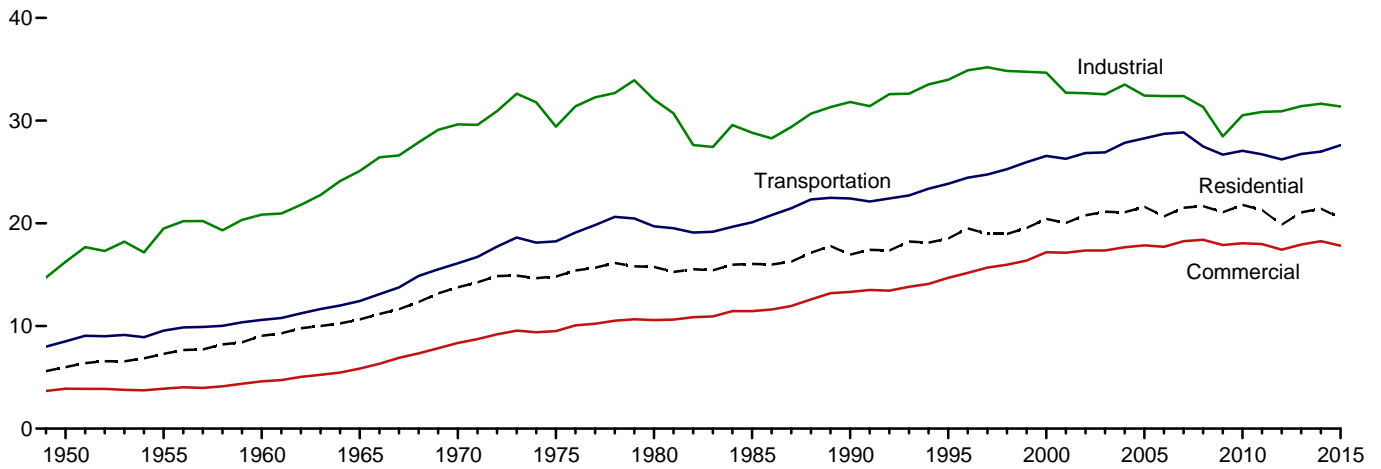


## **2. Energy Consumption by Sector**

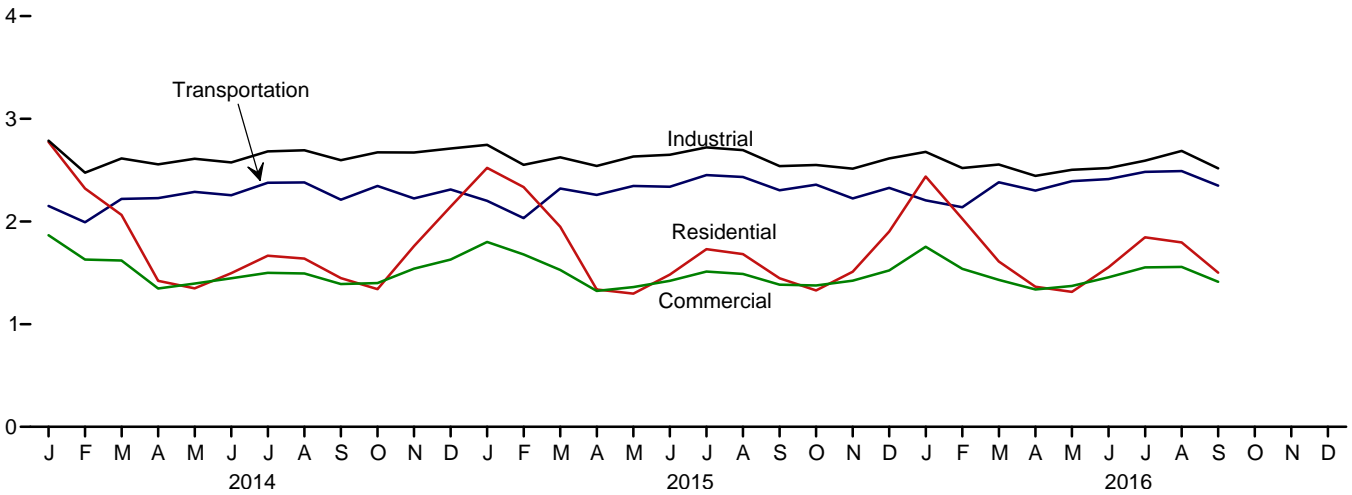
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**Figure 2.1 Energy Consumption by Sector**  
(Quadrillion Btu)

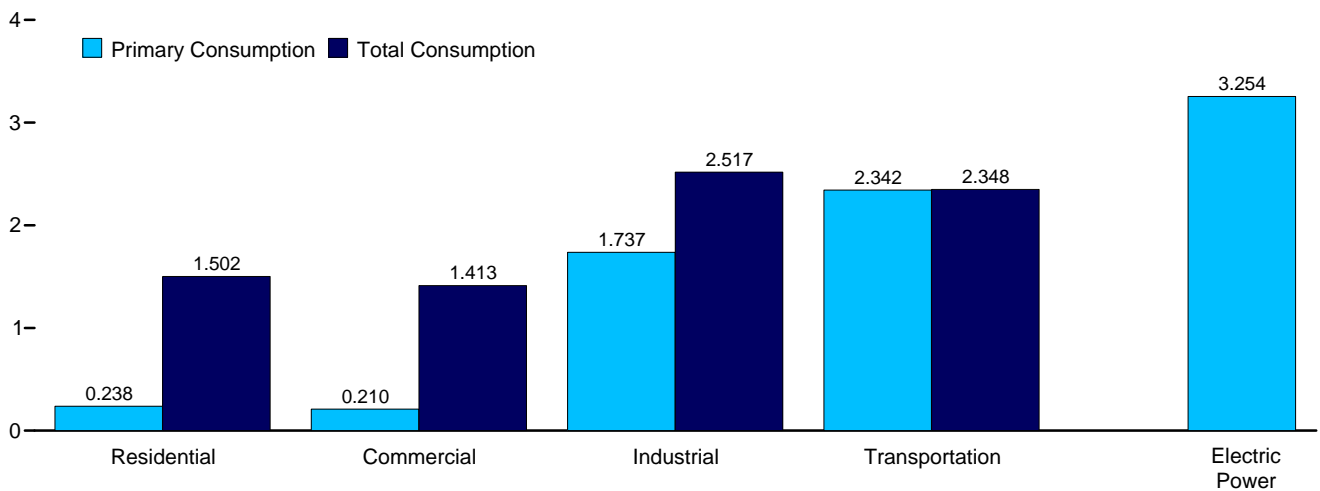
Total Consumption by End-Use Sector, 1949–2015



Total Consumption by End-Use Sector, Monthly



By Sector, September 2016



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

**Table 2.1 Energy Consumption by Sector**  
(Trillion Btu)

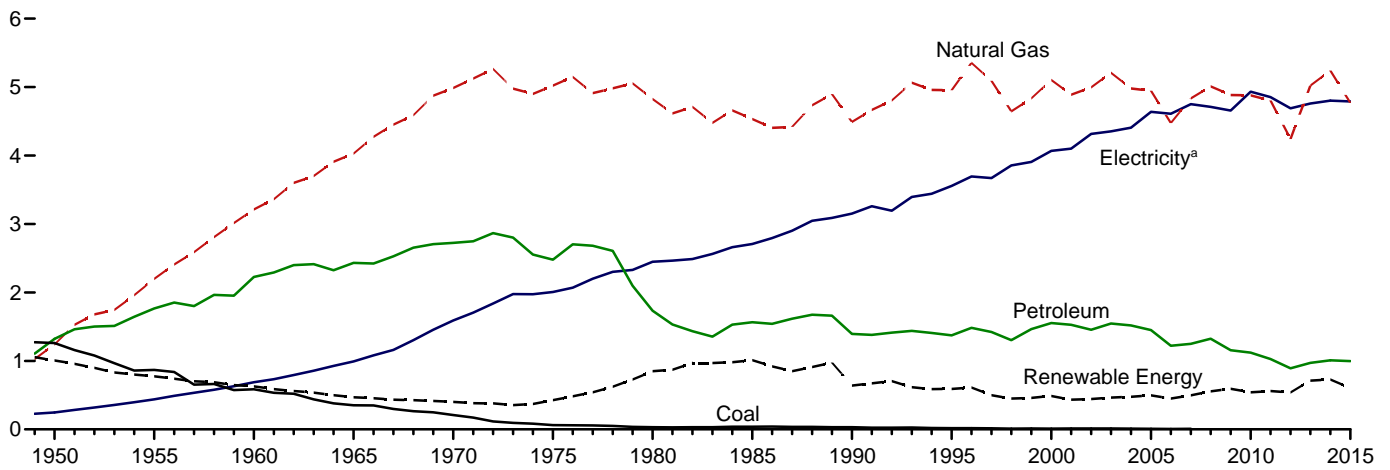
	End-Use Sectors								Electric Power Sector <sup>c,d</sup>	Balancing Item <sup>g</sup>	Primary Total <sup>f</sup>
	Residential		Commercial <sup>a</sup>		Industrial <sup>b</sup>		Transportation				
	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>	Primary <sup>e</sup>	Total <sup>f</sup>			
<b>1950 Total</b> .....	4,829	5,989	2,834	3,893	13,890	16,241	8,383	8,492	4,679	(s)	34,616
<b>1955 Total</b> .....	5,608	7,278	2,561	3,895	16,103	19,485	9,474	9,550	6,461	(s)	40,208
<b>1960 Total</b> .....	6,651	9,039	2,723	4,609	16,996	20,842	10,560	10,596	8,158	(s)	45,086
<b>1965 Total</b> .....	7,279	10,639	3,177	5,845	20,148	25,098	12,399	12,432	11,012	(s)	54,015
<b>1970 Total</b> .....	8,322	13,766	4,237	8,346	22,964	29,628	16,062	16,098	16,253	(s)	67,838
<b>1975 Total</b> .....	7,990	14,813	4,059	9,492	21,434	29,413	18,210	18,245	20,270	1	71,965
<b>1980 Total</b> .....	7,439	15,753	4,105	10,578	22,595	32,039	19,659	19,697	24,269	-1	78,067
<b>1985 Total</b> .....	7,148	16,041	3,732	11,451	19,443	28,816	20,041	20,088	26,032	-4	76,392
<b>1990 Total</b> .....	6,556	16,944	3,896	13,320	21,180	31,810	22,366	22,420	30,495	-9	84,484
<b>1995 Total</b> .....	6,934	18,517	4,100	14,690	22,718	33,970	23,796	23,851	33,479	3	91,031
<b>2000 Total</b> .....	7,156	20,421	4,278	17,175	22,823	34,662	26,495	26,555	38,062	2	98,817
<b>2001 Total</b> .....	6,864	20,038	4,085	17,137	21,793	32,719	26,219	26,282	37,215	-6	96,170
<b>2002 Total</b> .....	6,907	20,786	4,132	17,346	21,798	32,661	26,785	26,846	38,016	5	97,643
<b>2003 Total</b> .....	7,232	21,119	4,298	17,346	21,534	32,553	26,826	26,900	38,028	-1	97,917
<b>2004 Total</b> .....	6,987	21,081	4,232	17,655	22,411	33,516	27,764	27,843	38,701	-6	100,090
<b>2005 Total</b> .....	6,901	21,613	4,052	17,853	21,410	32,442	28,199	28,280	39,626	(s)	100,188
<b>2006 Total</b> .....	6,154	20,670	3,747	17,707	21,529	32,391	28,638	28,717	39,417	(s)	99,484
<b>2007 Total</b> .....	6,589	21,519	3,922	18,253	21,363	32,385	28,771	28,858	40,371	-1	101,015
<b>2008 Total</b> .....	6,889	21,668	4,100	18,402	20,528	31,334	27,404	27,486	39,969	1	98,891
<b>2009 Total</b> .....	6,633	21,077	4,055	17,887	18,756	28,466	26,605	26,687	38,069	(s)	94,118
<b>2010 Total</b> .....	6,540	21,795	4,023	18,058	20,278	30,526	26,978	27,059	39,619	7	97,444
<b>2011 Total</b> .....	6,392	21,300	4,062	17,979	20,456	30,843	26,632	26,712	39,293	8	96,842
<b>2012 Total</b> .....	5,672	19,858	3,725	17,422	20,742	30,915	26,144	26,219	38,131	2	94,416
<b>2013 Total</b> .....	6,704	21,067	4,163	17,932	R 21,263	R 31,409	R 26,671	R 26,750	38,357	-1	R 97,157
<b>2014 January</b> .....	1,238	2,774	672	1,866	1,947	2,787	2,144	2,151	3,578	4	9,583
February .....	1,038	2,321	587	1,629	1,723	2,476	1,986	1,993	3,085	3	8,421
March .....	881	2,064	513	1,620	1,781	2,615	2,213	2,220	3,130	(s)	8,519
April .....	491	1,422	314	1,348	1,744	2,556	2,220	2,227	2,785	-3	7,550
May .....	343	1,348	244	1,395	1,714	2,610	2,282	2,289	3,059	-1	7,641
June .....	257	1,496	204	1,446	1,675	2,575	2,249	2,255	3,387	2	7,775
July .....	244	1,666	198	1,499	1,765	2,682	2,370	2,376	3,647	4	8,228
August .....	240	1,639	199	1,493	1,768	2,693	2,373	2,380	3,626	4	8,209
September .....	266	1,448	217	1,391	1,761	2,597	2,206	2,212	3,198	1	7,648
October .....	366	1,341	275	1,400	1,827	2,673	2,340	2,346	2,951	-3	7,756
November .....	714	1,759	445	1,541	1,819	2,671	2,218	2,225	3,000	-3	8,194
December .....	903	2,145	518	1,629	1,887	2,711	2,306	2,312	3,183	-3	8,794
<b>Total</b> .....	<b>6,980</b>	<b>21,419</b>	<b>4,385</b>	<b>18,259</b>	<b>21,411</b>	<b>31,647</b>	<b>26,907</b>	<b>26,986</b>	<b>38,629</b>	<b>6</b>	<b>98,317</b>
<b>2015 January</b> .....	1,134	R 2,522	639	R 1,800	1,945	R 2,747	R 2,195	2,201	R 3,357	R 2	R 9,271
February .....	1,081	R 2,335	614	R 1,679	R 1,774	R 2,551	2,025	2,032	R 3,103	3	R 8,599
March .....	795	R 1,948	471	R 1,528	R 1,840	R 2,624	2,315	R 2,321	R 3,002	R (s)	R 8,422
April .....	445	R 1,338	296	R 1,324	1,743	R 2,540	R 2,253	2,259	R 2,723	-2	R 7,459
May .....	305	R 1,297	223	R 1,361	R 1,768	R 2,633	2,340	2,347	R 3,002	(s)	R 7,637
June .....	234	R 1,482	R 189	R 1,423	1,755	R 2,649	2,332	2,339	R 3,383	3	R 7,896
July .....	R 224	R 1,731	190	R 1,513	R 1,816	R 2,722	2,445	2,452	R 3,741	6	R 8,423
August .....	222	R 1,683	194	R 1,489	R 1,802	R 2,695	R 2,428	2,434	R 3,655	6	R 8,307
September .....	R 221	R 1,447	R 194	R 1,385	1,711	R 2,539	R 2,298	2,304	R 3,251	4	R 7,680
October .....	358	R 1,328	R 278	R 1,376	R 1,737	R 2,550	2,352	2,358	R 2,886	-1	R 7,612
November .....	R 572	R 1,511	R 372	R 1,424	R 1,718	R 2,514	R 2,219	2,225	R 2,792	-1	R 7,672
December .....	777	R 1,902	R 450	R 1,523	R 1,825	R 2,613	2,321	2,327	R 2,993	-1	R 8,365
<b>Total</b> .....	<b>R 6,368</b>	<b>R 20,521</b>	<b>R 4,109</b>	<b>R 17,825</b>	<b>R 21,435</b>	<b>R 31,379</b>	<b>R 27,523</b>	<b>R 27,600</b>	<b>R 37,890</b>	<b>R 19</b>	<b>R 97,344</b>
<b>2016 January</b> .....	1,092	R 2,438	622	R 1,753	R 1,896	R 2,677	2,199	2,206	R 3,265	3	R 9,077
February .....	885	R 2,027	R 524	R 1,538	R 1,793	R 2,521	2,133	2,139	R 2,890	(s)	R 8,225
March .....	619	R 1,611	390	R 1,432	R 1,804	R 2,555	2,376	2,382	R 2,792	-4	R 7,976
April .....	476	R 1,365	314	R 1,338	R 1,680	R 2,445	2,295	2,301	R 2,684	-2	R 7,447
May .....	336	R 1,315	248	R 1,372	R 1,689	R 2,504	2,386	2,392	R 2,924	-1	R 7,582
June .....	245	R 1,554	201	R 1,456	R 1,680	R 2,521	2,407	2,414	R 3,412	4	R 7,949
July .....	236	R 1,846	202	R 1,554	R 1,721	R 2,592	2,477	2,484	R 3,840	7	R 8,482
August .....	220	R 1,796	R 201	R 1,558	R 1,825	R 2,687	2,484	2,490	R 3,801	5	R 8,536
September .....	238	1,502	210	1,413	1,737	2,517	2,342	2,348	R 3,254	3	7,784
<b>9-Month Total</b> .....	<b>4,346</b>	<b>15,452</b>	<b>2,912</b>	<b>13,413</b>	<b>15,823</b>	<b>23,019</b>	<b>21,099</b>	<b>21,156</b>	<b>28,861</b>	<b>17</b>	<b>73,058</b>
<b>2015 9-Month Total</b> .....	<b>4,661</b>	<b>15,783</b>	<b>3,009</b>	<b>13,501</b>	<b>16,154</b>	<b>23,700</b>	<b>20,631</b>	<b>20,689</b>	<b>29,218</b>	<b>21</b>	<b>73,694</b>
<b>2014 9-Month Total</b> .....	<b>4,999</b>	<b>16,178</b>	<b>3,147</b>	<b>13,688</b>	<b>15,877</b>	<b>23,591</b>	<b>20,043</b>	<b>20,103</b>	<b>29,494</b>	<b>14</b>	<b>73,574</b>

<sup>a</sup> Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.  
<sup>b</sup> Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.  
<sup>c</sup> Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.  
<sup>d</sup> Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.  
<sup>e</sup> See "Primary Energy Consumption" in Glossary.  
<sup>f</sup> Total energy consumption in the end-use sectors consists of primary energy consumption, electricity retail sales, and electrical system energy losses. See Note 1, "Electrical System Energy Losses," at end of section.  
<sup>g</sup> A balancing item. The sum of primary consumption in the five energy-use sectors equals the sum of total consumption in the four end-use sectors. However, total energy consumption does not equal the sum of the sectoral components due

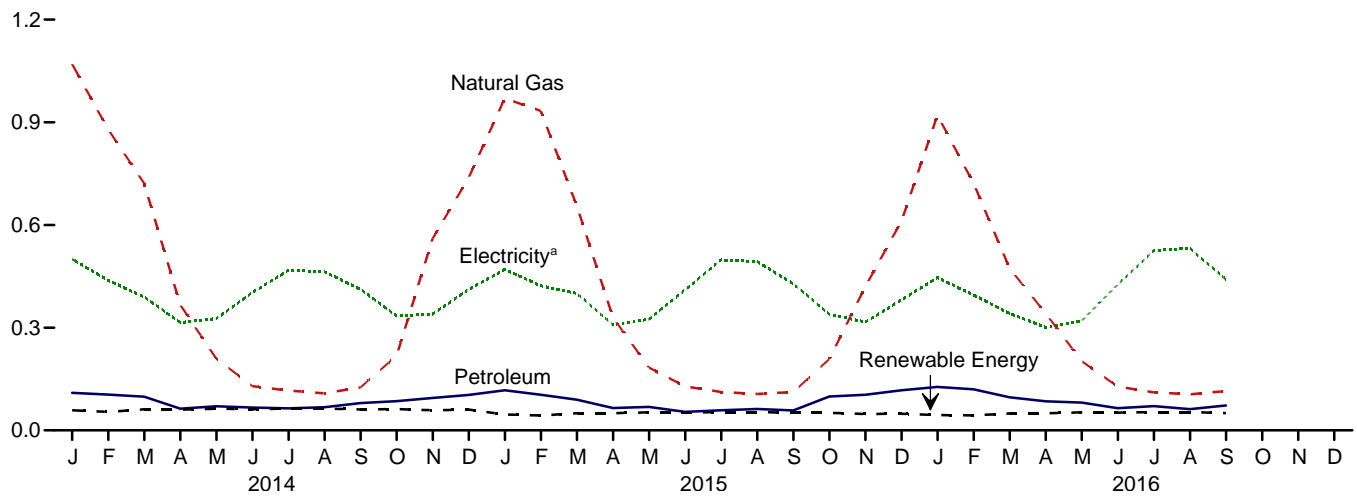
to the use of sector-specific conversion factors for coal and natural gas.  
<sup>h</sup> Primary energy consumption total. See Table 1.3.  
R=Revised. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.  
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.  
• See Note 2, "Energy Consumption Data and Surveys," at end of section.  
• Totals may not equal sum of components due to independent rounding.  
• Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#consumption> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.  
Sources: • End-Use Sectors: Tables 2.2-2.5. • Electric Power Sector: Table 2.6. • Balancing Item: Calculated as primary energy total consumption minus the sum of total energy consumption in the four end-use sectors.  
• Primary Total: Table 1.3.

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

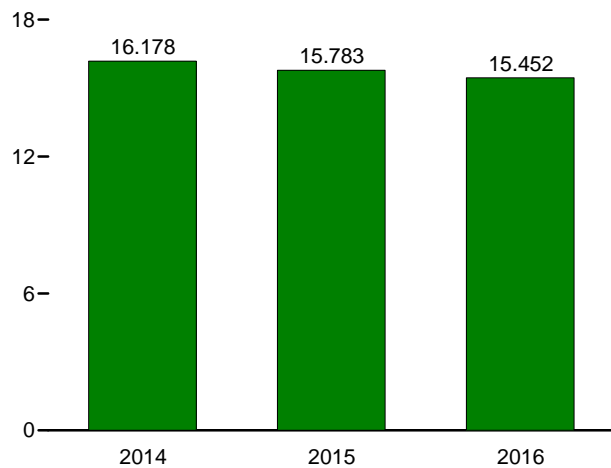
By Major Source, 1949–2015



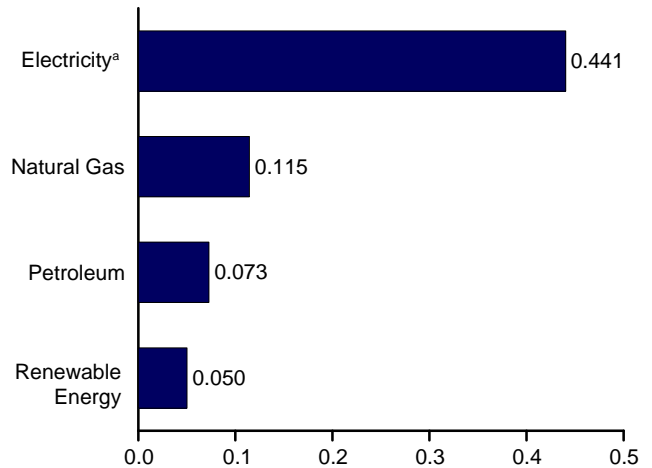
By Major Source, Monthly



Total, January–September



By Major Source, September 2016



<sup>a</sup> Electricity retail sales.  
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#consumption>.  
Source: Table 2.2.

**Table 2.2 Residential Sector Energy Consumption**  
(Trillion Btu)

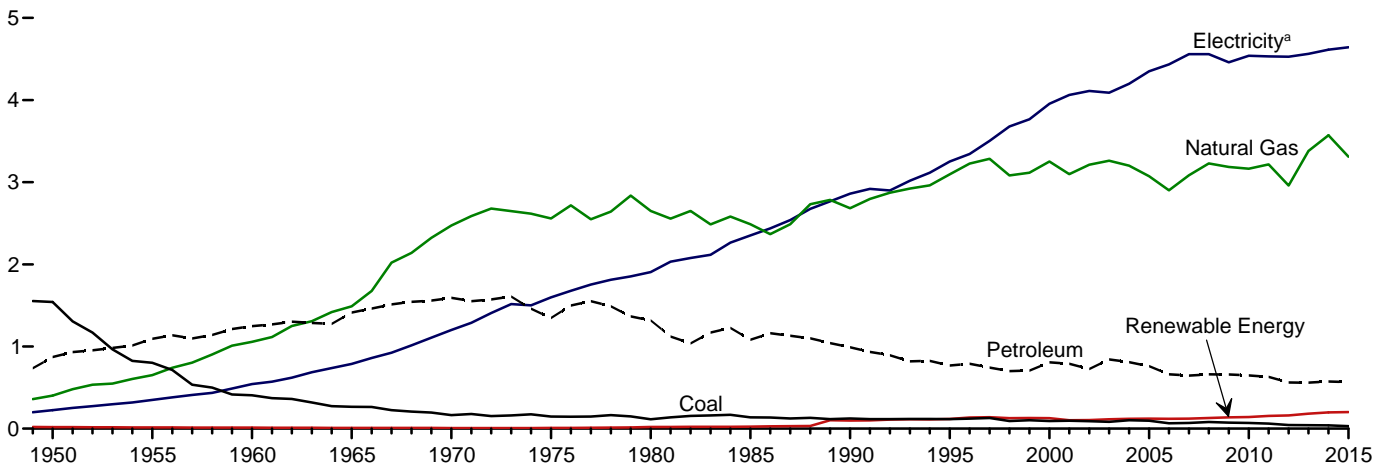
	Primary Consumption <sup>a</sup>									Electricity Retail Sales <sup>e</sup>	Electrical System Energy Losses <sup>f</sup>	Total
	Fossil Fuels				Renewable Energy <sup>b</sup>				Total Primary			
	Coal	Natural Gas <sup>c</sup>	Petroleum	Total	Geo-thermal	Solar <sup>d</sup>	Bio-mass	Total				
1950 Total	1,261	1,240	1,322	3,824	NA	NA	1,006	1,006	4,829	246	913	5,989
1955 Total	867	2,198	1,767	4,833	NA	NA	775	775	5,608	438	1,232	7,278
1960 Total	585	3,212	2,227	6,024	NA	NA	627	627	6,651	687	1,701	9,039
1965 Total	352	4,028	2,432	6,811	NA	NA	468	468	7,279	993	2,367	10,639
1970 Total	209	4,987	2,725	7,922	NA	NA	401	401	8,322	1,591	3,852	13,766
1975 Total	63	5,023	2,479	7,564	NA	NA	425	425	7,990	2,007	4,817	14,813
1980 Total	31	4,825	1,734	6,589	NA	NA	850	850	7,439	2,448	5,866	15,753
1985 Total	39	4,534	1,565	6,138	NA	NA	1,010	1,010	7,148	2,709	6,184	16,041
1990 Total	31	4,491	1,394	5,916	6	55	580	640	6,556	3,153	7,235	16,944
1995 Total	17	4,954	1,373	6,345	7	63	520	589	6,934	3,557	8,026	18,517
2000 Total	11	5,105	1,553	6,669	9	58	420	486	7,156	4,069	9,197	20,421
2001 Total	12	4,889	1,528	6,429	9	55	370	435	6,864	4,100	9,074	20,038
2002 Total	12	4,995	1,456	6,463	10	53	380	443	6,907	4,317	9,562	20,786
2003 Total	12	5,209	1,546	6,768	13	52	400	465	7,232	4,353	9,534	21,119
2004 Total	11	4,981	1,519	6,511	14	51	410	475	6,987	4,408	9,687	21,081
2005 Total	8	4,946	1,450	6,405	16	50	430	496	6,901	4,638	10,074	21,613
2006 Total	6	4,476	1,221	5,704	18	52	380	451	6,154	4,611	9,905	20,670
2007 Total	8	4,835	1,249	6,092	22	55	420	497	6,589	4,750	10,180	21,519
2008 Total	NA	5,010	1,324	6,334	26	58	470	555	6,889	4,711	10,068	21,668
2009 Total	NA	4,883	1,157	6,040	33	60	500	593	6,633	4,657	9,788	21,077
2010 Total	NA	4,878	1,121	5,999	37	65	440	541	6,540	4,933	10,321	21,795
2011 Total	NA	4,805	1,027	5,832	40	70	450	560	6,392	4,855	10,054	21,300
2012 Total	NA	4,242	892	5,134	40	79	420	538	5,672	4,690	9,496	19,858
2013 Total	NA	5,023	970	5,993	40	92	580	711	6,704	4,759	9,604	21,067
2014 January	NA	1,070	110	1,179	3	6	49	59	1,238	500	1,036	2,774
February	NA	880	105	984	3	6	44	54	1,038	438	844	2,321
March	NA	722	98	820	3	9	49	61	881	390	793	2,064
April	NA	367	64	430	3	9	48	60	491	315	617	1,422
May	NA	210	71	280	3	11	49	63	343	327	678	1,348
June	NA	129	67	196	3	11	48	62	257	403	836	1,496
July	NA	116	64	180	3	11	49	64	244	468	954	1,666
August	NA	108	68	176	3	11	49	64	240	463	936	1,639
September	NA	125	80	205	3	10	48	61	266	412	769	1,448
October	NA	218	85	304	3	10	49	62	366	335	641	1,341
November	NA	560	95	655	3	8	48	59	714	339	706	1,759
December	NA	739	104	843	3	8	49	60	903	412	830	2,145
Total	NA	5,242	1,009	6,251	40	109	580	729	6,980	4,801	9,638	21,419
2015 January	NA	970	117	1,088	3	7	37	47	1,134	R 470	R 917	R 2,522
February	NA	933	104	1,037	3	7	33	43	1,081	R 423	R 831	R 2,335
March	NA	655	90	744	3	10	37	50	795	R 400	R 754	R 1,948
April	NA	330	65	395	3	11	35	50	445	R 308	R 585	R 1,338
May	NA	183	69	252	3	13	37	53	305	R 325	R 668	R 1,297
June	NA	128	54	182	3	13	35	52	234	R 410	R 838	R 1,482
July	NA	112	59	171	3	14	37	54	R 224	R 498	R 1,008	R 1,731
August	NA	106	62	168	3	14	37	54	222	R 493	R 967	R 1,683
September	NA	112	58	170	3	12	35	51	R 221	R 428	R 798	R 1,447
October	NA	208	99	307	3	11	37	51	358	R 339	R 631	R 1,328
November	NA	420	104	524	3	9	35	48	R 572	R 316	R 623	R 1,511
December	NA	611	117	728	3	9	37	49	777	R 381	R 744	R 1,902
Total	NA	4,769	998	5,767	41	R 129	432	R 601	R 6,368	R 4,791	R 9,362	R 20,521
2016 January	NA	921	127	1,047	4	8	33	45	1,092	446	R 900	R 2,438
February	NA	722	120	R 841	3	10	31	44	885	R 395	R 746	R 2,027
March	NA	473	97	570	4	13	33	49	619	R 342	R 650	R 1,611
April	NA	342	85	426	4	R 14	32	50	476	R 301	R 588	R 1,365
May	NA	202	81	283	4	16	33	R 52	336	R 321	R 658	R 1,315
June	NA	128	65	193	4	17	32	52	245	R 426	R 883	R 1,554
July	NA	111	71	182	4	17	33	54	236	525	R 1,085	R 1,846
August	NA	105	62	167	4	17	33	53	220	532	R 1,044	R 1,796
September	NA	115	73	188	4	15	32	50	238	441	823	1,502
9-Month Total	NA	3,118	779	3,897	33	127	289	449	4,346	3,728	7,378	15,452
2015 9-Month Total	NA	3,530	678	4,208	30	100	323	453	4,661	3,755	7,367	15,783
2014 9-Month Total	NA	3,726	725	4,451	30	84	434	548	4,999	3,715	7,464	16,178

<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> Distributed (small-scale) solar photovoltaic (PV) electricity generation in the residential sector and distributed solar thermal energy in the residential, commercial, and industrial sectors. See Tables 10.2a and 10.5.  
<sup>e</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.  
<sup>f</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total

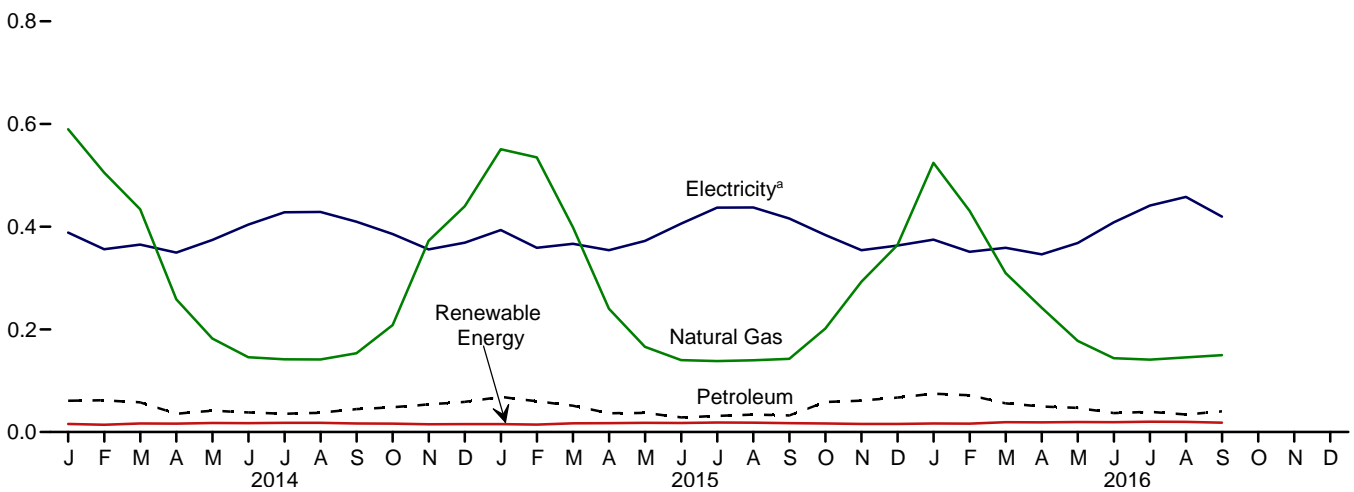
electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of section.  
R=Revised. NA=Not available.  
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#consumption> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.  
Sources: See end of section.

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

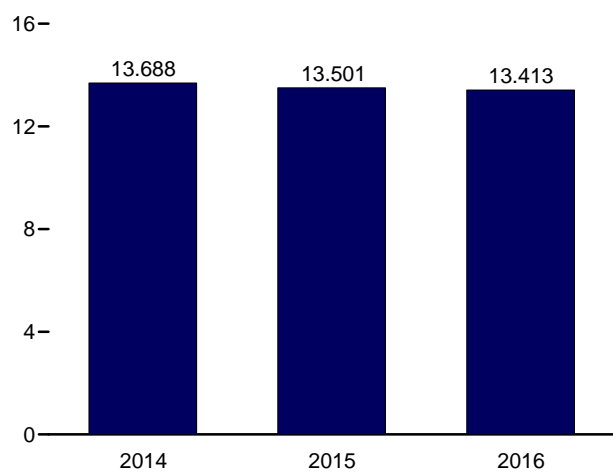
By Major Source, 1949–2015



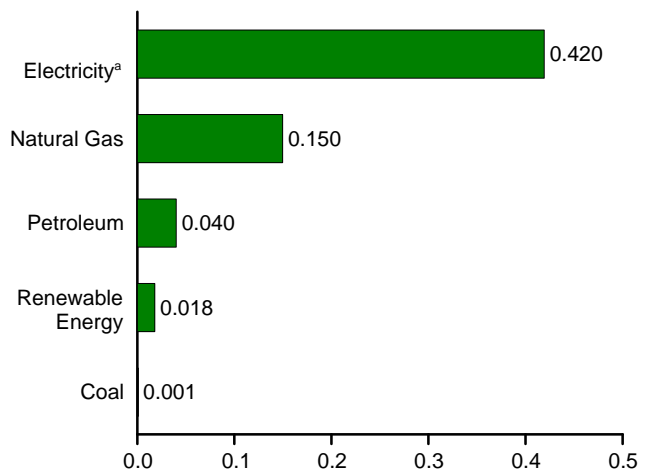
By Major Source, Monthly



Total, January–September



By Major Source, September 2016



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

**Table 2.3 Commercial Sector Energy Consumption**  
(Trillion Btu)

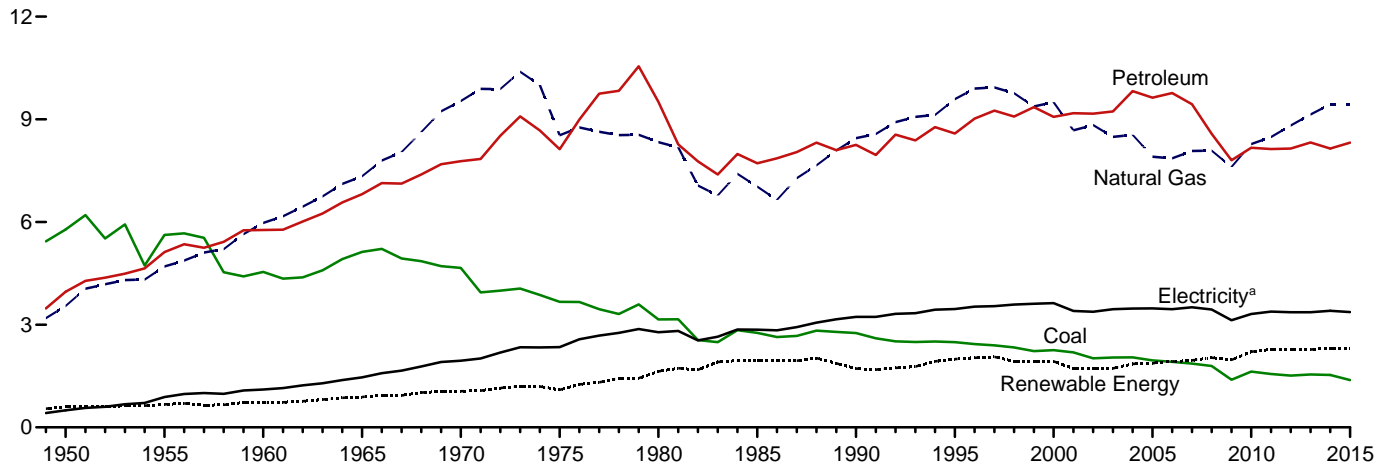
	Primary Consumption <sup>a</sup>											Electricity Retail Sales <sup>g</sup>	Electrical System Energy Losses <sup>h</sup>	Total
	Fossil Fuels				Renewable Energy <sup>b</sup>									
	Coal	Natural Gas <sup>c</sup>	Petroleum <sup>d</sup>	Total	Hydroelectric Power <sup>e</sup>	Geothermal	Solar <sup>f</sup>	Wind	Bio-mass	Total	Total Primary			
1950 Total	1,542	401	872	2,815	NA	NA	NA	NA	19	19	2,834	225	834	3,893
1955 Total	801	651	1,095	2,547	NA	NA	NA	NA	15	15	2,561	350	984	3,895
1960 Total	407	1,056	1,248	2,711	NA	NA	NA	NA	12	12	2,723	543	1,344	4,609
1965 Total	265	1,490	1,413	3,168	NA	NA	NA	NA	9	9	3,177	789	1,880	5,845
1970 Total	165	2,473	1,592	4,229	NA	NA	NA	NA	8	8	4,237	1,201	2,908	8,346
1975 Total	147	2,558	1,346	4,051	NA	NA	NA	NA	8	8	4,059	1,598	3,835	9,492
1980 Total	115	2,651	1,318	4,084	NA	NA	NA	NA	21	21	4,105	1,906	4,567	10,578
1985 Total	137	2,488	1,083	3,708	NA	NA	NA	NA	24	24	3,732	2,351	5,368	11,451
1990 Total	124	2,682	991	3,798	1	3	(s)	—	94	98	3,896	2,860	6,564	13,320
1995 Total	117	3,096	769	3,982	1	5	(s)	—	113	119	4,100	3,252	7,337	14,690
2000 Total	92	3,252	806	4,150	1	8	1	—	119	128	4,278	3,956	8,942	17,175
2001 Total	97	3,097	789	3,983	1	8	1	—	92	101	4,085	4,062	8,990	17,137
2002 Total	90	3,212	725	4,027	(s)	9	1	—	95	105	4,132	4,110	9,104	17,346
2003 Total	82	3,261	841	4,184	1	11	1	—	101	114	4,298	4,090	8,958	17,346
2004 Total	103	3,201	809	4,113	1	12	1	—	105	120	4,232	4,198	9,225	17,655
2005 Total	97	3,073	761	3,931	1	14	2	—	105	121	4,052	4,351	9,451	17,853
2006 Total	65	2,902	661	3,627	1	14	2	—	103	120	3,747	4,435	9,525	17,707
2007 Total	70	3,085	646	3,801	1	14	3	—	103	121	3,922	4,560	9,771	18,253
2008 Total	81	3,228	660	3,970	1	15	6	—	109	130	4,100	4,559	9,743	18,402
2009 Total	73	3,187	659	3,919	1	17	7	(s)	112	137	4,055	4,459	9,373	17,887
2010 Total	70	3,165	647	3,881	1	19	11	(s)	111	142	4,023	4,539	9,497	18,058
2011 Total	62	3,216	630	3,908	(s)	20	19	(s)	115	154	4,062	4,531	9,385	17,979
2012 Total	44	2,960	562	3,565	(s)	20	32	1	108	160	3,725	4,528	9,168	17,422
2013 Total	41	3,380	560	3,982	(s)	20	41	1	120	182	4,163	4,562	9,206	17,932
<b>2014</b>														
January	5	590	61	656	(s)	2	3	(s)	11	16	672	389	806	1,866
February	5	505	62	573	(s)	2	3	(s)	9	14	587	356	686	1,629
March	5	434	58	497	(s)	2	4	(s)	10	17	513	365	742	1,620
April	3	259	36	297	(s)	2	5	(s)	10	17	314	350	685	1,348
May	2	182	42	226	(s)	2	5	(s)	11	18	244	374	777	1,395
June	3	146	38	187	(s)	2	5	(s)	10	17	204	404	838	1,446
July	3	142	36	180	(s)	2	5	(s)	11	18	198	428	873	1,499
August	2	141	37	181	(s)	2	5	(s)	11	18	199	429	866	1,493
September	2	153	45	200	(s)	2	5	(s)	10	17	217	410	765	1,391
October	2	208	48	259	(s)	2	4	(s)	10	16	275	386	739	1,400
November	3	373	54	430	(s)	2	3	(s)	10	15	445	356	740	1,541
December	4	440	59	502	(s)	2	3	(s)	10	15	518	369	742	1,629
<b>Total</b>	<b>40</b>	<b>3,572</b>	<b>575</b>	<b>4,187</b>	<b>(s)</b>	<b>20</b>	<b>52</b>	<b>1</b>	<b>124</b>	<b>198</b>	<b>4,385</b>	<b>4,614</b>	<b>9,261</b>	<b>18,259</b>
<b>2015</b>														
January	4	551	68	623	(s)	2	3	(s)	R 10	16	639	R 393	R 768	R 1,800
February	4	535	60	599	(s)	2	4	(s)	R 9	15	614	R 359	R 706	R 1,679
March	4	399	51	454	(s)	2	5	(s)	R 10	R 17	471	R 367	R 691	R 1,528
April	2	240	37	279	(s)	2	R 5	(s)	10	17	296	R 354	R 673	R 1,324
May	2	166	37	205	(s)	2	6	(s)	10	18	223	372	R 766	R 1,361
June	2	140	29	171	(s)	2	6	(s)	10	R 18	R 189	406	R 828	R 1,423
July	2	138	31	172	(s)	2	6	(s)	R 11	R 19	190	R 437	R 885	R 1,513
August	2	140	34	176	(s)	2	6	(s)	R 11	18	194	R 437	R 858	R 1,489
September	2	143	32	177	(s)	2	5	(s)	10	17	R 194	R 416	R 775	R 1,385
October	2	201	58	262	(s)	2	5	(s)	10	17	R 278	R 384	R 714	R 1,376
November	2	293	61	R 356	(s)	2	4	(s)	R 10	16	R 372	R 354	R 697	R 1,424
December	3	364	67	434	(s)	2	R 3	(s)	11	16	R 450	363	R 710	R 1,523
<b>Total</b>	<b>31</b>	<b>3,309</b>	<b>567</b>	<b>R 3,907</b>	<b>(s)</b>	<b>20</b>	<b>R 57</b>	<b>1</b>	<b>R 124</b>	<b>R 202</b>	<b>R 4,109</b>	<b>R 4,643</b>	<b>R 9,073</b>	<b>R 17,825</b>
<b>2016</b>														
January	6	R 524	75	R 605	(s)	2	4	(s)	11	17	622	R 375	R 756	R 1,753
February	6	431	72	508	(s)	2	5	(s)	10	R 16	R 524	R 351	R 663	R 1,538
March	5	310	56	371	(s)	2	6	(s)	11	19	390	359	R 683	R 1,432
April	4	242	50	295	(s)	2	7	(s)	R 11	19	314	R 346	R 677	R 1,338
May	4	178	47	228	(s)	2	7	(s)	10	19	248	368	R 756	R 1,372
June	2	144	37	182	(s)	2	7	(s)	10	19	201	R 408	R 846	R 1,456
July	2	141	39	182	(s)	2	8	(s)	R 11	20	202	441	R 911	R 1,554
August	2	R 145	34	R 181	(s)	2	7	(s)	R 11	20	R 201	458	R 899	R 1,558
September	1	150	40	191	(s)	2	6	(s)	10	18	210	420	784	1,413
<b>9-Month Total</b>	<b>30</b>	<b>2,265</b>	<b>450</b>	<b>2,744</b>	<b>(s)</b>	<b>15</b>	<b>57</b>	<b>1</b>	<b>94</b>	<b>168</b>	<b>2,912</b>	<b>3,526</b>	<b>6,975</b>	<b>13,413</b>
<b>2015 9-Month Total</b>	<b>24</b>	<b>2,451</b>	<b>380</b>	<b>2,855</b>	<b>(s)</b>	<b>15</b>	<b>45</b>	<b>1</b>	<b>93</b>	<b>154</b>	<b>3,009</b>	<b>3,542</b>	<b>6,950</b>	<b>13,501</b>
<b>2014 9-Month Total</b>	<b>30</b>	<b>2,552</b>	<b>414</b>	<b>2,996</b>	<b>(s)</b>	<b>15</b>	<b>41</b>	<b>1</b>	<b>94</b>	<b>151</b>	<b>3,147</b>	<b>3,504</b>	<b>7,037</b>	<b>13,688</b>

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

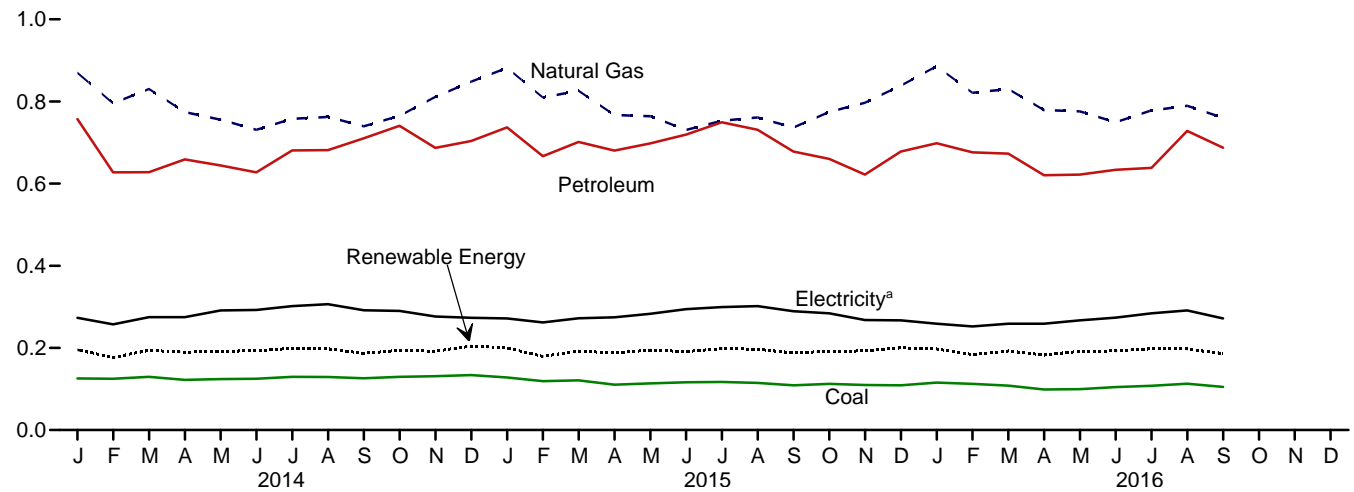
section.  
R=Revised. NA=Not available. —=No data reported. (s)=Less than 0.5 trillion Btu.  
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity retail sales beginning in 1979.  
• The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#consumption> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.  
Sources: See end of section.

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

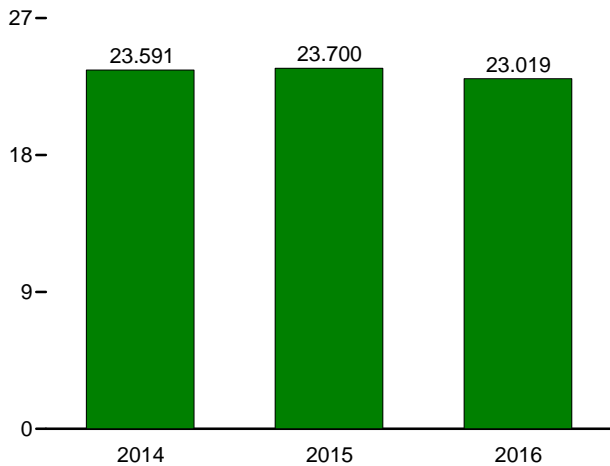
By Major Source, 1949–2015



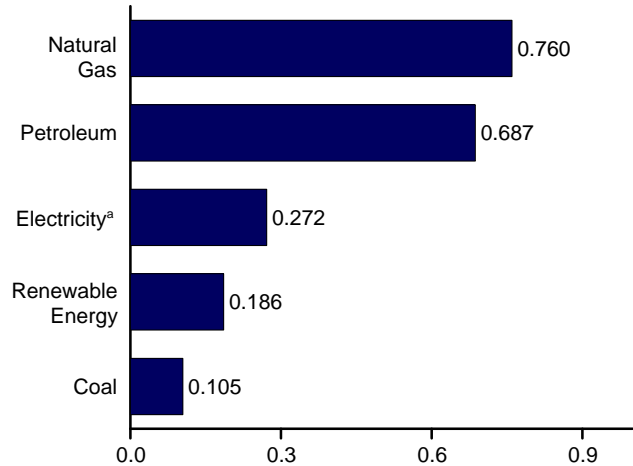
By Major Source, Monthly



Total, January–September



By Major Source, September 2016



<sup>a</sup> Electricity retail sales.  
Web Page: <http://www.eia.gov/totalenergy/data/monthly/#consumption>.  
Source: Table 2.4.



**Table 2.4 Industrial Sector Energy Consumption**  
(Trillion Btu)

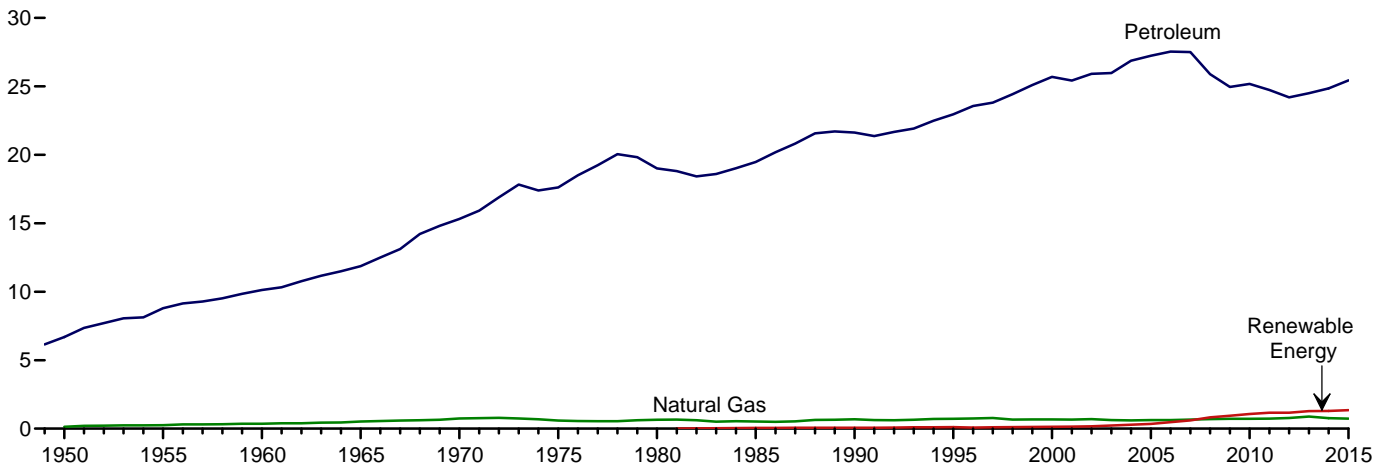
	Primary Consumption <sup>a</sup>											Electricity Retail Sales <sup>h</sup>	Electrical System Energy Losses <sup>i</sup>	Total <sup>e</sup>	
	Fossil Fuels				Renewable Energy <sup>b</sup>										
	Coal	Natural Gas <sup>c</sup>	Petroleum <sup>d</sup>	Total <sup>e</sup>	Hydroelectric Power <sup>f</sup>	Geo-thermal	Solar <sup>g</sup>	Wind	Bio-mass	Total	Total Primary				
<b>1950 Total</b> .....	5,781	3,546	3,960	13,288	69	NA	NA	NA	532	602	13,890	500	1,852	16,241	
<b>1955 Total</b> .....	5,620	4,701	5,123	15,434	38	NA	NA	NA	631	669	16,103	887	2,495	19,485	
<b>1960 Total</b> .....	4,543	5,973	5,766	16,277	39	NA	NA	NA	680	719	16,996	1,107	2,739	20,842	
<b>1965 Total</b> .....	5,127	7,339	6,813	19,260	33	NA	NA	NA	855	888	20,148	1,463	3,487	25,098	
<b>1970 Total</b> .....	4,656	9,536	7,776	21,911	34	NA	NA	NA	1,019	1,053	22,964	1,948	4,716	29,628	
<b>1975 Total</b> .....	3,667	8,532	8,127	20,339	32	NA	NA	NA	1,063	1,096	21,434	2,346	5,632	29,413	
<b>1980 Total</b> .....	3,155	8,333	9,509	20,962	33	NA	NA	NA	1,600	1,633	22,595	2,781	6,664	32,039	
<b>1985 Total</b> .....	2,760	7,032	7,714	17,492	33	NA	NA	NA	1,918	1,951	19,443	2,855	6,518	28,816	
<b>1990 Total</b> .....	2,756	8,451	8,251	19,463	31	2	(s)	-	1,684	1,717	21,180	3,226	7,404	31,810	
<b>1995 Total</b> .....	2,488	9,592	8,585	20,726	55	3	(s)	-	1,934	1,992	22,718	3,455	7,796	33,970	
<b>2000 Total</b> .....	2,256	9,500	9,073	20,895	42	4	(s)	-	1,881	1,928	22,823	3,631	8,208	34,662	
<b>2001 Total</b> .....	2,192	8,676	9,177	20,074	33	5	(s)	-	1,681	1,719	21,793	3,400	7,526	32,719	
<b>2002 Total</b> .....	2,019	8,832	9,167	20,078	39	5	(s)	-	1,676	1,720	21,798	3,379	7,484	32,661	
<b>2003 Total</b> .....	2,041	8,488	9,229	19,809	43	3	(s)	-	1,678	1,725	21,534	3,454	7,565	32,553	
<b>2004 Total</b> .....	2,047	8,550	9,825	20,560	33	4	(s)	-	1,815	1,852	22,411	3,473	7,631	33,516	
<b>2005 Total</b> .....	1,954	7,907	9,634	19,540	32	4	(s)	-	1,834	1,871	21,410	3,477	7,554	32,442	
<b>2006 Total</b> .....	1,914	7,861	9,767	19,603	29	4	(s)	-	1,892	1,926	21,529	3,451	7,411	32,391	
<b>2007 Total</b> .....	1,865	8,074	9,442	19,405	16	5	1	-	1,937	1,958	21,363	3,507	7,515	32,385	
<b>2008 Total</b> .....	1,793	8,083	8,576	18,493	17	5	1	-	2,012	2,035	20,528	3,444	7,362	31,334	
<b>2009 Total</b> .....	1,392	7,609	7,806	16,784	18	4	2	-	1,948	1,972	18,756	3,130	6,580	28,466	
<b>2010 Total</b> .....	1,631	8,278	8,167	18,070	16	4	3	-	2,185	2,208	20,278	3,314	6,934	30,526	
<b>2011 Total</b> .....	1,561	8,481	8,131	18,184	17	4	4	(s)	2,246	2,272	20,456	3,382	7,005	30,843	
<b>2012 Total</b> .....	1,513	8,819	8,147	18,482	22	4	7	(s)	2,226	2,259	20,742	3,363	6,810	30,915	
<b>2013 Total</b> .....	1,546	9,140	8,321	18,991	33	4	9	(s)	2,226	2,272	21,263	3,362	6,785	31,409	
<b>2014</b>															
January .....	126	870	757	1,752	1	(s)	1	(s)	193	195	1,947	273	567	2,787	
February .....	125	795	627	1,546	1	(s)	1	(s)	175	177	1,723	257	496	2,476	
March .....	129	830	628	1,587	1	(s)	1	(s)	192	194	1,781	275	559	2,615	
April .....	122	774	659	1,554	1	(s)	1	(s)	187	189	1,744	275	538	2,556	
May .....	124	755	644	1,522	1	(s)	1	(s)	190	192	1,714	291	605	2,610	
June .....	125	731	627	1,482	1	(s)	1	(s)	190	193	1,675	292	607	2,575	
July .....	129	758	681	1,566	1	(s)	1	(s)	196	199	1,765	302	616	2,682	
August .....	129	762	682	1,570	1	(s)	1	(s)	195	198	1,768	306	619	2,693	
September .....	126	740	711	1,574	1	(s)	1	(s)	185	187	1,761	292	545	2,597	
October .....	130	765	741	1,633	1	(s)	1	(s)	192	194	1,827	290	555	2,673	
November .....	131	811	687	1,627	1	(s)	1	(s)	190	192	1,819	277	575	2,671	
December .....	134	848	704	1,683	1	(s)	1	(s)	202	204	1,887	273	550	2,711	
<b>Total</b> .....	1,530	9,441	8,147	19,097	12	4	11	1	2,287	2,314	21,411	3,404	6,832	31,647	
<b>2015</b>															
January .....	128	882	737	1,745	1	(s)	1	(s)	198	200	1,945	272	530	2,747	
February .....	119	810	667	1,594	1	(s)	1	(s)	177	179	1,774	262	515	2,551	
March .....	121	826	702	1,648	1	(s)	1	(s)	189	192	1,840	272	513	2,624	
April .....	110	767	680	1,555	1	(s)	1	(s)	185	188	1,743	275	522	2,540	
May .....	114	764	698	1,573	1	(s)	1	(s)	192	195	1,768	283	582	2,633	
June .....	116	731	719	1,564	1	(s)	1	(s)	188	191	1,755	294	600	2,649	
July .....	117	753	749	1,618	1	(s)	1	(s)	195	198	1,816	299	606	2,722	
August .....	115	761	731	1,606	1	(s)	1	(s)	194	196	1,802	302	592	2,695	
September .....	109	736	678	1,524	1	(s)	1	(s)	185	188	1,711	289	539	2,539	
October .....	112	775	660	1,546	1	(s)	1	(s)	189	192	1,737	284	528	2,550	
November .....	110	797	622	1,526	1	(s)	1	(s)	190	193	1,718	268	527	2,514	
December .....	109	839	678	1,625	1	(s)	1	(s)	198	200	1,825	267	521	2,613	
<b>Total</b> .....	1,380	9,440	8,321	19,123	13	4	14	1	2,280	2,312	21,435	3,366	6,578	31,379	
<b>2016</b>															
January .....	115	886	698	1,698	1	(s)	1	(s)	195	197	1,896	259	522	2,677	
February .....	112	821	676	1,609	1	(s)	1	(s)	181	184	1,793	252	476	2,521	
March .....	108	830	673	1,611	1	(s)	1	(s)	190	193	1,804	259	493	2,555	
April .....	99	779	621	1,497	1	(s)	2	(s)	179	182	1,680	259	506	2,445	
May .....	100	776	622	1,497	1	(s)	2	(s)	189	192	1,689	267	548	2,504	
June .....	105	749	634	1,487	1	(s)	2	(s)	189	193	1,680	274	567	2,521	
July .....	108	778	638	1,523	1	(s)	2	(s)	195	198	1,721	284	587	2,592	
August .....	113	789	728	1,628	1	(s)	2	(s)	194	197	1,825	291	571	2,687	
September .....	105	760	687	1,551	1	(s)	2	(s)	184	186	1,737	272	508	2,517	
<b>9-Month Total</b> .....	964	7,169	5,978	14,102	10	3	14	1	1,695	1,721	15,823	2,417	4,779	23,019	
<b>2015 9-Month Total</b> .....	1,049	7,030	6,361	14,426	9	3	11	(s)	1,704	1,727	16,154	2,547	4,999	23,700	
<b>2014 9-Month Total</b> .....	1,136	7,016	6,015	14,153	9	3	9	(s)	1,703	1,724	15,877	2,564	5,150	23,591	

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 Solar photovoltaic (PV) electricity net generation in the industrial sector, both utility-scale and distributed (small-scale). See Tables 10.2b and 10.5.  
h Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.  
i Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total

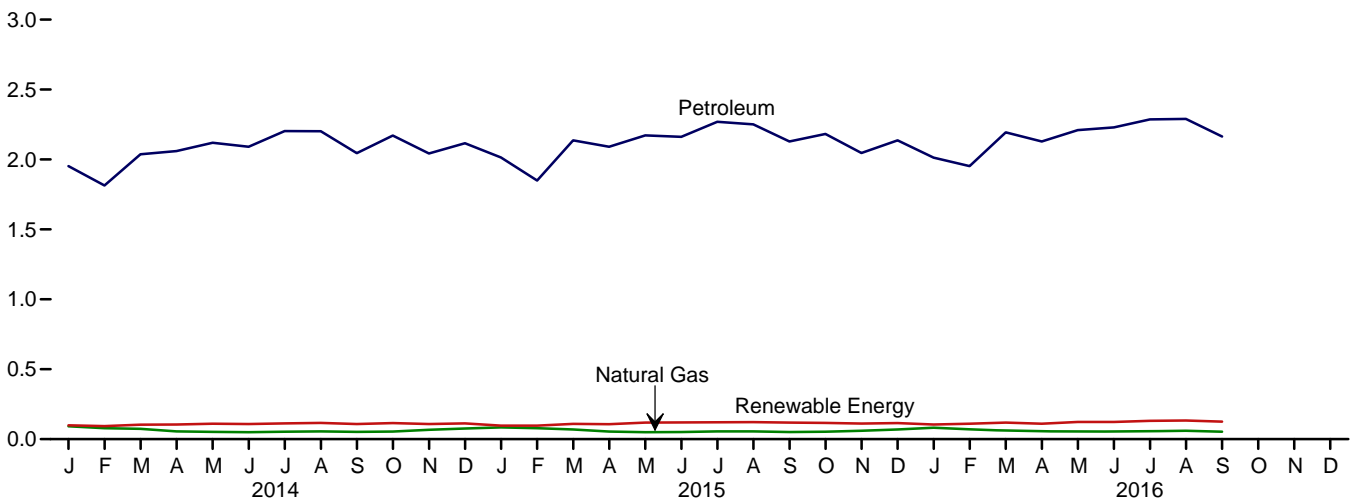
electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of section.  
R=Revised. NA=Not available. --=No data reported. (s)=Less than 0.5 trillion Btu.  
Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#consumption> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.  
Sources: See end of section.

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

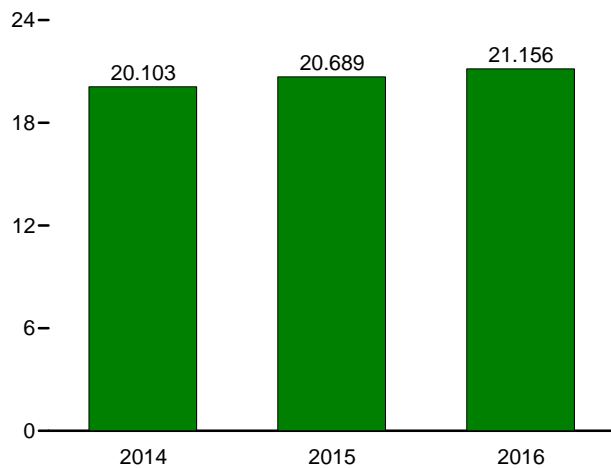
By Major Source, 1949–2015



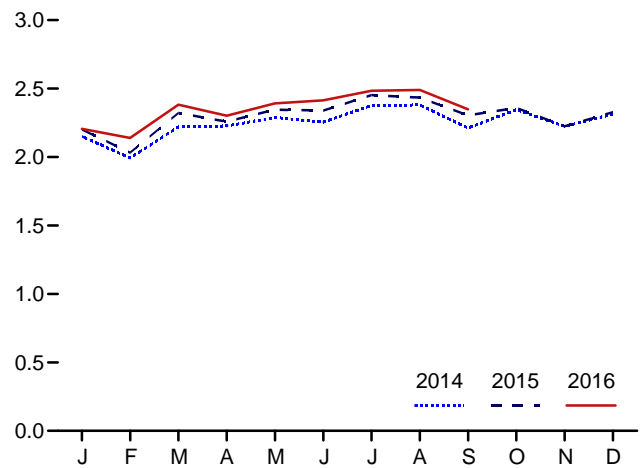
By Major Source, Monthly



Total, January–September



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)

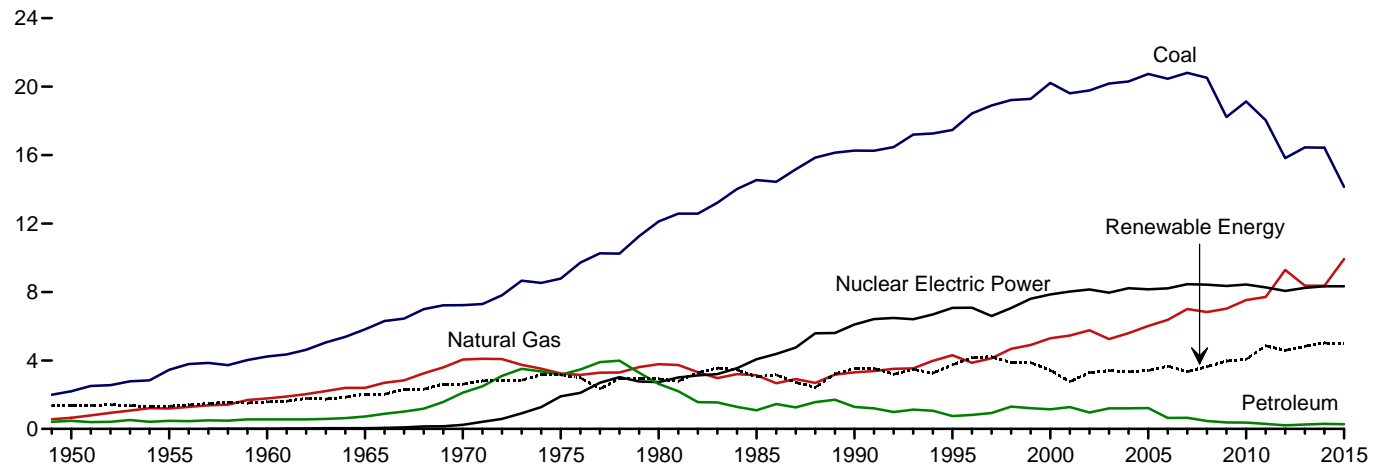
	Primary Consumption <sup>a</sup>					Total Primary	Electricity Retail Sales <sup>e</sup>	Electrical System Energy Losses <sup>f</sup>	Total
	Fossil Fuels				Renewable Energy <sup>b</sup>				
	Coal	Natural Gas <sup>c</sup>	Petroleum <sup>d</sup>	Total	Biomass				
1950 Total .....	1,564	130	6,690	8,383	NA	8,383	23	86	8,492
1955 Total .....	421	254	8,799	9,474	NA	9,474	20	56	9,550
1960 Total .....	75	359	10,125	10,560	NA	10,560	10	26	10,596
1965 Total .....	16	517	11,866	12,399	NA	12,399	10	24	12,432
1970 Total .....	7	745	15,310	16,062	NA	16,062	11	26	16,098
1975 Total .....	1	595	17,615	18,210	NA	18,210	10	24	18,245
1980 Total .....	(g)	650	19,009	19,659	NA	19,659	11	27	19,697
1985 Total .....	(g)	519	19,472	19,992	50	20,041	14	32	20,088
1990 Total .....	(g)	680	21,626	22,306	60	22,366	16	37	22,420
1995 Total .....	(g)	724	22,959	23,683	112	23,796	17	38	23,851
2000 Total .....	(g)	672	25,689	26,361	135	26,495	18	42	26,555
2001 Total .....	(g)	658	25,419	26,077	142	26,219	20	43	26,282
2002 Total .....	(g)	699	25,917	26,616	170	26,785	19	42	26,846
2003 Total .....	(g)	627	25,969	26,596	230	26,826	23	51	26,900
2004 Total .....	(g)	602	26,872	27,474	290	27,764	25	54	27,843
2005 Total .....	(g)	624	27,236	27,860	339	28,199	26	56	28,280
2006 Total .....	(g)	625	27,538	28,163	475	28,638	25	54	28,717
2007 Total .....	(g)	663	27,505	28,169	602	28,771	28	60	28,858
2008 Total .....	(g)	692	25,888	26,580	825	27,404	26	56	27,486
2009 Total .....	(g)	715	24,955	25,670	935	26,605	27	56	26,687
2010 Total .....	(g)	719	25,184	25,903	1,075	26,978	26	55	27,059
2011 Total .....	(g)	734	24,740	25,474	1,158	26,632	26	54	26,712
2012 Total .....	(g)	780	24,202	24,982	1,162	26,144	25	51	26,219
2013 Total .....	(g)	887	R 24,506	R 25,394	R 1,278	R 26,671	26	53	R 26,750
2014 January .....	(g)	92	1,953	2,045	99	2,144	2	5	2,151
February .....	(g)	79	1,814	1,893	93	1,986	2	5	1,993
March .....	(g)	73	2,037	2,110	103	2,213	2	4	2,220
April .....	(g)	56	2,060	2,116	104	2,220	2	4	2,227
May .....	(g)	52	2,120	2,172	110	2,282	2	5	2,289
June .....	(g)	50	2,091	2,141	108	2,249	2	4	2,255
July .....	(g)	54	2,204	2,257	113	2,370	2	4	2,376
August .....	(g)	55	2,202	2,257	117	2,373	2	4	2,380
September .....	(g)	52	2,046	2,097	109	2,206	2	4	2,212
October .....	(g)	54	2,171	2,225	115	2,340	2	4	2,346
November .....	(g)	67	2,043	2,110	108	2,218	2	5	2,225
December .....	(g)	77	2,116	2,193	113	2,306	2	4	2,312
Total .....	(g)	760	24,856	25,616	1,291	26,907	26	53	26,986
2015 January .....	(g)	84	R 2,015	2,098	96	R 2,195	2	R 4	2,201
February .....	(g)	78	1,849	1,928	97	2,025	2	5	2,032
March .....	(g)	69	2,136	2,206	109	2,315	2	4	R 2,321
April .....	(g)	54	R 2,092	2,145	107	R 2,253	2	4	2,259
May .....	(g)	50	2,172	2,222	118	2,340	2	4	2,347
June .....	(g)	51	2,162	2,213	119	2,332	2	4	2,339
July .....	(g)	56	R 2,270	2,325	120	2,445	2	R 4	2,452
August .....	(g)	55	R 2,251	2,306	122	R 2,428	2	4	2,434
September .....	(g)	51	R 2,129	2,180	118	R 2,298	2	4	2,304
October .....	(g)	53	2,182	2,236	116	2,352	2	4	2,358
November .....	(g)	60	2,046	2,107	112	R 2,219	2	4	2,225
December .....	(g)	69	2,137	2,206	115	2,321	2	4	2,327
Total .....	(g)	732	R 25,441	R 26,173	1,350	R 27,523	26	R 51	R 27,600
2016 January .....	(g)	82	2,013	2,095	104	2,199	2	5	2,206
February .....	(g)	R 70	1,952	2,023	110	2,133	2	4	2,139
March .....	(g)	63	2,194	2,257	119	2,376	2	4	2,382
April .....	(g)	56	2,128	2,185	111	2,295	2	4	2,301
May .....	(g)	53	2,210	2,263	123	2,386	2	4	2,392
June .....	(g)	54	2,230	2,284	123	2,407	2	R 4	2,414
July .....	(g)	R 59	R 2,287	2,346	131	2,477	2	5	2,484
August .....	(g)	60	R 2,291	R 2,350	133	2,484	2	4	2,490
September .....	(g)	53	2,164	2,217	125	2,342	2	4	2,348
9-Month Total .....	(g)	552	19,468	20,020	1,079	21,099	19	38	21,156
2015 9-Month Total .....	(g)	548	19,075	19,624	1,007	20,631	20	39	20,689
2014 9-Month Total .....	(g)	561	18,526	19,088	956	20,043	20	40	20,103

<sup>a</sup> See "Primary Energy Consumption" in Glossary.  
<sup>b</sup> See Table 10.2b for notes on series components.  
<sup>c</sup> Natural gas only; does not include supplemental gaseous fuels—see Note 3, "Supplemental Gaseous Fuels," at end of Section 4. Data are for natural gas consumed in the operation of pipelines (primarily in compressors) and small amounts consumed as vehicle fuel—see Table 4.3.  
<sup>d</sup> Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."  
<sup>e</sup> Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.  
<sup>f</sup> Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of

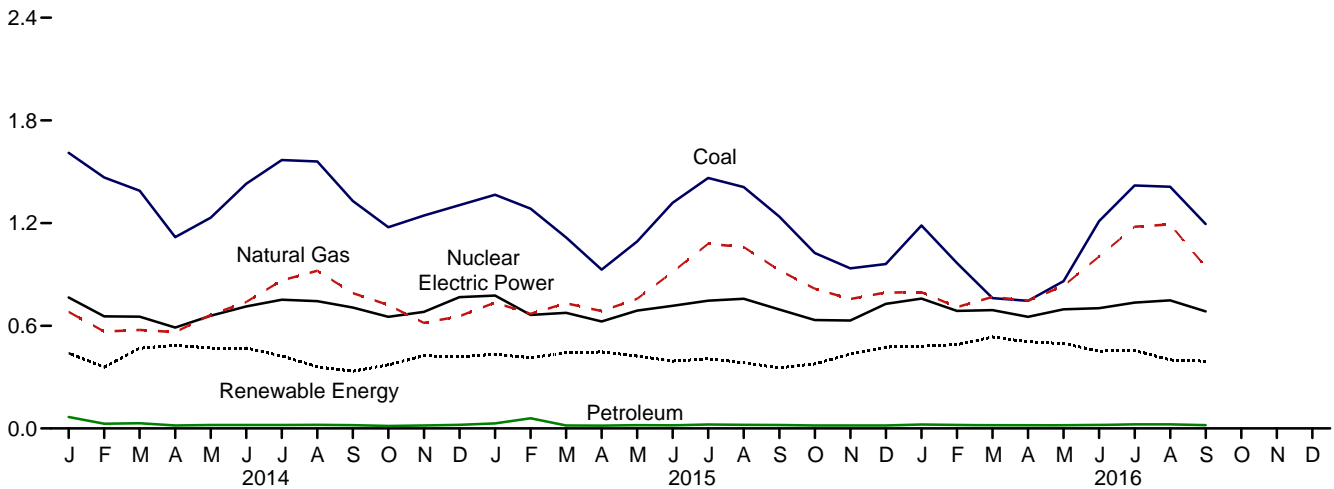
section.  
<sup>g</sup> Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.  
R=Revised, NA=Not available.  
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.  
Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#consumption> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.  
Sources: See end of section.

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

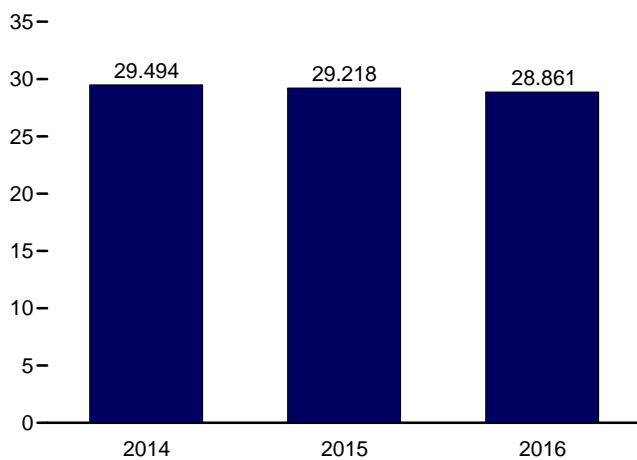
By Major Source, 1949–2015



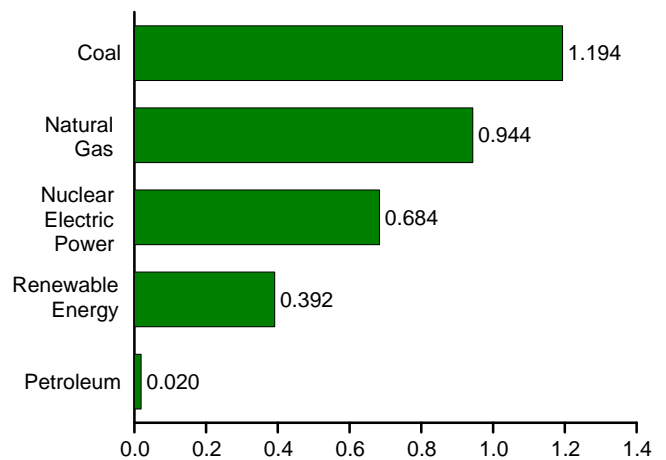
By Major Source, Monthly



Total, January–September



By Major Source, September 2016



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

**Table 2.6 Electric Power Sector Energy Consumption**  
(Trillion Btu)

	Primary Consumption <sup>a</sup>												Electricity Net Imports <sup>f</sup>	Total Primary
	Fossil Fuels				Nuclear Electric Power	Renewable Energy <sup>b</sup>								
	Coal	Natural Gas <sup>c</sup>	Petroleum	Total		Hydroelectric Power <sup>d</sup>	Geothermal	Solar <sup>e</sup>	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 <sup>g</sup>	16,261	3,309	1,289	20,859	6,104	3,014	161	4	29	317	3,524	8	30,495	
1995 Total	17,466	4,302	755	22,523	7,075	3,149	138	5	33	422	3,747	134	33,479	
2000 Total	20,220	5,293	1,144	26,658	7,862	2,768	144	5	57	453	3,427	115	38,062	
2001 Total	19,614	5,458	1,276	26,348	8,029	2,209	142	6	70	337	2,763	75	37,215	
2002 Total	19,783	5,767	961	26,511	8,145	2,650	147	6	105	380	3,288	72	38,016	
2003 Total	20,185	5,246	1,205	26,636	7,960	2,749	146	5	113	397	3,411	22	38,028	
2004 Total	20,305	5,595	1,201	27,101	8,223	2,655	148	6	142	388	3,339	39	38,701	
2005 Total	20,737	6,015	1,222	27,974	8,161	2,670	147	6	178	406	3,406	85	39,626	
2006 Total	20,462	6,375	637	27,474	8,215	2,839	145	5	264	412	3,665	63	39,417	
2007 Total	20,808	7,005	648	28,461	8,459	2,430	145	6	341	423	3,345	107	40,371	
2008 Total	20,513	6,829	459	27,801	8,426	2,494	146	9	546	435	3,630	112	39,969	
2009 Total	18,225	7,022	382	25,630	8,355	2,650	146	9	721	441	3,967	116	38,069	
2010 Total	19,133	7,528	370	27,031	8,434	2,521	148	12	923	459	4,064	89	39,619	
2011 Total	18,035	7,712	295	26,042	8,269	3,085	149	17	1,167	437	4,855	127	39,293	
2012 Total	15,821	9,287	214	25,322	8,062	2,606	148	40	1,339	453	4,586	161	38,131	
2013 Total	16,451	8,376	255	25,082	8,244	2,529	151	83	1,600	470	4,833	197	38,357	
2014 January	1,611	681	67	2,359	765	205	13	7	170	45	440	14	3,578	
February	1,467	566	27	2,060	655	164	11	8	133	42	359	11	3,085	
March	1,389	576	31	1,996	653	230	13	12	169	46	469	12	3,130	
April	1,118	563	17	1,698	590	241	12	14	177	41	485	12	2,785	
May	1,232	664	20	1,916	658	251	13	16	148	41	469	16	3,059	
June	1,430	739	20	2,189	713	244	12	18	150	45	470	15	3,387	
July	1,568	865	20	2,453	752	231	13	17	116	48	423	18	3,647	
August	1,560	921	21	2,502	744	187	13	17	97	46	361	20	3,626	
September	1,329	791	19	2,140	706	152	12	17	109	43	334	18	3,198	
October	1,176	722	15	1,912	653	162	13	16	138	42	371	15	2,951	
November	1,244	616	17	1,878	681	176	13	13	179	44	425	16	3,000	
December	1,305	656	21	1,982	767	211	13	10	140	45	419	15	3,183	
Total	16,427	8,362	295	25,085	8,338	2,454	151	165	1,726	530	5,026	182	38,629	
2015 January	R 1,366	R 735	R 29	R 2,130	777	R 224	R 13	R 11	R 141	R 45	R 433	18	R 3,357	
February	R 1,284	R 670	59	R 2,013	664	R 207	R 12	R 14	R 139	R 41	R 412	14	R 3,103	
March	R 1,116	R 732	18	R 1,865	675	R 225	R 13	R 19	R 143	R 43	R 443	19	R 3,002	
April	928	R 686	17	R 1,630	625	R 208	R 12	R 22	R 166	R 40	R 448	20	R 2,723	
May	R 1,092	R 758	19	R 1,869	R 688	R 186	R 13	R 23	R 160	R 41	R 423	20	R 3,002	
June	R 1,319	R 915	19	R 2,252	717	R 189	R 12	R 23	R 125	R 44	R 393	21	R 3,383	
July	R 1,464	R 1,079	23	R 2,566	747	R 195	R 13	R 24	R 127	R 48	R 407	21	R 3,741	
August	R 1,411	R 1,060	R 21	R 2,492	757	R 177	R 13	R 25	R 122	R 48	R 384	22	R 3,655	
September	R 1,238	R 924	20	R 2,182	695	R 149	R 11	R 20	R 130	R 43	R 354	20	R 3,251	
October	R 1,025	R 817	R 17	R 1,860	R 633	R 154	R 12	R 17	R 152	41	R 378	16	R 2,886	
November	R 936	R 756	18	R 1,710	630	R 179	R 12	R 16	R 183	R 44	R 434	18	R 2,792	
December	960	R 794	17	R 1,771	728	R 214	13	R 14	R 187	R 47	R 476	17	R 2,993	
Total	R 14,138	R 9,926	R 276	R 24,341	R 8,337	R 2,308	R 148	R 228	R 1,776	R 525	R 4,985	227	R 37,890	
2016 January	R 1,186	R 797	23	R 2,005	759	R 235	14	14	R 172	45	R 480	21	R 3,265	
February	R 967	R 709	21	R 1,697	R 686	R 224	13	R 22	R 188	43	R 490	17	R 2,890	
March	R 761	R 768	18	R 1,548	692	R 250	14	R 24	R 203	R 43	R 534	18	R 2,792	
April	R 746	R 746	R 18	R 1,510	652	R 236	12	R 27	R 191	R 40	R 506	15	R 2,684	
May	R 860	R 834	19	R 1,713	696	R 235	14	R 32	R 175	R 40	R 496	19	R 2,924	
June	R 1,211	R 1,004	20	R 2,235	703	R 212	13	R 32	R 152	42	R 452	23	R 3,412	
July	R 1,420	R 1,179	24	R 2,623	736	R 197	R 13	R 37	R 164	R 45	R 456	25	R 3,840	
August	R 1,412	R 1,192	24	R 2,629	748	R 180	R 13	R 36	R 126	R 46	R 401	24	R 3,801	
September	1,194	944	20	2,158	684	151	14	33	153	41	392	20	3,254	
9-Month Total	9,758	8,173	187	18,118	6,356	1,920	119	257	1,524	385	4,206	182	28,861	
2015 9-Month Total	11,217	7,558	224	18,999	6,345	1,760	111	180	1,253	393	3,697	177	29,218	
2014 9-Month Total	12,703	6,366	242	19,312	6,236	1,904	112	126	1,269	399	3,811	136	29,494	

<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> Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector. See Tables 10.2c and 10.5.  
<sup>f</sup> Net imports equal imports minus exports.  
<sup>g</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	42.4	1,141.5
2009	6.6	874.3	31.1	18.6	10.8	7.9	16.5	10.2	44.2	4.3	29.9	40.4	1,094.8
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	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
2015	6.2	735.1	30.1	16.9	9.0	6.6	16.2	8.4	44.0	6.0	30.7	37.8	947.0

<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.

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	129.4	.4	198.4	524.3	2.3	48.7	774.0	3.6	196.0	17.7	1,141.5
2009	20.3	131.7	.3	166.4	505.7	3.2	48.3	723.9	10.1	191.3	17.7	1,094.8
2010	20.0	130.1	.4	157.8	535.8	2.5	51.3	747.7	3.0	193.7	18.2	1,112.7
2011	18.5	124.7	.9	166.5	533.6	2.0	52.7	755.8	2.7	193.2	19.1	1,114.1
2012	15.9	116.2	.4	148.6	493.5	1.7	50.1	694.4	3.1	187.2	22.5	1,039.3
2013	14.3	122.5	.7	140.0	424.0	1.9	46.6	613.2	2.8	184.7	21.8	959.3
2014	13.5	125.6	.3	133.5	414.3	1.8	44.9	594.8	3.6	182.1	21.9	941.5
2015	12.6	123.3	.3	134.3	418.9	1.8	46.8	602.1	3.7	184.0	21.3	947.0

<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.

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."

#### Total Energy Consumption

1949 forward: Residential sector total energy consumption is the sum of the residential sector consumption values for



total primary energy, electricity retail sales, and electrical system energy losses.

## Table 2.3 Sources

### Coal

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

### Natural Gas

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

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

### Petroleum

1949–1992: Table 3.8a.

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

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

### Fossil Fuels Total

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

### Renewable Energy

1949 forward: Table 10.2a.

## Total Primary Energy Consumption

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

### Electricity Retail Sales

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

### Electrical System Energy Losses

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

## Total Energy Consumption

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

## Table 2.4 Sources

### Coal

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

### Natural Gas

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

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

### Petroleum

1949–1992: Table 3.8b.

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

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

#### **Coal Coke Net Imports**

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

#### **Fossil Fuels Total**

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

#### **Renewable Energy**

1949 forward: Table 10.2b.

#### **Total Primary Energy Consumption**

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

#### **Electricity Retail Sales**

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

#### **Electrical System Energy Losses**

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

#### **Total Energy Consumption**

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

## **Table 2.5 Sources**

#### **Coal**

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

#### **Natural Gas**

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

#### **Petroleum**

1949–1992: Table 3.8c.

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

2009 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."

### **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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