b>	<b>R 8,338</b>	<b>R 2,454</b>	<b>151</b>	<b>165</b>	<b>R 1,726</b>	<b>530</b>	<b>R 5,026</b>	<b>164</b>	<b>R 38,626</b>	
<b>2015</b>														
January	1,375	734	30	2,139	R 777	233	14	11	145	46	R 449	18	3,383	
February	1,293	668	59	2,020	R 664	R 215	13	15	R 142	42	R 427	14	R 3,125	
March	1,124	729	18	1,870	R 675	R 235	14	21	146	42	R 458	19	3,023	
April	936	686	17	1,639	R 625	R 213	13	24	R 169	39	R 458	20	R 2,742	
May	1,103	758	19	1,881	R 689	191	14	24	R 163	41	R 433	21	R 3,023	
June	1,334	916	19	2,268	R 717	R 190	13	25	128	43	R 399	21	R 3,405	
July	1,482	1,079	23	2,584	R 747	R 199	14	26	130	48	R 416	21	R 3,768	
August	1,427	1,056	22	2,505	R 757	R 184	14	26	124	47	R 395	22	R 3,680	
September	1,253	926	20	2,199	695	154	12	22	132	41	R 361	20	3,275	
October	1,039	818	18	1,874	R 634	158	13	19	156	41	R 386	16	2,910	
November	953	752	18	1,722	630	183	13	18	187	43	444	18	2,814	
<b>11-Month Total</b>	<b>13,318</b>	<b>9,122</b>	<b>262</b>	<b>22,702</b>	<b>7,609</b>	<b>2,155</b>	<b>146</b>	<b>231</b>	<b>1,621</b>	<b>474</b>	<b>4,627</b>	<b>210</b>	<b>35,149</b>	
<b>2014 11-Month Total</b>	<b>15,135</b>	<b>7,704</b>	<b>274</b>	<b>23,114</b>	<b>7,570</b>	<b>2,243</b>	<b>138</b>	<b>155</b>	<b>1,586</b>	<b>485</b>	<b>4,607</b>	<b>149</b>	<b>35,440</b>	
<b>2013 11-Month Total</b>	<b>14,973</b>	<b>7,691</b>	<b>232</b>	<b>22,895</b>	<b>7,499</b>	<b>2,330</b>	<b>137</b>	<b>75</b>	<b>1,467</b>	<b>426</b>	<b>4,437</b>	<b>185</b>	<b>35,016</b>	

<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://ctsedwweb.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://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx>, "A-5 Historical Federal Energy Consumption and Cost Data by Agency and Energy Type (FY 1975 to Present)" 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://ctsedweb.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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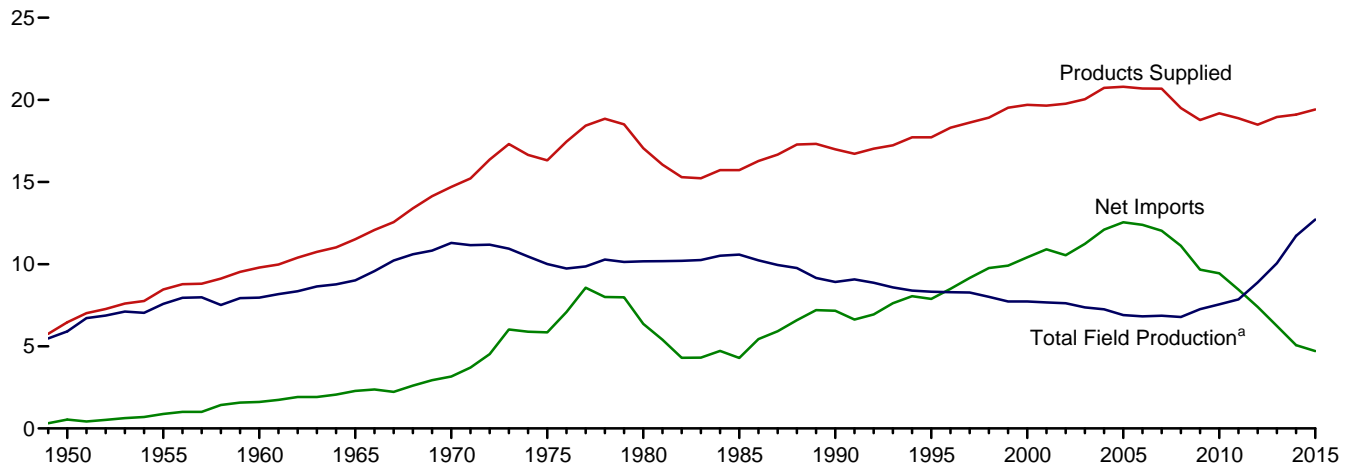


## **3. Petroleum**

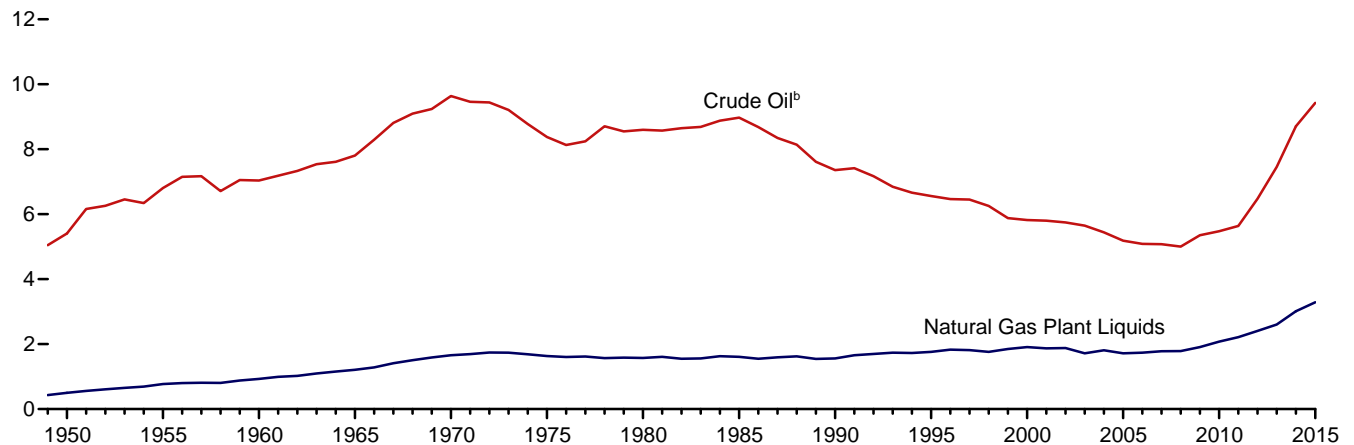
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**Figure 3.1 Petroleum Overview**  
(Million Barrels per Day)

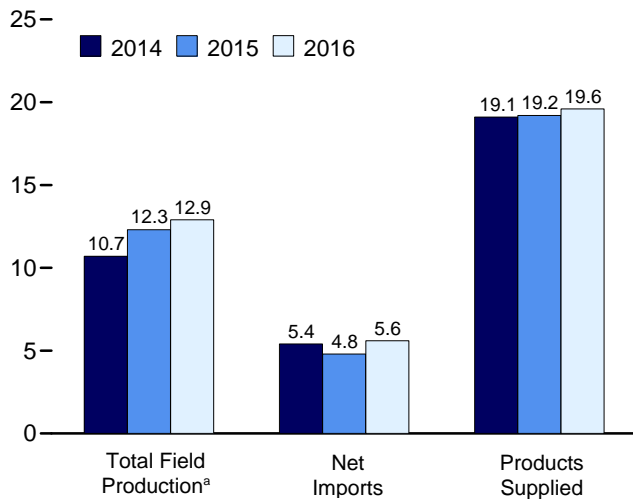
Overview, 1949–2015



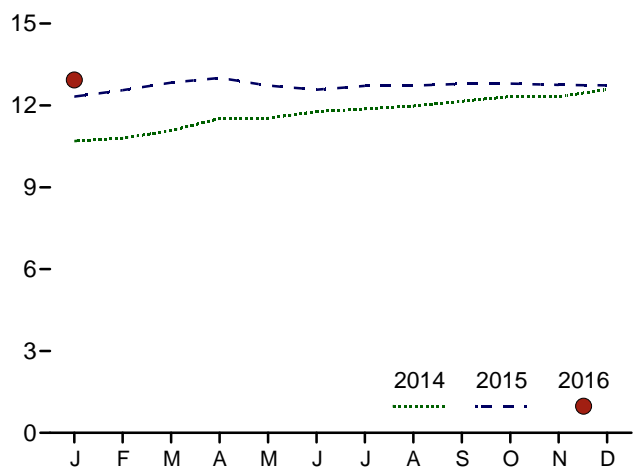
Crude Oil and Natural Gas Plant Liquids Field Production, 1949–2015



Overview, January



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>i</sup>	Adjustments <sup>h,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 January	6,529	549	7,078	2,379	9,457	891	1,061	10,089	2,881	7,208	98	231	18,749
February	6,554	541	7,095	2,490	9,585	905	966	9,286	3,280	6,007	-738	442	18,643
March	6,628	533	7,161	2,485	9,645	950	1,012	9,534	3,111	6,423	92	593	18,531
April	6,853	523	7,375	2,513	9,889	971	1,093	10,168	3,235	6,933	491	190	18,584
May	6,786	515	7,301	2,556	9,857	1,011	1,039	10,174	3,472	6,703	291	459	18,779
June	6,778	486	7,264	2,542	9,805	1,034	1,087	9,882	3,594	6,288	72	664	18,806
July	6,960	493	7,453	2,618	10,072	1,021	1,132	10,300	3,851	6,449	-37	546	19,257
August	7,074	428	7,502	2,715	10,218	1,004	1,115	10,249	3,725	6,524	162	426	19,125
September	7,216	511	7,727	2,791	10,519	998	1,136	10,036	3,632	6,405	353	547	19,252
October	7,181	521	7,702	2,766	10,469	1,052	1,085	9,608	4,074	5,535	-754	418	19,312
November	7,361	536	7,897	2,747	10,644	1,083	1,126	9,385	3,967	5,419	-688	530	19,491
December	7,327	546	7,873	2,660	10,533	1,102	1,179	9,539	4,602	4,938	-903	328	18,983
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	516	9,201	3,115	12,317	1,059	1,178	9,009	4,353	4,656	349	510	19,370
December	8,909	520	9,428	3,156	12,585	1,134	1,100	9,402	4,892	4,510	486	615	19,457
Average	8,211	497	8,708	3,015	11,723	1,055	1,081	9,241	4,176	5,065	269	451	19,106
2015 January	E 8,840	E 505	E 9,345	2,980	E 12,326	1,054	1,023	9,393	4,567	4,825	574	595	19,249
February	E 8,963	E 494	E 9,456	3,100	E 12,556	1,046	955	9,243	4,699	4,544	128	423	19,396
March	E 9,142	E 511	E 9,653	3,181	E 12,834	1,052	999	9,552	4,120	5,432	985	-93	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	E 8,868	E 447	E 9,315	3,259	E 12,574	1,148	990	9,552	4,668	4,884	443	438	19,591
July	E 8,983	E 450	E 9,433	3,284	E 12,717	1,124	1,053	9,511	4,967	4,544	-85	457	19,979
August	E 8,999	E 408	E 9,407	3,319	E 12,725	1,099	1,164	9,768	4,564	5,205	728	350	19,814
September	RE 8,977	E 472	RE 9,449	3,343	RE 12,792	1,092	1,009	9,335	4,884	4,451	332	R 212	19,225
October	RE 8,873	RE 497	RE 9,370	3,428	RE 12,798	1,112	R 1,017	R 8,800	4,628	4,172	257	R 508	19,350
November	RE 8,795	RE 523	RE 9,318	R 3,436	RE 12,753	R 1,114	R 1,051	R 9,126	R 4,817	R 4,308	R 415	R 377	R 19,188
December	E 8,665	E 526	E 9,191	E 3,544	E 12,735	E 1,060	E 1,079	E 9,536	E 4,425	E 5,111	E 177	E -54	E 19,754
Average	RE 8,941	RE 484	RE 9,425	RE 3,267	RE 12,713	RE 1,089	RE 1,036	RE 9,384	RE 4,678	RE 4,707	RE 467	RE 336	RE 19,413
2016 January	E 8,701	E 520	E 9,221	E 3,711	E 12,932	E 1,048	E 1,032	E 9,962	E 4,355	E 5,607	E 813	E -178	E 19,628

<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.

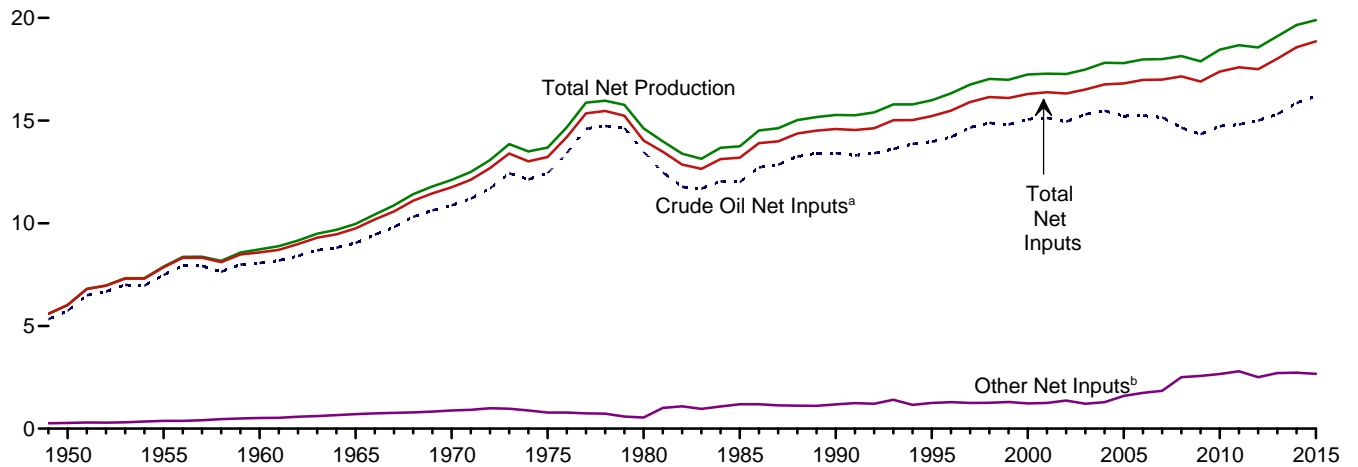
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

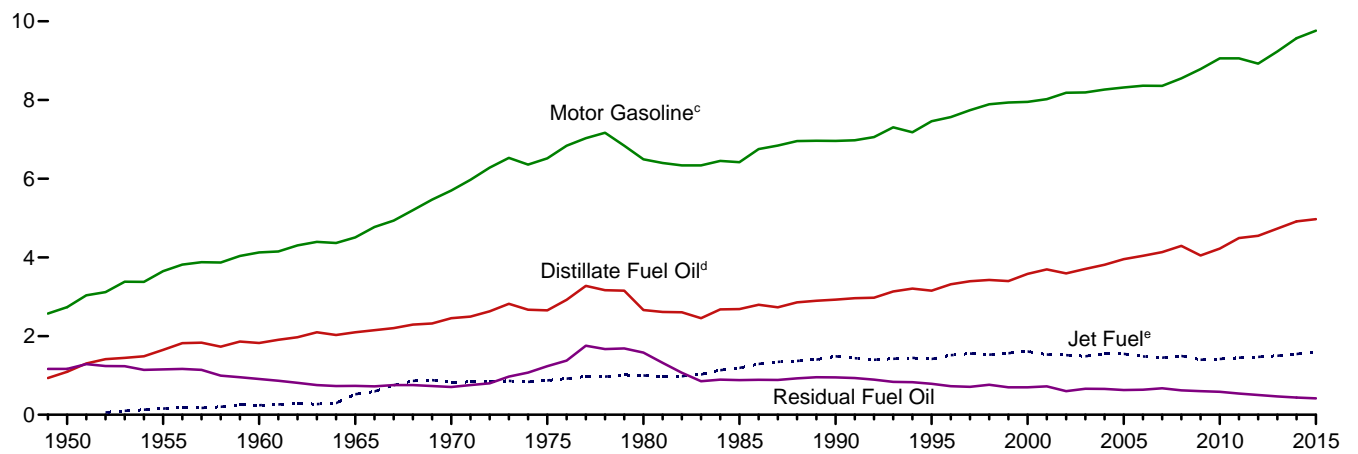
Sources: See end of section.

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

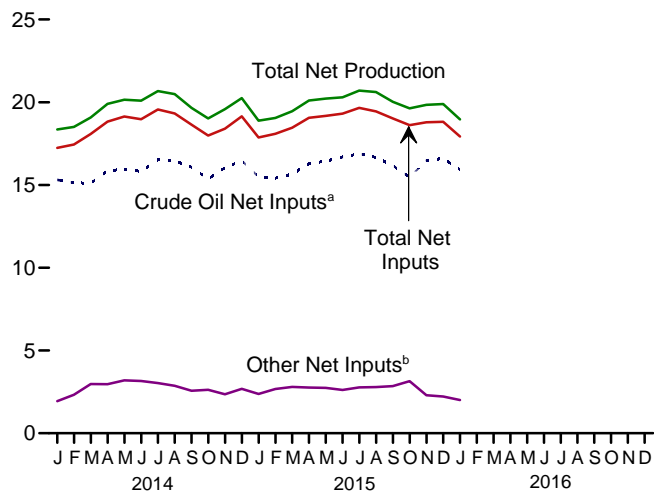
Net Inputs and Net Production, 1949–2015



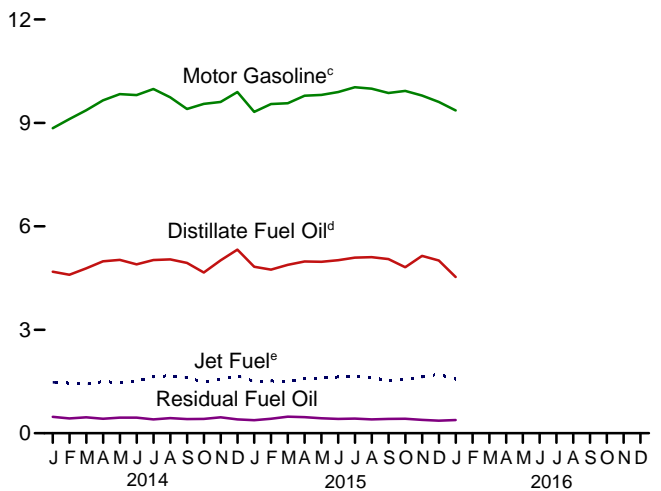
Net Production, Selected Products, 1949–2015



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.

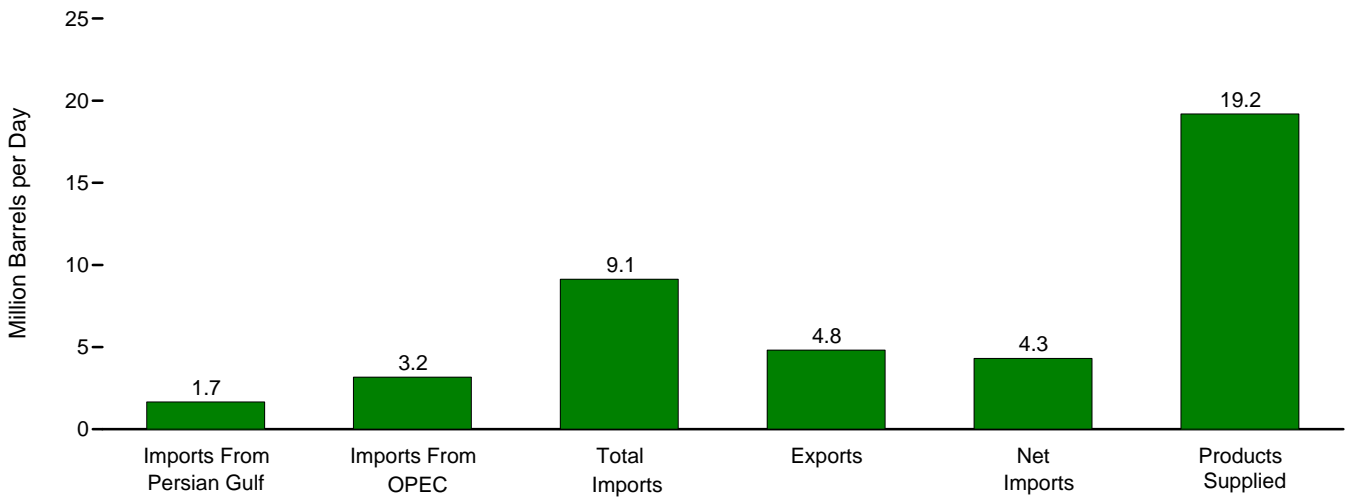
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#petroleum>.

Source: Table 3.2.

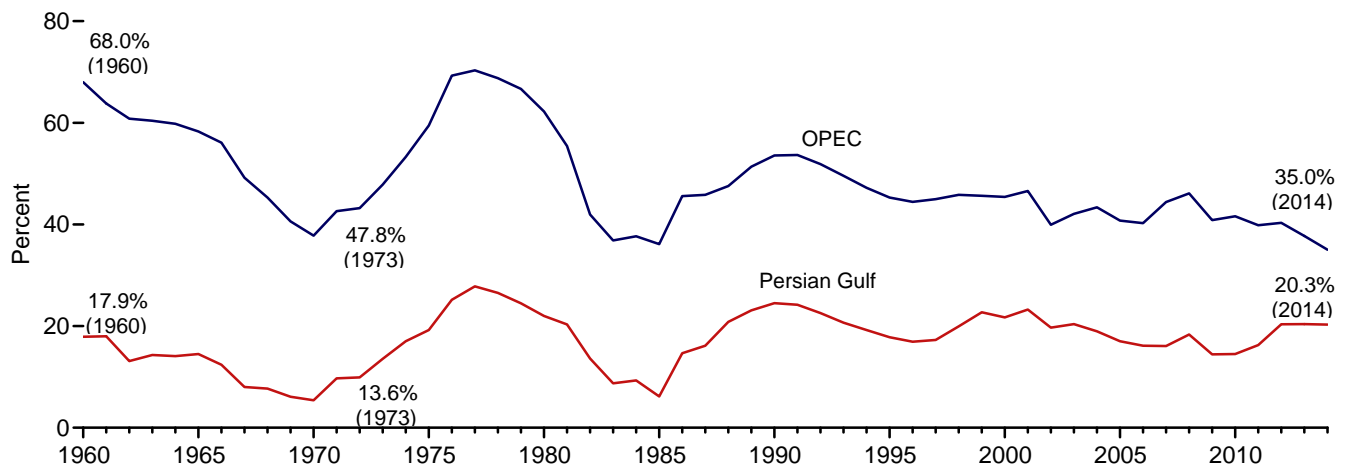


### Figure 3.3a Petroleum Trade: Overview

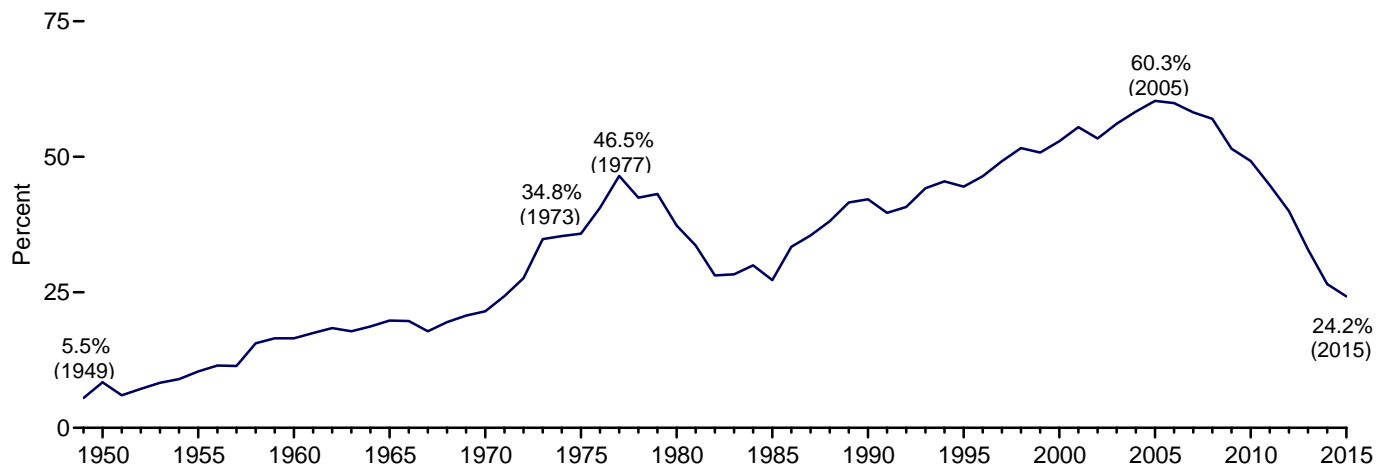
Overview, November 2015



Imports From OPEC and Persian Gulf as Share of Total Imports, 1960–2014



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					
<b>1950 Average</b>	NA	NA	850	305	545	6,458	NA	NA	13.2	8.4	NA	NA
<b>1955 Average</b>	NA	NA	1,248	368	880	8,455	NA	NA	14.8	10.4	NA	NA
<b>1960 Average</b>	326	1,233	1,815	202	1,613	9,797	3.3	12.6	18.5	16.5	17.9	68.0
<b>1965 Average</b>	359	1,439	2,468	187	2,281	11,512	3.1	12.5	21.4	19.8	14.5	58.3
<b>1970 Average</b>	184	1,294	3,419	259	3,161	14,697	1.3	8.8	23.3	21.5	5.4	37.8
<b>1975 Average</b>	1,165	3,601	6,056	209	5,846	16,322	7.1	22.1	37.1	35.8	19.2	59.5
<b>1980 Average</b>	1,519	4,300	6,909	544	6,365	17,056	8.9	25.2	40.5	37.3	22.0	62.2
<b>1985 Average</b>	311	1,830	5,067	781	4,286	15,726	2.0	11.6	32.2	27.3	6.1	36.1
<b>1990 Average</b>	1,966	4,296	8,018	857	7,161	16,988	11.6	25.3	47.2	42.2	24.5	53.6
<b>1995 Average</b>	1,573	4,002	8,835	949	7,886	17,725	8.9	22.6	49.8	44.5	17.8	45.3
<b>2000 Average</b>	2,488	5,203	11,459	1,040	10,419	19,701	12.6	26.4	58.2	52.9	21.7	45.4
<b>2001 Average</b>	2,761	5,528	11,871	971	10,900	19,649	14.1	28.1	60.4	55.5	23.3	46.6
<b>2002 Average</b>	2,269	4,605	11,530	984	10,546	19,761	11.5	23.3	58.3	53.4	19.7	39.9
<b>2003 Average</b>	2,501	5,162	12,264	1,027	11,238	20,034	12.5	25.8	61.2	56.1	20.4	42.1
<b>2004 Average</b>	2,493	5,701	13,145	1,048	12,097	20,731	12.0	27.5	63.4	58.4	19.0	43.4
<b>2005 Average</b>	2,334	5,587	13,714	1,165	12,549	20,802	11.2	26.9	65.9	60.3	17.0	40.7
<b>2006 Average</b>	2,211	5,517	13,707	1,317	12,390	20,687	10.7	26.7	66.3	59.9	16.1	40.2
<b>2007 Average</b>	2,163	5,980	13,468	1,433	12,036	20,680	10.5	28.9	65.1	58.2	16.1	44.4
<b>2008 Average</b>	2,370	5,954	12,915	1,802	11,114	19,498	12.2	30.5	66.2	57.0	18.4	46.1
<b>2009 Average</b>	1,689	4,776	11,691	2,024	9,667	18,771	9.0	25.4	62.3	51.5	14.4	40.9
<b>2010 Average</b>	1,711	4,906	11,793	2,353	9,441	19,180	8.9	25.6	61.5	49.2	14.5	41.6
<b>2011 Average</b>	1,861	4,555	11,436	2,986	8,450	18,882	9.9	24.1	60.6	44.8	16.3	39.8
<b>2012 Average</b>	2,156	4,271	10,598	3,205	7,393	18,900	11.7	23.1	57.3	40.0	20.3	40.3
<b>2013 January</b>	1,798	3,866	10,089	2,881	7,208	18,749	9.6	20.6	53.8	38.4	17.8	38.3
February	1,838	3,115	9,286	3,280	6,007	18,643	9.9	16.7	49.8	32.2	19.8	33.5
March	2,087	3,741	9,534	3,111	6,423	18,531	11.3	20.2	51.5	34.7	21.9	39.2
April	1,804	3,799	10,168	3,235	6,933	18,584	9.7	20.4	54.7	37.3	17.7	37.4
May	2,135	4,064	10,174	3,472	6,703	18,779	11.4	21.6	54.2	35.7	21.0	39.9
June	1,894	3,837	9,882	3,594	6,288	18,806	10.1	20.4	52.5	33.4	19.2	38.8
July	1,927	3,789	10,300	3,851	6,449	19,257	10.0	19.7	53.5	33.5	18.7	36.8
August	2,160	3,901	10,249	3,725	6,524	19,125	11.3	20.4	53.6	34.1	21.1	38.1
September	2,146	3,921	10,036	3,632	6,405	19,252	11.1	20.4	52.1	33.3	21.4	39.1
October	1,933	3,411	9,608	4,074	5,535	19,312	10.0	17.7	49.8	28.7	20.1	35.5
November	2,143	3,535	9,385	3,967	5,419	19,491	11.0	18.1	48.2	27.8	22.8	37.7
December	2,225	3,613	9,539	4,602	4,938	18,983	11.7	19.0	50.3	26.0	23.3	37.9
<b>Average</b>	<b>2,009</b>	<b>3,720</b>	<b>9,859</b>	<b>3,621</b>	<b>6,237</b>	<b>18,961</b>	<b>10.6</b>	<b>19.6</b>	<b>52.0</b>	<b>32.9</b>	<b>20.4</b>	<b>37.7</b>
<b>2014 January</b>	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
<b>Average</b>	<b>1,875</b>	<b>3,237</b>	<b>9,241</b>	<b>4,176</b>	<b>5,065</b>	<b>19,106</b>	<b>9.8</b>	<b>16.9</b>	<b>48.4</b>	<b>26.5</b>	<b>20.3</b>	<b>35.0</b>
<b>2015 January</b>	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	R 1,662	R 3,169	R 9,126	R 4,817	R 4,308	R 19,188	R 8.7	R 16.5	R 47.6	R 22.5	R 18.2	R 34.7
December	NA	NA	E 9,536	E 4,425	E 5,111	E 19,754	NA	NA	E 48.3	E 25.9	NA	NA
<b>Average</b>	<b>NA</b>	<b>NA</b>	<b>RE 9,384</b>	<b>RE 4,678</b>	<b>RE 4,707</b>	<b>RE 19,413</b>	<b>NA</b>	<b>NA</b>	<b>RE 48.3</b>	<b>RE 24.2</b>	<b>NA</b>	<b>NA</b>
<b>2016 January</b>	NA	NA	E 9,962	E 4,355	E 5,607	E 19,628	NA	NA	E 50.8	E 28.6	NA	NA

<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

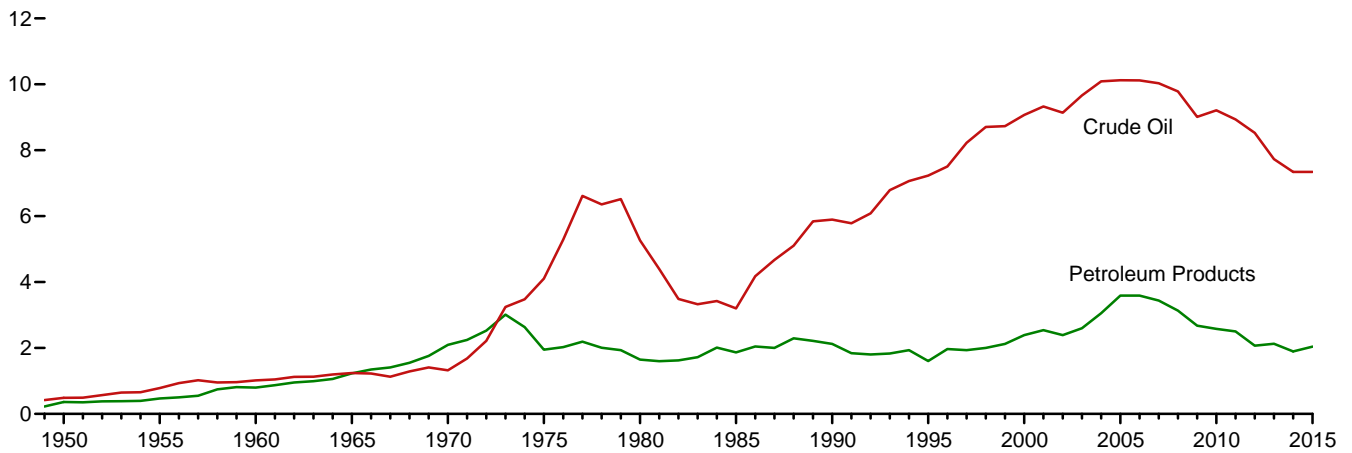
receipts from U.S. territories.

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.

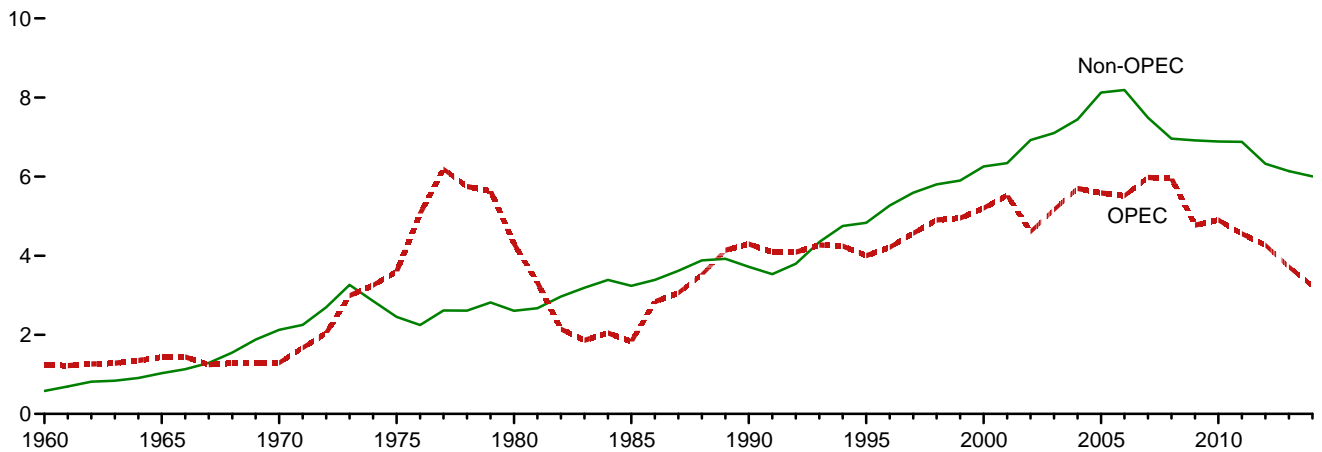
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual*, annual reports. • **1981–2014:** EIA, *Petroleum Supply Annual*, annual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

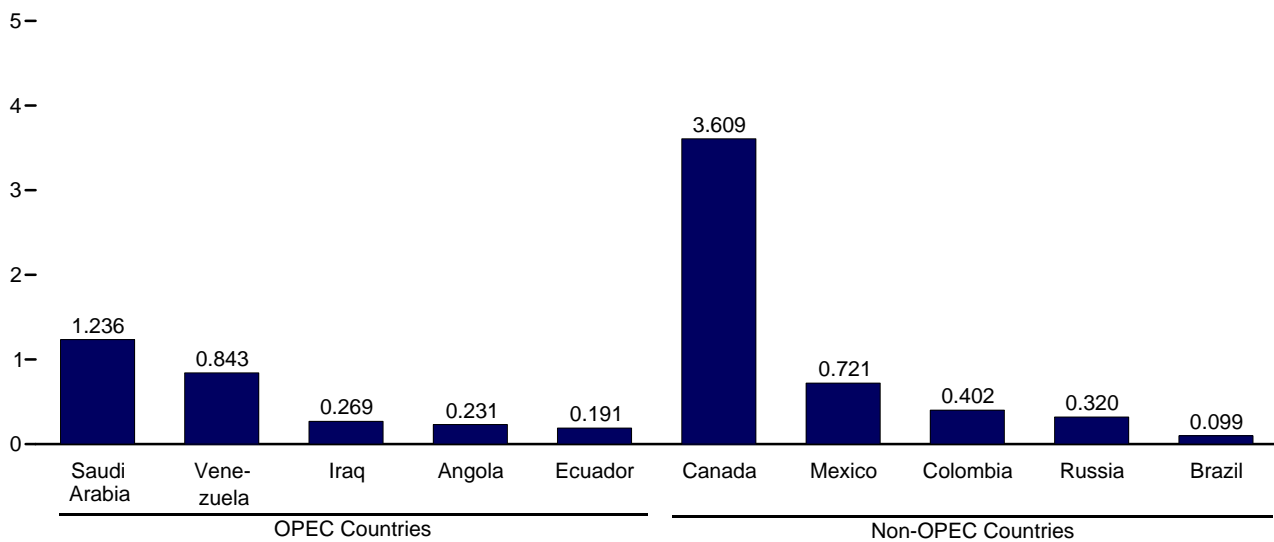
Overview, 1949–2015



OPEC and Non-OPEC, 1960–2014



From Selected Countries, November 2015



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 3.3d 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
<b>2013</b> January .....	103	3,456	351	1,068	121	48	328	116	-	632	6,223
February .....	79	3,457	366	978	121	10	454	95	-	612	6,172
March .....	123	3,037	479	677	122	57	454	111	-	735	5,793
April .....	97	3,208	465	973	76	40	584	131	-	796	6,369
May .....	198	2,854	389	885	88	30	554	180	-	931	6,110
June .....	192	2,885	356	846	74	80	519	198	-	896	6,045
July .....	185	3,014	588	930	69	68	456	192	-	1,011	6,511
August .....	241	3,082	375	912	85	36	572	163	-	882	6,348
September .....	262	3,086	314	839	61	56	459	149	-	890	6,116
October .....	95	3,218	384	878	83	114	555	160	-	711	6,197
November .....	133	3,130	308	1,014	78	53	325	124	-	685	5,850
December .....	105	3,296	293	1,030	90	54	265	146	-	648	5,926
<b>Average .....</b>	<b>151</b>	<b>3,142</b>	<b>389</b>	<b>919</b>	<b>89</b>	<b>54</b>	<b>460</b>	<b>147</b>	<b>-</b>	<b>786</b>	<b>6,138</b>
<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
<b>11-Month Average .....</b>	<b>215</b>	<b>3,727</b>	<b>392</b>	<b>757</b>	<b>58</b>	<b>60</b>	<b>366</b>	<b>122</b>	<b>-</b>	<b>809</b>	<b>6,506</b>
<b>2014 11-Month Average .....</b>	<b>157</b>	<b>3,333</b>	<b>320</b>	<b>844</b>	<b>81</b>	<b>46</b>	<b>327</b>	<b>116</b>	<b>-</b>	<b>720</b>	<b>5,945</b>
<b>2013 11-Month Average .....</b>	<b>156</b>	<b>3,127</b>	<b>398</b>	<b>908</b>	<b>89</b>	<b>54</b>	<b>479</b>	<b>148</b>	<b>-</b>	<b>799</b>	<b>6,158</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

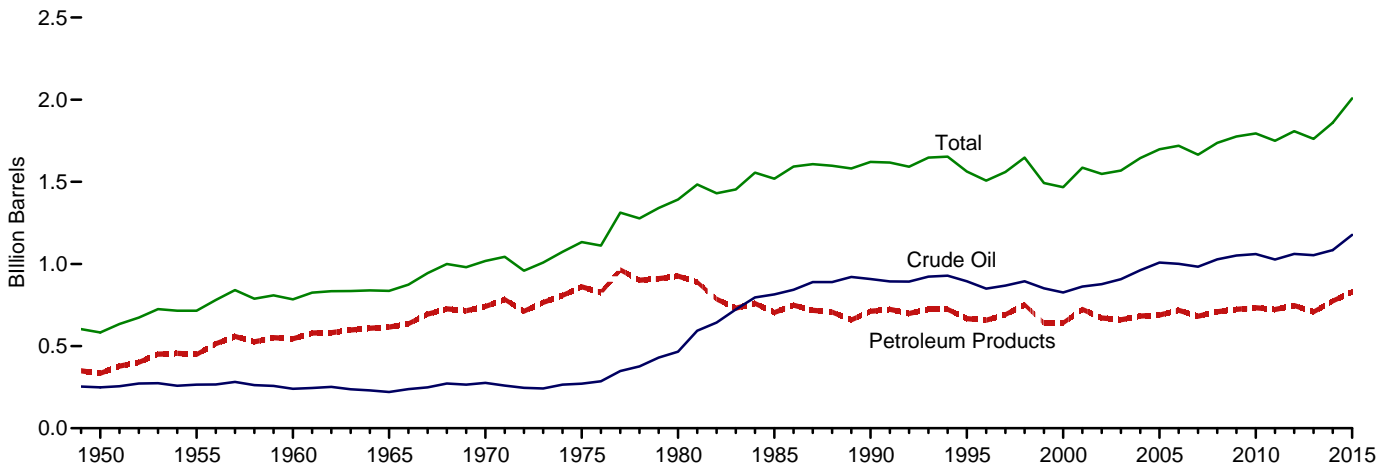
states and the District of Columbia.

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.

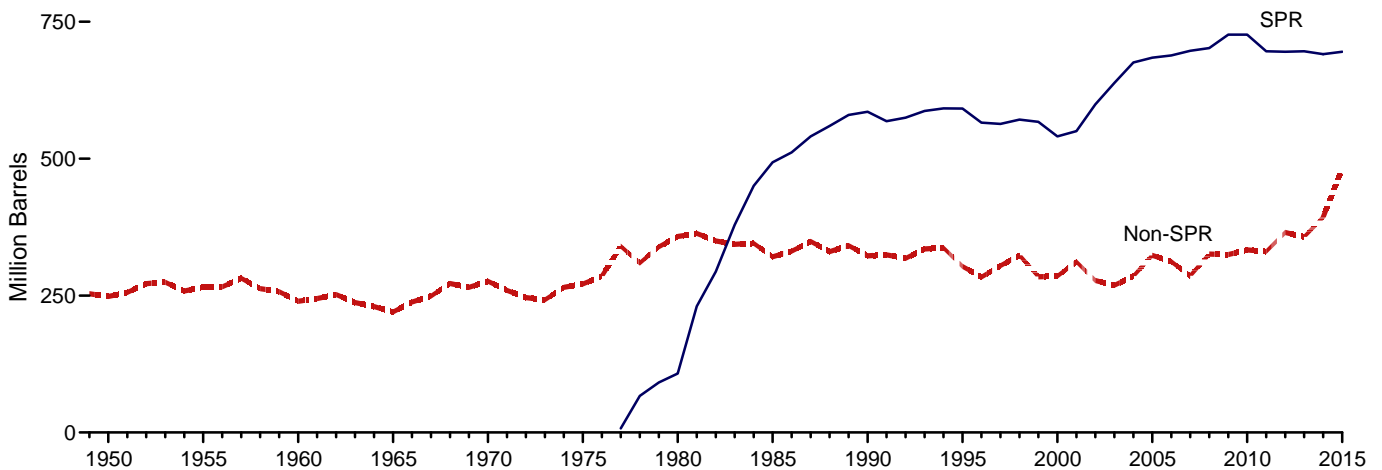
Sources: • **1960-1972:** Bureau of Mines, *Minerals Yearbook*, annual reports. • **1973-1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports. • **1976-1980:** U.S. Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual*,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

**Figure 3.4 Petroleum Stocks**

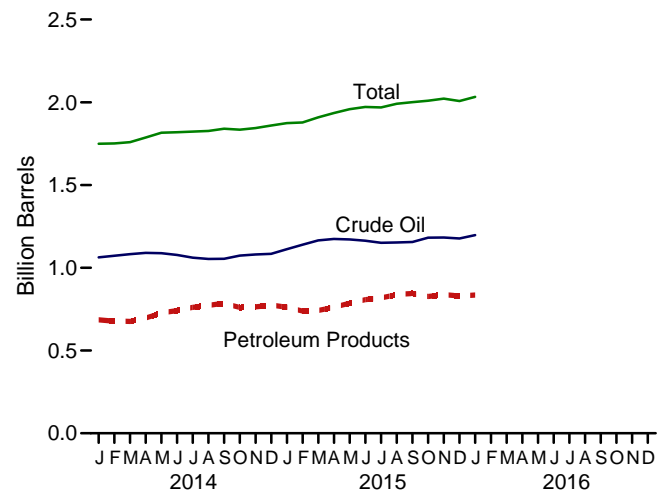
Overview, 1949–2015



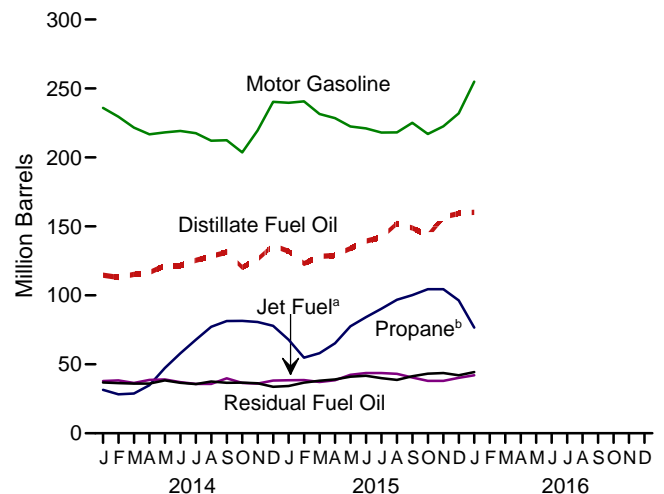
SPR and Non-SPR Crude Oil Stocks, 1949–2015



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)

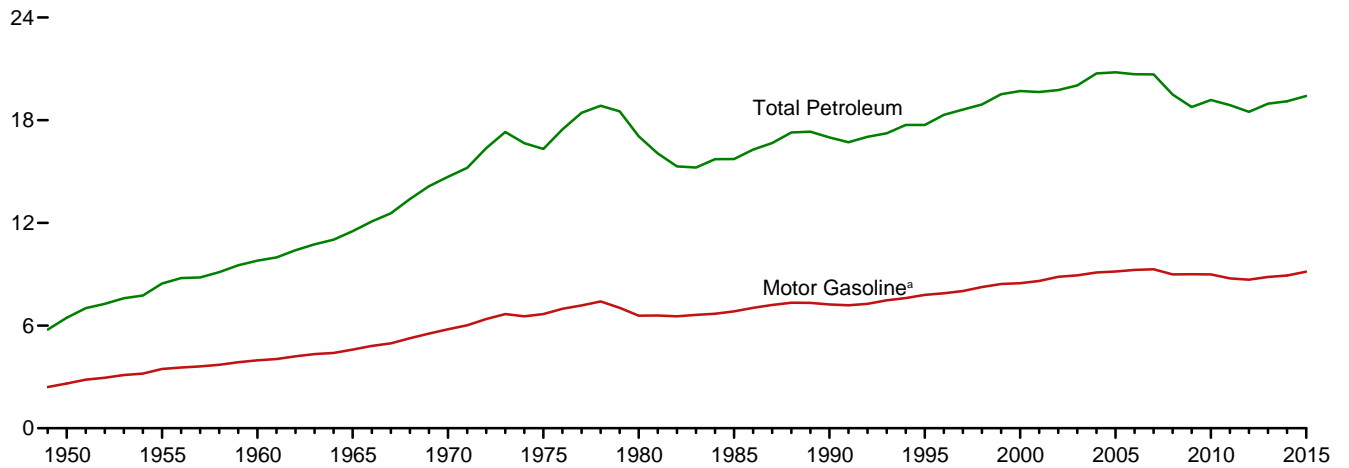
	Crude Oil <sup>a</sup>			Distillate Fuel Oil <sup>f</sup>	Jet Fuel <sup>g</sup>	LPG <sup>b</sup>		Motor Gasoline <sup>i</sup>	Residual Fuel Oil	Other <sup>j</sup>	Total
	SPR <sup>c</sup>	Non-SPR <sup>d,e</sup>	Total <sup>e</sup>			Propane <sup>h</sup>	Total				
1950 Year	--	248	248	72	(9)	NA	2	116	41	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 January	696	377	1,073	131	40	56	121	234	36	176	1,811
February	696	385	1,081	122	40	47	108	227	38	174	1,790
March	696	393	1,089	119	40	41	103	225	37	180	1,793
April	696	396	1,092	119	41	41	111	221	40	183	1,808
May	696	392	1,088	122	41	47	127	221	39	178	1,817
June	696	377	1,073	122	40	55	143	224	38	178	1,819
July	696	368	1,064	126	39	60	154	222	38	175	1,818
August	696	366	1,062	129	39	65	168	218	35	171	1,823
September	696	373	1,069	129	41	68	172	220	36	166	1,833
October	696	382	1,078	118	39	63	159	214	36	166	1,810
November	696	374	1,070	121	37	56	139	217	36	170	1,789
December	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	E 695	E 482	E 1,177	E 159	E 40	R 96	F 176	E 232	E 42	E 180	E 2,008
2016 January	E 695	E 502	E 1,198	E 160	E 42	E 77	F 157	E 255	E 44	E 177	E 2,033

<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,

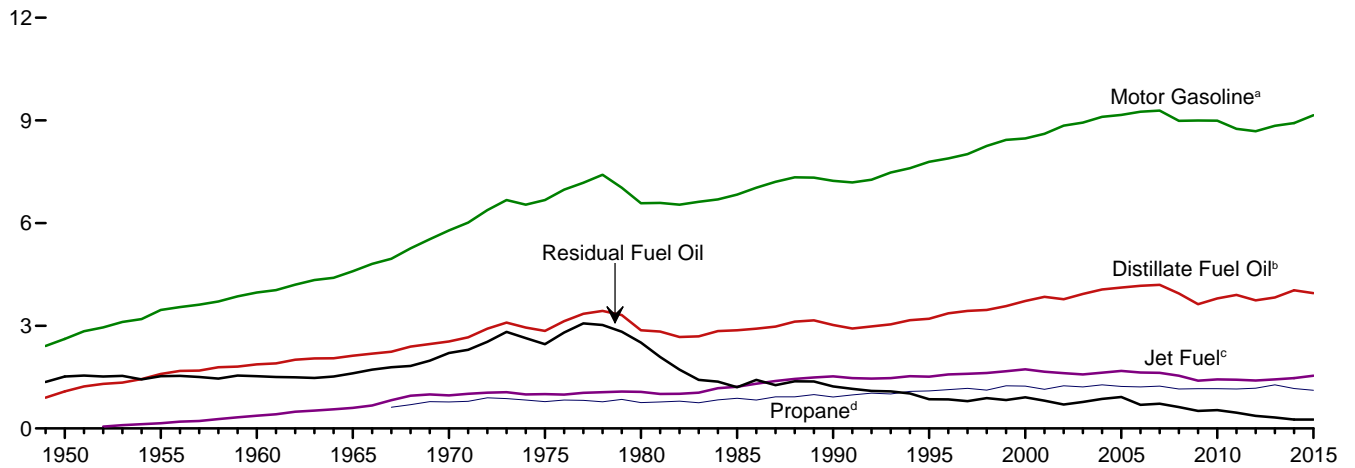
lubricants, pentanes plus, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, miscellaneous products, oxygenates, renewable fuels, and other hydrocarbons. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. 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)

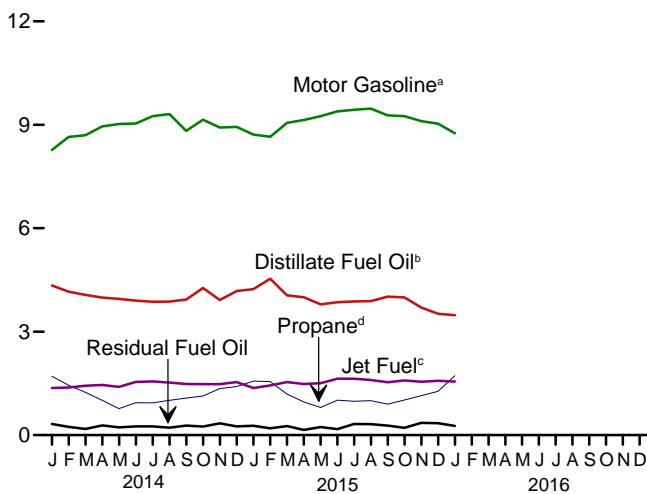
Total Petroleum and Motor Gasoline, 1949–2015



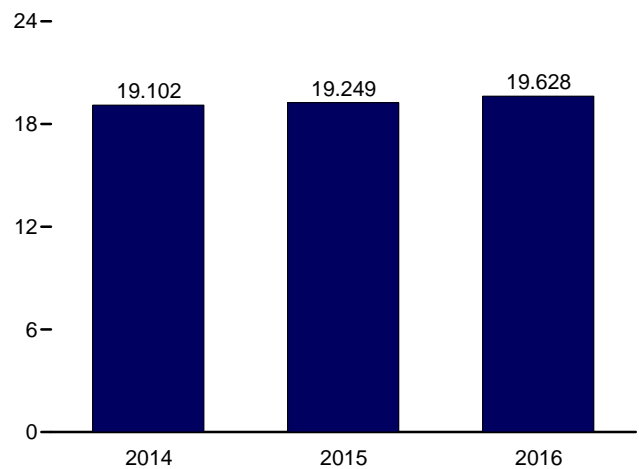
Selected Products, 1949–2015



Selected Products, Monthly



Total, January



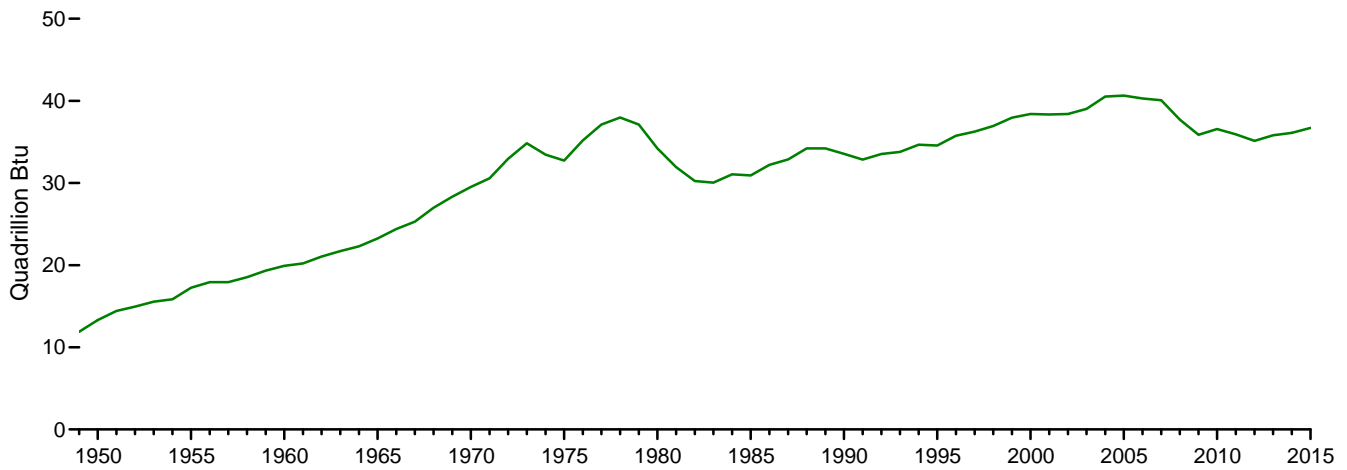
<sup>a</sup> Beginning in 1993, includes fuel ethanol blended into motor gasoline.  
<sup>b</sup> Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.  
<sup>c</sup> Beginning in 2005, includes kerosene-type jet fuel only.

<sup>d</sup> Includes propylene.  
 Note: SPR=Strategic Petroleum Reserve.  
 Web Page: <http://www.eia.gov/totalenergy/data/monthly/#petroleum>.  
 Source: Table 3.5.

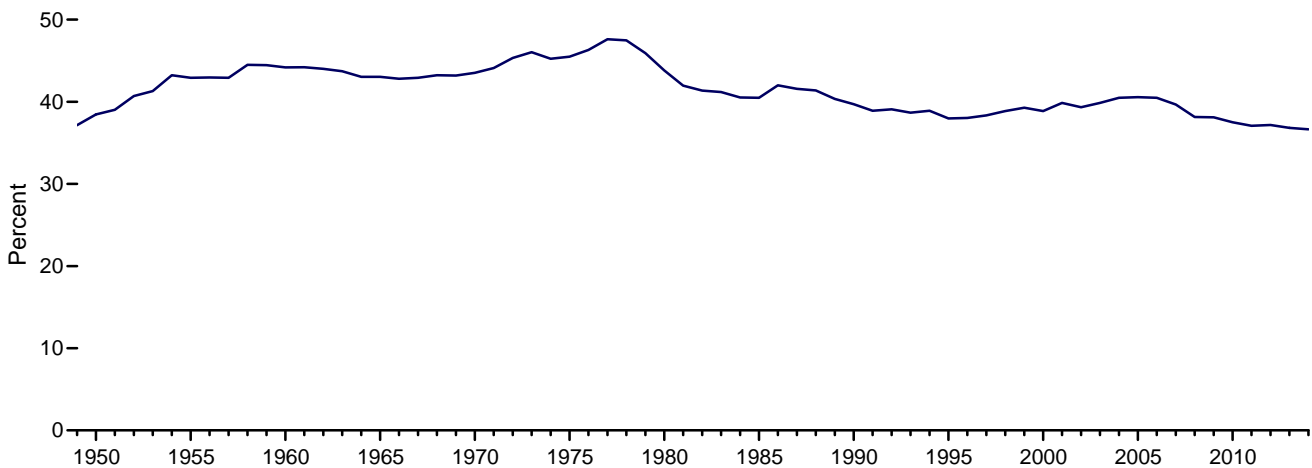


**Figure 3.6 Heat Content of Petroleum Products Supplied by Type**

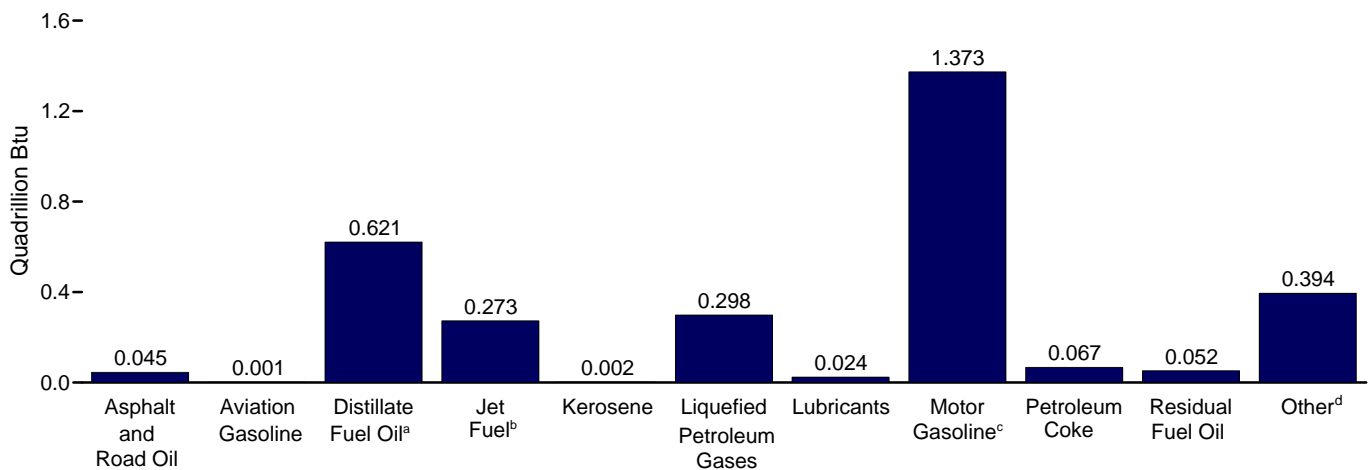
Total, 1949–2015



Petroleum Products Supplied as Share of Total Energy Consumption, 1949–2014



By Product, January 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>.

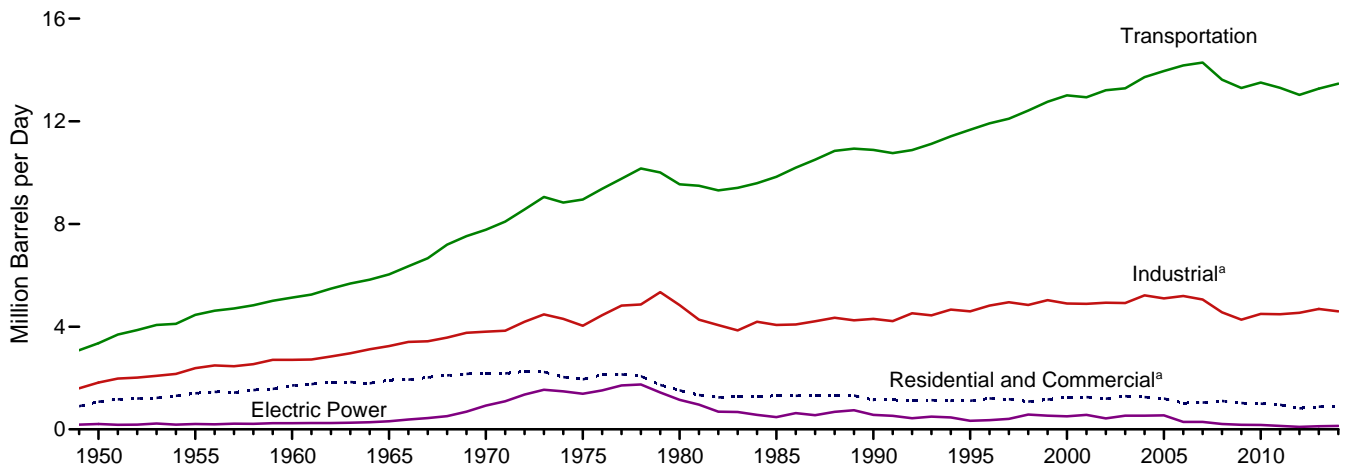
Sources: Tables 1.1 and 3.6.



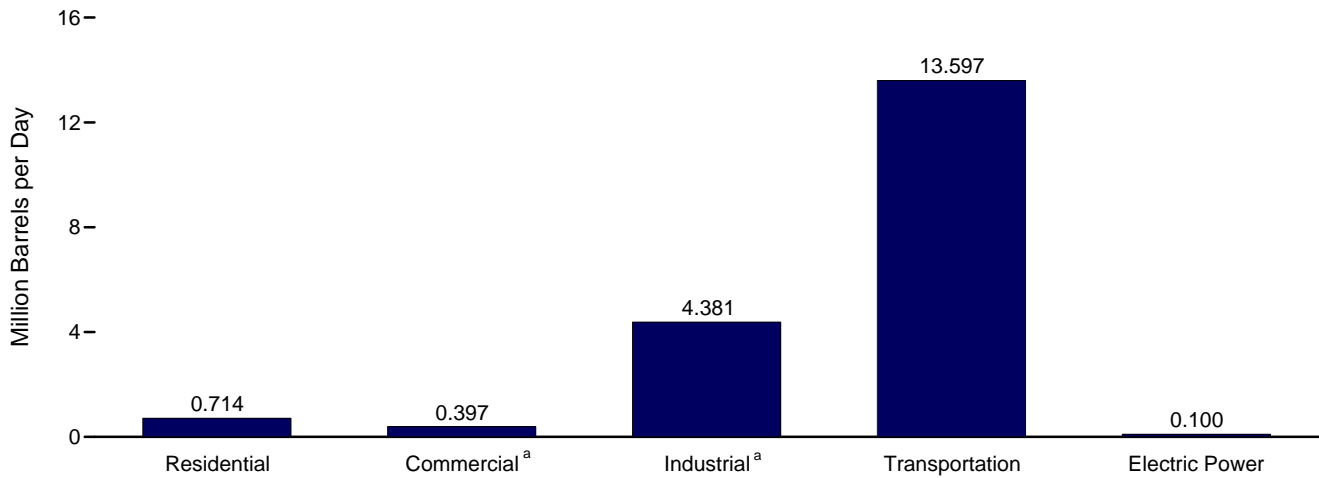


**Figure 3.7 Petroleum Consumption by Sector**

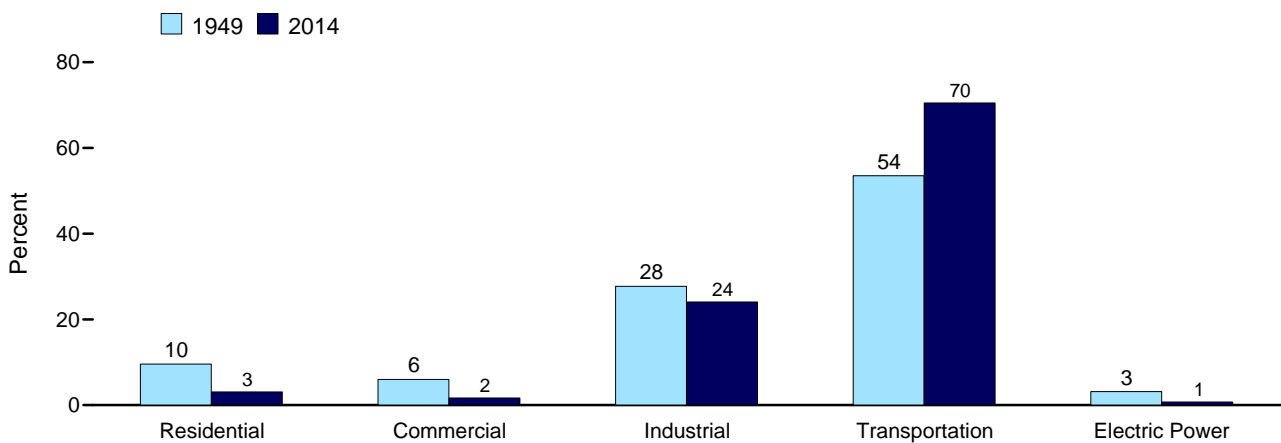
By Sector, 1949–2014



By Sector, November 2015



Sector Shares 1949 and 2014



<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	362	619	186	2	105	24	(s)	23	339
2012 Average .....	228	4	286	518	168	1	98	21	(s)	14	301
<b>2013</b> January .....	433	8	380	821	303	1	124	20	(s)	20	468
February .....	444	2	382	828	310	(s)	125	<sup>R</sup> 20	(s)	20	477
March .....	348	12	343	703	244	1	112	21	(s)	16	<sup>R</sup> 394
April .....	270	4	314	588	189	(s)	103	22	(s)	12	326
May .....	171	1	287	458	119	(s)	94	22	0	8	243
June .....	125	1	282	408	87	(s)	92	22	0	6	<sup>R</sup> 207
July .....	122	1	314	436	85	(s)	103	22	(s)	6	216
August .....	157	1	300	458	110	(s)	98	22	(s)	7	238
September .....	178	3	314	494	124	(s)	103	22	(s)	8	257
October .....	127	1	359	487	89	(s)	117	22	(s)	6	234
November .....	200	(s)	370	571	140	(s)	121	22	(s)	9	292
December .....	239	15	389	643	167	2	127	21	(s)	11	329
<b>Average</b> .....	<b>233</b>	<b>4</b>	<b>336</b>	<b>573</b>	<b>163</b>	<b>(s)</b>	<b>110</b>	<b>22</b>	<b>(s)</b>	<b>11</b>	<b>306</b>
<b>2014</b> January .....	330	14	404	<sup>R</sup> 748	221	2	132	<sup>R</sup> 30	(s)	5	<sup>R</sup> 390
February .....	406	4	359	768	272	<sup>R</sup> 1	117	<sup>R</sup> 32	(s)	6	<sup>R</sup> 427
March .....	328	2	331	661	219	(s)	108	<sup>R</sup> 32	(s)	4	<sup>R</sup> 365
April .....	164	1	303	469	110	(s)	99	<sup>R</sup> 33	(s)	2	<sup>R</sup> 244
May .....	215	1	268	484	144	(s)	88	<sup>R</sup> 33	(s)	3	<sup>R</sup> 268
June .....	191	1	289	481	128	(s)	94	<sup>R</sup> 33	0	3	<sup>R</sup> 258
July .....	155	9	295	459	104	1	97	<sup>R</sup> 34	(s)	2	<sup>R</sup> 237
August .....	162	1	323	486	108	(s)	106	<sup>R</sup> 34	(s)	2	<sup>R</sup> 251
September .....	234	14	322	570	156	2	105	<sup>R</sup> 32	(s)	3	<sup>R</sup> 299
October .....	244	12	332	<sup>R</sup> 588	164	2	109	<sup>R</sup> 33	(s)	3	<sup>R</sup> 311
November .....	297	5	368	670	199	1	120	<sup>R</sup> 33	(s)	4	<sup>R</sup> 357
December .....	319	<sup>R</sup> 16	367	703	213	2	120	<sup>R</sup> 33	(s)	4	<sup>R</sup> 373
<b>Average</b> .....	<b>253</b>	<b>7</b>	<b>330</b>	<b>590</b>	<b>169</b>	<b>1</b>	<b>108</b>	<b><sup>R</sup> 33</b>	<b>(s)</b>	<b>3</b>	<b><sup>R</sup> 314</b>
<b>2015</b> January .....	396	2	381	779	265	(s)	125	<sup>R</sup> 32	(s)	5	<sup>R</sup> 427
February .....	379	7	380	766	253	1	124	<sup>R</sup> 32	(s)	5	<sup>R</sup> 416
March .....	271	<sup>R</sup> 8	325	604	181	1	106	<sup>R</sup> 33	(s)	4	<sup>R</sup> 326
April .....	169	1	307	476	113	(s)	100	<sup>R</sup> 33	(s)	2	<sup>R</sup> 249
May .....	163	<sup>R</sup> 15	290	469	109	2	95	<sup>R</sup> 34	(s)	2	<sup>R</sup> 242
June .....	99	(s)	305	403	66	(s)	100	<sup>R</sup> 34	0	1	<sup>R</sup> 201
July .....	110	1	321	432	74	(s)	105	<sup>R</sup> 34	0	2	<sup>R</sup> 215
August .....	137	1	302	439	92	(s)	99	<sup>R</sup> 35	(s)	2	<sup>R</sup> 227
September .....	135	1	285	421	90	(s)	93	<sup>R</sup> 34	(s)	2	<sup>R</sup> 220
October .....	<sup>R</sup> 329	2	316	<sup>R</sup> 648	<sup>R</sup> 220	(s)	103	<sup>R</sup> 34	(s)	<sup>R</sup> 5	<sup>R</sup> 363
November .....	365	2	347	714	244	(s)	113	33	(s)	5	397
<b>11-Month Average</b> ...	<b>231</b>	<b>4</b>	<b>323</b>	<b>558</b>	<b>155</b>	<b>1</b>	<b>106</b>	<b>33</b>	<b>(s)</b>	<b>3</b>	<b>298</b>
<b>2014 11-Month Average</b> ...	<b>247</b>	<b>6</b>	<b>326</b>	<b>579</b>	<b>165</b>	<b>1</b>	<b>107</b>	<b>33</b>	<b>(s)</b>	<b>3</b>	<b>309</b>
<b>2013 11-Month Average</b> ...	<b>233</b>	<b>3</b>	<b>331</b>	<b>567</b>	<b>163</b>	<b>(s)</b>	<b>108</b>	<b>22</b>	<b>(s)</b>	<b>11</b>	<b>304</b>

<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.

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

Notes: • Data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term

"petroleum consumption" in Tables 3.7a-3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

**Table 3.7b Petroleum Consumption: Industrial Sector**  
(Thousand Barrels per Day)

	Industrial Sector <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	1,714	64	138	295	59	1,272	4,484
2012 Average	340	602	1	1,841	59	136	319	30	1,215	4,543
<b>2013</b> January	224	749	1	2,217	65	134	351	22	1,171	R 4,934
February	215	R 620	(s)	2,232	65	135	230	20	1,214	4,731
March	236	525	2	2,005	65	139	241	28	1,114	R 4,355
April	290	571	1	1,836	58	R 142	219	18	1,189	R 4,324
May	308	565	(s)	1,674	66	R 145	331	16	1,363	4,469
June	406	500	(s)	1,647	73	146	334	19	1,311	R 4,435
July	453	449	(s)	1,833	63	R 147	307	23	1,336	4,610
August	464	453	(s)	1,754	62	147	331	26	1,192	4,430
September	461	544	1	1,831	61	144	337	23	1,521	4,922
October	377	809	(s)	2,097	60	144	257	17	1,178	R 4,938
November	262	R 720	(s)	2,162	51	R 143	346	24	1,426	5,135
December	180	R 704	3	2,270	59	R 139	251	17	1,377	R 5,000
<b>Average</b>	<b>323</b>	<b>601</b>	<b>1</b>	<b>1,962</b>	<b>62</b>	<b>R 142</b>	<b>295</b>	<b>21</b>	<b>1,282</b>	<b>4,690</b>
<b>2014</b> January	195	R 913	3	2,361	54	R 107	372	19	1,098	R 5,122
February	208	R 712	1	2,093	53	R 112	240	17	1,256	R 4,693
March	215	669	(s)	1,934	75	R 113	114	12	1,130	R 4,262
April	278	R 714	(s)	1,768	68	R 116	278	19	1,224	R 4,465
May	346	586	(s)	1,563	67	R 117	308	16	1,183	R 4,187
June	402	R 517	(s)	1,686	60	R 117	287	18	1,171	R 4,260
July	466	R 513	2	1,724	71	R 120	356	17	1,166	R 4,435
August	458	R 497	(s)	1,884	66	R 121	288	14	1,184	R 4,513
September	447	R 555	3	1,882	74	R 114	354	19	1,358	R 4,806
October	392	R 768	2	1,938	65	R 119	328	17	1,234	R 4,863
November	264	R 575	1	2,150	71	R 116	354	24	1,225	R 4,780
December	247	R 757	3	2,145	57	R 116	200	18	1,223	R 4,766
<b>Average</b>	<b>327</b>	<b>648</b>	<b>1</b>	<b>1,926</b>	<b>65</b>	<b>R 116</b>	<b>290</b>	<b>18</b>	<b>1,204</b>	<b>R 4,595</b>
<b>2015</b> January	198	R 850	(s)	2,223	79	R 113	323	19	1,146	R 4,951
February	214	R 926	1	2,221	57	R 112	169	10	1,226	R 4,937
March	235	735	2	1,895	75	R 118	335	19	1,193	R 4,605
April	302	716	(s)	1,793	64	R 119	328	11	1,220	R 4,552
May	340	539	3	1,695	84	R 120	332	17	1,303	R 4,433
June	470	583	(s)	1,778	66	R 122	356	12	1,309	R 4,697
July	484	R 565	(s)	1,873	81	R 122	343	22	1,303	R 4,794
August	507	R 533	(s)	1,760	63	R 123	344	21	1,308	R 4,660
September	471	R 714	(s)	1,666	66	R 120	237	20	1,143	R 4,438
October	400	R 503	(s)	1,844	77	R 120	280	14	1,125	R 4,363
November	284	365	(s)	2,023	54	118	268	24	1,242	4,381
<b>11-Month Average</b>	<b>356</b>	<b>637</b>	<b>1</b>	<b>1,886</b>	<b>70</b>	<b>119</b>	<b>303</b>	<b>17</b>	<b>1,229</b>	<b>4,618</b>
<b>2014 11-Month Average</b>	<b>335</b>	<b>638</b>	<b>1</b>	<b>1,906</b>	<b>66</b>	<b>116</b>	<b>298</b>	<b>18</b>	<b>1,202</b>	<b>4,579</b>
<b>2013 11-Month Average</b>	<b>337</b>	<b>591</b>	<b>1</b>	<b>1,933</b>	<b>63</b>	<b>142</b>	<b>299</b>	<b>21</b>	<b>1,274</b>	<b>4,661</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 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	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 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	8,867	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 January .....	11	2,542	1,311	36	62	R 8,177	250	R 12,388	35	53	50	138
February .....	8	2,584	1,344	36	62	R 8,240	221	R 12,494	26	52	37	114
March .....	12	2,630	1,393	32	62	R 8,481	367	R 12,977	22	50	28	101
April .....	12	2,801	1,444	30	55	8,691	212	13,244	24	48	30	102
May .....	15	2,867	1,459	27	62	8,866	191	R 13,488	27	66	28	121
June .....	15	R 2,927	1,454	27	69	8,909	231	R 13,632	23	69	31	124
July .....	16	R 2,931	1,546	30	59	R 8,977	291	R 13,851	34	67	44	146
August .....	14	2,952	1,524	28	59	8,955	343	R 13,875	21	70	33	124
September .....	11	R 2,857	1,417	30	58	R 8,781	310	R 13,463	21	65	29	116
October .....	11	2,993	1,455	34	56	8,778	216	R 13,544	21	58	28	108
November .....	14	2,807	1,429	35	48	R 8,758	302	13,393	26	48	27	100
December .....	7	2,741	1,428	37	56	R 8,509	104	R 12,882	35	57	38	129
Average .....	12	2,804	1,434	32	59	8,679	253	R 13,274	26	59	34	119
2014 January .....	10	R 2,716	1,364	38	51	R 8,136	162	R 12,478	159	66	138	364
February .....	7	R 2,723	1,380	34	50	R 8,503	160	R 12,857	48	60	55	164
March .....	12	2,803	1,433	31	70	R 8,552	107	R 13,008	47	64	57	168
April .....	12	2,979	1,455	29	64	R 8,806	229	R 13,574	22	46	28	96
May .....	13	2,980	1,400	25	63	R 8,873	182	R 13,537	27	60	24	110
June .....	11	R 3,042	1,544	27	57	R 8,889	207	R 13,777	23	64	27	114
July .....	17	R 3,074	1,559	28	67	R 9,095	203	R 14,043	21	58	31	110
August .....	14	R 3,084	1,522	30	62	R 9,156	169	R 14,038	23	58	33	113
September .....	12	R 2,965	1,482	30	70	R 8,675	228	R 13,462	23	59	28	110
October .....	11	R 3,069	1,479	31	61	R 8,996	200	R 13,848	21	34	26	81
November .....	11	2,819	1,476	35	67	R 8,773	285	R 13,465	27	45	26	98
December .....	12	R 2,862	1,537	35	54	R 8,792	206	R 13,499	27	65	24	116
Average .....	12	2,928	1,470	31	61	8,773	195	R 13,469	39	57	41	137
2015 January .....	8	R 2,681	1,367	36	74	R 8,573	191	R 12,931	43	61	57	161
February .....	8	R 2,843	1,442	36	54	R 8,507	33	R 12,923	134	71	149	354
March .....	9	R 2,840	1,540	31	71	R 8,905	211	R 13,605	27	43	28	97
April .....	14	2,980	1,483	29	60	R 8,987	110	R 13,663	21	47	28	96
May .....	13	R 2,953	1,507	27	79	R 9,097	189	R 13,866	27	53	25	106
June .....	12	R 3,079	1,637	29	62	R 9,234	129	R 14,183	27	50	30	106
July .....	18	R 3,103	1,637	30	77	R 9,281	263	R 14,410	25	65	38	128
August .....	11	R 3,104	1,596	29	59	R 9,310	261	R 14,370	23	61	34	119
September .....	11	3,054	1,535	27	62	R 9,121	222	R 14,032	22	61	31	114
October .....	14	R 2,920	1,584	30	72	R 9,096	R 165	R 13,881	21	47	28	96
November .....	10	2,701	1,548	33	51	8,958	296	13,597	27	42	31	100
11-Month Average ..	12	2,933	1,535	31	66	9,010	190	13,776	35	55	43	133
2014 11-Month Average ...	12	2,934	1,464	31	62	8,771	194	13,467	40	56	43	139
2013 11-Month Average ...	13	2,810	1,435	31	59	8,695	267	13,310	26	59	33	118

<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.

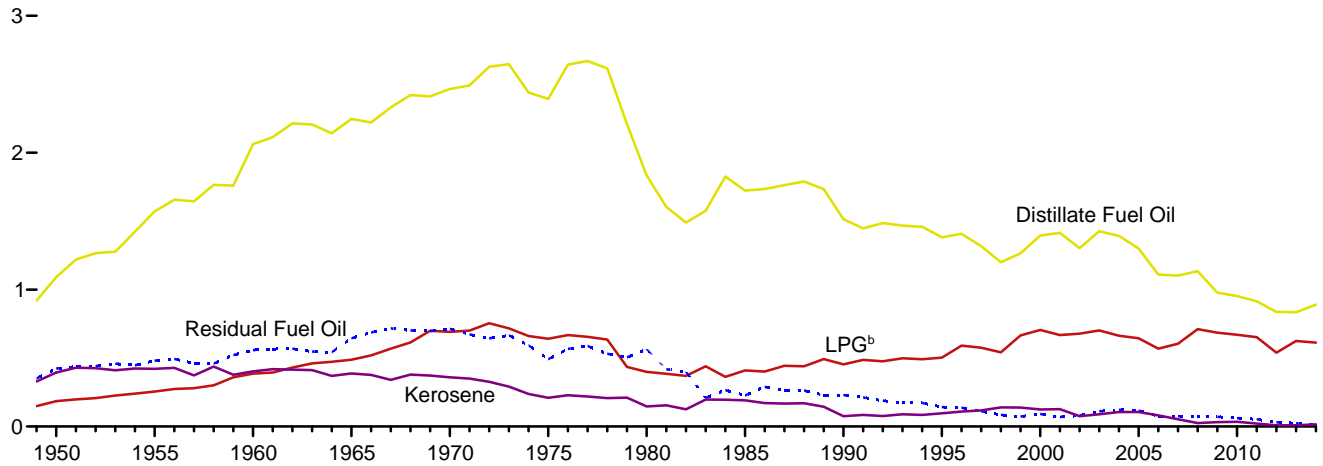
R=Revised. NA=Not available.

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

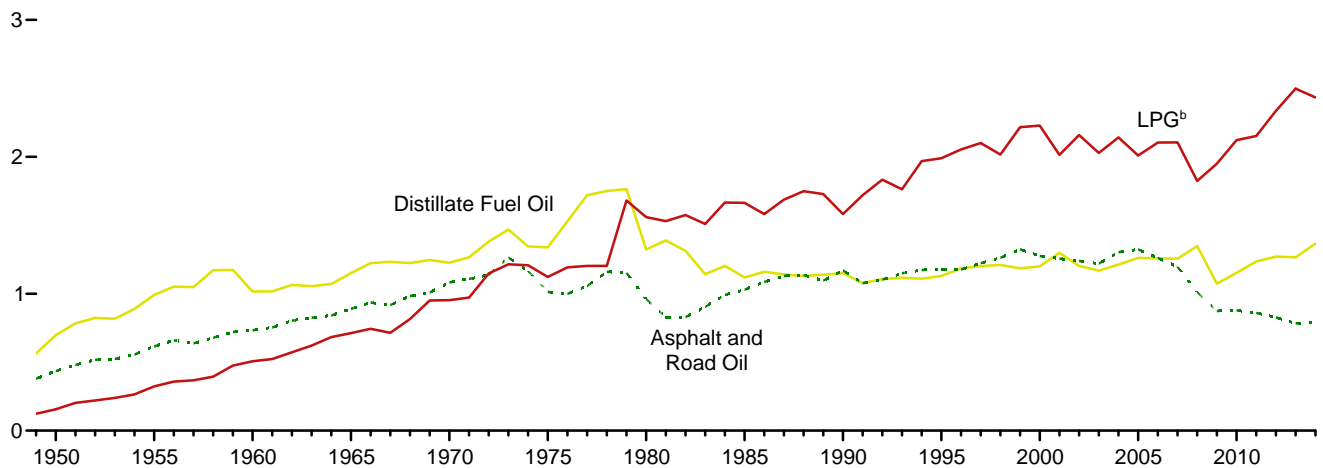
Sources: See end of section.

**Figure 3.8a Heat Content of Petroleum Consumption by End-Use Sector, 1949–2014**  
(Quadrillion Btu)

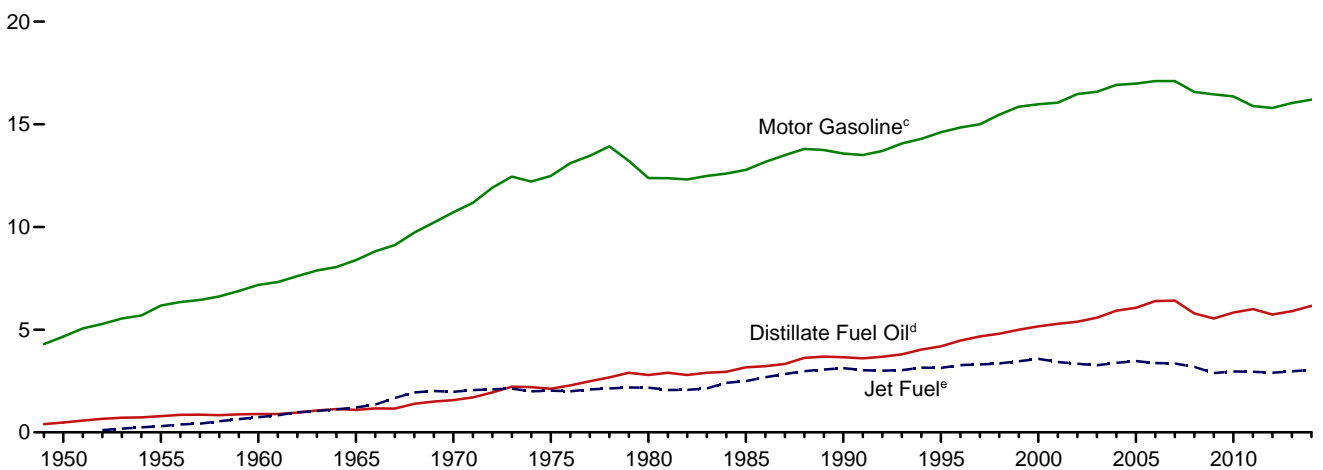
Residential and Commercial<sup>a</sup> Sectors, Selected Products



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 biodie-

sel) blended into distillate fuel oil.

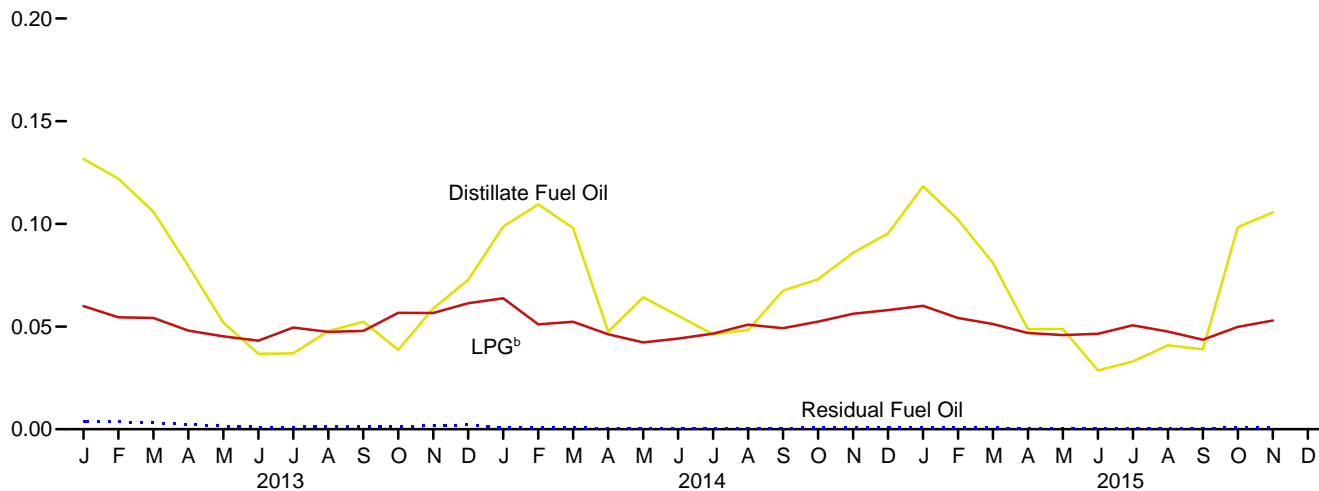
<sup>e</sup> Beginning in 2005, includes kerosene-type jet fuel only.

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

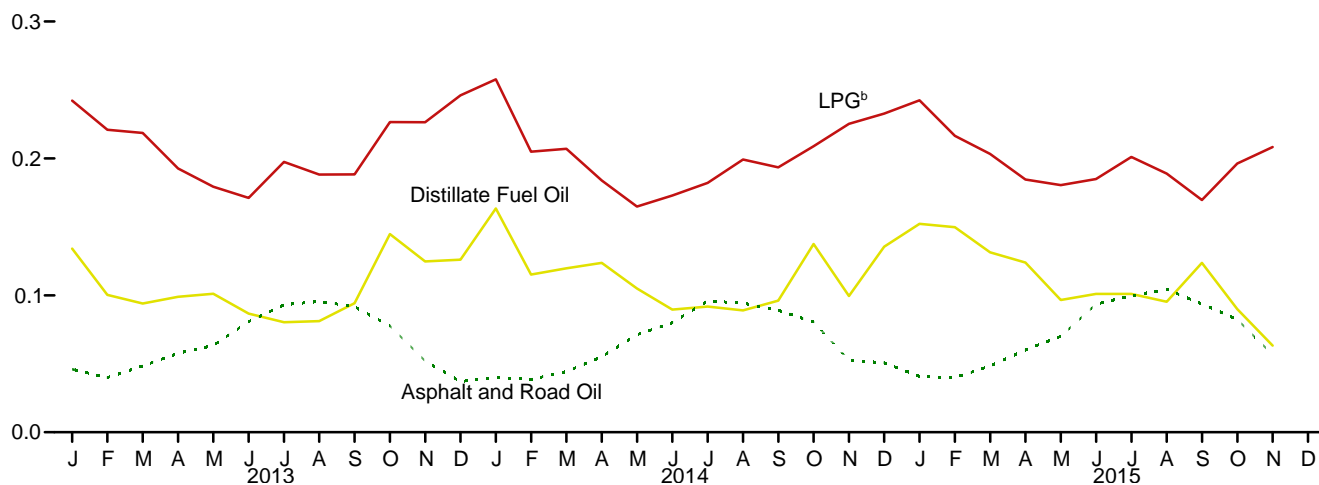
Sources: Tables 3.8a–3.8c.

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

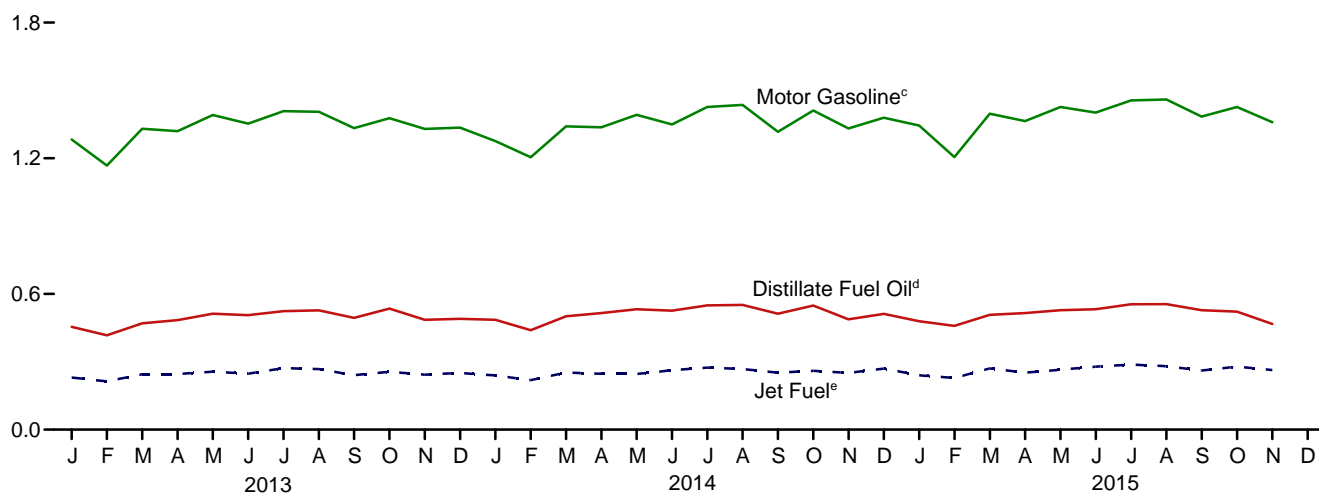
Residential and Commercial<sup>a</sup> Sectors, Selected Products



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	506	1,048	391	3	146	44	(s)	54	639
2012 Total	482	8	402	892	355	1	138	39	(s)	31	564
2013 January	77	1	45	124	54	(s)	15	3	(s)	4	76
February	72	(s)	41	113	50	(s)	13	3	(s)	4	70
March	62	2	41	105	44	(s)	13	3	(s)	3	64
April	47	1	36	84	33	(s)	12	3	(s)	2	50
May	31	(s)	34	65	21	(s)	11	3	0	2	38
June	22	(s)	32	54	15	(s)	11	3	0	1	30
July	22	(s)	37	59	15	(s)	12	4	(s)	1	32
August	28	(s)	36	64	20	(s)	12	R 3	(s)	1	36
September	31	1	36	67	22	(s)	12	3	(s)	2	38
October	23	(s)	43	66	16	(s)	14	3	(s)	1	R 34
November	35	(s)	43	77	24	(s)	14	3	(s)	2	43
December	43	3	46	92	30	(s)	15	3	(s)	2	51
Total	491	8	470	970	344	1	154	40	(s)	24	563
2014 January	59	2	48	110	40	(s)	16	R 5	(s)	1	R 61
February	66	1	39	105	44	(s)	13	R 4	(s)	1	R 62
March	59	(s)	39	98	39	(s)	13	R 5	(s)	1	R 58
April	28	(s)	35	64	19	(s)	11	R 5	(s)	(s)	R 36
May	38	(s)	32	71	26	(s)	10	R 5	(s)	1	R 42
June	33	(s)	33	67	22	(s)	11	R 5	0	(s)	R 39
July	28	2	35	64	19	(s)	11	R 5	(s)	(s)	R 36
August	29	(s)	38	68	19	(s)	13	R 5	(s)	(s)	R 38
September	40	2	37	80	27	(s)	12	R 5	(s)	1	R 45
October	44	2	39	85	29	(s)	13	R 5	(s)	1	R 48
November	51	1	42	95	34	(s)	14	R 5	(s)	1	R 54
December	57	3	44	104	38	(s)	14	R 5	(s)	1	R 59
Total	533	14	462	1,009	357	2	151	R 60	1	8	R 578
2015 January	71	(s)	45	116	47	(s)	15	R 5	(s)	1	R 68
February	61	1	41	103	41	(s)	13	R 4	(s)	1	R 60
March	49	R 1	39	89	32	(s)	13	R 5	(s)	1	R 51
April	29	(s)	35	65	20	(s)	12	R 5	(s)	(s)	R 37
May	29	3	35	R 66	20	(s)	11	R 5	(s)	(s)	R 37
June	17	(s)	35	52	11	(s)	11	R 5	0	(s)	R 28
July	20	(s)	38	58	13	(s)	12	R 5	0	(s)	R 31
August	24	(s)	36	60	16	(s)	12	R 5	(s)	(s)	R 34
September	23	(s)	33	56	16	(s)	11	R 5	(s)	(s)	R 32
October	R 59	(s)	38	R 97	39	(s)	12	R 5	(s)	1	R 58
November	63	(s)	40	104	42	(s)	13	5	(s)	1	61
11-Month Total	446	7	414	867	298	1	135	56	(s)	7	498
2014 11-Month Total	476	11	418	905	318	2	137	55	(s)	7	519
2013 11-Month Total	449	6	424	879	314	1	139	37	(s)	22	512

<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.

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

Notes: • Data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 3.6. Petroleum products supplied is an approximation of petroleum consumption

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

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

Sources: See end of section.



**Table 3.8b Heat Content of Petroleum Consumption: Industrial Sector**  
(Trillion Btu)

	Industrial Sector <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	2,152	142	255	663	135	2,676	8,121
<b>2012 Total</b> .....	827	1,271	2	2,335	130	252	717	70	2,558	8,163
<b>2013</b>										
January .....	46	134	(s)	242	12	21	67	4	208	735
February .....	40	100	(s)	221	11	19	40	3	196	631
March .....	48	94	(s)	219	12	22	46	6	197	644
April .....	58	99	(s)	193	11	22	41	3	204	630
May .....	63	101	(s)	179	12	23	63	3	241	686
June .....	81	87	(s)	171	13	22	62	3	223	662
July .....	93	80	(s)	197	12	23	59	4	241	710
August .....	95	81	(s)	188	12	23	63	5	212	680
September .....	92	94	(s)	188	11	22	62	4	258	732
October .....	78	145	(s)	227	11	23	49	3	211	746
November .....	52	125	(s)	226	9	22	64	3	243	746
December .....	37	126	(s)	246	11	22	48	3	244	738
<b>Total</b> .....	<b>783</b>	<b>1,266</b>	<b>1</b>	<b>2,498</b>	<b>138</b>	<b>R 263</b>	<b>663</b>	<b>48</b>	<b>2,677</b>	<b>R 8,339</b>
<b>2014</b>										
January .....	40	R 163	(s)	258	10	R 17	71	4	195	R 758
February .....	39	115	(s)	205	9	R 16	42	3	201	R 629
March .....	44	120	(s)	207	14	R 18	22	2	202	R 629
April .....	55	124	(s)	184	12	R 18	51	4	212	R 660
May .....	71	105	(s)	165	13	R 18	59	3	212	R 646
June .....	80	R 90	(s)	173	11	R 18	53	3	201	R 629
July .....	96	92	(s)	182	13	R 19	68	3	209	R 682
August .....	94	89	(s)	199	12	R 19	55	3	211	R 683
September .....	89	96	(s)	193	13	R 17	65	4	233	R 712
October .....	81	R 137	(s)	209	12	R 19	62	3	218	R 742
November .....	53	R 100	(s)	225	13	R 18	65	5	211	R 688
December .....	51	R 135	1	233	11	R 18	39	4	215	R 705
<b>Total</b> .....	<b>793</b>	<b>1,366</b>	<b>3</b>	<b>2,433</b>	<b>144</b>	<b>R 214</b>	<b>653</b>	<b>41</b>	<b>2,518</b>	<b>R 8,165</b>
<b>2015</b>										
January .....	41	R 152	(s)	242	15	R 18	62	4	202	R 736
February .....	40	150	(s)	217	10	R 16	30	2	195	R 659
March .....	48	R 131	(s)	203	14	R 18	64	4	209	R 692
April .....	60	124	(s)	185	12	R 18	61	2	208	R 669
May .....	70	R 97	R 1	181	16	R 19	63	3	232	R 681
June .....	94	101	(s)	185	12	R 19	66	2	225	R 703
July .....	100	101	(s)	201	15	R 19	66	4	232	R 738
August .....	104	95	(s)	189	12	R 19	66	4	229	R 719
September .....	94	124	(s)	170	12	R 18	44	4	196	R 661
October .....	82	R 90	(s)	196	14	R 19	53	3	197	R 655
November .....	57	63	(s)	208	10	18	50	5	214	624
<b>11-Month Total</b> .....	<b>789</b>	<b>1,228</b>	<b>1</b>	<b>2,177</b>	<b>141</b>	<b>201</b>	<b>623</b>	<b>36</b>	<b>2,339</b>	<b>7,537</b>
<b>2014 11-Month Total</b> .....	<b>742</b>	<b>1,231</b>	<b>2</b>	<b>2,200</b>	<b>133</b>	<b>196</b>	<b>615</b>	<b>37</b>	<b>2,303</b>	<b>7,459</b>
<b>2013 11-Month Total</b> .....	<b>746</b>	<b>1,140</b>	<b>1</b>	<b>2,252</b>	<b>127</b>	<b>241</b>	<b>615</b>	<b>45</b>	<b>2,434</b>	<b>7,601</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	(C)	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 January	2	455	230	4	12	1,283	49	R 2,035	6	9	10	25
February	1	417	213	4	11	1,168	39	R 1,853	4	8	6	19
March	2	470	245	4	12	1,331	72	R 2,135	4	9	6	18
April	2	485	246	3	10	1,320	40	R 2,105	4	8	6	18
May	2	513	256	3	12	1,391	37	R 2,215	5	12	6	22
June	2	506	247	3	12	1,353	44	R 2,168	4	12	6	22
July	3	R 524	272	4	11	1,409	57	R 2,278	6	12	9	27
August	2	R 527	268	3	11	1,405	67	R 2,284	4	12	6	23
September	2	494	241	3	11	1,333	58	R 2,143	4	11	6	20
October	2	535	256	4	11	R 1,378	42	R 2,227	4	10	5	20
November	2	R 486	243	4	9	1,330	57	R 2,130	4	8	5	18
December	1	490	251	4	10	R 1,335	20	R 2,112	6	10	7	24
Total	22	5,902	2,969	44	130	R 16,036	581	R 25,685	55	123	77	255
2014 January	2	485	240	5	10	R 1,276	32	R 2,049	29	12	27	67
February	1	R 440	219	4	9	R 1,205	28	R 1,905	8	10	10	27
March	2	501	252	4	13	R 1,341	21	R 2,134	8	11	11	31
April	2	515	248	3	12	R 1,337	43	R 2,160	4	8	5	17
May	2	533	246	3	12	R 1,392	36	R 2,223	5	11	5	20
June	2	526	263	3	10	R 1,349	39	R 2,192	4	11	5	20
July	3	550	274	3	13	R 1,427	39	R 2,308	4	10	6	20
August	2	R 551	268	4	12	R 1,436	33	R 2,306	4	10	6	21
September	2	513	252	4	13	R 1,317	43	R 2,143	4	10	5	19
October	2	R 549	260	4	12	R 1,411	39	R 2,276	4	6	5	15
November	2	488	251	4	12	R 1,332	54	R 2,142	5	8	5	17
December	2	512	270	4	10	R 1,379	40	R 2,217	5	12	5	21
Total	22	6,162	3,042	44	136	R 16,202	447	R 26,054	82	118	95	295
2015 January	1	479	240	4	14	R 1,345	37	R 2,121	8	11	11	30
February	1	459	229	4	9	R 1,205	6	R 1,913	22	11	26	59
March	1	R 508	271	4	13	R 1,397	41	R 2,235	5	8	5	18
April	2	515	252	3	11	R 1,364	21	R 2,169	4	8	5	17
May	2	528	265	3	15	R 1,427	37	R 2,277	5	9	5	19
June	2	533	279	3	11	R 1,402	24	R 2,254	5	9	6	19
July	3	555	288	4	14	R 1,456	51	R 2,370	4	11	7	23
August	2	555	281	3	11	R 1,460	51	R 2,363	4	11	7	22
September	2	528	261	3	11	R 1,385	42	R 2,232	4	10	6	20
October	2	522	278	4	14	R 1,427	32	R 2,279	4	8	5	18
November	1	467	263	4	9	1,360	56	2,161	5	7	6	18
11-Month Total	20	5,648	2,907	39	134	15,227	398	24,373	68	104	90	262
2014 11-Month Total	20	5,650	2,772	40	126	14,823	406	23,836	77	107	90	274
2013 11-Month Total	21	5,412	2,717	40	120	14,701	561	23,573	49	112	70	232

<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: 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.

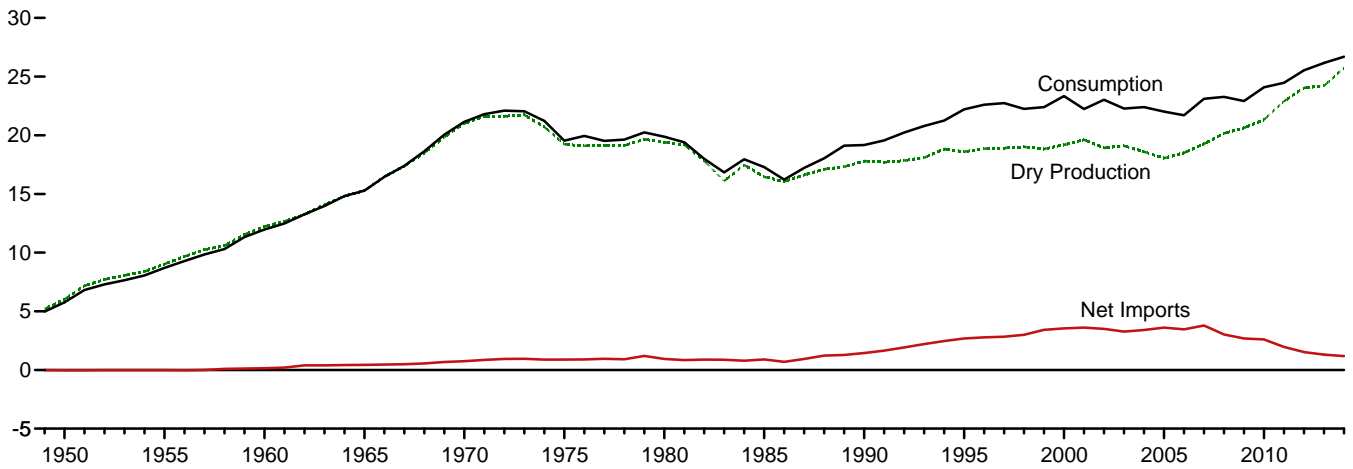
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# 4. Natural Gas

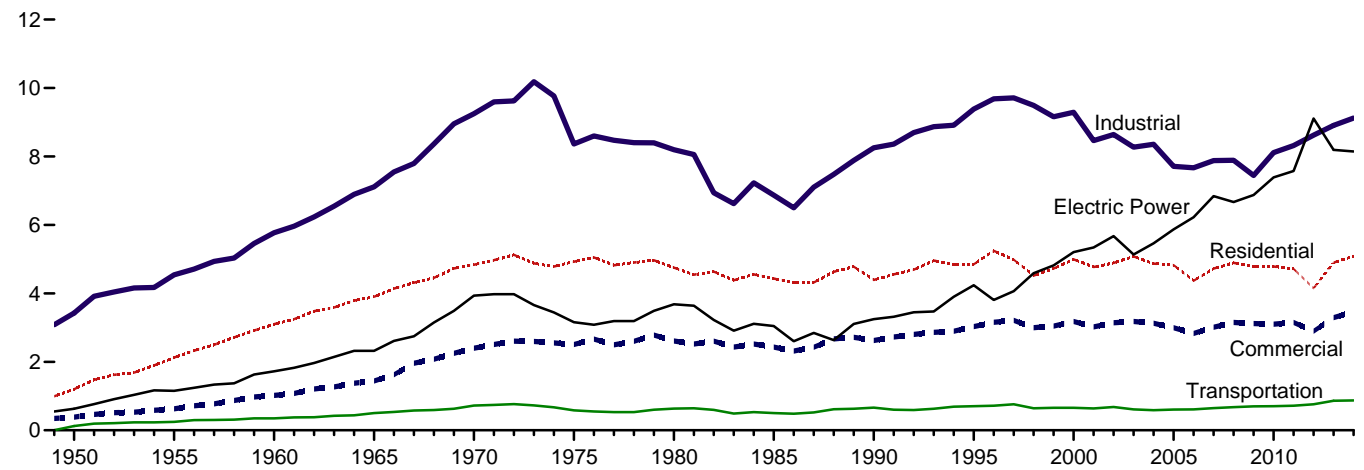
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**Figure 4.1 Natural Gas**  
(Trillion Cubic Feet)

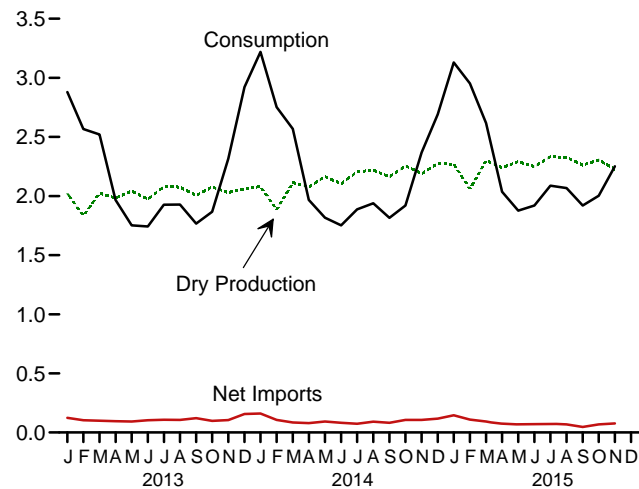
Overview, 1949–2014



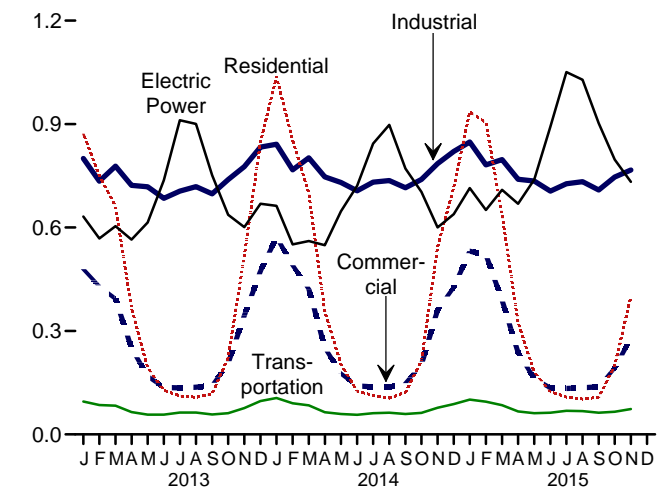
Consumption by Sector, 1949–2014



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	6,282	260	6,022	NA	0	26	-26	-54	-175	5,767
1955 Total	11,720	9,405	377	9,029	NA	11	31	-20	-68	-247	8,694
1960 Total	15,088	12,771	543	12,228	NA	156	11	144	-132	-274	11,967
1965 Total	17,963	16,040	753	15,286	NA	456	26	430	-118	-319	15,280
1970 Total	23,786	21,921	906	21,014	NA	821	70	751	-398	-228	21,139
1975 Total	21,104	20,109	872	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	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
<b>2013 Total</b>	<b>29,523</b>	<b>25,562</b>	<b>1,357</b>	<b>24,206</b>	<b>55</b>	<b>2,883</b>	<b>1,572</b>	<b>1,311</b>	<b>546</b>	<b>38</b>	<b>26,155</b>
2013 January	2,512	2,136	113	2,023	5	278	154	124	732	-5	2,879
February	2,270	1,935	103	1,833	4	237	133	104	613	14	2,567
March	2,504	2,137	113	2,023	5	248	149	100	387	7	2,521
April	2,446	2,095	111	1,983	4	221	126	95	-141	26	1,967
May	2,489	2,157	114	2,043	5	234	142	92	-426	39	1,752
June	2,385	2,084	111	1,974	4	237	134	103	-379	41	1,743
July	2,512	2,196	117	2,080	5	236	129	108	-281	15	1,926
August	2,495	2,192	116	2,075	5	236	130	106	-278	19	1,927
September	2,414	2,115	112	2,003	5	244	122	121	-361	-1	1,767
October	2,513	2,193	116	2,076	5	220	122	98	-261	-51	1,867
November	2,455	2,144	114	2,030	5	219	114	105	216	-38	2,317
December	2,526	2,178	116	2,062	5	273	117	156	725	-27	2,921
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
2015 January	E 2,771	E 2,401	133	E 2,268	5	279	134	146	725	R -14	R 3,130
February	E 2,515	E 2,188	125	E 2,062	6	254	145	109	741	34	2,952
March	E 2,822	E 2,441	142	E 2,299	5	257	164	93	194	27	2,617
April	E 2,746	E 2,382	142	E 2,239	5	205	130	75	-321	R 39	R 2,037
May	E 2,780	E 2,435	145	E 2,290	5	204	134	70	-497	R 9	R 1,877
June	E 2,699	E 2,390	141	E 2,249	5	206	138	68	-362	-40	1,920
July	E 2,790	E 2,480	146	E 2,335	4	217	144	73	-283	-41	2,088
August	E 2,766	E 2,474	148	E 2,326	4	214	145	69	-309	R -22	R 2,068
September	RE 2,750	E 2,407	144	E 2,263	5	209	163	46	-372	-23	1,920
October	RE 2,819	RE 2,457	153	RE 2,305	5	226	159	68	-330	R -46	2,002
November	E 2,744	E 2,376	149	E 2,227	6	229	152	77	12	-70	2,252
11-Month Total	E 30,204	E 26,431	1,567	E 24,864	54	2,502	1,607	895	-803	-146	24,863
2014 11-Month Total	28,579	24,918	1,466	23,453	54	2,442	1,377	1,064	-548	-19	24,004
2013 11-Month Total	26,997	23,384	1,241	22,143	50	2,610	1,455	1,155	-179	65	23,234

<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 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. 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: 1949–2012—U.S. Energy Information Administration (EIA), *Natural Gas Annual*, annual reports. 2013 forward—EIA, *Natural Gas Monthly*, January 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 January	0	265	0	(s)	0	0	11	3	278	99	0	56	0	154
February	0	225	0	(s)	0	4	8	0	237	84	0	49	0	133
March	0	240	0	(s)	0	4	5	0	248	92	0	56	0	149
April	0	215	0	(s)	0	0	5	0	221	71	0	55	0	126
May	0	229	0	(s)	0	0	6	0	234	82	0	60	0	142
June	0	229	0	(s)	0	0	8	0	237	76	0	58	0	134
July	0	228	0	(s)	0	0	8	0	236	66	0	62	0	129
August	0	227	0	(s)	0	0	6	3	236	68	0	62	0	130
September	0	227	0	(s)	3	0	9	6	244	70	0	53	0	122
October	0	215	0	(s)	0	0	3	3	220	70	0	53	0	122
November	0	216	0	(s)	0	0	3	0	219	60	0	54	0	114
December	0	270	0	(s)	0	0	0	3	273	73	0	44	0	117
Total	0	2,786	0	1	3	7	70	17	2,883	911	0	661	0	1,572
2014 January	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	64	0	121
December	0	246	0	(s)	0	0	5	3	254	73	0	59	0	137
Total	0	2,635	0	1	0	0	43	16	2,695	770	13	729	3	1,514
2015 January	0	268	0	(s)	0	0	9	2	279	62	0	69	3	134
February	0	242	0	(s)	0	0	10	2	254	78	0	65	3	145
March	0	242	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	221	0	(s)	0	0	4	3	229	57	0	92	3	152
11-Month Total	0	2,415	0	1	0	0	69	17	2,502	628	8	954	17	1,607
2014 11-Month Total	0	2,389	0	1	0	0	38	13	2,442	696	13	665	3	1,377
2013 11-Month Total	0	2,516	0	1	3	7	70	14	2,610	838	0	617	0	1,455

<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 and 2015; 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 and forward; Oman in 2000–2005; Peru in 2010 and 2011; United Arab Emirates in 1996–2000; Yemen in 2010 forward; and Other (unassigned) in 2004 and forward.

<sup>d</sup> Brazil in 2010–2012, 2014, and 2015; 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; and United Kingdom in 2010 and 2011.

(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." • 1988–2012: EIA, *Natural Gas Annual*, annual reports. • 2013 forward: EIA,



**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
<b>2013</b> January .....	4,377	2,699	7,077	-211	-7.2	793	72	721
February .....	4,384	2,099	6,483	-349	-14.3	648	44	604
March .....	4,382	1,720	6,102	-753	-30.5	483	103	380
April .....	4,381	1,855	6,236	-756	-29.0	135	272	-137
May .....	4,385	2,270	6,655	-617	-21.4	49	468	-419
June .....	4,385	2,643	7,027	-473	-15.2	69	441	-372
July .....	4,365	2,937	7,302	-308	-9.5	99	373	-275
August .....	4,362	3,212	7,574	-194	-5.7	102	374	-272
September .....	4,363	3,565	7,928	-129	-3.5	66	421	-355
October .....	4,364	3,817	8,181	-112	-2.9	84	340	-256
November .....	4,366	3,605	7,971	-194	-5.1	366	155	211
December .....	4,365	2,890	7,255	-523	-15.3	808	94	714
<b>Total</b> .....	<b>4,365</b>	<b>2,890</b>	<b>7,255</b>	<b>-523</b>	<b>-15.3</b>	<b>3,702</b>	<b>3,156</b>	<b>546</b>
<b>2014</b> 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
<b>Total</b> .....	<b>4,365</b>	<b>3,141</b>	<b>7,506</b>	<b>251</b>	<b>8.7</b>	<b>3,586</b>	<b>3,839</b>	<b>-253</b>
<b>2015</b> 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	3,952	8,317	365	10.2	71	401	-330
November .....	4,367	3,937	8,305	510	14.9	214	202	12
<b>11-Month Total</b> ...	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2,699</b>	<b>3,502</b>	<b>-803</b>
<b>2014 11-Month Total</b> ...	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3,157</b>	<b>3,696</b>	<b>-539</b>
<b>2013 11-Month Total</b> ...	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2,894</b>	<b>3,062</b>	<b>-168</b>

<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.

-- = Not applicable. NA = Not available.

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

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

beginning in 1973.

Sources: • **Storage Activity: 1949–1975**—U.S. Energy Information Administration (EIA), *Natural Gas Annual 1994, Volume 2*, Table 9. **1976–1979**—EIA, *Natural Gas Production and Consumption 1979*, Table 1. **1980–1995**—EIA, *Historical Natural Gas Annual 1930 Through 2000*, Table 11. **1996–2012**—EIA, *Natural Gas Monthly (NGM)*, monthly issues. **2013 forward**—EIA, NGM, January 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." **1996–2012**—EIA, NGA, annual reports. **2013 forward**—EIA, NGM, January 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		
1988	... 8,124	2002	... 8,207		

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 1980–2013 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), and 2015 (378 million cubic feet). Also, small amounts of compressed natural gas (CNG) were imported from Canada in 2014 and 2015. 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, 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.

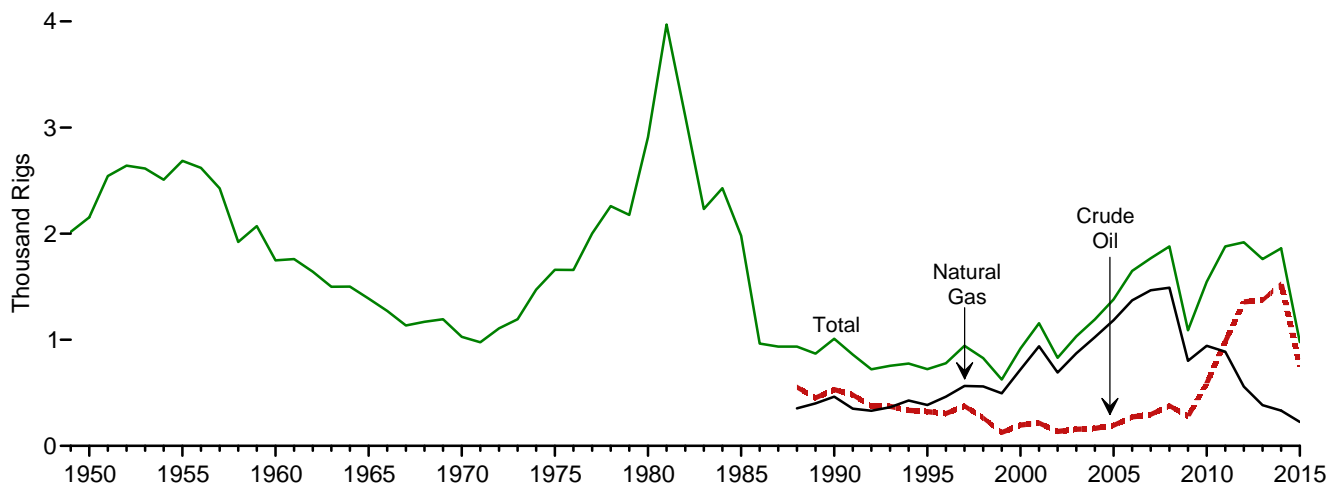
Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see EIA's *Natural Gas Monthly*. Preliminary data are revised after publication of EIA's *U.S. Imports and Exports of Natural Gas*.

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

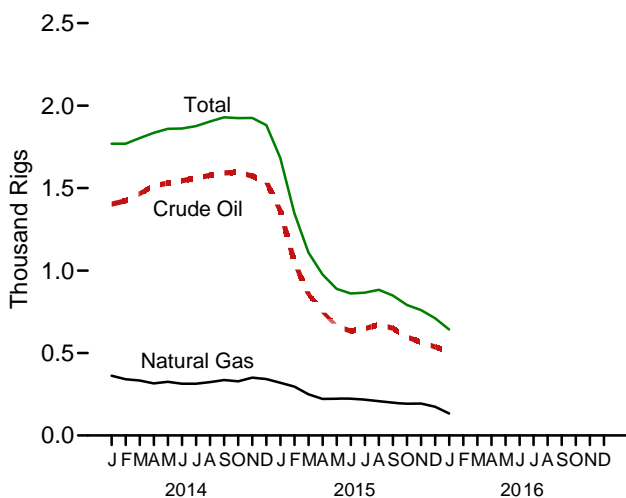
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**Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators**

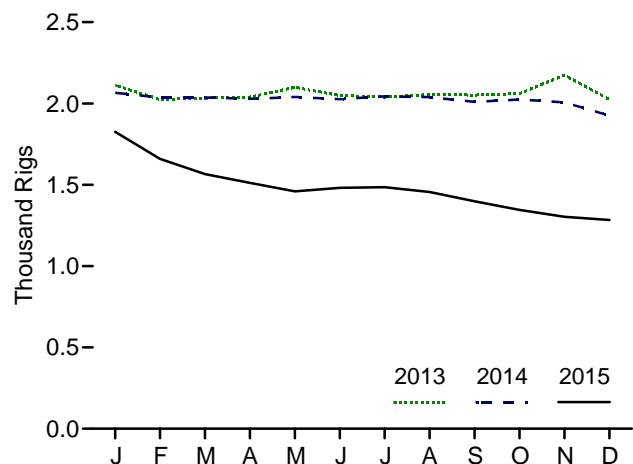
Rotary Rigs in Operation by Type, 1949–2015



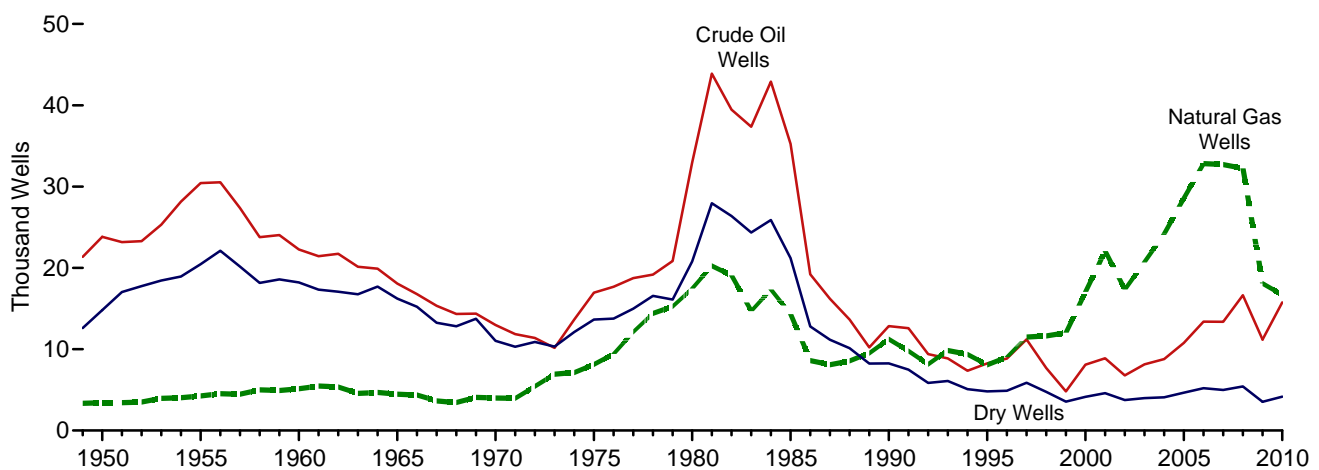
Rotary Rigs in Operation by Type, Monthly



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		
<b>1950 Average</b> .....	NA	NA	NA	NA	2,154	NA
<b>1955 Average</b> .....	NA	NA	NA	NA	2,686	NA
<b>1960 Average</b> .....	NA	NA	NA	NA	1,748	NA
<b>1965 Average</b> .....	NA	NA	NA	NA	1,388	NA
<b>1970 Average</b> .....	NA	NA	NA	NA	1,028	NA
<b>1975 Average</b> .....	1,554	106	NA	NA	1,660	2,486
<b>1980 Average</b> .....	2,678	231	NA	NA	2,909	4,089
<b>1985 Average</b> .....	1,774	206	NA	NA	1,980	4,716
<b>1990 Average</b> .....	902	108	532	464	1,010	3,658
<b>1995 Average</b> .....	622	101	323	385	723	3,041
<b>2000 Average</b> .....	778	140	197	720	918	2,692
<b>2001 Average</b> .....	1,003	153	217	939	1,156	2,267
<b>2002 Average</b> .....	717	113	137	691	830	1,830
<b>2003 Average</b> .....	924	108	157	872	1,032	1,967
<b>2004 Average</b> .....	1,095	97	165	1,025	1,192	2,064
<b>2005 Average</b> .....	1,287	94	194	1,184	1,381	2,222
<b>2006 Average</b> .....	1,559	90	274	1,372	1,649	2,364
<b>2007 Average</b> .....	1,695	72	297	1,466	1,768	2,388
<b>2008 Average</b> .....	1,814	65	379	1,491	1,879	2,515
<b>2009 Average</b> .....	1,046	44	278	801	1,089	1,722
<b>2010 Average</b> .....	1,514	31	591	943	1,546	1,854
<b>2011 Average</b> .....	1,846	32	984	887	1,879	2,075
<b>2012 Average</b> .....	1,871	48	1,357	558	1,919	2,113
<b>2013 January</b> .....	1,704	52	1,318	434	1,756	2,112
February .....	1,708	54	1,332	426	1,762	2,024
March .....	1,705	51	1,339	413	1,756	2,033
April .....	1,707	49	1,374	374	1,755	2,039
May .....	1,715	52	1,407	353	1,767	2,099
June .....	1,706	55	1,404	352	1,761	2,049
July .....	1,708	58	1,396	364	1,766	2,039
August .....	1,720	61	1,388	386	1,781	2,055
September .....	1,695	65	1,364	389	1,760	2,052
October .....	1,683	61	1,364	374	1,744	2,061
November .....	1,698	58	1,384	366	1,756	2,175
December .....	1,710	61	1,396	373	1,771	2,024
<b>Average</b> .....	<b>1,705</b>	<b>56</b>	<b>1,373</b>	<b>383</b>	<b>1,761</b>	<b>2,064</b>
<b>2014 January</b> .....	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
<b>Average</b> .....	<b>1,804</b>	<b>57</b>	<b>1,527</b>	<b>333</b>	<b>1,862</b>	<b>2,024</b>
<b>2015 January</b> .....	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	R 1,283
<b>Average</b> .....	<b>943</b>	<b>35</b>	<b>750</b>	<b>226</b>	<b>978</b>	R <b>1,481</b>
<b>2016 January</b> .....	615	28	510	133	643	NA

<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-reports>. • **Active Well Service Rig Count:** Cameron International Corporation, Houston, TX. See <http://www.c-a-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 Thousand Feet
	Exploratory				Development				Total				
	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	
Number													
<b>1950 Total</b> .....	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
<b>1955 Total</b> .....	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
<b>1960 Total</b> .....	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
<b>1965 Total</b> .....	946	515	8,005	9,466	17,119	3,967	8,221	29,307	18,065	4,482	16,226	38,773	174,882
<b>1970 Total</b> .....	757	477	6,162	7,396	12,211	3,534	4,869	20,614	12,968	4,011	11,031	28,010	138,556
<b>1975 Total</b> .....	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
<b>1980 Total</b> .....	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
<b>1985 Total</b> .....	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
<b>1990 Total</b> .....	778	811	3,652	5,241	12,061	10,435	4,593	27,089	12,839	11,246	8,245	32,330	156,044
<b>1995 Total</b> .....	570	558	2,024	3,152	7,678	7,524	2,790	17,992	8,248	8,082	4,814	21,144	117,156
<b>2000 Total</b> .....	288	657	1,341	2,286	7,802	16,394	2,805	27,001	8,090	17,051	4,146	29,287	144,425
<b>2001 Total</b> .....	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
<b>2002 Total</b> .....	258	844	1,282	2,384	6,517	16,498	2,472	25,487	6,775	17,342	3,754	27,871	145,159
<b>2003 Total</b> .....	350	997	1,297	2,644	7,779	19,725	2,685	30,189	8,129	20,722	3,982	32,833	177,239
<b>2004 Total</b> .....	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
<b>2005 Total</b> .....	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
<b>2006 Total</b> .....	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
<b>2007 Total</b> .....	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
<b>2008 January</b> .....	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
<b>Total</b> .....	<b>897</b>	<b>2,345</b>	<b>1,715</b>	<b>4,957</b>	<b>15,736</b>	<b>29,901</b>	<b>3,708</b>	<b>49,345</b>	<b>16,633</b>	<b>32,246</b>	<b>5,423</b>	<b>54,302</b>	<b>334,141</b>
<b>2009 January</b> .....	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
<b>Total</b> .....	<b>605</b>	<b>1,206</b>	<b>1,055</b>	<b>2,866</b>	<b>10,585</b>	<b>16,882</b>	<b>2,470</b>	<b>29,937</b>	<b>11,190</b>	<b>18,088</b>	<b>3,525</b>	<b>32,803</b>	<b>231,562</b>
<b>2010 January</b> .....	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
<b>Total</b> .....	<b>669</b>	<b>1,105</b>	<b>1,066</b>	<b>2,840</b>	<b>15,084</b>	<b>15,591</b>	<b>3,096</b>	<b>33,771</b>	<b>15,753</b>	<b>16,696</b>	<b>4,162</b>	<b>36,611</b>	<b>239,247</b>

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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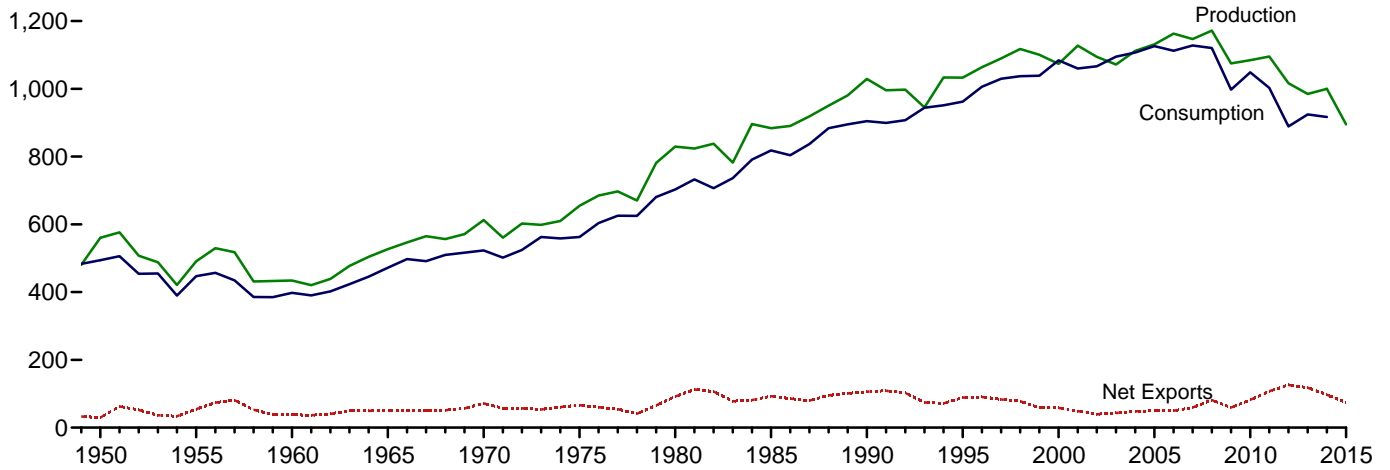


## **6. Coal**

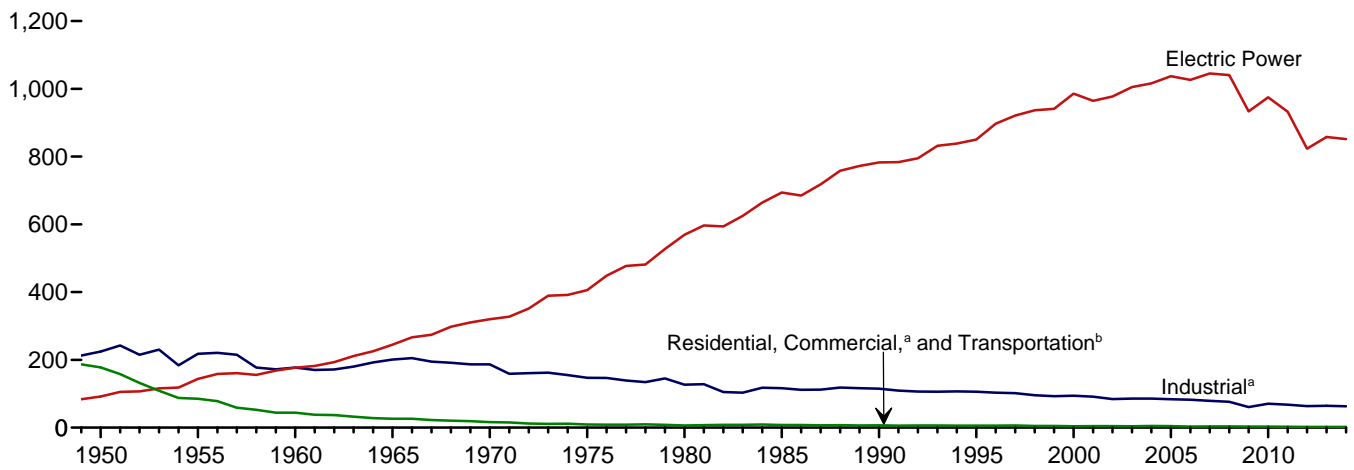
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**Figure 6.1 Coal**  
(Million Short Tons)

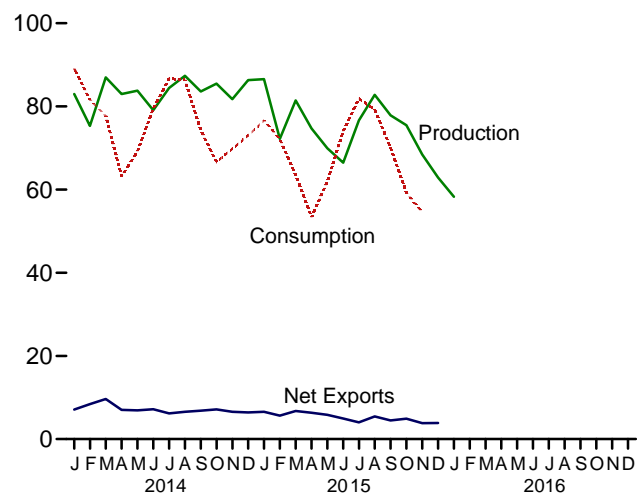
Overview, 1949–2015



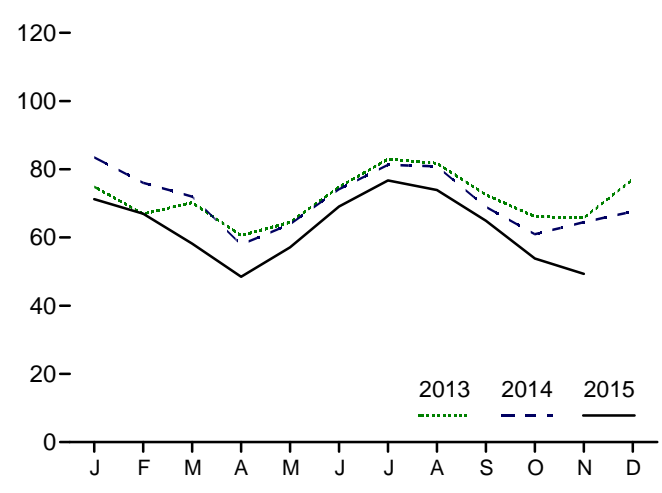
Consumption by Sector, 1949–2014



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>			
1950 Total	560,388	NA	365	29,360	-28,995	27,829	9,462	494,102
1955 Total	490,838	NA	337	54,429	-54,092	-3,974	-6,292	447,012
1960 Total	434,329	NA	262	37,981	-37,719	-3,194	1,722	398,081
1965 Total	526,954	NA	184	51,032	-50,848	1,897	2,244	471,965
1970 Total	612,661	NA	36	71,733	-71,697	11,100	6,633	523,231
1975 Total	654,641	NA	940	66,309	-65,369	32,154	-5,522	562,640
1980 Total	829,700	NA	1,194	91,742	-90,548	25,595	10,827	702,730
1985 Total	883,638	NA	1,952	92,680	-90,727	-27,934	2,796	818,049
1990 Total	1,029,076	3,339	2,699	105,804	-103,104	26,542	-1,730	904,498
1995 Total	1,032,974	8,561	9,473	88,547	-79,074	-275	632	962,104
2000 Total	1,073,612	9,089	12,513	58,489	-45,976	-48,309	938	1,084,095
2001 Total	1,127,689	10,085	19,787	48,666	-28,879	41,630	7,120	1,060,146
2002 Total	1,094,283	9,052	16,875	39,601	-22,726	10,215	4,040	1,066,355
2003 Total	1,071,753	10,016	25,044	43,014	-17,970	-26,659	-4,403	1,094,861
2004 Total	1,112,099	11,299	27,280	47,998	-20,718	-11,462	6,887	1,107,255
2005 Total	1,131,498	13,352	30,460	49,942	-19,482	-9,702	9,092	1,125,978
2006 Total	1,162,750	14,409	36,246	49,647	-13,401	42,642	8,824	1,112,292
2007 Total	1,146,635	14,076	36,347	59,163	-22,816	5,812	4,085	1,127,998
2008 Total	1,171,809	14,146	34,208	81,519	-47,311	12,354	5,740	1,120,548
2009 Total	1,074,923	13,666	22,639	59,097	-36,458	39,668	14,985	997,478
2010 Total	1,084,368	13,651	19,353	81,716	-62,363	-13,039	182	1,048,514
2011 Total	1,095,628	13,209	13,088	107,259	-94,171	211	11,506	1,002,948
2012 Total	1,016,458	11,196	9,159	125,746	-116,586	6,902	14,980	889,185
2013 January	82,713	1,047	654	9,572	-8,917	-5,799	55	80,587
February	77,586	950	385	8,627	-8,242	-2,835	645	72,486
March	84,568	1,171	390	13,637	-13,247	-3,371	-51	75,914
April	78,909	716	672	9,754	-9,082	1,948	2,635	65,960
May	83,271	992	870	10,478	-9,608	4,830	-61	69,885
June	81,031	979	1,213	9,194	-7,981	-5,380	-759	80,169
July	84,518	1,108	874	9,125	-8,251	-11,970	1,045	88,299
August	90,199	925	710	10,073	-9,363	-6,318	923	87,156
September	82,878	749	815	9,391	-8,576	-2,738	-112	77,902
October	80,603	737	707	9,855	-9,148	1,229	-861	71,824
November	80,576	781	850	8,511	-7,662	1,783	473	71,439
December	77,990	1,122	766	9,443	-8,676	-9,897	-2,488	82,821
Total	984,842	11,279	8,906	117,659	-108,753	-38,518	1,444	924,442
2014 January	82,992	1,116	1,065	8,152	-7,087	-14,750	2,689	89,082
February	75,320	999	582	8,972	-8,390	-13,810	139	81,600
March	86,959	1,089	803	10,460	-9,657	-1,582	2,253	77,719
April	82,981	934	930	7,952	-7,022	11,322	2,326	63,245
May	83,793	852	1,280	8,182	-6,902	7,624	904	69,214
June	79,069	1,003	1,365	8,540	-7,175	-4,037	-2,567	79,501
July	84,448	F 865	928	7,119	-6,192	-7,652	121	86,654
August	87,346	F 865	1,076	7,637	-6,561	-5,843	1,122	86,372
September	83,582	F 865	1,148	7,966	-6,818	2,809	585	74,235
October	85,462	F 865	584	7,738	-7,154	12,497	56	66,620
November	81,755	F 865	1,005	7,557	-6,552	6,157	91	69,820
December	86,341	F 865	586	6,981	-6,396	10,318	-2,474	72,967
Total	1,000,049	E 11,184	11,350	97,257	-85,907	3,052	5,246	917,028
2015 January	86,548	F 902	1,293	7,871	-6,579	2,917	1,313	76,641
February	72,210	F 902	866	6,496	-5,630	-4,671	67	72,086
March	81,430	F 902	850	7,612	-6,762	4,848	7,225	63,498
April	74,704	F 902	879	7,216	-6,337	13,541	2,328	53,400
May	69,942	F 902	919	6,761	-5,842	5,542	-2,513	61,973
June	66,484	F 902	842	5,789	-4,947	-6,713	-4,868	74,020
July	R 76,618	F 902	1,091	5,117	-4,026	-8,705	R 348	81,850
August	R 82,777	F 902	970	6,409	-5,439	-3,480	R 2,494	79,226
September	R 77,868	F 902	904	5,388	-4,485	5,228	R -992	70,049
October	75,455	F 902	854	5,744	-4,889	13,620	-1,392	59,239
November	68,431	RF 902	882	4,709	-3,827	R 13,108	R -2,122	R 54,520
December	62,903	NA	R 969	R 4,846	R -3,877	NA	NA	NA
Total	R 895,369	NA	R 11,318	R 73,958	R -62,640	NA	NA	NA
2016 January	58,282	NA	NA	NA	NA	NA	NA	NA

<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. E=Estimate. 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 6.3 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
<b>2013 January</b>	46,914	566	2,417	4,299	6,716	7,281	178,859	233,054
February	47,672	548	2,312	4,122	6,434	6,982	175,565	230,219
March	48,429	530	2,207	3,946	6,152	6,683	171,736	226,848
April	48,998	530	2,305	3,950	6,254	6,784	173,014	228,796
May	49,567	529	2,402	3,954	6,356	6,885	177,174	233,626
June	50,136	529	2,500	3,957	6,458	6,987	171,124	228,246
July	49,138	529	2,516	4,074	6,590	7,119	160,019	216,276
August	48,140	530	2,531	4,191	6,722	7,252	154,567	209,959
September	47,142	530	2,546	4,308	6,854	7,385	152,694	207,221
October	47,068	519	2,431	4,238	6,668	7,187	154,194	208,449
November	46,994	507	2,315	4,167	6,483	6,989	156,249	210,232
<b>December</b>	<b>45,659</b>	<b>495</b>	<b>2,200</b>	<b>4,097</b>	<b>6,297</b>	<b>6,792</b>	<b>147,884</b>	<b>200,335</b>
<b>2014 January</b>	F 45,439	465	2,064	3,913	5,977	6,441	133,705	185,585
February	F 45,780	435	1,927	3,729	5,657	6,091	119,904	171,775
March	F 46,192	405	1,791	3,545	5,336	5,741	118,260	170,193
April	F 46,765	413	1,833	3,579	5,412	5,825	128,925	181,515
May	F 46,310	421	1,875	3,613	5,488	5,908	136,921	189,139
June	F 45,610	429	1,937	3,647	5,584	6,013	133,479	185,102
July	F 45,355	F 431	F 1,904	F 3,890	F 5,794	F 6,225	125,870	177,450
August	F 43,796	F 433	F 1,879	F 4,129	F 6,009	F 6,442	121,369	171,607
September	F 43,220	F 435	F 1,847	F 4,368	F 6,215	F 6,649	124,546	174,415
October	F 43,146	F 436	F 1,851	F 4,514	F 6,366	F 6,802	136,964	186,912
November	F 43,527	F 439	F 1,850	F 4,658	F 6,508	F 6,947	142,595	193,069
<b>December</b>	<b>F 44,750</b>	<b>F 434</b>	<b>F 1,853</b>	<b>F 4,801</b>	<b>F 6,654</b>	<b>F 7,088</b>	<b>151,548</b>	<b>203,387</b>
<b>2015 January</b>	F 44,719	F 467	F 1,845	F 4,582	F 6,427	F 6,894	154,691	206,304
February	F 45,427	F 460	F 1,704	F 4,371	F 6,075	F 6,535	149,671	201,633
March	F 45,476	F 453	F 1,563	F 4,148	F 5,711	F 6,164	154,841	206,481
April	F 46,135	F 454	F 1,684	F 4,259	F 5,944	F 6,397	167,490	220,022
May	F 45,711	F 454	F 1,813	F 4,372	F 6,185	F 6,639	173,214	225,564
June	F 45,157	F 454	F 1,946	F 4,484	F 6,430	F 6,884	166,810	218,851
July	F 44,743	F 456	F 1,912	F 4,706	F 6,618	F 7,074	158,330	210,146
August	F 43,125	F 457	F 1,885	F 4,922	F 6,807	F 7,264	156,277	206,666
September	F 42,078	F 459	F 1,851	F 5,134	F 6,986	F 7,444	162,373	211,895
October	F 42,118	F 460	F 1,854	F 5,257	F 7,110	F 7,571	175,826	225,514
November	F 42,395	F 462	F 1,850	F 5,377	F 7,227	F 7,689	188,538	238,622

<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.

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.

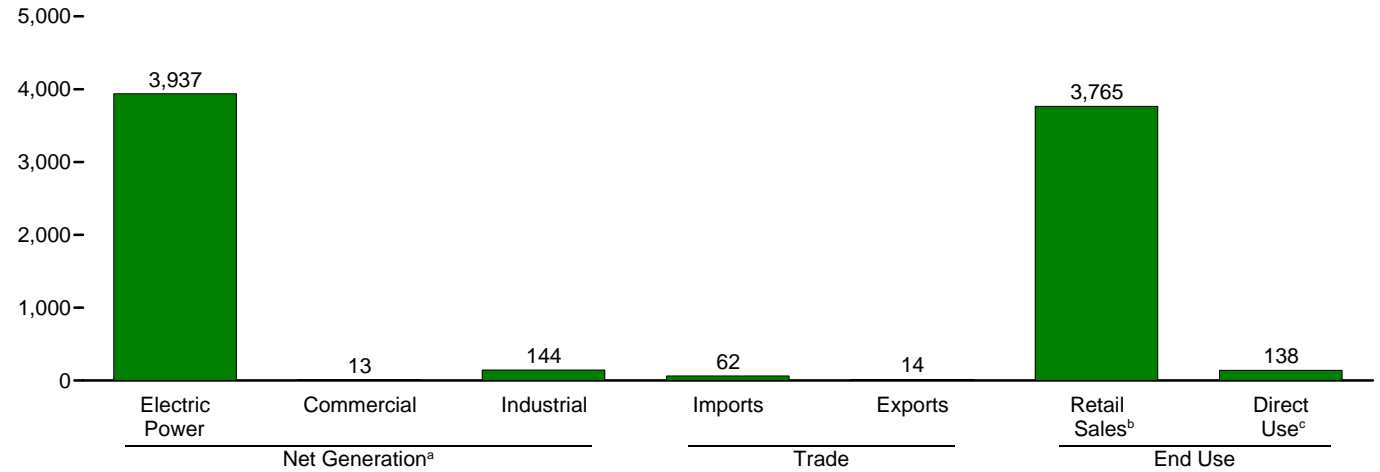
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## 7. Electricity

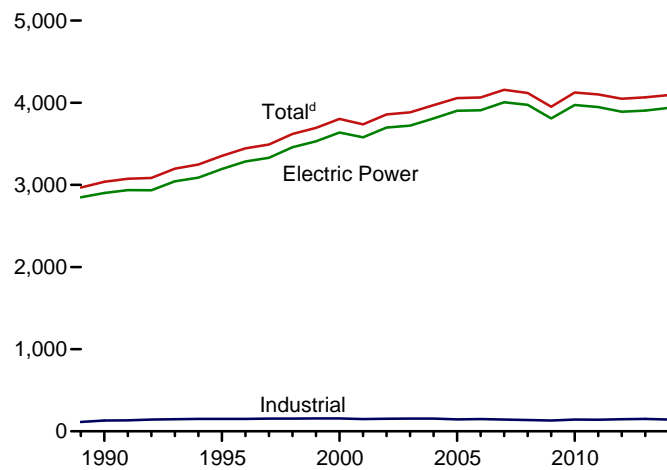
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**Figure 7.1 Electricity Overview**  
(Billion Kilowatthours)

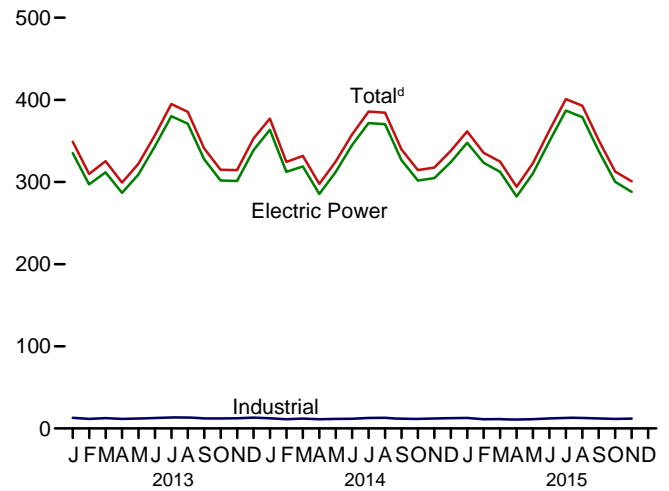
Overview, 2014



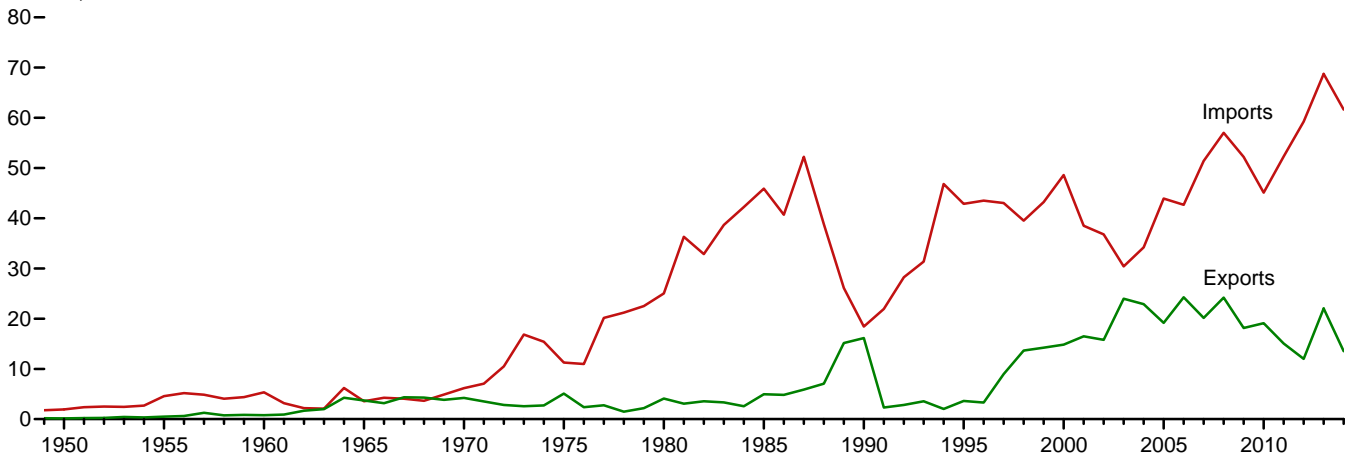
Net Generation<sup>a</sup> by Sector, 1989–2014



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



Trade, 1949–2014



<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 January	335	1	13	349	6	1	5	21	321	<sup>E</sup> 12	333
February	297	1	12	310	5	1	5	12	291	<sup>E</sup> 11	303
March	312	1	13	325	6	1	5	21	297	<sup>E</sup> 12	309
April	287	1	12	299	5	1	4	14	278	<sup>E</sup> 11	289
May	309	1	12	322	6	1	5	26	289	<sup>E</sup> 12	301
June	343	1	13	357	6	1	5	30	320	<sup>E</sup> 12	332
July	380	1	14	395	7	1	6	29	359	<sup>E</sup> 13	372
August	371	1	13	385	7	1	6	25	354	<sup>E</sup> 13	366
September	328	1	12	341	6	1	5	11	323	<sup>E</sup> 12	335
October	302	1	12	315	6	1	5	14	294	<sup>E</sup> 12	306
November	301	1	12	315	6	1	5	26	281	<sup>E</sup> 12	293
December	339	1	13	353	6	1	5	29	316	<sup>E</sup> 13	329
Total	3,904	12	150	4,066	70	11	59	257	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	7	309	<sup>E</sup> 11	320
March	319	1	12	332	5	2	3	21	302	<sup>E</sup> 11	314
April	285	1	11	298	4	1	3	14	276	<sup>E</sup> 11	287
May	312	1	12	325	5	1	4	26	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	6	1	5	25	357	<sup>E</sup> 12	364
September	327	1	12	340	6	1	5	6	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	62	14	48	239	3,765	<sup>E</sup> 13	3,903
2015 January	348	1	13	362	6	1	5	29	326	<sup>E</sup> 12	338
February	323	1	11	336	6	1	4	25	304	<sup>E</sup> 11	315
March	312	1	11	325	7	1	6	17	302	<sup>E</sup> 11	313
April	282	1	11	294	7	1	6	17	272	<sup>E</sup> 10	283
May	310	1	11	323	7	1	6	33	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	401	7	1	6	35	360	<sup>E</sup> 13	372
August	379	1	13	393	7	1	6	28	359	<sup>E</sup> 12	371
September	338	1	12	351	7	1	6	15	330	<sup>E</sup> 12	341
October	300	1	11	313	5	1	5	13	293	<sup>E</sup> 11	305
November	288	1	12	301	6	1	5	21	273	<sup>E</sup> 11	285
11-Month Total	3,617	12	131	3,760	70	8	62	268	3,428	<sup>E</sup> 12	3,554
2014 11-Month Total	3,613	12	131	3,756	56	12	44	218	3,455	<sup>E</sup> 12	3,581
2013 11-Month Total	3,565	11	137	3,713	65	10	54	228	3,408	<sup>E</sup> 13	3,539

<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. 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.

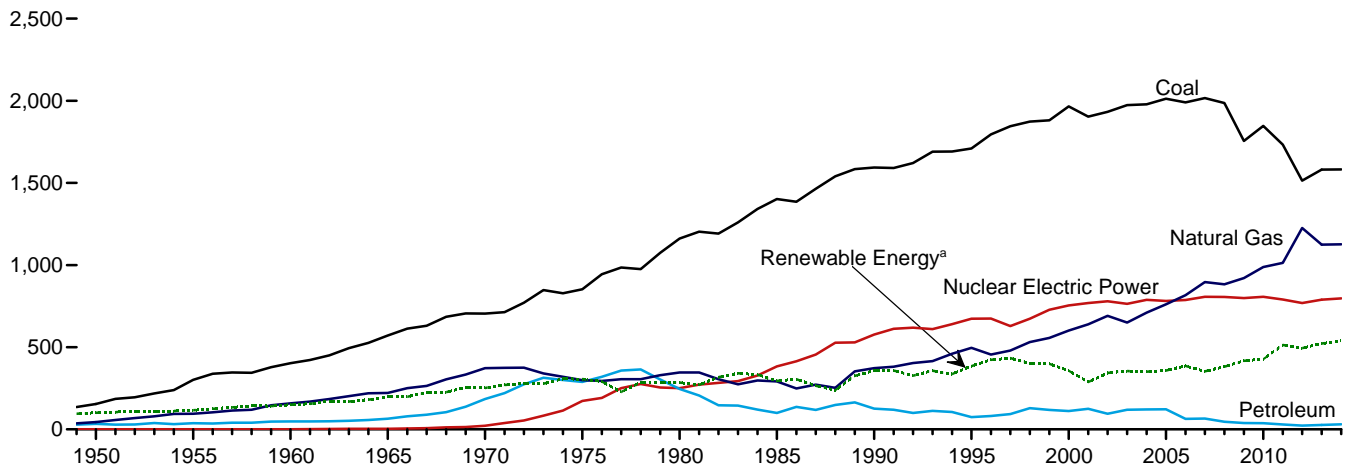
• Geographic coverage is the 50 states and the District of Columbia.

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.

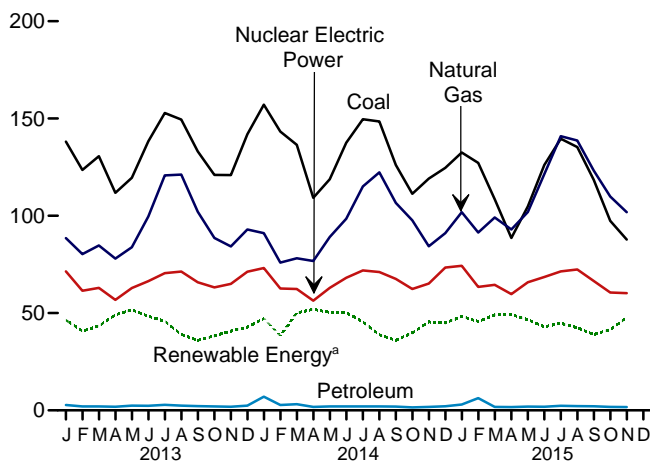
Sources: See end of section.

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

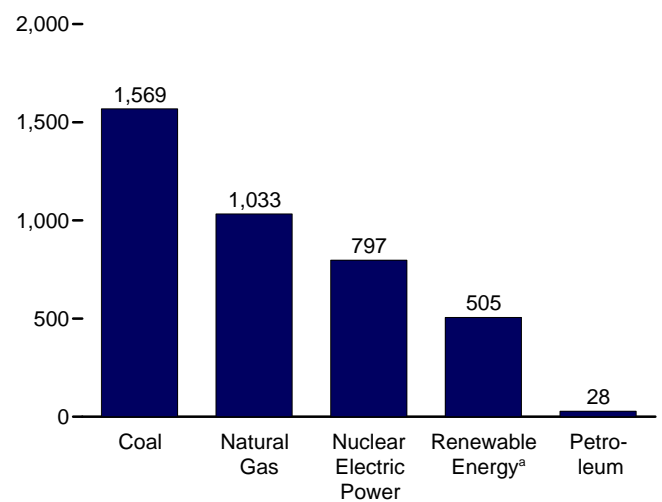
Total (All Sectors), Major Sources, 1949–2014



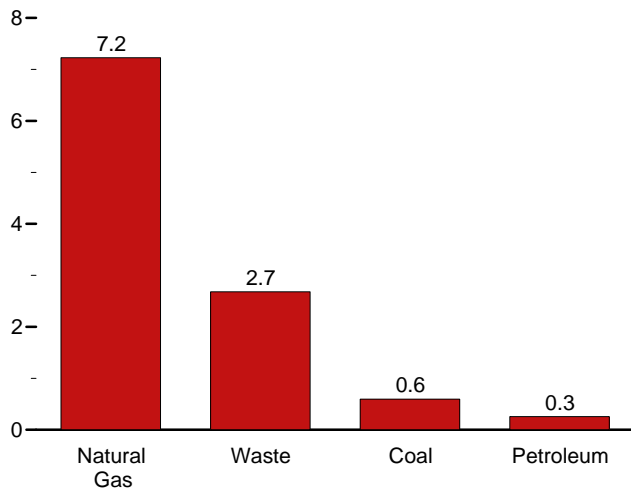
Total (All Sectors), Major Sources, Monthly



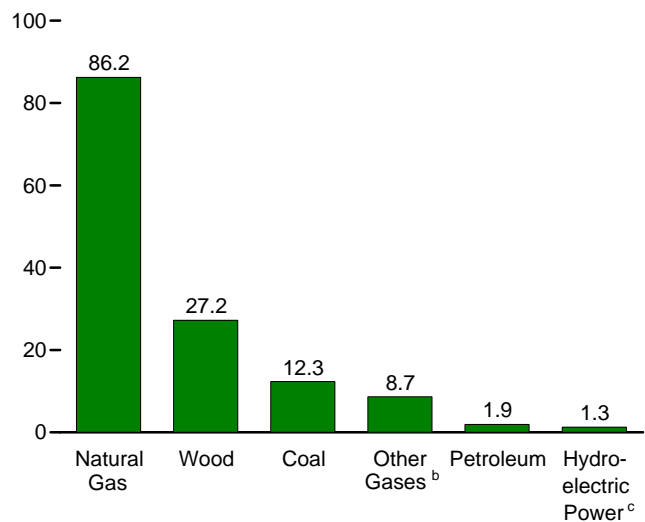
Electric Power Sector, Major Sources, 2014



Commercial Sector, Major Sources, 2014



Industrial Sector, Major Sources, 2014



<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.



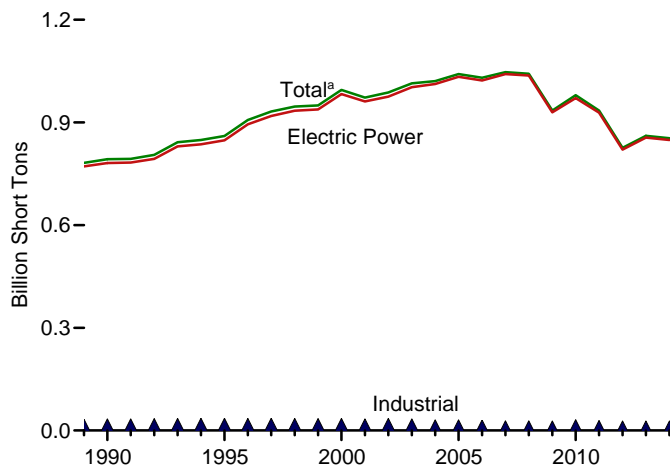




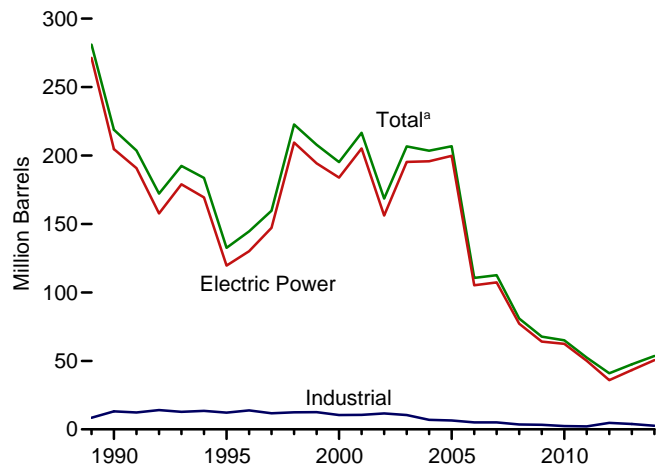


**Figure 7.3 Consumption of Selected Combustible Fuels for Electricity Generation**

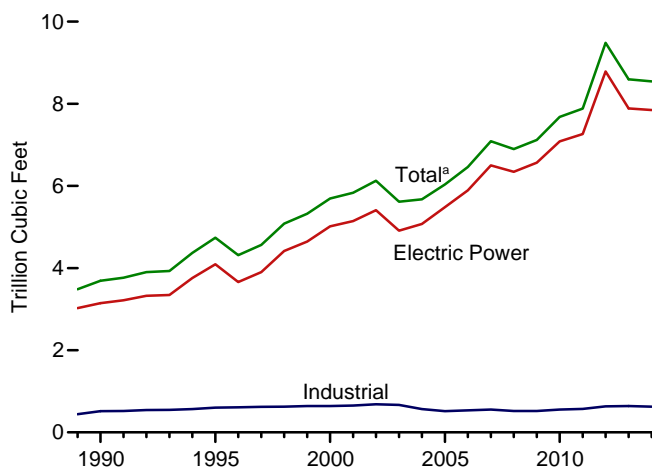
**Coal by Sector, 1989–2014**



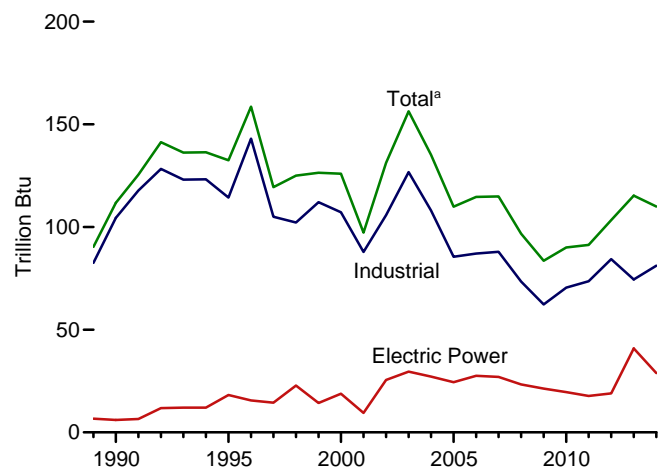
**Petroleum by Sector, 1989–2014**



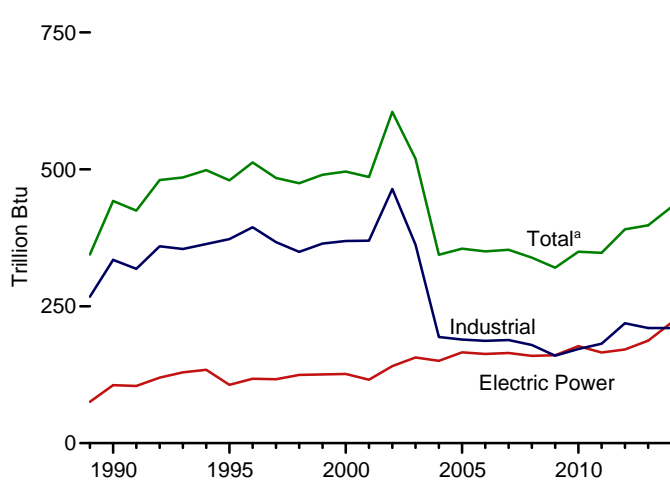
**Natural Gas by Sector, 1989–2014**



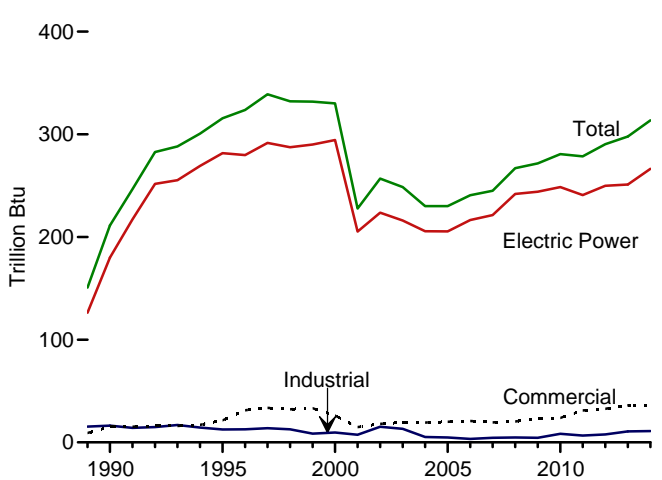
**Other Gases<sup>b</sup> by Sector, 1989–2014**



**Wood by Sector, 1989–2014**



**Waste by Sector, 1989–2014**



<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 7.3c 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				
<b>1990 Total</b> .....	417	953	28	15	10,740	13,103	517	104	335	16	36
<b>1995 Total</b> .....	569	649	43	21	12,171	12,265	601	114	373	13	40
<b>2000 Total</b> .....	514	823	37	26	11,706	10,459	640	107	369	10	45
<b>2001 Total</b> .....	532	1,023	36	15	10,636	10,530	654	88	370	7	44
<b>2002 Total</b> .....	477	834	33	18	11,855	11,608	685	106	464	15	43
<b>2003 Total</b> .....	582	894	38	19	10,440	10,424	668	127	362	13	46
<b>2004 Total</b> .....	377	766	33	19	7,687	6,919	566	108	194	5	41
<b>2005 Total</b> .....	377	585	34	20	7,504	6,440	518	85	189	5	46
<b>2006 Total</b> .....	347	333	35	21	7,408	5,066	536	87	187	3	45
<b>2007 Total</b> .....	361	258	34	19	5,089	5,041	554	88	188	4	41
<b>2008 Total</b> .....	369	166	33	20	5,075	3,617	520	73	179	5	39
<b>2009 Total</b> .....	317	190	34	23	4,674	3,328	520	62	160	4	42
<b>2010 Total</b> .....	314	172	39	24	8,125	2,422	555	70	172	8	55
<b>2011 Total</b> .....	347	137	47	31	5,735	2,145	572	74	182	7	57
<b>2012 Total</b> .....	307	279	63	33	4,665	4,761	633	84	219	8	54
<b>2013 January</b> .....	55	48	5	3	386	393	55	7	18	1	4
February .....	50	36	5	3	358	210	49	6	16	1	4
March .....	49	25	5	3	404	352	53	6	17	1	4
April .....	40	24	5	3	374	360	50	6	16	1	4
May .....	40	20	5	3	399	397	50	6	17	1	4
June .....	38	18	6	3	395	370	53	6	18	1	4
July .....	38	31	7	3	429	367	58	7	19	1	4
August .....	38	27	6	3	408	371	58	7	18	1	5
September .....	38	20	6	3	380	323	52	6	17	1	5
October .....	37	22	5	3	367	297	52	6	18	1	5
November .....	42	25	5	3	366	199	53	6	17	1	4
December .....	47	39	6	3	404	254	58	5	19	1	4
<b>Total</b> .....	513	335	67	36	4,670	3,892	642	74	210	11	50
<b>2014 January</b> .....	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
<b>Total</b> .....	202	462	72	36	4,629	2,594	623	81	210	11	54
<b>2015 January</b> .....	17	56	6	3	351	236	55	8	18	1	3
February .....	19	165	5	3	344	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	5	16	1	4
May .....	12	20	6	2	321	185	50	6	16	1	4
June .....	14	20	6	2	373	144	52	7	17	1	4
July .....	15	24	7	3	396	195	55	8	18	1	4
August .....	12	23	7	3	406	185	55	7	18	1	4
September .....	11	17	6	2	372	173	52	7	17	1	4
October .....	11	10	6	3	344	155	49	5	17	1	4
November .....	11	9	6	3	306	139	52	5	17	1	4
<b>11-Month Total</b> ...	151	389	67	30	3,854	2,070	563	69	187	9	41
<b>2014 11-Month Total</b> ...	185	430	66	33	4,255	2,395	568	74	192	10	49
<b>2013 11-Month Total</b> ...	466	296	61	33	4,266	3,639	584	69	192	10	46

<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).

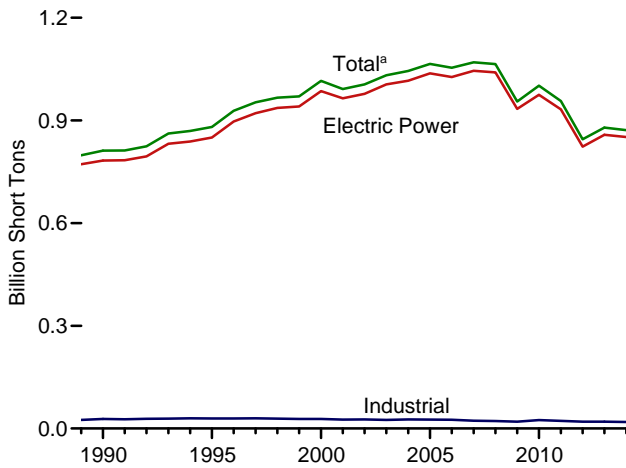
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data are for fuels consumed to produce electricity. Through 1988, data are not available. •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

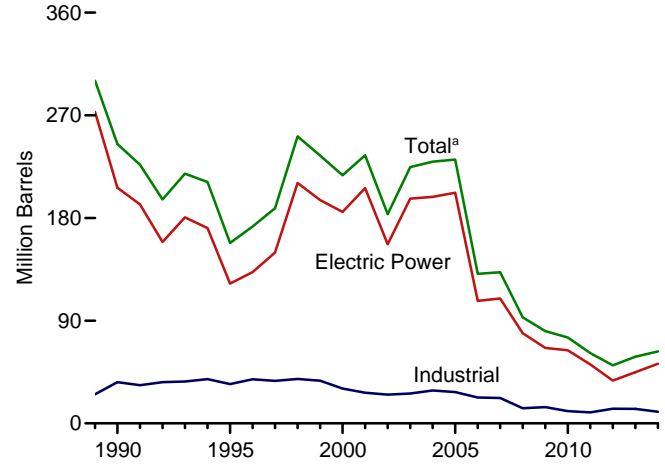
Sources: • 1989–1997: U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998–2000: EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001–2003: EIA, Form EIA-906, "Power Plant Report." • 2004–2007: EIA, Form EIA-906, "Power Plant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

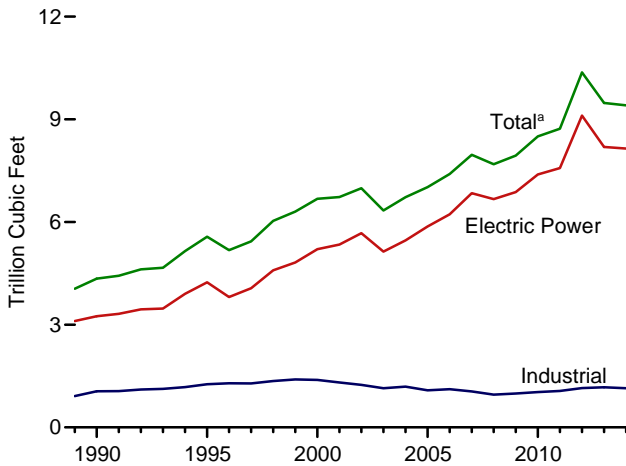
**Coal by Sector, 1989–2014**



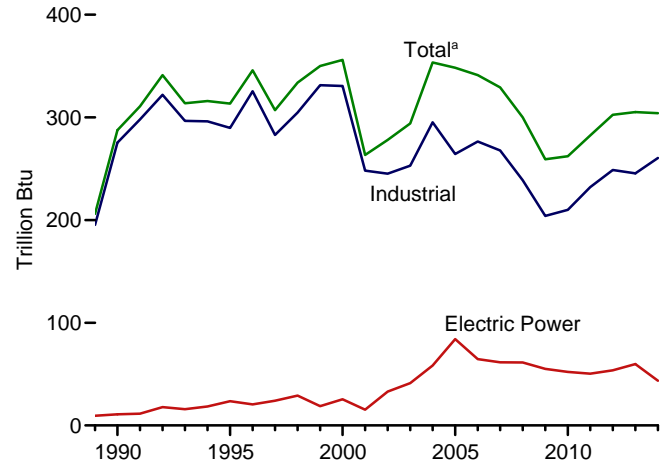
**Petroleum by Sector, 1989–2014**



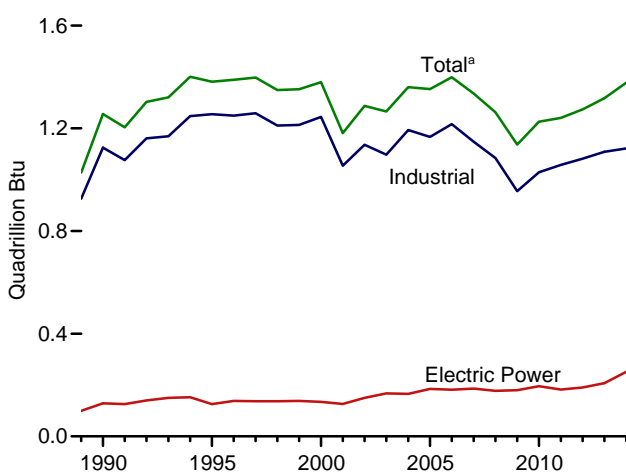
**Natural Gas by Sector, 1989–2014**



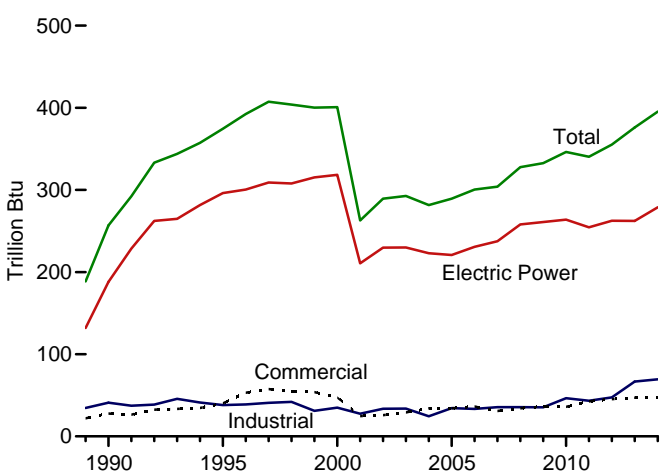
**Other Gases<sup>b</sup> by Sector, 1989–2014**



**Wood by Sector, 1989–2014**



**Waste by Sector, 1989–2014**



<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 7.4b 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	
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	NA	636	338,686	3,932	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 January	74,832	1,087	1,540	282	329	4,554	632	5	17	22	11
February	66,919	722	1,022	138	289	3,328	568	4	15	19	10
March	70,219	690	883	82	312	3,216	604	4	17	23	12
April	60,584	711	895	101	288	3,147	565	5	14	21	11
May	64,444	836	882	87	409	3,849	615	5	15	22	12
June	74,817	698	942	86	416	3,804	737	5	17	22	12
July	82,966	1,056	1,367	138	418	4,649	911	5	18	22	13
August	81,737	663	1,018	117	434	3,966	901	5	20	23	12
September	72,501	644	876	105	392	3,587	751	5	18	21	11
October	66,107	652	872	92	362	3,427	637	5	18	22	11
November	65,763	770	800	104	285	3,101	601	5	19	22	11
December	77,071	1,070	1,187	156	350	4,166	669	5	20	24	12
Total	857,962	9,598	12,263	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	71,242	1,320	1,770	244	379	5,231	714	5	22	24	11
February	66,959	3,765	4,172	726	398	10,651	651	4	21	21	10
March	58,214	845	853	126	264	3,147	709	4	20	22	10
April	48,462	628	842	91	282	2,969	669	3	17	22	10
May	57,124	845	786	107	330	3,389	739	3	19	22	11
June	69,072	797	898	83	299	3,270	892	4	21	22	11
July	76,747	777	1,186	100	402	4,073	1,051	4	23	25	12
August	73,930	723	1,067	94	379	3,777	1,029	4	24	24	12
September	64,922	664	940	149	364	3,571	902	4	20	21	11
October	53,824	643	864	100	293	3,069	797	3	18	23	11
November	49,344	805	930	53	252	3,049	733	3	20	23	11
11-Month Total	689,840	11,812	14,308	1,871	3,641	46,196	8,886	40	226	249	121
2014 11-Month Total	783,963	13,410	14,381	2,067	3,728	48,495	7,507	39	229	256	125
2013 11-Month Total	780,891	8,528	11,097	1,333	3,934	40,628	7,522	55	188	239	126

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

<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 Waste <sup>f</sup>	Coal <sup>c</sup>	Petroleum <sup>d</sup>	Natural Gas <sup>e</sup>	Other Gases <sup>g</sup>	Biomass		Other <sup>i</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				
<b>1990 Total</b>	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
<b>2013</b>											
January	149	270	10	4	1,767	1,222	100	21	96	5	6
February	137	98	9	3	1,600	858	89	19	86	5	5
March	132	35	9	4	1,748	1,091	97	22	92	5	6
April	100	28	9	4	1,565	1,036	92	20	88	6	5
May	105	27	9	4	1,618	1,159	93	20	91	5	5
June	102	24	10	4	1,563	1,133	96	20	92	5	5
July	100	44	12	4	1,674	1,143	105	21	100	5	6
August	102	39	11	4	1,626	1,245	104	21	96	5	6
September	96	29	10	4	1,530	967	96	20	88	5	6
October	91	37	9	4	1,620	956	96	19	91	6	6
November	112	42	9	4	1,683	750	98	19	92	7	6
December	130	213	11	4	1,765	1,137	105	23	97	7	6
Total	1,356	887	118	47	19,761	12,697	1,170	246	1,109	67	69
<b>2014</b>											
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
<b>2015</b>											
January	96	93	11	4	1,672	1,059	103	22	99	6	4
February	91	236	10	4	1,488	1,131	91	19	88	4	4
March	88	47	11	4	1,583	1,004	98	19	90	6	4
April	64	32	9	3	1,391	857	91	19	90	6	5
May	62	31	10	3	1,441	755	95	19	92	6	5
June	64	30	10	3	1,433	794	97	20	90	6	5
July	68	36	11	4	1,561	776	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	792	96	18	89	6	5
October	61	28	10	4	1,372	661	95	18	90	6	5
November	70	26	11	4	1,509	801	100	17	89	5	4
11-Month Total	784	637	116	41	16,485	9,382	1,069	214	1,004	64	50
<b>2014 11-Month Total</b>	973	713	109	43	17,432	9,285	1,045	238	1,023	63	65
<b>2013 11-Month Total</b>	1,226	674	107	43	17,995	11,560	1,065	223	1,012	60	64

<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).

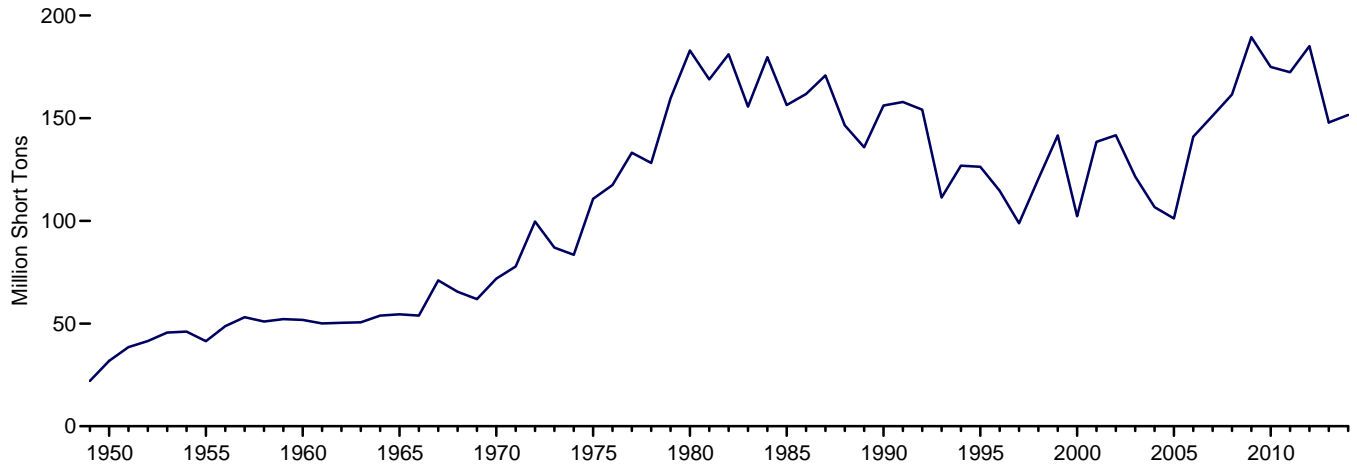
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is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

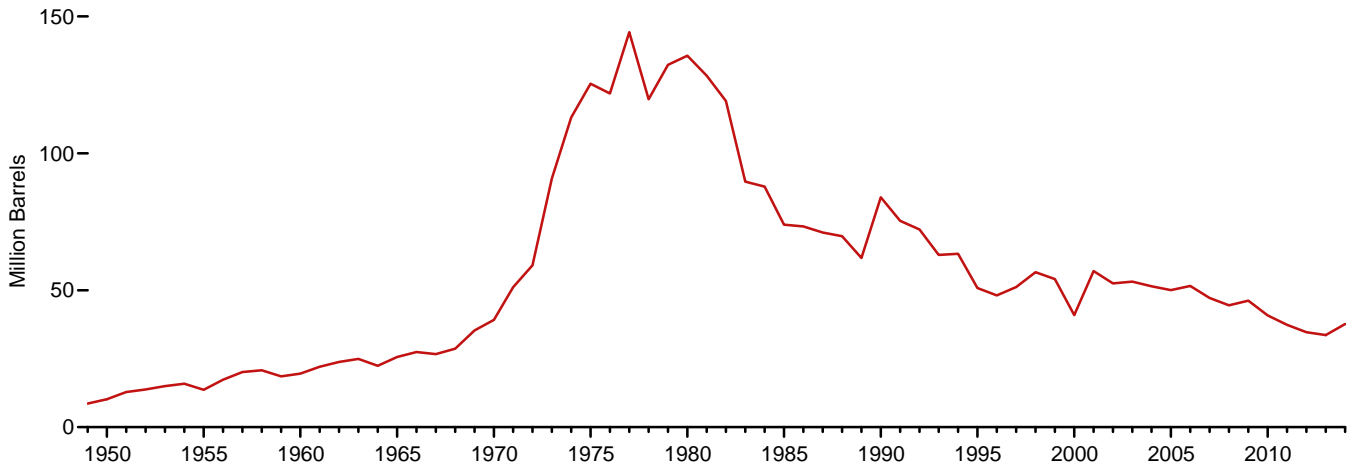
Sources: • **1989–1997:** U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906,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

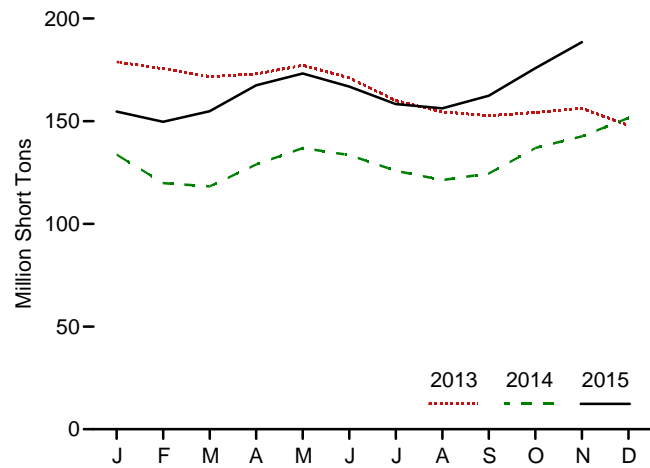
Coal, 1949–2014



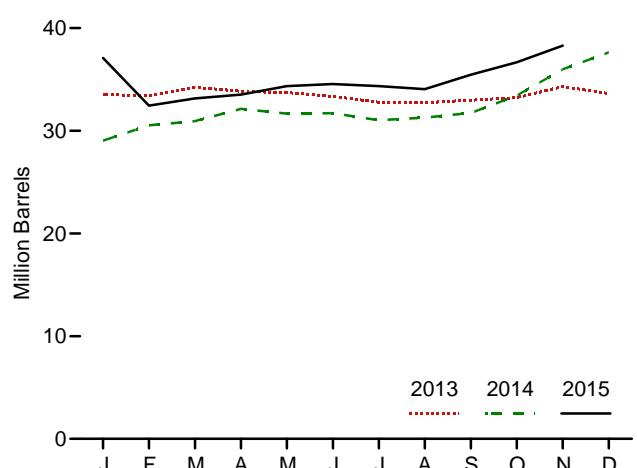
Total Petroleum, 1949–2014



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> Thousand Short Tons	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 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 January	178,859	16,431	12,219	2,664	442	33,525
February	175,565	16,517	12,024	2,664	442	33,417
March	171,736	16,508	12,983	2,707	407	34,234
April	173,014	16,322	12,531	2,715	456	33,847
May	177,174	16,271	12,476	2,747	443	33,711
June	171,124	16,345	12,198	2,770	408	33,350
July	160,019	16,260	11,760	2,784	394	32,774
August	154,567	16,350	12,275	2,810	260	32,735
September	152,694	16,301	12,349	2,778	309	32,973
October	154,194	16,497	12,514	2,759	291	33,226
November	156,249	16,787	13,046	2,787	338	34,310
December	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	154,691	18,037	12,142	2,458	892	37,096
February	149,671	16,237	9,780	2,181	850	32,450
March	154,841	16,637	10,167	2,261	818	33,155
April	167,490	16,693	10,045	2,231	912	33,529
May	173,214	16,703	10,417	2,232	999	34,348
June	166,810	16,666	10,463	2,267	1,031	34,553
July	158,330	16,620	10,157	2,245	1,065	34,345
August	156,277	16,701	9,968	2,246	1,029	34,058
September	162,373	17,116	10,617	2,224	1,102	35,465
October	175,826	17,344	11,322	2,248	1,151	36,670
November	188,538	17,415	12,133	2,291	1,290	38,288

<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

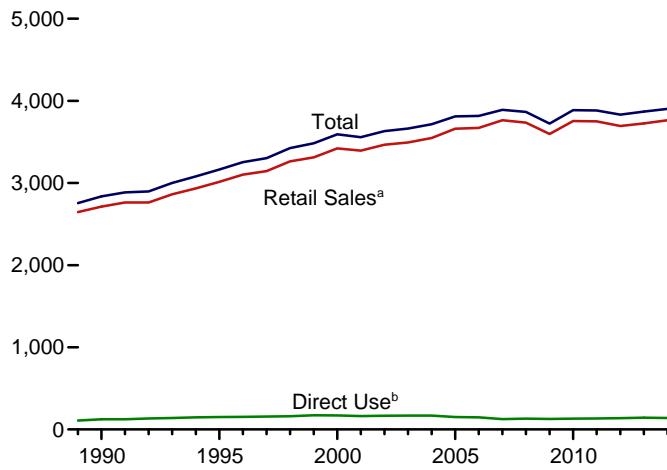
primary business is to sell electricity, or electricity and heat, to the public. • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

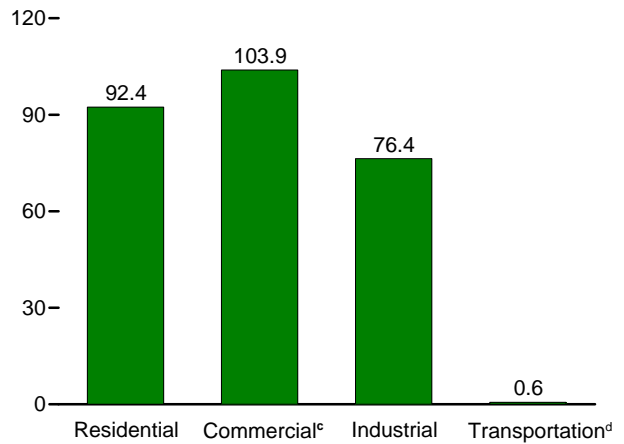
Sources: • **1949–September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977–1981:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1982–1988:** U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power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

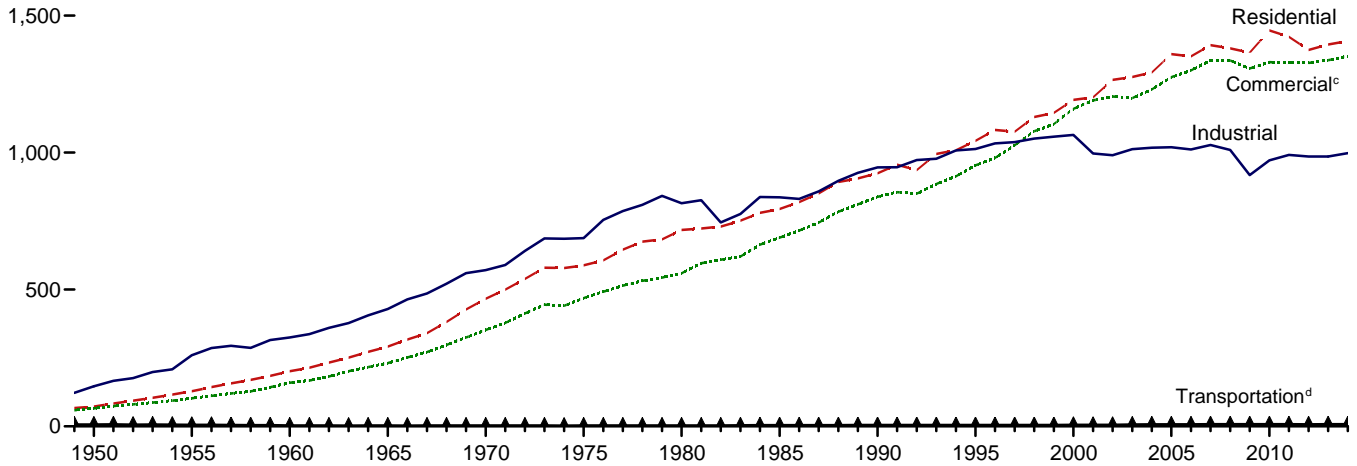
Electricity End Use Overview, 1989–2014



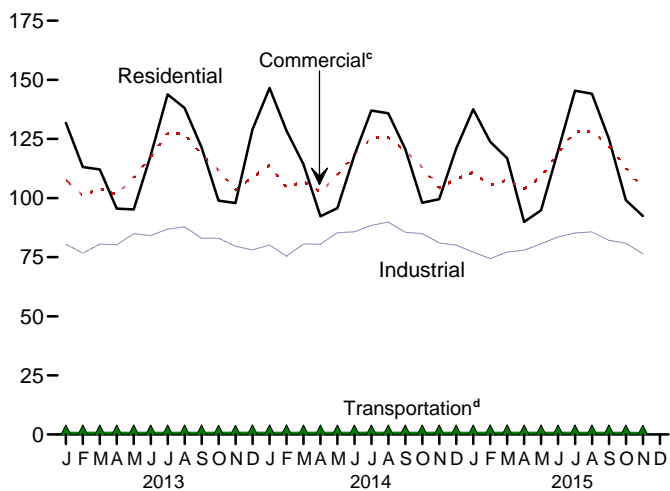
Retail Sales<sup>a</sup> by Sector, November 2015



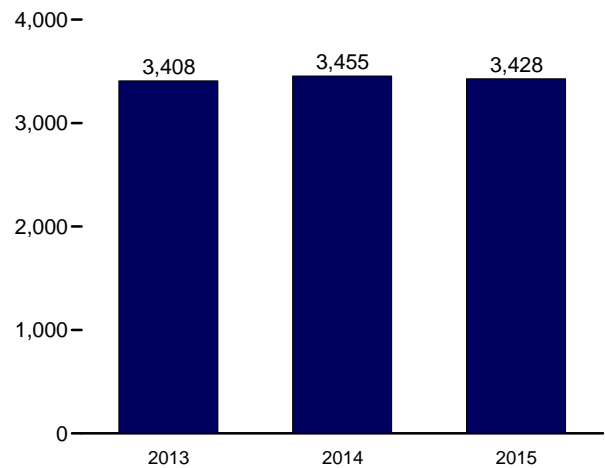
Retail Sales<sup>a</sup> by Sector, 1949–2014



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



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



<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, inte-

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	588,643	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	--	--
<b>2013 January</b> .....	131,785	107,729	80,505	664	320,683	E 12,296	332,978	--	--
February .....	113,114	101,016	76,692	659	291,480	E 11,079	302,559	--	--
March .....	112,097	104,011	80,474	644	297,226	E 12,000	309,226	--	--
April .....	95,541	101,395	80,216	630	277,782	E 11,076	288,858	--	--
May .....	95,192	108,683	84,897	627	289,398	E 11,608	301,006	--	--
June .....	117,982	117,410	84,170	638	320,201	E 11,969	332,170	--	--
July .....	143,855	127,311	86,887	649	358,701	E 13,031	371,732	--	--
August .....	138,065	127,063	87,806	645	353,580	E 12,682	366,262	--	--
September .....	121,419	118,408	83,025	626	323,478	E 11,762	335,240	--	--
October .....	98,893	111,907	82,980	591	294,370	E 11,621	305,992	--	--
November .....	97,904	103,384	79,632	574	281,494	E 11,718	293,212	--	--
December .....	128,966	108,762	78,067	679	316,475	E 12,621	329,095	--	--
<b>Total</b> .....	<b>1,394,812</b>	<b>1,337,079</b>	<b>985,352</b>	<b>7,625</b>	<b>3,724,868</b>	<b>143,462</b>	<b>3,868,330</b>	--	--
<b>2014 January</b> .....	146,511	113,866	80,149	712	341,238	E 12,033	353,272	--	--
February .....	128,475	104,353	75,413	700	308,941	E 10,675	319,616	--	--
March .....	114,233	106,968	80,539	648	302,388	E 11,414	313,802	--	--
April .....	92,290	102,459	80,505	640	275,894	E 10,767	286,661	--	--
May .....	95,727	109,666	85,383	646	291,421	E 11,188	302,609	--	--
June .....	118,049	118,423	85,711	609	322,792	E 11,367	334,159	--	--
July .....	137,028	125,434	88,417	645	351,524	E 12,346	363,870	--	--
August .....	135,830	125,603	89,808	642	351,883	E 12,412	364,295	--	--
September .....	120,741	120,049	85,489	628	326,907	E 11,610	338,517	--	--
October .....	98,038	113,023	84,994	625	296,680	E 11,208	307,887	--	--
November .....	99,486	104,245	81,044	637	285,413	E 11,280	296,692	--	--
December .....	120,801	108,070	80,123	626	309,620	E 12,170	321,790	--	--
<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 138,470</b>	<b>3,903,170</b>	--	--
<b>2015 January</b> .....	137,528	110,807	77,086	670	326,091	E 12,240	338,331	--	--
February .....	123,774	105,391	74,395	702	304,262	E 10,758	315,020	--	--
March .....	116,862	107,645	77,204	682	302,392	E 11,018	313,411	--	--
April .....	89,923	103,857	77,891	623	272,294	E 10,391	282,685	--	--
May .....	94,860	109,012	80,603	611	285,086	E 11,062	296,148	--	--
June .....	119,922	118,956	83,565	612	323,054	E 11,604	334,658	--	--
July .....	145,413	128,289	85,205	650	359,557	E 12,525	372,082	--	--
August .....	144,085	128,233	85,704	627	358,649	E 12,352	371,001	--	--
September .....	124,992	121,934	82,141	617	329,684	E 11,703	341,387	--	--
October .....	99,083	112,791	80,903	637	293,414	E 11,100	304,515	--	--
November .....	92,390	103,935	76,357	606	273,287	E 11,473	284,760	--	--
<b>11-Month Total</b> ...	<b>1,288,832</b>	<b>1,250,848</b>	<b>881,053</b>	<b>7,037</b>	<b>3,427,770</b>	<b>E 126,227</b>	<b>3,553,996</b>	--	--
<b>2014 11-Month Total</b> ...	<b>1,286,408</b>	<b>1,244,088</b>	<b>917,454</b>	<b>7,131</b>	<b>3,455,081</b>	<b>E 126,299</b>	<b>3,581,380</b>	--	--
<b>2013 11-Month Total</b> ...	<b>1,265,846</b>	<b>1,228,316</b>	<b>907,285</b>	<b>6,946</b>	<b>3,408,393</b>	<b>E 130,841</b>	<b>3,539,234</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.** Through 1984, data for electric utilities also include institutions (such as universities) and military facilities that generated electricity primarily for their own use; beginning in 1985, data for electric utilities exclude institutions and military facilities. Data for independent power producers, commercial plants, and industrial plants include plants with combined generator nameplate capacities of one megawatt or greater; they exclude plants with combined generator nameplate capacities less than one megawatt. Also excluded from the electricity statistics in Section 7 are data for residential and commercial self-generation from solar energy, except for the small amount sold to the grid and included in data for the electric power sector.

**Note 2. Classification of Power Plants Into Energy-Use Sectors.** The 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)*, January 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, January 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, January 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.”

2001–2013: EIA, *Electric Power Annual 2013*, March 2015, Table 2.2.

2014: 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 2014 and 2015, the 2013 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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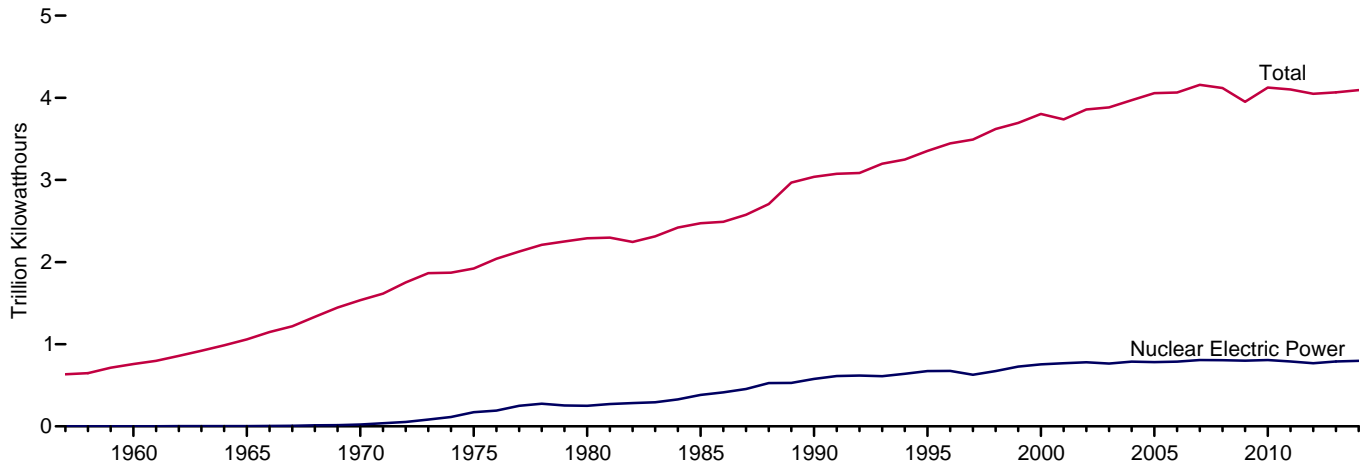


# 8. Nuclear Energy

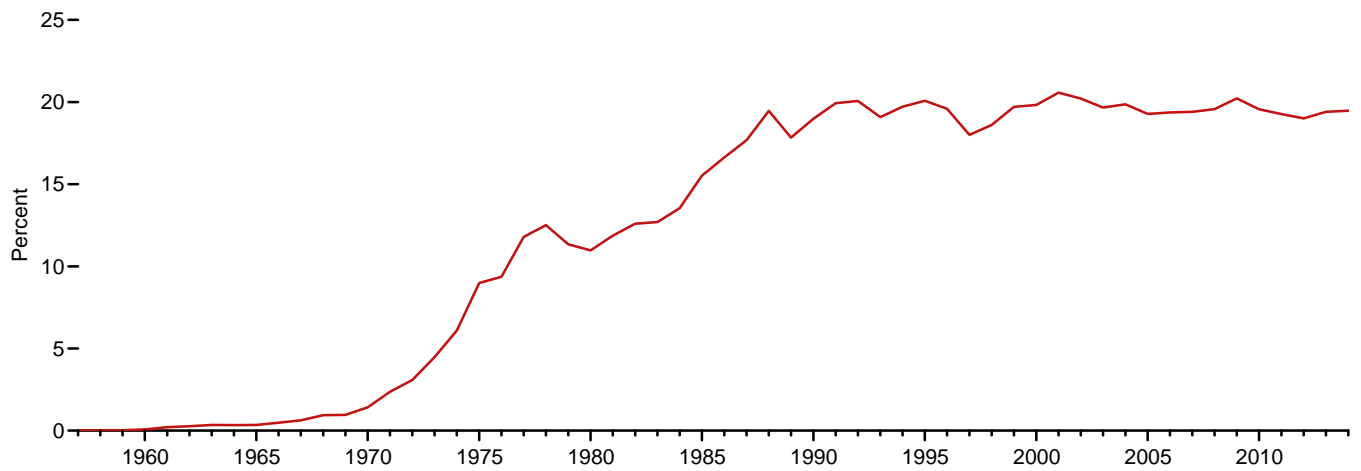
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## Figure 8.1 Nuclear Energy Overview

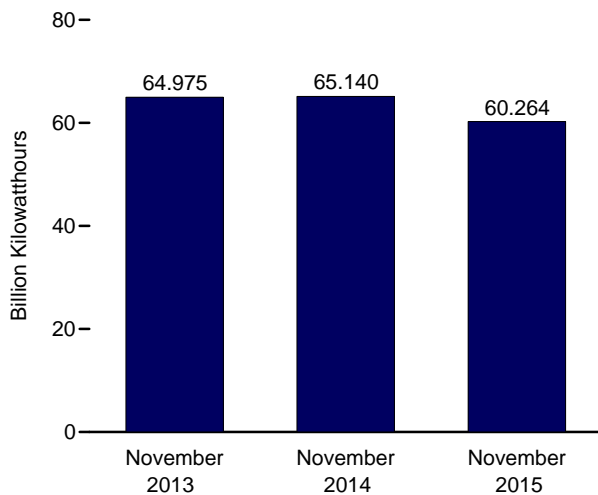
Electricity Net Generation, 1957–2014



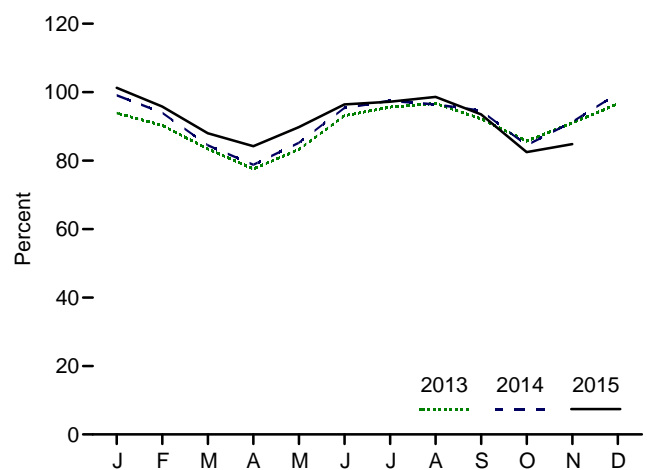
Nuclear Share of Electricity Net Generation, 1957–2014



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>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>	<sup>c</sup> <b>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 January</b> .....	104	102.206	71,406	20.5	93.9
February .....	103	101.346	61,483	19.9	90.3
March .....	103	101.455	62,947	19.3	83.4
April .....	103	101.603	56,767	19.0	77.6
May .....	102	101.282	62,848	19.5	83.3
June .....	100	99.132	66,430	18.6	93.1
July .....	100	99.132	70,539	17.9	95.6
August .....	100	99.132	71,344	18.5	96.7
September .....	100	99.132	65,799	19.3	92.2
October .....	100	99.132	63,184	20.1	85.7
November .....	100	99.132	64,975	20.7	91.0
December .....	100	99.240	71,294	20.2	96.6
<b>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> .....	100	99.182	73,163	19.4	99.1
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> .....	99	<sup>E</sup> 98.569	74,270	20.5	<sup>E</sup> 101.3
February .....	99	<sup>E</sup> 98.569	63,462	18.9	<sup>E</sup> 95.8
March .....	99	<sup>E</sup> 98.569	64,547	19.9	<sup>E</sup> 88.0
April .....	99	<sup>E</sup> 98.569	59,757	20.3	<sup>E</sup> 84.2
May .....	99	<sup>E</sup> 98.569	65,833	20.4	<sup>E</sup> 89.8
June .....	99	<sup>E</sup> 98.708	68,546	18.9	<sup>E</sup> 96.4
July .....	99	<sup>E</sup> 98.708	71,412	17.8	<sup>E</sup> 97.2
August .....	99	<sup>E</sup> 98.708	72,415	18.4	<sup>E</sup> 98.6
September .....	99	<sup>E</sup> 98.708	66,466	18.9	<sup>E</sup> 93.5
October .....	99	<sup>E</sup> 98.708	60,571	19.4	<sup>E</sup> 82.5
November .....	99	<sup>E</sup> 98.708	60,264	20.0	<sup>E</sup> 84.8
<b>11-Month Total</b> .....	<b>99</b>	<sup>E</sup> <b>98.708</b>	<b>727,544</b>	<b>19.3</b>	<sup>E</sup> <b>92.0</b>
<b>2014 11-Month Total</b> .....	<b>100</b>	<b>99.182</b>	<b>723,803</b>	<b>19.3</b>	<b>91.0</b>
<b>2013 11-Month Total</b> .....	<b>100</b>	<b>99.132</b>	<b>717,723</b>	<b>19.3</b>	<b>89.3</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.

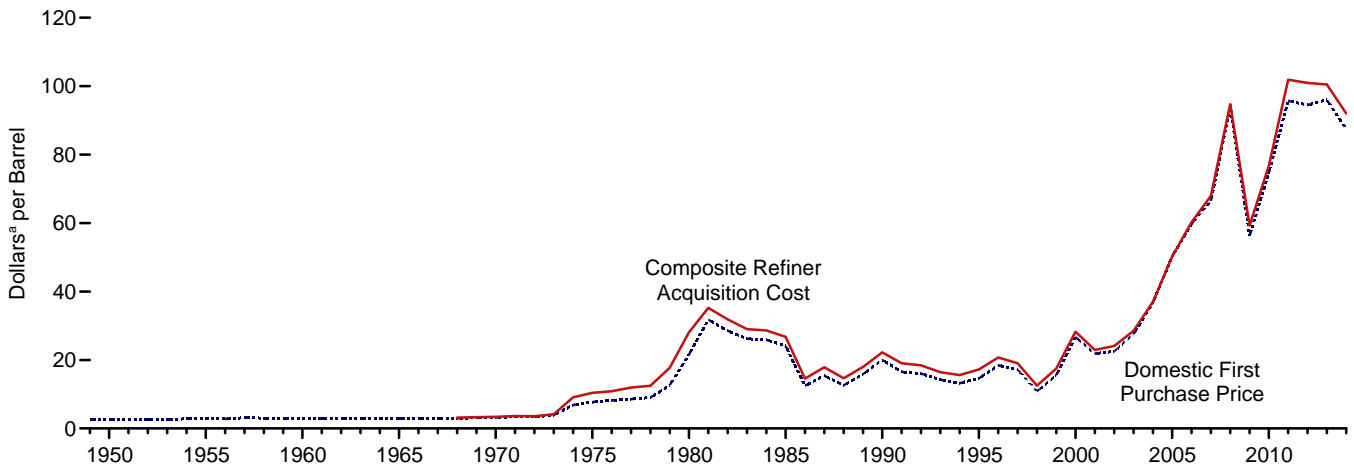
2008 forward: EIA, Form EIA-860, “Annual Electric Generator Report”; Form EIA-860M, “Monthly Update to the Annual Electric Generator Report”; and Form EIA-923, “Power Plant Operations Report.”

## **9. Energy Prices**

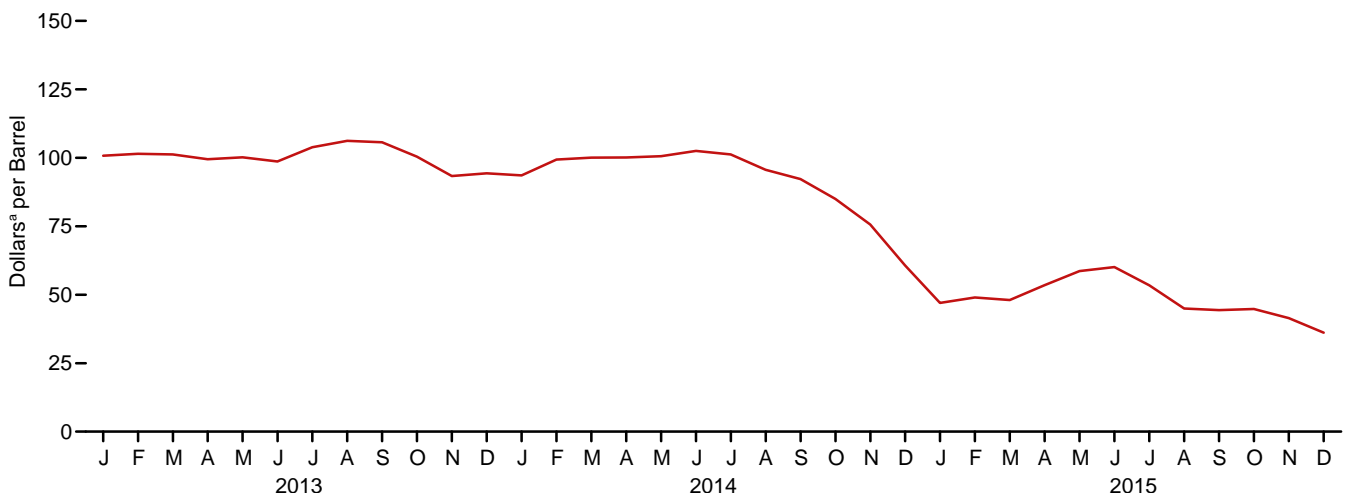
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# Figure 9.1 Petroleum Prices

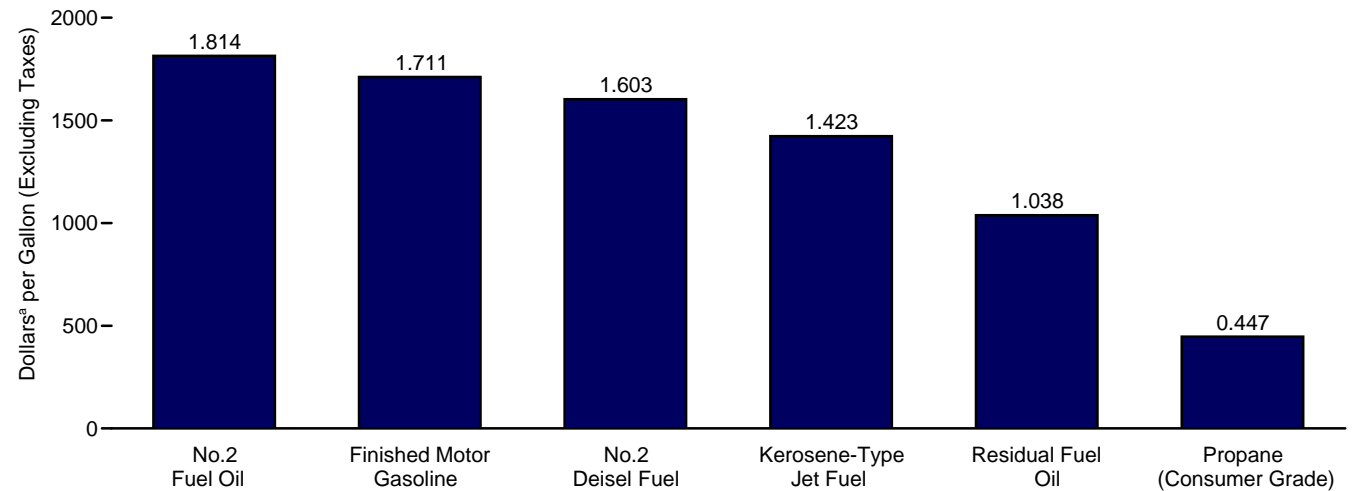
## Crude Oil Prices, 1949–2014



## Composite Refiner Acquisition Cost, Monthly



## Refiner Prices to End Users: Selected Products, November 2015



<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
<b>2013</b> January	95.00	94.93	95.12	103.78	97.91	100.78
February	95.01	100.46	98.93	103.75	99.23	101.45
March	95.54	99.73	98.35	103.45	99.11	101.23
April	94.41	95.59	95.75	102.53	96.45	99.50
May	94.75	96.12	97.39	101.98	98.50	100.17
June	93.82	96.22	96.90	100.26	97.17	98.67
July	101.41	101.36	101.19	106.19	101.56	103.85
August	102.96	101.89	103.13	108.30	104.16	106.20
September	102.32	100.82	101.59	107.96	103.49	105.70
October	96.18	92.81	94.89	103.00	97.84	100.41
November	88.70	88.30	89.45	96.09	90.36	93.32
December	91.85	89.90	90.07	97.87	90.57	94.32
<b>Average</b>	<b>95.99</b>	<b>96.56</b>	<b>96.99</b>	<b>102.91</b>	<b>98.11</b>	<b>100.49</b>
<b>2014</b> 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
<b>Average</b>	<b>87.39</b>	<b>85.65</b>	<b>88.16</b>	<b>94.05</b>	<b>89.56</b>	<b>92.02</b>
<b>2015</b> 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	R 36.90	R 40.02	46.68	41.13	44.38
October	42.33	R 37.28	R 40.65	R 47.02	R 42.03	R 44.78
November	R 38.19	R 35.22	R 38.04	R 43.37	R 39.06	R 41.47
December	NA	NA	NA	E 38.71	E 33.02	E 36.14

<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			
<b>1973 Average<sup>d</sup></b> .....	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
<b>2013</b> January .....	W	106.99	100.16	W	W	–	97.15	105.30	102.42	91.11
February .....	W	106.45	108.25	W	W	–	104.06	105.22	106.93	96.65
March .....	W	101.31	105.16	111.03	W	–	101.60	108.10	105.77	94.09
April .....	W	99.58	99.94	W	W	–	95.01	100.50	98.68	93.14
May .....	103.46	98.97	99.06	106.45	W	–	95.48	98.46	98.72	93.99
June .....	103.67	98.56	97.16	W	W	–	95.71	97.42	98.45	94.59
July .....	W	102.20	101.27	W	W	W	100.32	101.21	102.36	100.54
August .....	W	105.59	100.97	111.28	W	–	101.12	104.10	103.69	100.42
September .....	113.86	103.16	100.14	W	103.53	W	100.37	103.22	104.44	98.42
October .....	–	W	93.76	–	98.96	–	95.72	98.48	97.38	89.45
November .....	W	W	88.56	W	91.38	–	91.79	92.02	93.23	84.76
December .....	W	95.50	90.25	–	95.97	–	92.46	94.88	94.41	87.24
<b>Average</b> .....	<b>107.71</b>	<b>101.24</b>	<b>98.40</b>	<b>110.06</b>	<b>101.16</b>	<b>W</b>	<b>97.52</b>	<b>100.62</b>	<b>100.57</b>	<b>93.67</b>
<b>2014</b> 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
<b>Average</b> .....	<b>W</b>	<b>80.75</b>	<b>86.55</b>	<b>W</b>	<b>95.60</b>	<b>–</b>	<b>84.51</b>	<b>94.03</b>	<b>89.76</b>	<b>82.95</b>
<b>2015</b> January .....	–	42.49	40.70	–	48.14	–	37.99	52.21	42.64	38.64
February .....	W	51.02	47.75	W	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	–	<sup>R</sup> 44.50	–	<sup>R</sup> 36.23	43.87	<sup>R</sup> 39.81	<sup>R</sup> 35.06
October .....	W	<sup>R</sup> 41.56	<sup>R</sup> 40.25	–	<sup>R</sup> 42.58	–	<sup>R</sup> 37.82	<sup>R</sup> 40.62	<sup>R</sup> 39.35	<sup>R</sup> 36.11
November .....	–	W	36.85	–	41.30	–	33.33	38.28	35.16	35.25

<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>e</sup> R=Revised. – =No data reported. W=Value withheld to avoid disclosure of individual company data.

Notes: • The Free on Board (F.O.B.) cost at the country of origin excludes all costs related to insurance and transportation. See "F.O.B. (Free on Board)" in Glossary, and Note 3, "Crude Oil F.O.B. Costs," at end of section. • Values for the current two months are preliminary. • Through 1980, prices reflect the period of reporting; beginning in 1981, prices reflect the period of loading.  
• Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported. • U.S. geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#prices> (Excel and CSV files) for all available annual and monthly data beginning in 1973.  
Sources: See end of section.





**Table 9.4 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 January	--	3.351	3.646	3.407	3.255	3.452	3.319	3.909
February	--	3.693	3.990	3.748	3.605	3.807	3.670	4.111
March	--	3.735	4.038	3.792	3.648	3.845	3.711	4.068
April	--	3.590	3.901	3.647	3.501	3.714	3.570	3.930
May	--	3.623	3.936	3.682	3.565	3.720	3.615	3.870
June	--	3.633	3.957	3.693	3.576	3.731	3.626	3.849
July	--	3.628	3.951	3.687	3.515	3.751	3.591	3.866
August	--	3.600	3.919	3.658	3.515	3.697	3.574	3.905
September	--	3.556	3.881	3.616	3.474	3.656	3.532	3.961
October	--	3.375	3.702	3.434	3.285	3.468	3.344	3.885
November	--	3.251	3.585	3.310	3.186	3.362	3.243	3.839
December	--	3.277	3.604	3.333	3.209	3.418	3.276	3.882
Average	--	3.526	3.843	3.584	3.443	3.635	3.505	3.922
2014 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
Average	--	3.367	3.713	3.425	3.299	3.481	3.358	3.825
2015 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	2.309
Average	--	R 2.448	R 2.866	R 2.510	2.334	2.629	2.429	2.707
2016 January	--	1.967	2.455	2.034	1.843	2.170	1.949	2.143

<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</b> January .....	2.530	2.874	2.328	2.333	2.388	2.475
February .....	2.571	3.017	2.388	2.402	2.415	2.578
March .....	2.479	2.949	2.294	2.320	2.346	2.517
April .....	2.354	2.875	2.214	2.238	2.246	2.354
May .....	2.316	2.839	2.213	2.421	2.240	2.507
June .....	2.285	2.785	2.214	2.385	2.234	2.454
July .....	2.282	2.768	2.225	2.280	2.242	2.384
August .....	2.331	2.759	2.258	2.411	2.277	2.500
September .....	2.359	2.839	2.265	2.412	2.286	2.513
October .....	2.338	NA	2.232	2.364	2.255	2.532
November .....	2.296	NA	2.190	2.328	2.224	2.492
December .....	2.315	NA	2.177	2.353	2.209	2.458
<b>Average</b> .....	<b>2.363</b>	<b>2.883</b>	<b>2.249</b>	<b>2.353</b>	<b>2.278</b>	<b>2.482</b>
<b>2014</b> January .....	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</b> January .....	.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 .....	<sup>R</sup> .812	NA	<sup>R</sup> .840	<sup>R</sup> 1.041	<sup>R</sup> .836	<sup>R</sup> 1.094
November .....	.776	W	.791	.994	.789	1.038

<sup>a</sup> Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.  
R=Revised. 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*, February 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 January .....	2.676	3.685	3.093	3.334	3.069	3.046	.928
February .....	3.020	4.058	3.250	3.474	3.168	3.259	.953
March .....	2.987	4.085	3.036	3.137	2.977	3.082	.952
April .....	2.853	3.962	2.884	2.889	2.793	2.969	.949
May .....	2.951	4.068	2.763	2.793	2.708	2.958	.932
June .....	2.882	3.950	2.784	2.806	2.741	2.923	.861
July .....	2.942	4.017	2.899	2.996	2.894	3.015	.903
August .....	2.890	4.025	2.995	3.055	2.954	3.084	1.059
September .....	2.792	3.854	3.017	3.057	2.973	3.095	1.114
October .....	2.632	3.656	2.928	3.029	2.955	3.006	1.154
November .....	2.544	3.467	2.868	2.995	2.910	2.949	1.219
December .....	2.581	3.508	2.978	3.164	3.011	2.998	1.342
Average .....	2.812	3.869	2.953	3.084	2.966	3.028	1.088
2014 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
Average .....	2.618	3.687	2.763	2.882	2.741	2.812	1.165
2015 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	<sup>R</sup> 1.451	1.555	<sup>R</sup> 1.411	<sup>R</sup> 1.572	.524
November .....	1.426	2.385	1.400	1.554	1.356	1.456	.505

<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.

<sup>R</sup>=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*, February 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
<b>2013</b> January .....	2.850	W	3.117	3.790	3.341	3.129	.891
February .....	3.221	4.060	3.294	3.887	3.498	3.339	.925
March .....	3.233	4.022	3.070	3.869	3.314	3.204	.943
April .....	3.102	3.860	2.922	3.836	3.217	3.090	.971
May .....	3.188	3.900	2.787	3.786	3.222	3.058	.953
June .....	3.184	4.191	2.813	3.634	3.172	3.028	.876
July .....	3.146	4.224	2.908	3.840	3.244	3.099	.935
August .....	3.097	4.298	3.002	3.707	3.314	3.169	1.074
September .....	3.059	3.982	3.040	3.849	3.327	3.184	1.115
October .....	2.893	3.653	2.931	3.852	NA	3.085	1.169
November .....	2.759	3.674	2.883	3.847	NA	3.030	1.222
December .....	2.759	3.678	3.008	W	3.578	3.055	1.322
<b>Average .....</b>	<b>3.049</b>	<b>3.932</b>	<b>2.979</b>	<b>3.842</b>	<b>3.335</b>	<b>3.127</b>	<b>1.028</b>
<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 .....	<sup>R</sup> 1.849	W	1.473	W	NA	1.702	.479
November .....	1.711	W	1.423	W	1.814	1.603	.447

<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

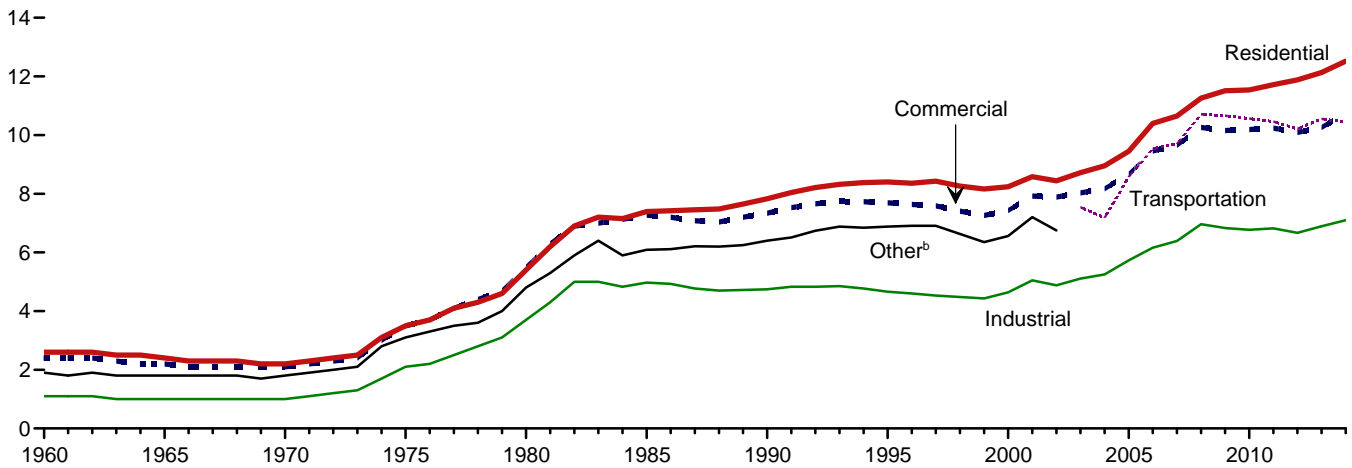
Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

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.

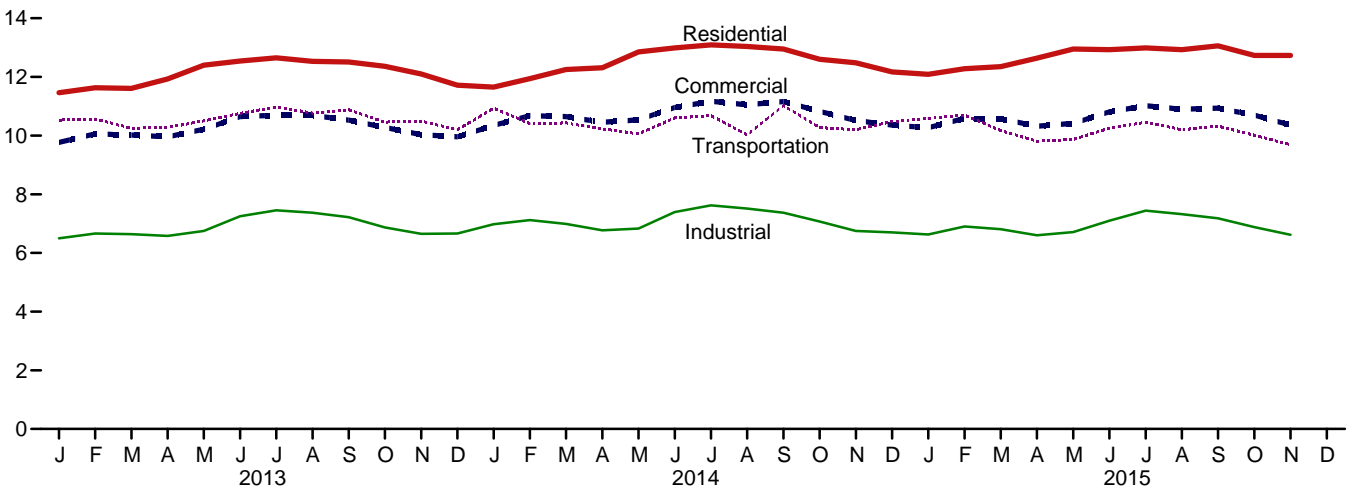
Sources: • 1978–2007: EIA, *Petroleum Marketing Annual 2007*, Table 2. • 2008 forward: EIA, *Petroleum Marketing Monthly*, February 2016, Table 2.

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

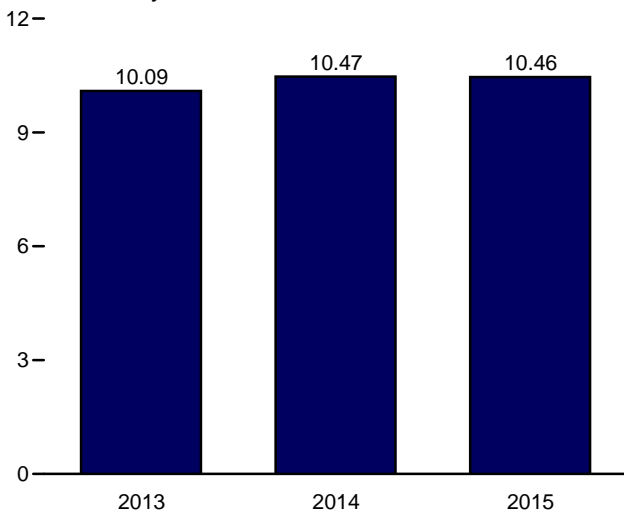
By Sector, 1960–2014



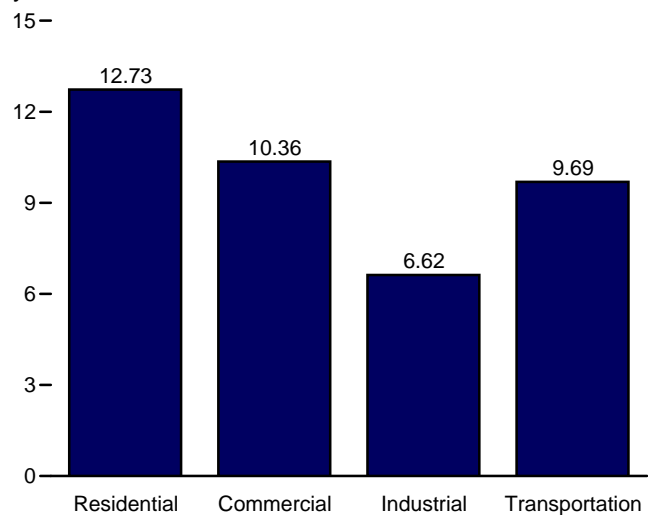
By Sector, Monthly



Total, January–November



By Sector, November 2015



<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
1960 Average	2.60	2.40	1.10	NA	1.90	1.80
1965 Average	2.40	2.20	1.00	NA	1.80	1.70
1970 Average	2.20	2.10	1.00	NA	1.80	1.70
1975 Average	3.50	3.50	2.10	NA	3.10	2.90
1980 Average	5.40	5.50	3.70	NA	4.80	4.70
1985 Average	7.39	7.27	4.97	NA	6.09	6.44
1990 Average	7.83	7.34	4.74	NA	6.40	6.57
1995 Average	8.40	7.69	4.66	NA	6.88	6.89
2000 Average	8.24	7.43	4.64	NA	6.56	6.81
2001 Average	8.58	7.92	5.05	NA	7.20	7.29
2002 Average	8.44	7.89	4.88	NA	6.75	7.20
2003 Average	8.72	8.03	5.11	7.54	--	7.44
2004 Average	8.95	8.17	5.25	7.18	--	7.61
2005 Average	9.45	8.67	5.73	8.57	--	8.14
2006 Average	10.40	9.46	6.16	9.54	--	8.90
2007 Average	10.65	9.65	6.39	9.70	--	9.13
2008 Average	11.26	10.26	6.96	10.71	--	9.74
2009 Average	11.51	10.16	6.83	10.66	--	9.82
2010 Average	11.54	10.19	6.77	10.56	--	9.83
2011 Average	11.72	10.24	6.82	10.46	--	9.90
2012 Average	11.88	10.09	6.67	10.21	--	9.84
<b>2013</b> January	11.46	9.77	6.50	10.53	--	9.64
February	11.63	10.06	6.66	10.56	--	9.77
March	11.61	10.02	6.64	10.25	--	9.71
April	11.93	9.96	6.58	10.28	--	9.66
May	12.40	10.22	6.75	10.50	--	9.92
June	12.54	10.65	7.25	10.76	--	10.45
July	12.65	10.70	7.45	10.97	--	10.69
August	12.53	10.69	7.37	10.77	--	10.58
September	12.51	10.53	7.22	10.88	--	10.43
October	12.36	10.28	6.87	10.46	--	10.02
November	12.10	10.03	6.65	10.49	--	9.79
December	11.72	9.96	6.66	10.20	--	9.86
<b>Average</b>	<b>12.13</b>	<b>10.26</b>	<b>6.89</b>	<b>10.55</b>	--	<b>10.07</b>
<b>2014</b> January	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</b> January	12.09	10.27	6.63	10.59	--	10.18
February	12.28	10.59	6.90	10.70	--	10.38
March	12.35	10.57	6.81	10.17	--	10.30
April	12.64	10.32	6.60	9.81	--	10.02
May	12.95	10.42	6.71	9.87	--	10.21
June	12.93	10.81	7.10	10.25	--	10.64
July	12.99	11.02	7.44	10.45	--	10.97
August	12.93	10.90	7.32	10.20	--	10.86
September	13.06	10.94	7.18	10.32	--	10.81
October	12.73	10.70	6.88	10.01	--	10.33
November	12.73	10.36	6.62	9.69	--	10.11
<b>11-Month Average</b>	<b>12.70</b>	<b>10.64</b>	<b>6.94</b>	<b>10.20</b>	--	<b>10.46</b>
<b>2014 11-Month Average</b>	<b>12.55</b>	<b>10.78</b>	<b>7.14</b>	<b>10.44</b>	--	<b>10.47</b>
<b>2013 11-Month Average</b>	<b>12.17</b>	<b>10.29</b>	<b>6.91</b>	<b>10.59</b>	--	<b>10.09</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.

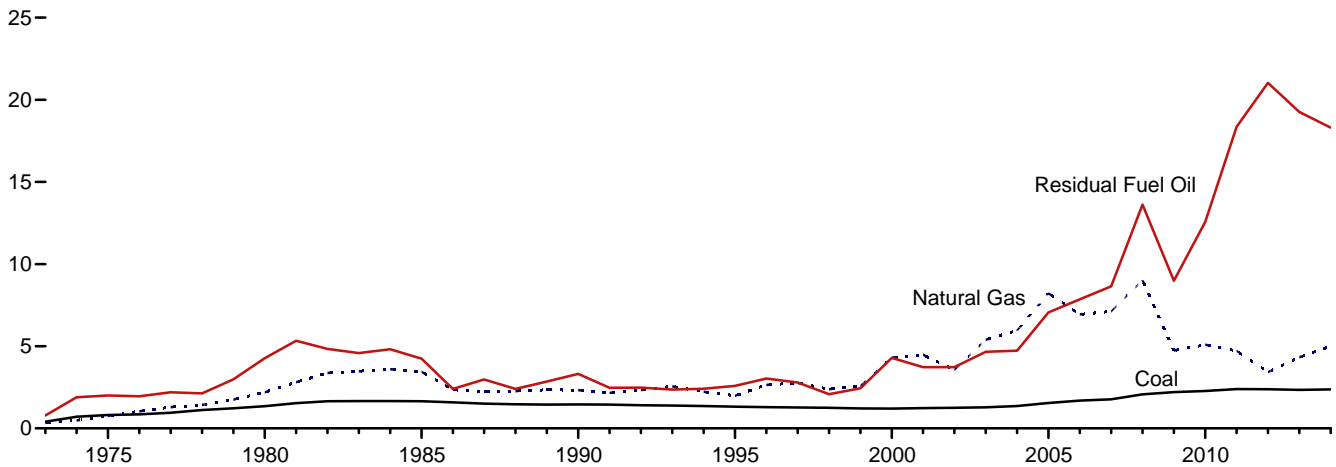
(Class A utilities are those with operating revenues of \$2.5 million or more; Class B utilities are those with operating revenues between \$1 million and \$2.5 million.) For 1980–1982, data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous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

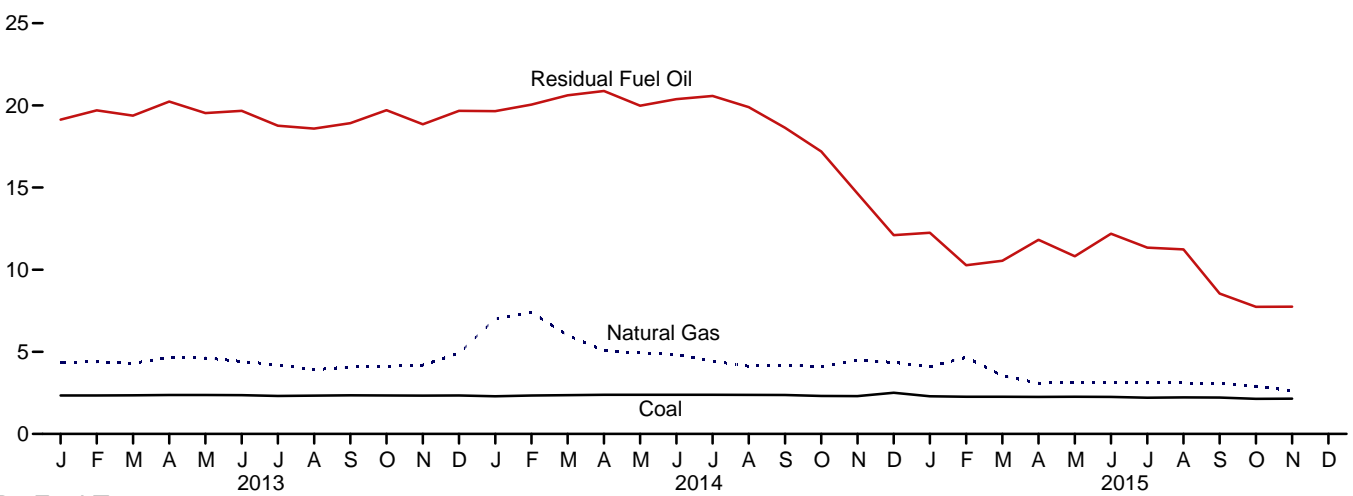
Sources: • **1960–September 1977:** Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **October 1977–February 1980:** Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **March 1980–1982:** FERC, Form FPC-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*, January 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)

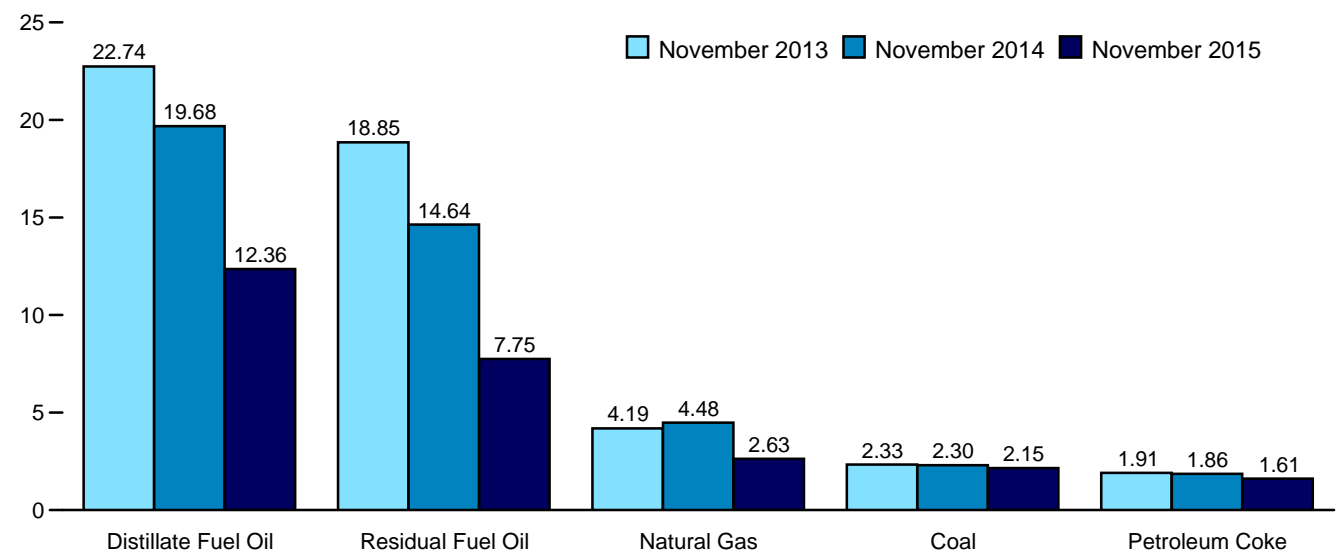
Costs, 1973–2014



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> .....	<b>0.41</b>	<b>0.79</b>	<b>NA</b>	<b>NA</b>	<b>0.80</b>	<b>0.34</b>	<b>0.48</b>
1975 Average .....	.81	2.01	NA	NA	2.02	.75	1.04
1980 Average .....	1.35	4.27	NA	NA	4.35	2.20	1.93
1985 Average .....	1.65	4.24	NA	NA	4.32	3.44	2.09
1990 Average .....	1.45	3.32	5.38	.80	3.35	2.32	1.69
1995 Average .....	1.32	2.59	3.99	.65	2.57	1.98	1.45
2000 Average .....	1.20	4.29	6.65	.58	4.18	4.30	1.74
2001 Average .....	1.23	3.73	6.30	.78	3.69	4.49	1.73
2002 Average <sup>g</sup> .....	1.25	3.73	5.34	.78	3.34	3.56	1.86
2003 Average .....	1.28	4.66	6.82	.72	4.33	5.39	2.28
2004 Average .....	1.36	4.73	8.02	.83	4.29	5.96	2.48
2005 Average .....	1.54	7.06	11.72	1.11	6.44	8.21	3.25
2006 Average .....	1.69	7.85	13.28	1.33	6.23	6.94	3.02
2007 Average .....	1.77	8.64	14.85	1.51	7.17	7.11	3.23
2008 Average .....	2.07	13.62	21.46	2.11	10.87	9.01	4.12
2009 Average .....	2.21	8.98	13.22	1.61	7.02	4.74	3.04
2010 Average .....	2.27	12.57	16.61	2.28	9.54	5.09	3.26
2011 Average .....	2.39	18.35	22.46	3.03	12.48	4.72	3.29
2012 Average .....	2.38	21.03	23.49	2.24	12.48	3.42	2.83
<b>2013</b> January .....	2.34	19.13	22.94	2.04	12.44	4.38	3.08
February .....	2.34	19.70	23.84	2.09	12.66	4.39	3.09
March .....	2.35	19.38	23.87	2.08	14.34	4.30	3.09
April .....	2.37	20.23	22.96	2.28	9.67	4.67	3.15
May .....	2.37	19.53	22.60	2.34	10.75	4.62	3.15
June .....	2.36	19.67	22.37	2.42	10.04	4.42	3.14
July .....	2.31	18.76	23.10	2.29	11.38	4.20	3.11
August .....	2.33	18.59	23.24	2.25	11.74	3.91	2.99
September .....	2.35	18.92	23.55	2.17	10.06	4.08	3.02
October .....	2.34	19.71	22.85	2.13	11.22	4.11	2.99
November .....	2.33	18.85	22.74	1.91	12.88	4.19	3.01
December .....	2.34	19.67	22.81	2.02	11.18	4.91	3.26
<b>Average</b> .....	<b>2.34</b>	<b>19.26</b>	<b>23.03</b>	<b>2.18</b>	<b>11.57</b>	<b>4.33</b>	<b>3.09</b>
<b>2014</b> January .....	2.29	19.65	23.12	1.82	16.63	7.02	4.07
February .....	2.32	20.05	23.97	W	W	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> .....	<b>2.37</b>	<b>18.30</b>	<b>21.88</b>	<b>W</b>	<b>W</b>	<b>5.00</b>	<b>W</b>
<b>2015</b> January .....	2.29	12.25	13.37	2.03	7.13	4.10	2.93
February .....	2.26	10.27	16.41	1.79	9.02	4.67	3.20
March .....	2.26	10.54	15.55	2.03	8.53	3.54	W
April .....	2.25	11.82	14.82	1.99	6.93	3.09	2.59
May .....	2.26	10.82	15.31	2.05	7.03	3.14	2.64
June .....	2.25	12.19	15.28	1.89	7.83	3.11	2.65
July .....	2.21	11.34	14.35	1.93	6.17	3.11	2.63
August .....	2.23	11.23	13.02	1.85	6.41	3.10	2.62
September .....	2.22	8.55	12.00	1.76	5.79	3.06	2.58
October .....	2.14	7.74	12.60	W	5.85	2.91	W
November .....	2.15	7.75	12.36	1.61	5.58	2.63	2.38
<b>11-Month Average</b> ...	<b>2.23</b>	<b>10.07</b>	<b>14.29</b>	<b>1.89</b>	<b>6.96</b>	<b>3.28</b>	<b>2.67</b>
<b>2014 11-Month Average</b> ...	<b>2.35</b>	<b>19.11</b>	<b>22.47</b>	<b>1.98</b>	<b>12.04</b>	<b>5.05</b>	<b>3.32</b>
<b>2013 11-Month Average</b> ...	<b>2.34</b>	<b>19.23</b>	<b>23.05</b>	<b>2.19</b>	<b>11.61</b>	<b>4.28</b>	<b>3.07</b>

<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.

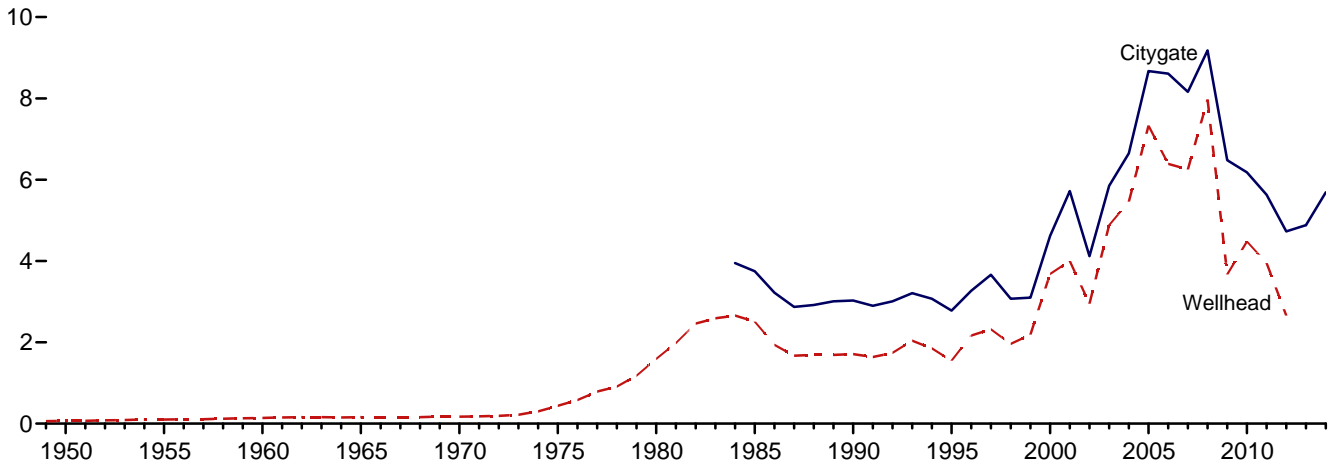
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated 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.

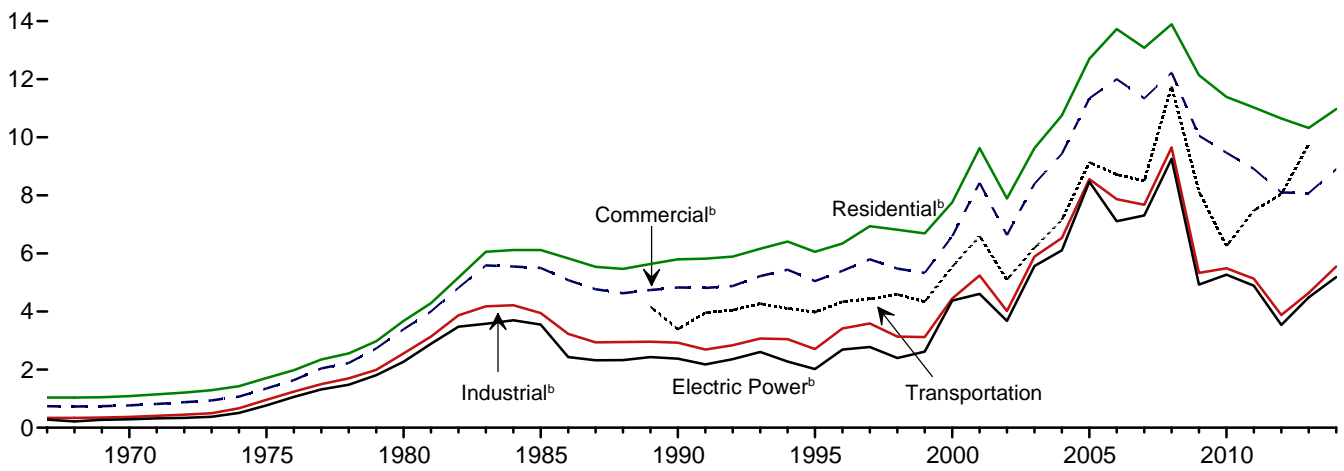
Sources: See end of section.

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

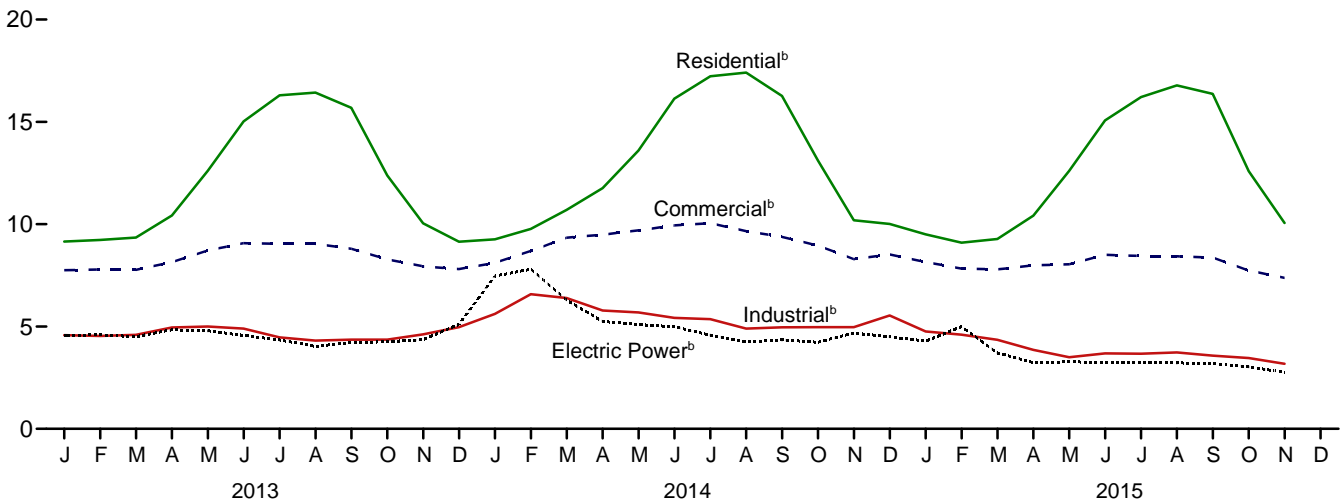
Wellhead and Citygate, 1949–2014



Consuming Sectors, 1967–2014



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>								
			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>j</sup>	Price <sup>h</sup>	Percentage of Sector <sup>i,k</sup>
1950 Average	0.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1955 Average	.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1960 Average	.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1965 Average	.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1970 Average	.17	NA	1.09	NA	.77	NA	.37	NA	NA	.29	NA
1975 Average	.44	NA	1.71	NA	1.35	NA	.96	NA	NA	.77	96.1
1980 Average	1.59	NA	3.68	NA	3.39	NA	2.56	NA	NA	2.27	96.9
1985 Average	2.51	3.75	6.12	NA	5.50	NA	3.95	68.8	NA	3.55	94.0
1990 Average	1.71	3.03	5.80	99.2	4.83	86.6	2.93	35.2	3.39	2.38	76.8
1995 Average	1.55	2.78	6.06	99.0	5.05	76.7	2.71	24.5	3.98	2.02	71.4
2000 Average	3.68	4.62	7.76	92.6	6.59	63.9	4.45	19.8	5.54	4.38	50.5
2001 Average	4.00	5.72	9.63	92.4	8.43	66.0	5.24	20.8	6.60	4.61	40.2
2002 Average	2.95	4.12	7.89	97.9	6.63	77.4	4.02	22.7	5.10	3.68	83.9
2003 Average	4.88	5.85	9.63	97.5	8.40	78.2	5.89	22.1	6.19	5.57	91.2
2004 Average	5.46	6.65	10.75	97.7	9.43	78.0	6.53	23.6	7.16	6.11	89.8
2005 Average	7.33	8.67	12.70	98.1	11.34	82.1	8.56	24.0	9.14	8.47	91.3
2006 Average	6.39	8.61	13.73	98.1	12.00	80.8	7.87	23.4	8.72	7.11	93.4
2007 Average	6.25	8.16	13.08	98.0	11.34	80.4	7.68	22.2	8.50	7.31	92.2
2008 Average	7.97	9.18	13.89	97.5	12.23	79.7	9.65	20.4	11.75	9.26	101.1
2009 Average	3.67	6.48	12.14	97.4	10.06	77.8	5.33	18.8	8.13	4.93	101.1
2010 Average	4.48	6.18	11.39	97.4	9.47	77.5	5.49	18.0	6.25	5.27	100.8
2011 Average	3.95	5.63	11.03	96.3	8.91	67.3	5.13	16.3	7.48	4.89	101.2
2012 Average	E 2.66	4.73	10.65	95.8	8.10	65.2	3.88	16.2	8.04	3.54	95.5
2013 January	NA	4.52	9.15	96.1	7.75	70.2	4.58	17.0	NA	4.56	95.0
February	NA	4.56	9.23	95.7	7.78	69.7	4.54	17.0	NA	4.59	94.1
March	NA	4.75	9.35	95.6	7.77	68.8	4.59	16.8	NA	4.50	94.7
April	NA	5.16	10.43	95.3	8.15	66.1	4.95	16.8	NA	4.84	95.2
May	NA	5.55	12.61	95.6	8.71	62.6	5.00	16.2	NA	4.79	95.5
June	NA	5.74	15.02	95.5	9.07	58.4	4.90	16.0	NA	4.56	95.0
July	NA	5.51	16.30	95.6	9.04	56.7	4.47	15.8	NA	4.34	94.6
August	NA	5.24	16.43	95.6	9.04	56.2	4.31	15.9	NA	4.03	94.9
September	NA	5.21	15.69	95.6	8.80	56.6	4.36	16.3	NA	4.22	95.2
October	NA	4.88	12.38	95.7	8.28	60.5	4.36	16.6	NA	4.26	95.1
November	NA	4.78	10.04	95.8	7.94	65.7	4.62	16.9	NA	4.36	94.6
December	NA	4.93	9.14	95.8	7.81	69.2	4.97	17.2	NA	5.11	94.3
Average	NA	4.88	10.32	95.7	8.08	65.8	4.64	16.6	9.76	4.49	94.9
2014 January	NA	5.56	9.26	95.7	8.11	70.7	5.62	16.6	NA	7.46	94.5
February	NA	6.41	9.77	95.5	8.69	70.6	6.58	17.1	NA	7.80	93.6
March	NA	6.57	10.70	95.4	9.34	69.4	6.39	16.9	NA	6.29	94.1
April	NA	5.64	11.76	95.3	9.49	65.1	5.78	16.0	NA	5.25	95.0
May	NA	5.90	13.60	95.4	9.70	60.5	5.69	15.8	NA	5.09	94.7
June	NA	6.05	16.13	95.5	9.94	58.1	5.42	15.6	NA	4.99	94.4
July	NA	5.99	17.23	95.5	10.05	55.7	5.36	15.7	NA	4.58	94.7
August	NA	5.49	17.41	95.6	9.66	55.2	4.90	15.4	NA	4.25	95.1
September	NA	5.51	16.27	95.6	9.38	55.7	4.96	14.9	NA	4.34	94.8
October	NA	5.16	13.11	95.3	8.96	58.8	4.97	14.8	NA	4.23	94.6
November	NA	4.91	10.19	95.8	8.29	66.1	4.97	15.7	NA	4.68	94.7
December	NA	5.15	10.01	95.6	8.52	68.4	5.54	15.9	NA	4.50	94.8
Average	NA	5.71	10.97	95.5	8.90	65.8	5.55	15.9	NA	5.19	94.6
2015 January	NA	4.48	9.50	95.8	8.15	71.0	4.76	15.9	NA	4.29	94.6
February	NA	R 4.54	9.10	95.7	7.83	71.1	4.60	16.1	NA	4.99	94.3
March	NA	R 4.35	9.28	95.5	7.79	70.1	4.35	16.6	NA	3.71	94.4
April	NA	R 3.93	10.42	95.5	7.99	64.7	3.86	15.8	NA	3.23	95.3
May	NA	R 4.24	12.61	95.5	8.04	R 61.5	3.50	16.4	NA	3.28	95.0
June	NA	4.43	15.07	95.5	8.50	R 57.8	3.69	15.6	NA	3.24	94.4
July	NA	4.65	16.21	95.7	8.45	R 57.1	R 3.67	15.6	NA	3.23	94.4
August	NA	R 4.58	16.78	95.5	R 8.43	55.2	3.73	R 15.3	NA	3.22	93.9
September	NA	R 4.54	R 16.37	95.9	8.37	R 56.0	R 3.58	15.5	NA	3.19	94.2
October	NA	4.00	12.59	95.5	7.74	60.4	3.46	15.7	NA	3.03	93.9
November	NA	3.68	10.06	96.0	7.38	64.0	3.18	15.9	NA	2.76	94.0
11-Month Average	NA	4.32	10.53	95.6	7.97	65.7	3.88	15.9	NA	3.43	94.4
2014 11-Month Average	NA	5.80	11.13	95.5	8.96	65.4	5.55	15.9	NA	5.25	94.6
2013 11-Month Average	NA	4.87	10.55	95.7	8.12	65.3	4.61	16.5	NA	4.43	94.9

<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.

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

Notes: • Prices are for natural gas, plus a small amount of supplemental gaseous fuels. • Prices are intended to include all taxes. See Note 8, "Natural Gas Prices," at end of section. • Wellhead annual and year-to-date prices are simple averages of the monthly prices; all other annual and year-to-date prices are volume-weighted averages of the monthly prices. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#prices> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1976.

Sources: See end of section.

## 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*, February 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*, February 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*, February 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*, February 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*, January 2016, Table 4.1; and Form EIA-923, “Power Plant Operations Report.”

### Table 9.10 Sources

#### All Prices Except Vehicle Fuel and Electric Power

1949–2012: U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports and unpublished revisions.

2013 forward: EIA, *Natural Gas Monthly (NGM)*, January 2016, Table 3.

#### Vehicle Fuel Price

1989–2013: EIA, NGA, annual reports.

#### Electric Power Sector Price

1967–1972: EIA, NGA, annual reports.

1973–1998: EIA, NGA 2000, Table 96.

1999–2002: EIA, NGM, 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

1989–2012: 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.

2013 forward: EIA, Form EIA-857, “Monthly Report of Natural Gas Purchases and Deliveries to Consumers.”

#### Percentage of Commercial Sector

1987–2012: 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.

2013 forward: EIA, NGM, January 2016, Table 3.

#### Percentage of Industrial Sector

1982–2012: 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.

2013 forward: EIA, NGM, January 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).

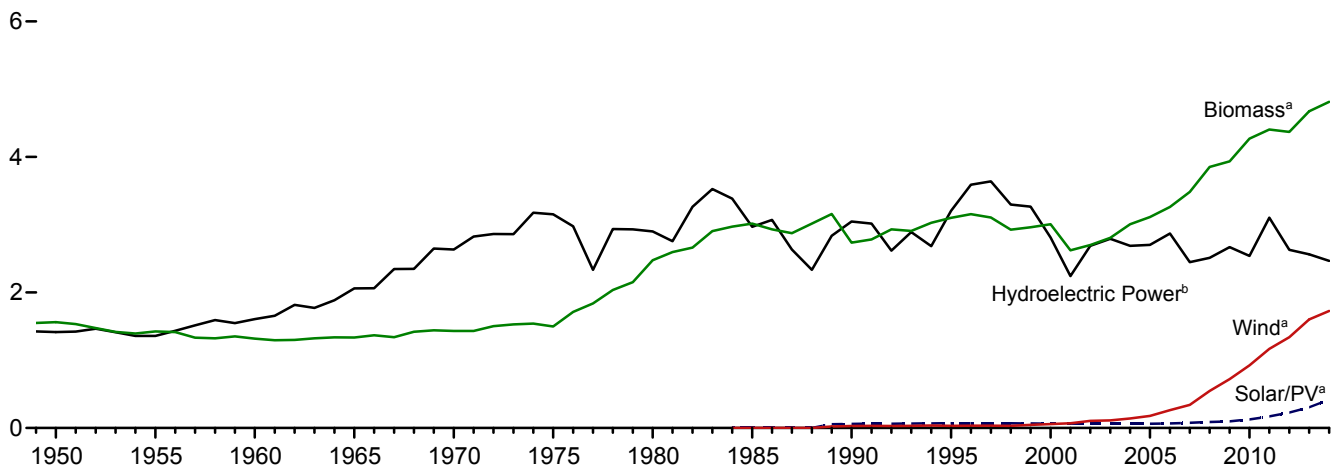
2008 forward: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form EIA-923, “Power Plant Operations Report,” divided by the quantity of natural gas consumed by the electric power sector (see MER, Table 7.4b).

# 10. Renewable Energy

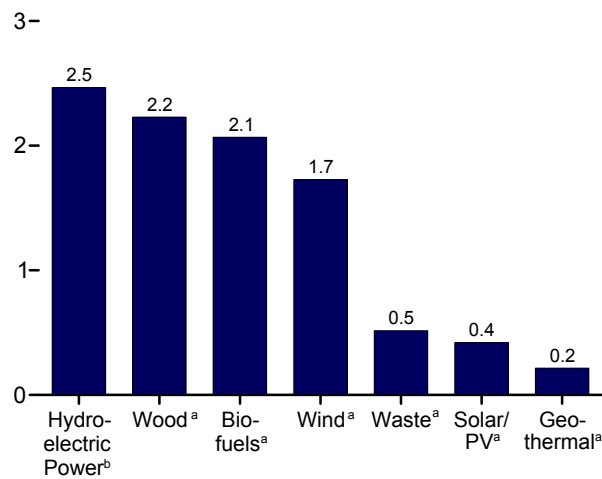
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**Figure 10.1 Renewable Energy Consumption**  
(Quadrillion Btu)

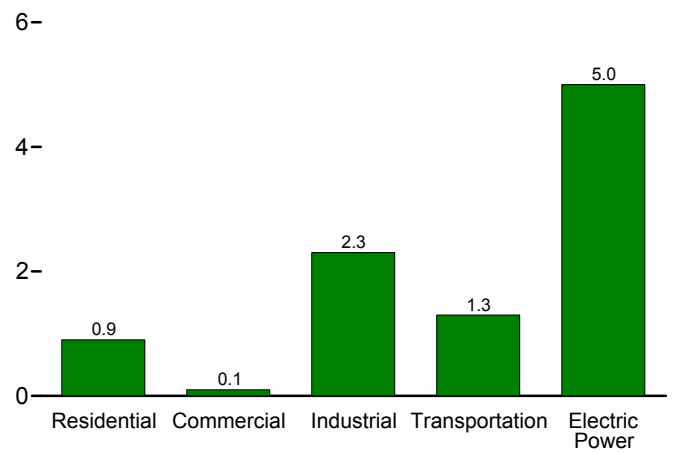
Major Sources, 1949–2014



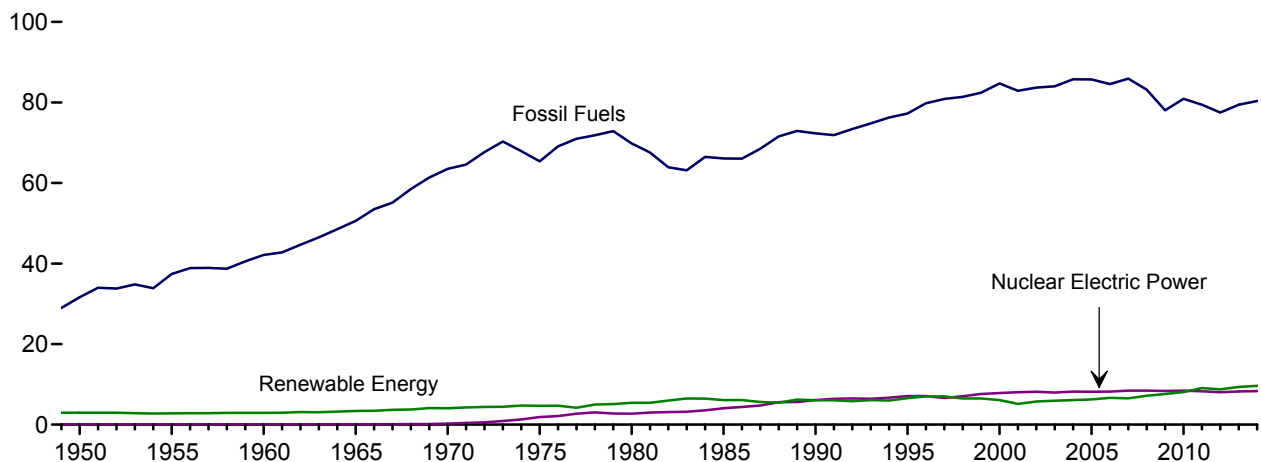
By Source, 2014



By Sector, 2014



Compared With Other Resources, 1949–2014



<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								Total Renewable Energy
	Biomass		Total Renewable Energy <sup>d</sup>	Hydroelectric Power <sup>e</sup>	Geothermal <sup>f</sup>	Solar/PV <sup>g</sup>	Wind <sup>h</sup>	Biomass				
	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 January	150	377	795	237	19	22	141	185	41	149	376	794
February	137	341	708	195	17	21	134	167	37	139	343	710
March	159	383	772	196	19	25	150	182	42	161	385	774
April	160	372	820	239	17	24	167	171	41	162	374	822
May	169	390	860	271	18	26	155	179	41	170	390	860
June	167	387	823	261	17	26	131	179	40	173	392	828
July	170	403	813	280	18	27	106	190	42	171	403	814
August	167	397	741	206	18	28	92	188	42	170	400	744
September	162	379	697	162	18	27	111	177	40	170	387	704
October	177	400	741	164	18	28	130	181	42	183	406	746
November	176	399	762	169	17	26	151	181	42	175	398	761
December	185	420	800	202	18	27	133	189	45	185	420	799
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	R 827	206	18	29	R 170	190	45	163	397	R 820
February	153	367	R 709	R 165	16	27	R 133	173	41	150	364	R 706
March	173	406	R 858	231	18	34	R 169	189	45	167	401	R 852
April	170	392	R 864	R 242	18	35	R 177	179	44	167	390	R 862
May	178	403	R 860	R 252	18	38	R 148	182	43	176	401	R 858
June	177	406	R 858	R 245	18	39	R 150	186	42	173	402	R 853
July	183	420	R 824	232	18	38	116	192	45	180	417	R 821
August	179	416	R 758	R 188	18	39	97	193	43	182	418	R 761
September	173	396	R 714	R 153	18	38	110	182	41	172	394	R 713
October	179	407	R 764	R 163	18	38	138	186	42	180	408	R 765
November	177	403	R 811	R 177	18	34	R 179	185	42	173	399	R 808
December	191	428	R 830	R 212	R 18	31	140	194	44	183	420	R 822
Total	2,103	4,849	R 9,678	R 2,467	R 214	R 420	R 1,728	2,230	516	2,067	4,812	R 9,641
2015 January	178	405	R 839	R 234	20	35	R 145	182	45	164	392	R 826
February	162	364	R 777	R 216	18	37	R 142	164	39	156	358	R 771
March	180	393	R 840	237	19	45	146	171	43	174	388	R 834
April	172	380	R 829	215	18	R 47	170	166	41	169	377	R 826
May	183	397	R 820	R 192	19	49	R 163	172	42	185	399	R 822
June	184	396	R 782	191	18	49	128	170	42	186	398	R 784
July	187	411	R 810	R 200	19	50	130	179	45	188	412	R 811
August	184	404	R 783	185	19	51	124	177	43	188	408	R 787
September	176	384	R 733	R 154	18	45	132	168	41	182	390	R 739
October	185	397	R 773	159	19	43	156	169	43	186	398	R 774
November	181	392	823	184	18	41	187	168	43	179	389	820
11-Month Total	1,971	4,323	8,810	2,167	205	493	1,622	1,884	468	1,957	4,309	8,796
2014 11-Month Total	1,912	4,421	8,847	2,254	196	389	1,588	2,036	472	1,884	4,392	8,819
2013 11-Month Total	1,796	4,227	8,530	2,361	196	278	1,468	1,980	452	1,822	4,254	8,557

<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.  
R=Revised. 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>3</sup>								
	Geo-thermal <sup>b</sup>	Solar/PV <sup>c</sup>	Biomass		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>	Total					Wood <sup>d</sup>	Waste <sup>h</sup>	Fuel Ethanol <sup>i</sup>	Total	
<b>1950 Total</b> .....	NA	NA	1,006	1,006	NA	NA	NA	NA	19	NA	NA	19	19
<b>1955 Total</b> .....	NA	NA	775	775	NA	NA	NA	NA	15	NA	NA	15	15
<b>1960 Total</b> .....	NA	NA	627	627	NA	NA	NA	NA	12	NA	NA	12	12
<b>1965 Total</b> .....	NA	NA	468	468	NA	NA	NA	NA	9	NA	NA	9	9
<b>1970 Total</b> .....	NA	NA	401	401	NA	NA	NA	NA	8	NA	NA	8	8
<b>1975 Total</b> .....	NA	NA	425	425	NA	NA	NA	NA	8	NA	NA	8	8
<b>1980 Total</b> .....	NA	NA	850	850	NA	NA	NA	NA	21	NA	NA	21	21
<b>1985 Total</b> .....	NA	NA	1,010	1,010	NA	NA	NA	NA	24	NA	(s)	24	24
<b>1990 Total</b> .....	6	56	580	641	1	3	-	-	66	28	(s)	94	98
<b>1995 Total</b> .....	7	64	520	591	1	5	-	-	72	40	(s)	113	118
<b>2000 Total</b> .....	9	61	420	489	1	8	-	-	71	47	(s)	119	128
<b>2001 Total</b> .....	9	59	370	438	1	8	-	-	67	25	(s)	92	101
<b>2002 Total</b> .....	10	57	380	448	(s)	9	-	-	69	26	(s)	95	104
<b>2003 Total</b> .....	13	57	400	470	1	11	-	-	71	29	1	101	113
<b>2004 Total</b> .....	14	57	410	481	1	12	-	-	70	34	1	105	118
<b>2005 Total</b> .....	16	58	430	504	1	14	-	-	70	34	1	105	120
<b>2006 Total</b> .....	18	63	380	462	1	14	-	-	65	36	1	103	118
<b>2007 Total</b> .....	22	70	420	512	1	14	-	-	70	31	2	103	118
<b>2008 Total</b> .....	26	80	470	577	1	15	(s)	-	73	34	2	109	125
<b>2009 Total</b> .....	33	89	500	622	1	17	(s)	(s)	73	36	3	112	129
<b>2010 Total</b> .....	37	114	440	591	1	19	(s)	(s)	72	36	3	111	130
<b>2011 Total</b> .....	40	153	450	643	(s)	20	1	(s)	69	43	3	115	136
<b>2012 Total</b> .....	40	186	420	646	(s)	20	1	1	61	45	3	108	130
<b>2013 January</b> .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
February .....	3	17	44	64	(s)	2	(s)	(s)	5	3	(s)	9	11
March .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
April .....	3	18	48	69	(s)	2	(s)	(s)	6	4	(s)	10	12
May .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
June .....	3	18	48	69	(s)	2	(s)	(s)	6	4	(s)	10	12
July .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
August .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
September .....	3	18	48	69	(s)	2	(s)	(s)	6	4	(s)	10	12
October .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
November .....	3	18	48	69	(s)	2	(s)	(s)	6	4	(s)	10	12
December .....	3	19	49	71	(s)	2	(s)	(s)	6	4	(s)	10	12
<b>Total</b> .....	<b>40</b>	<b>219</b>	<b>580</b>	<b>839</b>	<b>(s)</b>	<b>20</b>	<b>3</b>	<b>1</b>	<b>70</b>	<b>47</b>	<b>3</b>	<b>120</b>	<b>143</b>
<b>2014 January</b> .....	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)	R 11	R 13
June .....	3	21	48	72	(s)	2	(s)	(s)	6	4	(s)	10	R 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
<b>Total</b> .....	<b>40</b>	<b>252</b>	<b>580</b>	<b>871</b>	<b>(s)</b>	<b>20</b>	<b>4</b>	<b>1</b>	<b>73</b>	<b>47</b>	<b>R 4</b>	<b>R 124</b>	<b>R 149</b>
<b>2015 January</b> .....	3	24	38	65	(s)	2	(s)	(s)	7	4	(s)	11	13
February .....	3	22	34	59	(s)	2	(s)	(s)	6	4	(s)	10	12
March .....	3	24	38	65	(s)	2	(s)	(s)	6	4	(s)	11	13
April .....	3	23	37	63	(s)	2	1	(s)	6	3	(s)	10	12
May .....	3	24	38	65	(s)	2	1	(s)	6	3	(s)	10	12
June .....	3	23	37	63	(s)	2	1	(s)	6	3	(s)	10	12
July .....	3	24	38	65	(s)	2	1	(s)	7	4	(s)	R 11	R 13
August .....	3	24	38	65	(s)	2	1	(s)	6	3	(s)	10	R 13
September .....	3	23	37	63	(s)	2	(s)	(s)	6	3	(s)	10	12
October .....	3	24	38	65	(s)	2	(s)	(s)	6	4	(s)	R 11	13
November .....	3	23	37	63	(s)	2	(s)	(s)	6	4	(s)	11	13
<b>11-Month Total</b> ...	<b>37</b>	<b>257</b>	<b>409</b>	<b>703</b>	<b>(s)</b>	<b>18</b>	<b>5</b>	<b>1</b>	<b>70</b>	<b>41</b>	<b>4</b>	<b>114</b>	<b>139</b>
<b>2014 11-Month Total</b> ...	<b>36</b>	<b>230</b>	<b>531</b>	<b>797</b>	<b>(s)</b>	<b>18</b>	<b>3</b>	<b>1</b>	<b>67</b>	<b>43</b>	<b>4</b>	<b>114</b>	<b>137</b>
<b>2013 11-Month Total</b> ...	<b>36</b>	<b>200</b>	<b>531</b>	<b>767</b>	<b>(s)</b>	<b>18</b>	<b>3</b>	<b>1</b>	<b>64</b>	<b>43</b>	<b>2</b>	<b>110</b>	<b>131</b>

<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.

R=Revised. 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 January	3	(s)	(s)	(s)	113	16	1	55	185	189	83	9	92
February	3	(s)	(s)	(s)	101	14	1	50	167	171	77	9	87
March	3	(s)	(s)	(s)	109	16	1	57	184	187	89	12	102
April	2	(s)	(s)	(s)	104	16	1	57	179	182	89	13	103
May	3	(s)	(s)	(s)	108	15	2	61	186	190	93	14	107
June	3	(s)	(s)	(s)	109	15	2	60	185	188	93	15	111
July	3	(s)	(s)	(s)	117	15	2	60	194	198	92	15	109
August	2	(s)	(s)	(s)	113	16	R 1	59	189	192	91	16	109
September	2	(s)	(s)	(s)	105	15	1	57	179	181	90	18	111
October	2	(s)	(s)	(s)	108	16	2	63	189	192	94	22	118
November	2	(s)	(s)	(s)	109	16	1	63	190	192	89	18	111
December	3	(s)	(s)	(s)	114	17	2	66	199	202	92	22	118
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	R 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	R 193	88	14	103
April	1	(s)	(s)	(s)	107	17	1	62	187	R 188	89	12	104
May	1	(s)	(s)	(s)	109	15	R 1	64	190	R 191	94	15	110
June	1	(s)	(s)	(s)	111	15	R 1	64	R 190	192	92	16	108
July	1	(s)	(s)	(s)	114	16	R 1	65	R 196	198	R 96	15	113
August	1	(s)	(s)	(s)	115	15	R 1	64	R 195	197	95	19	R 117
September	1	(s)	(s)	(s)	107	14	1	62	185	186	R 89	19	R 109
October	1	(s)	(s)	(s)	110	17	R 1	64	192	193	96	16	R 115
November	1	(s)	(s)	(s)	109	16	R 1	64	190	R 191	R 92	17	108
December	1	(s)	(s)	(s)	116	17	R 1	68	202	204	94	18	113
Total	12	4	(s)	1	1,325	190	R 14	757	R 2,287	R 2,304	R 1,093	181	R 1,291
2015 January	1	(s)	(s)	(s)	116	16	1	65	199	R 200	90	7	97
February	1	(s)	(s)	(s)	103	14	1	59	R 176	178	83	11	R 96
March	1	(s)	(s)	(s)	106	16	R 1	65	R 188	R 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	R 1	65	192	193	98	18	R 118
June	1	(s)	(s)	(s)	106	16	R 1	65	189	R 190	97	20	119
July	1	(s)	(s)	(s)	111	17	R 1	67	196	R 197	99	18	120
August	1	(s)	(s)	(s)	109	16	R 1	65	192	193	R 100	19	121
September	1	(s)	(s)	(s)	105	16	R 1	63	185	186	R 96	19	117
October	1	(s)	(s)	(s)	107	17	R 1	66	191	R 192	R 98	17	R 118
November	1	(s)	(s)	(s)	105	16	1	65	187	188	94	14	112
11-Month Total	11	4	(s)	(s)	1,180	178	14	708	2,079	2,095	1,038	171	1,232
2014 11-Month Total	11	4	(s)	(s)	1,209	173	13	689	2,085	2,100	999	163	1,178
2013 11-Month Total	30	4	(s)	(s)	1,198	170	16	643	2,027	2,061	979	161	1,160

<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.

R=Revised. 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	2,639	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 January	234	13	3	141	17	22	39	429
February	191	12	4	134	15	19	35	376
March	193	13	6	150	17	23	39	402
April	237	12	6	167	14	21	35	457
May	268	12	7	155	15	22	37	480
June	258	12	8	131	17	22	39	448
July	257	13	8	106	18	22	41	424
August	204	13	9	92	20	23	42	360
September	160	12	9	111	18	21	39	331
October	162	13	9	130	18	22	39	353
November	167	12	8	151	19	22	41	377
December	198	13	8	133	20	24	43	396
Total	2,529	151	83	1,600	207	262	470	4,833
2014 January	205	13	7	R 170	21	24	45	R 440
February	R 164	R 11	8	R 133	20	22	42	R 359
March	230	13	12	169	22	24	46	R 469
April	241	R 12	14	R 177	18	23	41	R 485
May	R 251	13	16	R 148	17	24	41	R 469
June	R 244	12	18	R 150	22	24	45	R 470
July	R 231	13	17	116	23	25	48	R 423
August	R 187	13	R 17	97	23	24	46	R 361
September	R 152	12	17	R 109	21	22	43	R 334
October	R 162	13	16	138	20	22	42	R 371
November	R 176	13	13	R 179	22	22	44	R 425
December	R 211	13	10	140	22	23	45	R 419
Total	R 2,454	151	165	R 1,726	251	279	530	R 5,026
2015 January	233	14	11	145	22	24	46	R 449
February	R 215	13	15	R 142	21	21	42	R 427
March	R 235	14	21	146	20	22	42	R 458
April	R 213	13	24	R 169	17	22	39	R 458
May	191	14	24	R 163	19	22	41	R 433
June	190	13	25	128	21	22	43	R 399
July	R 199	14	26	130	23	25	48	R 416
August	R 184	14	26	124	24	24	47	R 395
September	154	12	22	132	20	21	41	R 361
October	158	13	19	156	18	23	41	R 386
November	183	13	18	187	20	23	43	444
11-Month Total	2,155	146	231	1,621	226	249	474	4,627
2014 11-Month Total	2,243	138	155	1,586	229	256	485	4,607
2013 11-Month Total	2,330	137	75	1,467	188	239	426	4,437

<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).

R=Revised. 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>
				Mbbbl	MMgal	TBtu	Net Imports <sup>e</sup>	Consumption <sup>d</sup>						
								Mbbbl			MMgal	TBtu	Mbbbl	
TBtu	TBtu	Mbbbl	Mbbbl	MMgal	TBtu	Mbbbl	Mbbbl	Mbbbl	Mbbbl	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 January	141	55	503	24,778	1,041	88	-767	19,894	-456	24,467	1,028	87	85	
February	128	50	461	22,494	945	80	-727	19,009	-885	22,652	951	81	79	
March	146	57	511	25,620	1,076	91	-169	18,410	-599	26,050	1,094	93	90	
April	146	57	515	25,601	1,075	91	-551	17,370	-1,040	26,090	1,096	93	90	
May	155	61	537	27,197	1,142	97	-400	16,804	-566	27,363	1,149	97	95	
June	152	60	509	26,722	1,122	95	130	16,428	-376	27,228	1,144	97	95	
July	154	60	519	26,923	1,131	96	624	17,072	644	26,903	1,130	96	93	
August	150	59	494	26,279	1,104	94	413	16,945	-127	26,819	1,126	95	93	
September	146	57	499	25,564	1,074	91	-187	15,986	-959	26,336	1,106	94	91	
October	160	63	538	27,995	1,176	100	-767	15,750	-236	27,464	1,153	98	95	
November	159	62	532	27,915	1,172	99	-1,902	15,569	-181	26,194	1,100	93	91	
December	168	66	563	29,405	1,235	105	-1,459	16,424	855	27,091	1,138	96	94	
<b>Total</b>	<b>1,805</b>	<b>707</b>	<b>6,181</b>	<b>316,493</b>	<b>13,293</b>	<b>1,126</b>	<b>-5,761</b>	<b>16,424</b>	<b>-3,926</b>	<b>314,658</b>	<b>13,216</b>	<b>1,120</b>	<b>1,092</b>	
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	
<b>Total</b>	<b>1,938</b>	<b>755</b>	<b>6,476</b>	<b>340,781</b>	<b>14,313</b>	<b>1,212</b>	<b>-18,371</b>	<b>18,739</b>	<b>2,315</b>	<b>320,095</b>	<b>13,444</b>	<b>1,139</b>	<b>1,111</b>	
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	
<b>11-Month Total</b>	<b>1,822</b>	<b>706</b>	<b>6,016</b>	<b>321,445</b>	<b>13,501</b>	<b>1,144</b>	<b>-16,203</b>	<b>19,945</b>	<b>1,206</b>	<b>304,036</b>	<b>12,770</b>	<b>1,082</b>	<b>1,056</b>	
<b>2014 11-Month Total</b>	<b>1,763</b>	<b>687</b>	<b>5,867</b>	<b>309,950</b>	<b>13,018</b>	<b>1,103</b>	<b>-16,792</b>	<b>17,035</b>	<b>611</b>	<b>292,547</b>	<b>12,287</b>	<b>1,041</b>	<b>1,016</b>	
<b>2013 11-Month Total</b>	<b>1,637</b>	<b>641</b>	<b>5,618</b>	<b>287,088</b>	<b>12,058</b>	<b>1,022</b>	<b>-4,303</b>	<b>15,569</b>	<b>-4,781</b>	<b>287,566</b>	<b>12,078</b>	<b>1,023</b>	<b>998</b>	

<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: • Mbbbl = thousand barrels. MMgal = million U.S. gallons. TBtu = trillion Btu. • Fuel ethanol data in thousand barrels are converted to million gallons by multiplying by 0.042, and are converted to Btu by multiplying by the approximate heat content of fuel ethanol—see Table A3. • Through 1980, data are not available. For 1981–1992, data are estimates. For 1993–2008, only data for feedstock, losses and co-products, and denaturant are estimates. Beginning in 2009, only data for feedstock, and losses and co-products, are estimates. • See "Denaturant," "Ethanol," "Fuel Ethanol," and "Fuel Ethanol Minus Denaturant" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

**Table 10.4 Biodiesel and Other Renewable Fuels Overview**

	Biodiesel												Other Renewable Fuels <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
<b>2001 Total</b> .....	1	(s)	204	9	1	81	41	40	NA	NA	244	10	1	NA
<b>2002 Total</b> .....	1	(s)	250	10	1	197	57	140	NA	NA	390	16	2	NA
<b>2003 Total</b> .....	2	(s)	338	14	2	97	113	-17	NA	NA	322	14	2	NA
<b>2004 Total</b> .....	4	(s)	666	28	4	101	128	-27	NA	NA	639	27	3	NA
<b>2005 Total</b> .....	12	(s)	2,162	91	12	214	213	1	NA	NA	2,163	91	12	NA
<b>2006 Total</b> .....	32	(s)	5,963	250	32	1,105	856	250	NA	NA	6,213	261	33	NA
<b>2007 Total</b> .....	63	1	11,662	490	62	3,455	6,696	-3,241	NA	NA	8,422	354	45	NA
<b>2008 Total</b> .....	88	1	16,145	678	87	7,755	16,673	-8,918	NA	NA	7,228	304	39	NA
<b>2009 Total</b> .....	67	1	12,281	516	66	1,906	6,546	-4,640	711	711	<sup>g</sup> 7,663	322	41	(s)
<b>2010 Total</b> .....	44	1	8,177	343	44	564	2,588	-2,024	672	-39	6,192	260	33	(s)
<b>2011 Total</b> .....	125	2	23,035	967	123	890	1,799	-908	2,005	<sup>h</sup> 1,028	21,099	886	113	(s)
<b>2012 Total</b> .....	128	2	23,588	991	126	853	3,056	-2,203	1,984	-20	21,406	899	115	3
<b>2013 January</b> .....	9	(s)	1,640	69	9	38	16	22	2,002	18	1,644	69	9	(s)
February .....	9	(s)	1,672	70	9	88	37	51	2,026	24	1,699	71	9	1
March .....	13	(s)	2,412	101	13	439	176	263	2,390	364	2,310	97	12	1
April .....	14	(s)	2,548	107	14	372	371	1	2,507	117	2,432	102	13	1
May .....	14	(s)	2,645	111	14	410	563	-153	2,460	-47	2,539	107	14	(s)
June .....	15	(s)	2,699	113	14	698	587	111	2,485	25	2,785	117	15	3
July .....	17	(s)	3,072	129	16	358	429	-71	2,683	198	2,803	118	15	2
August .....	17	(s)	3,086	130	17	385	687	-302	2,549	-134	2,918	123	16	2
September .....	16	(s)	3,025	127	16	781	511	270	2,509	-40	3,336	140	18	3
October .....	18	(s)	3,272	137	18	1,177	415	762	2,483	-26	4,061	171	22	3
November .....	17	(s)	3,080	129	17	1,641	408	1,233	3,360	877	3,436	144	18	3
December .....	17	(s)	3,217	135	17	1,765	476	1,289	3,810	450	4,056	170	22	3
<b>Total</b> .....	176	2	32,368	1,359	173	8,152	4,675	3,477	3,810	1,825	34,020	1,429	182	24
<b>2014 January</b> .....	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
<b>Total</b> .....	165	2	30,452	1,279	163	4,578	1,974	2,604	3,131	-679	33,735	1,417	181	18
<b>2015 January</b> .....	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
<b>11-Month Total</b> ...	149	2	27,491	1,155	147	6,879	1,959	4,920	3,458	422	31,989	1,344	171	22
<b>2014 11-Month Total</b> ...	149	2	27,493	1,155	147	4,038	1,924	2,114	3,084	-725	30,333	1,274	163	17
<b>2013 11-Month Total</b> ...	158	2	29,151	1,224	156	6,387	4,199	2,188	3,360	1,375	29,964	1,258	161	20

<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: Annual estimate is from EIA, *Short-Term Energy Outlook (STEO)*, April 2015.

(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 and 2015: Annual estimates are from EIA, STEO, April 2015.

(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: Annual estimate is from EIA, STEO, April 2015. (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, the annual estimate is assumed by EIA to be equal to that of 2013; for 2015, the annual estimate is from EIA, STEO, April 2015). 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, April 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, April 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).

2009–2013: 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.

2014 and 2015: 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."

2009–2013: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants. 2014 and 2015: EIA, PSM, monthly reports, Table 1, data for net production of fuel ethanol at renewable fuels and oxygenate plants.

#### Trade, Stocks, and Stock Change

1992–2013: EIA, PSA, annual reports, Table 1.

2014 and 2015: 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).

2009–2013: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2014 and 2015: 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.

2011–2013: EIA, *Petroleum Supply Annual (PSA)*, annual reports, Table 1, data for renewable fuels except fuel ethanol.

2014 and 2015: 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 and 2013: EIA, PSA, annual reports, Tables 25 and 31, data for biomass-based diesel fuel.

2014 and 2015: 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.

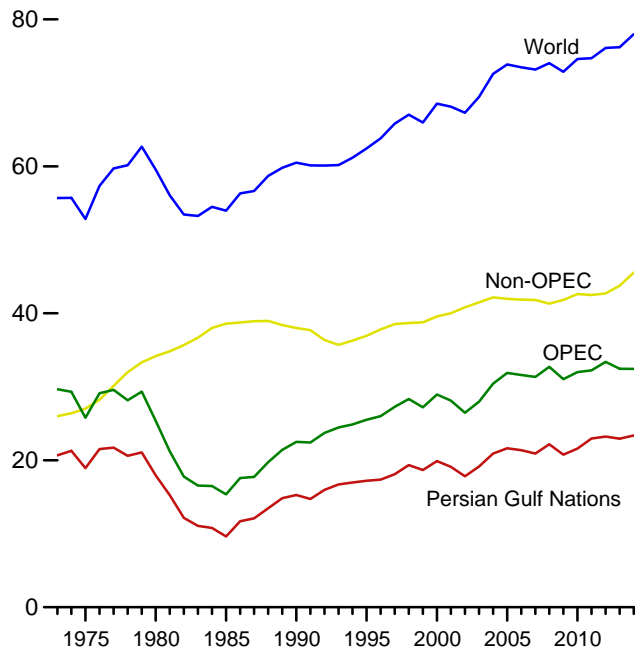
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# **11. International Petroleum**

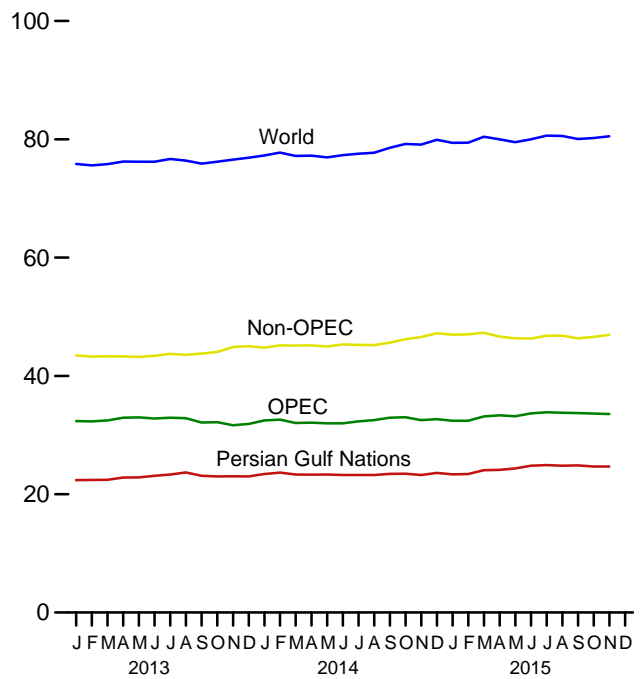
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**Figure 11.1a World Crude Oil Production Overview**  
(Million Barrels per Day)

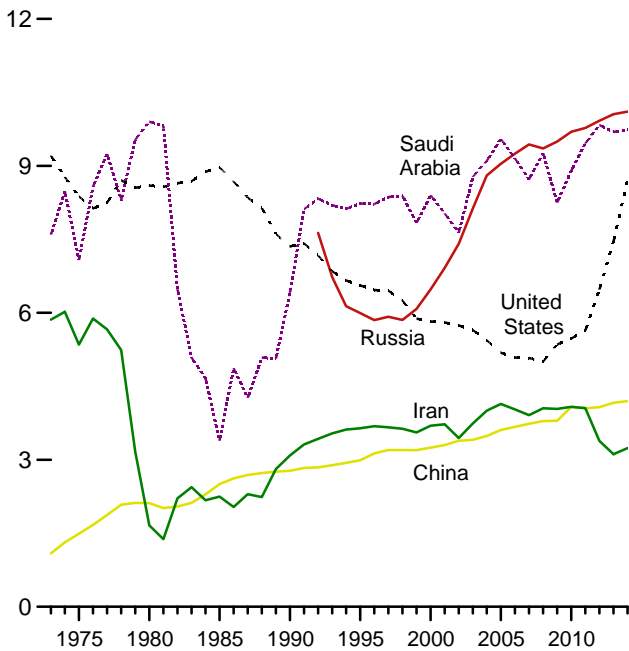
World Production, 1973–2014



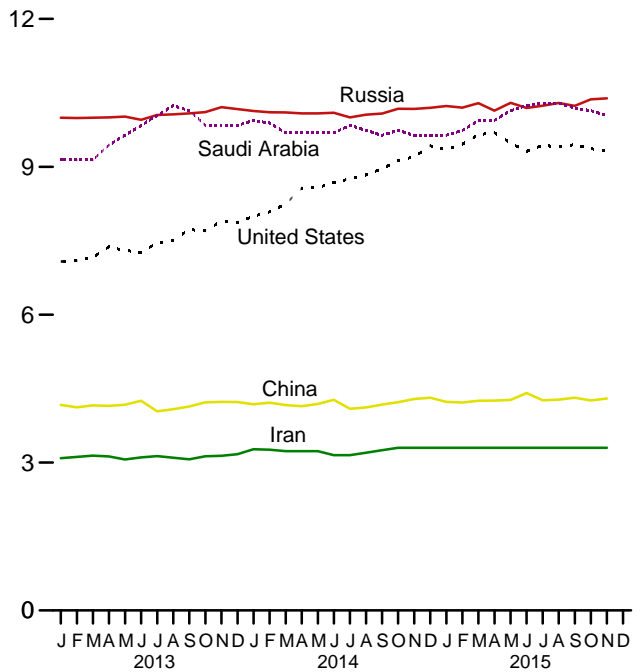
World Production, Monthly



Selected Producers, 1973–2014



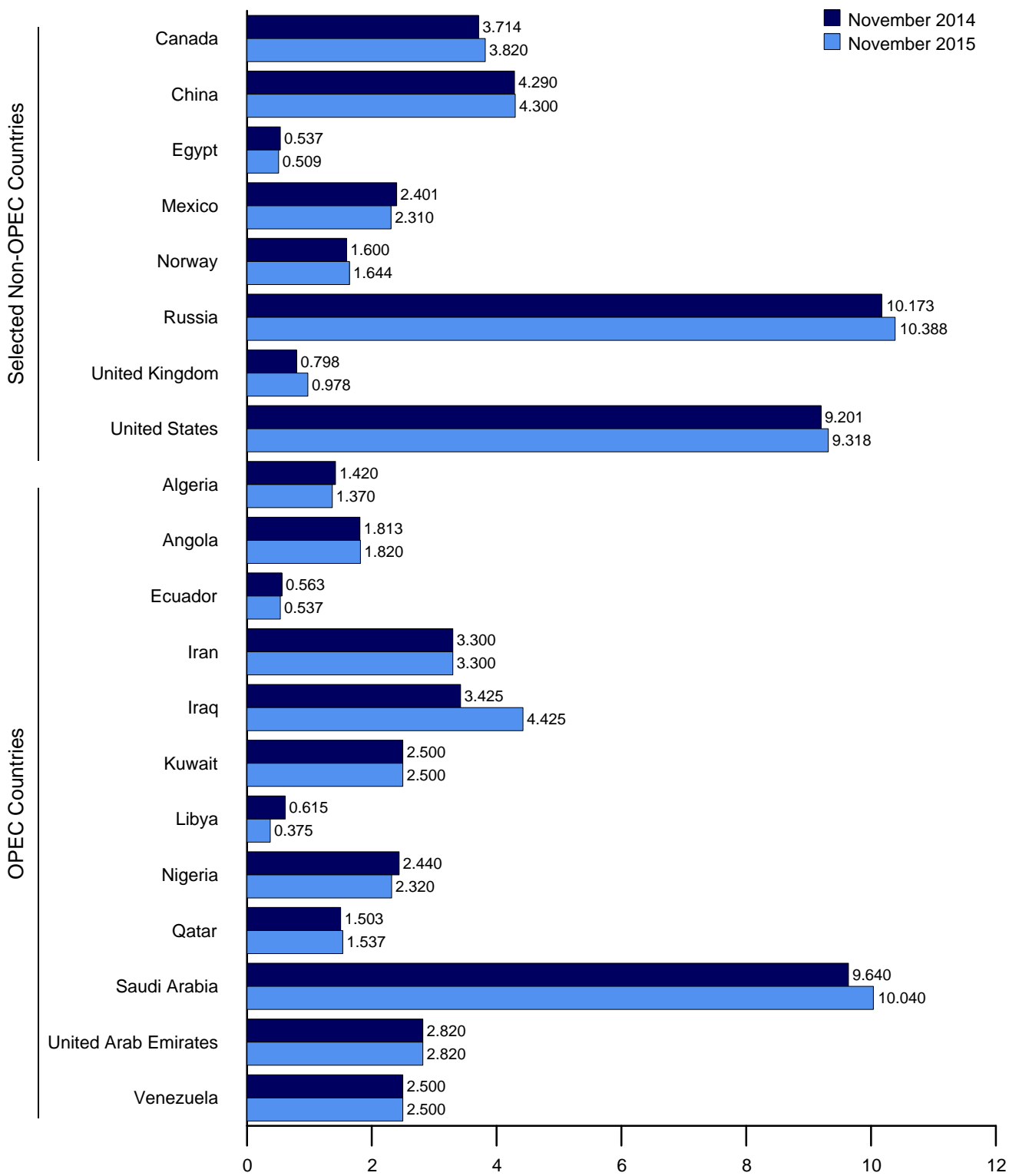
Selected Producers, Monthly



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 11.1b 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	26,018	55,679
1975 Average	18,934	1,430	1,490	235	705	189	9,523	NA	12	8,375	27,039	52,828
1980 Average	17,961	1,435	2,114	595	1,936	486	11,706	NA	1,622	8,597	34,175	59,558
1985 Average	9,630	1,471	2,505	887	2,745	773	11,585	NA	2,530	8,971	38,598	53,965
1990 Average	15,278	1,553	2,774	873	2,553	1,630	10,975	NA	1,820	7,355	37,999	60,497
1995 Average	17,208	1,805	2,990	920	2,711	2,766	--	5,995	2,489	6,560	36,934	62,434
1996 Average	17,367	1,837	3,131	922	2,944	3,091	--	5,850	2,568	6,465	37,815	63,818
1997 Average	18,095	1,922	3,200	856	3,104	3,142	--	5,920	2,518	6,452	38,532	65,806
1998 Average	19,337	1,981	3,198	834	3,160	3,011	--	5,854	2,616	6,252	38,685	67,032
1999 Average	18,667	1,907	3,195	852	2,998	3,019	--	6,079	2,684	5,881	38,768	65,967
2000 Average	19,897	1,977	3,249	768	3,104	3,222	--	6,479	2,275	5,822	39,583	68,527
2001 Average	19,114	2,029	3,300	720	3,218	3,226	--	6,917	2,282	5,801	40,003	68,132
2002 Average	17,824	2,171	3,390	715	3,263	3,131	--	7,408	2,292	5,744	40,825	67,290
2003 Average	19,154	2,306	3,409	713	3,459	3,042	--	8,132	2,093	5,649	41,483	69,640
2004 Average	20,906	2,398	3,485	673	3,476	2,954	--	8,805	1,845	5,441	42,163	72,595
2005 Average	21,644	2,369	3,609	623	3,423	2,698	--	9,043	1,649	5,184	41,968	73,866
2006 Average	21,377	2,525	3,673	535	3,345	2,491	--	9,247	1,490	5,087	41,870	73,477
2007 Average	20,904	2,628	3,736	530	3,143	2,270	--	9,437	1,498	5,077	41,822	73,176
2008 Average	22,186	2,579	3,790	566	2,839	2,182	--	9,357	1,391	5,001	41,326	74,049
2009 Average	20,754	2,579	3,796	587	2,646	2,067	--	9,495	1,328	5,354	41,825	72,870
2010 Average	21,589	2,741	4,078	568	2,621	1,871	--	9,694	1,233	5,476	42,618	74,621
2011 Average	22,953	2,901	4,052	551	2,600	1,760	--	9,774	1,026	5,637	42,486	74,715
2012 Average	23,233	3,138	4,074	539	2,593	1,612	--	9,922	888	6,476	42,708	76,110
<b>2013</b> January	22,374	3,329	4,168	515	2,602	1,550	--	9,995	825	7,078	43,466	75,839
February	22,401	3,259	4,122	512	2,595	1,512	--	9,990	823	7,095	43,267	75,578
March	22,425	3,429	4,158	514	2,555	1,507	--	9,995	812	7,161	43,320	75,803
April	22,810	3,237	4,149	522	2,557	1,567	--	10,002	830	7,375	43,302	76,227
May	22,850	3,026	4,173	524	2,548	1,583	--	10,018	861	7,301	43,220	76,216
June	23,116	3,146	4,255	529	2,559	1,390	--	9,955	781	7,264	43,407	76,201
July	23,341	3,306	4,040	525	2,522	1,642	--	10,052	792	7,454	43,719	76,664
August	23,683	3,471	4,082	525	2,554	1,547	--	10,064	630	7,502	43,566	76,409
September	23,101	3,352	4,136	532	2,563	1,375	--	10,082	744	7,727	43,776	75,897
October	23,013	3,335	4,222	535	2,580	1,483	--	10,109	732	7,702	44,050	76,217
November	23,022	3,468	4,232	523	2,553	1,611	--	10,209	833	7,897	44,892	76,563
December	23,005	3,534	4,228	528	2,557	1,617	--	10,170	955	7,873	45,028	76,895
<b>Average</b>	<b>22,932</b>	<b>3,325</b>	<b>4,164</b>	<b>524</b>	<b>2,562</b>	<b>1,533</b>	--	<b>10,054</b>	<b>801</b>	<b>7,454</b>	<b>43,754</b>	<b>76,214</b>
<b>2014</b> January	23,417	3,568	4,182	518	2,545	1,629	--	10,131	825	7,998	44,777	77,258
February	23,657	3,578	4,215	513	2,541	1,611	--	10,106	929	8,087	45,150	77,762
March	23,327	3,685	4,167	513	2,511	1,597	--	10,103	909	8,244	45,132	77,180
April	23,292	3,556	4,142	507	2,518	1,613	--	10,083	820	8,568	45,151	77,247
May	23,317	3,467	4,189	514	2,530	1,358	--	10,083	869	8,577	44,973	76,948
June	23,237	3,548	4,272	510	2,476	1,459	--	10,095	752	8,678	45,332	77,314
July	23,258	3,589	4,091	516	2,427	1,588	--	10,003	705	8,754	45,251	77,556
August	23,238	3,547	4,118	509	2,455	1,546	--	10,056	468	8,835	45,202	77,731
September	23,438	3,595	4,175	517	2,430	1,517	--	10,079	748	8,959	45,618	78,555
October	23,463	3,727	4,224	522	2,402	1,615	--	10,176	790	9,129	46,211	79,219
November	23,238	3,714	4,290	537	2,401	1,600	--	10,173	798	9,201	46,569	79,108
December	23,588	3,780	4,315	527	2,392	1,616	--	10,197	846	9,428	47,207	79,909
<b>Average</b>	<b>23,371</b>	<b>3,613</b>	<b>4,198</b>	<b>517</b>	<b>2,469</b>	<b>1,562</b>	--	<b>10,107</b>	<b>787</b>	<b>8,708</b>	<b>45,550</b>	<b>77,983</b>
<b>2015</b> January	23,349	3,885	4,232	508	2,290	1,579	--	10,231	872	9,345	46,972	79,399
February	23,405	3,906	4,218	516	2,370	1,589	--	10,201	812	9,456	47,012	79,430
March	24,060	3,775	4,254	525	2,356	1,586	--	10,291	867	9,653	47,294	80,442
April	24,116	3,463	4,258	503	2,235	1,614	--	10,138	925	9,694	46,652	79,991
May	24,367	3,212	4,271	512	2,263	1,555	--	10,297	1,016	9,479	46,343	79,513
June	24,822	3,457	4,408	504	2,283	1,596	--	10,193	870	9,315	46,315	79,989
July	24,922	3,821	4,263	524	2,308	1,611	--	10,240	839	9,403	46,778	80,618
August	24,822	3,922	4,278	511	2,291	1,599	--	10,295	788	9,407	46,799	80,568
September	24,872	3,422	4,317	510	2,306	1,581	--	10,236	862	9,449	46,335	80,061
October	24,672	3,582	4,259	509	2,314	1,685	--	10,368	912	9,370	46,597	80,222
November	24,672	3,820	4,300	509	2,310	1,644	--	10,388	978	9,318	46,957	80,501
<b>11-Month Average</b>	<b>24,377</b>	<b>3,660</b>	<b>4,278</b>	<b>512</b>	<b>2,302</b>	<b>1,604</b>	--	<b>10,262</b>	<b>886</b>	<b>9,447</b>	<b>46,732</b>	<b>80,072</b>
<b>2014 11-Month Average</b>	<b>23,351</b>	<b>3,598</b>	<b>4,187</b>	<b>516</b>	<b>2,476</b>	<b>1,557</b>	--	<b>10,099</b>	<b>782</b>	<b>8,642</b>	<b>45,396</b>	<b>77,804</b>
<b>2013 11-Month Average</b>	<b>22,925</b>	<b>3,306</b>	<b>4,158</b>	<b>523</b>	<b>2,562</b>	<b>1,525</b>	--	<b>10,043</b>	<b>787</b>	<b>7,415</b>	<b>43,636</b>	<b>76,151</b>

<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; and Indonesia left OPEC at the end of 2008, and is thus included in "Total Non-OPEC" for all years.

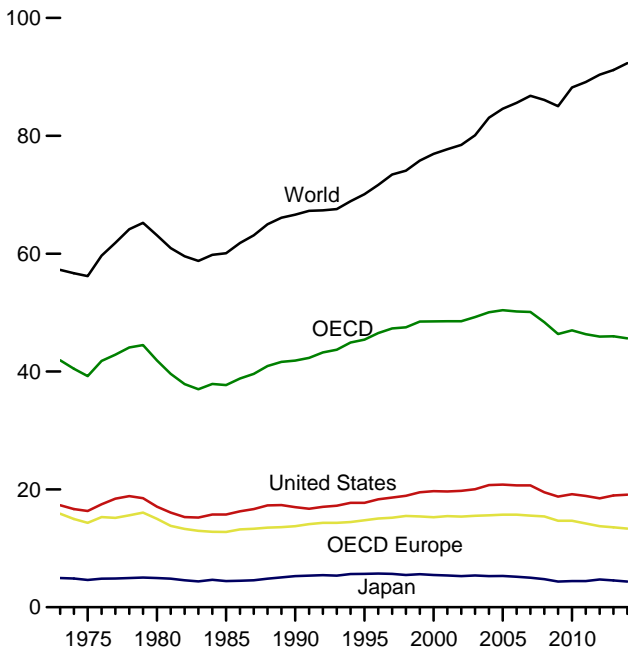
<sup>b</sup> Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and the Neutral Zone (between Kuwait and Saudi Arabia).  
R=Revised. NA=Not available. -- =Not applicable. E=Estimate.

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.

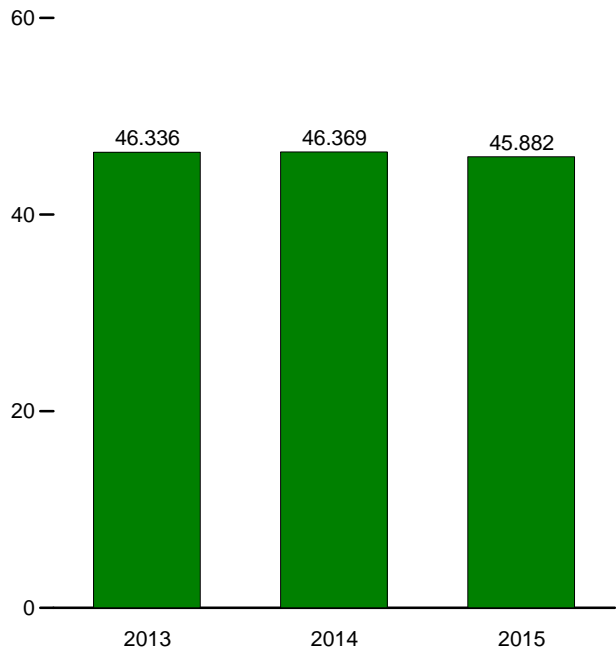
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#international> (Excel and CSV files) for all available annual and monthly data beginning in 1973. Sources: See end of section.

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

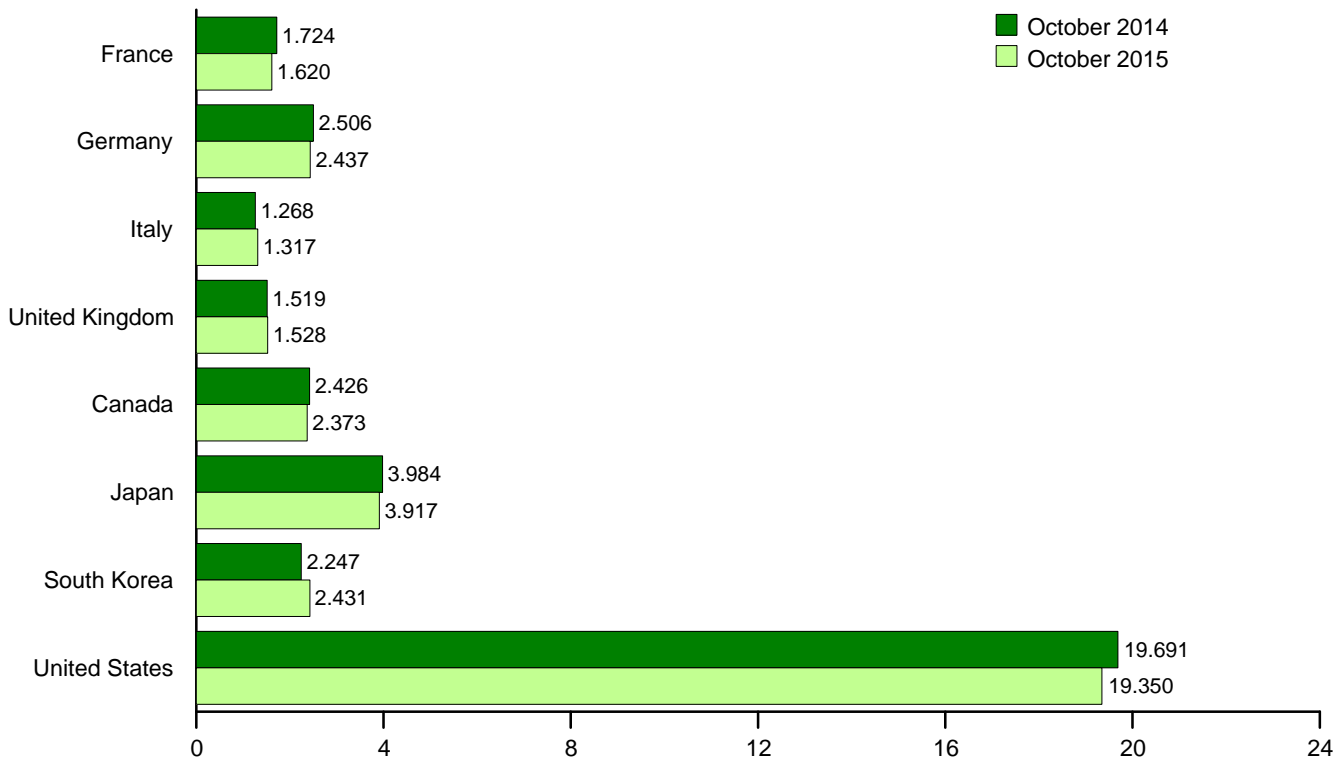
Overview, 1973–2014



OECD Total, October



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 January	1,665	2,263	1,190	1,392	R 12,781	2,437	5,139	2,425	18,749	R 4,196	R 45,727	NA
February	1,791	2,347	1,281	1,531	R 13,367	2,395	5,258	2,412	18,643	R 4,268	R 46,343	NA
March	1,726	2,369	1,243	1,432	R 13,078	2,330	4,742	2,182	18,531	R 4,158	R 45,020	NA
April	1,787	2,635	1,260	1,545	R 13,974	2,318	4,351	2,291	18,584	R 4,304	R 45,822	NA
May	1,718	2,487	1,228	1,508	R 13,739	2,412	4,112	2,279	18,779	R 4,230	R 45,552	NA
June	1,696	2,504	1,231	1,589	R 13,629	2,342	3,912	2,324	18,806	R 4,262	R 45,276	NA
July	1,838	2,481	1,369	1,527	R 14,158	2,401	4,389	2,268	19,257	R 4,220	R 46,693	NA
August	1,674	2,417	1,227	1,515	R 13,713	2,375	4,403	2,329	19,125	R 4,314	R 46,258	NA
September	1,695	2,479	1,280	1,543	R 13,812	2,386	4,136	2,240	19,252	R 3,998	R 45,823	NA
October	1,747	2,607	1,340	1,453	R 14,008	2,326	4,192	2,253	19,312	R 4,245	R 46,336	NA
November	1,605	2,465	1,218	1,554	R 13,505	2,438	4,838	2,459	19,491	R 4,149	R 46,879	NA
December	1,619	2,170	1,252	1,452	R 12,962	2,335	5,246	2,488	18,983	R 4,219	R 46,233	NA
Average	1,713	2,435	1,260	1,502	R 13,560	2,374	4,557	2,328	18,961	R 4,213	R 45,994	R 91,159
2014 January	1,592	2,291	1,179	1,425	R 12,525	2,403	5,042	2,353	19,102	R 3,977	R 45,402	NA
February	1,691	2,309	1,223	1,550	R 13,162	2,515	5,291	2,374	18,908	R 4,177	R 46,427	NA
March	1,625	2,458	1,186	1,442	R 13,155	2,327	4,906	2,327	18,464	R 4,107	R 45,287	NA
April	1,687	2,411	1,193	1,514	R 13,366	2,247	4,125	2,278	18,849	R 4,054	R 44,919	NA
May	1,535	2,348	1,231	1,469	R 13,094	2,317	3,840	2,328	18,585	R 4,121	R 44,286	NA
June	1,681	2,289	1,219	1,546	R 13,522	2,398	3,833	2,319	18,890	R 4,047	R 45,009	NA
July	1,787	2,485	1,307	1,498	R 13,906	2,469	3,982	2,303	19,283	R 4,153	R 46,097	NA
August	1,623	2,435	1,177	1,533	R 13,424	2,383	3,954	2,370	19,400	R 3,994	R 45,523	NA
September	1,728	2,499	1,274	1,512	R 13,929	2,477	3,851	2,294	19,246	R 4,043	R 45,840	NA
October	1,724	2,506	1,268	1,519	R 13,884	2,426	3,984	2,247	19,691	R 4,139	R 46,369	NA
November	1,474	2,390	1,166	1,528	R 13,006	2,366	4,354	2,360	19,370	R 4,041	R 45,498	NA
December	1,691	2,323	1,272	1,535	R 13,293	2,423	5,096	2,526	19,457	R 4,179	R 46,974	NA
Average	1,653	2,396	1,225	1,505	R 13,356	2,395	4,350	2,340	19,106	R 4,086	R 45,633	R 92,323
2015 January	1,615	2,310	1,155	1,431	R 12,955	2,374	4,633	2,489	19,249	R 3,940	R 45,641	NA
February	1,754	2,462	1,262	1,653	R 13,853	2,452	5,158	2,532	19,396	R 4,176	R 47,567	NA
March	1,669	2,405	1,251	1,477	R 13,474	2,270	4,617	2,427	19,238	R 4,054	R 46,081	NA
April	1,674	2,385	1,340	1,568	R 13,662	2,211	4,246	2,402	19,037	R 4,022	R 45,579	NA
May	1,497	2,190	1,256	1,485	R 12,954	2,252	3,678	2,224	19,117	R 4,034	R 44,259	NA
June	1,727	2,337	1,326	1,558	R 13,910	2,322	3,760	2,328	19,591	R 4,118	R 46,029	NA
July	1,766	2,422	1,422	1,494	R 14,108	2,372	3,880	2,313	19,979	R 4,228	R 46,880	NA
August	1,631	2,435	1,272	1,578	R 13,894	2,388	3,998	2,466	19,814	R 4,079	R 46,639	NA
September	1,746	2,532	1,361	1,623	R 14,333	R 2,389	3,942	2,379	19,225	R 4,116	R 46,384	NA
October	1,620	2,437	1,317	1,528	R 13,761	2,373	3,917	2,431	19,350	R 4,051	R 45,882	NA
10-Month Average	1,669	2,390	1,296	1,538	R 13,686	2,340	4,175	2,398	19,401	4,081	46,081	NA
2014 10-Month Average	1,667	2,404	1,226	1,500	R 13,397	2,395	4,274	2,319	19,044	4,081	45,510	NA
2013 10-Month Average	1,733	2,459	1,265	1,502	R 13,627	2,372	4,459	2,299	18,907	4,219	45,883	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

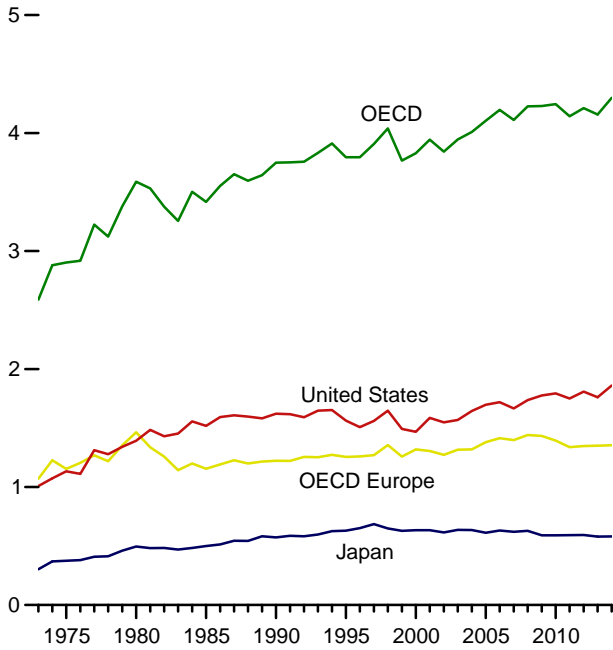
rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

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.

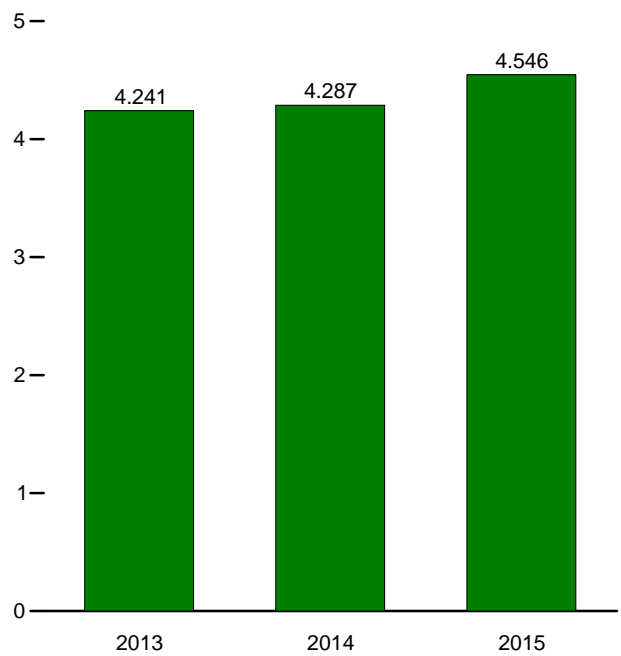
Sources: • United States: Table 3.1. • Chile, East Germany, Former Czechoslovakia, Hungary, Mexico, Poland, South Korea, Non-OECD Countries, U.S. Territories, and World: 1973–1979—U.S. Energy Information Administration (EIA), International Energy Database. • Countries Other Than United States: 1980–2008—EIA,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

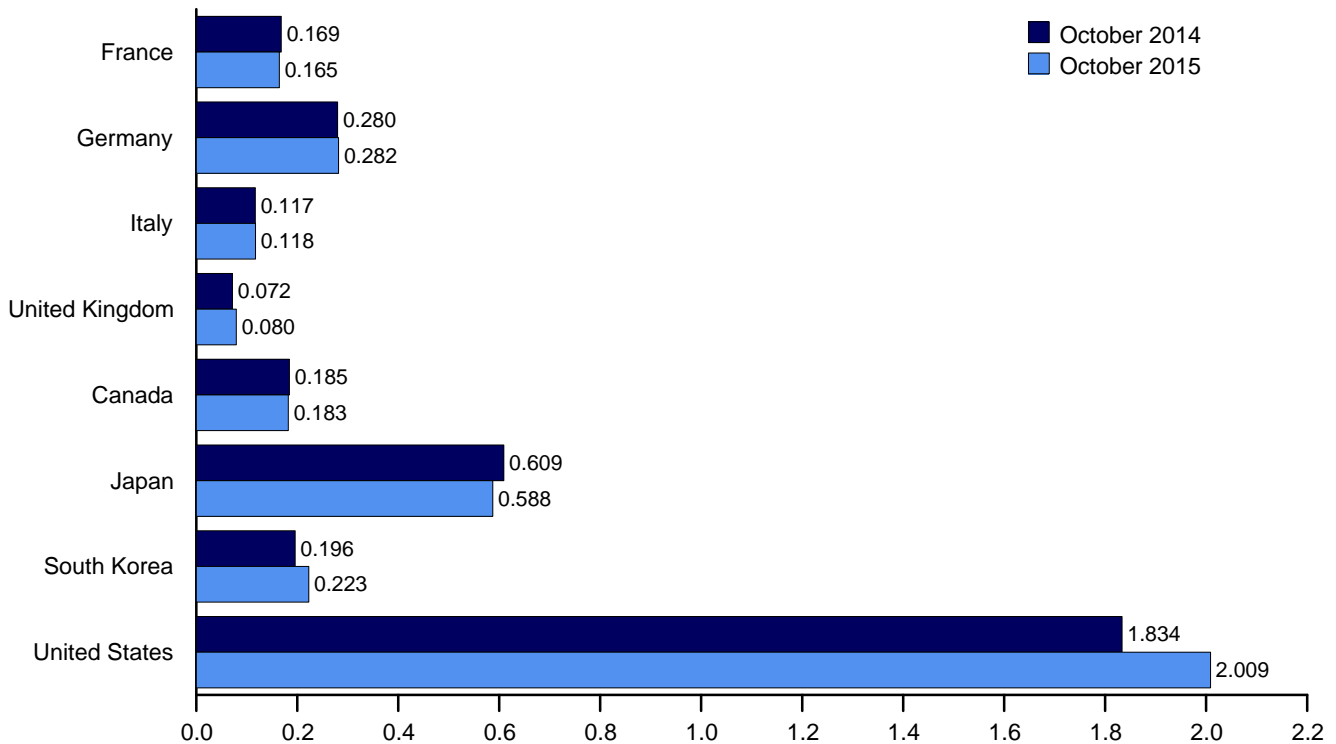
Overview, End of Year, 1973–2014



OECD Stocks, End of Month, October



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>
1973 Year .....	201	181	152	156	1,070	140	303	NA	1,008	67	2,588
1975 Year .....	225	187	143	165	1,154	174	375	NA	1,133	67	2,903
1980 Year .....	243	319	170	168	1,464	164	495	NA	1,392	72	3,587
1985 Year .....	139	277	156	131	1,154	112	500	13	1,519	119	3,417
1990 Year .....	143	280	171	103	1,222	143	572	64	1,621	126	3,749
1995 Year .....	155	302	162	101	1,256	132	631	92	1,563	122	3,795
1996 Year .....	154	303	152	103	1,259	127	651	123	1,507	127	3,794
1997 Year .....	161	299	147	100	1,271	144	685	124	1,560	123	3,907
1998 Year .....	169	323	153	104	1,355	139	649	129	1,647	120	4,039
1999 Year .....	160	290	148	101	1,258	141	629	132	1,493	114	3,766
2000 Year .....	170	272	157	100	1,318	143	634	140	1,468	126	3,829
2001 Year .....	165	273	151	113	1,306	154	634	143	1,586	120	3,944
2002 Year .....	170	253	156	104	1,273	155	615	140	1,548	112	3,843
2003 Year .....	179	273	153	100	1,316	165	636	155	1,568	105	3,945
2004 Year .....	177	267	154	101	1,319	154	635	149	1,645	108	4,010
2005 Year .....	185	283	151	95	1,380	168	612	135	1,698	112	4,105
2006 Year .....	182	283	153	103	1,413	169	631	152	1,720	113	4,197
2007 Year .....	180	275	152	92	1,398	163	621	143	1,665	121	4,112
2008 Year .....	179	279	148	93	1,441	162	629	135	1,737	124	4,227
2009 Year .....	175	284	146	89	1,432	157	591	155	1,776	118	4,230
2010 Year .....	168	287	143	83	1,393	184	590	165	1,794	119	4,246
2011 Year .....	165	281	135	80	1,338	178	592	167	1,750	117	4,143
2012 Year .....	162	288	126	80	1,347	174	594	181	1,808	107	4,212
<b>2013</b> January .....	162	294	129	82	1,384	172	596	181	1,811	105	4,249
February .....	162	291	130	81	1,389	174	587	177	1,790	110	4,227
March .....	161	293	131	77	1,383	171	594	188	1,793	114	4,245
April .....	159	291	132	81	1,379	172	601	178	1,808	113	4,251
May .....	163	293	121	81	1,355	169	597	180	1,817	111	4,228
June .....	166	290	126	81	1,352	174	591	185	1,819	115	4,236
July .....	166	290	126	77	1,363	178	582	196	1,818	113	4,250
August .....	167	289	127	76	1,353	185	582	193	1,823	113	4,250
September .....	166	288	131	75	1,360	183	594	196	1,833	112	4,279
October .....	167	290	130	75	1,359	176	590	193	1,810	114	4,241
November .....	167	289	131	74	1,346	174	591	185	1,789	113	4,198
December .....	167	290	125	78	1,350	170	580	185	1,761	111	4,157
<b>2014</b> January .....	171	290	128	76	1,370	170	583	184	1,749	112	4,168
February .....	167	295	124	77	1,365	176	580	188	1,751	114	4,174
March .....	167	288	123	76	1,353	174	589	193	1,759	110	4,179
April .....	167	290	122	75	1,349	178	578	187	1,787	112	4,191
May .....	172	292	128	75	1,371	176	587	191	1,816	115	4,256
June .....	168	290	122	74	1,356	179	589	188	1,819	112	4,244
July .....	170	286	120	72	1,351	187	595	190	1,822	114	4,259
August .....	173	286	125	76	1,370	187	605	197	1,827	117	4,303
September .....	171	283	123	74	1,364	186	608	197	1,840	116	4,310
October .....	169	280	117	72	1,348	185	609	196	1,834	114	4,287
November .....	168	282	124	76	1,351	188	597	202	1,844	112	4,295
December .....	168	284	119	78	R 1,354	193	581	197	1,860	114	4,299
<b>2015</b> January .....	170	286	116	73	R 1,373	192	574	197	1,874	114	R 4,324
February .....	170	288	113	75	R 1,385	184	568	198	1,878	112	R 4,324
March .....	173	286	121	76	R 1,409	183	568	201	1,908	110	R 4,379
April .....	170	286	124	85	R 1,413	185	558	210	1,935	110	R 4,411
May .....	175	290	122	78	R 1,420	181	582	224	1,958	107	R 4,472
June .....	170	287	117	77	R 1,410	176	578	225	1,971	113	R 4,473
July .....	168	283	116	74	R 1,401	184	589	223	1,969	113	R 4,479
August .....	167	284	123	77	R 1,429	185	594	227	1,991	R 110	4,537
September .....	167	283	117	79	R 1,432	R 182	590	226	2,001	R 110	R 4,542
October .....	165	282	118	80	1,437	183	588	223	2,009	106	4,546

<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, February 9, 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, February 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.

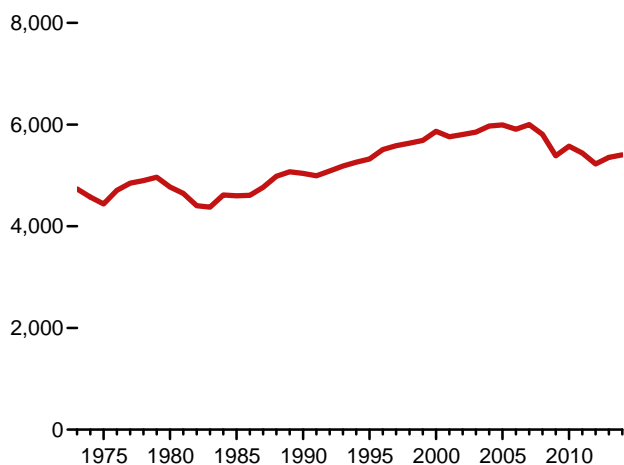
1994 forward: EIA, International Energy Statistics Database, February 2016.

## **12. Environment**

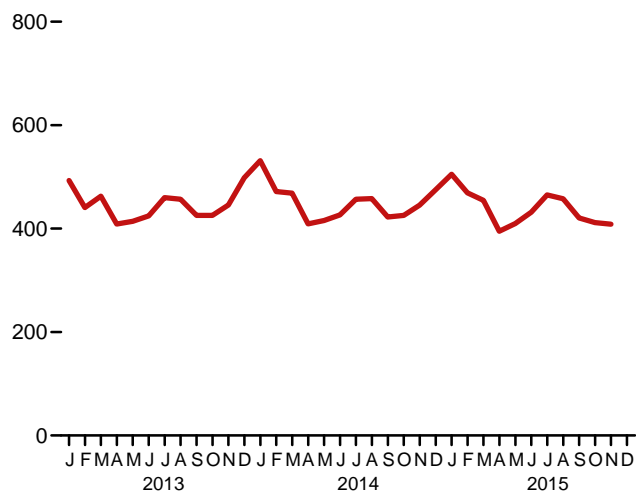
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**Figure 12.1 Carbon Dioxide Emissions From Energy Consumption by Source**  
(Million Metric Tons of Carbon Dioxide)

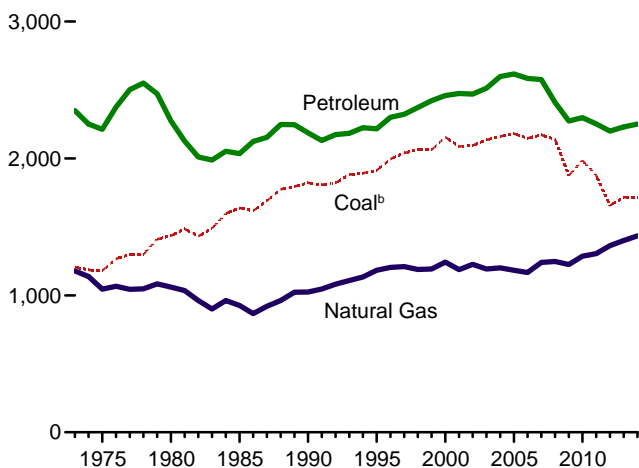
Total,<sup>a</sup> 1973–2014



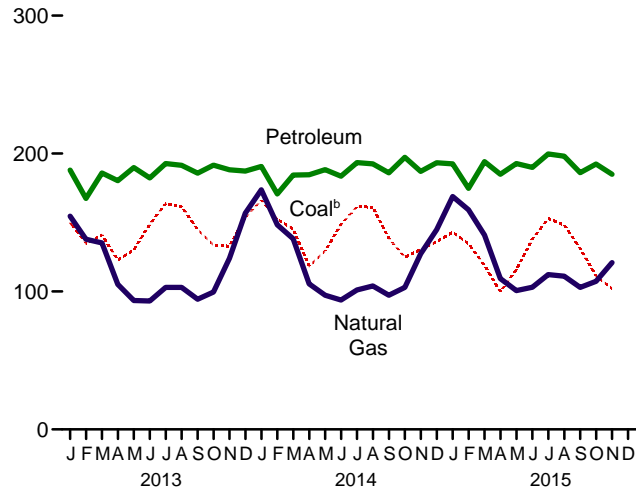
Total,<sup>a</sup> Monthly



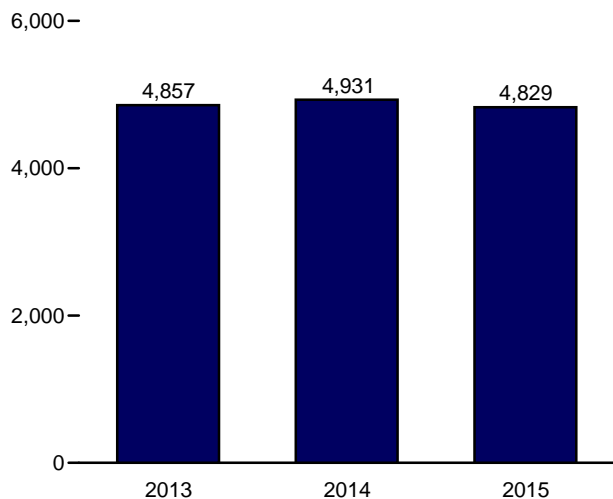
By Major Source, 1973–2014



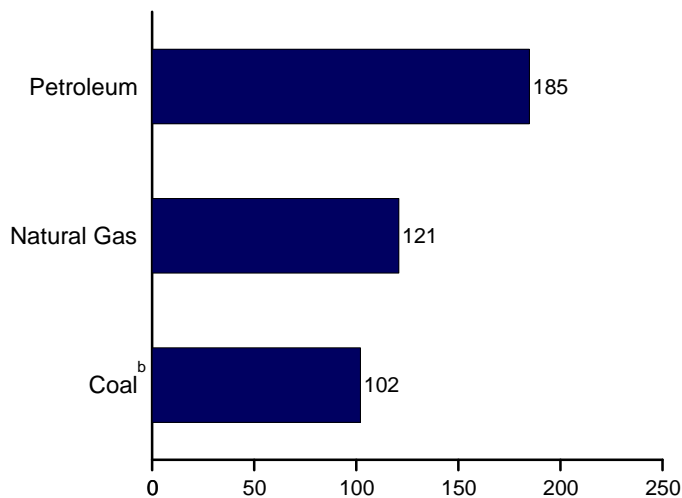
By Major Source, Monthly



Total,<sup>a</sup> January–November



By Major Source, November 2015



<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>		Total
1973 Total	1,207	1,178	6	480	155	32	92	13	911	54	508	100	2,350	4,735
1975 Total	1,181	1,046	5	443	146	24	82	11	911	51	443	97	2,212	4,439
1980 Total	1,436	1,061	4	446	156	24	87	13	900	49	453	142	2,275	4,771
1985 Total	1,638	926	3	445	178	17	87	12	930	54	216	93	2,036	4,600
1990 Total	1,821	1,024	3	470	223	6	67	13	988	70	220	127	2,187	5,039
1995 Total	1,913	1,183	3	498	222	8	80	13	1,045	76	152	121	2,216	5,323
1996 Total	1,995	1,204	3	524	232	9	86	12	1,063	79	152	139	2,300	5,510
1997 Total	2,040	1,210	3	534	234	10	87	13	1,075	80	142	145	2,323	5,584
1998 Total	2,064	1,189	2	537	238	12	82	14	1,107	93	158	128	2,372	5,635
1999 Total	2,062	1,193	3	555	245	11	90	14	1,128	96	148	133	2,422	5,688
2000 Total	2,155	1,243	3	579	254	10	97	14	1,136	86	163	118	2,459	5,868
2001 Total	2,088	1,188	2	597	243	11	88	13	1,152	89	144	135	2,474	5,761
2002 Total	2,095	1,227	2	586	237	6	91	12	1,183	96	125	130	2,470	5,804
2003 Total	2,136	1,193	2	610	231	8	87	11	1,187	96	138	142	2,513	5,853
2004 Total	2,160	1,200	2	632	240	10	87	12	1,210	107	155	144	2,598	5,970
2005 Total	2,182	1,183	2	639	246	10	84	12	1,209	106	165	143	2,617	5,993
2006 Total	2,147	1,167	2	645	240	8	80	11	1,217	106	122	152	2,584	5,910
2007 Total	2,172	1,241	2	647	238	5	83	12	1,211	100	128	150	2,576	6,001
2008 Total	2,140	1,248	2	610	226	2	79	11	1,143	93	110	132	2,409	5,809
2009 Total	1,876	1,225	2	559	204	3	78	10	1,129	87	90	112	2,273	5,386
2010 Total	1,986	1,286	2	585	210	3	79	11	1,112	82	93	122	2,299	5,576
2011 Total	1,876	1,305	2	599	209	2	78	10	1,078	79	79	117	2,252	5,439
2012 Total	1,657	1,363	2	574	206	1	81	9	1,071	79	65	113	2,200	5,227
2013 January	150	155	(s)	53	16	(s)	9	1	87	7	5	9	188	493
February	135	138	(s)	47	15	(s)	8	1	79	5	4	9	167	441
March	141	135	(s)	49	17	(s)	8	1	90	5	7	8	186	463
April	123	105	(s)	48	17	(s)	7	1	89	5	4	9	180	409
May	130	93	(s)	48	18	(s)	6	1	94	7	4	11	190	414
June	149	93	(s)	46	18	(s)	6	1	92	7	4	9	182	425
July	164	103	(s)	47	19	(s)	7	1	96	7	5	11	193	460
August	162	103	(s)	47	19	(s)	6	1	95	7	6	9	192	457
September	145	94	(s)	46	17	(s)	6	1	90	7	5	12	186	425
October	134	100	(s)	52	18	(s)	8	1	93	6	4	9	192	425
November	133	124	(s)	48	17	(s)	8	1	90	7	5	11	188	446
December	154	157	(s)	50	18	(s)	9	1	90	6	3	11	187	498
Total	1,718	1,400	2	581	210	1	88	10	1,087	77	56	119	2,231	5,355
2014 January	166	174	(s)	56	17	(s)	10	1	86	8	5	8	191	531
February	152	148	(s)	49	16	(s)	7	1	81	5	3	9	171	472
March	145	138	(s)	52	18	(s)	7	1	91	3	3	9	184	468
April	118	105	(s)	50	18	(s)	6	1	90	6	4	10	185	409
May	129	97	(s)	51	17	(s)	5	1	94	7	3	9	188	416
June	149	94	(s)	49	19	(s)	6	1	91	6	4	9	184	426
July	162	101	(s)	50	19	(s)	6	1	96	8	4	9	193	457
August	161	104	(s)	50	19	(s)	6	1	97	6	3	9	193	458
September	139	97	(s)	49	18	(s)	6	1	89	7	4	11	186	422
October	125	103	(s)	55	18	(s)	7	1	95	7	4	10	197	426
November	130	127	(s)	49	18	(s)	8	1	90	7	5	9	187	445
December	136	145	(s)	54	19	(s)	8	1	93	5	4	9	193	475
Total	1,713	1,434	2	614	216	1	83	10	1,095	76	45	110	2,252	5,406
2015 January	143	169	(s)	55	17	(s)	9	1	91	7	4	8	193	505
February	135	159	(s)	53	16	(s)	8	1	81	4	3	9	175	469
March	119	141	(s)	52	19	(s)	7	1	94	7	4	9	194	455
April	100	109	(s)	50	18	(s)	6	1	92	7	2	9	185	395
May	116	101	(s)	49	19	(s)	6	1	96	7	3	11	193	410
June	138	103	(s)	48	20	(s)	6	1	95	7	2	11	190	432
July	153	112	(s)	50	20	(s)	6	1	98	8	5	11	200	465
August	148	111	(s)	50	20	(s)	6	1	99	8	5	10	198	458
September	131	103	(s)	50	19	(s)	6	1	93	5	4	8	186	421
October	111	107	(s)	51	20	(s)	7	1	96	6	3	8	192	412
November	102	121	(s)	46	19	(s)	7	1	92	6	5	10	185	409
11-Month Total	1,396	1,337	1	554	206	1	74	10	1,028	72	41	104	2,090	4,829
2014 11-Month Total	1,577	1,289	1	559	196	1	75	10	1,002	71	41	101	2,059	4,931
2013 11-Month Total	1,564	1,243	1	531	193	1	79	9	996	72	54	108	2,044	4,857

<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.

(s)=Less than 0.5 million metric tons.

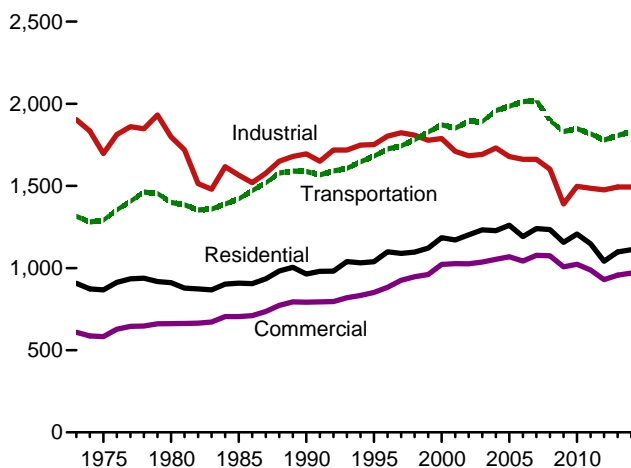
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, including the nonfuel use of fossil fuels. See "Section 12 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of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

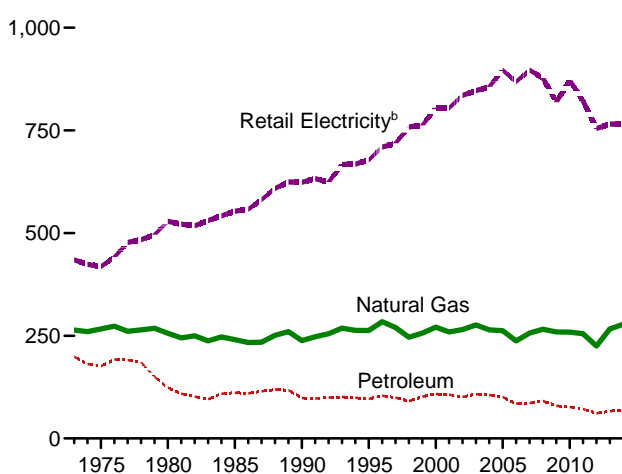
Sources: See end of section.

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

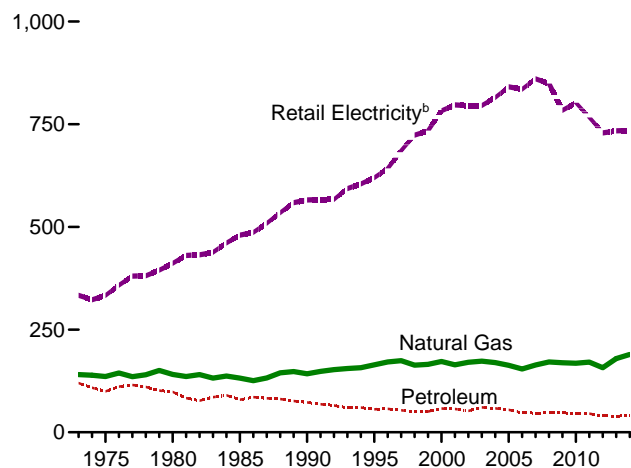
Total<sup>a</sup> by End-Use Sector,<sup>b</sup> 1973–2014



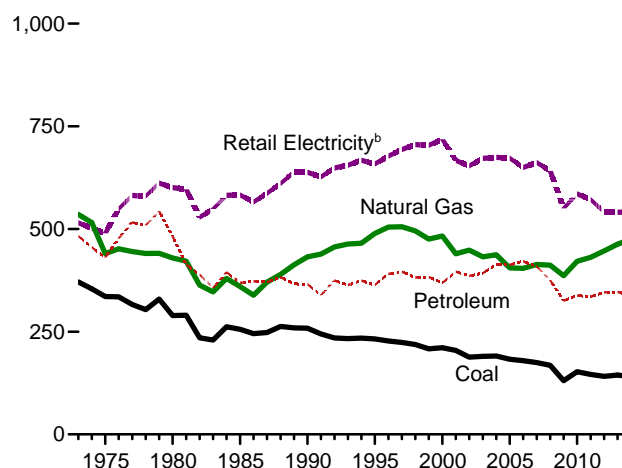
Residential Sector by Major Source, 1973–2014



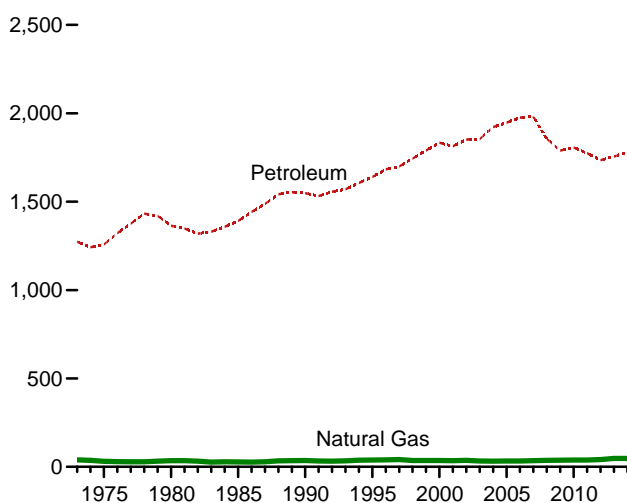
Commercial Sector by Major Source, 1973–2014



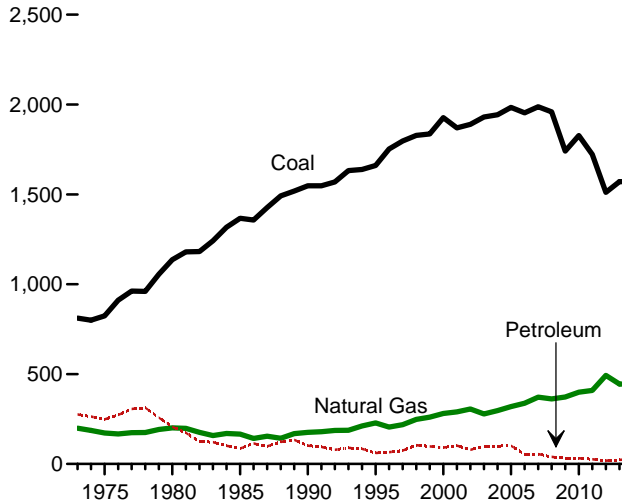
Industrial Sector by Major Source, 1973–2014



Transportation Sector by Major Source, 1973–2014



Electric Power Sector by Major Source, 1973–2014



<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		
<b>1973 Total</b> .....	<b>9</b>	<b>264</b>	<b>147</b>	<b>16</b>	<b>36</b>	<b>199</b>	<b>435</b>	<b>907</b>
<b>1975 Total</b> .....	<b>6</b>	<b>266</b>	<b>132</b>	<b>12</b>	<b>32</b>	<b>176</b>	<b>419</b>	<b>867</b>
<b>1980 Total</b> .....	<b>3</b>	<b>256</b>	<b>96</b>	<b>8</b>	<b>20</b>	<b>124</b>	<b>529</b>	<b>911</b>
<b>1985 Total</b> .....	<b>4</b>	<b>241</b>	<b>80</b>	<b>11</b>	<b>20</b>	<b>111</b>	<b>553</b>	<b>909</b>
<b>1990 Total</b> .....	<b>3</b>	<b>238</b>	<b>72</b>	<b>5</b>	<b>22</b>	<b>98</b>	<b>624</b>	<b>963</b>
<b>1995 Total</b> .....	<b>2</b>	<b>263</b>	<b>66</b>	<b>5</b>	<b>25</b>	<b>96</b>	<b>678</b>	<b>1,039</b>
<b>1996 Total</b> .....	<b>2</b>	<b>284</b>	<b>68</b>	<b>6</b>	<b>30</b>	<b>104</b>	<b>710</b>	<b>1,099</b>
<b>1997 Total</b> .....	<b>2</b>	<b>270</b>	<b>64</b>	<b>7</b>	<b>29</b>	<b>99</b>	<b>719</b>	<b>1,090</b>
<b>1998 Total</b> .....	<b>1</b>	<b>247</b>	<b>56</b>	<b>8</b>	<b>27</b>	<b>91</b>	<b>759</b>	<b>1,097</b>
<b>1999 Total</b> .....	<b>1</b>	<b>257</b>	<b>60</b>	<b>8</b>	<b>33</b>	<b>102</b>	<b>762</b>	<b>1,122</b>
<b>2000 Total</b> .....	<b>1</b>	<b>271</b>	<b>66</b>	<b>7</b>	<b>35</b>	<b>108</b>	<b>805</b>	<b>1,185</b>
<b>2001 Total</b> .....	<b>1</b>	<b>259</b>	<b>66</b>	<b>7</b>	<b>33</b>	<b>106</b>	<b>805</b>	<b>1,171</b>
<b>2002 Total</b> .....	<b>1</b>	<b>265</b>	<b>63</b>	<b>4</b>	<b>34</b>	<b>101</b>	<b>835</b>	<b>1,203</b>
<b>2003 Total</b> .....	<b>1</b>	<b>276</b>	<b>68</b>	<b>5</b>	<b>34</b>	<b>108</b>	<b>847</b>	<b>1,232</b>
<b>2004 Total</b> .....	<b>1</b>	<b>264</b>	<b>67</b>	<b>6</b>	<b>32</b>	<b>106</b>	<b>856</b>	<b>1,227</b>
<b>2005 Total</b> .....	<b>1</b>	<b>262</b>	<b>62</b>	<b>6</b>	<b>32</b>	<b>101</b>	<b>897</b>	<b>1,261</b>
<b>2006 Total</b> .....	<b>1</b>	<b>237</b>	<b>52</b>	<b>5</b>	<b>28</b>	<b>85</b>	<b>869</b>	<b>1,191</b>
<b>2007 Total</b> .....	<b>1</b>	<b>257</b>	<b>53</b>	<b>3</b>	<b>31</b>	<b>86</b>	<b>897</b>	<b>1,241</b>
<b>2008 Total</b> .....	<b>NA</b>	<b>266</b>	<b>55</b>	<b>2</b>	<b>35</b>	<b>91</b>	<b>877</b>	<b>1,234</b>
<b>2009 Total</b> .....	<b>NA</b>	<b>259</b>	<b>43</b>	<b>2</b>	<b>35</b>	<b>79</b>	<b>819</b>	<b>1,157</b>
<b>2010 Total</b> .....	<b>NA</b>	<b>259</b>	<b>41</b>	<b>2</b>	<b>33</b>	<b>77</b>	<b>872</b>	<b>1,207</b>
<b>2011 Total</b> .....	<b>NA</b>	<b>255</b>	<b>38</b>	<b>1</b>	<b>32</b>	<b>72</b>	<b>821</b>	<b>1,148</b>
<b>2012 Total</b> .....	<b>NA</b>	<b>225</b>	<b>35</b>	<b>1</b>	<b>25</b>	<b>61</b>	<b>755</b>	<b>1,041</b>
<b>2013 January</b> .....	<b>NA</b>	<b>47</b>	<b>6</b>	<b>(s)</b>	<b>3</b>	<b>9</b>	<b>72</b>	<b>128</b>
February .....	NA	41	5	(s)	3	8	60	109
March .....	NA	36	5	(s)	3	7	62	105
April .....	NA	20	3	(s)	2	6	49	75
May .....	NA	11	2	(s)	2	4	51	66
June .....	NA	7	2	(s)	2	4	66	77
July .....	NA	6	2	(s)	2	4	82	92
August .....	NA	6	2	(s)	2	4	79	89
September .....	NA	6	2	(s)	2	5	66	77
October .....	NA	12	2	(s)	3	4	53	70
November .....	NA	28	3	(s)	3	5	54	87
December .....	NA	46	3	(s)	3	6	73	126
<b>Total</b> .....	<b>NA</b>	<b>267</b>	<b>36</b>	<b>1</b>	<b>30</b>	<b>66</b>	<b>766</b>	<b>1,098</b>
<b>2014 January</b> .....	<b>NA</b>	<b>57</b>	<b>4</b>	<b>(s)</b>	<b>3</b>	<b>8</b>	<b>84</b>	<b>148</b>
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	110
<b>Total</b> .....	<b>NA</b>	<b>278</b>	<b>39</b>	<b>1</b>	<b>29</b>	<b>69</b>	<b>765</b>	<b>1,112</b>
<b>2015 January</b> .....	<b>NA</b>	<b>51</b>	<b>5</b>	<b>(s)</b>	<b>3</b>	<b>8</b>	<b>73</b>	<b>132</b>
February .....	NA	49	4	(s)	3	7	67	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	64
June .....	NA	7	1	(s)	2	3	66	76
July .....	NA	6	1	(s)	2	4	81	91
August .....	NA	6	2	(s)	2	4	78	88
September .....	NA	6	2	(s)	2	4	65	75
October .....	NA	11	4	(s)	2	7	49	<sup>R</sup> 67
November .....	NA	22	5	(s)	3	7	45	74
<b>11-Month Total</b> .....	<b>NA</b>	<b>220</b>	<b>33</b>	<b>(s)</b>	<b>26</b>	<b>59</b>	<b>673</b>	<b>952</b>
<b>2014 11-Month Total</b> .....	<b>NA</b>	<b>239</b>	<b>35</b>	<b>1</b>	<b>26</b>	<b>62</b>	<b>704</b>	<b>1,004</b>
<b>2013 11-Month Total</b> .....	<b>NA</b>	<b>220</b>	<b>33</b>	<b>(s)</b>	<b>27</b>	<b>60</b>	<b>693</b>	<b>974</b>

<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 January	(s)	26	4	(s)	1	(s)	(s)	(s)	5	58	90
February	(s)	23	4	(s)	1	(s)	(s)	(s)	5	54	83
March	(s)	21	3	(s)	1	(s)	(s)	(s)	5	57	84
April	(s)	14	2	(s)	1	(s)	(s)	(s)	4	52	70
May	(s)	9	2	(s)	1	(s)	0	(s)	3	58	70
June	(s)	7	1	(s)	1	(s)	0	(s)	2	66	76
July	(s)	7	1	(s)	1	(s)	(s)	(s)	2	72	82
August	(s)	7	1	(s)	1	(s)	(s)	(s)	3	72	83
September	(s)	8	2	(s)	1	(s)	(s)	(s)	3	64	75
October	(s)	11	1	(s)	1	(s)	(s)	(s)	2	60	74
November	(s)	19	2	(s)	1	(s)	(s)	(s)	3	57	79
December	(s)	26	2	(s)	1	(s)	(s)	(s)	4	62	92
Total	4	179	25	(s)	10	3	(s)	2	40	734	957
2014 January	1	31	3	(s)	1	(s)	(s)	(s)	4	65	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	52	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)	R 3	72	82
September	(s)	8	2	(s)	1	(s)	(s)	(s)	3	63	R 75
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	1	23	3	(s)	1	(s)	(s)	(s)	4	57	R 85
Total	5	189	26	(s)	10	R 4	(s)	1	R 40	735	R 969
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)	R 4	53	78
April	(s)	13	1	(s)	1	(s)	(s)	(s)	R 3	49	R 65
May	(s)	9	1	(s)	1	(s)	(s)	(s)	R 3	57	68
June	(s)	7	1	(s)	1	(s)	0	(s)	2	66	75
July	(s)	7	1	(s)	1	(s)	0	(s)	2	72	82
August	(s)	R 7	1	(s)	1	(s)	(s)	(s)	2	70	80
September	(s)	8	1	(s)	1	(s)	(s)	(s)	2	63	73
October	(s)	11	3	(s)	1	(s)	(s)	(s)	4	56	71
November	1	15	3	(s)	1	(s)	(s)	(s)	4	51	71
11-Month Total	5	156	22	(s)	9	4	(s)	1	35	650	846
2014 11-Month Total	4	166	23	(s)	9	4	(s)	1	36	678	884
2013 11-Month Total	3	154	23	(s)	9	2	(s)	2	36	672	865

<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)	34	5	17	65	6	117	335	572	1,486
2012 Total	141	(s)	447	93	(s)	45	5	17	70	3	113	346	541	1,476
2013 January	12	(s)	42	10	(s)	5	(s)	1	7	(s)	9	32	44	130
February	12	(s)	38	7	(s)	4	(s)	1	4	(s)	9	26	41	117
March	12	(s)	40	7	(s)	4	(s)	1	5	(s)	8	26	44	123
April	12	(s)	38	7	(s)	3	(s)	1	4	(s)	9	26	42	116
May	12	(s)	37	7	(s)	3	(s)	2	6	(s)	11	29	45	124
June	12	(s)	36	6	(s)	3	(s)	1	6	(s)	9	27	47	121
July	12	(s)	37	6	(s)	3	(s)	2	6	(s)	11	28	49	126
August	12	(s)	37	6	(s)	3	(s)	2	6	(s)	9	26	50	125
September	12	(s)	36	7	(s)	3	(s)	1	6	(s)	12	30	45	124
October	12	(s)	38	11	(s)	4	(s)	R 1	5	(s)	9	31	45	126
November	12	(s)	40	9	(s)	4	(s)	1	6	(s)	11	33	44	129
December	12	(s)	43	9	(s)	5	(s)	1	5	(s)	11	32	44	131
Total	144	-2	463	92	(s)	46	5	R 17	65	2	119	347	541	1,493
2014 January	12	(s)	44	12	(s)	5	(s)	1	7	(s)	8	34	46	R 135
February	12	(s)	40	8	(s)	4	(s)	1	4	(s)	9	27	42	121
March	12	(s)	42	9	(s)	4	1	1	2	(s)	9	25	44	R 123
April	11	(s)	39	9	(s)	3	(s)	1	5	(s)	10	29	40	120
May	12	(s)	38	8	(s)	2	(s)	R 1	6	(s)	9	27	46	122
June	12	(s)	37	7	(s)	3	(s)	1	5	(s)	9	25	47	121
July	12	(s)	38	7	(s)	3	(s)	R 1	7	(s)	9	27	50	R 126
August	12	(s)	38	6	(s)	3	(s)	R 1	5	(s)	9	26	51	127
September	11	(s)	37	7	(s)	3	1	1	6	(s)	11	29	45	R 122
October	12	(s)	39	10	(s)	3	(s)	R 1	6	(s)	10	R 31	44	126
November	11	(s)	41	7	(s)	4	(s)	1	6	(s)	9	29	44	125
December	11	(s)	43	10	(s)	4	(s)	R 1	4	(s)	9	29	42	R 124
Total	141	-2	476	100	(s)	42	5	R 14	64	2	110	R 337	542	R 1,493
2015 January	11	(s)	44	11	(s)	5	1	1	6	(s)	8	R 32	41	129
February	11	(s)	41	11	(s)	4	(s)	1	3	(s)	9	R 28	40	120
March	11	(s)	42	10	(s)	4	1	R 1	6	(s)	9	R 30	38	121
April	10	(s)	39	9	(s)	3	(s)	1	6	(s)	9	29	37	114
May	10	(s)	38	7	(s)	2	1	R 1	6	(s)	11	29	42	119
June	11	(s)	37	7	(s)	3	(s)	R 1	6	(s)	11	R 29	46	123
July	11	(s)	38	7	(s)	3	1	R 1	6	(s)	11	30	48	R 126
August	11	(s)	38	7	(s)	3	(s)	R 1	6	(s)	10	R 28	47	125
September	11	(s)	37	9	(s)	3	(s)	R 1	4	(s)	8	26	43	117
October	12	(s)	39	7	(s)	3	1	R 1	5	(s)	8	25	40	115
November	11	(s)	40	5	(s)	3	(s)	1	5	(s)	10	24	37	112
11-Month Total	120	-2	433	90	(s)	36	5	13	61	2	104	311	457	1,320
2014 11-Month Total	129	-2	433	90	(s)	37	5	13	60	2	101	308	499	1,368
2013 11-Month Total	132	-2	420	83	(s)	41	5	16	60	2	108	315	496	1,361

<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>)

	Coal	Natural Gas <sup>b</sup>	Petroleum							Retail Electricity <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 January	(h)	5	(s)	33	16	(s)	(s)	86	4	139	(s)	145
February	(h)	5	(s)	30	15	(s)	(s)	78	3	127	(s)	132
March	(h)	5	(s)	34	17	(s)	(s)	89	6	146	(s)	151
April	(h)	4	(s)	35	17	(s)	(s)	88	3	144	(s)	148
May	(h)	3	(s)	37	18	(s)	(s)	93	3	151	(s)	155
June	(h)	3	(s)	36	18	(s)	(s)	90	3	148	(s)	151
July	(h)	3	(s)	38	19	(s)	(s)	94	4	156	(s)	160
August	(h)	3	(s)	38	19	(s)	(s)	94	5	156	(s)	160
September	(h)	3	(s)	35	17	(s)	(s)	89	5	146	(s)	150
October	(h)	3	(s)	38	18	(s)	(s)	91	3	152	(s)	156
November	(h)	4	(s)	35	17	(s)	(s)	88	4	146	(s)	150
December	(h)	5	(s)	35	18	(s)	(s)	89	2	144	(s)	149
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	R 146	(s)	R 151
April	(h)	4	(s)	37	18	(s)	(s)	89	3	R 148	(s)	R 151
May	(h)	3	(s)	38	17	(s)	(s)	R 93	3	152	(s)	155
June	(h)	3	(s)	38	19	(s)	(s)	R 90	3	150	(s)	153
July	(h)	3	(s)	40	19	(s)	(s)	95	3	158	(s)	161
August	(h)	3	(s)	40	19	(s)	(s)	R 96	3	R 158	(s)	161
September	(h)	3	(s)	37	18	(s)	(s)	R 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)	R 92	3	R 152	(s)	R 157
Total	(h)	48	2	443	216	3	5	R 1,077	35	R 1,780	4	R 1,832
2015 January	(h)	6	(s)	R 35	17	(s)	1	89	3	145	(s)	R 151
February	(h)	5	(s)	33	16	(s)	(s)	80	(s)	130	(s)	136
March	(h)	5	(s)	R 37	19	(s)	(s)	93	3	R 153	(s)	R 158
April	(h)	4	(s)	37	18	(s)	(s)	91	2	148	(s)	152
May	(h)	3	(s)	38	19	(s)	1	R 95	3	155	(s)	159
June	(h)	3	(s)	38	20	(s)	(s)	93	2	R 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
11-Month Total	(h)	44	1	405	206	2	5	1,011	31	1,663	4	1,711
2014 11-Month Total	(h)	43	1	406	196	2	5	985	32	1,628	4	1,675
2013 11-Month Total	(h)	42	1	389	193	3	4	978	44	1,612	4	1,658

<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			
<b>1973 Total</b> .....	812	199	20	2	254	276	NA	NA	1,286
<b>1975 Total</b> .....	824	172	17	(s)	231	248	NA	NA	1,244
<b>1980 Total</b> .....	1,137	200	12	1	194	207	NA	NA	1,544
<b>1985 Total</b> .....	1,367	166	6	1	79	86	NA	NA	1,619
<b>1990 Total</b> .....	1,548	176	7	3	92	102	(s)	6	1,831
<b>1995 Total</b> .....	1,661	228	8	8	45	61	(s)	10	1,960
<b>1996 Total</b> .....	1,752	205	8	8	50	66	(s)	10	2,033
<b>1997 Total</b> .....	1,797	219	8	10	56	75	(s)	10	2,101
<b>1998 Total</b> .....	1,828	248	10	13	82	105	(s)	10	2,192
<b>1999 Total</b> .....	1,836	260	10	11	76	97	(s)	10	2,204
<b>2000 Total</b> .....	1,927	281	13	10	69	91	(s)	10	2,310
<b>2001 Total</b> .....	1,870	290	12	11	79	102	(s)	11	2,273
<b>2002 Total</b> .....	1,890	306	9	18	52	79	(s)	13	2,288
<b>2003 Total</b> .....	1,931	278	12	18	69	98	(s)	11	2,319
<b>2004 Total</b> .....	1,943	297	8	22	69	99	(s)	11	2,350
<b>2005 Total</b> .....	1,984	319	8	24	69	101	(s)	11	2,416
<b>2006 Total</b> .....	1,954	338	5	21	28	55	(s)	12	2,358
<b>2007 Total</b> .....	1,987	372	6	17	31	54	(s)	11	2,425
<b>2008 Total</b> .....	1,959	362	5	15	19	39	(s)	12	2,373
<b>2009 Total</b> .....	1,741	373	5	13	14	33	(s)	11	2,158
<b>2010 Total</b> .....	1,828	399	6	14	12	32	(s)	5	2,265
<b>2011 Total</b> .....	1,723	409	5	14	7	26	(s)	6	2,165
<b>2012 Total</b> .....	1,511	493	4	9	6	19	(s)	6	2,029
<b>2013</b> .....									
January .....	137	34	(s)	1	1	2	(s)	1	174
February .....	123	31	(s)	1	1	2	(s)	(s)	156
March .....	129	33	(s)	1	(s)	2	(s)	1	164
April .....	111	31	(s)	1	(s)	2	(s)	(s)	144
May .....	118	33	(s)	1	(s)	2	(s)	1	154
June .....	137	40	(s)	1	(s)	2	(s)	(s)	180
July .....	152	49	(s)	1	1	2	(s)	1	204
August .....	150	49	(s)	1	1	2	(s)	1	201
September .....	133	41	(s)	1	(s)	2	(s)	(s)	176
October .....	121	35	(s)	1	(s)	2	(s)	1	158
November .....	120	33	(s)	1	(s)	2	(s)	(s)	155
December .....	141	36	(s)	1	1	2	(s)	1	180
<b>Total</b> .....	<b>1,571</b>	<b>444</b>	<b>4</b>	<b>13</b>	<b>6</b>	<b>23</b>	<b>(s)</b>	<b>6</b>	<b>2,045</b>
<b>2014</b> .....									
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	167
April .....	107	30	(s)	1	(s)	1	(s)	(s)	139
May .....	118	35	(s)	1	(s)	2	(s)	1	155
June .....	137	39	(s)	1	(s)	2	(s)	(s)	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)	(s)	171
October .....	112	38	(s)	1	(s)	1	(s)	1	153
November .....	119	33	(s)	1	(s)	2	(s)	(s)	154
December .....	125	35	(s)	1	(s)	2	(s)	1	162
<b>Total</b> .....	<b>1,570</b>	<b>444</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>26</b>	<b>(s)</b>	<b>6</b>	<b>2,046</b>
<b>2015</b> .....									
January .....	131	39	1	1	1	3	(s)	1	173
February .....	123	35	2	1	2	5	(s)	(s)	164
March .....	107	39	(s)	1	(s)	2	(s)	1	148
April .....	89	36	(s)	1	(s)	2	(s)	(s)	128
May .....	105	40	(s)	1	(s)	2	(s)	1	148
June .....	127	49	(s)	1	(s)	2	(s)	(s)	178
July .....	142	57	(s)	1	1	2	(s)	1	201
August .....	136	56	(s)	1	1	2	(s)	1	195
September .....	120	49	(s)	1	(s)	2	(s)	(s)	171
October .....	99	43	(s)	1	(s)	2	(s)	1	145
November .....	91	40	(s)	1	(s)	2	(s)	(s)	133
<b>11-Month Total</b> .....	<b>1,272</b>	<b>484</b>	<b>5</b>	<b>11</b>	<b>7</b>	<b>23</b>	<b>(s)</b>	<b>6</b>	<b>1,785</b>
<b>2014 11-Month Total</b> .....	<b>1,446</b>	<b>409</b>	<b>6</b>	<b>11</b>	<b>7</b>	<b>24</b>	<b>(s)</b>	<b>6</b>	<b>1,884</b>
<b>2013 11-Month Total</b> .....	<b>1,430</b>	<b>408</b>	<b>4</b>	<b>11</b>	<b>5</b>	<b>21</b>	<b>(s)</b>	<b>6</b>	<b>1,865</b>

<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.

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 January	17	4	6	1	28	5	1	12	6	4	28
February	16	3	5	1	25	4	1	11	6	3	25
March	17	4	6	1	28	5	1	12	7	4	28
April	16	4	6	1	27	4	1	11	7	3	27
May	17	4	6	1	28	5	1	12	7	3	28
June	17	4	6	1	28	4	1	12	7	4	28
July	18	4	6	1	29	5	1	12	7	4	29
August	18	4	6	1	29	5	1	12	7	4	29
September	17	4	6	1	28	4	1	11	7	4	28
October	17	4	7	2	29	5	1	12	8	4	29
November	17	4	6	1	28	4	1	12	7	4	28
December	18	4	6	2	30	5	1	12	8	4	30
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	4	1	12	7	4	28
February	15	3	6	1	25	3	1	11	7	4	25
March	16	4	7	1	27	4	1	12	7	4	27
April	16	4	6	1	27	3	1	12	7	4	27
May	16	4	7	1	28	4	1	12	8	4	28
June	16	4	7	2	28	3	1	12	8	4	28
July	17	4	7	1	29	4	1	12	8	4	29
August	17	4	7	1	29	4	1	12	8	4	29
September	16	4	7	1	27	3	1	11	8	4	27
October	16	4	7	1	28	4	1	12	8	4	28
November	16	4	7	1	27	3	1	11	7	4	27
11-Month Total	177	42	72	13	304	38	11	128	84	44	304
2014 11-Month Total	191	43	70	12	315	50	10	130	80	45	315
2013 11-Month Total	186	41	68	12	307	50	10	129	79	39	307

<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/ggrpt/documentation/pdf/0638\(2008\).pdf](http://www.eia.gov/oiaf/1605/ggrpt/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/ggrpt/excel/CO2\\_coefs\\_09\\_v2.xls](http://www.eia.gov/oiaf/1605/ggrpt/excel/CO2_coefs_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>	Natural Gas Plant Liquids	Petroleum Products		Total	Crude Oil <sup>a</sup>	Petroleum Products	
	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>E</sup>	5.800	3.723	6.035	5.222	5.518	5.929	5.800	5.218	5.369	5.406

<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.

<sup>E</sup>=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	4.640	5.163	4.962	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	<sup>R</sup> 5.039	<sup>R</sup> 4.868	<sup>R</sup> 5.299	5.906	5.178	5.773	3.534	5.060	6.100	3.558	5.797
2015	<sup>E</sup> 4.688	<sup>RE</sup> 5.039	<sup>RE</sup> 4.868	<sup>RE</sup> 5.299	<sup>E</sup> 5.906	<sup>E</sup> 5.178	<sup>E</sup> 5.773	<sup>E</sup> 3.534	<sup>E</sup> 5.060	<sup>E</sup> 6.100	<sup>E</sup> 3.558	<sup>E</sup> 5.776

<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. 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> 1,032	<sup>E</sup> 1,032	<sup>E</sup> 1,029	<sup>E</sup> 1,032	<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.

<sup>E</sup>=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>P</sup> 20.160	<sup>E</sup> 11.961	<sup>E</sup> 21.652	<sup>E</sup> 28.611	<sup>E</sup> 21.509	<sup>P</sup> 19.306	<sup>E</sup> 19.622	<sup>P</sup> 21.864	<sup>P</sup> 25.414	<sup>P</sup> 24.800	
2015	<sup>E</sup> 20.160	<sup>E</sup> 11.961	<sup>E</sup> 21.652	<sup>E</sup> 28.611	<sup>E</sup> 21.509	<sup>E</sup> 19.306	<sup>E</sup> 19.622	<sup>E</sup> 21.864	<sup>E</sup> 25.414	<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.

<sup>P</sup>=Preliminary. <sup>E</sup>=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>9,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 .....	<sup>R</sup> 10,428	<sup>R</sup> 10,814	<sup>R</sup> 7,907	<sup>R</sup> 9,510	<sup>R</sup> 10,459	<sup>R</sup> 9,510	3,412
2015 .....	<sup>RE</sup> 10,428	<sup>RE</sup> 10,814	<sup>RE</sup> 7,907	<sup>RE</sup> 9,510	<sup>RE</sup> 10,459	<sup>RE</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>9</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.  
R=Revised. E=Estimate. NA=Not available. --=Not applicable.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#appendices> (Excel and CSV files) for all available annual data beginning in 1949.  
Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

# Thermal Conversion Factor Source Documentation

## Approximate Heat Content of Petro- leum 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.** Assumed by EIA to be 5.800 million Btu per barrel or equal to the thermal conversion factor for crude oil produced in the United States. See **Crude Oil Production**.

**Crude Oil Imports.** Calculated annually by EIA as the average of the thermal conversion factors for each type of crude oil imported weighted by the quantities imported. Thermal conversion factors for each type were calculated on a foreign country basis, by determining the average American Petroleum Institute (API) gravity of crude oil imported from each foreign country from Form ERA-60 in 1977 and converting average API gravity to average Btu content by using National Bureau of Standards, Miscellaneous Publication No. 97, *Thermal Properties of Petroleum Products*, 1933.

**Crude Oil Production.** EIA adopted the thermal conversion factor of 5.800 million Btu per barrel as reported in a Bureau of Mines internal memorandum, “Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950.”

**Distillate Fuel Oil 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

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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	28,703.8
2013 .....	316.5	7,101.0	4.5	16,663.2	15,583.3	1.06929	29,721.3
2014 .....	318.9	7,178.7	4.4	17,348.1	15,961.7	1.08686	31,001.4

<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.

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 2014). • **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 (September 2015), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1987 forward**—DOC, BEA, GDP by Industry data (July 2015).

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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 Wood <sup>a</sup>	Total		
1635 .....	NA	--	--	NA	--	(s)	(s)	--	(s)
1645 .....	NA	--	--	NA	--	0.001	0.001	--	0.001
1655 .....	NA	--	--	NA	--	.002	.002	--	.002
1665 .....	NA	--	--	NA	--	.005	.005	--	.005
1675 .....	NA	--	--	NA	--	.007	.007	--	.007
1685 .....	NA	--	--	NA	--	.009	.009	--	.009
1695 .....	NA	--	--	NA	--	.014	.014	--	.014
1705 .....	NA	--	--	NA	--	.022	.022	--	.022
1715 .....	NA	--	--	NA	--	.037	.037	--	.037
1725 .....	NA	--	--	NA	--	.056	.056	--	.056
1735 .....	NA	--	--	NA	--	.080	.080	--	.080
1745 .....	NA	--	--	NA	--	.112	.112	--	.112
1755 .....	NA	--	--	NA	--	.155	.155	--	.155
1765 .....	NA	--	--	NA	--	.200	.200	--	.200
1775 .....	NA	--	--	NA	--	.249	.249	--	.249
1785 .....	NA	--	--	NA	--	.310	.310	--	.310
1795 .....	NA	--	--	NA	--	.402	.402	--	.402
1805 .....	NA	--	--	NA	--	.537	.537	--	.537
1815 .....	NA	--	--	NA	--	.714	.714	--	.714
1825 .....	NA	--	--	NA	--	.960	.960	--	.960
1835 .....	NA	--	--	NA	--	1.305	1.305	--	1.305
1845 .....	NA	--	--	NA	--	1.757	1.757	--	1.757
1850 .....	0.219	--	--	0.219	--	2.138	2.138	--	2.357
1855 .....	.421	--	--	.421	--	2.389	2.389	--	2.810
1860 .....	.518	--	0.003	.521	--	2.641	2.641	--	3.162
1865 .....	.632	--	.010	.642	--	2.767	2.767	--	3.409
1870 .....	1.048	--	.011	1.059	--	2.893	2.893	--	3.952
1875 .....	1.440	--	.011	1.451	--	2.872	2.872	--	4.323
1880 .....	2.054	--	.096	2.150	--	2.851	2.851	--	5.001
1885 .....	2.840	0.082	.040	2.962	--	2.683	2.683	--	5.645
1890 .....	4.062	.257	.156	4.475	0.022	2.515	2.537	--	7.012
1895 .....	4.950	.147	.168	5.265	.090	2.306	2.396	--	7.661
1900 .....	6.841	.252	.229	7.322	.250	2.015	2.265	--	9.587
1905 .....	10.001	.372	.610	10.983	.386	1.843	2.229	--	13.212
1910 .....	12.714	.540	1.007	14.261	.539	1.765	2.304	--	16.565
1915 .....	13.294	.673	1.418	15.385	.659	1.688	2.347	0.002	17.734
1920 .....	15.504	.813	2.676	18.993	.738	1.610	2.348	.003	21.344
1925 .....	14.706	1.191	4.280	20.177	.668	1.533	2.201	.004	22.382
1930 .....	13.639	1.932	5.897	21.468	.752	1.455	2.207	.005	23.680
1935 .....	10.634	1.919	5.675	18.228	.806	1.397	2.203	.005	20.436
1940 .....	12.535	2.665	7.760	22.960	.880	1.358	2.238	.007	25.205
1945 .....	15.972	3.871	10.110	29.953	1.442	<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**.

**Kilowatt-hour (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 kilowatt-hour is equivalent to 3,412 Btu. See **Watt-hour**.

**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), 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). Countries no longer members of OPEC include Gabon (1975–1994) and Indonesia (1962–2008).

**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 kilowatt-hour). 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.

**Watt-hour (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.

