Independent Statistics and Analysis
U.S. Energy Information Administration

DOE/EIA-0035(2024/4)

April 2024

Monthly Energy Review

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Monthly Energy Review

The *Monthly Energy Review* (MER) is the U.S. Energy Information Administration's (EIA) primary report of recent and historical U.S. energy statistics. Included are statistics on total energy production, consumption, stocks, trade, and energy prices; overviews of petroleum, natural gas, coal, electricity, nuclear energy, and renewable energy; carbon dioxide emissions; and data unit conversions.
Release of the MER is in keeping with responsibilities given to EIA in Public Law 95–91 (Department of Energy Organization Act), which states, in part, in Section 205(a)(2):

"The Administrator shall be responsible for carrying out a central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze, and disseminate data and information…"

The MER is intended for use by members of Congress, federal and state agencies, energy analysts, and the general public. EIA welcomes suggestions from readers regarding MER content and other EIA publications.

Related monthly publications: Other monthly EIA reports are Petroleum Supply Monthly, Petroleum Marketing Monthly, Natural Gas Monthly, and Electric Power Monthly. For more information, contact EIA's Office of Communications via email at infoctr@eia.gov.

Important notes about the data

Data displayed: For tables beginning in 1949, annual data are usually displayed only in 5-year increments between 1950 and 2010 in the tables in Portable Document Format (PDF) files; however, all annual data are shown in the Excel files, comma-separated values (CSV) files, application programming interface (API) files, and in the data browser. Also, only two to three years of monthly data are displayed in the PDF files; however, for many series, monthly data beginning with January 1973 are available in the Excel files, CSV files, API files, and in the data browser.

Comprehensive changes: Each month, most MER tables and figures present data for a new month. These data are usually preliminary (and sometimes estimated or forecasted) and likely to be revised the following month. The first dissemination of most annual data is also preliminary. It is often based on monthly estimates and is likely to be revised later that year after final data are published from sources, according to source data revision policies and publication schedules. In addition, EIA may revise historical data when a major revision in a source publication is needed, when new data sources become available, or when estimation methodologies are improved. A record of current and historical changes to MER data is available at https://www.eia.gov/totalenergy/data/monthly/whatsnew.php.

Annual data from 1949: In 2013, EIA expanded the MER to incorporate annual data as far back as 1949 in those data tables that were previously published in both the Annual Energy Review and MER.

Electronic access

The MER is available on EIA's website in various formats at http://www.eia.gov/totalenergy/data/monthly.

- Full report and report tables: PDF files
- Table data (unrounded): Excel files, CSV files, API files, and data browser
- Graphs: PDF files and data browser

Note: PDF files display selected annual and monthly data; Excel files, CSV files, API files, and data browser display all available annual and monthly data, often with greater precision than the PDF files.

Timing of release: The MER is posted at http://www.eia.gov/totalenergy/data/monthly no later than the last work day of the month.

Released: April 25, 2024

DOE/EIA-0035(2024/4)

Monthly Energy Review

April 2024

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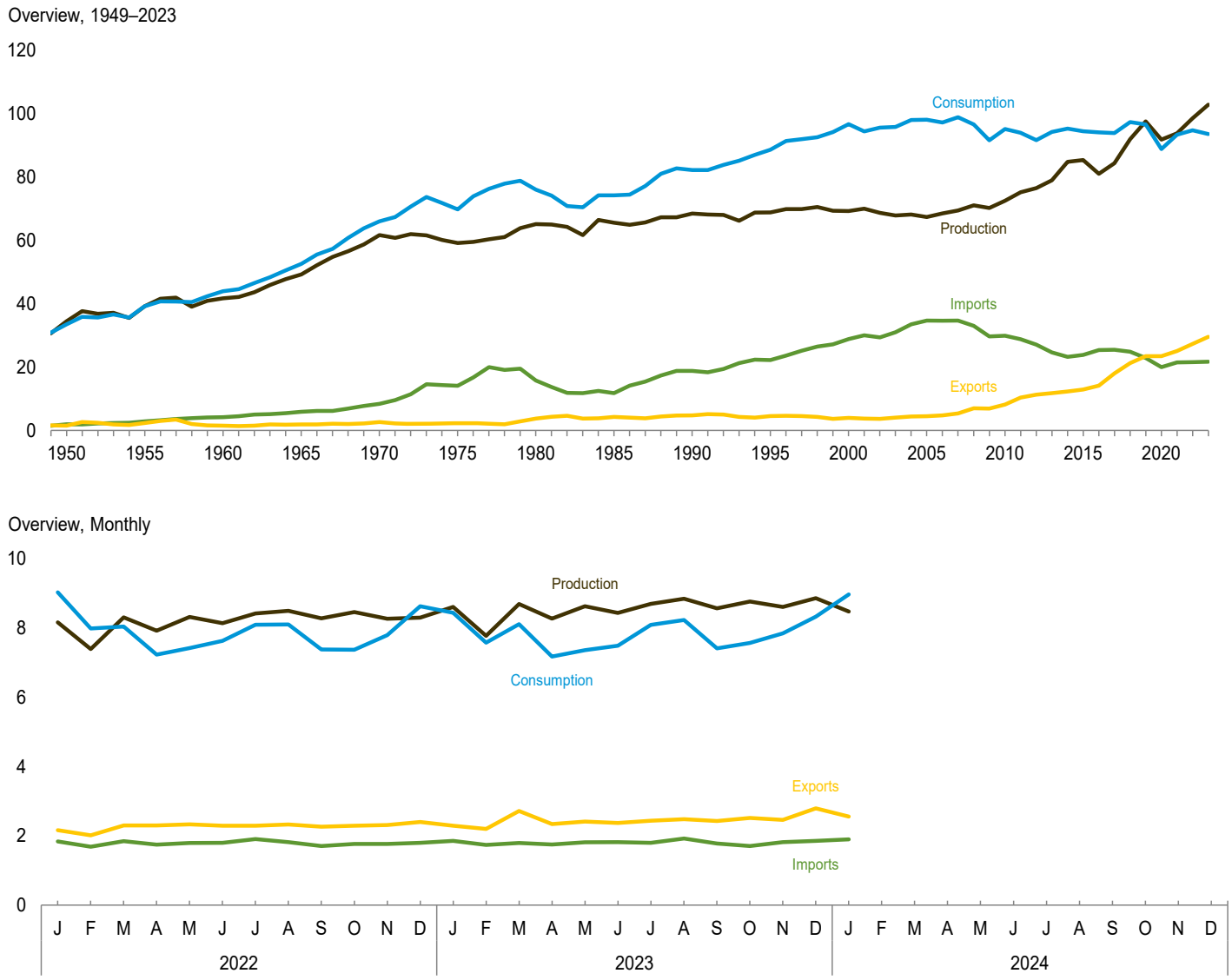
(Quadrillion Btu)



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

Table 1.1 Primary Energy Overview

(Quadrillion Btu)

	Production				Trade			Stock Change and Other[d]	Consumption			
	Fossil Fuels[a]	Nuclear Electric Power	Renewable Energy[b]	Total	Imports	Exports	Net Imports[c]		Fossil Fuels[e]	Nuclear Electric Power	Renewable Energy[b]	Total[f]
1950 Total	**32.553**	**0.000**	**1.907**	**34.460**	**1.913**	**1.465**	**0.448**	**-1.380**	**31.615**	**0.000**	**1.907**	**33.527**
1955 Total	**37.347**	**.000**	**1.821**	**39.168**	**2.790**	**2.286**	**.504**	**-.457**	**37.380**	**.000**	**1.821**	**39.215**
1960 Total	**39.855**	**.006**	**1.830**	**41.691**	**4.188**	**1.477**	**2.710**	**-.458**	**42.091**	**.006**	**1.830**	**43.942**
1965 Total	**47.205**	**.043**	**2.008**	**49.256**	**5.892**	**1.829**	**4.063**	**-.754**	**50.515**	**.043**	**2.008**	**52.565**
1970 Total	**59.152**	**.239**	**2.289**	**61.681**	**8.342**	**2.632**	**5.709**	**-1.354**	**63.501**	**.239**	**2.289**	**66.036**
1975 Total	**54.697**	**1.900**	**2.544**	**59.141**	**14.032**	**2.323**	**11.709**	**-1.062**	**65.323**	**1.900**	**2.544**	**69.788**
1980 Total	**58.979**	**2.739**	**3.445**	**65.164**	**15.796**	**3.695**	**12.101**	**-1.227**	**69.782**	**2.739**	**3.445**	**76.038**
1985 Total	**57.502**	**4.076**	**4.018**	**65.595**	**11.781**	**4.196**	**7.584**	**1.088**	**66.035**	**4.076**	**4.018**	**74.268**
1990 Total	**58.523**	**6.104**	**3.863**	**68.490**	**18.817**	**4.752**	**14.065**	**-.299**	**72.281**	**6.104**	**3.863**	**82.256**
1995 Total	**57.496**	**7.075**	**4.295**	**68.866**	**22.180**	**4.496**	**17.684**	**2.118**	**77.162**	**7.075**	**4.297**	**88.668**
2000 Total	**57.307**	**7.862**	**4.093**	**69.262**	**28.865**	**3.962**	**24.904**	**2.528**	**84.620**	**7.862**	**4.096**	**96.694**
2005 Total	**54.995**	**8.161**	**4.220**	**67.376**	**34.659**	**4.462**	**30.197**	**.527**	**85.623**	**8.161**	**4.233**	**98.101**
2010 Total	**58.159**	**8.434**	**5.943**	**72.536**	**29.866**	**8.176**	**21.690**	**.916**	**80.723**	**8.434**	**5.896**	**95.142**
2011 Total	**60.529**	**8.269**	**6.404**	**75.202**	**28.748**	**10.373**	**18.375**	**.389**	**79.263**	**8.269**	**6.308**	**93.966**
2012 Total	**62.298**	**8.062**	**6.187**	**76.547**	**27.068**	**11.267**	**15.801**	**-.670**	**77.304**	**8.062**	**6.150**	**91.677**
2013 Total	**64.180**	**8.244**	**6.561**	**78.985**	**24.623**	**11.788**	**12.835**	**2.433**	**79.224**	**8.244**	**6.587**	**94.253**
2014 Total	**69.619**	**8.338**	**6.836**	**84.792**	**23.241**	**12.270**	**10.971**	**-.428**	**80.017**	**8.338**	**6.799**	**95.335**
2015 Total	**70.186**	**8.337**	**6.846**	**85.369**	**23.794**	**12.902**	**10.892**	**-1.776**	**79.090**	**8.337**	**6.829**	**94.484**
2016 Total	**65.435**	**8.427**	**7.188**	**81.050**	**25.378**	**14.119**	**11.259**	**1.784**	**78.319**	**8.427**	**7.120**	**94.092**
2017 Total	**68.448**	**8.419**	**7.505**	**84.372**	**25.458**	**17.946**	**7.512**	**2.017**	**77.907**	**8.419**	**7.383**	**93.902**
2018 Total	**75.780**	**8.438**	**7.744**	**91.963**	**24.833**	**21.224**	**3.610**	**1.832**	**81.281**	**8.438**	**7.535**	**97.405**
2019 Total	**81.399**	**8.452**	**7.753**	**97.604**	**22.865**	**23.476**	**-.610**	**-.390**	**80.425**	**8.452**	**7.594**	**96.603**
2020 Total	**76.145**	**8.251**	**7.465**	**91.861**	**19.988**	**23.464**	**-3.476**	**.467**	**73.139**	**8.251**	**7.301**	**88.852**
2021 Total	**77.903**	**8.131**	**7.807**	**93.841**	**21.455**	**25.071**	**-3.616**	**3.138**	**77.454**	**8.131**	**7.644**	**93.363**
2022 January	6.736	.737	.698	8.171	1.841	2.170	-.329	1.194	7.622	.737	.666	9.036
February	6.098	.646	.652	7.396	1.687	2.016	-.330	.929	6.715	.646	.628	7.995
March	6.919	.660	.733	8.312	1.848	2.305	-.457	.190	6.663	.660	.715	8.044
April	6.637	.578	.712	7.928	1.747	2.303	-.555	-.137	5.949	.578	.700	7.235
May	6.917	.662	.743	8.322	1.795	2.335	-.540	-.355	6.031	.662	.725	7.427
June	6.730	.687	.726	8.143	1.805	2.297	-.492	-.014	6.225	.687	.710	7.637
July	6.995	.719	.713	8.428	1.913	2.294	-.381	.056	6.673	.719	.692	8.103
August	7.110	.720	.672	8.503	1.826	2.331	-.505	.113	6.706	.720	.664	8.111
September	6.987	.666	.633	8.286	1.705	2.266	-.561	-.339	6.089	.666	.618	7.386
October	7.188	.616	.659	8.463	1.771	2.294	-.523	-.560	6.108	.616	.647	7.380
November	6.935	.648	.686	8.269	1.767	2.314	-.547	.079	6.478	.648	.665	7.800
December	6.905	.722	.680	8.307	1.802	2.407	-.605	.934	7.240	.722	.661	8.636
Total	**82.157**	**8.061**	**8.307**	**98.526**	**21.507**	**27.332**	**-5.826**	**2.091**	**78.498**	**8.061**	**8.091**	**94.791**
2023 January	R7.175	.740	.702	R8.617	1.854	R2.297	R-.444	R.268	R7.005	.740	.685	R8.441
February	R6.482	.635	.660	R7.777	1.745	R2.202	R-.457	R.252	R6.286	.635	.644	R7.572
March	R7.302	.656	.735	R8.693	1.793	R2.723	R-.930	R.342	R6.721	.656	R.718	R8.104
April	R6.988	.592	.700	R8.280	1.754	R2.342	R-.588	R-.518	R5.888	.592	.687	R7.174
May	R7.252	.642	.741	R8.635	1.817	R2.419	R-.602	R-.680	R5.967	.642	.735	R7.354
June	R7.068	.679	.692	R8.439	1.826	R2.377	R-.551	R-.403	R6.119	.679	.682	R7.485
July	R7.263	.730	.712	R8.705	R1.806	R2.437	R-.632	R.013	R6.658	.730	.693	R8.086
August	R7.412	.729	.712	R8.853	1.927	R2.487	R-.560	R-.061	R6.794	.729	.703	R8.231
September	R7.218	.685	.669	R8.572	1.782	R2.433	R-.651	R-.511	R6.073	.685	.652	R7.410
October	R7.431	.642	.701	R8.773	1.711	R2.522	R-.811	R-.399	R6.230	.642	.690	R7.563
November	7.283	.650	R.685	8.618	1.826	R2.462	R-.636	R-.136	R6.528	.650	R.665	R7.845
December	R7.426	.720	R.719	R8.864	R1.859	R2.796	R-.938	R.400	R6.912	.720	.690	R8.326
Total	**R86.298**	**8.101**	**R8.426**	**R102.825**	**R21.699**	**R29.498**	**R-7.799**	**R-1.434**	**R77.181**	**8.101**	**8.245**	**R93.592**
2024 January	7.070	.722	.686	8.478	1.906	2.562	-.656	1.151	7.584	.722	.662	8.973

[a] Coal, natural gas (dry), crude oil, and natural gas plant liquids.

[b] See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.

[c] Net imports equal imports minus exports.

[d] Includes petroleum stock change and adjustments; natural gas net storage withdrawals and balancing item; coal stock change, losses, and unaccounted for; fuel ethanol stock change; and biodiesel stock change and balancing item.

[e] Coal, coal coke net imports, natural gas, and petroleum.

[f] Also includes electricity net imports.

R=Revised.

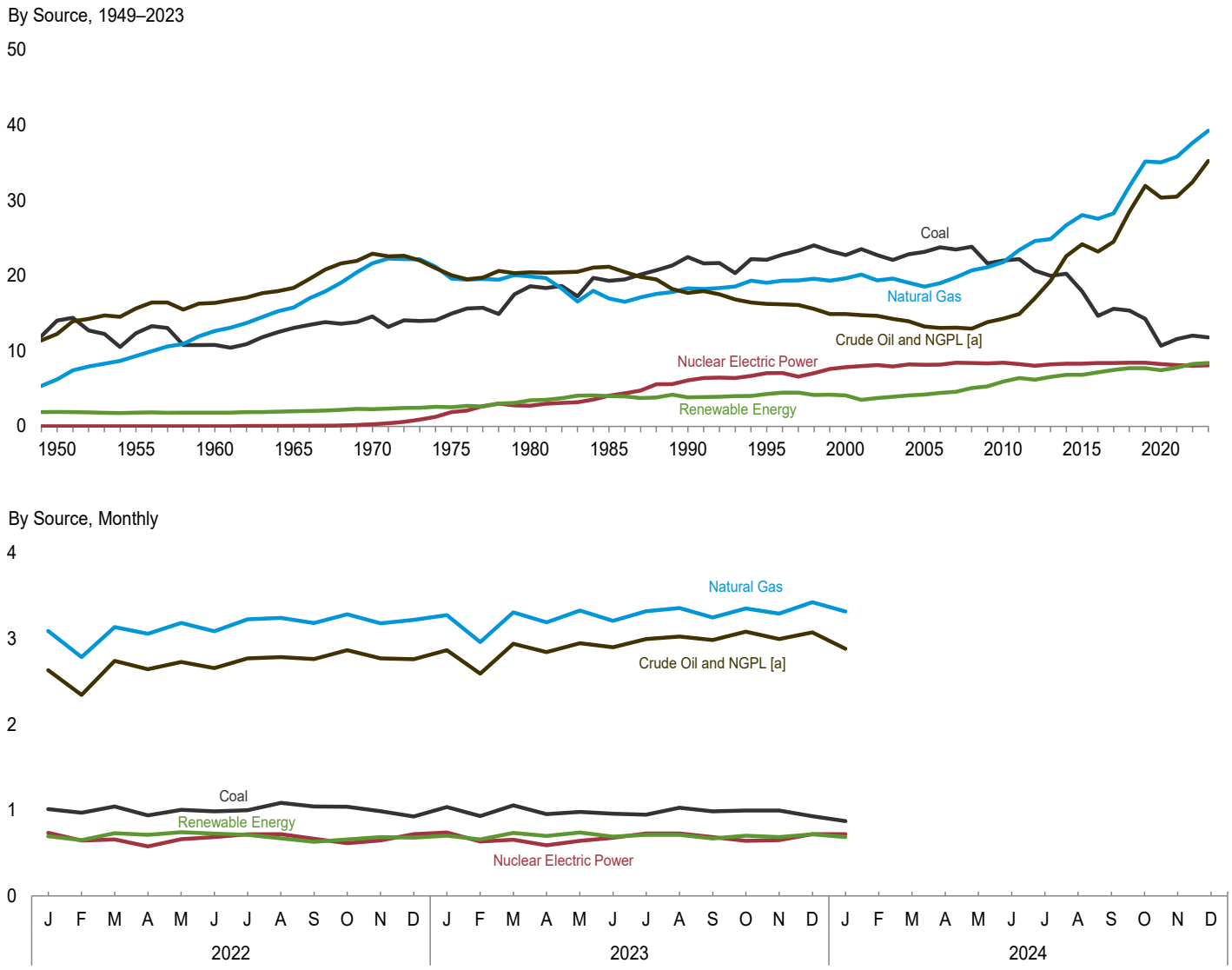
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

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

Figure 1.2 Primary Energy Production

(Quadrillion Btu)



[a] 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[a]						Total
	Coal[b]	Natural Gas (Dry)	Crude Oil[c]	NGPL[d]	Total		Hydroelectric Power[e]	Geothermal	Solar	Wind	Biomass	Total	
1950 Total	14.060	6.233	11.447	0.813	32.553	0.000	0.344	NA	NA	NA	1.562	1.907	34.460
1955 Total	12.370	9.345	14.410	1.223	37.347	.000	.397	NA	NA	NA	1.424	1.821	39.168
1960 Total	10.817	12.656	14.935	1.447	39.855	.006	.510	(s)	NA	NA	1.320	1.830	41.691
1965 Total	13.055	15.775	16.521	1.853	47.205	.043	.672	.001	NA	NA	1.335	2.008	49.256
1970 Total	14.607	21.666	20.401	2.478	59.152	.239	.856	.002	NA	NA	1.431	2.289	61.681
1975 Total	14.989	19.640	17.729	2.338	54.697	1.900	1.034	.011	NA	NA	1.499	2.544	59.141
1980 Total	18.598	19.908	18.249	2.225	58.979	2.739	.953	.017	NA	NA	2.475	3.445	65.164
1985 Total	19.325	16.980	18.992	2.204	57.502	4.076	.970	.032	(s)	(s)	3.016	4.018	65.595
1990 Total	22.488	18.326	15.571	2.138	58.523	6.104	.999	.063	.056	.010	2.735	3.863	68.490
1995 Total	22.130	19.082	13.887	2.398	57.496	7.075	1.061	.060	.064	.011	3.099	4.295	68.866
2000 Total	22.735	19.662	12.358	2.551	57.307	7.862	.940	.069	.059	.019	3.006	4.093	69.262
2005 Total	23.185	18.556	10.974	2.280	54.995	8.161	.922	.084	.052	.061	3.101	4.220	67.376
2010 Total	22.038	21.806	11.610	2.705	58.159	8.434	.888	.111	.068	.323	4.553	5.943	72.536
2011 Total	22.221	23.406	12.012	2.890	60.529	8.269	1.090	.116	.076	.410	4.712	6.404	75.202
2012 Total	20.677	24.610	13.849	3.162	62.298	8.062	.943	.117	.094	.480	4.554	6.187	76.547
2013 Total	20.001	24.859	15.868	3.451	64.180	8.244	.916	.117	.120	.573	4.835	6.561	78.985
2014 Total	20.286	26.718	18.610	4.005	69.619	8.338	.885	.118	.161	.620	5.052	6.836	84.792
2015 Total	17.946	28.067	19.697	4.476	70.186	8.337	.850	.118	.196	.651	5.031	6.846	85.369
2016 Total	14.667	27.576	18.527	4.665	65.435	8.427	.914	.117	.251	.774	5.132	7.188	81.050
2017 Total	15.625	28.289	19.547	4.987	68.448	8.419	1.025	.118	.329	.868	5.166	7.505	84.372
2018 Total	15.363	31.882	22.808	5.727	75.780	8.438	.998	.118	.384	.930	5.314	7.744	91.963
2019 Total	14.256	35.187	25.604	6.352	81.399	8.452	.982	.116	.430	1.010	5.215	7.753	97.604
2020 Total	10.703	35.062	23.575	6.805	76.145	8.251	.973	.118	.511	1.153	4.710	7.465	91.861
2021 Total	11.596	35.807	23.401	7.099	77.903	8.131	.858	.118	.627	1.290	4.914	7.807	93.841
2022 January	1.012	3.090	2.023	.610	6.736	.737	.083	.010	.042	.128	.435	.698	8.171
February	.970	2.784	1.792	.552	6.098	.646	.073	.009	.047	.128	.394	.652	7.396
March	1.044	3.135	2.080	.660	6.919	.660	.083	.010	.063	.147	.430	.733	8.312
April	.940	3.056	2.007	.635	6.637	.578	.068	.010	.071	.158	.406	.712	7.928
May	1.006	3.183	2.068	.661	6.917	.662	.080	.010	.079	.144	.430	.743	8.322
June	.986	3.087	2.012	.644	6.730	.687	.089	.010	.083	.115	.430	.726	8.143
July	1.000	3.224	2.085	.686	6.995	.719	.084	.010	.083	.101	.436	.713	8.428
August	1.087	3.240	2.112	.672	7.110	.720	.072	.010	.077	.084	.429	.672	8.503
September	1.044	3.181	2.102	.660	6.987	.666	.058	.010	.070	.093	.402	.633	8.286
October	1.040	3.284	2.181	.684	7.188	.616	.049	.010	.063	.112	.425	.659	8.463
November	.988	3.178	2.110	.658	6.935	.648	.061	.010	.047	.141	.427	.686	8.269
December	.926	3.219	2.139	.621	6.905	.722	.070	.010	.040	.132	.429	.680	8.307
Total	**12.043**	**37.662**	**24.710**	**7.742**	**82.157**	**8.061**	**.869**	**.118**	**.765**	**1.482**	**5.073**	**8.307**	**98.526**
2023 January	R 1.037	E 3.273	E 2.217	.648	R 7.175	.740	.076	.011	.044	.134	.437	.702	R 8.617
February	R .931	E 2.958	E 1.996	.597	R 6.482	.635	.064	.009	R .050	.144	.393	.660	R 7.777
March	R 1.057	E 3.304	E 2.252	.688	R 7.302	.656	.069	.010	.067	.152	.436	.735	R 8.693
April	R .955	E 3.190	E 2.159	.683	R 6.988	.592	.060	.010	.079	.147	.404	.700	R 8.280
May	R .981	E 3.326	E 2.239	.706	R 7.252	.642	.094	.010	.090	.109	.438	.741	R 8.635
June	R .959	E 3.209	E 2.201	.700	R 7.068	.679	.066	.010	.092	.094	.430	.692	R 8.439
July	R .949	E 3.320	E 2.280	.714	R 7.263	.730	.072	.010	.098	.095	.437	.712	R 8.705
August	R 1.030	E 3.357	E 2.300	.726	R 7.412	.729	.072	.010	.093	.097	.440	.712	R 8.853
September	R .986	E 3.247	E 2.261	.724	R 7.218	.685	.056	.010	.082	.096	.425	.669	R 8.572
October	R .998	E 3.351	E 2.331	.750	R 7.431	.642	.062	.010	.074	.124	.430	.701	R 8.773
November	R .997	RE 3.291	RE 2.269	.725	7.283	.650	.062	.010	.056	.126	.430	R .685	8.618
December	R .930	RE 3.424	RE 2.345	.728	R 7.426	.720	.066	.010	.051	.131	R .461	R .719	R 8.864
Total	**R 11.809**	**E 39.251**	**E 26.849**	**8.389**	**R 86.298**	**8.101**	**.818**	**.120**	**.878**	**1.451**	**R 5.160**	**R 8.426**	**R 102.825**
2024 January	.872	E 3.317	E 2.210	.671	7.070	.722	.072	.010	.053	.119	.432	.686	8.478

[a] Most data are estimates. See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.

[b] Beginning in 1989, includes waste coal supplied. Beginning in 2001, also includes a small amount of refuse recovery. See Table 6.1.

[c] Includes lease condensate.

[d] Natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[e] Conventional hydroelectric power.

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

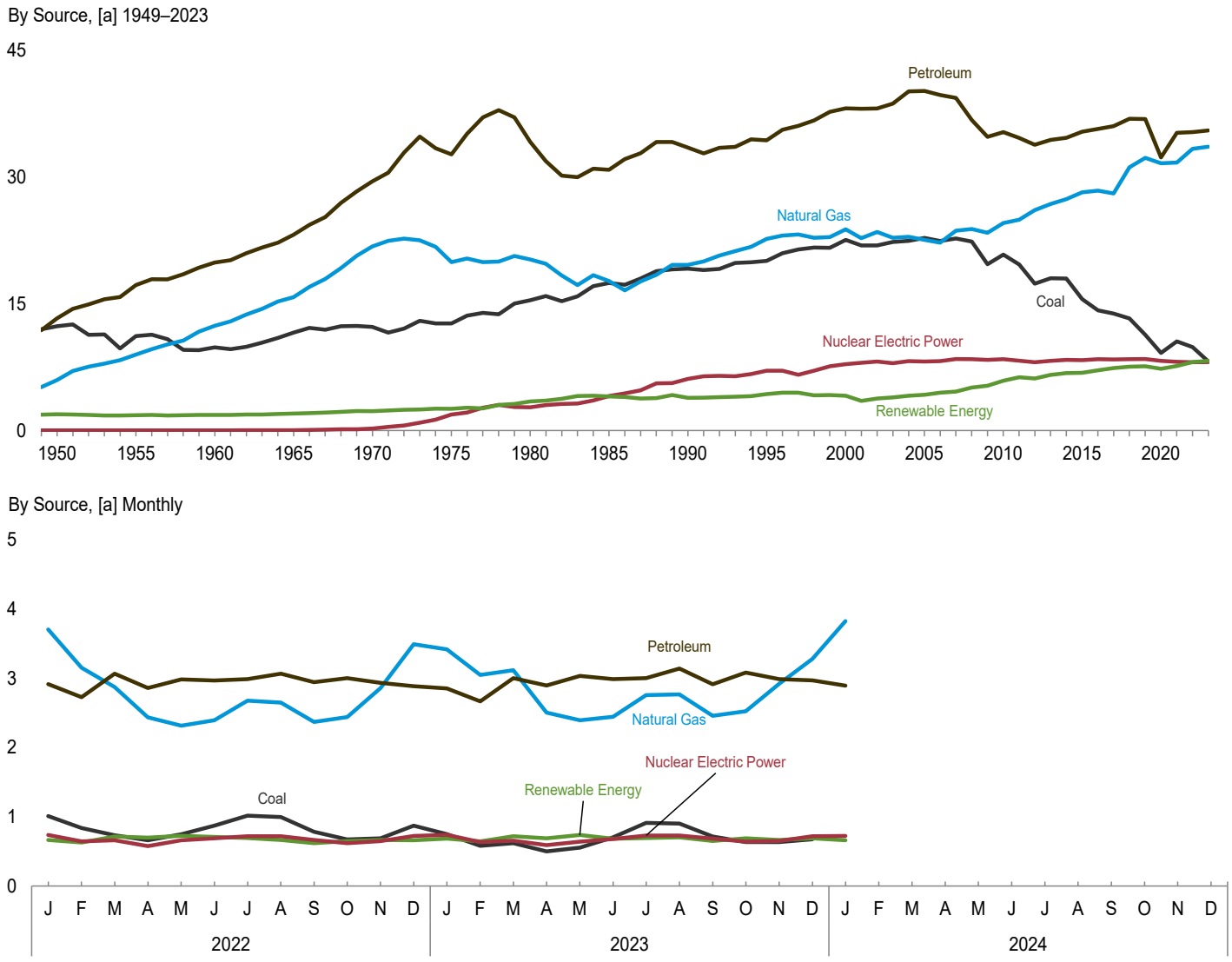
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 1.3 Primary Energy Consumption

(Quadrillion Btu)



[a] Small quantities of net imports of coal coke and electricity are not shown.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.3.

Table 1.3 Primary Energy Consumption by Source

(Quadrillion Btu)

	Fossil Fuels[a]					Renewable Energy[b]						
	Coal	Natural Gas[c]	Petroleum[d]	Total[e]	Nuclear Electric Power	Hydroelectric Power[f]	Geothermal	Solar	Wind	Biomass	Total	Total[g]
1950 Total	**12.347**	**5.968**	**13.298**	**31.615**	**0.000**	**0.344**	**NA**	**NA**	**NA**	**1.562**	**1.907**	**33.527**
1955 Total	**11.167**	**8.998**	**17.225**	**37.380**	**.000**	**.397**	**NA**	**NA**	**NA**	**1.424**	**1.821**	**39.215**
1960 Total	**9.838**	**12.385**	**19.874**	**42.091**	**.006**	**.510**	**(s)**	**NA**	**NA**	**1.320**	**1.830**	**43.942**
1965 Total	**11.581**	**15.769**	**23.184**	**50.515**	**.043**	**.672**	**.001**	**NA**	**NA**	**1.335**	**2.008**	**52.565**
1970 Total	**12.265**	**21.795**	**29.499**	**63.501**	**.239**	**.856**	**.002**	**NA**	**NA**	**1.431**	**2.289**	**66.036**
1975 Total	**12.663**	**19.948**	**32.699**	**65.323**	**1.900**	**1.034**	**.011**	**NA**	**NA**	**1.499**	**2.544**	**69.788**
1980 Total	**15.423**	**20.235**	**34.159**	**69.782**	**2.739**	**.953**	**.017**	**NA**	**NA**	**2.475**	**3.445**	**76.038**
1985 Total	**17.478**	**17.703**	**30.866**	**66.035**	**4.076**	**.970**	**.032**	**(s)**	**(s)**	**3.016**	**4.018**	**74.268**
1990 Total	**19.173**	**19.603**	**33.500**	**72.281**	**6.104**	**.999**	**.063**	**.056**	**.010**	**2.735**	**3.863**	**82.256**
1995 Total	**20.089**	**22.671**	**34.341**	**77.162**	**7.075**	**1.061**	**.060**	**.064**	**.011**	**3.101**	**4.297**	**88.668**
2000 Total	**22.580**	**23.824**	**38.152**	**84.620**	**7.862**	**.940**	**.069**	**.059**	**.019**	**3.008**	**4.096**	**96.694**
2005 Total	**22.797**	**22.565**	**40.217**	**85.623**	**8.161**	**.922**	**.084**	**.052**	**.061**	**3.114**	**4.233**	**98.101**
2010 Total	**20.834**	**24.575**	**35.321**	**80.723**	**8.434**	**.888**	**.111**	**.068**	**.323**	**4.506**	**5.896**	**95.142**
2011 Total	**19.658**	**24.955**	**34.639**	**79.263**	**8.269**	**1.090**	**.116**	**.076**	**.410**	**4.616**	**6.308**	**93.966**
2012 Total	**17.378**	**26.089**	**33.833**	**77.304**	**8.062**	**.943**	**.117**	**.094**	**.480**	**4.517**	**6.150**	**91.677**
2013 Total	**18.039**	**26.805**	**34.398**	**79.224**	**8.244**	**.916**	**.117**	**.120**	**.573**	**4.861**	**6.587**	**94.253**
2014 Total	**17.998**	**27.383**	**34.658**	**80.017**	**8.338**	**.885**	**.118**	**.161**	**.620**	**5.016**	**6.799**	**95.335**
2015 Total	**15.549**	**28.191**	**35.368**	**79.090**	**8.337**	**.850**	**.118**	**.196**	**.651**	**5.015**	**6.829**	**94.484**
2016 Total	**14.226**	**28.400**	**35.712**	**78.319**	**8.427**	**.914**	**.117**	**.251**	**.774**	**5.063**	**7.120**	**94.092**
2017 Total	**13.837**	**28.055**	**36.043**	**77.907**	**8.419**	**1.025**	**.118**	**.329**	**.868**	**5.045**	**7.383**	**93.902**
2018 Total	**13.252**	**31.163**	**36.892**	**81.281**	**8.438**	**.998**	**.118**	**.384**	**.930**	**5.105**	**7.535**	**97.405**
2019 Total	**11.316**	**32.264**	**36.866**	**80.425**	**8.452**	**.982**	**.116**	**.430**	**1.010**	**5.056**	**7.594**	**96.603**
2020 Total	**9.181**	**31.640**	**32.331**	**73.139**	**8.251**	**.973**	**.118**	**.511**	**1.153**	**4.545**	**7.301**	**88.852**
2021 Total	**10.549**	**31.711**	**35.243**	**77.454**	**8.131**	**.858**	**.118**	**.627**	**1.290**	**4.751**	**7.644**	**93.363**
2022 January	1.008	3.704	2.915	7.622	.737	.083	.010	.042	.128	.404	.666	9.036
February	.838	3.153	2.726	6.715	.646	.073	.009	.047	.128	.370	.628	7.995
March	.733	2.872	3.063	6.663	.660	.083	.010	.063	.147	.412	.715	8.044
April	.663	2.434	2.858	5.949	.578	.068	.010	.071	.158	.393	.700	7.235
May	.745	2.313	2.982	6.031	.662	.080	.010	.079	.144	.412	.725	7.427
June	.870	2.393	2.967	6.225	.687	.089	.010	.083	.115	.414	.710	7.637
July	1.018	2.674	2.986	6.673	.719	.084	.010	.083	.101	.415	.692	8.103
August	.997	2.650	3.064	6.706	.720	.072	.010	.077	.084	.421	.664	8.111
September	.783	2.368	2.943	6.089	.666	.058	.010	.070	.093	.387	.618	7.386
October	.673	2.439	2.999	6.108	.616	.049	.010	.063	.112	.413	.647	7.380
November	.690	2.859	2.931	6.478	.648	.061	.010	.047	.141	.407	.665	7.800
December	.871	3.490	2.884	7.240	.722	.070	.010	.040	.132	.409	.661	8.636
Total	**9.888**	**33.347**	**35.319**	**78.498**	**8.061**	**.869**	**.118**	**.765**	**1.482**	**4.857**	**8.091**	**94.791**
2023 January	.749	3.417	R 2.842	R 7.005	.740	.076	.011	.044	.134	.420	.685	R 8.441
February	R .582	3.047	R 2.658	R 6.286	.635	.064	.009	R .050	.144	.376	.644	R 7.572
March	R .618	3.114	R 2.991	R 6.721	.656	.069	.010	.067	.152	.420	R .718	R 8.104
April	.499	2.503	R 2.888	R 5.888	.592	.060	.010	.079	.147	.391	.687	R 7.174
May	.552	2.392	R 3.026	R 5.967	.642	.094	.010	.090	.109	.432	.735	R 7.354
June	.703	2.441	R 2.978	R 6.119	.679	.066	.010	.092	.094	.420	.682	R 7.485
July	R .913	2.755	R 2.993	R 6.658	.730	.072	.010	.098	.095	.418	.693	R 8.086
August	.902	2.765	R 3.130	R 6.794	.729	.072	.010	.093	.097	.431	.703	R 8.231
September	.716	2.455	R 2.906	R 6.073	.685	.056	.010	.082	.096	.408	.652	R 7.410
October	.635	2.523	R 3.074	R 6.230	.642	.062	.010	.074	.124	.420	.690	R 7.563
November	.633	2.920	R 2.978	R 6.528	.650	.062	.010	.056	.126	.410	R .665	R 7.845
December	.676	3.277	R 2.963	R 6.912	.720	.066	.010	.051	.131	.432	.690	R 8.326
Total	**R 8.178**	**33.608**	**R 35.427**	**R 77.181**	**8.101**	**.818**	**.120**	**.878**	**1.451**	**4.978**	**8.245**	**R 93.592**
2024 January	.876	3.823	2.886	7.584	.722	.072	.010	.053	.119	.407	.662	8.973

[a] Includes non-combustion use of fossil fuels.

[b] Most data are estimates. See Tables 10.1–10.2c for notes on series components and estimation; and see Note, "Renewable Energy Production and Consumption," at end of Section 10.

[c] Natural gas only; excludes supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

[d] Petroleum products supplied; excludes biofuels. Biofuels are included in "Biomass."

[e] Includes coal coke net imports. See Table 1.4c.

[f] Conventional hydroelectric power.

[g] Includes coal coke net imports and electricity net imports, which are not separately displayed. See Table 1.4c.

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

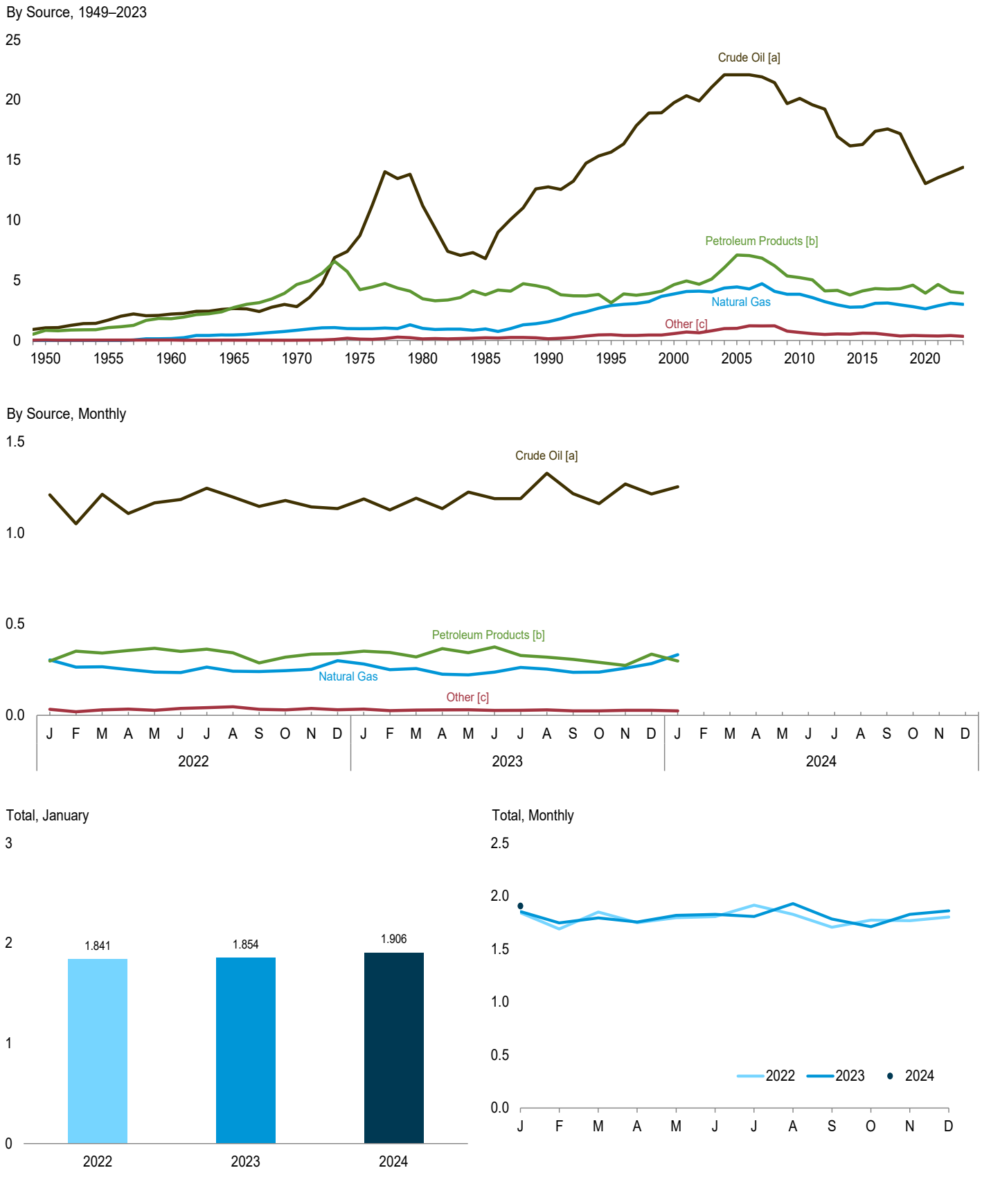
Notes: • See "Primary Energy Consumption" in Glossary. • See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

(Quadrillion Btu)



[a] Crude oil and lease condensate, includes imports into the Strategic Petroleum Reserve, which began in 1977.
[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.
[c] Coal, coal coke, biomass, and electricity.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.4a.

Table 1.4a Primary Energy Imports by Source

(Quadrillion Btu)

	Imports								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Total	Biomass[c]	Electricity	Total
1950 Total	**0.009**	**0.011**	**0.000**	**1.056**	**0.830**	**1.886**	**NA**	**0.007**	**1.913**
1955 Total	**.008**	**.003**	**.011**	**1.691**	**1.061**	**2.752**	**NA**	**.016**	**2.790**
1960 Total	**.007**	**.003**	**.161**	**2.196**	**1.802**	**3.999**	**NA**	**.018**	**4.188**
1965 Total	**.005**	**.002**	**.471**	**2.654**	**2.748**	**5.402**	**NA**	**.012**	**5.892**
1970 Total	**.001**	**.004**	**.846**	**2.814**	**4.656**	**7.470**	**NA**	**.021**	**8.342**
1975 Total	**.024**	**.045**	**.978**	**8.721**	**4.227**	**12.948**	**NA**	**.038**	**14.032**
1980 Total	**.030**	**.016**	**1.006**	**11.195**	**3.463**	**14.658**	**NA**	**.085**	**15.796**
1985 Total	**.049**	**.014**	**.952**	**6.814**	**3.796**	**10.609**	**NA**	**.157**	**11.781**
1990 Total	**.067**	**.019**	**1.551**	**12.766**	**4.351**	**17.117**	**NA**	**.063**	**18.817**
1995 Total	**.237**	**.095**	**2.901**	**15.669**	**3.131**	**18.800**	**.001**	**.146**	**22.180**
2000 Total	**.313**	**.094**	**3.869**	**19.783**	**4.641**	**24.424**	**(s)**	**.166**	**28.865**
2005 Total	**.762**	**.088**	**4.450**	**22.091**	**7.108**	**29.198**	**.012**	**.150**	**34.659**
2010 Total	**.484**	**.030**	**3.834**	**20.140**	**5.219**	**25.359**	**.004**	**.154**	**29.866**
2011 Total	**.327**	**.035**	**3.555**	**19.595**	**5.038**	**24.633**	**.019**	**.178**	**28.748**
2012 Total	**.212**	**.028**	**3.216**	**19.239**	**4.122**	**23.361**	**.049**	**.202**	**27.068**
2013 Total	**.199**	**.003**	**2.955**	**16.957**	**4.169**	**21.126**	**.102**	**.236**	**24.623**
2014 Total	**.252**	**.002**	**2.763**	**16.178**	**3.773**	**19.951**	**.046**	**.227**	**23.241**
2015 Total	**.256**	**.003**	**2.786**	**16.299**	**4.111**	**20.410**	**.079**	**.259**	**23.794**
2016 Total	**.220**	**.006**	**3.082**	**17.392**	**4.309**	**21.700**	**.123**	**.248**	**25.378**
2017 Total	**.168**	**.001**	**3.109**	**17.597**	**4.277**	**21.874**	**.081**	**.224**	**25.458**
2018 Total	**.122**	**.003**	**2.961**	**17.192**	**4.309**	**21.501**	**.048**	**.199**	**24.833**
2019 Total	**.138**	**.003**	**2.810**	**15.045**	**4.596**	**19.641**	**.072**	**.201**	**22.865**
2020 Total	**.105**	**.004**	**2.615**	**13.044**	**3.937**	**16.980**	**.074**	**.210**	**19.988**
2021 Total	**.109**	**.003**	**2.878**	**13.539**	**4.661**	**18.200**	**.083**	**.181**	**21.455**
2022 January	.011	(s)	.304	1.207	.298	1.505	.006	.015	1.841
February	.006	(s)	.264	1.049	.352	1.402	.003	.011	1.687
March	.011	(s)	.266	1.210	.341	1.552	.006	.013	1.848
April	.015	(s)	.251	1.106	.356	1.462	.006	.013	1.747
May	.007	(s)	.237	1.163	.368	1.530	.006	.015	1.795
June	.013	(s)	.235	1.182	.351	1.533	.005	.019	1.805
July	.014	(s)	.264	1.244	.363	1.607	.005	.023	1.913
August	.017	(s)	.242	1.195	.342	1.537	.006	.025	1.826
September	.011	(s)	.240	1.144	.288	1.432	.004	.018	1.705
October	.009	(s)	.245	1.177	.319	1.496	.007	.014	1.771
November	.015	(s)	.252	1.141	.335	1.477	.010	.012	1.767
December	.006	(s)	.300	1.132	.338	1.470	.009	.017	1.802
Total	**.135**	**.002**	**3.100**	**13.951**	**4.052**	**18.003**	**.073**	**.194**	**21.507**
2023 January	R.011	(s)	.282	1.185	.352	1.537	.008	.015	1.854
February	.006	(s)	.250	1.125	.344	1.469	.008	.012	1.745
March	.006	(s)	.256	1.189	.320	1.509	.009	.013	1.793
April	.009	.001	.226	1.132	.366	1.498	.008	.012	1.754
May	.007	(s)	.222	1.222	.343	1.564	.011	.013	1.817
June	.006	.001	.237	1.187	.375	1.562	.009	.010	1.826
July	.007	.001	.262	1.187	.328	1.515	.008	.011	R1.806
August	.008	(s)	.253	1.326	.319	1.644	.012	.010	1.927
September	.007	(s)	.236	1.214	.307	1.521	.010	.008	1.782
October	.009	.001	.237	1.159	.291	1.449	.007	.008	1.711
November	.007	.001	.258	1.267	.273	1.540	.011	.008	1.826
December	.005	(s)	.284	1.212	.335	1.547	.012	.011	R1.859
Total	**R.088**	**.005**	**3.003**	**14.404**	**3.952**	**18.356**	**.114**	**.133**	**R21.699**
2024 January	.002	(s)	.332	1.252	.298	1.550	.011	.012	1.906

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

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

[c] Beginning in 1993, includes fuel ethanol (minus denaturant). Beginning in 2001, also includes biodiesel. Beginning in 2011, also includes renewable diesel fuel. Beginning in 2021, also includes other biofuels.

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

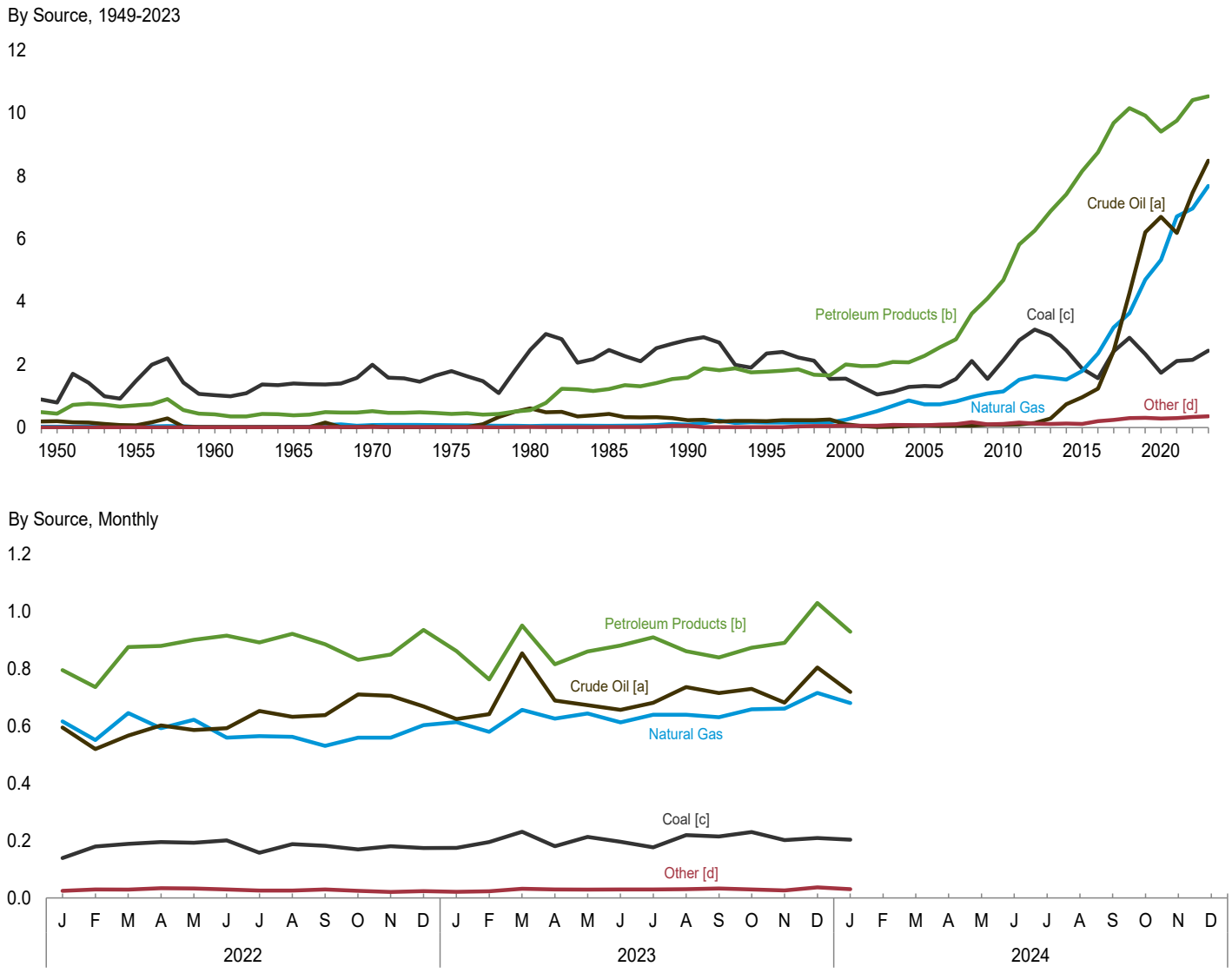
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 1.4b Primary Energy Exports

(Quadrillion Btu)



[a] Crude oil and lease condensate.
[b] Petroleum products, unfinished oils, natural gasoline, and gasoline blending components. Does not include biofuels.
[c] Includes coal coke.
[d] Biomass and electricity
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.4b.

Table 1.4b Primary Energy Exports by Source

(Quadrillion Btu)

	Exports								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[a]	Petroleum Products[b]	Total	Biomass[c]	Electricity	Total
1950 Total	**0.786**	**0.010**	**0.027**	**0.202**	**0.440**	**0.642**	**NA**	**0.001**	**1.465**
1955 Total	**1.465**	**.013**	**.032**	**.067**	**.707**	**.774**	**NA**	**.002**	**2.286**
1960 Total	**1.023**	**.009**	**.012**	**.018**	**.413**	**.431**	**NA**	**.003**	**1.477**
1965 Total	**1.376**	**.021**	**.027**	**.006**	**.386**	**.392**	**NA**	**.013**	**1.829**
1970 Total	**1.936**	**.061**	**.072**	**.029**	**.520**	**.549**	**NA**	**.014**	**2.632**
1975 Total	**1.761**	**.032**	**.074**	**.012**	**.427**	**.439**	**NA**	**.017**	**2.323**
1980 Total	**2.421**	**.051**	**.049**	**.609**	**.551**	**1.160**	**NA**	**.014**	**3.695**
1985 Total	**2.438**	**.028**	**.056**	**.432**	**1.225**	**1.657**	**NA**	**.017**	**4.196**
1990 Total	**2.772**	**.014**	**.087**	**.230**	**1.594**	**1.824**	**NA**	**.055**	**4.752**
1995 Total	**2.318**	**.034**	**.156**	**.200**	**1.776**	**1.976**	**NA**	**.012**	**4.496**
2000 Total	**1.528**	**.028**	**.245**	**.106**	**2.003**	**2.110**	**NA**	**.051**	**3.962**
2005 Total	**1.273**	**.043**	**.735**	**.067**	**2.276**	**2.344**	**(s)**	**.065**	**4.462**
2010 Total	**2.101**	**.036**	**1.147**	**.088**	**4.691**	**4.780**	**.047**	**.065**	**8.176**
2011 Total	**2.751**	**.024**	**1.519**	**.100**	**5.820**	**5.919**	**.108**	**.051**	**10.373**
2012 Total	**3.087**	**.024**	**1.633**	**.143**	**6.261**	**6.404**	**.078**	**.041**	**11.267**
2013 Total	**2.895**	**.021**	**1.587**	**.284**	**6.886**	**7.170**	**.076**	**.039**	**11.788**
2014 Total	**2.435**	**.023**	**1.528**	**.744**	**7.414**	**8.158**	**.081**	**.045**	**12.270**
2015 Total	**1.852**	**.021**	**1.800**	**.964**	**8.153**	**9.118**	**.080**	**.031**	**12.902**
2016 Total	**1.546**	**.025**	**2.356**	**1.238**	**8.752**	**9.990**	**.181**	**.021**	**14.119**
2017 Total	**2.388**	**.030**	**3.182**	**2.424**	**9.684**	**12.108**	**.206**	**.032**	**17.946**
2018 Total	**2.824**	**.029**	**3.640**	**4.277**	**10.158**	**14.434**	**.249**	**.047**	**21.224**
2019 Total	**2.305**	**.024**	**4.700**	**6.212**	**9.926**	**16.139**	**.240**	**.068**	**23.476**
2020 Total	**1.725**	**.017**	**5.332**	**6.699**	**9.410**	**16.108**	**.234**	**.048**	**23.464**
2021 Total	**2.061**	**.052**	**6.712**	**6.191**	**9.761**	**15.952**	.247	**.047**	**25.071**
2022 January	.134	.005	.616	.595	.795	1.390	.020	.005	2.170
February	.178	.002	.551	.520	.736	1.255	.024	.005	2.016
March	.184	.005	.645	.567	.876	1.443	.023	.006	2.305
April	.190	.005	.593	.602	.880	1.481	.029	.005	2.303
May	.184	.010	.622	.586	.901	1.487	.027	.005	2.335
June	.197	.004	.559	.593	.915	1.508	.026	.004	2.297
July	.153	.005	.565	.653	.892	1.545	.022	.004	2.294
August	.184	.004	.563	.632	.922	1.554	.022	.004	2.331
September	.177	.005	.531	.638	.885	1.523	.025	.005	2.266
October	.165	.004	.559	.710	.831	1.541	.021	.004	2.294
November	.177	.003	.559	.705	.850	1.554	.018	.003	2.314
December	.169	.005	.603	.669	.936	1.605	.022	.003	2.407
Total	**2.093**	**.057**	**6.966**	**7.468**	**10.417**	**17.885**	**.278**	**.054**	**27.332**
2023 January	R.172	.003	.614	.624	.862	1.486	.018	.004	R2.297
February	R.193	.002	.580	.641	.763	1.404	.018	.005	R2.202
March	R.229	.002	.657	.854	.951	1.804	.027	.004	R2.723
April	R.179	.002	.626	.689	.816	1.505	.024	.006	R2.342
May	R.209	.003	.644	.673	.860	1.533	.024	.004	R2.419
June	R.193	.003	.613	.657	.881	1.538	.026	.005	R2.377
July	R.172	.004	.640	.681	.910	1.591	.023	.007	R2.437
August	R.217	.003	.640	.736	.861	1.597	.025	.005	R2.487
September	R.211	.004	.631	.715	.839	1.553	.026	.008	R2.433
October	R.228	.002	.658	.730	.873	1.603	.024	.007	R2.522
November	R.199	.003	.661	.682	.890	1.572	.021	.006	R2.462
December	R.204	.005	.716	.804	1.030	1.834	R.031	.006	R2.796
Total	**R2.405**	**.037**	**7.680**	**8.486**	**10.536**	**19.022**	**R.286**	**.068**	**R29.498**
2024 January	.203	.001	.680	.719	.929	1.648	.024	.006	2.562

[a] Crude oil and lease condensate.

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

[c] Beginning in 2001, includes biodiesel. Beginning in 2010, also includes fuel ethanol (minus denaturant). Beginning in 2016, also includes wood and wood-derived fuels.

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

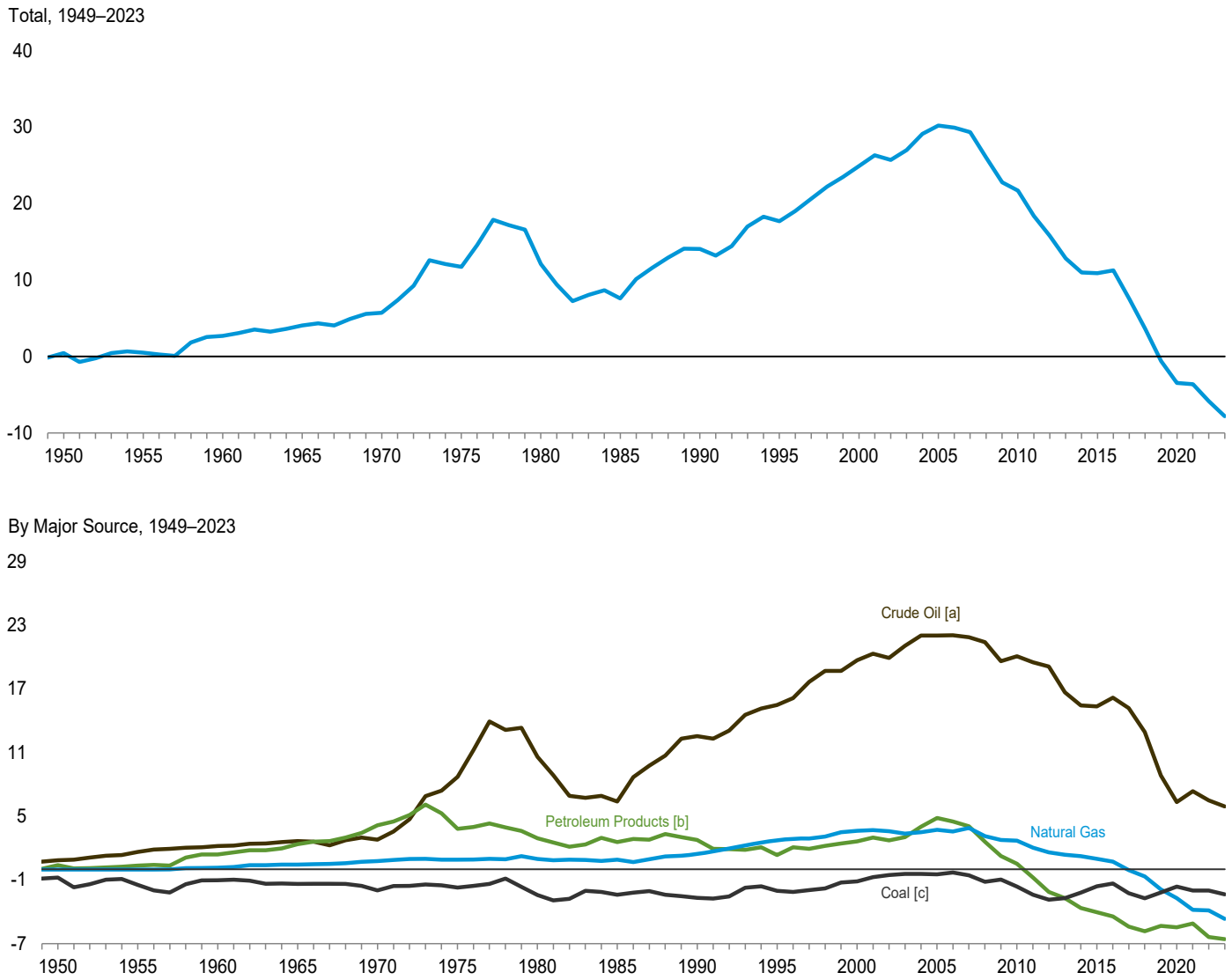
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 1.4c Primary Energy Net Imports

(Quadrillion Btu)



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

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

[c] Includes coal coke.

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

Source: Table 1.4c.

Table 1.4c Primary Energy Net Imports by Source

(Quadrillion Btu)

	Net Imports[a]								
				Petroleum					
	Coal	Coal Coke	Natural Gas	Crude Oil[b]	Petroleum Products[c]	Total	Biomass[d]	Electricity	Total
1950 Total	**-0.777**	**0.001**	**-0.027**	**0.854**	**0.390**	**1.244**	**NA**	**0.006**	**0.448**
1955 Total	**-1.456**	**-.010**	**-.021**	**1.624**	**.354**	**1.978**	**NA**	**.014**	**.504**
1960 Total	**-1.017**	**-.006**	**.149**	**2.178**	**1.389**	**3.568**	**NA**	**.015**	**2.710**
1965 Total	**-1.372**	**-.018**	**.444**	**2.648**	**2.362**	**5.010**	**NA**	**(s)**	**4.063**
1970 Total	**-1.935**	**-.058**	**.774**	**2.785**	**4.136**	**6.921**	**NA**	**.007**	**5.709**
1975 Total	**-1.738**	**.014**	**.904**	**8.708**	**3.800**	**12.508**	**NA**	**.021**	**11.709**
1980 Total	**-2.391**	**-.035**	**.957**	**10.586**	**2.912**	**13.499**	**NA**	**.071**	**12.101**
1985 Total	**-2.389**	**-.013**	**.896**	**6.381**	**2.570**	**8.952**	**NA**	**.140**	**7.584**
1990 Total	**-2.705**	**.005**	**1.464**	**12.536**	**2.757**	**15.293**	**NA**	**.008**	**14.065**
1995 Total	**-2.081**	**.061**	**2.745**	**15.469**	**1.355**	**16.824**	**NA**	**.134**	**17.684**
2000 Total	**-1.215**	**.065**	**3.623**	**19.676**	**2.638**	**22.314**	**NA**	**.115**	**24.904**
2005 Total	**-.512**	**.044**	**3.714**	**22.023**	**4.831**	**26.855**	**.011**	**.085**	**30.197**
2010 Total	**-1.617**	**-.006**	**2.687**	**20.052**	**.528**	**20.580**	**-.042**	**.089**	**21.690**
2011 Total	**-2.423**	**.011**	**2.036**	**19.495**	**-.781**	**18.714**	**-.089**	**.127**	**18.375**
2012 Total	**-2.875**	**.004**	**1.583**	**19.096**	**-2.139**	**16.957**	**-.029**	**.161**	**15.801**
2013 Total	**-2.696**	**-.017**	**1.369**	**16.673**	**-2.717**	**13.956**	**.026**	**.197**	**12.835**
2014 Total	**-2.183**	**-.022**	**1.235**	**15.434**	**-3.641**	**11.793**	**-.034**	**.182**	**10.971**
2015 Total	**-1.596**	**-.018**	**.986**	**15.335**	**-4.042**	**11.292**	**-.001**	**.227**	**10.892**
2016 Total	**-1.326**	**-.019**	**.725**	**16.154**	**-4.443**	**11.710**	**-.058**	**.227**	**11.259**
2017 Total	**-2.220**	**-.029**	**-.073**	**15.173**	**-5.407**	**9.766**	**-.124**	**.192**	**7.512**
2018 Total	**-2.702**	**-.026**	**-.679**	**12.915**	**-5.849**	**7.066**	**-.201**	**.152**	**3.610**
2019 Total	**-2.167**	**-.021**	**-1.889**	**8.833**	**-5.331**	**3.502**	**-.168**	**.133**	**-.610**
2020 Total	**-1.620**	**-.013**	**-2.717**	**6.345**	**-5.473**	**.872**	**-.159**	**.161**	**-3.476**
2021 Total	**-1.952**	**-.049**	**-3.834**	**7.348**	**-5.100**	**2.248**	**-.163**	**.134**	**-3.616**
2022 January	-.124	-.005	-.313	.612	-.497	.115	-.013	.010	-.329
February	-.172	-.002	-.287	.530	-.383	.147	-.022	.006	-.330
March	-.173	-.005	-.379	.644	-.535	.109	-.016	.007	-.457
April	-.175	-.005	-.342	.505	-.524	-.019	-.023	.009	-.555
May	-.177	-.010	-.386	.576	-.533	.043	-.021	.009	-.540
June	-.184	-.004	-.324	.589	-.563	.026	-.021	.015	-.492
July	-.139	-.005	-.301	.592	-.529	.062	-.017	.019	-.381
August	-.167	-.004	-.321	.562	-.579	-.017	-.016	.020	-.505
September	-.166	-.005	-.291	.507	-.598	-.091	-.021	.013	-.561
October	-.156	-.004	-.314	.467	-.512	-.044	-.014	.010	-.523
November	-.163	-.003	-.306	.437	-.514	-.077	-.007	.009	-.547
December	-.163	-.005	-.302	.463	-.598	-.135	-.013	.014	-.605
Total	**-1.957**	**-.056**	**-3.866**	**6.483**	**-6.365**	**.118**	**-.205**	**.141**	**-5.826**
2023 January	R -.162	-.003	-.332	.561	-.510	.052	-.010	.011	R -.444
February	R -.187	-.002	-.330	.484	-.419	.065	-.010	.007	R -.457
March	R -.222	-.002	-.401	.335	-.631	-.296	-.018	.009	R -.930
April	R -.169	-.002	-.400	.443	-.450	-.007	-.016	.007	R -.588
May	R -.203	-.003	-.423	.549	-.518	.031	-.014	.009	R -.602
June	R -.187	-.002	-.375	.530	-.506	.024	-.016	.006	R -.551
July	R -.165	-.003	-.378	.506	-.582	-.076	-.015	.004	R -.632
August	R -.209	-.003	-.388	.590	-.542	.048	-.013	.005	R -.560
September	R -.204	-.004	-.395	.499	-.532	-.033	-.015	(s)	R -.651
October	R -.219	-.002	-.421	.428	-.582	-.154	-.016	.001	R -.811
November	R -.192	-.002	-.403	.585	-.617	-.032	-.010	.002	R -.636
December	R -.199	-.005	-.431	.408	-.696	-.288	R -.019	.005	R -.938
Total	R **-2.317**	**-.032**	**-4.677**	**5.918**	**-6.584**	**-.666**	R **-.172**	**.065**	R **-7.799**
2024 January	-.201	-.001	-.348	.532	-.631	-.099	-.013	.006	-.656

[a] Net imports equal imports minus exports.

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

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

[d] Beginning in 1993, includes fuel ethanol (minus denaturant) imports. Beginning in 2001, also includes biodiesel imports and exports. Beginning in 2010, also includes fuel ethanol (minus denaturant) exports. Beginning in 2011, also includes renewable diesel fuel imports. Beginning in 2021, also includes other biofuels imports.

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

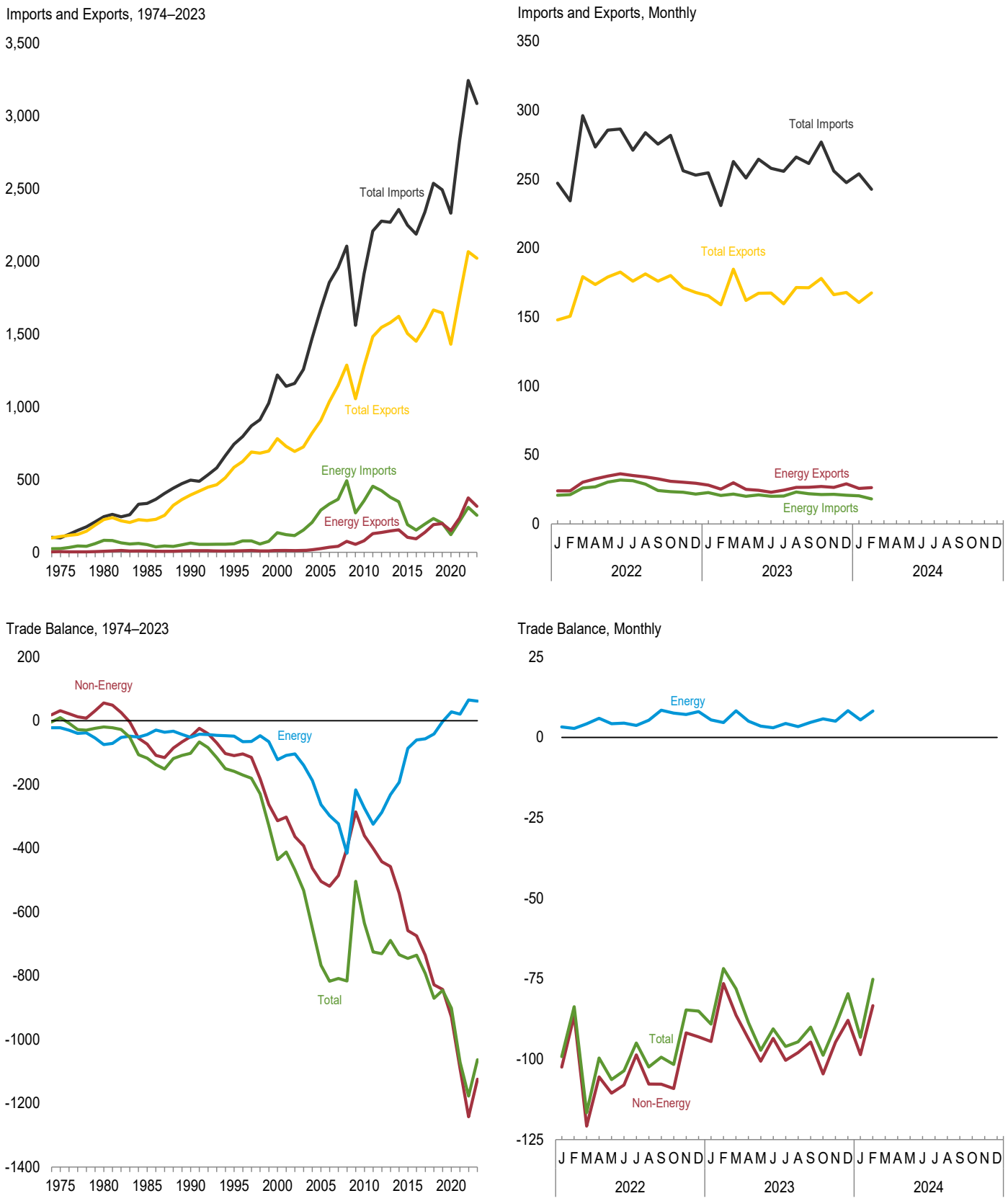
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: Tables 1.4a and 1.4b.

Figure 1.5 Merchandise Trade Value

(Billion Dollars[a])



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

Table 1.5 Merchandise Trade Value

(Million Dollars[a])

	Petroleum[b]			Energy[c]			Non-Energy Balance	Total Merchandise		
	Exports	Imports	Balance	Exports	Imports	Balance		Exports	Imports	Balance
1974 Total	**792**	**24,668**	**-23,876**	**3,444**	**25,454**	**-22,010**	**18,126**	**99,437**	**103,321**	**-3,884**
1975 Total	**907**	**25,197**	**-24,289**	**4,470**	**26,476**	**-22,006**	**31,557**	**108,856**	**99,305**	**9,551**
1980 Total	**2,833**	**78,637**	**-75,803**	**7,982**	**82,924**	**-74,942**	**55,246**	**225,566**	**245,262**	**-19,696**
1985 Total	**4,707**	**50,475**	**-45,768**	**9,971**	**53,917**	**-43,946**	**-73,765**	**218,815**	**336,526**	**-117,712**
1990 Total	**6,901**	**61,583**	**-54,682**	**12,233**	**64,661**	**-52,428**	**-50,068**	**393,592**	**496,088**	**-102,496**
1995 Total	**6,321**	**54,368**	**-48,047**	**10,358**	**59,109**	**-48,751**	**-110,050**	**584,742**	**743,543**	**-158,801**
2000 Total	**10,192**	**119,251**	**-109,059**	**13,179**	**135,367**	**-122,188**	**-313,916**	**781,918**	**1,218,022**	**-436,104**
2005 Total	**19,155**	**250,068**	**-230,913**	**26,488**	**289,723**	**-263,235**	**-504,242**	**905,978**	**1,673,455**	**-767,477**
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	**102,180**	**431,866**	**-329,686**	**128,989**	**453,839**	**-324,850**	**-400,597**	**1,482,508**	**2,207,954**	**-725,447**
2012 Total	**111,949**	**408,509**	**-296,560**	**136,054**	**423,860**	**-287,806**	**-442,640**	**1,545,821**	**2,276,267**	**-730,446**
2013 Total	**123,244**	**363,141**	**-239,897**	**147,572**	**379,758**	**-232,186**	**-457,284**	**1,578,517**	**2,267,987**	**-689,470**
2014 Total	**127,818**	**326,709**	**-198,891**	**154,498**	**347,474**	**-192,976**	**-541,506**	**1,621,874**	**2,356,356**	**-734,482**
2015 Total	**85,890**	**177,455**	**-91,565**	**103,612**	**190,501**	**-86,889**	**-658,594**	**1,503,328**	**2,248,811**	**-745,483**
2016 Total	**74,921**	**142,920**	**-67,999**	**92,971**	**153,800**	**-60,829**	**-674,497**	**1,451,460**	**2,186,786**	**-735,326**
2017 Total	**104,975**	**181,672**	**-76,697**	**137,920**	**194,790**	**-56,870**	**-735,526**	**1,547,195**	**2,339,591**	**-792,396**
2018 Total	**149,715**	**219,493**	**-69,778**	**190,888**	**232,746**	**-41,858**	**-828,500**	**1,665,787**	**2,536,145**	**-870,358**
2019 Total	**156,390**	**189,040**	**-32,650**	**197,740**	**200,829**	**-3,089**	**-842,670**	**1,645,940**	**2,491,700**	**-845,759**
2020 Total	**110,373**	**113,077**	**-2,704**	**150,074**	**122,486**	**27,588**	**-929,070**	**1,429,995**	**2,331,477**	**-901,482**
2021 Total	**157,448**	**198,648**	**-41,200**	**236,151**	**215,734**	**20,417**	**-1,091,470**	**1,757,822**	**2,828,875**	**-1,071,053**
2022 January	16,213	18,180	-1,967	23,981	20,737	3,244	-102,461	147,848	247,065	-99,217
February	15,898	19,117	-3,219	23,981	21,207	2,774	-86,437	150,555	234,219	-83,663
March	20,953	24,082	-3,129	30,134	25,978	4,156	-120,818	179,314	295,975	-116,662
April	22,813	24,904	-2,091	32,722	26,847	5,875	-105,518	173,534	273,177	-99,643
May	23,559	28,205	-4,646	34,610	30,388	4,222	-110,563	179,048	285,388	-106,341
June	25,009	29,559	-4,550	36,284	31,859	4,425	-108,047	182,663	286,285	-103,622
July	25,364	29,009	-3,645	35,002	31,322	3,680	-98,691	175,897	270,907	-95,011
August	23,183	26,196	-3,013	34,022	28,738	5,284	-107,737	181,182	283,635	-102,453
September	21,934	22,030	-96	32,686	24,256	8,430	-107,793	175,980	275,343	-99,363
October	21,317	21,686	-369	30,853	23,322	7,531	-109,166	180,101	281,737	-101,635
November	21,572	21,006	566	30,149	23,029	7,120	-91,807	171,280	255,967	-84,687
December	20,525	19,334	1,191	29,501	21,516	7,985	-93,060	167,755	252,830	-85,075
Total	**258,342**	**283,306**	**-24,964**	**373,924**	**309,198**	**64,726**	**-1,242,099**	**2,065,157**	**3,242,530**	**-1,177,373**
2023 January	18,737	20,164	-1,427	28,103	22,703	5,400	-94,496	165,342	254,438	-89,096
February	17,530	17,921	-391	25,213	20,601	4,612	-76,468	158,851	230,707	-71,856
March	21,600	18,959	2,641	29,762	21,517	8,245	-86,381	184,621	262,756	-78,136
April	18,214	18,527	-313	25,019	20,013	5,006	-93,694	162,064	250,752	-88,688
May	17,751	19,804	-2,053	24,398	20,960	3,438	-100,659	167,128	264,349	-97,221
June	17,121	18,991	-1,870	23,032	20,046	2,986	-93,570	167,303	257,887	-90,584
July	18,440	19,049	-609	24,519	20,205	4,314	-100,361	159,619	255,666	-96,047
August	20,088	22,045	-1,957	26,465	23,101	3,364	-97,986	171,405	266,027	-94,622
September	20,215	20,768	-553	26,560	21,927	4,633	-94,667	171,272	261,306	-90,034
October	20,064	20,099	-35	27,109	21,363	5,746	-104,557	178,021	276,832	-98,811
November	19,379	20,265	-886	26,490	21,501	4,989	-94,705	166,193	255,909	-89,716
December	21,868	19,204	2,664	29,081	20,782	8,299	-87,937	167,788	247,426	-79,638
Total	**231,007**	**235,796**	**-4,789**	**315,750**	**254,718**	**61,032**	**-1,124,481**	**2,020,606**	**3,084,055**	**-1,063,449**
2024 January	18,784	18,422	362	25,789	20,382	5,407	R -98,628	R 160,579	R 253,800	R -93,221
February	19,098	16,656	2,442	26,320	18,147	8,173	-83,382	167,420	242,629	-75,209
2-Month Total	**37,882**	**35,078**	**2,804**	**52,109**	**38,528**	**13,580**	**-182,010**	**327,999**	**496,430**	**-168,431**
2022 2-Month Total	**36,267**	**38,085**	**-1,818**	**53,316**	**43,304**	**10,012**	**-170,964**	**324,193**	**485,145**	**-160,952**
2021 2-Month Total	**32,111**	**37,297**	**-5,186**	**47,962**	**41,944**	**6,018**	**-188,898**	**298,403**	**481,284**	**-182,881**

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

[b] Through 2010, data are for crude oil, petroleum preparations, liquefied propane and butane, and other mineral fuels. Beginning in 2011, data are for petroleum products and preparations.

[c] Petroleum, coal, natural gas, and electricity.

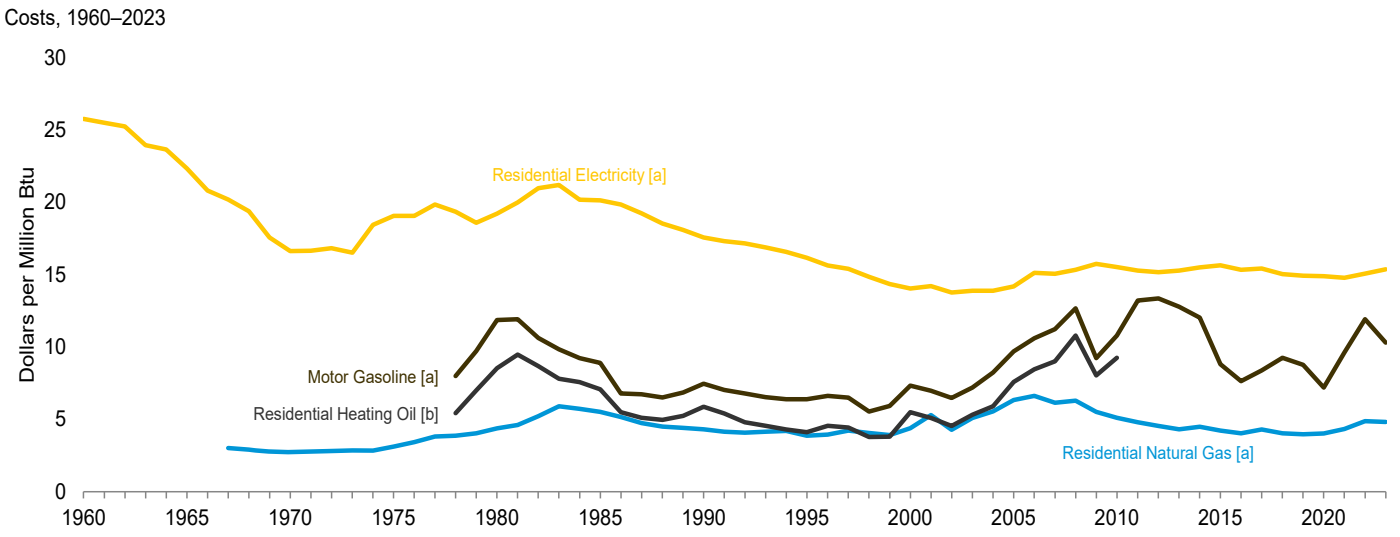
R=Revised.

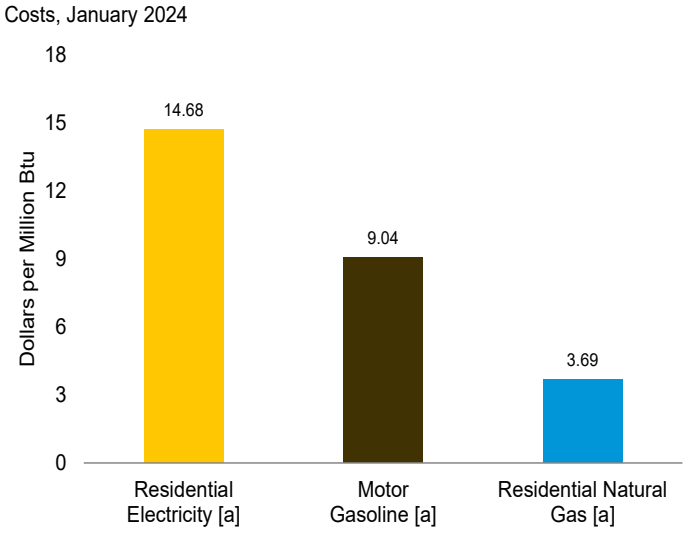
Notes: • Monthly data are not adjusted for seasonal variations. • See Note 1, "Merchandise Trade Value," at end of section. • Totals may not equal sum of components due to independent rounding. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. customs territory, which comprises the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands.

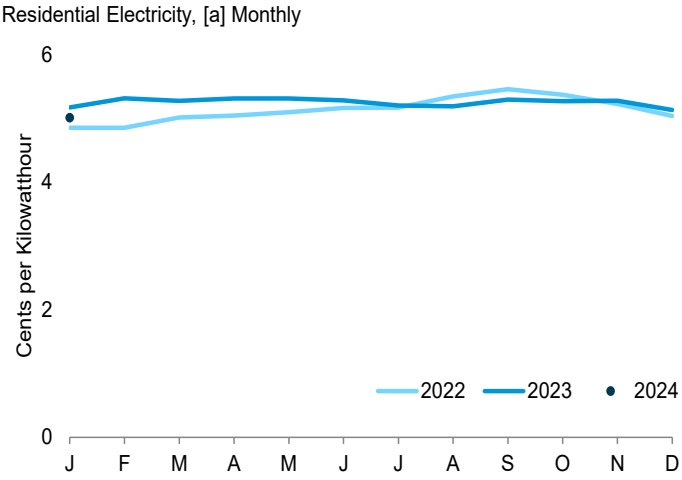
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual and monthly data beginning in 1974.

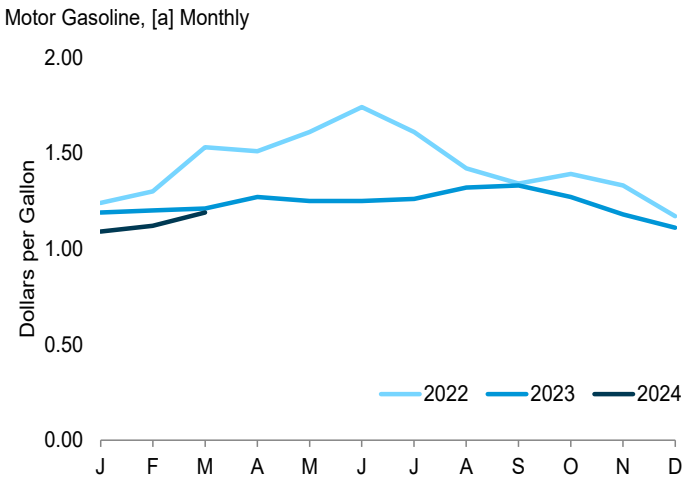
Sources: See end of section.

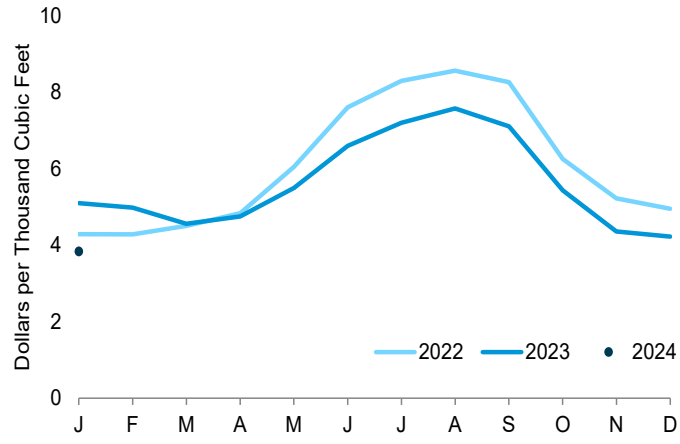
Figure 1.6 Cost of Fuels to End Users In Real (1982-1984) Dollars











[a] Includes Taxes.
[b] Excludes Taxes.
Note: See "Real Dollars" in Glossary.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Tables 1.6.

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

	Consumer Price Index, All Urban Consumers[a]	Motor Gasoline[b]		Residential Heating Oil[c]		Residential Natural Gas[b]		Residential Electricity[b]	
	Index 1982–1984=100	Dollars per Gallon	Dollars per Million Btu	Dollars per Gallon	Dollars per Million Btu	Dollars per Thousand Cubic Feet	Dollars per Million Btu	Cents per Kilowatthour	Dollars per Million Btu
1960 Average	**29.6**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**8.8**	**25.74**
1965 Average	**31.5**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**7.6**	**22.33**
1970 Average	**38.8**	**NA**	**NA**	**NA**	**NA**	**2.81**	**2.72**	**5.7**	**16.62**
1975 Average	**53.8**	**NA**	**NA**	**NA**	**NA**	**3.18**	**3.12**	**6.5**	**19.07**
1980 Average	**82.4**	**1.482**	**11.85**	**1.182**	**8.52**	**4.47**	**4.36**	**6.6**	**19.21**
1985 Average	**107.6**	**1.112**	**8.89**	**0.979**	**7.06**	**5.69**	**5.52**	**6.87**	**20.13**
1990 Average	**130.7**	**0.931**	**7.44**	**0.813**	**5.86**	**4.44**	**4.31**	**5.99**	**17.56**
1995 Average	**152.4**	**0.791**	**6.38**	**0.569**	**4.10**	**3.98**	**3.87**	**5.51**	**16.15**
2000 Average	**172.2**	**0.908**	**7.33**	**0.761**	**5.49**	**4.51**	**4.39**	**4.79**	**14.02**
2005 Average	**195.3**	**1.197**	**9.68**	**1.051**	**7.58**	**6.50**	**6.33**	**4.84**	**14.18**
2010 Average	**218.056**	**1.301**	**10.78**	**1.283**	**9.25**	**5.22**	**5.11**	**5.29**	**15.51**
2011 Average	**224.939**	**1.590**	**13.19**	**NA**	**NA**	**4.90**	**4.80**	**5.21**	**15.27**
2012 Average	**229.594**	**1.609**	**13.35**	**NA**	**NA**	**4.64**	**4.53**	**5.17**	**15.17**
2013 Average	**232.957**	**1.538**	**12.77**	**NA**	**NA**	**4.43**	**4.31**	**5.21**	**15.26**
2014 Average	**236.736**	**1.447**	**12.01**	**NA**	**NA**	**4.63**	**4.49**	**5.29**	**15.50**
2015 Average	**237.017**	**1.059**	**8.80**	**NA**	**NA**	**4.38**	**4.22**	**5.34**	**15.64**
2016 Average	**240.007**	**0.918**	**7.63**	**NA**	**NA**	**4.19**	**4.03**	**5.23**	**15.33**
2017 Average	**245.120**	**1.007**	**8.37**	**NA**	**NA**	**4.45**	**4.29**	**5.26**	**15.41**
2018 Average	**251.107**	**1.113**	**9.25**	**NA**	**NA**	**4.18**	**4.03**	**5.13**	**15.02**
2019 Average	**255.657**	**1.055**	**8.77**	**NA**	**NA**	**4.11**	**3.95**	**5.09**	**14.91**
2020 Average	**258.811**	**0.866**	**7.20**	**NA**	**NA**	**4.17**	**4.01**	**5.08**	**14.89**
2020 Average	**270.970**	**1.156**	**9.62**	**NA**	**NA**	**4.50**	**4.33**	**5.04**	**14.77**
2021 January	281.148	1.245	10.36	NA	NA	4.28	4.13	4.85	14.22
February	283.716	1.295	10.78	NA	NA	4.28	4.12	4.85	14.21
March	287.504	1.531	12.73	NA	NA	4.50	4.34	5.01	14.69
April	289.109	1.511	12.57	NA	NA	4.83	4.66	5.04	14.77
May	292.296	1.606	13.36	NA	NA	6.05	5.82	5.09	14.93
June	296.311	1.738	14.46	NA	NA	7.59	7.32	5.16	15.13
July	296.276	1.609	13.39	NA	NA	8.29	7.98	5.17	15.15
August	296.171	1.420	11.81	NA	NA	8.56	8.24	5.34	15.66
September	296.808	1.344	11.18	NA	NA	8.25	7.95	5.45	15.99
October	298.012	1.386	11.53	NA	NA	6.25	6.02	5.37	15.73
November	297.711	1.329	11.06	NA	NA	5.22	5.03	5.22	15.31
December	296.797	1.165	9.69	NA	NA	4.95	4.77	5.03	14.75
Average	**292.655**	**1.432**	**11.92**	**NA**	**NA**	**5.04**	**4.86**	**5.14**	**15.06**
2023 January	299.170	1.188	9.88	NA	NA	5.10	4.91	5.17	15.16
February	300.840	1.204	10.02	NA	NA	4.98	4.80	5.31	15.57
March	301.836	1.213	10.09	NA	NA	4.56	4.39	5.27	15.45
April	303.363	1.265	10.53	NA	NA	4.75	4.57	5.31	15.55
May	304.127	1.248	10.38	NA	NA	5.49	5.29	5.31	15.56
June	305.109	1.252	10.42	NA	NA	6.59	6.35	5.28	15.48
July	305.691	1.257	10.45	NA	NA	7.19	6.93	5.20	15.23
August	307.026	1.324	11.01	NA	NA	7.57	7.29	5.19	15.21
September	307.789	1.334	11.10	NA	NA	7.10	6.84	5.29	15.51
October	307.671	1.271	10.57	NA	NA	5.43	5.23	5.27	15.43
November	307.051	1.180	9.82	NA	NA	4.35	4.19	5.27	15.45
December	306.746	1.112	9.25	NA	NA	4.22	4.06	5.13	15.03
Average	**304.702**	**1.238**	**10.29**	**NA**	**NA**	**5.00**	**4.82**	**5.24**	**15.37**
2023 January	308.417	1.087	9.04	NA	NA	R 3.83	R 3.69	R 5.01	R 14.68
February	310.326	1.123	9.34	NA	NA	NA	NA	NA	NA
March	312.332	1.187	9.87	NA	NA	NA	NA	NA	NA

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

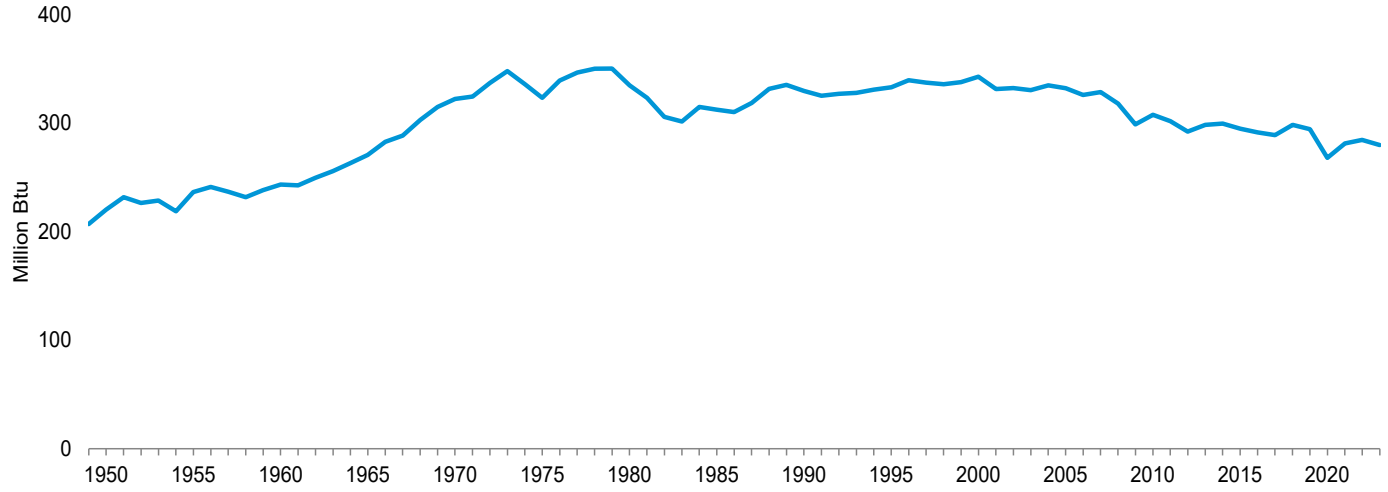
Notes: • See "Real Dollars" in Glossary. • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. • Annual averages may not equal average of months due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1995.

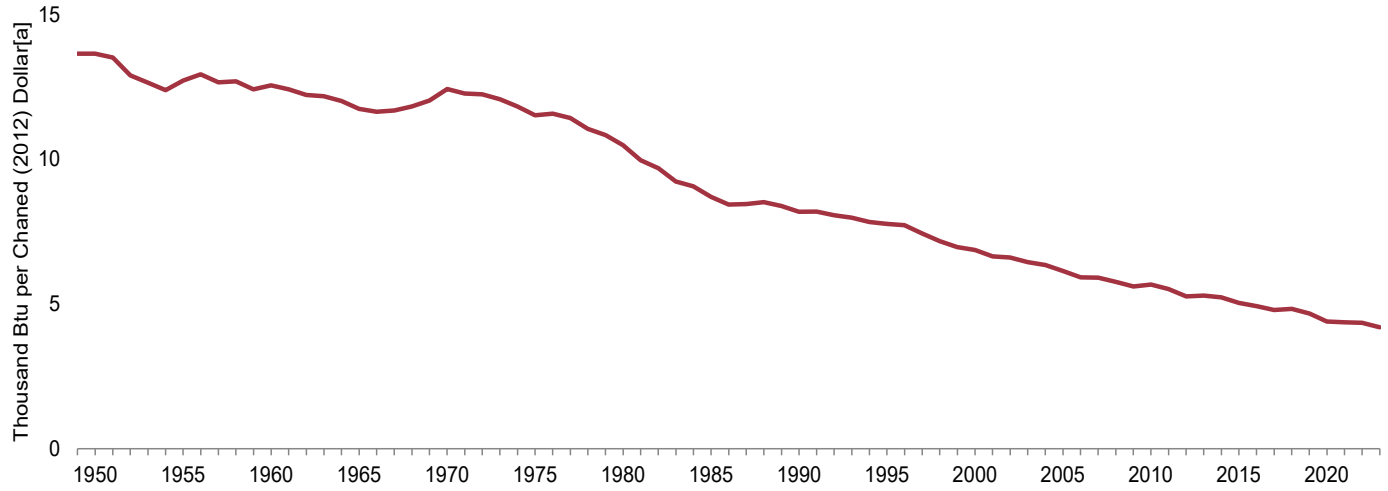
Sources: • **Fuel Prices:** Tables 9.4 (All Grades), 9.8, and 9.10, adjusted by the CPI; and *Monthy Energy Review*, September 2012, Table 9.8c. • **Consumer Price Index, All Urban Consumers:** U.S. Department of Labor, Bureau of Labor Statistics, series ID CUUR0000SA0. • **Conversion Factors:** Tables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

Figure 1.7 Primary Energy Consumption and Energy Expenditures Indicators

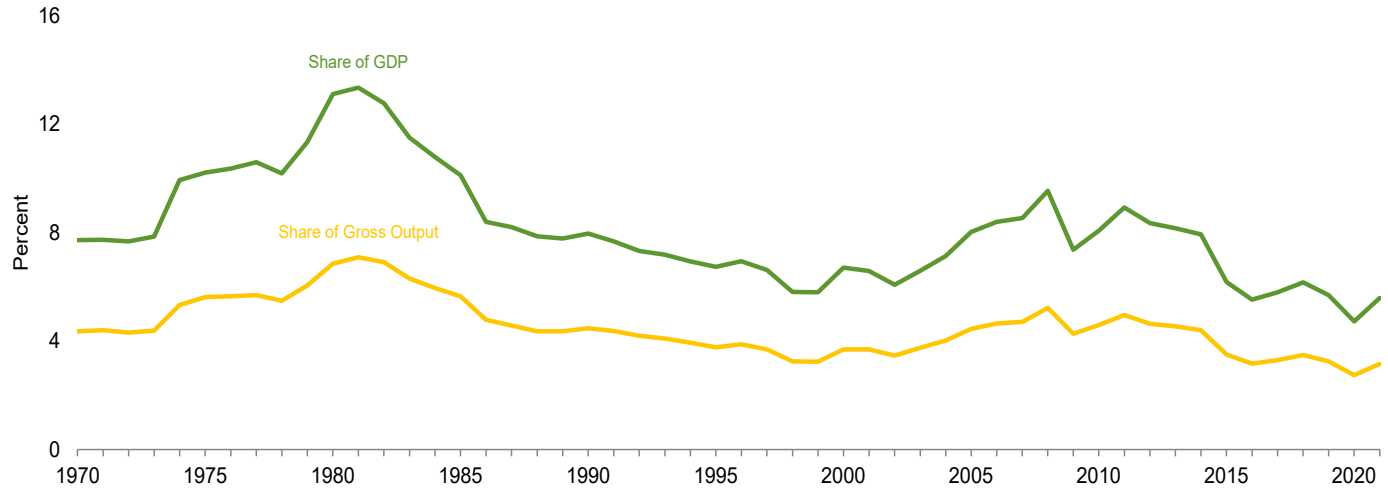
Energy Consumption per Capita, 1949–2023



Primary Energy Consumption per Real Dollar [a] of Gross Domestic Product, 1949–2023



Energy Expenditures as Share of Gross Domestic Product and Gross Output,[b] 1970–2021



[a] See "Chained Dollars" and "Real Dollars" in Glossary.
[b] Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.

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

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

	Primary Energy Consumption[a]			Energy Expenditures[b]				Carbon Dioxide Emissions[c]		
	Consumption	Consumption per Capita	Consumption per Real Dollar[d] of GDP[e]	Expenditures	Expenditures per Capita	Expenditures as Share of GDP[e]	Expenditures as Share of Gross Output[f]	Emissions	Emissions per Capita	Emissions per Real Dollar[d] of GDP[e]
	Quadrillion Btu	Million Btu	Thousand Btu per Chained (2017) Dollar[d]	Million Nominal Dollars[g]	Nominal Dollars[g]	Percent	Percent	Million Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide per Million Chained (2017) Dollars[d]
1950	33.527	220	13.64	NA	NA	NA	NA	2,382	15.6	969
1955	39.215	236	12.72	NA	NA	NA	NA	2,685	16.2	871
1960	43.942	243	12.55	NA	NA	NA	NA	2,914	16.1	833
1965	52.565	271	11.74	NA	NA	NA	NA	3,462	17.8	773
1970	66.036	322	12.42	82,875	404	7.7	4.4	4,261	20.8	802
1975	69.788	323	11.51	171,854	796	10.2	5.6	4,428	20.5	731
1980	76.038	335	10.48	374,350	1,647	13.1	6.9	4,756	20.9	655
1981	74.159	323	9.97	427,901	1,865	13.3	7.1	4,637	20.2	623
1982	70.812	306	9.69	426,482	1,841	12.8	6.9	4,404	19.0	603
1983	70.489	302	9.22	417,622	1,786	11.5	6.3	4,384	18.8	574
1984	74.237	315	9.06	435,313	1,846	10.8	6.0	4,613	19.6	563
1985	74.268	312	8.70	438,343	1,842	10.1	5.6	4,605	19.4	539
1986	74.458	310	8.43	384,091	1,599	8.4	4.8	4,616	19.2	523
1987	77.161	318	8.44	397,627	1,641	8.2	4.6	4,776	19.7	523
1988	81.025	331	8.51	411,568	1,683	7.9	4.4	4,998	20.4	525
1989	82.711	335	8.38	439,051	1,779	7.8	4.4	5,085	20.6	515
1990	82.256	330	8.18	474,652	1,901	8.0	4.5	5,038	20.2	501
1991	82.214	325	8.19	472,440	1,867	7.7	4.4	4,991	19.7	497
1992	83.836	327	8.06	476,845	1,859	7.3	4.2	5,089	19.8	489
1993	85.191	328	7.97	492,275	1,894	7.2	4.1	5,182	19.9	485
1994	87.053	331	7.83	504,856	1,919	6.9	3.9	5,262	20.0	473
1995	88.668	333	7.77	514,624	1,933	6.7	3.8	5,324	20.0	467
1996	91.404	339	7.72	560,293	2,080	6.9	3.9	5,518	20.5	466
1997	91.956	337	7.43	567,962	2,083	6.6	3.7	5,589	20.5	452
1998	92.602	336	7.16	526,283	1,908	5.8	3.2	5,637	20.4	436
1999	94.232	338	6.96	558,627	2,002	5.8	3.2	5,700	20.4	421
2000	96.694	343	6.86	687,711	2,437	6.7	3.7	5,889	20.9	418
2001	94.416	331	6.63	696,242	2,443	6.6	3.7	5,778	20.3	406
2002	95.575	332	6.60	663,964	2,308	6.1	3.5	5,820	20.2	402
2003	95.806	330	6.44	755,070	2,603	6.6	3.7	5,887	20.3	396
2004	98.033	335	6.35	871,210	2,975	7.1	4.0	5,994	20.5	388
2005	98.101	332	6.14	1,045,730	3,539	8.0	4.4	6,007	20.3	376
2006	97.235	326	5.92	1,158,821	3,884	8.4	4.6	5,929	19.9	361
2007	98.965	329	5.90	1,233,869	4,096	8.5	4.7	6,016	20.0	359
2008	96.647	318	5.76	1,408,759	4,633	9.5	5.2	5,823	19.1	347
2009	91.626	299	5.60	1,066,528	3,477	7.4	4.3	5,404	17.6	331
2010	95.142	308	5.67	1,214,278	3,926	8.1	4.6	5,594	18.1	333
2011	93.966	302	5.51	1,392,468	4,469	8.9	5.0	5,455	17.5	320
2012	91.677	292	R 5.26	1,355,175	4,318	8.3	4.6	5,236	16.7	300
2013	94.253	298	5.29	1,376,402	4,356	8.2	4.5	5,359	17.0	301
2014	95.335	300	5.22	1,395,430	4,384	7.9	4.4	5,414	17.0	296
2015	94.484	295	5.03	1,128,447	3,519	6.2	3.5	5,262	16.4	280
2016	94.092	291	4.92	1,038,884	3,217	5.5	3.2	5,169	16.0	270
2017	93.902	289	4.79	1,136,379	3,497	5.8	3.3	5,132	15.8	262
2018	97.405	298	4.82	1,271,931	3,893	6.2	3.5	5,278	16.2	261
2019	96.603	294	4.67	1,223,985	3,729	5.7	3.2	5,147	15.7	249
2020	88.852	268	4.39	1,007,785	3,040	4.7	2.7	4,584	13.8	227
2021	93.363	281	4.36	1,317,098	3,967	5.6	3.2	R 4,906	14.8	229
2022	94.791	284	4.34	NA	NA	NA	NA	R 4,939	14.8	226
2023	R 93.592	R 279	R 4.18	NA	NA	NA	NA	R 4,794	R 14.3	R 214

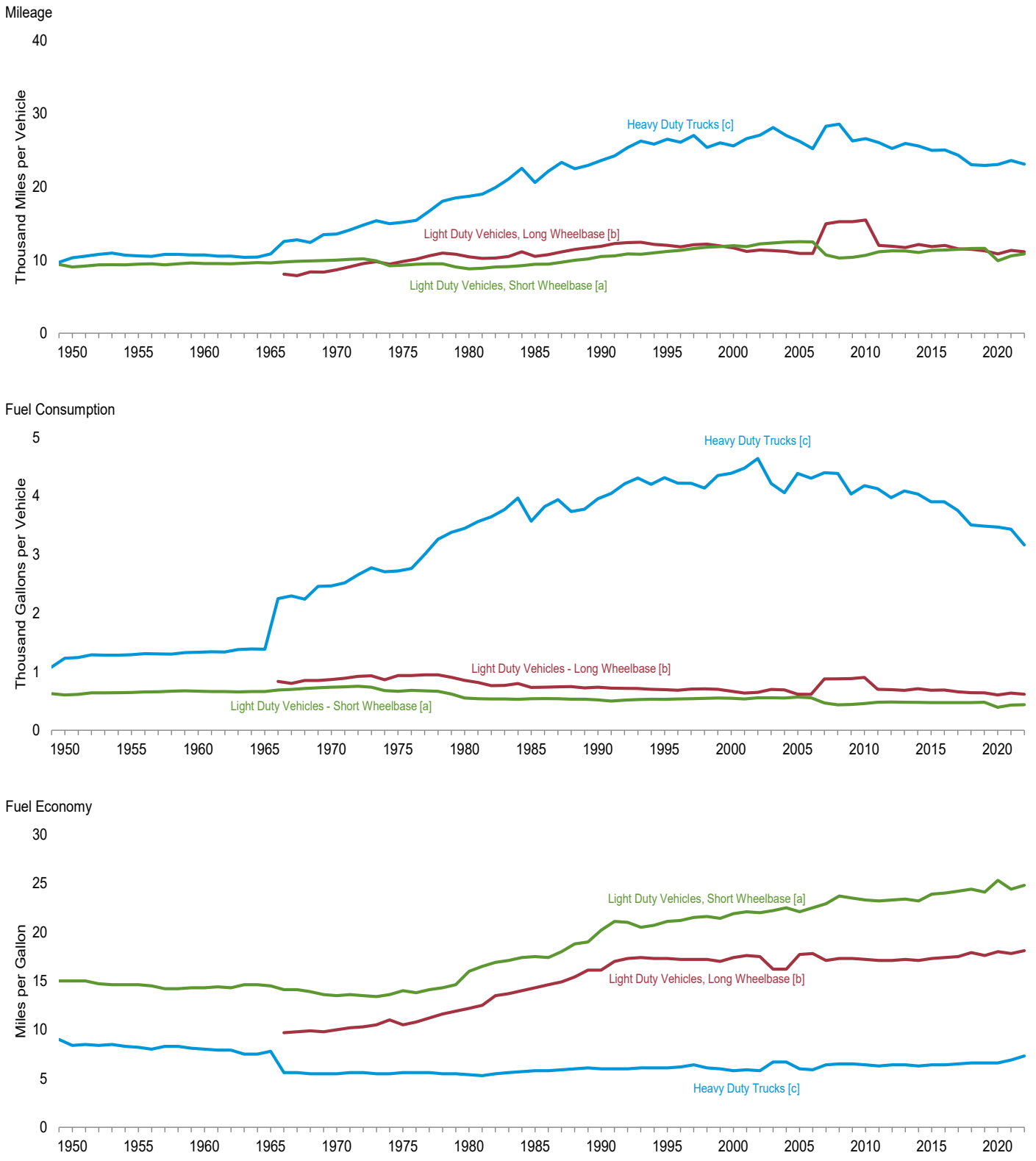
[a] See "Primary Energy Consumption" in Glossary.
[b] Expenditures include taxes where data are available.
[c] Carbon dioxide emissions from energy consumption. See Table 11.1.
[d] See "Chained Dollars" and "Real Dollars" in Glossary.
[e] See "Gross Domestic Product (GDP)" in Glossary.
[f] Gross output is the value of GDP plus the value of intermediate inputs used to produce GDP. Through 1996, data have been adjusted by EIA based on DOC/BEA's 2012 comprehensive revision.
[g] See "Nominal Dollars" in Glossary.
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 (2017) dollars (see Table C1). • **Expenditures:** U.S. Energy Information Administration, "State Energy Price and Expenditure Estimates, 1970 Through 2021" (June 2023), U.S. Table ET1. • **Expenditures per Capita:** Calculated as energy expenditures divided by U.S. population (see Table C1). • **Expenditures as Share of GDP:** Calculated as energy expenditures divided by U.S. gross domestic product in nominal dollars (see Table C1). • **Expenditures as Share of Gross Output:** Calculated as energy expenditures divided by U.S. gross output (see Table C1). • **Emissions: 1949–1972—**U.S. Energy Information Administration, *Annual Energy Review 2011,* Table 11.1. **1973 forward—**Table 11.1. • **Emissions per Capita:** Calculated as carbon dioxide emissions divided by U.S. population (see Table C1). • **Emissions per Real Dollar of GDP:** Calculated as carbon dioxide emissions divided by U.S. gross domestic product in chained (2017) dollars (see Table C1).

Figure 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949-2022



[a] Through 1989, data are for passenger cars and motorcycles. For 1990–2006, data are for passenger cars only. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase less than or equal to 121 inches.
[b] For 1966–2000, data are for vans, pickup trucks, and sport utility vehicles. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase greater than 121 inches.
[c] For 1949–1965, data are for single-unit trucks with 2 axles and 6 or more tires, combination trucks, and other vehicles with 2 axles and 4 tires that are not passenger cars. For 1966–2006 data are for single-unit truck with 2 axles and 6 or more tires, and combination trucks. Beginning in 2007, data are for single-unit trucks with 2 axles and 6 or more tires (or a gross vehicle weight rating exceeding 10,000 pounds), and combination trucks.
Note: Through 1965, "Light-Duty Vehicles, Long Wheelbase" data are included in "Heavy-Duty Trucks."
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.8.

Table 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy

	Light-Duty Vehicles, Short Wheelbase[a]			Light-Duty Vehicles, Long Wheelbase[b]			Heavy-Duty Trucks[c]			All Motor Vehicles[d]		
	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy	Mileage	Fuel Consumption	Fuel Economy
	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon	Miles per Vehicle	Gallons per Vehicle	Miles per Gallon
1950	9,060	603	15.0	([e])	([e])	([e])	10,316	1,229	8.4	9,321	725	12.8
1955	9,447	645	14.6	([e])	([e])	([e])	10,576	1,293	8.2	9,661	761	12.7
1960	9,518	668	14.3	([e])	([e])	([e])	10,693	1,333	8.0	9,732	784	12.4
1965	9,603	661	14.5	([e])	([e])	([e])	10,851	1,387	7.8	9,826	787	12.5
1970	9,989	737	13.5	8,676	866	10.0	13,565	2,467	5.5	9,976	830	12.0
1975	9,309	665	14.0	9,829	934	10.5	15,167	2,722	5.6	9,627	790	12.2
1980	8,813	551	16.0	10,437	854	12.2	18,736	3,447	5.4	9,458	712	13.3
1981	8,873	538	16.5	10,244	819	12.5	19,016	3,565	5.3	9,477	697	13.6
1982	9,050	535	16.9	10,276	762	13.5	19,931	3,647	5.5	9,644	686	14.1
1983	9,118	534	17.1	10,497	767	13.7	21,083	3,769	5.6	9,760	686	14.2
1984	9,248	530	17.4	11,151	797	14.0	22,550	3,967	5.7	10,017	691	14.5
1985	9,419	538	17.5	10,506	735	14.3	20,597	3,570	5.8	10,020	685	14.6
1986	9,464	543	17.4	10,764	738	14.6	22,143	3,821	5.8	10,143	692	14.7
1987	9,720	539	18.0	11,114	744	14.9	23,349	3,937	5.9	10,453	694	15.1
1988	9,972	531	18.8	11,465	745	15.4	22,485	3,736	6.0	10,721	688	15.6
1989	10,157	533	19.0	11,676	724	16.1	22,926	3,776	6.1	10,932	688	15.9
1990	10,504	520	20.2	11,902	738	16.1	23,603	3,953	6.0	11,107	677	16.4
1991	10,571	501	21.1	12,245	721	17.0	24,229	4,047	6.0	11,294	669	16.9
1992	10,857	517	21.0	12,381	717	17.3	25,373	4,210	6.0	11,558	683	16.9
1993	10,804	527	20.5	12,430	714	17.4	26,262	4,309	6.1	11,595	693	16.7
1994	10,992	531	20.7	12,156	701	17.3	25,838	4,202	6.1	11,683	698	16.7
1995	11,203	530	21.1	12,018	694	17.3	26,514	4,315	6.1	11,793	700	16.8
1996	11,330	534	21.2	11,811	685	17.2	26,092	4,221	6.2	11,813	700	16.9
1997	11,581	539	21.5	12,115	703	17.2	27,032	4,218	6.4	12,107	711	17.0
1998	11,754	544	21.6	12,173	707	17.2	25,397	4,135	6.1	12,211	721	16.9
1999	11,848	553	21.4	11,957	701	17.0	26,014	4,352	6.0	12,206	732	16.7
2000	11,976	547	21.9	11,672	669	17.4	25,617	4,391	5.8	12,164	720	16.9
2001	11,831	534	22.1	11,204	636	17.6	26,602	4,477	5.9	11,887	695	17.1
2002	12,202	555	22.0	11,364	650	17.5	27,071	4,642	5.8	12,171	719	16.9
2003	12,325	556	22.2	11,287	697	16.2	28,093	4,215	6.7	12,208	718	17.0
2004	12,460	553	22.5	11,184	690	16.2	27,023	4,057	6.7	12,200	714	17.1
2005	12,510	567	22.1	10,920	617	17.7	26,235	4,385	6.0	12,082	706	17.1
2006	12,485	554	22.5	10,920	612	17.8	25,231	4,304	5.9	12,017	698	17.2
2007	[a] 10,710	[a] 468	[a] 22.9	[b] 14,970	[b] 877	[b] 17.1	[c] 28,290	[c] 4,398	6.4	11,915	693	17.2
2008	10,290	435	23.7	15,256	880	17.3	28,573	4,387	6.5	11,631	667	17.4
2009	10,391	442	23.5	15,252	882	17.3	26,274	4,037	6.5	11,631	661	17.6
2010	10,650	456	23.3	15,474	901	17.2	26,604	4,180	6.4	11,866	681	17.4
2011	11,150	481	23.2	12,007	702	17.1	26,054	4,128	6.3	11,652	665	17.5
2012	11,262	484	23.3	11,885	694	17.1	25,255	3,973	6.4	11,707	665	17.6
2013	11,244	480	23.4	11,712	683	17.2	25,951	4,086	6.4	11,679	663	17.6
2014	11,048	476	23.2	12,138	710	17.1	25,594	4,036	6.3	11,621	666	17.5
2015	11,327	475	23.9	11,855	684	17.3	24,979	3,904	6.4	11,742	656	17.9
2016	11,370	475	24.0	11,991	689	17.4	25,037	3,904	6.4	11,810	658	17.9
2017	11,467	474	24.2	11,543	659	17.5	24,335	3,758	6.5	11,789	653	18.1
2018	11,576	475	24.4	11,486	643	17.9	23,037	3,507	6.6	11,843	651	18.2
2019	11,599	481	24.1	11,263	640	17.6	22,930	3,488	6.6	11,797	651	18.1
2020	9,928	393	25.3	10,855	603	18.0	23,075	3,470	6.6	10,523	577	18.2
2021	10,573	433	24.4	11,318	636	17.8	23,601	3,436	6.9	11,099	617	18.0
2022	10,847	437	24.8	11,142	617	18.1	23,111	3,167	7.3	11,278	608	18.5

[a] Through 1989, data are for passenger cars and motorcycles. For 1990–2006, data are for passenger cars only. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase less than or equal to 121 inches.

[b] For 1966–2006, data are for vans, pickup trucks, and sport utility vehicles. Beginning in 2007, data are for light-duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles) with a wheelbase greater than 121 inches.

[c] For 1949–1965, data are for single-unit trucks with 2 axles and 6 or more tires, combination trucks, and other vehicles with 2 axles and 4 tires that are not passenger cars. For 1966–2006, data are for single-unit trucks with 2 axles and 6 or more tires, and combination trucks. Beginning in 2007, data are for single-unit trucks with 2 axles and 6 or more tires (or a gross vehicle weight rating exceeding 10,000 pounds), and combination trucks.

[d] Includes buses and motorcycles, which are not separately displayed.

[e] Included in "Heavy-Duty Trucks."

Note: Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Light-Duty Vehicles, Short Wheelbase: 1990–1994**—U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 1998,* Table 4-13. • **All Other Data: 1949–1994**—Federal Highway Administration (FHWA), *Highway Statistics Summary to 1995,* Table VM-201A. **1995 forward**—FHWA, *Highway Statistics,* annual reports, Table VM-1.

Table 1.9 Electric and Fuel Cell Electric Light-Duty Vehicles Overview

	Electric Light-Duty Vehicles			Fuel Cell Electric Vehicles[c]	All Light-Duty Vehicles[d]	Electric Vehicle Share of All Light-Duty Vehicles
	Battery Electric Vehicles[a]	Plug-In Hybrid Electric Vehicles[b]	Total			
	Thousands of Registered Vehicles					Percent
2012	29.7	64.7	94.4	0.1	231,872.8	(s)
2013	E 85.7	E 108.9	E 194.7	E 0.2	E 237,326.1	E 0.1
2014	127.4	158.8	286.2	0.1	240,796.6	0.1
2015	E 194.8	E 196.7	E 391.5	E 0.2	E 248,926.1	E 0.2
2016	272.6	239.0	511.7	1.1	251,219.0	0.2
2017	E 353.3	E 368.3	E 721.6	E 4.6	E 257,206.5	E 0.3
2018	573.0	491.2	1,064.2	5.9	259,182.4	0.4
2019	755.7	561.2	1,316.9	7.6	261,451.1	0.5
2020	973.5	613.0	1,586.5	8.2	259,976.0	0.6
2021	1,422.0	774.9	2,196.9	11.4	263,152.3	0.8
2022	2,115.6	936.9	3,052.5	13.9	263,764.2	1.2

[a] See "Battery Electric Vehicle" in Glossary.
[b] See "Plug-In Hybrid Electric Vehicle" in Glossary.
[c] See "Fuel Cell Electric Vehicle" in Glossary.
[d] Includes internal combustion engine vehicles, electric vehicles, and fuel cell electric vehicles.

E=Estimate. (s)=Less than 0.05 percent.

Notes: • Data are at end of year. • Data are for on-road vehicles less than or equal to 8,500 pounds (includes cars and light trucks). • Data for 2013, 2015, and 2017 are estimates. • The federal government and some states self-register their state-owned vehicles. These vehicles are not included in number of registered vehicles. • 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 2012.

Sources: • **Electric Light-Duty Vehicles, Fuel Cell Electric Vehicles, and All Light-Duty vehicles:** S&P Global Mobility Vehicles in Operation, as of calendar year end figures for each of the years shown. Data for 2013, 2015, and 2017 are estimates interpolated by EIA. • **Electric Vehicle Share of All Light Duty-Vehicles (defined by EIA as less than or equal to 8,500 lbs):** Calculated as battery electric and plug-in hybrid electric light-duty vehicles divided by all light-duty vehicles by EIA.

Table 1.10 Heating Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	R6,793	R6,313	R7,028	R7,461	R3,495	R3,552	R2,280	R6,320	R3,910	R5,362
1955 Total	R6,872	R6,220	6,488	R6,918	R3,487	R3,517	2,295	R6,686	R4,324	R5,242
1960 Total	R6,826	R6,376	6,909	R7,191	R3,764	R4,139	2,767	R6,264	R3,806	R5,400
1965 Total	R7,027	R6,379	R6,588	R6,938	R3,358	R3,505	R2,238	R6,067	R3,825	R5,143
1970 Total	R7,022	R6,376	6,721	R7,094	R3,437	R3,827	2,561	R6,098	R3,731	R5,214
1975 Total	R6,545	R5,881	R6,407	R6,886	R2,953	R3,441	R2,311	R6,237	R4,120	R4,900
1980 Total	7,071	R6,463	6,976	R6,840	R3,361	R3,969	2,495	R5,534	R3,544	R5,075
1985 Total	R6,750	R5,957	6,668	R7,269	R2,892	R3,663	R2,537	R6,040	R3,939	R4,886
1990 Total	5,988	R5,240	R5,779	R6,141	R2,301	R2,947	R1,967	R5,370	R3,610	R4,178
1995 Total	R6,686	R6,079	6,741	R6,916	R2,984	R3,653	R2,148	R5,079	R3,274	R4,637
2000 Total	R6,624	R5,986	R6,317	R6,504	R2,902	R3,555	R2,152	R4,952	R3,464	R4,491
2005 Total	R6,645	R5,938	R6,224	R6,218	R2,773	R3,384	R1,985	R4,873	R3,383	R4,346
2010 Total	5,935	R5,539	R6,188	R6,570	R3,163	R3,954	2,450	R5,060	R3,628	R4,461
2011 Total	R6,113	R5,471	R6,173	R6,569	R2,564	R3,347	R2,113	R5,304	R3,823	R4,312
2012 Total	R5,563	R4,960	R5,356	R5,520	R2,304	R2,880	R1,648	R4,560	R3,418	R3,771
2013 Total	R6,425	R5,827	R6,623	R7,140	R2,736	R3,651	R2,325	R5,262	R3,367	R4,470
2014 Total	R6,676	R6,190	7,196	R7,308	R2,961	R3,935	R2,421	R4,737	R2,777	R4,558
2015 Total	R6,520	R5,762	R6,165	R6,093	R2,497	R3,224	R2,085	R4,595	R2,902	R4,094
2016 Total	R5,928	R5,339	5,701	R5,791	R2,464	R3,095	R1,750	R4,617	R3,035	R3,887
2017 Total	6,037	R5,318	5,684	R6,003	R2,239	R2,837	R1,580	R4,571	R3,190	R3,838
2018 Total	R6,323	R5,769	6,434	R6,974	R2,638	R3,479	2,252	R4,808	R3,172	R4,291
2019 Total	6,538	R5,736	R6,427	R7,082	R2,392	R3,181	R2,143	R5,309	R3,547	R4,317
2020 Total	5,822	R5,199	R5,855	R6,326	R2,263	R3,064	R1,812	R4,784	R3,219	R3,914
2021 Total	5,799	5,262	5,747	6,061	2,366	3,166	1,911	4,694	3,338	3,934
2022 January	1,303	1,242	1,391	1,442	644	847	578	888	549	914
February	994	933	1,084	1,194	412	591	498	806	478	712
March	841	758	791	847	286	388	263	608	401	525
April	544	495	567	578	156	217	52	422	337	342
May	187	146	159	185	31	32	4	240	213	122
June	53	27	26	30	1	1	0	69	56	26
July	3	2	3	9	0	0	0	7	10	4
August	3	3	14	18	0	0	0	11	8	6
September	108	67	82	84	13	23	2	66	31	44
October	386	393	425	405	177	240	66	311	140	258
November	614	588	695	825	267	429	298	770	516	511
December	983	980	1,105	1,289	536	671	439	926	627	781
Total	**6,019**	**5,636**	**6,344**	**6,905**	**2,523**	**3,438**	**2,200**	**5,125**	**3,366**	**4,245**
2023 January	R921	844	997	1,183	R450	576	R403	R963	R632	R715
February	R937	R813	881	1,031	R307	414	R330	R826	R591	621
March	849	796	850	955	301	397	R198	R772	R611	586
April	R465	368	R442	488	117	R188	85	445	R351	R297
May	R282	R244	215	145	65	62	6	R181	R195	R146
June	65	43	R44	23	9	R6	0	100	R113	R44
July	1	1	7	17	0	0	0	11	R11	5
August	24	13	R22	17	0	0	0	18	10	10
September	R64	58	68	R59	10	13	1	97	R79	46
October	R284	R274	R339	362	111	146	47	317	171	207
November	788	716	736	R747	326	R416	R255	R575	382	R505
December	851	791	826	903	R453	R599	R393	770	R480	624
Total	**R5,532**	**R4,962**	**R5,426**	**R5,930**	**R2,147**	**R2,817**	**R1,719**	**R5,075**	**R3,627**	**R3,805**
2024 January	1,084	1,021	1,192	1,339	575	854	633	917	578	840

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

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

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

Sources: State-level degree day data are from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Centers for Environmental Information. Using these state-level data, the U.S. Energy Information Administration calculates population-weighted census-division and U.S. degree day averages using state populations from the same year the degree days are measured. See methodology at http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf.

Table 1.11 Cooling Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	**296**	R**403**	R**506**	**646**	R**1,427**	R**1,419**	R**2,279**	R**689**	**628**	R**873**
1955 Total	**531**	R**764**	R**921**	R**1,139**	R**1,645**	R**1,672**	R**2,505**	R**787**	R**557**	**1,145**
1960 Total	**318**	R**488**	**626**	**870**	R**1,597**	R**1,529**	**2,366**	R**983**	R**794**	**1,002**
1965 Total	R**311**	R**502**	**617**	**831**	R**1,624**	R**1,550**	R**2,461**	R**788**	R**575**	R**981**
1970 Total	**423**	R**619**	**746**	**979**	R**1,758**	R**1,569**	R**2,281**	R**981**	**732**	R**1,082**
1975 Total	R**423**	R**586**	**720**	**937**	R**1,802**	R**1,439**	R**2,162**	R**913**	R**597**	R**1,052**
1980 Total	**439**	R**683**	R**768**	**1,158**	R**1,923**	R**1,751**	R**2,652**	R**1,083**	R**651**	**1,216**
1985 Total	**324**	R**513**	R**602**	**780**	R**1,882**	R**1,519**	**2,519**	R**1,107**	R**758**	**1,122**
1990 Total	R**428**	R**566**	**602**	**912**	R**2,058**	R**1,560**	R**2,527**	R**1,224**	R**833**	R**1,201**
1995 Total	R**472**	R**705**	R**878**	R**928**	R**2,030**	R**1,611**	**2,398**	R**1,226**	**791**	R**1,262**
2000 Total	R**279**	R**460**	**630**	**983**	R**1,925**	R**1,672**	**2,773**	R**1,494**	R**771**	R**1,233**
2005 Total	R**599**	R**895**	**944**	**1,063**	R**2,100**	R**1,674**	R**2,645**	R**1,386**	**777**	R**1,390**
2010 Total	**634**	R**913**	**963**	**1,095**	R**2,271**	R**1,974**	R**2,754**	R**1,370**	**674**	R**1,457**
2011 Total	**553**	R**840**	**858**	**1,074**	R**2,260**	R**1,725**	**3,112**	R**1,462**	**734**	R**1,470**
2012 Total	**563**	R**819**	**974**	**1,221**	R**2,163**	R**1,760**	R**2,913**	R**1,582**	R**917**	R**1,494**
2013 Total	**540**	R**685**	**689**	R**892**	R**2,001**	R**1,438**	**2,535**	R**1,471**	R**889**	R**1,305**
2014 Total	R**420**	R**600**	R**609**	**812**	R**2,001**	R**1,491**	**2,474**	R**1,439**	R**1,068**	R**1,296**
2015 Total	R**556**	R**809**	**729**	**941**	R**2,397**	R**1,717**	R**2,742**	R**1,485**	R**1,067**	R**1,485**
2016 Total	R**625**	R**891**	R**957**	**1,072**	R**2,405**	R**1,956**	**2,882**	R**1,502**	R**929**	R**1,554**
2017 Total	R**451**	R**665**	R**708**	**910**	R**2,247**	**1,585**	**2,718**	R**1,550**	R**1,056**	R**1,423**
2018 Total	R**668**	R**890**	**972**	R**1,134**	R**2,411**	R**1,928**	R**2,855**	R**1,574**	R**1,004**	**1,579**
2019 Total	R**536**	R**787**	R**832**	**951**	R**2,504**	R**1,885**	R**2,759**	R**1,398**	R**845**	R**1,496**
2020 Total	R**645**	R**848**	**831**	**964**	R**2,335**	R**1,636**	**2,735**	R**1,683**	**1,071**	R**1,519**
2021 Total	**604**	**837**	**911**	**1,093**	**2,226**	**1,611**	**2,644**	**1,583**	**1,040**	**1,492**
2022 January	0	0	0	0	28	3	9	0	9	8
February	0	0	0	0	45	3	5	2	7	11
March	0	0	1	3	84	22	41	13	14	27
April	0	0	0	2	98	25	158	52	23	49
May	18	40	79	72	240	206	386	127	42	147
June	63	114	177	232	376	367	554	290	146	270
July	260	311	264	338	482	480	682	431	247	394
August	273	302	219	276	440	385	583	358	297	359
September	33	72	74	121	278	200	404	245	222	202
October	0	1	2	7	106	29	131	67	59	55
November	0	0	0	0	88	5	26	1	11	23
December	0	0	0	0	37	3	13	0	9	11
Total	**647**	**838**	**816**	**1,050**	**2,302**	**1,728**	**2,992**	**1,586**	**1,088**	**1,556**
2023 January	0	0	0	0	50	R**19**	35	0	8	17
February	0	0	0	0	R**69**	17	27	0	8	20
March	0	0	0	1	84	R**27**	R**88**	3	10	32
April	0	0	1	5	117	30	R**94**	41	18	44
May	4	12	48	89	R**177**	R**143**	292	116	33	R**110**
June	50	78	130	226	294	271	515	R**192**	R**55**	R**209**
July	R**277**	307	R**246**	283	488	431	R**648**	460	282	R**390**
August	R**134**	R**189**	188	R**279**	461	R**420**	R**711**	362	239	348
September	60	80	88	146	R**290**	248	R**507**	R**202**	R**88**	202
October	5	10	10	14	138	R**65**	172	R**85**	57	73
November	0	0	0	0	66	4	28	13	R**14**	21
December	0	0	0	0	38	3	R**15**	0	8	11
Total	R**531**	R**677**	R**711**	R**1,042**	R**2,271**	R**1,678**	R**3,132**	R**1,475**	R**820**	R**1,476**
2024 January	0	0	0	0	36	2	8	0	7	10

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

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

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

Sources: State-level degree day data are from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Centers for Environmental Information. Using these state-level data, the U.S. Energy Information Administration calculates population-weighted census-division and U.S. degree day averages using state populations from the same year the degree days are measured. See methodology at http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf.

Table 1.12a Non-Combustion Use of Fossil Fuels in Physical Units

	Coal	Natural Gas	Petroleum							
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petro-chemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total
	Thousand Short Tons	Billion Cubic Feet	Thousand Barrels per Day							
1973 Total	**3,523**	**898**	**522**	**684**	**162**	**356**	**45**	**88**	**88**	**1,945**
1975 Total	**3,105**	**761**	**419**	**654**	**137**	**320**	**43**	**75**	**122**	**1,770**
1980 Total	**2,612**	**759**	**396**	**890**	**159**	**692**	**41**	**100**	**143**	**2,422**
1985 Total	**1,536**	**642**	**425**	**982**	**145**	**395**	**46**	**83**	**95**	**2,173**
1990 Total	**758**	**675**	**483**	**1,071**	**164**	**546**	**57**	**56**	**85**	**2,462**
1995 Total	**921**	**868**	**486**	**1,357**	**156**	**590**	**58**	**37**	**70**	**2,754**
2000 Total	**674**	**918**	**525**	**1,543**	**166**	**662**	**78**	**51**	**78**	**3,103**
2005 Total	**929**	**761**	**546**	**1,369**	**141**	**729**	**106**	**33**	**75**	**2,997**
2010 Total	**719**	**654**	**362**	**1,597**	**131**	**539**	**42**	**14**	**89**	**2,773**
2011 Total	**730**	**680**	**355**	**1,639**	**125**	**520**	**40**	**12**	**91**	**2,781**
2012 Total	**707**	**706**	**340**	**1,747**	**114**	**444**	**43**	**8**	**88**	**2,785**
2013 Total	**732**	**721**	**323**	**1,870**	**121**	**448**	**40**	**52**	**93**	**2,948**
2014 Total	**562**	**725**	**327**	**1,780**	**126**	**410**	**20**	**55**	**97**	**2,817**
2015 Total	**520**	**703**	**343**	**1,918**	**138**	**378**	**21**	**52**	**99**	**2,948**
2016 Total	**435**	**727**	**351**	**1,943**	**130**	**371**	**20**	**49**	**100**	**2,966**
2017 Total	**463**	**746**	**351**	**2,023**	**121**	**394**	**19**	**52**	**103**	**3,062**
2018 Total	**531**	**1,118**	**327**	**2,309**	**117**	**393**	**22**	**48**	**103**	**3,320**
2019 Total	**520**	**1,114**	**348**	**2,342**	**113**	**349**	**21**	**50**	**94**	**3,318**
2020 Total	**418**	**1,051**	**343**	**2,479**	**102**	**329**	**17**	**45**	**88**	**3,403**
2021 Total	**509**	**1,074**	**371**	**2,652**	**105**	**336**	**18**	**42**	**90**	**3,615**
2022 January	41	108	243	R 2,849	125	237	16	41	98	R 3,610
February	38	95	264	R 2,696	114	203	15	49	107	R 3,448
March	41	99	272	R 2,790	139	249	17	53	95	R 3,614
April	38	92	335	R 2,657	123	267	16	45	94	R 3,537
May	39	88	401	R 2,596	112	276	13	37	91	R 3,526
June	37	83	493	R 2,837	93	236	15	48	103	R 3,825
July	39	84	465	R 2,941	46	266	27	51	99	R 3,895
August	39	85	510	R 2,597	134	252	20	69	98	R 3,681
September	37	83	472	R 2,682	99	233	18	52	99	R 3,655
October	40	89	453	R 2,636	130	252	12	45	92	R 3,620
November	37	94	369	R 2,606	107	228	21	34	94	R 3,460
December	38	99	256	R 2,341	105	243	14	34	93	R 3,085
Total	**464**	**1,100**	**378**	**R 2,685**	**111**	**246**	**17**	**47**	**97**	**R 3,580**
2023 January	39	100	231	R 2,517	117	268	8	47	85	R 3,273
February	37	92	239	R 2,497	112	221	16	36	94	R 3,215
March	41	98	258	R 2,523	57	220	22	48	95	R 3,224
April	37	92	328	R 2,742	84	302	23	48	88	R 3,614
May	38	88	406	R 2,895	97	294	16	39	89	R 3,837
June	37	83	472	R 2,961	95	228	13	45	92	R 3,906
July	39	85	461	R 2,989	94	258	8	55	99	R 3,964
August	39	88	512	R 2,762	74	240	22	44	91	R 3,744
September	38	84	476	R 2,733	81	226	28	45	101	R 3,690
October	40	91	451	R 2,914	94	225	18	58	89	R 3,848
November	36	96	331	R 2,980	55	259	33	52	89	R 3,797
December	37	102	253	R 3,190	37	241	10	43	90	R 3,865
Total	**457**	**1,097**	**369**	**R 2,811**	**83**	**249**	**18**	**47**	**92**	**R 3,667**
2024 January	36	103	229	2,821	85	229	15	47	89	3,514

[a] Ethane, propane, normal butane, isobutane, natural gasoline, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

[b] Includes still gas not burned as refinery fuel.

[c] Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.

R=Revised.

Notes: • Data are estimates. • Non-combustion use estimates are included in total energy consumption. See Table 1.3. • Non-combustion estimates are all for industrial sector consumption, except for some lubricants consumed by the transportation sector. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia. • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary for all available annual and monthly data beginning in 1973.

Sources: • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.

Table 1.12b Heat Content of Non-Combustion Use of Fossil Fuels

(Quadrillion Btu)

	Coal	Natural Gas	Petroleum								Total	Percent of Total Energy Consumption
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petrochemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total		
1973 Total	**0.113**	**0.916**	**1.264**	**0.872**	**0.359**	**0.726**	**0.093**	**0.169**	**0.185**	**3.668**	**4.696**	**6.4**
1975 Total	**.099**	**.777**	**1.014**	**.822**	**.304**	**.652**	**.090**	**.144**	**.256**	**3.283**	**4.159**	**6.0**
1980 Total	**.084**	**.777**	**.962**	**1.128**	**.354**	**1.426**	**.086**	**.193**	**.303**	**4.451**	**5.312**	**7.0**
1985 Total	**.049**	**.662**	**1.029**	**1.194**	**.322**	**.817**	**.096**	**.159**	**.201**	**3.818**	**4.529**	**6.1**
1990 Total	**.024**	**.695**	**1.170**	**1.345**	**.362**	**1.123**	**.119**	**.107**	**.179**	**4.406**	**5.125**	**6.2**
1995 Total	**.029**	**.892**	**1.178**	**1.716**	**.346**	**1.214**	**.120**	**.071**	**.145**	**4.790**	**5.711**	**6.4**
2000 Total	**.022**	**.942**	**1.276**	**1.928**	**.369**	**1.344**	**.163**	**.097**	**.164**	**5.342**	**6.306**	**6.5**
2005 Total	**.030**	**.782**	**1.323**	**1.701**	**.312**	**1.474**	**.221**	**.063**	**.157**	**5.250**	**6.062**	**6.2**
2010 Total	**.023**	**.669**	**.878**	**1.931**	**.291**	**1.096**	**.087**	**.026**	**.188**	**4.496**	**5.187**	**5.5**
2011 Total	**.023**	**.695**	**.859**	**1.947**	**.276**	**1.057**	**.083**	**.023**	**.193**	**4.437**	**5.156**	**5.5**
2012 Total	**.023**	**.724**	**.827**	**2.109**	**.254**	**.901**	**.090**	**.015**	**.187**	**4.382**	**5.128**	**5.6**
2013 Total	**.023**	**.741**	**.783**	**2.270**	**.268**	**.901**	**.083**	**.100**	**.197**	**4.601**	**5.366**	**5.7**
2014 Total	**.018**	**.749**	**.793**	**2.125**	**.280**	**.827**	**.043**	**.106**	**.205**	**4.379**	**5.146**	**5.4**
2015 Total	**.017**	**.730**	**.832**	**2.317**	**.305**	**.760**	**.043**	**.099**	**.208**	**4.564**	**5.310**	**5.6**
2016 Total	**.014**	**.755**	**.853**	**2.330**	**.289**	**.754**	**.043**	**.094**	**.212**	**4.575**	**5.344**	**5.7**
2017 Total	**.015**	**.774**	**.849**	**2.393**	**.267**	**.797**	**.040**	**.100**	**.217**	**4.663**	**5.452**	**5.8**
2018 Total	**.017**	**1.160**	**.793**	**2.708**	**.259**	**.794**	**.046**	**.092**	**.218**	**4.910**	**6.087**	**6.2**
2019 Total	**.017**	**1.159**	**.844**	**2.746**	**.250**	**.704**	**.044**	**.096**	**.198**	**4.882**	**6.057**	**6.3**
2020 Total	**.013**	**1.092**	**.832**	**2.870**	**.227**	**.669**	**.036**	**.087**	**.186**	**4.908**	**6.013**	**6.8**
2021 Total	**.016**	**1.116**	**.898**	**3.084**	**.233**	**.684**	**.038**	**.081**	**.190**	**5.208**	**6.340**	**6.8**
2022 January	.001	.112	.050	R.270	.024	.041	.003	.007	.017	R.411	R.524	5.8
February	.001	.099	.049	R.230	.019	.031	.002	.007	.017	R.357	R.457	5.7
March	.001	.103	.056	R.266	.026	.043	.003	.009	.017	R.420	R.524	6.5
April	.001	.095	.067	.243	.022	.045	.003	.007	.016	.403	R.499	6.9
May	.001	.091	.083	R.246	.021	.048	.002	.006	.016	R.422	R.515	6.9
June	.001	.087	.098	R.262	.017	.040	.003	.008	.018	R.445	R.533	7.0
July	.001	.087	.096	R.282	.009	.046	.005	.008	.018	R.463	R.551	6.8
August	.001	.088	.105	R.252	.025	.044	.003	.011	.018	R.459	R.548	6.8
September	.001	.086	.094	R.250	.018	.039	.003	.008	.017	R.429	R.517	7.0
October	.001	.092	.093	R.250	.024	.044	.002	.007	.016	R.438	R.531	7.2
November	.001	.098	.073	R.240	.020	.038	.004	.005	.016	R.396	R.496	6.4
December	.001	.103	.053	R.220	.020	.042	.003	.005	.017	R.359	R.463	5.4
Total	**.015**	**1.141**	**.916**	**R3.011**	**.245**	**.501**	**.035**	**.089**	**.204**	**R5.002**	**R6.158**	**6.5**
2023 January	.001	.103	.048	R.238	.022	.046	.001	.008	.015	R.379	R.483	5.7
February	.001	.095	.044	R.209	.019	.035	.003	.005	.015	R.330	R.426	5.6
March	.001	.101	.053	R.236	.011	.038	.004	.008	.017	R.367	.470	5.8
April	.001	.096	.065	R.250	.015	.051	.004	.008	.015	R.408	R.505	R7.0
May	.001	.091	.084	R.274	.018	.051	.003	.006	.016	R.452	.545	7.4
June	.001	.086	.094	R.275	.017	.038	.002	.007	.016	R.449	R.536	7.2
July	.001	.088	.095	R.287	.018	.045	.001	.009	.018	R.473	R.562	R6.9
August	.001	.091	.105	R.265	.014	.042	.004	.007	.016	R.454	R.546	6.6
September	.001	.088	.095	R.254	.015	.037	.005	.007	.018	R.430	R.519	7.0
October	.001	.095	.093	R.281	.018	.039	.003	.009	.016	R.459	R.555	R7.3
November	.001	.100	.066	R.279	.010	.043	.006	.008	.015	R.427	R.528	6.7
December	.001	.106	.052	R.302	.007	.041	.002	.007	.016	R.427	R.534	6.4
Total	**.015**	**1.139**	**.893**	**R3.151**	**.184**	**.506**	**.038**	**.089**	**.194**	**R5.055**	**R6.209**	**6.6**
2024 January	.001	.107	.047	.269	.016	.039	.003	.008	.016	.397	.505	5.6

[a] Ethane, propane, normal butane, isobutane, natural gasoline, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

[b] Includes still gas not burned as refinery fuel.

[c] Distillate fuel oil, residual fuel oil, waxes, and miscellaneous products.

R=Revised.

Notes: • Data are estimates. • Non-combustion use estimates are included in total energy consumption. See Table 1.3. • Non-combustion estimates are all for industrial sector consumption, except for some lubricants consumed by the transportation sector. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.• See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary for all available annual and monthly data beginning in 1973.

Sources: • See Note 2, "Non-Combustion Use of Fossil Fuels," at end of section. • **Percent of Total Energy Consumption:** Calculated as total non-combustion use of fossil fuels divided by total primary energy consumption (see Table 1.3).

Note 1. Merchandise Trade Value. Imports data presented are based on the customs values. Those values do not include insurance and freight and are consequently lower than the cost, insurance, and freight (CIF) values, which are also reported by the Bureau of the Census. All exports data, and imports data through 1980, are on a free alongside ship (f.a.s.) basis.

"Balance" is exports minus imports; a positive balance indicates a surplus trade value and a negative balance indicates a deficit trade value. "Energy" includes mineral fuels, lubricants, and related material. "Non-Energy Balance" and "Total Merchandise" include foreign exports (i.e., re-exports) and nonmonetary gold and U.S. Department of Defense Grant-Aid shipments. The "Non-Energy Balance" is calculated by subtracting the "Energy" from the "Total Merchandise Balance."

"Imports" consist of government and nongovernment shipments of merchandise into the 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the U.S. Foreign Trade Zones. They reflect the total arrival from foreign countries of merchandise that immediately entered consumption channels, warehouses, the Foreign Trade Zones, or the Strategic Petroleum Reserve. They exclude shipments between the United States, Puerto Rico, and U.S. possessions, shipments to U.S. Armed Forces and diplomatic missions abroad for their own use, U.S. goods returned to the United States by its Armed Forces, and in-transit shipments.

Note 2. Non-Combustion Use of Fossil Fuels. Most fossil fuels consumed in the United States and elsewhere are combusted to produce heat and power. However, some are used directly for non-combustion use as construction materials, chemical feedstocks, lubricants, solvents, and waxes. For example, coal tars from coal coke manufacturing are used as feedstock in the chemical industry, for metallurgical work, and in anti-dandruff shampoos; natural gas is used to make nitrogenous fertilizers and as chemical feedstocks; asphalt and road oil are used for roofing and paving; hydrocarbon gas liquids are used to create intermediate products that are used in making plastics; lubricants, including motor oil and greases, are used in vehicles and various industrial processes; petrochemical feedstocks are used to make plastics, synthetic fabrics, and related products.

Coal

The U.S. Energy Information Administration (EIA) assumes all non-combustion use of coal comes from the process of manufacturing coal coke in the industrial sector. Among the byproducts of the process are "coal tars" or "coal liquids," which typically are rich in aromatic hydrocarbons, such as benzene, and are used as chemical feedstock. EIA estimates non-combustion use ratios of coal tar for 1973 forward. Prior to 1998, estimate ratios are based on coal tar production data from the United States International Trade Commission's *Synthetic Organic Chemicals*. For 1998 forward, coal tar production is estimated using chemicals industry coal, coke, and breeze nonfuel use data from EIA, Form EIA-846, "Manufacturing Energy Consumption Survey" (MECS). For Table 1.12b, coal tar values in Table 1.12a are multiplied by 32.0067 million Btu/short ton, which is the product of 4.95 barrels/short ton (the density of coal tar) and 6.466 million Btu/barrel (the approximate heat content of coal tar).

Natural Gas

EIA assumes that all non-combustion use of natural gas takes place in the industrial sector. EIA estimates non-combustion ratios of natural gas using total natural gas nonfuel use data from MECS, and natural gas used as feedstock for hydrogen production data from EIA, Form EIA-820, "Annual Refinery Report." For Table 1.12b, natural gas values in Table 1.12a are multiplied by the heat content factors for natural gas end-use sectors consumption shown in Table A4.

Asphalt and Road Oil

EIA assumes all asphalt and road oil consumption is for non-combustion use. For Table 1.12b, asphalt and road oil values in Table 1.12a are multiplied by 6.636 million Btu/ barrel (the approximate heat content of asphalt and road oil) and the number of days in the period.

Distillate Fuel Oil

EIA assumes that all non-combustion use of distillate fuel oil occurs in the industrial sector. EIA estimates non-combustion ratios of distillate fuel oil using total distillate fuel oil nonfuel use data from MECS. Ratios prior to 1985 are

assumed to be equal to the 1985 ratio. For Table 1.12b, distillate fuel oil values in Table 1.12a are multiplied by the heat content factors for distillate fuel oil consumption shown in Table A3 and the number of days in the period. Distillate fuel oil is included in "other" petroleum products.

Hydrocarbon Gas Liquids (HGL)

EIA estimates non-combustion ratios of hydrocarbon gas liquids (HGL), which include ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). EIA assumes that 100% of ethane, ethylene, and propylene consumption is for non-combustion use; 85% of normal butane, butylene, isobutane, and isobutylene consumption is for non-combustion use; and 50% of natural gasoline consumption is for non-combustion use. Non-combustion use of propane in the industrial sector is estimated using data from the American Petroleum Institute (API), the Propane Education & Research Council (PERC), and EIA's *Petroleum Supply Annual* (PSA). For 1984 through 2009, propane non-combustion ratios are estimated using API propane and propylene chemical industry sales data. Propane non-combustion ratios prior to 1984 are assumed to be equal to the 1984 ratio. For 2010 through 2016, propane non-combustion ratios are estimated by subtracting API data for total odorized propane sales from PSA data for total propane product supplied. Beginning in 2017, propane non-combustion ratios are estimated by subtracting PERC data for total odorized propane sales from PSA data for total propane product supplied. For Table 1.12b, HGL component values are multiplied by the appropriate heat content factors in Table A1 and the number of days in the period.

Lubricants

EIA assumes all lubricants consumption is for non-combustion use. For Table 1.12b, lubricants values in Table 1.12a are multiplied by 6.065 million Btu/barrel (the approximate heat content of lubricants) and the number of days in the period.

Petrochemical Feedstocks, Naphtha

EIA assumes all naphtha for petrochemical feedstocks is for non-combustion use. For Table 1.12b, naphtha petrochemical feedstock values in 1.12a are multiplied by 5.248 million Btu/barrel (the approximate heat content of naphtha for petrochemical feedstocks) and the number of days in the period.

Petrochemical Feedstocks, Other Oils

EIA assumes all other oils for petrochemical feedstocks are for non-combustion use. For Table 1.12b, other oils petrochemical feedstock values in 1.12a are multiplied by 5.825 million Btu/barrel (the approximate heat content of other oils for petrochemical feedstocks) and the number of days in the period.

Petrochemical Feedstocks, Still Gas

EIA assumes all still gas not burned as refinery fuel or for pipeline gas supplies is for non-combustion use. EIA estimates non-combustion ratios of still gas by subtracting data for all known fuel uses (refinery fuel use from the PSA, and pipeline gas supplies from EIA's *Natural Gas Annual*) from the products supplied values in the PSA. The remainder is assumed to be dispatched to chemical plants as a feedstock for non-combustion use. For Table 1.12b, still gas for petrochemical feedstock values in 1.12a are multiplied by the still gas heat content factors (through 2015, the still gas heat content factor is 6.000 million Btu per fuel oil equivalent barrel; beginning in 2016, the still gas heat content factor is 6.287 million Btu per residual fuel oil equivalent barrel) and the number of days in the period.

Petroleum Coke

EIA assumes all non-combustion use of petroleum coke occurs in the industrial sector. Examples include petroleum coke used in the production of chemicals and metals. EIA estimates non-combustion ratios of petroleum coke by first subtracting data for petroleum coke consumed at refineries (from EIA, Form EIA-820, "Annual Refinery Report") from industrial sector petroleum coke consumption (from MER Table 3.7b), and then multiplying that amount by the nonfuel share of non-refinery petroleum coke consumption (from MECS). Non-combustion ratios prior to 1994 are assumed to be equal to the 1994 ratio. For Table 1.12b, petroleum coke values in 1.12a are multiplied by 5.719 million Btu/barrel (the approximate heat content of marketable petroleum coke) and the number of days in the period.

Residual Fuel Oil

EIA assumes that all non-combustion use of residual fuel oil occurs in the industrial sector. EIA estimates non-combustion ratios of residual fuel oil using total minus chemicals industry residual fuel oil nonfuel use data from MECS. Ratios prior to 1994 are assumed to be equal to the 1994 ratio. For Table 1.12b, residual fuel oil values in Table 1.12a are multiplied by 6.287 million Btu/barrel (the approximate heat content of residual fuel oil) and the number of days in the period. Residual fuel oil is included in "other" petroleum products.

Special Naphthas

EIA assumes all special naphthas consumption is for non- combustion use. For Table 1.12b, special naphthas values in Table 1.12a are multiplied by 5.248 million Btu/barrel (the approximate heat content of special naphthas) and the number of days in the period.

Waxes

EIA assumes all waxes consumption is for non-combustion use. For Table 1.12b, waxes values in Table 1.12a are multiplied by 5.537 million Btu/barrel (the approximate heat content of waxes) and the number of days in the period. Waxes are included in "other" petroleum products.

Miscellaneous Petroleum Products

Miscellaneous products include all finished petroleum products not classified elsewhere. EIA assumes all miscellaneous petroleum products consumption is for non-combustion use. For Table 1.12b, miscellaneous petroleum products values in Table 1.12a are multiplied by 5.796 million Btu/barrel (the approximate heat content of miscellaneous petroleum products) and the number of days in the period. Miscellaneous petroleum products are included in "other" petroleum products.

Table 1.2 Sources

Coal

1949–1988: Coal production data from Table 6.1 are converted to Btu by multiplying by the coal production heat content factors in Table A5.

1989 forward: Coal production data from Table 6.1 are converted to Btu by multiplying by the coal production heat content factors in Table A5. Waste coal supplied data from Table 6.1 are converted to Btu by multiplying by the waste coal supplied heat content factors in Table A5. Coal production (including waste coal supplied) is equal to coal production plus waste coal supplied.

Natural Gas (Dry)

1949 forward: Natural gas (dry) production data from Table 4.1 are converted to Btu by multiplying by the natural gas (dry) production heat content factors in Table A4.

Crude Oil

1949 forward: Crude oil (including lease condensate) production data from Table 3.1 are converted to Btu by multiplying by the crude oil (including lease condensate) production heat content factors in Table A2.

NGPL

1949 forward: Natural gas plant liquids (NGPL) production data from Table 3.1 are converted to Btu by multiplying by the NGPL production heat content factors in Table A2.

Fossil Fuels Total

1949 forward: Total fossil fuels production is the sum of the production values for coal, natural gas (dry), crude oil, and NGPL.

Nuclear Electric Power

1949 forward: Nuclear electricity net generation data from Table 7.2a are converted to Btu by multiplying by the nuclear heat rate factors in Table A6.

Renewable Energy
1949 forward: Table 10.1.

Total Primary Energy Production
1949 forward: Total primary energy production is the sum of the production values for fossil fuels, nuclear electric power, and renewable energy.

Table 1.3 Sources

Coal
1949 forward: Coal consumption data from Table 6.1 are converted to Btu by multiplying by the total coal consumption heat content factors in Table A5.

Natural Gas
1949–1979: Natural gas (including supplemental gaseous fuels) consumption data from Table 4.1 are converted to Btu by multiplying by the total natural gas consumption heat content factors in Table A4.

1980 forward: Natural gas (including supplemental gaseous fuels) consumption data from Table 4.1 are converted to Btu by multiplying by the total natural gas consumption heat content factors in Table A4. Supplemental gaseous fuels data in Btu are estimated using the method described in Note 3, “Supplemental Gaseous Fuels,” at the end of Section 4. Natural gas (excluding supplemental gaseous fuels) consumption is equal to natural gas (including supplemental gaseous fuels) consumption minus supplemental gaseous fuels.

Petroleum
1949–1992: Petroleum (excluding biofuels) consumption is equal to total petroleum products supplied from Table 3.6.

1993–2008: Petroleum (excluding biofuels) consumption is equal to total petroleum products supplied from Table 3.6 minus fuel ethanol consumption from Table 10.3.

2009–2011: Petroleum (excluding biofuels) consumption is equal to: total petroleum products supplied from Table 3.6; minus fuel ethanol (minus denaturant) consumption from Table 10.3; minus biodiesel consumption, calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1); minus renewable diesel fuel and other biofuels refinery and blender net inputs, calculated using “other renewable diesel fuel” and “other renewable fuels” data from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the heat content factors for renewable diesel fuel and other biofuels in Table A1).

2012–2020: Petroleum (excluding biofuels) consumption is equal to: total petroleum products supplied from Table 3.6; minus fuel ethanol (minus denaturant) consumption from Table 10.3; minus biodiesel consumption from Table 10.4a; minus renewable diesel fuel and other biofuels refinery and blender net inputs, calculated using “other renewable diesel fuel” and “other renewable fuels” data from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the heat content factors for renewable diesel fuel and other biofuels in Table A1).

2021 forward: Petroleum (excluding biofuels) consumption is equal to: total petroleum products supplied from Table 3.6; minus fuel ethanol (minus denaturant) consumption from Table 10.3; minus biodiesel, renewable diesel fuel, and other biofuels refinery and blender net inputs and products supplied calculated using “biofuels except fuel ethanol“ refinery and blender net inputs and products supplied from U.S. Energy Information Administration (EIA), *Petroleum Supply Annual* and *Petroleum Supply Monthly* (data are converted to Btu by multiplying by the appropriate heat content factors in Table A1).

Coal Coke Net Imports
1949 forward: Table 1.4c.

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: Table 1.4c.

Total Primary Energy Consumption
1949 forward: Total primary energy consumption is the sum of the consumption values for fossil fuels, nuclear electric power, and renewable energy, plus electricity net imports.

Table 1.4a Sources

Coal
1949 forward: Coal imports data from Table 6.1 are converted to Btu by multiplying by the coal imports heat content factors in Table A5.

Coal Coke
1949 forward: Coal coke imports data from U.S. Department of Commerce, Bureau of the Census, Monthly Report IM 145, are converted to Btu by multiplying by the coal coke imports heat content factor in Table A5.

Natural Gas
1949 forward: Natural gas imports data from Table 4.1 are converted to Btu by multiplying by the natural gas imports heat content factors in Table A4.

Crude Oil
1949 forward: Crude oil imports data from Table 3.3b are converted to Btu by multiplying by the crude oil imports heat content factors in Table A2.

Petroleum Products
1949–1992: Petroleum products (excluding biofuels) imports are equal to total petroleum imports from Table 3.3b minus crude oil imports from Table 3.3b; petroleum products (excluding biofuels) imports data are converted to Btu by multiplying by the total petroleum products imports heat content factors in Table A2.

1993–2008: Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below).

2009–2011: Biomass-based diesel fuel 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 (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biomass-based diesel fuel imports.

2012–2020: Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biodiesel imports (see "Biomass—Biodiesel") minus renewable diesel fuel imports (see "Biomass—Renewable Diesel Fuel").

2021 forward: Petroleum products (excluding biofuels) imports are equal to petroleum products (including biofuels) imports (see 1949–1992 sources above) minus fuel ethanol (minus denaturant) imports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biodiesel imports (see "Biomass—Biodiesel") minus renewable diesel fuel imports (see "Biomass—Renewable Diesel Fuel") minus other biofuels imports (see "Biomass—Other Biofuels").

Total Petroleum

1949 forward: Total petroleum imports are equal to crude oil imports plus petroleum products imports.

Biomass—Fuel Ethanol (Minus Denaturant)

1993 forward: Fuel ethanol (including denaturant) imports data are from PSA/PSM Table 1. Fuel ethanol (minus denaturant) production is equal to fuel ethanol (including denaturant) production from Table 10.3 minus denaturant from Table 10.3. Fuel ethanol (minus denaturant) imports are equal to fuel ethanol (including denaturant) imports multiplied by the ratio of fuel ethanol (minus denaturant) production to fuel ethanol (including denaturant) production. Fuel ethanol (minus denaturant) imports data are converted to Btu by multiplying by 3.539 million Btu per barrel, the undenatured ethanol heat content factor in Table A3.

Biomass—Biodiesel

2001 forward: Biodiesel imports data are from Table 10.4a, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1.

Biomass—Renewable Diesel Fuel

2012 forward: Renewable diesel fuel imports data are from Table 10.4b, and are converted to Btu by multiplying by the renewable diesel fuel heat content factor in Table A1.

Biomass—Other Biofuels

2021 forward: Other biofuels imports data are from Table 10.4c, and are converted to Btu by multiplying by the other biofuels heat content factor in Table A1.

Total Biomass

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

2001–2011: Total biomass imports are equal to fuel ethanol (minus denaturant) imports plus biodiesel imports.

2012–2020: Total biomass imports are the sum of imports values for fuel ethanol (minus denaturant), biodiesel, and renewable diesel fuel.

2021 forward: Total biomass imports are the sum of imports values for fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels.

Electricity

1949 forward: Electricity imports data from Table 7.1 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Total Primary Energy Imports

1949 forward: Total primary energy imports are the sum of the imports values for coal, coal coke, natural gas, total petroleum, total biomass, and electricity.

Table 1.4b Sources

Coal

1949 forward: Coal exports data from Table 6.1 are converted to Btu by multiplying by the coal exports heat content factors in Table A5.

Coal Coke

1949 forward: Coal coke exports data from U.S. Department of Commerce, Bureau of the Census, Monthly Report EM 545, are converted to Btu by multiplying by the coal coke exports heat content factor in Table A5.

Natural Gas

1949 forward: Natural gas exports data from Table 4.1 are converted to Btu by multiplying by the natural gas exports heat content factors in Table A4.

Crude Oil

1949 forward: Crude oil exports data from Table 3.3b are converted to Btu by multiplying by the crude oil exports heat content factor in Table A2.

Petroleum Products

1949–2009: Petroleum products (excluding biofuels) exports are equal to total petroleum exports from Table 3.3b minus crude oil exports from Table 3.3b; petroleum products (excluding biofuels) exports data are converted to Btu by multiplying by the total petroleum products exports heat content factors in Table A2.

2010: Petroleum products (including biofuels) exports are equal to total petroleum exports from Table 3.3b minus crude oil exports from Table 3.3b; petroleum products (including biofuels) exports data are converted to Btu by multiplying by the total petroleum products exports heat content factors in Table A2. Petroleum products (excluding biofuels) exports are equal to petroleum products (including biofuels) exports minus fuel ethanol (minus denaturant) exports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below).

2011–2018: Biomass-based diesel fuel exports data are from U.S. Energy Information Administration (EIA), Petroleum Supply Annual (PSA), Table 31, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1. Petroleum products (excluding biofuels) exports are equal to petroleum products (including biofuels) exports (see 2010 sources above) minus fuel ethanol (minus denaturant) exports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biomass-based diesel fuel exports.

2019 forward: Biodiesel exports data are from EIA, PSA, Table 31, and *Petroleum Supply Monthly* (PSM), Table 49, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1. Petroleum products (excluding biofuels) exports are equal to petroleum products (including biofuels) exports (see 2010 sources above) minus fuel ethanol (minus denaturant) exports (see "Biomass—Fuel Ethanol (Minus Denaturant)" sources below) minus biodiesel exports.

Total Petroleum

1949 forward: Total petroleum exports are equal to crude oil exports plus petroleum products exports.

Biomass—Fuel Ethanol (Minus Denaturant)

2010 forward: Fuel ethanol (including denaturant) exports data are from PSA/PSM Table 1. Fuel ethanol (minus denaturant) production is equal to fuel ethanol (including denaturant) production from Table 10.3 minus denaturant from Table 10.3. Fuel ethanol (minus denaturant) exports are equal to fuel ethanol (including denaturant) exports multiplied by the ratio of fuel ethanol (minus denaturant) production to fuel ethanol (including denaturant) production. Fuel ethanol (minus denaturant) exports are converted to Btu by multiplying by 3.539 million Btu per barrel, the undenatured ethanol heat content factor in Table A3.

Biomass—Biodiesel

2001 forward: Biodiesel exports data are from Table 10.4a, and are converted to Btu by multiplying by the biodiesel heat content factor in Table A1.

Biomass—Densified Biomass

2016 forward: Densified biomass exports data are from EIA, Form EIA-63C, "Densified Biomass Fuel Report."

Total Biomass

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

2010–2015: Total biomass exports are equal to fuel ethanol (minus denaturant) exports plus biodiesel exports.

2016 forward: Total biomass exports are the sum of the exports values for fuel ethanol (minus denaturant), biodiesel, and densified biomass.

Electricity
1949 forward: Electricity exports data from Table 7.1 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Total Primary Energy Exports
1949 forward: Total primary energy exports are the sum of the exports values for coal, coal coke, natural gas, total petroleum, total biomass, and electricity.

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.

1993–2019: "U.S. International Trade in Goods and Services," annual revisions.

2020–2022: "U.S. International Trade in Goods and Services," 2022 annual revisions.

2023: "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.

1994–2019: "U.S. International Trade in Goods and Services," annual revisions.

2020–2022: "U.S. International Trade in Goods and Services," 2022 annual revisions.

2023: "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.

1993–2019: "U.S. International Trade in Goods and Services," annual revisions.

2020–2022: "U.S. International Trade in Goods and Services," 2022 annual revisions.

2023: "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.

1992–2019: "U.S. International Trade in Goods and Services," annual revisions.

2020–2022: "U.S. International Trade in Goods and Services," 2022 annual revisions.

2023: "U.S. International Trade in Goods and Services," FT-900, monthly.

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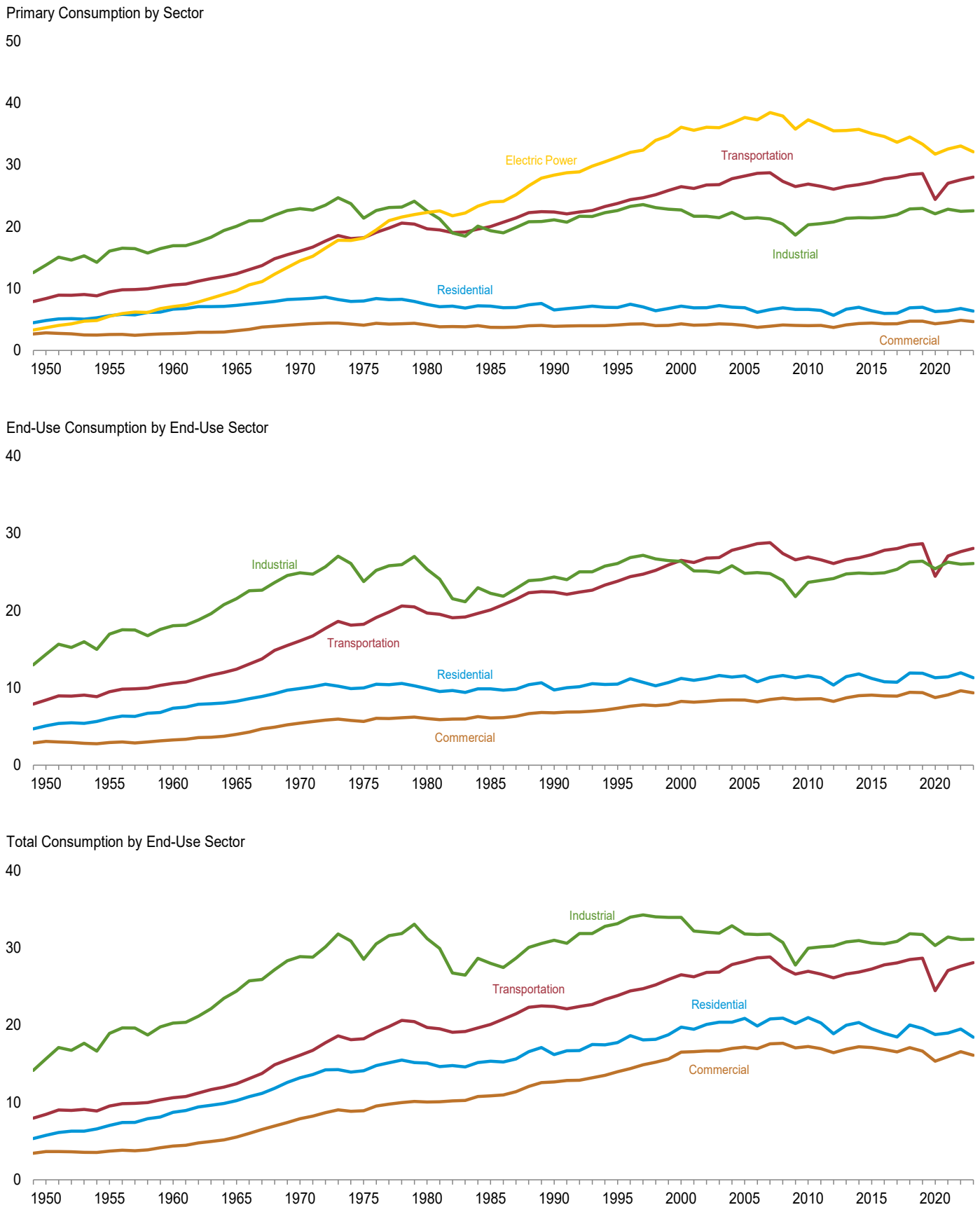
2. Energy Consumption By Sector

Figure 2.1a Energy Consumption by Sector, 1949–2023

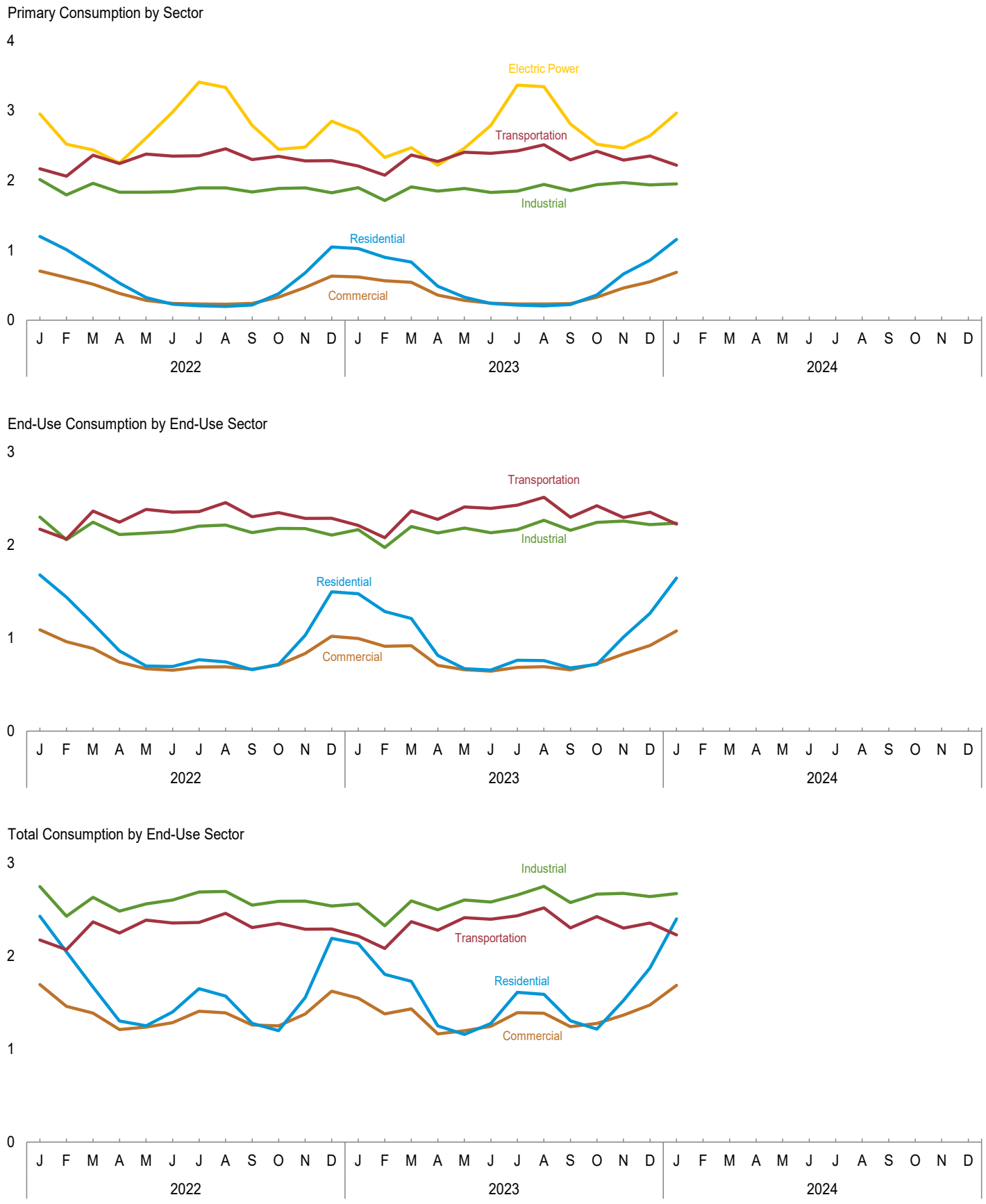
(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Tables 2.1a—2.1b.

Figure 2.1b Energy Consumption by Sector, Monthly

(Quadrillion Btu)



Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Tables 2.1a—2.1b.

Table 2.1a Energy Consumption: Residential, Commercial, and Industrial Sectors

(Trillion Btu)

	End-Use Sectors														
	Residential					Commercial[a]					Industrial[a]				
	Primary[b]	Electricity[c]	End Use[d]	Electrical System Energy Losses[e]	Total[f]	Primary[b]	Electricity[c]	End Use[d]	Electrical System Energy Losses[e]	Total[f]	Primary[b]	Electricity[c]	End Use[d]	Electrical System Energy Losses[e]	Total[f]
1950 Total	**4,830**	**246**	**5,076**	**661**	**5,736**	**2,834**	**225**	**3,059**	**604**	**3,663**	**13,820**	**500**	**14,319**	**1,340**	**15,659**
1955 Total	**5,608**	**438**	**6,046**	**990**	**7,036**	**2,561**	**350**	**2,911**	**791**	**3,702**	**16,046**	**887**	**16,933**	**2,005**	**18,938**
1960 Total	**6,651**	**687**	**7,339**	**1,387**	**8,726**	**2,723**	**543**	**3,266**	**1,096**	**4,362**	**16,923**	**1,107**	**18,030**	**2,234**	**20,264**
1965 Total	**7,280**	**993**	**8,273**	**1,950**	**10,223**	**3,177**	**789**	**3,966**	**1,549**	**5,514**	**20,063**	**1,463**	**21,526**	**2,873**	**24,399**
1970 Total	**8,323**	**1,591**	**9,914**	**3,264**	**13,178**	**4,237**	**1,201**	**5,438**	**2,464**	**7,902**	**22,918**	**1,948**	**24,866**	**3,995**	**28,862**
1975 Total	**7,990**	**2,007**	**9,997**	**4,103**	**14,100**	**4,059**	**1,598**	**5,657**	**3,267**	**8,924**	**21,378**	**2,346**	**23,725**	**4,797**	**28,522**
1980 Total	**7,440**	**2,448**	**9,888**	**5,194**	**15,082**	**4,105**	**1,906**	**6,011**	**4,044**	**10,055**	**22,527**	**2,781**	**25,308**	**5,900**	**31,209**
1985 Total	**7,149**	**2,709**	**9,858**	**5,486**	**15,344**	**3,732**	**2,351**	**6,084**	**4,762**	**10,845**	**19,363**	**2,855**	**22,218**	**5,782**	**28,000**
1990 Total	**6,552**	**3,153**	**9,705**	**6,501**	**16,206**	**3,892**	**2,860**	**6,753**	**5,898**	**12,650**	**21,100**	**3,226**	**24,326**	**6,652**	**30,978**
1995 Total	**6,934**	**3,557**	**10,491**	**7,256**	**17,747**	**4,099**	**3,252**	**7,352**	**6,634**	**13,985**	**22,622**	**3,455**	**26,077**	**7,048**	**33,125**
2000 Total	**7,156**	**4,069**	**11,225**	**8,507**	**19,732**	**4,277**	**3,956**	**8,233**	**8,271**	**16,504**	**22,721**	**3,631**	**26,352**	**7,592**	**33,945**
2005 Total	**6,901**	**4,638**	**11,538**	**9,340**	**20,879**	**4,051**	**4,351**	**8,401**	**8,762**	**17,163**	**21,322**	**3,477**	**24,799**	**7,003**	**31,803**
2010 Total	**6,635**	**4,933**	**11,568**	**9,419**	**20,987**	**4,014**	**4,539**	**8,553**	**8,666**	**17,219**	**20,317**	**3,314**	**23,631**	**6,328**	**29,958**
2011 Total	**6,465**	**4,855**	**11,319**	**8,967**	**20,286**	**4,051**	**4,531**	**8,583**	**8,370**	**16,952**	**20,494**	**3,382**	**23,876**	**6,247**	**30,123**
2012 Total	**5,672**	**4,690**	**10,362**	**8,510**	**18,871**	**3,702**	**4,528**	**8,230**	**8,216**	**16,446**	**20,765**	**3,363**	**24,128**	**6,103**	**30,230**
2013 Total	**6,669**	**4,759**	**11,428**	**8,554**	**19,983**	**4,134**	**4,562**	**8,696**	**8,200**	**16,897**	**21,357**	**3,362**	**24,719**	**6,043**	**30,762**
2014 Total	**6,976**	**4,801**	**11,778**	**8,560**	**20,338**	**4,356**	**4,614**	**8,969**	**8,226**	**17,195**	**21,449**	**3,404**	**24,853**	**6,068**	**30,921**
2015 Total	**6,423**	**4,791**	**11,214**	**8,306**	**19,520**	**4,404**	**4,643**	**9,047**	**8,050**	**17,097**	**21,411**	**3,366**	**24,777**	**5,836**	**30,613**
2016 Total	**5,968**	**4,815**	**10,783**	**8,146**	**18,929**	**4,281**	**4,665**	**8,945**	**7,893**	**16,838**	**21,549**	**3,333**	**24,882**	**5,639**	**30,520**
2017 Total	**6,017**	**4,704**	**10,721**	**7,751**	**18,471**	**4,318**	**4,616**	**8,934**	**7,606**	**16,540**	**21,951**	**3,358**	**25,309**	**5,534**	**30,843**
2018 Total	**6,885**	**5,013**	**11,897**	**8,126**	**20,023**	**4,715**	**4,715**	**9,429**	**7,643**	**17,072**	**22,864**	**3,414**	**26,278**	**5,535**	**31,813**
2019 Total	**6,974**	**4,914**	**11,889**	**7,686**	**19,575**	**4,732**	**4,643**	**9,375**	**7,263**	**16,638**	**22,946**	**3,420**	**26,366**	**5,349**	**31,716**
2020 Total	**6,296**	**4,997**	**11,293**	**7,502**	**18,795**	**4,335**	**4,393**	**8,728**	**6,595**	**15,322**	**22,103**	**3,272**	**25,376**	**4,913**	**30,288**
2021 Total	**6,409**	**5,017**	**11,426**	**7,564**	**18,991**	**4,547**	**4,533**	**9,080**	**6,834**	**15,914**	**22,833**	**3,414**	**26,247**	**5,147**	**31,394**
2022 January	R1,200	479	R1,679	747	R2,426	R702	388	R1,089	604	R1,693	R2,012	287	R2,299	446	R2,745
February	R1,011	428	R1,439	605	R2,044	R610	352	R961	498	R1,459	1,793	262	R2,055	371	R2,426
March	R775	380	R1,155	512	R1,667	R517	371	R888	499	R1,387	R1,958	286	2,244	385	R2,628
April	R531	332	R863	438	R1,301	R384	357	R741	470	R1,210	1,831	281	R2,112	370	R2,482
May	R324	376	R699	552	R1,251	R284	386	R670	566	R1,236	R1,833	294	2,127	431	R2,558
June	R229	465	R694	704	R1,398	R239	415	R654	628	R1,282	R1,840	303	2,143	458	R2,601
July	R208	561	768	878	R1,647	R232	457	R689	716	1,406	1,893	309	2,202	484	2,685
August	R197	547	R744	824	R1,568	R228	463	R691	698	R1,389	1,895	318	2,213	479	R2,691
September	R219	441	R660	618	R1,277	R241	424	R665	593	1,259	1,836	295	2,132	414	2,545
October	R377	340	R717	480	R1,197	R329	382	R711	539	R1,249	1,887	290	2,177	409	R2,586
November	R678	352	R1,030	523	R1,552	R470	365	R835	541	R1,376	1,895	279	2,174	414	2,588
December	R1,048	448	R1,496	693	R2,190	R632	389	R1,020	601	R1,621	R1,825	279	R2,105	432	R2,536
Total	**R6,793**	**5,150**	**R11,943**	**7,553**	**R19,496**	**R4,868**	**4,746**	**R9,614**	**6,961**	**R16,574**	**R22,500**	**3,482**	**R25,981**	**5,107**	**R31,088**
2023 January	R1,025	451	R1,476	R657	2,132	R619	377	R996	R549	R1,545	R1,895	269	R2,164	393	R2,557
February	R899	384	R1,283	R518	R1,801	R565	346	R911	R467	R1,378	R1,712	259	R1,972	R350	R2,321
March	R831	378	R1,209	R517	1,726	R542	376	R917	R513	R1,431	R1,907	288	R2,195	394	R2,589
April	R485	329	814	R434	1,249	R360	347	R707	R457	R1,164	R1,848	279	R2,127	R368	R2,495
May	327	343	R670	488	1,158	R284	377	R660	R536	R1,196	R1,884	295	R2,179	R419	R2,599
June	240	415	655	R619	1,275	R242	402	R644	R600	R1,244	R1,828	300	2,129	R448	R2,577
July	215	546	R762	R848	R1,610	R231	454	R685	R706	R1,391	R1,847	316	R2,163	R490	R2,654
August	204	553	757	R829	R1,586	R232	461	R693	R691	R1,384	R1,941	321	R2,262	R482	R2,745
September	R223	455	677	R626	1,304	R237	422	R659	R581	R1,239	R1,853	302	R2,155	416	R2,571
October	R363	354	R717	R495	1,212	R330	394	R723	R551	R1,274	R1,940	301	R2,241	R421	R2,662
November	R662	349	R1,011	R511	R1,523	R463	365	R828	R534	R1,362	R1,969	285	R2,253	R416	R2,670
December	R858	406	R1,264	R605	R1,869	R548	372	R919	R553	R1,473	R1,936	281	R2,218	R419	2,636
Total	**R6,333**	**4,963**	**R11,297**	**R7,133**	**R18,430**	**R4,651**	**4,691**	**R9,342**	**R6,742**	**R16,085**	**R22,561**	**3,497**	**R26,058**	**R5,026**	**R31,084**
2024 January	1,155	487	1,642	754	2,397	685	392	1,077	607	1,683	1,949	282	2,232	437	2,668

[a] Includes energy consumed at combined-heat-and-power (CHP) and electricity-only plants within the sector.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] Electricity sold to the sector. See "Electricity Sales to Ultimate Customers" in Glossary.

[d] Sum of "Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[e] Calculated as the difference between primary energy consumed by the electric power sector and the energy content of electricity sales to ultimate customers sent to the end-use sectors. Allocated proportionally to the electricity sales to ultimate customers in each end-use sector. See Note 1, "Electrical System Energy Losses," at end of section.

[f] Equal to end-use energy consumption plus electrical system energy losses.

R=Revised.

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

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

Sources: Tables 2.2–2.4

Table 2.1b Energy Consumption: Transportation Sector, Total End-Use Sectors, and Electric Power Sector (Trillion Btu)

	End-Use Sectors										Electric Power Sector[a]	
	Transportation					Total						
	Primary[b]	Electricity[c]	End Use[d]	Electrical System Energy Losses[e]	Total[f]	Primary[b]	Electricity[c]	End Use[d]	Electrical System Energy Losses[e]	Total[g]	Primary[b]	Primary Total[h]
1950 Total	**8,383**	**23**	**8,407**	**62**	**8,469**	**29,867**	**994**	**30,861**	**2,666**	**33,527**	**3,661**	**33,527**
1955 Total	**9,474**	**20**	**9,494**	**45**	**9,539**	**33,690**	**1,695**	**35,385**	**3,830**	**39,215**	**5,525**	**39,215**
1960 Total	**10,560**	**10**	**10,570**	**21**	**10,591**	**36,856**	**2,348**	**39,204**	**4,738**	**43,942**	**7,086**	**43,942**
1965 Total	**12,399**	**10**	**12,409**	**20**	**12,428**	**42,919**	**3,254**	**46,173**	**6,392**	**52,565**	**9,646**	**52,565**
1970 Total	**16,062**	**11**	**16,073**	**22**	**16,094**	**51,540**	**4,751**	**56,291**	**9,745**	**66,036**	**14,495**	**66,036**
1975 Total	**18,211**	**10**	**18,221**	**21**	**18,241**	**51,638**	**5,961**	**57,599**	**12,188**	**69,787**	**18,149**	**69,788**
1980 Total	**19,659**	**11**	**19,670**	**23**	**19,694**	**53,731**	**7,146**	**60,878**	**15,162**	**76,040**	**22,309**	**76,038**
1985 Total	**20,042**	**14**	**20,056**	**29**	**20,084**	**50,285**	**7,929**	**58,214**	**16,059**	**74,273**	**23,988**	**74,268**
1990 Total	**22,366**	**16**	**22,382**	**33**	**22,415**	**53,910**	**9,255**	**63,165**	**19,084**	**82,250**	**28,340**	**82,256**
1995 Total	**23,757**	**17**	**23,774**	**35**	**23,808**	**57,412**	**10,281**	**67,694**	**20,973**	**88,666**	**31,254**	**88,668**
2000 Total	**26,456**	**18**	**26,474**	**38**	**26,512**	**60,610**	**11,674**	**72,284**	**24,409**	**96,693**	**36,083**	**96,694**
2005 Total	**28,179**	**26**	**28,205**	**52**	**28,257**	**60,452**	**12,491**	**72,944**	**25,158**	**98,101**	**37,649**	**98,101**
2010 Total	**26,894**	**26**	**26,920**	**50**	**26,970**	**57,860**	**12,812**	**70,672**	**24,463**	**95,135**	**37,275**	**95,142**
2011 Total	**26,523**	**26**	**26,549**	**48**	**26,598**	**57,533**	**12,794**	**70,327**	**23,632**	**93,959**	**36,426**	**93,966**
2012 Total	**26,057**	**25**	**26,082**	**45**	**26,127**	**56,195**	**12,606**	**68,801**	**22,874**	**91,675**	**35,480**	**91,677**
2013 Total	**26,541**	**26**	**26,567**	**47**	**26,614**	**58,701**	**12,709**	**71,410**	**22,845**	**94,255**	**35,554**	**94,253**
2014 Total	**26,802**	**26**	**26,828**	**47**	**26,875**	**59,583**	**12,845**	**72,428**	**22,902**	**95,329**	**35,747**	**95,335**
2015 Total	**27,182**	**26**	**27,208**	**45**	**27,253**	**59,420**	**12,826**	**72,246**	**22,237**	**94,483**	**35,063**	**94,484**
2016 Total	**27,741**	**26**	**27,767**	**43**	**27,810**	**59,539**	**12,838**	**72,376**	**21,720**	**94,097**	**34,558**	**94,092**
2017 Total	**27,979**	**26**	**28,005**	**42**	**28,047**	**60,265**	**12,704**	**72,969**	**20,932**	**93,901**	**33,636**	**93,902**
2018 Total	**28,435**	**26**	**28,461**	**42**	**28,504**	**62,898**	**13,168**	**76,066**	**21,346**	**97,412**	**34,514**	**97,405**
2019 Total	**28,602**	**26**	**28,628**	**41**	**28,669**	**63,255**	**13,004**	**76,259**	**20,339**	**96,598**	**33,343**	**96,603**
2020 Total	**24,394**	**22**	**24,417**	**34**	**24,450**	**57,128**	**12,685**	**69,813**	**19,043**	**88,856**	**31,728**	**88,852**
2021 Total	**27,015**	**22**	**27,037**	**33**	**27,070**	**60,804**	**12,986**	**73,790**	**19,578**	**93,368**	**32,564**	**93,363**
2022 January	2,166	2	2,168	3	2,171	6,080	1,155	7,235	1,800	9,035	2,955	9,036
February	2,062	2	2,064	3	2,067	5,476	1,044	6,520	1,477	7,996	2,520	7,995
March	2,361	2	2,363	3	2,366	5,612	1,038	6,650	1,399	8,049	2,437	8,044
April	R 2,242	2	R 2,244	2	R 2,246	4,987	972	5,960	1,280	7,239	2,252	7,235
May	2,379	2	R 2,381	3	R 2,384	4,820	1,057	5,877	1,552	7,429	2,609	7,427
June	R 2,349	2	R 2,351	3	2,353	4,658	1,184	5,842	1,793	7,635	2,977	7,637
July	R 2,355	2	R 2,357	3	R 2,360	4,688	1,328	6,016	2,081	8,097	3,409	8,103
August	R 2,453	2	R 2,455	3	2,457	4,773	1,329	6,102	2,003	8,105	3,333	8,111
September	R 2,300	2	R 2,302	3	2,304	4,596	1,162	5,758	1,627	7,385	2,789	7,386
October	R 2,346	2	2,347	3	2,350	4,938	1,014	5,952	1,431	7,383	2,445	7,380
November	2,282	2	2,284	3	2,287	5,325	997	6,323	1,480	7,803	2,478	7,800
December	R 2,284	2	R 2,286	3	2,289	5,789	1,118	6,907	1,730	8,637	2,848	8,636
Total	**R 27,580**	**23**	**R 27,602**	**33**	**R 27,635**	**61,741**	**13,400**	**75,140**	**19,653**	**94,794**	**33,053**	**94,791**
2023 January	R 2,203	2	R 2,205	3	R 2,208	R 5,741	1,099	R 6,840	R 1,601	R 8,442	R 2,700	R 8,441
February	R 2,071	2	R 2,073	3	R 2,076	R 5,247	991	R 6,238	R 1,337	R 7,575	R 2,329	R 7,572
March	R 2,358	2	R 2,360	3	R 2,363	R 5,639	1,044	R 6,682	R 1,426	R 8,108	R 2,470	R 8,104
April	R 2,267	2	R 2,269	2	R 2,271	R 4,960	957	R 5,916	R 1,262	R 7,178	R 2,218	R 7,174
May	R 2,400	2	R 2,401	3	R 2,404	R 4,895	1,016	R 5,911	R 1,445	R 7,356	R 2,461	R 7,354
June	R 2,383	2	R 2,385	3	R 2,388	R 4,694	1,119	R 5,813	R 1,670	R 7,483	R 2,789	R 7,485
July	R 2,419	2	R 2,421	3	R 2,424	R 4,712	1,319	R 6,031	R 2,048	R 8,078	R 3,366	R 8,086
August	R 2,503	2	R 2,505	3	R 2,508	R 4,881	1,337	R 6,218	R 2,006	R 8,224	R 3,343	R 8,231
September	R 2,288	2	R 2,291	3	R 2,294	R 4,601	1,181	R 5,782	R 1,626	R 7,407	R 2,806	R 7,410
October	R 2,412	2	R 2,414	3	R 2,417	R 5,045	1,050	R 6,095	R 1,469	R 7,565	R 2,520	R 7,563
November	R 2,288	2	R 2,290	3	R 2,292	R 5,381	1,001	R 6,383	R 1,464	R 7,847	R 2,466	R 7,845
December	R 2,344	2	R 2,346	3	R 2,349	R 5,686	1,061	R 6,747	R 1,580	R 8,327	R 2,641	R 8,326
Total	**R 27,936**	**23**	**R 27,960**	**33**	**R 27,993**	**R 61,482**	**13,175**	**R 74,657**	**R 18,935**	**R 93,592**	**R 32,110**	**R 93,592**
2024 January	2,215	2	2,217	3	2,221	6,004	1,164	7,168	1,801	8,969	2,965	8,973

[a] Includes NAICS 22 electricity-only and CHP plants whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only. For 1989 forward, data are for electric utilities and independent power producers.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] Electricity sold to the sector. See "Electricity Sales to Ultimate Customers" in Glossary.

[d] Sum of "Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[e] Calculated as the difference between primary energy consumed by the electric power sector and the energy content of electricity sales to ultimate customers sent to the end-use sectors. Allocated proportionally to the electricity sales to ultimate customers in each end-use sector. See Note 1, "Electrical System Energy Losses," at end of section.

[f] Equal to end-use energy consumption plus electrical system energy losses.

[g] Equal to the sum of total energy consumption in the four end-use sectors, which does not equal total primary energy consumption due to the use of sector-specific conversion factors for coal and natural gas.

[h] Total primary energy consumption. See Table 1.3.

R=Revised.

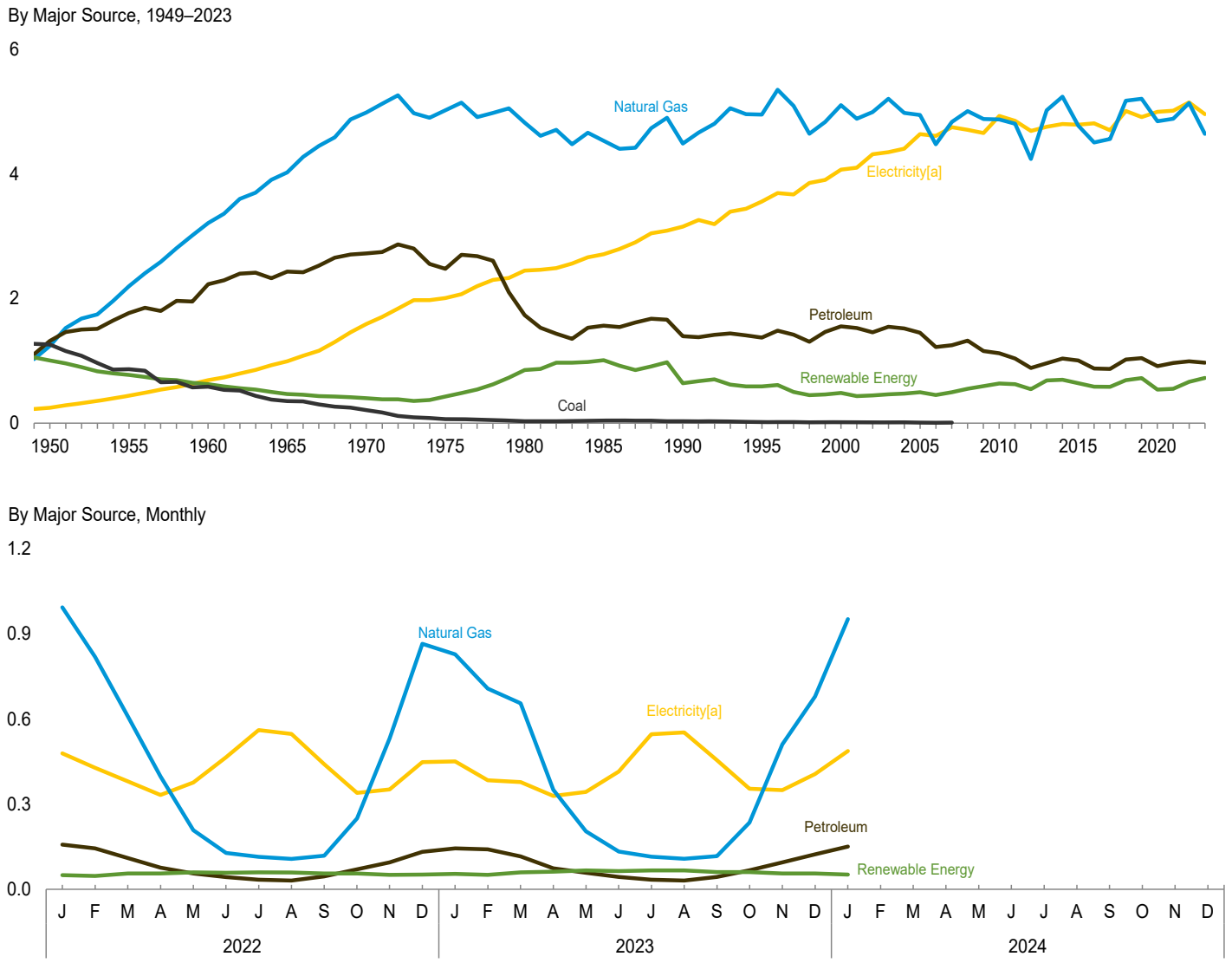
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Other Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may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

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

Sources: • **End-Use Sectors:** Tables 2.2–2.5. • **Electric Power Sector:** Table 2.6. • **Primary Total:** Table 1.3.

Figure 2.2 Residential Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity sales to ultimate customers.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.2.

Table 2.2 Residential Sector Energy Consumption

(Trillion Btu)

	End-Use Energy Consumption[a]												
	Primary Consumption[b]												
	Fossil Fuels				Renewable Energy[c]								
	Coal	Natural Gas[d]	Petro-leum	Total	Geo-thermal	Solar[e]	Bio-mass	Total	Total Primary	Elec-tricity[f]	Total End Use	Electrical System Energy Losses[g]	Total
1950 Total	1,261	1,240	1,322	3,824	NA	NA	1,006	1,006	4,830	246	5,076	661	5,736
1955 Total	867	2,198	1,767	4,833	NA	NA	775	775	5,608	438	6,046	990	7,036
1960 Total	585	3,212	2,228	6,025	NA	NA	627	627	6,651	687	7,339	1,387	8,726
1965 Total	352	4,028	2,432	6,812	NA	NA	468	468	7,280	993	8,273	1,950	10,223
1970 Total	209	4,987	2,726	7,922	NA	NA	401	401	8,323	1,591	9,914	3,264	13,178
1975 Total	63	5,023	2,479	7,565	NA	NA	425	425	7,990	2,007	9,997	4,103	14,100
1980 Total	31	4,825	1,734	6,590	NA	NA	850	850	7,440	2,448	9,888	5,194	15,082
1985 Total	39	4,534	1,566	6,139	NA	NA	1,010	1,010	7,149	2,709	9,858	5,486	15,344
1990 Total	31	4,487	1,395	5,912	6	55	580	640	6,552	3,153	9,705	6,501	16,206
1995 Total	17	4,954	1,374	6,345	7	63	520	589	6,934	3,557	10,491	7,256	17,747
2000 Total	11	5,105	1,554	6,670	9	57	420	486	7,156	4,069	11,225	8,507	19,732
2005 Total	8	4,946	1,450	6,405	16	49	430	495	6,901	4,638	11,538	9,340	20,879
2010 Total	NA	4,878	1,120	5,999	37	59	541	636	6,635	4,933	11,568	9,419	20,987
2011 Total	NA	4,805	1,034	5,838	40	62	524	626	6,465	4,855	11,319	8,967	20,286
2012 Total	NA	4,242	886	5,128	40	66	438	544	5,672	4,690	10,362	8,510	18,871
2013 Total	NA	5,023	963	5,986	40	72	572	683	6,669	4,759	11,428	8,554	19,983
2014 Total	NA	5,242	1,036	6,279	40	79	579	697	6,976	4,801	11,778	8,560	20,338
2015 Total	NA	4,777	1,007	5,784	40	87	513	639	6,423	4,791	11,214	8,306	19,520
2016 Total	NA	4,506	878	5,384	40	100	445	584	5,968	4,815	10,783	8,146	18,929
2017 Total	NA	4,563	871	5,435	40	113	430	582	6,017	4,704	10,721	7,751	18,471
2018 Total	NA	5,174	1,022	6,197	40	123	525	688	6,885	5,013	11,897	8,126	20,023
2019 Total	NA	5,208	1,045	6,253	40	136	546	721	6,974	4,914	11,889	7,686	19,575
2020 Total	NA	4,846	914	5,760	40	151	345	536	6,296	4,997	11,293	7,502	18,795
2021 Total	NA	4,889	967	5,856	40	169	344	553	6,409	5,017	11,426	7,564	18,991
2022 January	NA	993	R157	R1,149	3	11	36	50	R1,200	479	R1,679	747	R2,426
February	NA	819	R144	R964	3	12	32	47	R1,011	428	R1,439	605	R2,044
March	NA	609	R110	R719	3	17	36	56	R775	380	R1,155	512	R1,667
April	NA	398	R76	R474	3	18	35	56	R531	332	R863	438	R1,301
May	NA	208	R56	R264	3	20	36	60	R324	376	R699	552	R1,251
June	NA	128	R43	R171	3	20	35	58	R229	465	R694	704	R1,398
July	NA	114	R34	R148	3	21	36	60	R208	561	768	878	R1,647
August	NA	107	R31	137	3	20	36	59	R197	547	R744	824	R1,568
September	NA	118	R45	R163	3	18	35	56	R219	441	R660	618	R1,277
October	NA	250	R70	R321	3	17	36	56	R377	340	R717	480	R1,197
November	NA	532	R95	R626	3	13	35	51	R678	352	R1,030	523	R1,552
December	NA	865	R132	R996	3	12	36	52	R1,048	448	R1,496	693	R2,190
Total	**NA**	**5,140**	**R992**	**R6,132**	**40**	**200**	**422**	**662**	**R6,793**	**5,150**	**R11,943**	**7,553**	**R19,496**
2023 January	NA	828	R143	R971	3	13	38	54	R1,025	451	R1,476	R657	2,132
February	NA	707	R140	R847	3	14	35	51	R899	384	R1,283	R518	R1,801
March	NA	655	R116	R771	3	19	38	R60	R831	378	R1,209	R517	1,726
April	NA	350	R74	423	3	21	37	62	R485	329	814	R434	1,249
May	NA	204	R58	R262	3	24	38	66	327	343	R670	488	1,158
June	NA	133	43	R177	3	24	37	64	240	415	655	R619	1,275
July	NA	115	34	149	3	25	38	66	215	546	R762	R848	R1,610
August	NA	108	30	138	3	24	38	66	204	553	757	R829	R1,586
September	NA	117	R44	161	3	21	37	61	R223	455	677	R626	1,304
October	NA	235	R67	R302	3	20	38	61	R363	354	R717	R495	1,212
November	NA	511	R95	R606	3	16	37	56	R662	349	R1,011	R511	R1,523
December	NA	679	R122	R802	3	15	38	56	R858	406	R1,264	R605	R1,869
Total	**NA**	**4,643**	**R966**	**R5,608**	**40**	**235**	**450**	**725**	**R6,333**	**4,963**	**R11,297**	**R7,133**	**R18,430**
2024 January	NA	952	150	1,103	3	15	34	52	1,155	487	1,642	754	2,397

[a] Sum of "Total Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] See Table 10.2a for notes on series components.

[d] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

[e] Includes small-scale solar photovoltaic (PV) electricity and solar thermal energy in the residential sector. See Tables 10.2a and 10.5.

[f] Electricity sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

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

R=Revised. NA=Not available.

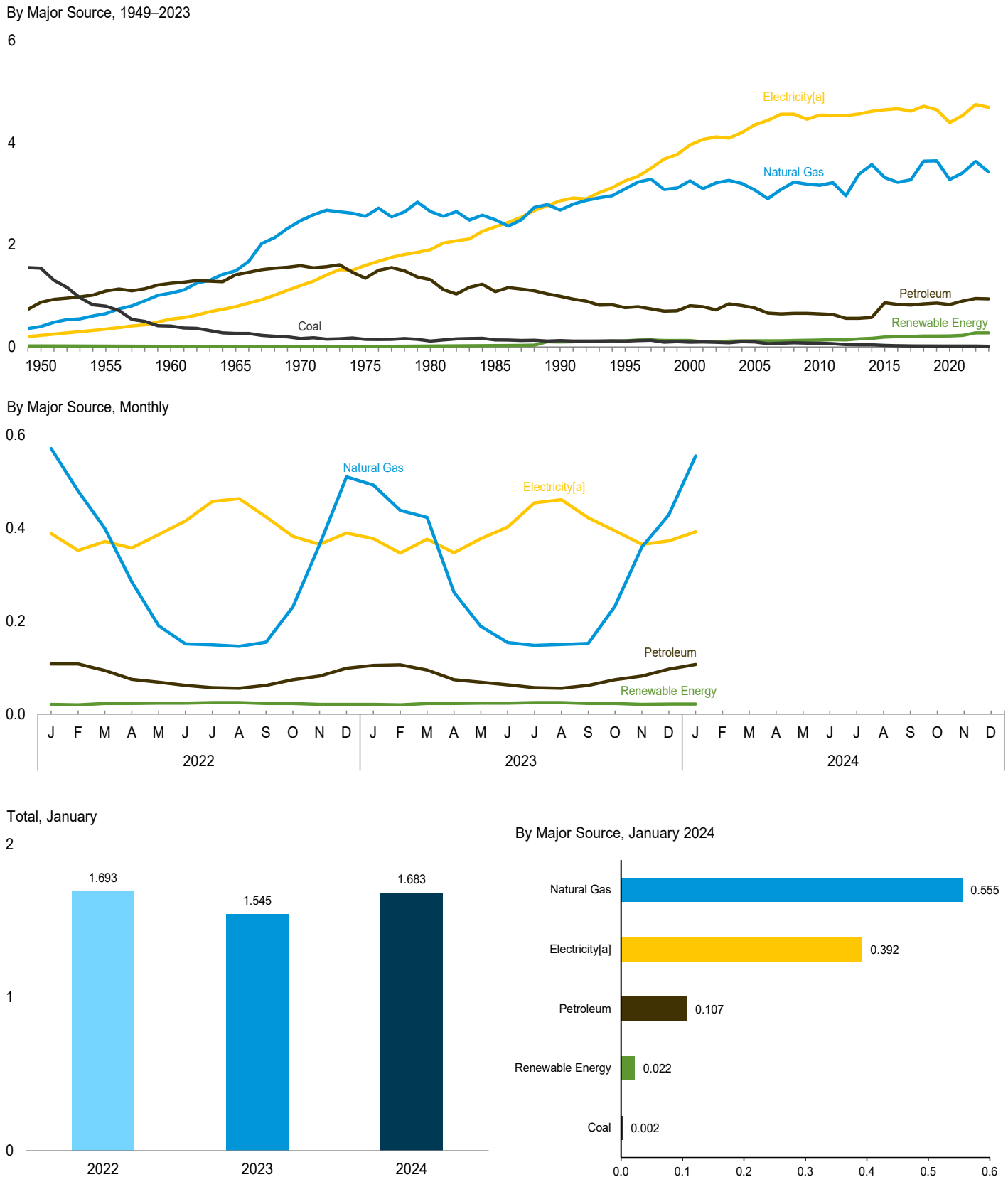
Notes: • Data are estimates, except for electricity sales to ultimate customers. • See Note 2, "Other Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage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

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

Sources: See end of section.

Figure 2.3 Commercial Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity sales to ultimate customers.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.3.

Table 2.3 Commercial Sector Energy Consumption

(Trillion Btu)

	End-Use Energy Consumption[a]														
	Primary Consumption[b]														
	Fossil Fuels				Renewable Energy[c]										
	Coal	Natural Gas[d]	Petro-leum[e]	Total	Hydro-electric Power[f]	Geo-thermal	Solar[g]	Wind	Bio-mass	Total	Total Primary	Elec-tricity[h]	Total End Use	Electrical System Energy Losses[i]	Total
1950 Total	1,542	401	872	2,815	NA	NA	NA	NA	19	19	2,834	225	3,059	604	3,663
1955 Total	801	651	1,095	2,547	NA	NA	NA	NA	15	15	2,561	350	2,911	791	3,702
1960 Total	407	1,056	1,248	2,711	NA	NA	NA	NA	12	12	2,723	543	3,266	1,096	4,362
1965 Total	265	1,490	1,413	3,168	NA	NA	NA	NA	9	9	3,177	789	3,966	1,549	5,514
1970 Total	165	2,473	1,592	4,229	NA	NA	NA	NA	8	8	4,237	1,201	5,438	2,464	7,902
1975 Total	147	2,558	1,346	4,051	NA	NA	NA	NA	8	8	4,059	1,598	5,657	3,267	8,924
1980 Total	115	2,651	1,318	4,084	NA	NA	NA	NA	21	21	4,105	1,906	6,011	4,044	10,055
1985 Total	137	2,488	1,083	3,708	NA	NA	NA	NA	24	24	3,732	2,351	6,084	4,762	10,845
1990 Total	124	2,680	991	3,795	(s)	3	(s)	–	94	97	3,892	2,860	6,753	5,898	12,650
1995 Total	117	3,096	769	3,982	(s)	5	(s)	–	113	118	4,099	3,252	7,352	6,634	13,985
2000 Total	92	3,252	807	4,150	(s)	8	(s)	–	119	127	4,277	3,956	8,233	8,271	16,504
2005 Total	97	3,073	761	3,931	(s)	14	1	–	105	120	4,051	4,351	8,401	8,762	17,163
2010 Total	70	3,165	647	3,881	(s)	19	4	(s)	111	134	4,014	4,539	8,553	8,666	17,219
2011 Total	62	3,216	632	3,910	(s)	20	7	(s)	115	141	4,051	4,531	8,583	8,370	16,952
2012 Total	44	2,960	560	3,563	(s)	20	11	(s)	108	139	3,702	4,528	8,230	8,216	16,446
2013 Total	41	3,380	558	3,979	(s)	20	15	(s)	120	155	4,134	4,562	8,696	8,200	16,897
2014 Total	40	3,572	578	4,190	(s)	20	19	(s)	127	166	4,356	4,614	8,969	8,226	17,195
2015 Total	31	3,316	864	4,211	(s)	20	21	(s)	152	193	4,404	4,643	9,047	8,050	17,097
2016 Total	24	3,224	832	4,079	1	20	23	(s)	158	201	4,281	4,665	8,945	7,893	16,838
2017 Total	21	3,273	820	4,113	1	20	28	(s)	156	205	4,318	4,616	8,934	7,606	16,540
2018 Total	19	3,638	845	4,502	1	20	35	1	156	213	4,715	4,715	9,429	7,643	17,072
2019 Total	17	3,647	857	4,521	1	21	40	1	149	211	4,732	4,643	9,375	7,263	16,638
2020 Total	15	3,279	827	4,120	1	21	46	1	147	215	4,335	4,393	8,728	6,595	15,322
2021 Total	15	3,409	898	4,322	1	21	54	1	149	225	4,547	4,533	9,080	6,834	15,914
2022 January	2	571	R 108	R 680	(s)	2	4	(s)	16	21	R 702	388	R 1,089	604	R 1,693
February	2	480	R 108	R 590	(s)	2	4	(s)	15	20	R 610	352	R 961	498	R 1,459
March	1	399	R 94	R 494	(s)	2	5	(s)	16	23	R 517	371	R 888	499	R 1,387
April	1	285	R 75	R 361	(s)	2	6	(s)	15	23	R 384	357	R 741	470	R 1,210
May	1	190	R 69	R 260	(s)	2	6	(s)	16	24	R 284	386	R 670	566	R 1,236
June	1	151	R 62	R 215	(s)	2	6	(s)	16	24	R 239	415	R 654	628	R 1,282
July	1	149	R 57	R 207	(s)	2	7	(s)	16	25	R 232	457	R 689	716	1,406
August	1	146	R 56	R 204	(s)	2	6	(s)	16	25	R 228	463	R 691	698	R 1,389
September	1	155	R 62	R 218	(s)	2	6	(s)	15	23	R 241	424	R 665	593	1,259
October	1	231	R 74	R 307	(s)	2	5	(s)	16	23	R 329	382	R 711	539	R 1,249
November	1	365	R 82	R 449	(s)	2	4	(s)	16	21	R 470	365	R 835	541	R 1,376
December	2	510	R 99	R 610	(s)	2	4	(s)	16	21	R 632	389	R 1,020	601	R 1,621
Total	**14**	**3,633**	**R 947**	**R 4,595**	**1**	**20**	**63**	**1**	**190**	**274**	**R 4,868**	**4,746**	**R 9,614**	**6,961**	**R 16,574**
2023 January	1	492	R 104	R 597	(s)	2	4	(s)	16	21	R 619	377	R 996	R 549	R 1,545
February	1	438	R 105	R 545	(s)	2	4	(s)	14	20	R 565	346	R 911	R 467	R 1,378
March	1	423	R 95	R 519	(s)	2	6	(s)	15	23	R 542	376	R 917	R 513	R 1,431
April	1	262	R 74	R 337	(s)	2	6	(s)	15	23	R 360	347	R 707	R 457	R 1,164
May	1	189	R 69	R 259	(s)	2	7	(s)	15	24	R 284	377	R 660	R 536	R 1,196
June	1	154	R 63	R 218	(s)	2	7	(s)	15	24	R 242	402	R 644	R 600	R 1,244
July	1	148	R 57	R 206	(s)	2	7	(s)	16	25	R 231	454	R 685	R 706	R 1,391
August	1	150	R 56	R 207	(s)	2	7	(s)	16	25	R 232	461	R 693	R 691	R 1,384
September	1	152	R 61	R 214	(s)	2	6	(s)	15	23	R 237	422	R 659	R 581	R 1,239
October	1	232	R 74	R 307	(s)	2	5	(s)	16	23	R 330	394	R 723	R 551	R 1,274
November	1	359	R 81	R 442	(s)	2	4	(s)	15	21	R 463	365	R 828	R 534	R 1,362
December	1	428	R 96	R 526	(s)	2	4	(s)	16	22	R 548	372	R 919	R 553	R 1,473
Total	**R 12**	**3,428**	**R 937**	**R 4,377**	**1**	**20**	**69**	**1**	**185**	**275**	**R 4,651**	**4,691**	**R 9,342**	**R 6,742**	**R 16,085**
2024 January	2	555	107	663	(s)	2	4	(s)	16	22	685	392	1,077	607	1,683

[a] Sum of "Total Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] See Table 10.2a for notes on series components.

[d] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

[e] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

[f] Conventional hydroelectric power.

[g] Includes small-scale solar photovoltaic (PV) electricity and solar thermal energy in the commercial sector. See Tables 10.2a and 10.5.

[h] Electricity 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 sales to ultimate customers. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Note 1, "Electrical System Energy Losses," at end of section.

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

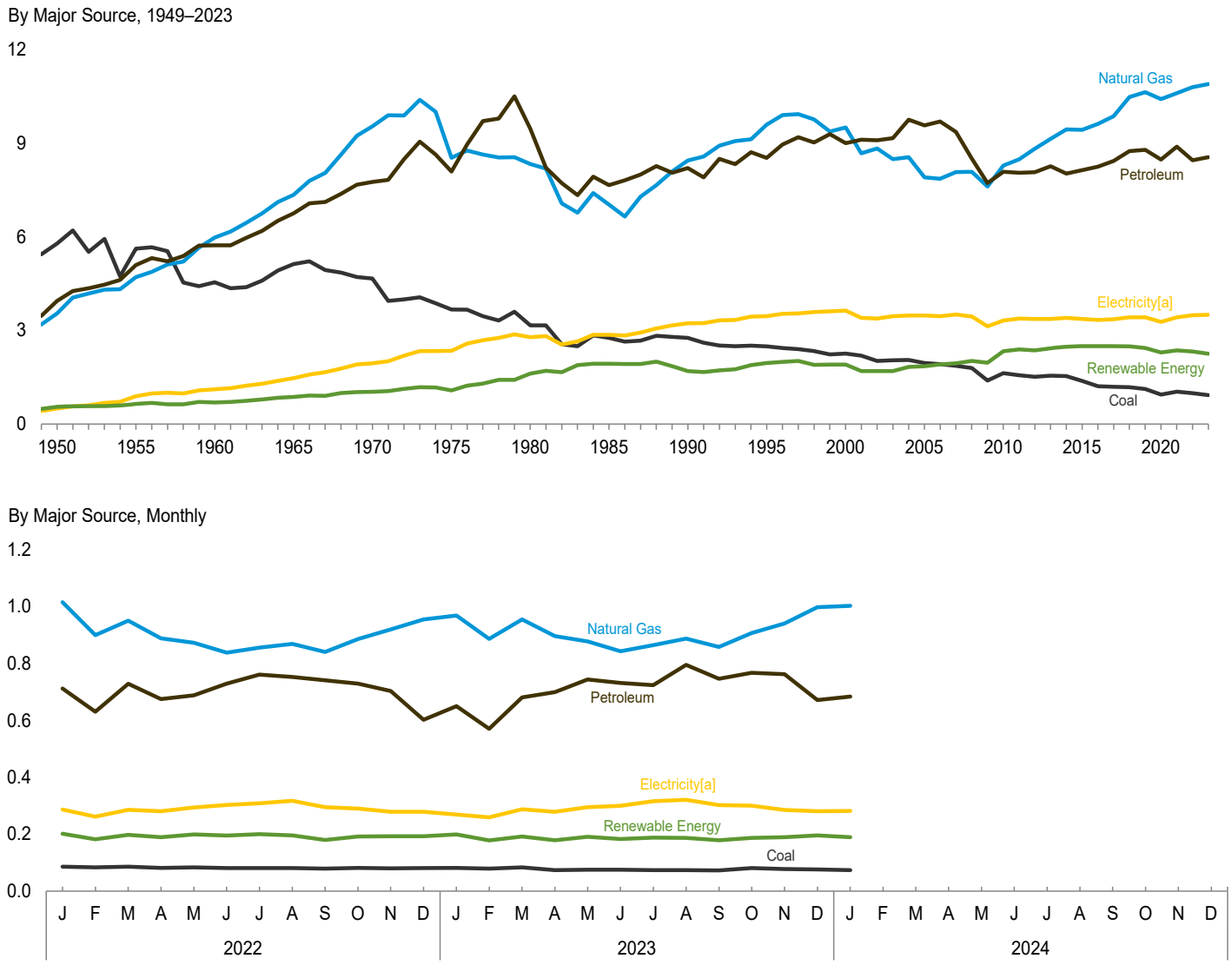
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity sales to ultimate customers beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Other Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 2.4 Industrial Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity sales to ultimate customers.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#consumption.
Source: Table 2.4.

Table 2.4 Industrial Sector Energy Consumption

(Trillion Btu)

	End-Use Energy Consumption[a]														
	Primary Consumption[b]														
	Fossil Fuels[c]				Renewable Energy[d]										
	Coal	Natural Gas[e]	Petro-leum[f]	Total[g]	Hydro-electric Power[h]	Geo-thermal	Solar[i]	Wind	Bio-mass	Total	Total Primary	Elec-tricity[j]	Total End Use	Electrical System Energy Losses[k]	Total
1950 Total	**5,781**	**3,546**	**3,943**	**13,271**	**17**	**NA**	**NA**	**NA**	**532**	**549**	**13,820**	**500**	**14,319**	**1,340**	**15,659**
1955 Total	**5,620**	**4,701**	**5,093**	**15,404**	**11**	**NA**	**NA**	**NA**	**631**	**642**	**16,046**	**887**	**16,933**	**2,005**	**18,938**
1960 Total	**4,543**	**5,973**	**5,720**	**16,231**	**12**	**NA**	**NA**	**NA**	**680**	**692**	**16,923**	**1,107**	**18,030**	**2,234**	**20,264**
1965 Total	**5,127**	**7,339**	**6,750**	**19,197**	**11**	**NA**	**NA**	**NA**	**855**	**866**	**20,063**	**1,463**	**21,526**	**2,873**	**24,399**
1970 Total	**4,656**	**9,536**	**7,754**	**21,888**	**11**	**NA**	**NA**	**NA**	**1,019**	**1,030**	**22,918**	**1,948**	**24,866**	**3,995**	**28,862**
1975 Total	**3,667**	**8,532**	**8,092**	**20,304**	**11**	**NA**	**NA**	**NA**	**1,063**	**1,074**	**21,378**	**2,346**	**23,725**	**4,797**	**28,522**
1980 Total	**3,155**	**8,333**	**9,464**	**20,916**	**11**	**NA**	**NA**	**NA**	**1,600**	**1,611**	**22,527**	**2,781**	**25,308**	**5,900**	**31,209**
1985 Total	**2,760**	**7,032**	**7,656**	**17,434**	**11**	**NA**	**NA**	**NA**	**1,918**	**1,928**	**19,363**	**2,855**	**22,218**	**5,782**	**28,000**
1990 Total	**2,756**	**8,443**	**8,200**	**19,403**	**10**	**2**	**(s)**	**–**	**1,684**	**1,696**	**21,100**	**3,226**	**24,326**	**6,652**	**30,978**
1995 Total	**2,488**	**9,592**	**8,525**	**20,666**	**18**	**3**	**(s)**	**–**	**1,934**	**1,955**	**22,622**	**3,455**	**26,077**	**7,048**	**33,125**
2000 Total	**2,256**	**9,500**	**8,999**	**20,821**	**14**	**4**	**(s)**	**–**	**1,881**	**1,900**	**22,721**	**3,631**	**26,352**	**7,592**	**33,945**
2005 Total	**1,954**	**7,907**	**9,567**	**19,472**	**11**	**4**	**(s)**	**–**	**1,834**	**1,849**	**21,322**	**3,477**	**24,799**	**7,003**	**31,803**
2010 Total	**1,631**	**8,278**	**8,083**	**17,986**	**6**	**4**	**1**	**–**	**2,320**	**2,331**	**20,317**	**3,314**	**23,631**	**6,328**	**29,958**
2011 Total	**1,561**	**8,481**	**8,055**	**18,107**	**6**	**4**	**1**	**(s)**	**2,375**	**2,387**	**20,494**	**3,382**	**23,876**	**6,247**	**30,123**
2012 Total	**1,513**	**8,819**	**8,066**	**18,401**	**8**	**4**	**2**	**(s)**	**2,349**	**2,363**	**20,765**	**3,363**	**24,128**	**6,103**	**30,230**
2013 Total	**1,546**	**9,140**	**8,260**	**18,930**	**12**	**4**	**3**	**(s)**	**2,407**	**2,427**	**21,357**	**3,362**	**24,719**	**6,043**	**30,762**
2014 Total	**1,530**	**9,441**	**8,021**	**18,971**	**4**	**4**	**4**	**(s)**	**2,466**	**2,478**	**21,449**	**3,404**	**24,853**	**6,068**	**30,921**
2015 Total	**1,380**	**9,426**	**8,135**	**18,923**	**5**	**4**	**5**	**(s)**	**2,474**	**2,489**	**21,411**	**3,366**	**24,777**	**5,836**	**30,613**
2016 Total	**1,205**	**9,617**	**8,243**	**19,046**	**4**	**4**	**7**	**(s)**	**2,487**	**2,503**	**21,549**	**3,333**	**24,882**	**5,639**	**30,520**
2017 Total	**1,195**	**9,864**	**8,427**	**19,458**	**5**	**4**	**8**	**(s)**	**2,475**	**2,493**	**21,951**	**3,358**	**25,309**	**5,534**	**30,843**
2018 Total	**1,180**	**10,474**	**8,747**	**20,375**	**4**	**4**	**9**	**(s)**	**2,471**	**2,489**	**22,864**	**3,414**	**26,278**	**5,535**	**31,813**
2019 Total	**1,117**	**10,630**	**8,785**	**20,511**	**4**	**4**	**11**	**(s)**	**2,416**	**2,435**	**22,946**	**3,420**	**26,366**	**5,349**	**31,716**
2020 Total	**938**	**10,410**	**8,476**	**19,811**	**3**	**4**	**12**	**2**	**2,270**	**2,292**	**22,103**	**3,272**	**25,376**	**4,913**	**30,288**
2021 Total	**1,036**	**10,603**	**8,885**	**20,476**	**3**	**4**	**14**	**(s)**	**2,336**	**2,357**	**22,833**	**3,414**	**26,247**	**5,147**	**31,394**
2022 January	86	1,016	R 713	R 1,810	(s)	(s)	1	(s)	201	202	R 2,012	287	R 2,299	446	R 2,745
February	83	900	631	R 1,611	(s)	(s)	1	(s)	180	182	1,793	262	R 2,055	371	R 2,426
March	86	951	729	1,761	(s)	(s)	1	(s)	196	198	R 1,958	286	2,244	385	R 2,628
April	82	889	675	R 1,641	(s)	(s)	1	(s)	188	190	1,831	281	R 2,112	370	R 2,482
May	83	873	688	R 1,634	(s)	(s)	2	(s)	196	199	R 1,833	294	2,127	431	R 2,558
June	81	838	730	R 1,645	(s)	(s)	2	(s)	193	195	R 1,840	303	2,143	458	R 2,601
July	81	856	761	R 1,693	(s)	(s)	2	(s)	198	200	1,893	309	2,202	484	2,685
August	81	869	R 753	R 1,698	(s)	(s)	2	(s)	194	196	1,895	318	2,213	479	R 2,691
September	79	841	741	1,656	(s)	(s)	1	(s)	178	180	1,836	295	2,132	414	2,545
October	82	886	R 730	1,695	(s)	(s)	1	(s)	190	192	1,887	290	2,177	409	R 2,586
November	80	920	R 704	R 1,701	(s)	(s)	1	(s)	192	193	1,895	279	2,174	414	2,588
December	81	955	R 602	R 1,632	(s)	(s)	1	(s)	191	193	R 1,825	279	R 2,105	432	R 2,536
Total	**987**	**10,793**	**R 8,455**	**R 20,180**	**3**	**4**	**15**	**(s)**	**2,297**	**2,320**	**R 22,500**	**3,482**	**R 25,981**	**5,107**	**R 31,088**
2023 January	R 82	969	R 648	R 1,696	(s)	(s)	1	(s)	197	199	R 1,895	269	R 2,164	393	R 2,557
February	79	887	R 570	R 1,534	(s)	(s)	1	(s)	176	178	R 1,712	259	R 1,972	R 350	R 2,321
March	83	955	R 680	R 1,716	(s)	(s)	1	(s)	190	192	R 1,907	288	R 2,195	394	R 2,589
April	74	897	R 699	R 1,669	(s)	(s)	2	(s)	177	179	R 1,848	279	R 2,127	R 368	R 2,495
May	75	878	R 743	R 1,693	(s)	(s)	2	(s)	189	191	R 1,884	295	R 2,179	R 419	R 2,599
June	R 75	843	731	1,646	(s)	(s)	2	(s)	181	183	R 1,828	300	2,129	R 448	R 2,577
July	R 74	865	R 723	R 1,659	(s)	(s)	2	(s)	186	188	R 1,847	316	R 2,163	R 490	R 2,654
August	74	888	R 794	R 1,753	(s)	(s)	2	(s)	185	187	R 1,941	321	R 2,262	R 482	R 2,745
September	R 73	859	R 746	R 1,674	(s)	(s)	1	(s)	177	179	R 1,853	302	R 2,155	416	R 2,571
October	81	907	R 766	R 1,753	(s)	(s)	1	(s)	185	187	R 1,940	301	R 2,241	R 421	R 2,662
November	R 78	941	R 762	R 1,778	(s)	(s)	1	(s)	188	190	R 1,969	285	R 2,253	R 416	R 2,670
December	76	R 998	671	R 1,740	(s)	(s)	1	(s)	195	196	R 1,936	281	R 2,218	R 419	2,636
Total	**R 924**	**10,888**	**R 8,532**	**R 20,312**	**3**	**4**	**16**	**(s)**	**2,225**	**2,249**	**R 22,561**	**3,497**	**R 26,058**	**R 5,026**	**R 31,084**
2024 January	74	1,003	683	1,759	(s)	(s)	1	(s)	188	190	1,949	282	2,232	437	2,668

[a] Sum of "Total Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] Includes non-combustion use of fossil fuels.

[d] See Table 10.2b for notes on series components and estimation.

[e] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

[f] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."

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

[h] Conventional hydroelectric power.

[i] Includes both utility-scale and small-scale solar photovoltaic (PV) electricity net generation in the industrial sector. See Tables 10.2b and 10.5.

[j] Electricity sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

[k] Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity sales to ultimate customers. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Note 1, "Electrical System Energy Losses," at end of section.

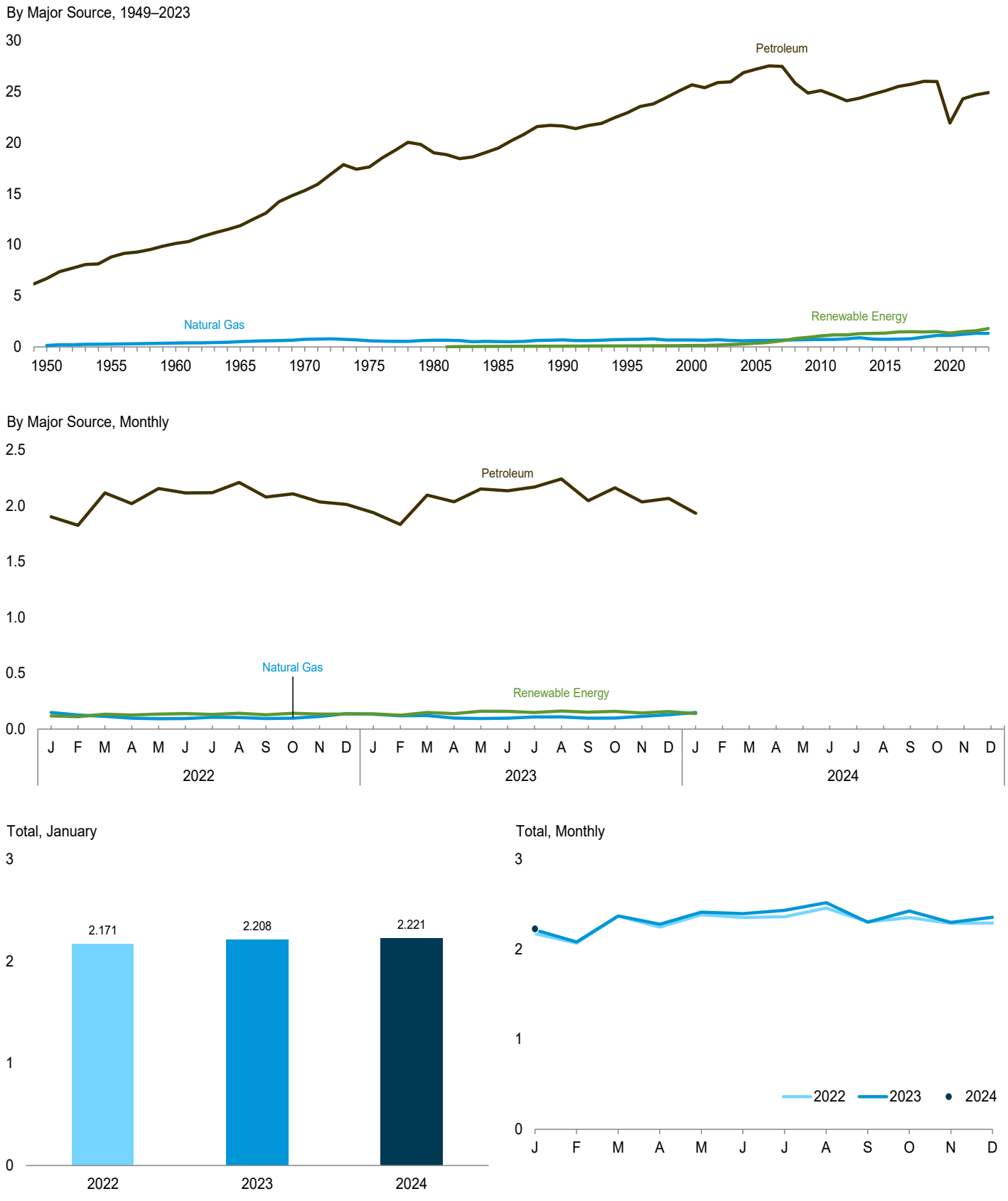
R=Revised. NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity sales to ultimate customers. • 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, "Other Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 2.5 Transportation Sector Energy Consumption
(Quadrillion Btu)



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

Table 2.5 Transportation Sector Energy Consumption

(Trillion Btu)

	End-Use Energy Consumption[a]									
	Primary Consumption[b]									
	Fossil Fuels				Renewable Energy[c]				Electrical System Energy Losses[g]	
	Coal	Natural Gas[d]	Petroleum[e]	Total	Biomass	Total Primary	Electricity[f]	Total End Use		Total
1950 Total	1,564	130	6,690	8,383	NA	8,383	23	8,407	62	8,469
1955 Total	421	254	8,799	9,474	NA	9,474	20	9,494	45	9,539
1960 Total	75	359	10,125	10,560	NA	10,560	10	10,570	21	10,591
1965 Total	16	517	11,866	12,399	NA	12,399	10	12,409	20	12,428
1970 Total	7	745	15,311	16,062	NA	16,062	11	16,073	22	16,094
1975 Total	1	595	17,615	18,211	NA	18,211	10	18,221	21	18,241
1980 Total	(h)	650	19,009	19,659	NA	19,659	11	19,670	23	19,694
1985 Total	(h)	519	19,472	19,992	50	20,042	14	20,056	29	20,084
1990 Total	(h)	679	21,626	22,305	60	22,366	16	22,382	33	22,415
1995 Total	(h)	724	22,920	23,644	112	23,757	17	23,774	35	23,808
2000 Total	(h)	672	25,649	26,321	135	26,456	18	26,474	38	26,512
2005 Total	(h)	624	27,217	27,840	339	28,179	26	28,205	52	28,257
2010 Total	(h)	719	25,100	25,819	1,075	26,894	26	26,920	50	26,970
2011 Total	(h)	734	24,623	25,357	1,166	26,523	26	26,549	48	26,598
2012 Total	(h)	780	24,108	24,888	1,169	26,057	25	26,082	45	26,127
2013 Total	(h)	887	24,361	25,248	1,292	26,541	26	26,567	47	26,614
2014 Total	(h)	760	24,728	25,487	1,314	26,802	26	26,828	47	26,875
2015 Total	(h)	745	25,086	25,831	1,351	27,182	26	27,208	45	27,253
2016 Total	(h)	757	25,515	26,272	1,469	27,741	26	27,767	43	27,810
2017 Total	(h)	799	25,707	26,506	1,474	27,979	26	28,005	42	28,047
2018 Total	(h)	962	26,017	26,979	1,456	28,435	26	28,461	42	28,504
2019 Total	(h)	1,114	25,992	27,106	1,497	28,602	26	28,628	41	28,669
2020 Total	(h)	1,109	21,930	23,039	1,355	24,394	22	24,417	34	24,450
2021 Total	(h)	1,232	24,287	25,519	1,496	27,015	22	27,037	33	27,070
2022 January	(h)	148	1,900	2,048	118	2,166	2	2,168	3	2,171
February	(h)	126	1,825	1,951	111	2,062	2	2,064	3	2,067
March	(h)	114	2,114	R 2,229	133	2,361	2	2,363	3	2,366
April	(h)	97	R 2,018	R 2,115	127	R 2,242	2	R 2,244	2	R 2,246
May	(h)	92	2,153	2,245	134	2,379	2	R 2,381	3	R 2,384
June	(h)	95	R 2,115	R 2,210	139	R 2,349	2	R 2,351	3	2,353
July	(h)	106	2,117	2,223	132	R 2,355	2	R 2,357	3	R 2,360
August	(h)	105	R 2,207	R 2,312	141	R 2,453	2	R 2,455	3	2,457
September	(h)	94	2,078	R 2,172	128	R 2,300	2	R 2,302	3	2,304
October	(h)	97	2,107	2,204	142	R 2,346	2	2,347	3	2,350
November	(h)	113	2,034	R 2,148	135	2,282	2	2,284	3	2,287
December	(h)	139	R 2,011	R 2,150	134	R 2,284	2	R 2,286	3	2,289
Total	(h)	**1,326**	**R 24,681**	**R 26,006**	**1,573**	**R 27,580**	**23**	**R 27,602**	**33**	**R 27,635**
2023 January	(h)	133	R 1,932	R 2,066	137	R 2,203	2	R 2,205	3	R 2,208
February	(h)	119	R 1,828	R 1,947	124	R 2,071	2	R 2,073	3	R 2,076
March	(h)	122	R 2,088	R 2,210	148	R 2,358	2	R 2,360	3	R 2,363
April	(h)	99	R 2,030	R 2,129	138	R 2,267	2	R 2,269	2	R 2,271
May	(h)	95	R 2,144	R 2,238	161	R 2,400	2	R 2,401	3	R 2,404
June	(h)	97	R 2,128	R 2,225	158	R 2,383	2	R 2,385	3	R 2,388
July	(h)	109	R 2,162	R 2,271	148	R 2,419	2	R 2,421	3	R 2,424
August	(h)	109	R 2,233	R 2,342	162	R 2,503	2	R 2,505	3	R 2,508
September	(h)	97	R 2,039	R 2,136	152	R 2,288	2	R 2,291	3	R 2,294
October	(h)	100	R 2,155	R 2,254	158	R 2,412	2	R 2,414	3	R 2,417
November	(h)	115	R 2,028	R 2,143	145	R 2,288	2	R 2,290	3	R 2,292
December	(h)	128	R 2,060	R 2,188	156	R 2,344	2	R 2,346	3	R 2,349
Total	(h)	**1,322**	**R 24,826**	**R 26,148**	**1,788**	**R 27,936**	**23**	**R 27,960**	**33**	**R 27,993**
2024 January	(h)	149	1,926	2,075	140	2,215	2	2,217	3	2,221

[a] Sum of "Total Primary" and "Electricity." See "End-Use Energy Consumption" in Glossary.

[b] Energy consumed in the form that it is first accounted for, before any transformation to secondary or tertiary forms of energy. See "Primary Energy Consumption" in Glossary.

[c] See Table 10.2c for notes on series components.

[d] Natural gas consumed in the operation of pipelines and smaller amounts consumed as vehicle fuel. Does not include supplemental gaseous fuels—see Note 3, "Supplemental Gaseous Fuels," at end of Section 4.

[e] Does not include biofuels. Biofuels are included in "Biomass." Includes non-combustion use of lubricants.

[f] Electricity sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.

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

[h] Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

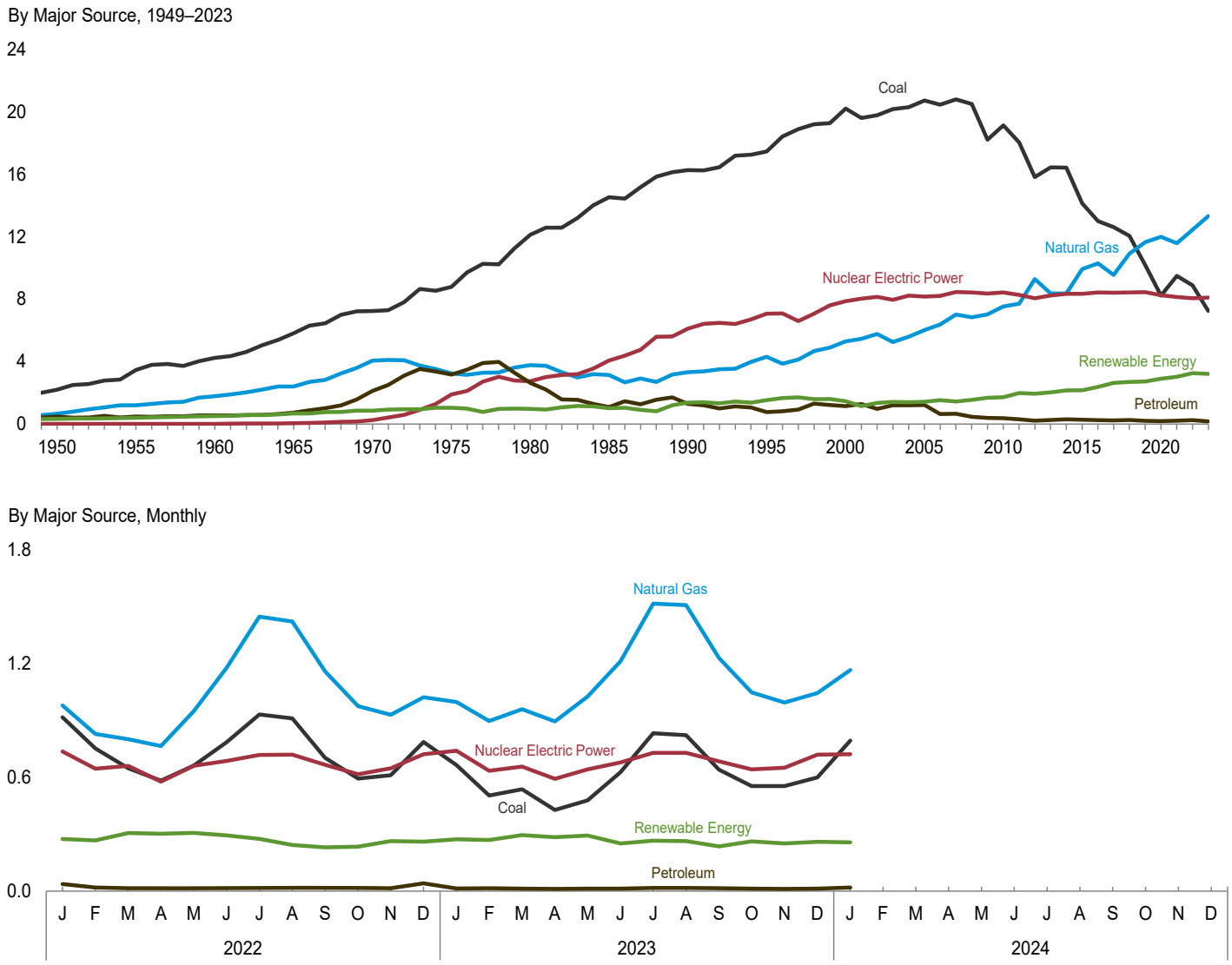
R=Revised. NA=Not available.

Notes: • Data are estimates, except for coal totals through 1977; and electricity sales to ultimate customers beginning in 1979. • See Note 2, "Other Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 2.6 Electric Power Sector Energy Consumption
(Quadrillion Btu)



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

Table 2.6 Electric Power Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]												
	Fossil Fuels					Renewable Energy[b]							
	Coal	Natural Gas[c]	Petroleum	Total	Nuclear Electric Power	Hydroelectric Power[d]	Geothermal	Solar[e]	Wind	Biomass	Total	Electricity Net Imports[f]	Total Primary
1950 Total	**2,199**	**651**	**472**	**3,322**	**0**	**327**	**NA**	**NA**	**NA**	**5**	**333**	**6**	**3,661**
1955 Total	**3,458**	**1,194**	**471**	**5,123**	**0**	**385**	**NA**	**NA**	**NA**	**3**	**389**	**14**	**5,525**
1960 Total	**4,228**	**1,785**	**553**	**6,565**	**6**	**498**	**(s)**	**NA**	**NA**	**2**	**499**	**15**	**7,086**
1965 Total	**5,821**	**2,395**	**722**	**8,938**	**43**	**661**	**1**	**NA**	**NA**	**3**	**665**	**(s)**	**9,646**
1970 Total	**7,227**	**4,054**	**2,117**	**13,399**	**239**	**845**	**2**	**NA**	**NA**	**4**	**851**	**7**	**14,495**
1975 Total	**8,786**	**3,240**	**3,166**	**15,191**	**1,900**	**1,024**	**11**	**NA**	**NA**	**2**	**1,037**	**21**	**18,149**
1980 Total	**12,123**	**3,778**	**2,634**	**18,534**	**2,739**	**942**	**17**	**NA**	**NA**	**4**	**964**	**71**	**22,309**
1985 Total	**14,542**	**3,135**	**1,090**	**18,767**	**4,076**	**959**	**32**	**(s)**	**(s)**	**14**	**1,006**	**140**	**23,988**
1990 Total	**16,261**	**3,309**	**1,289**	**20,859**	**6,104**	**989**	**53**	**1**	**10**	**317**	**1,369**	**8**	**[g]28,340**
1995 Total	**17,466**	**4,302**	**755**	**22,523**	**7,075**	**1,042**	**46**	**2**	**11**	**422**	**1,522**	**134**	**31,254**
2000 Total	**20,220**	**5,293**	**1,144**	**26,658**	**7,862**	**926**	**48**	**2**	**19**	**453**	**1,447**	**115**	**36,083**
2005 Total	**20,737**	**6,015**	**1,222**	**27,974**	**8,161**	**911**	**50**	**2**	**61**	**406**	**1,430**	**85**	**37,649**
2010 Total	**19,133**	**7,528**	**370**	**27,031**	**8,434**	**882**	**52**	**4**	**323**	**459**	**1,720**	**89**	**37,275**
2011 Total	**18,035**	**7,712**	**295**	**26,042**	**8,269**	**1,083**	**52**	**6**	**410**	**437**	**1,988**	**127**	**36,426**
2012 Total	**15,821**	**9,287**	**214**	**25,322**	**8,062**	**934**	**53**	**14**	**480**	**453**	**1,935**	**161**	**35,480**
2013 Total	**16,451**	**8,376**	**255**	**25,082**	**8,244**	**904**	**54**	**30**	**572**	**470**	**2,030**	**197**	**35,554**
2014 Total	**16,427**	**8,362**	**295**	**25,085**	**8,338**	**880**	**54**	**59**	**619**	**530**	**2,143**	**182**	**35,747**
2015 Total	**14,138**	**9,926**	**276**	**24,341**	**8,337**	**845**	**54**	**83**	**650**	**525**	**2,158**	**227**	**35,063**
2016 Total	**12,996**	**10,301**	**244**	**23,542**	**8,427**	**909**	**54**	**121**	**774**	**505**	**2,363**	**227**	**34,558**
2017 Total	**12,622**	**9,555**	**218**	**22,395**	**8,419**	**1,019**	**54**	**180**	**867**	**510**	**2,630**	**192**	**33,636**
2018 Total	**12,053**	**10,922**	**260**	**23,235**	**8,438**	**993**	**54**	**216**	**929**	**496**	**2,689**	**152**	**34,514**
2019 Total	**10,181**	**11,658**	**189**	**22,028**	**8,452**	**978**	**51**	**243**	**1,009**	**448**	**2,729**	**133**	**33,343**
2020 Total	**8,229**	**12,000**	**184**	**20,413**	**8,251**	**969**	**53**	**302**	**1,150**	**428**	**2,902**	**161**	**31,728**
2021 Total	**9,498**	**11,583**	**205**	**21,285**	**8,131**	**854**	**53**	**391**	**1,289**	**426**	**3,014**	**134**	**32,564**
2022 January	917	979	37	1,933	737	82	5	27	128	34	275	10	2,955
February	753	829	19	1,600	646	72	4	31	128	32	267	6	2,520
March	648	801	16	1,464	660	83	4	40	147	32	306	7	2,437
April	583	765	14	1,362	578	68	4	45	157	28	303	9	2,252
May	663	950	16	1,629	662	79	5	51	144	29	308	9	2,609
June	786	1,179	17	1,982	687	88	4	54	115	31	294	15	2,977
July	931	1,447	17	2,396	719	84	5	53	101	34	276	19	3,409
August	911	1,422	17	2,350	720	72	5	49	84	33	243	20	3,333
September	703	1,159	17	1,879	666	58	5	45	93	30	231	13	2,789
October	593	975	17	1,585	616	49	4	40	112	29	234	10	2,445
November	611	930	16	1,556	648	61	5	28	140	30	264	9	2,478
December	787	1,023	41	1,851	722	69	5	23	132	32	261	14	2,848
Total	**8,885**	**12,459**	**244**	**21,589**	**8,061**	**865**	**55**	**487**	**1,481**	**374**	**3,263**	**141**	**33,053**
2023 January	[R]665	997	14	[R]1,676	740	76	5	27	134	31	273	11	[R]2,700
February	[R]504	897	16	[R]1,416	635	63	4	31	144	27	270	7	[R]2,329
March	[R]537	960	13	[R]1,510	656	69	5	41	152	29	295	9	[R]2,470
April	[R]428	895	12	[R]1,335	592	59	5	50	147	24	285	7	[R]2,218
May	[R]479	1,026	[R]12	[R]1,517	642	93	5	57	109	28	293	9	[R]2,461
June	[R]627	1,213	13	[R]1,852	679	66	4	60	94	28	252	6	[R]2,789
July	[R]833	1,516	17	[R]2,366	730	72	4	64	95	30	266	4	[R]3,366
August	[R]822	1,508	17	[R]2,346	729	72	5	60	97	30	264	5	[R]3,343
September	[R]641	1,229	16	[R]1,885	685	56	5	53	96	27	236	(s)	[R]2,806
October	[R]554	1,048	13	[R]1,616	642	61	5	48	124	23	262	1	[R]2,520
November	[R]554	995	12	[R]1,561	650	61	5	35	126	24	252	2	[R]2,466
December	[R]599	1,045	13	[R]1,657	720	66	5	31	131	27	260	5	[R]2,641
Total	**[R]7,242**	**13,328**	**[R]167**	**[R]20,737**	**8,101**	**814**	**56**	**558**	**1,450**	**329**	**3,207**	**65**	**[R]32,110**
2024 January	794	1,166	19	1,980	722	72	5	33	119	29	258	6	2,965

[a] See "Primary Energy Consumption" in Glossary.
[b] See Table 10.2c for notes on series components.
[c] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Conventional hydroelectric power.
[e] Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector. See Tables 10.2c and 10.5.
[f] Net imports equal imports minus exports.
[g] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.
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 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 2.7 U.S. Government Energy Consumption by Agency, Fiscal Years

(Trillion Btu)

Fiscal Year[a]	Agri-culture	Defense	DHS[b]	Energy	GSA[c]	HHS[d]	Interior	Justice	NASA[e]	Postal Service	Trans-portation	Veterans Affairs	Other[f]	Total
1975	9.5	1,360.2	– –	50.4	22.3	6.5	9.4	5.9	13.4	30.5	19.3	27.1	10.5	1,565.0
1976	9.3	1,183.3	– –	50.3	20.6	6.7	9.4	5.7	12.4	30.0	19.5	25.0	11.2	1,383.4
1977	8.9	1,192.3	– –	51.6	20.4	6.9	9.5	5.9	12.0	32.7	20.4	25.9	11.9	1,398.5
1978	9.1	1,157.8	– –	50.1	20.4	6.5	9.2	5.9	11.2	30.9	20.6	26.8	12.4	1,360.9
1979	9.2	1,175.8	– –	49.6	19.6	6.4	10.4	6.4	11.1	29.3	19.6	25.7	12.3	1,375.4
1980	8.6	1,183.1	– –	47.4	18.1	6.0	8.5	5.7	10.4	27.2	19.2	24.8	12.3	1,371.2
1981	7.9	1,239.5	– –	47.3	18.0	6.7	7.6	5.4	10.0	27.9	18.8	24.0	11.1	1,424.2
1982	7.6	1,264.5	– –	49.0	18.1	6.4	7.4	5.8	10.1	27.5	19.1	24.2	11.6	1,451.4
1983	7.4	1,248.3	– –	49.5	16.1	6.2	7.7	5.5	10.3	26.5	19.4	24.1	10.8	1,431.8
1984	7.9	1,292.1	– –	51.6	16.2	6.4	8.4	6.4	10.6	27.7	19.8	24.6	10.7	1,482.5
1985	8.4	1,250.6	– –	52.2	20.7	6.0	7.8	8.2	10.9	27.8	19.6	25.1	13.1	1,450.3
1986	6.8	1,222.8	– –	46.9	14.0	6.2	6.9	8.6	11.2	28.0	19.4	25.0	10.8	1,406.7
1987	7.3	1,280.5	– –	48.5	13.1	6.6	6.6	8.1	11.3	28.5	19.0	24.9	11.9	1,466.3
1988	7.8	1,165.8	– –	49.9	12.4	6.4	7.0	9.4	11.3	29.6	18.7	26.3	15.8	1,360.3
1989	8.7	1,274.4	– –	44.2	12.7	6.7	7.1	7.7	12.4	30.3	18.5	26.2	15.6	1,464.7
1990	9.6	1,241.7	– –	43.5	17.5	7.1	7.4	7.0	12.4	30.6	19.0	24.9	17.5	1,438.0
1991	9.6	1,269.3	– –	42.1	14.0	6.2	7.1	8.0	12.5	30.8	19.0	25.1	18.1	1,461.7
1992	9.1	1,104.0	– –	44.3	13.8	6.8	7.0	7.5	12.6	31.7	17.0	25.3	15.7	1,294.8
1993	9.3	1,048.8	– –	43.4	14.1	7.2	7.5	9.1	12.4	33.7	19.4	25.7	16.2	1,246.8
1994	9.4	977.0	– –	42.1	14.0	7.5	7.9	10.3	12.6	35.0	19.8	25.6	17.1	1,178.2
1995	9.0	926.0	– –	47.3	13.7	6.1	6.4	10.2	12.4	36.2	18.7	25.4	17.1	1,128.5
1996	9.1	904.5	– –	44.6	14.5	6.6	4.3	12.1	11.5	36.4	19.6	26.8	17.7	1,107.7
1997	7.4	880.0	– –	43.1	14.4	7.9	6.6	12.0	12.0	40.8	19.1	27.3	20.8	1,091.2
1998	7.9	837.1	– –	31.5	14.1	7.4	6.4	15.8	11.7	39.5	18.5	27.6	19.5	1,037.1
1999	7.8	810.7	– –	27.0	14.4	7.1	7.5	15.4	11.4	39.8	22.6	27.5	19.8	1,010.9
2000	7.4	779.1	– –	30.5	17.6	8.0	7.8	19.7	11.1	43.3	21.2	27.0	20.3	993.1
2001	7.4	787.2	– –	31.1	18.4	8.5	9.5	19.7	10.9	43.4	17.8	27.7	20.7	1,002.3
2002	7.2	837.5	– –	30.7	17.5	8.0	8.2	17.7	10.7	41.6	18.3	27.7	18.4	1,043.4
2003	7.7	895.1	18.3	31.9	18.5	10.1	7.3	22.7	10.8	50.9	5.5	30.6	22.7	1,132.3
2004	7.0	960.7	23.5	31.4	18.3	8.8	8.7	17.5	9.9	50.5	5.2	29.9	20.4	1,191.7
2005	7.5	933.2	18.9	29.6	18.4	9.6	8.6	18.8	10.3	53.5	5.0	30.0	23.2	1,166.4
2006	6.8	843.7	17.1	32.9	18.2	9.3	8.1	23.5	10.2	51.8	4.6	29.3	20.9	1,076.4
2007	6.8	864.6	17.1	31.5	19.1	9.9	7.5	20.7	10.6	45.8	5.6	30.0	21.0	1,090.2
2008	6.5	910.8	22.0	32.1	18.8	10.3	7.1	19.0	10.8	47.1	7.7	29.0	22.4	1,143.4
2009	6.6	874.3	18.6	31.1	18.6	10.8	7.9	16.5	10.2	44.2	4.3	29.9	21.8	1,094.8
2010	6.8	889.9	21.2	31.7	18.8	10.4	7.3	15.7	10.1	43.3	5.7	30.2	21.8	1,112.7
2011	8.3	890.3	20.3	33.1	18.5	10.5	7.3	13.9	10.1	43.0	6.7	30.6	21.4	1,114.1
2012	6.7	828.5	20.1	30.3	16.3	10.0	6.7	15.1	8.9	40.8	5.6	29.7	20.5	1,039.3
2013	7.3	749.5	18.9	28.9	16.4	10.5	6.2	15.3	8.7	41.9	5.3	29.9	20.4	959.3
2014	6.3	730.6	18.5	29.4	17.0	9.5	6.2	15.6	8.3	43.0	5.2	31.4	20.6	941.5
2015	6.2	734.5	17.9	30.1	16.3	9.0	6.8	16.2	8.4	44.0	6.0	30.7	19.8	945.9
2016	6.2	709.2	18.1	28.9	15.8	8.7	6.4	15.6	8.5	43.9	6.0	30.3	19.5	917.2
2017	6.3	707.9	19.2	28.8	15.0	8.8	5.9	15.5	8.6	43.7	6.6	29.1	19.7	915.1
2018	6.1	690.6	16.8	27.3	15.6	10.0	6.1	16.2	8.4	45.5	5.8	29.7	18.8	897.0
2019	5.9	682.1	16.2	27.2	15.4	9.8	6.2	15.8	8.5	46.0	5.9	31.9	19.1	890.0
2020	5.4	648.8	17.1	26.4	14.4	9.5	5.5	14.6	8.1	46.1	5.5	30.6	17.0	849.0
2021	6.4	650.7	15.9	27.5	14.4	9.1	5.4	14.5	8.1	45.5	5.6	30.3	18.1	851.5
2022	8.0	622.5	16.5	26.3	13.4	9.6	6.3	14.5	8.4	48.3	5.5	30.8	17.3	827.2

[a] For 1975 and 1976, the U.S. Government's fiscal year was July 1 through June 30. Beginning in 1977, the U.S. Government's fiscal year is October 1 through September 30 (for example, fiscal year 2014 is October 2013 through September 2014).

[b] U.S. Department of Homeland Security.

[c] General Services Administration.

[d] U.S. Department of Health and Human Services.

[e] National Aeronautics and Space Administration.

[f] Includes all U.S. government agencies not separately displayed. See http://ctsedwweb.ee.doe.gov/Annual/Report/AgencyReference.aspx for agency list.

– – =Not applicable.

Notes: • Data in this table are developed using conversion factors that often differ from those in Tables A1–A6. • Data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. • Totals may not equal sum of components due to independent rounding.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all annual data beginning in 1975.

Sources: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program. See http://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx, "A-1 Total Site-Delivered Energy Use in All End-Use Sectors, by Federal Agency (Billion Btu)".

Table 2.8 U.S. Government Energy Consumption by Source, Fiscal Years

(Trillion Btu)

Fiscal Year[a]	Coal	Natural Gas[b]	Petroleum						Other Mobility Fuels[f]	Electricity	Purchased Steam and Other[g]	Total
			Aviation Gasoline	Fuel Oil[c]	Jet Fuel	LPG[d]	Motor Gasoline[e]	Total				
1975	77.9	166.2	22.0	376.0	707.4	5.6	63.2	1,174.2	0.0	141.5	5.1	1,565.0
1976	71.3	151.8	11.6	329.7	610.0	4.7	60.4	1,016.4	.0	139.3	4.6	1,383.4
1977	68.4	141.2	8.8	348.5	619.2	4.1	61.4	1,042.1	.0	141.1	5.7	1,398.5
1978	66.0	144.7	6.2	332.3	601.1	3.0	60.1	1,002.9	.0	141.0	6.4	1,360.9
1979	65.1	148.9	4.7	327.1	618.6	3.7	59.1	1,013.1	.0	141.2	7.1	1,375.4
1980	63.5	147.3	4.9	307.7	638.7	3.8	56.5	1,011.6	.2	141.9	6.8	1,371.2
1981	65.1	142.2	4.6	351.3	653.3	3.5	53.2	1,066.0	.2	144.5	6.2	1,424.2
1982	68.6	146.2	3.6	349.4	672.7	3.7	53.1	1,082.5	.2	147.5	6.2	1,451.4
1983	62.4	147.8	2.6	329.5	673.4	3.8	51.6	1,060.8	.2	151.5	9.0	1,431.8
1984	65.3	157.4	1.9	342.9	693.7	3.9	51.2	1,093.6	.2	155.9	10.1	1,482.5
1985	64.8	149.9	1.9	292.6	705.7	3.8	50.4	1,054.3	.2	167.2	13.9	1,450.3
1986	63.8	140.9	1.4	271.6	710.2	3.6	45.3	1,032.1	.3	155.8	13.7	1,406.7
1987	67.0	145.6	1.0	319.5	702.3	3.6	43.1	1,069.5	.4	169.9	13.9	1,466.3
1988	60.2	144.6	6.0	284.8	617.2	2.7	41.2	951.9	.4	171.2	32.0	1,360.3
1989	48.7	152.4	.8	245.3	761.7	3.5	41.1	1,052.4	2.2	188.6	20.6	1,464.7
1990	44.3	159.4	.5	245.2	732.4	3.8	37.2	1,019.1	2.6	193.6	19.1	1,438.0
1991	45.9	154.1	.4	232.6	774.5	3.0	34.1	1,044.7	6.0	192.7	18.3	1,461.7
1992	51.7	151.2	1.0	200.6	628.2	3.0	35.6	868.4	8.4	192.5	22.5	1,294.8
1993	38.3	152.9	.7	187.0	612.4	3.5	34.5	838.1	5.8	193.1	18.6	1,246.8
1994	35.0	143.9	.6	198.5	550.7	3.2	29.5	782.6	7.7	190.9	18.2	1,178.2
1995	31.7	149.4	.3	178.4	522.3	3.0	31.9	735.9	8.4	184.8	18.2	1,128.5
1996	23.3	147.3	.2	170.5	513.0	3.1	27.6	714.4	18.7	184.0	20.1	1,107.7
1997	22.5	153.8	.3	180.0	475.7	2.6	39.0	697.6	14.5	183.6	19.2	1,091.2
1998	23.9	140.4	.2	174.5	445.5	3.5	43.0	666.8	5.9	181.4	18.8	1,037.1
1999	21.2	137.4	.1	162.1	444.7	2.4	41.1	650.4	.4	180.0	21.5	1,010.9
2000	22.7	133.8	.2	171.3	403.1	2.5	43.9	621.0	1.8	193.6	20.2	993.1
2001	18.8	133.7	.2	176.9	415.2	3.1	42.5	638.0	4.8	188.4	18.6	1,002.3
2002	16.9	133.7	.2	165.6	472.9	2.8	41.3	682.8	3.2	188.3	18.5	1,043.4
2003	18.1	135.5	.3	190.8	517.9	3.2	46.3	758.4	3.3	193.8	23.2	1,132.3
2004	17.4	135.3	.2	261.4	508.2	2.9	44.1	816.9	3.1	197.1	22.0	1,191.7
2005	17.1	135.7	.4	241.4	492.2	3.4	48.8	786.1	5.6	197.6	24.3	1,166.4
2006	23.5	132.6	.6	209.3	442.6	2.7	48.3	703.6	2.1	196.7	18.2	1,076.4
2007	20.4	131.5	.4	212.9	461.1	2.7	46.5	723.7	2.9	194.9	16.7	1,090.2
2008	20.8	129.6	.4	198.4	525.4	2.3	49.0	775.4	3.6	196.2	17.9	1,143.4
2009	20.3	131.7	.3	166.4	505.7	3.2	48.3	723.9	10.1	191.3	17.7	1,094.8
2010	20.0	130.1	.4	157.8	535.8	2.5	51.3	747.7	3.0	193.7	18.2	1,112.7
2011	18.5	124.7	.9	166.5	533.6	2.0	52.7	755.8	2.7	193.2	19.1	1,114.1
2012	15.9	116.2	.4	148.6	493.5	1.7	50.1	694.4	3.1	187.2	22.5	1,039.3
2013	14.3	122.5	.7	140.0	424.0	1.9	46.6	613.2	2.8	184.7	21.8	959.3
2014	13.5	125.6	.3	133.5	414.3	1.8	44.9	594.8	3.6	182.1	21.9	941.5
2015	12.6	122.2	.3	134.4	418.9	1.8	46.8	602.2	3.7	184.3	20.9	945.9
2016	10.2	115.4	.3	129.7	403.9	1.7	46.5	582.2	3.6	184.5	21.4	917.2
2017	9.1	115.1	.3	135.1	400.1	1.5	46.4	583.5	2.7	181.7	23.0	915.1
2018	6.2	125.8	.3	127.8	383.2	1.7	45.5	558.5	3.0	180.0	23.6	897.0
2019	5.0	131.7	.3	125.4	376.8	1.9	46.6	551.0	2.7	178.2	21.5	890.0
2020	5.2	128.3	.2	129.6	345.0	1.7	43.3	520.0	1.6	173.7	20.3	849.0
2021	5.3	129.6	.4	122.2	352.0	1.7	44.9	521.2	1.9	173.1	20.5	851.5
2022	3.5	128.8	.2	126.4	326.9	1.6	44.4	499.5	1.8	171.8	21.8	827.2

[a] For 1975 and 1976, the U.S. Government's fiscal year was July 1 through June 30. Beginning in 1977, the U.S. Government's fiscal year is October 1 through September 30 (for example, fiscal year 2014 is October 2013 through September 2014).

[b] Natural gas, plus a small amount of supplemental gaseous fuels.

[c] Distillate fuel oil, including diesel fuel; and residual fuel oil, including Navy Special.

[d] Liquefied petroleum gases, primarily propane.

[e] Includes E10 (a mixture of 10% ethanol and 90% motor gasoline) and E15 (a mixture of 15% ethanol and 85% motor gasoline).

[f] Other types of fuel used in vehicles and equipment. Primarily includes alternative fuels such as compressed natural gas (CNG); liquefied natural gas (LNG); E85 (a mixture of 85% ethanol and 15% motor gasoline); B20 (a mixture of 20% biodiesel and 80% diesel fuel); B100 (100% biodiesel); hydrogen; and methanol.

[g] Other types of energy used in facilities. Primarily includes chilled water, but also includes small amounts of renewable energy such as wood and solar thermal.

Notes: • Data in this table are developed using conversion factors that often differ from those in Tables A1–A6. • Data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. • Totals may not equal sum of components due to independent rounding.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#consumption (Excel and CSV files) for all annual data beginning in 1975.

Sources: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program. See http://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx, "A-5 Historical Federal Energy Consumption and Cost Data by Agency and Energy Type (FY 1975 to Present)".

Note 1. Electrical System Energy Losses. Electrical system energy losses are calculated as the difference between total primary consumption by the electric power sector (see Table 2.6) and the total energy content of electricity sales to ultimate customers (see Tables 7.6 and A6). Most of these losses are from the conversion of heat energy into mechanical energy to turn electric generators at fossil fuel, biomass, and nuclear plants. These losses are a necessary feature of the thermodynamic cycles of these power plants (steam-electric, gas-electric, and combined-cycle). Overall, over half of total energy input is lost in conversion. 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. Currently, of electricity generated, approximately 5% is lost in plant use and 5% is lost in transmission and distribution. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales.

Note 2. Other Energy Losses. Similar to electrical system energy losses, there are also other energy losses from energy consumption not separately identified. There are losses in the production of energy, the transformation of one form of energy to another form of energy, and the distribution and use of energy. For example, there are transformation losses in the process of refining crude oil into usable petroleum products, processing natural gas into marketable dry gas, and in the process of converting energy from the sun into usable energy with solar panels. All uses of primary energy have efficiency losses, usually in the form of heat, when energy is converted to do useful work. Examples include when motor gasoline is burned to move vehicles, when natural gas is burned to heat homes, or in any household appliance that uses electricity. The Lawrence Livermore National Laboratory estimates primary energy losses by end-use sector by applying an end-use efficiency factor to EIA's *Monthly Energy Review* consumption data. https://flowcharts.llnl.gov/.

Note 3. Energy Consumption Data and Surveys. Most of the data in this section of the Monthly Energy Review (MER) are developed from a group of energy-related surveys, typically called "supply surveys," conducted by the U.S. Energy Information Administration (EIA). Supply surveys are directed to suppliers and marketers of specific energy sources. They measure the quantities of specific energy sources produced, or the quantities supplied to the market, or both. The data obtained from EIA's supply surveys are integrated to yield the summary consumption statistics published in this section (and in Section 1) of the MER.

Users of EIA's energy consumption statistics should be aware of a second group of energy-related surveys, typically called "consumption surveys." Consumption surveys gather information on the types of energy consumed by end users of energy, along with the characteristics of those end users that can be associated with energy use. For example, the "Manufacturing Energy Consumption Survey" belongs to the consumption survey group because it collects information directly from end users (the manufacturing establishments). There are important differences between the supply and consumption surveys that need to be taken into account in any analysis that uses both data sources. For information on those differences, see "Energy Consumption by End-Use Sector, A Comparison of Measures by Consumption and Supply Surveys," DOE/EIA-0533, U.S. Energy Information Administration, Washington, DC, April 6, 1990.

Table 2.2 Sources

Coal

1949–2007: Residential sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the residential and commercial sectors coal consumption heat content factors in Table A5.

Natural Gas

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

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

gaseous fuels) consumption is equal to residential sector natural gas (including supplemental gaseous fuels) consumption minus the residential sector portion of supplemental gaseous fuels.

Petroleum
1949 forward: Table 3.8a.

Fossil Fuels Total
1949–2007: Residential sector total fossil fuels consumption is the sum of the residential sector consumption values for coal, natural gas, and petroleum.

2008 forward: Residential sector total fossil fuels consumption is the sum of the residential sector consumption values for natural gas and petroleum.

Renewable Energy
1949 forward: Table 10.2a.

Total Primary Energy Consumption
1949 forward: Residential sector total primary energy consumption is the sum of the residential sector consumption values for fossil fuels and renewable energy.

Electricity Sales to Ultimate Customers
1949 forward: Residential sector electricity sales to ultimate customers from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

End-Use Energy Consumption
1949 forward: Residential sector end-use energy consumption is the sum of residential sector total primary energy consumption and residential sector electricity sales to ultimate customers.

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 sales to ultimate customers 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 sales to ultimate customers 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 sales to ultimate customers, 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 Sales to Ultimate Customers
1949 forward: Commercial sector electricity sales to ultimate customers from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

End-Use Energy Consumption
1949 forward: Commercial sector end-use energy consumption is the sum of commercial sector total primary energy consumption and commercial sector electricity sales to ultimate customers.

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 sales to ultimate customers 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 sales to ultimate customers 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 sales to ultimate customers, 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 Sales to Ultimate Customers
1949 forward: Industrial sector electricity sales to ultimate customers from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

End-Use Energy Consumption
1949 forward: Industrial sector end-use energy consumption is the sum of industrial sector total primary energy consumption and residential sector electricity sales to ultimate customers.

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 sales to ultimate customers 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 sales to ultimate customers 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 sales to ultimate customers, and electrical system energy losses.

Table 2.5 Sources

Coal

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

Natural Gas

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

Petroleum

1949–1992: Table 3.8c.

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

2009–2011: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel consumption, calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1); minus renewable diesel fuel and other biofuels refinery and blender net inputs, calculated using "other renewable diesel fuel" and "other renewable fuels" data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the heat content factors for renewable diesel fuel and other biofuels in Table A1).

2012–2020: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel consumption from Table 10.4; minus renewable diesel fuel and other biofuels refinery and blender net inputs, calculated using "other renewable diesel fuel" and "other renewable fuels" data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the heat content factors for renewable diesel fuel and other biofuels in Table A1).

2021 forward: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel, renewable diesel fuel, and other biofuels refinery and

blender net inputs and products supplied, calculated using “biofuels except fuel ethanol“ refinery and blender net inputs and products supplied from U.S. Energy Information Administration (EIA), *Petroleum Supply Annual* and *Petroleum Supply Monthly* (data are converted to Btu by multiplying by the appropriate heat content factors 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 Sales to Ultimate Customers

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

End-Use Energy Consumption

1949 forward: Transportation sector end-use energy consumption is the sum of transportation sector total primary energy consumption and residential sector electricity sales to ultimate customers.

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 sales to ultimate customers 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 sales to ultimate customers 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 sales to ultimate customers, 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.

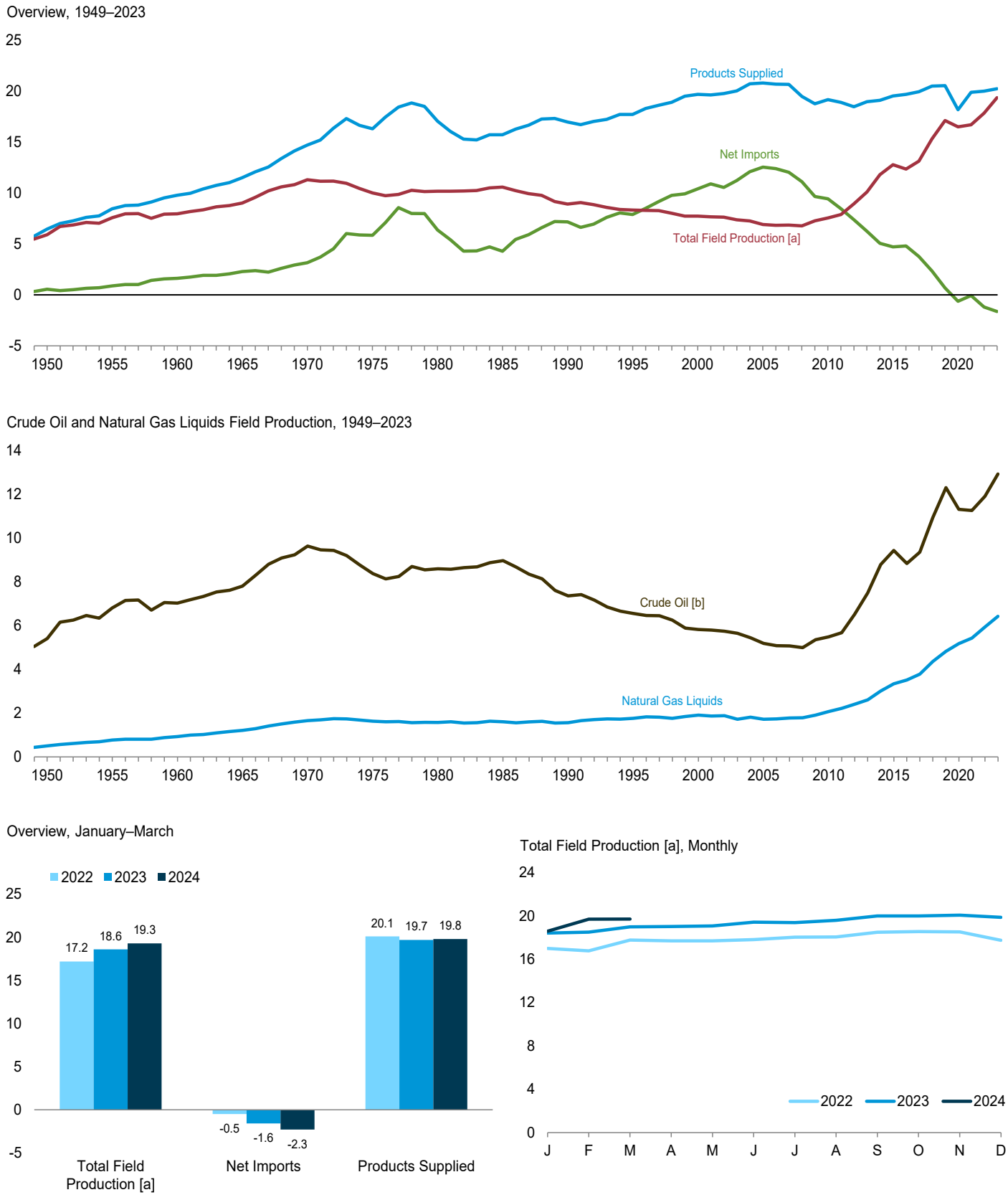
Electricity Net Imports
1949 forward: Electricity net imports are equal to electricity imports from Table 1.4a minus electricity exports from Table 1.4b.

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.

3. Petroleum

Figure 3.1 Petroleum Overview

(Million Barrels Per Day)



[a] Crude oil, including lease condensate, and natural gas liquids field production.
[b] Includes lease condensate.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.1.

Table 3.1 Petroleum Overview

(Thousand Barrels per Day)

	Field Production[a]					Biofuels Plant Net Production[e]	Processing Gain[f]	Trade			Stock Change[i]	Adjustments[c,j]	Petroleum Products Supplied
	Crude Oil[b,c]			Natural Gas Liquids	Total[c]			Imports[g]	Exports	Net Imports[h]			
	48 States[d]	Alaska	Total										
1950 Average	5,407	0	5,407	499	5,906	NA	2	850	305	545	-56	-51	6,458
1955 Average	6,807	0	6,807	771	7,578	NA	34	1,248	368	880	(s)	-37	8,455
1960 Average	7,034	2	7,035	929	7,965	NA	146	1,815	202	1,613	-83	-8	9,797
1965 Average	7,774	30	7,804	1,210	9,014	NA	220	2,468	187	2,281	-8	-10	11,512
1970 Average	9,408	229	9,637	1,660	11,297	NA	359	3,419	259	3,161	103	-16	14,697
1975 Average	8,183	191	8,375	1,633	10,007	NA	460	6,056	209	5,846	32	41	16,322
1980 Average	6,980	1,617	8,597	1,573	10,170	NA	597	6,909	544	6,365	140	64	17,056
1985 Average	7,146	1,825	8,971	1,609	10,581	NA	557	5,067	781	4,286	-103	200	15,726
1990 Average	5,582	1,773	7,355	1,559	8,914	NA	683	8,018	857	7,161	107	338	16,988
1995 Average	5,076	1,484	6,560	1,762	8,322	NA	774	8,835	949	7,886	-246	496	17,725
2000 Average	4,851	970	5,822	1,911	7,733	NA	948	11,459	1,040	10,419	-69	532	19,701
2005 Average	4,320	864	5,184	1,717	6,901	NA	989	13,714	1,165	12,549	[k] 146	509	20,802
2010 Average	4,885	600	5,484	2,074	7,558	907	1,068	11,793	2,353	9,441	42	246	19,178
2011 Average	5,113	561	5,674	2,216	7,890	1,016	1,076	11,436	2,986	8,450	-138	325	18,896
2012 Average	5,998	526	6,524	2,408	8,932	964	1,059	10,598	3,205	7,393	151	285	18,482
2013 Average	6,981	515	7,495	2,606	10,101	1,002	1,087	9,859	3,621	6,237	-138	400	18,967
2014 Average	8,295	496	8,791	3,015	11,805	1,055	1,081	9,241	4,176	5,065	267	362	19,100
2015 Average	8,957	483	9,439	3,342	12,782	1,095	1,062	9,449	4,738	4,711	431	313	19,532
2016 Average	8,356	490	8,846	3,509	12,356	1,158	1,118	10,055	5,261	4,795	125	390	19,692
2017 Average	8,863	495	9,357	3,783	13,140	1,198	1,111	10,144	6,376	3,768	-364	370	19,952
2018 Average	10,472	479	10,951	4,369	15,321	1,234	1,138	9,943	7,601	2,341	44	522	20,512
2019 Average	11,845	466	12,311	4,825	17,136	1,125	1,069	9,141	8,471	670	28	572	20,543
2020 Average	10,871	448	11,318	5,175	16,493	1,009	923	7,863	8,498	-635	176	573	18,186
2021 Average	10,830	437	11,268	5,425	16,693	1,136	956	8,474	8,536	-62	-527	641	19,890
2022 January	11,030	450	11,480	5,508	16,988	1,206	988	8,177	8,690	-513	-448	496	19,613
February	10,808	450	11,258	5,514	16,772	1,183	924	8,457	8,735	-278	-1,212	377	20,190
March	11,366	440	11,806	5,952	17,758	1,197	1,004	8,449	9,070	-621	-780	365	20,483
April	11,328	442	11,770	5,917	17,687	1,157	1,050	8,247	9,665	-1,418	-620	630	19,727
May	11,287	447	11,734	5,961	17,695	1,206	1,087	8,348	9,379	-1,031	-207	675	19,840
June	11,382	419	11,800	6,008	17,809	1,246	1,111	8,625	9,798	-1,173	-718	723	20,433
July	11,403	432	11,834	6,189	18,023	1,228	1,100	8,744	9,675	-931	309	815	19,926
August	11,572	413	11,985	6,061	18,046	1,189	1,010	8,367	9,747	-1,380	-826	574	20,265
September	11,895	430	12,325	6,154	18,479	1,126	1,082	8,029	9,854	-1,825	-859	408	20,129
October	11,943	435	12,378	6,168	18,545	1,225	1,014	8,145	9,575	-1,430	-93	560	20,007
November	11,931	445	12,376	6,139	18,515	1,280	1,023	8,342	9,979	-1,637	-463	570	20,214
December	11,691	447	12,138	5,600	17,739	1,191	986	8,026	10,035	-2,009	-664	757	19,327
Average	**11,473**	**437**	**11,911**	**5,933**	**17,844**	**1,203**	**1,032**	**8,329**	**9,520**	**-1,191**	**-542**	**581**	**20,010**
2023 January	[E] 12,120	[E] 448	[E] 12,568	5,850	[E] 18,418	1,240	1,026	8,402	9,367	-964	1,048	477	19,149
February	[E] 12,086	[E] 446	[E] 12,532	5,961	[E] 18,494	1,240	957	8,892	9,736	-843	435	347	19,759
March	[E] 12,335	[E] 435	[E] 12,770	6,211	[E] 18,982	1,254	917	8,236	11,271	-3,035	-1,173	792	20,083
April	[E] 12,216	[E] 434	[E] 12,650	6,373	[E] 19,023	1,238	1,012	8,470	9,782	-1,312	241	315	20,037
May	[E] 12,264	[E] 430	[E] 12,694	6,376	[E] 19,070	1,296	944	8,552	9,652	-1,100	167	353	20,396
June	[E] 12,471	[E] 423	[E] 12,894	6,527	[E] 19,421	1,345	1,071	8,836	10,028	-1,192	-93	-24	20,716
July	[E] 12,528	[E] 397	[E] 12,925	6,445	[E] 19,371	1,313	1,076	8,270	10,029	-1,758	236	360	20,124
August	[E] 12,645	[E] 396	[E] 13,041	6,548	[E] 19,589	1,303	1,075	8,968	9,998	-1,030	-334	-390	20,881
September	[E] 12,831	[E] 415	[E] 13,247	6,753	[E] 20,000	1,327	1,070	8,575	10,060	-1,485	871	51	20,092
October	[E] 12,793	[E] 426	[E] 13,219	6,770	[E] 19,989	1,309	1,036	7,893	10,053	-2,160	-628	-120	20,680
November	[RE] 12,867	[E] 428	[RE] 13,295	6,764	[RE] 20,060	1,341	1,064	8,666	10,222	-1,556	127	[R] -70	20,710
December	[RE] 12,862	[E] 433	[RE] 13,295	6,568	[RE] 19,863	1,401	1,061	8,458	11,544	-3,085	-391	[R] 663	20,293
Average	[RE] **12,504**	[E] **426**	[RE] **12,930**	**6,431**	[RE] **19,361**	**1,301**	**1,026**	**8,514**	**10,150**	**-1,636**	**36**	[R] **230**	**20,246**
2024 January	[RE] 12,107	[E] 427	[RE] 12,533	[R] 6,058	[RE] 18,591	[R] 1,272	[R] 977	[R] 8,449	[R] 10,372	[R] -1,923	[R] -490	[R] 180	[R] 19,587
February	[E] 12,841	[RE] 435	[E] 13,276	[E] 6,414	[E] 19,690	[E] 1,361	[E] 949	[E] 8,449	[E] 11,031	[E] -2,583	[E] -64	[E] 44	[E] 19,524
March	[E] 12,666	[E] 434	[E] 13,100	[E] 6,600	[E] 19,700	[E] 1,369	[E] 1,018	[E] 8,060	[E] 10,373	[E] -2,313	[E] 17	[E] 478	[E] 20,235
3-Month Average	[E] **12,531**	[E] **432**	[E] **12,963**	[E] **6,356**	[E] **19,319**	[E] **1,333**	[E] **982**	[E] **8,316**	[E] **10,582**	[E] **-2,266**	[E] **-181**	[E] **238**	[E] **19,788**
2023 3-Month Average	[E] **12,184**	[E] **443**	[E] **12,627**	**6,009**	[E] **18,636**	**1,245**	**967**	**8,497**	**10,137**	**-1,640**	**92**	**545**	**19,660**
2022 3-Month Average	**11,077**	**446**	**11,523**	**5,663**	**17,186**	**1,196**	**974**	**8,357**	**8,835**	**-477**	**-800**	**414**	**20,093**

[a] Crude oil production on leases, and natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[b] Includes lease condensate.

[c] Once a month, data for crude oil production, total field production, and adjustments are revised going back as far as the data year of the U.S. Energy Information Administration's (EIA) last published *Petroleum Supply Annual* (PSA)—these revisions are released at the same time as EIA's *Petroleum Supply Monthly*. Once a year, data for these series are revised going back as far as 10 years—these revisions are released at the same time as the PSA.

[d] United States excluding Alaska and Hawaii.

[e] Biofuels plant net production of fuel ethanol, biodiesel, renewable diesel fuel, other biofuels, natural gasoline, finished motor gasoline, and motor gasoline blending components. For 2009–2018, also includes oxygenates (excluding fuel ethanol).

[f] Refinery and blender net production minus refinery and blender net inputs. See Table 3.2.

[g] Includes Strategic Petroleum Reserve imports. See Table 3.3b.

[h] Net imports equal imports minus exports.

[i] A negative value indicates a decrease in stocks and a positive value indicates an increase. The current month stock change estimate is based on the change from the previous month's estimate, rather than the stocks values shown in Table 3.4. Includes crude oil stocks in the Strategic Petroleum Reserve, but excludes distillate fuel oil stocks in the Northeast Home Heating Oil Reserve. See Table 3.4.

[j] An adjustment for crude oil, hydrogen, oxygenates, biofuels, other hydrocarbons, motor gasoline blending components, finished motor gasoline, and distillate fuel oil. See EIA's *Petroleum Supply Monthly*, Appendix B, "PSM Explanatory Notes," for further information.

[k] Derived from the 2004 petroleum stocks value that excludes crude oil stocks on leases (1,628 million barrels), not the 2004 petroleum stocks value that includes crude oil stocks on leases (1,645 million barrels).

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

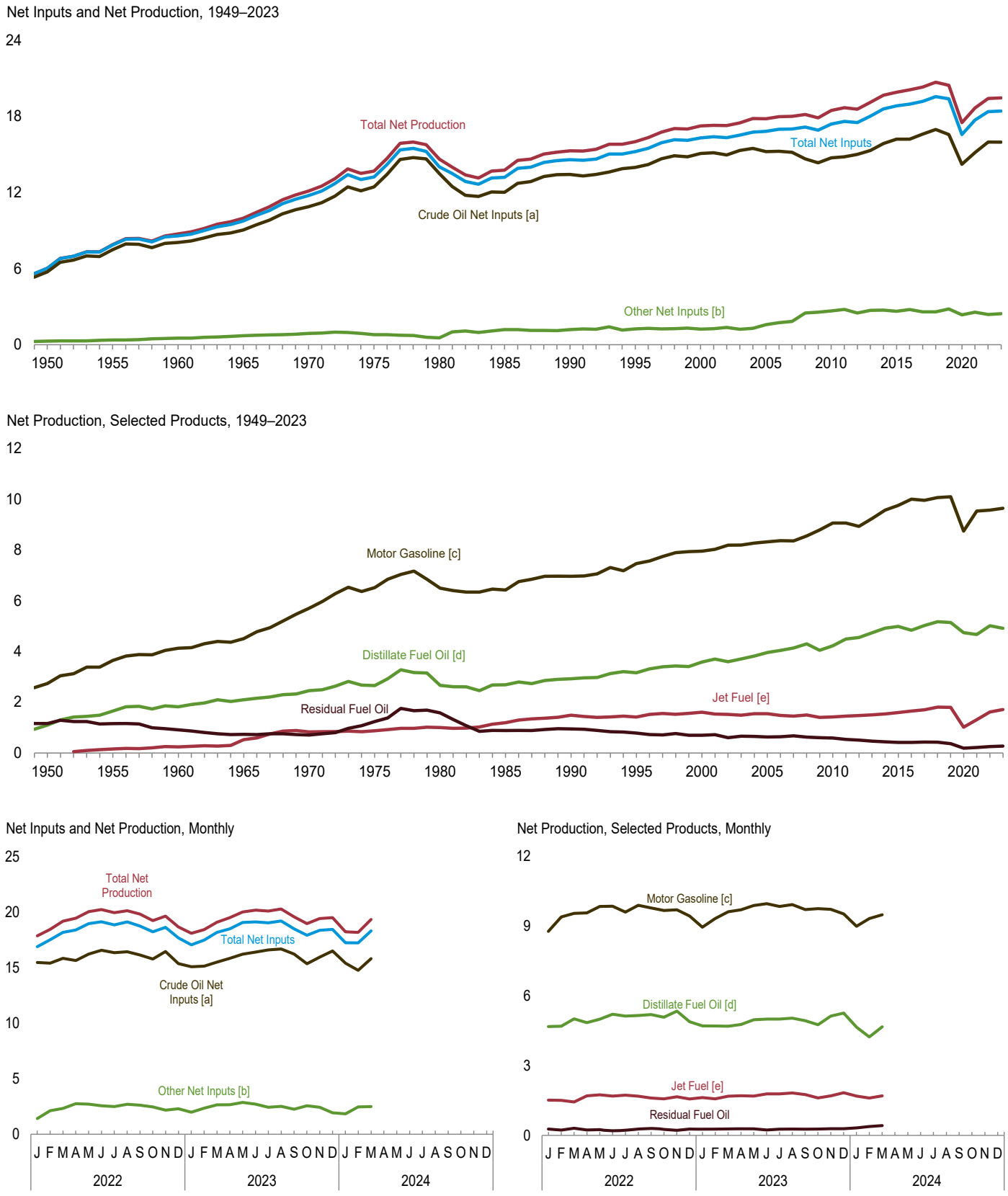
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 3.2 Refinery and Blender Net Inputs and Net Production

(Million Barrels per Day)



[a] Includes lease condensate.
[b] Natural gas liquids and other liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[e] Beginning in 2005, includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.2.

Table 3.2 Refinery and Blender Net Inputs and Net Production

(Thousand Barrels per Day)

	Refinery and Blender Net Inputs[a]				Refinery and Blender Net Production[b]									
						Hydrocarbon Gas Liquids								
						Propane/Propylene								
	Crude Oil[c]	Natural Gas Liquids[d]	Other Liquids[e]	Total	Distillate Fuel Oil[f]	Propane	Propylene	Total[g]	Total[h]	Jet Fuel[i]	Motor Gasoline[j]	Residual Fuel Oil	Other Products[k]	Total
1950 Average	**5,739**	**259**	**19**	**6,018**	**1,093**	**NA**	**NA**	**NA**	**80**	**(i)**	**2,735**	**1,165**	**947**	**6,019**
1955 Average	**7,480**	**345**	**32**	**7,857**	**1,651**	**NA**	**NA**	**NA**	**119**	**155**	**3,648**	**1,152**	**1,166**	**7,891**
1960 Average	**8,067**	**455**	**61**	**8,583**	**1,823**	**NA**	**NA**	**NA**	**212**	**241**	**4,126**	**908**	**1,420**	**8,729**
1965 Average	**9,043**	**618**	**88**	**9,750**	**2,096**	**NA**	**NA**	**NA**	**293**	**523**	**4,507**	**736**	**1,814**	**9,970**
1970 Average	**10,870**	**763**	**121**	**11,754**	**2,454**	**E 184**	**E 55**	**239**	**345**	**827**	**5,699**	**706**	**2,082**	**12,113**
1975 Average	**12,442**	**710**	**72**	**13,225**	**2,653**	**E 179**	**E 60**	**238**	**311**	**871**	**6,518**	**1,235**	**2,097**	**13,685**
1980 Average	**13,481**	**462**	**81**	**14,025**	**2,661**	**E 202**	**E 72**	**273**	**330**	**999**	**6,492**	**1,580**	**2,559**	**14,622**
1985 Average	**12,002**	**509**	**681**	**13,192**	**2,686**	**E 223**	**E 72**	**295**	**391**	**1,189**	**6,419**	**882**	**2,183**	**13,750**
1990 Average	**13,409**	**467**	**713**	**14,589**	**2,925**	**299**	**105**	**404**	**499**	**1,488**	**6,959**	**950**	**2,452**	**15,272**
1995 Average	**13,973**	**471**	**775**	**15,220**	**3,155**	**352**	**151**	**503**	**654**	**1,416**	**7,459**	**788**	**2,522**	**15,994**
2000 Average	**15,067**	**380**	**849**	**16,295**	**3,580**	**366**	**217**	**583**	**705**	**1,606**	**7,951**	**696**	**2,705**	**17,243**
2005 Average	**15,220**	**441**	**1,149**	**16,811**	**3,954**	**311**	**229**	**540**	**573**	**1,546**	**8,318**	**628**	**2,782**	**17,800**
2010 Average	**14,724**	**442**	**2,219**	**17,385**	**4,223**	**282**	**278**	**560**	**659**	**1,418**	**9,059**	**585**	**2,509**	**18,452**
2011 Average	**14,806**	**490**	**2,300**	**17,596**	**4,492**	**270**	**282**	**552**	**619**	**1,449**	**9,058**	**537**	**2,518**	**18,673**
2012 Average	**14,999**	**509**	**1,997**	**17,505**	**4,550**	**276**	**277**	**553**	**630**	**1,471**	**8,926**	**501**	**2,487**	**18,564**
2013 Average	**15,312**	**496**	**2,211**	**18,019**	**4,733**	**284**	**281**	**564**	**623**	**1,499**	**9,234**	**467**	**2,550**	**19,106**
2014 Average	**15,848**	**511**	**2,214**	**18,574**	**4,916**	**306**	**281**	**587**	**653**	**1,541**	**9,570**	**435**	**2,537**	**19,654**
2015 Average	**16,188**	**517**	**2,119**	**18,824**	**4,983**	**283**	**276**	**559**	**615**	**1,590**	**9,754**	**417**	**2,527**	**19,886**
2016 Average	**16,187**	**536**	**2,238**	**18,961**	**4,834**	**307**	**280**	**587**	**632**	**1,650**	**9,995**	**418**	**2,550**	**20,079**
2017 Average	**16,590**	**566**	**2,031**	**19,187**	**5,024**	**307**	**285**	**592**	**628**	**1,702**	**9,954**	**427**	**2,563**	**20,298**
2018 Average	**16,969**	**575**	**2,011**	**19,555**	**5,168**	**301**	**293**	**594**	**634**	**1,806**	**10,061**	**425**	**2,599**	**20,693**
2019 Average	**16,563**	**571**	**2,237**	**19,371**	**5,137**	**288**	**282**	**570**	**606**	**1,796**	**10,095**	**361**	**2,444**	**20,439**
2020 Average	**14,212**	**508**	**1,846**	**16,566**	**4,738**	**264**	**264**	**528**	**546**	**1,018**	**8,742**	**188**	**2,257**	**17,489**
2021 Average	**15,147**	**549**	**2,011**	**17,706**	**4,668**	**278**	**291**	**568**	**617**	**1,311**	**9,529**	**213**	**2,325**	**18,662**
2022 January	15,468	653	764	16,885	4,670	271	279	550	382	1,517	8,758	270	2,276	17,873
February	15,397	593	1,528	17,518	4,682	272	276	547	454	1,504	9,373	228	2,202	18,442
March	15,847	532	1,805	18,183	5,004	275	284	559	631	1,436	9,525	301	2,290	19,187
April	15,648	470	2,285	18,402	4,835	298	285	583	810	1,699	9,547	232	2,329	19,452
May	16,239	453	2,272	18,963	4,988	289	286	576	849	1,741	9,825	245	2,401	20,050
June	16,571	439	2,120	19,130	5,197	296	273	569	861	1,686	9,834	205	2,457	20,241
July	16,358	474	2,023	18,854	5,124	292	276	568	847	1,724	9,580	217	2,463	19,955
August	16,428	487	2,205	19,119	5,142	294	263	557	800	1,683	9,872	274	2,357	20,130
September	16,141	607	2,001	18,750	5,183	283	252	535	611	1,601	9,760	296	2,381	19,832
October	15,776	650	1,807	18,232	5,077	274	224	498	404	1,568	9,654	253	2,290	19,246
November	16,450	738	1,436	18,624	5,338	288	234	522	338	1,659	9,682	219	2,411	19,647
December	15,377	725	1,576	17,678	4,873	262	229	492	337	1,562	9,415	272	2,204	18,664
Average	**15,977**	**568**	**1,819**	**18,364**	**5,011**	**283**	**263**	**546**	**611**	**1,615**	**9,569**	**251**	**2,339**	**19,397**
2023 January	15,086	743	1,239	17,068	4,703	266	233	499	352	1,623	8,934	262	2,220	18,094
February	15,128	686	1,665	17,479	4,696	269	226	495	409	1,566	9,306	276	2,183	18,435
March	15,513	555	2,102	18,170	4,685	279	247	526	633	1,679	9,600	276	2,213	19,087
April	15,840	498	2,161	18,498	4,757	286	261	547	806	1,702	9,681	287	2,279	19,511
May	16,207	475	2,393	19,075	4,966	288	256	544	843	1,691	9,869	278	2,373	20,019
June	16,395	501	2,221	19,117	4,996	284	252	535	846	1,780	9,944	230	2,393	20,188
July	16,598	469	1,967	19,033	4,994	290	255	544	810	1,780	9,826	264	2,435	20,109
August	16,689	521	1,997	19,208	5,037	288	255	542	826	1,824	9,907	269	2,419	20,282
September	16,239	680	1,584	18,503	4,923	274	245	520	613	1,750	9,691	263	2,333	19,574
October	15,357	747	1,825	17,929	4,747	272	231	503	415	1,612	9,728	271	2,193	18,965
November	15,937	794	1,635	18,366	5,118	262	273	535	333	1,700	9,703	291	2,286	19,430
December	16,502	796	1,146	18,444	5,244	283	276	559	345	1,828	9,505	287	2,296	19,505
Average	**15,963**	**622**	**1,828**	**18,413**	**4,907**	**278**	**251**	**529**	**604**	**1,712**	**9,643**	**271**	**2,303**	**19,439**
2024 January	R 15,399	R 723	R 1,123	R 17,245	R 4,646	R 268	R 249	R 517	R 368	R 1,692	R 8,976	R 320	R 2,220	R 18,223
February	E 14,767	RF 637	RE 1,822	RF 17,227	E 4,225	NA	NA	RE 489	F 418	E 1,604	E 9,308	E 387	RE 2,233	RE 18,175
March	E 15,815	F 547	E 1,954	F 18,316	E 4,665	NA	NA	E 674	F 644	E 1,697	E 9,468	E 423	E 2,437	E 19,334
3-Month Average	**E 15,339**	**E 636**	**E 1,629**	**E 17,604**	**E 4,518**	**NA**	**NA**	**E 562**	**E 478**	**E 1,666**	**E 9,250**	**E 377**	**E 2,298**	**E 18,586**
2023 3-Month Average	**15,246**	**660**	**1,669**	**17,576**	**4,695**	**271**	**236**	**507**	**467**	**1,625**	**9,279**	**271**	**2,206**	**18,542**
2022 3-Month Average	**15,576**	**592**	**1,360**	**17,529**	**4,789**	**272**	**280**	**552**	**490**	**1,485**	**9,213**	**268**	**2,258**	**18,503**

[a] See "Refinery and Blender Net Inputs" in Glossary.

[b] See "Refinery and Blender Net Production" in Glossary.

[c] Includes lease condensate.

[d] Ethane, propane, normal butane, isobutane, and natural gasoline (pentanes plus).

[e] Unfinished oils (net). Beginning in 1981, also includes aviation gasoline blending components (net) and motor gasoline blending components (net). Beginning in 1993, also includes fuel ethanol. Beginning in 2009, also includes biofuels (excluding fuel ethanol), hydrogen, and other hydrocarbons. For 2009–2018, also includes oxygenates (excluding fuel ethanol).

[f] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. Beginning in 2021, also includes renewable heating oil blended into distillate fuel oil.

[g] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures."

[h] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene).

[i] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other Products.") For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other Products.")

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

[k] Asphalt and road oil, kerosene, lubricants, petrochemical feedstocks, petroleum coke, still gas (refinery gas), waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 2005, also includes naphtha-type jet fuel.

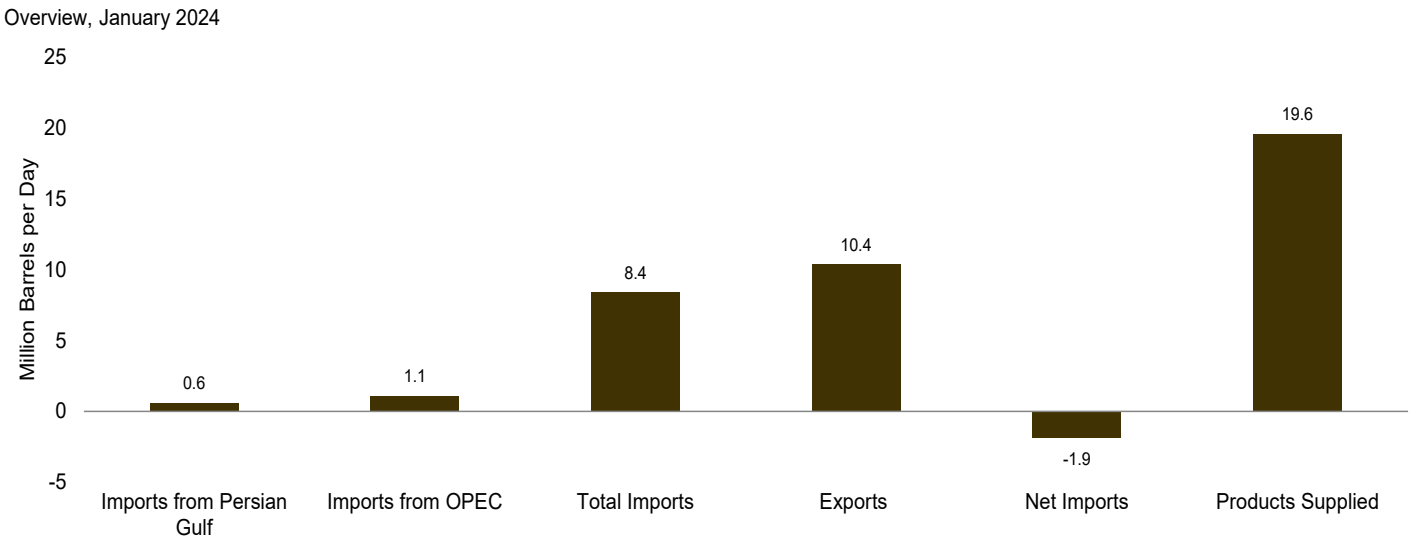
R=Revised. E=Estimate. F=Forecast. NA=Not available.

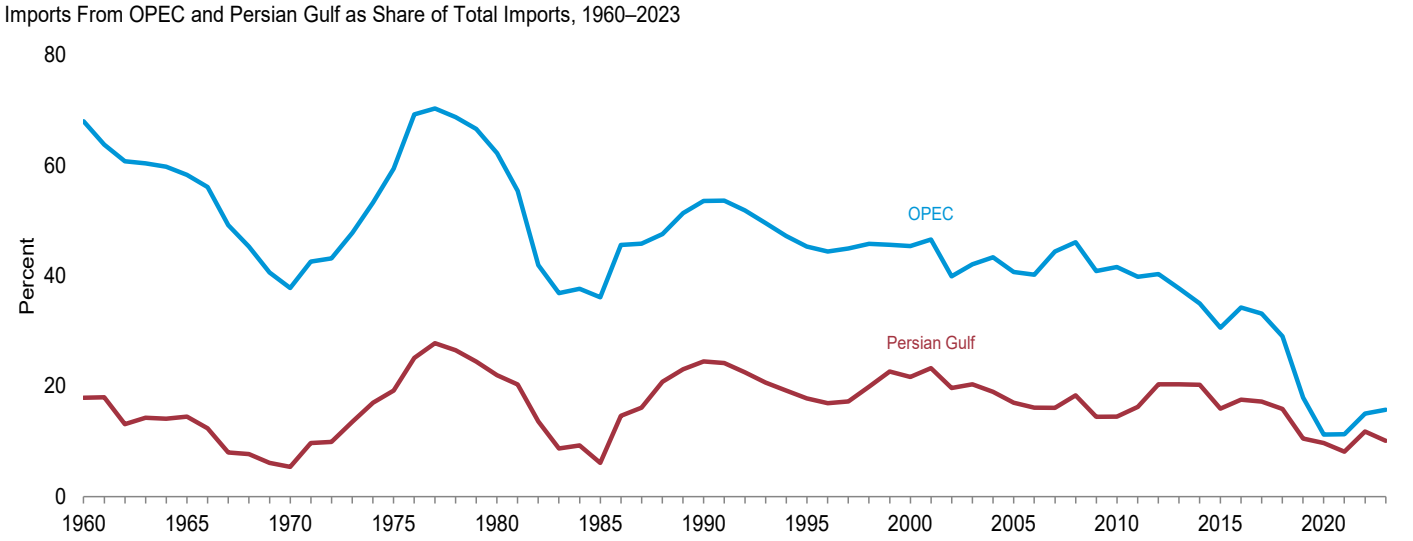
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

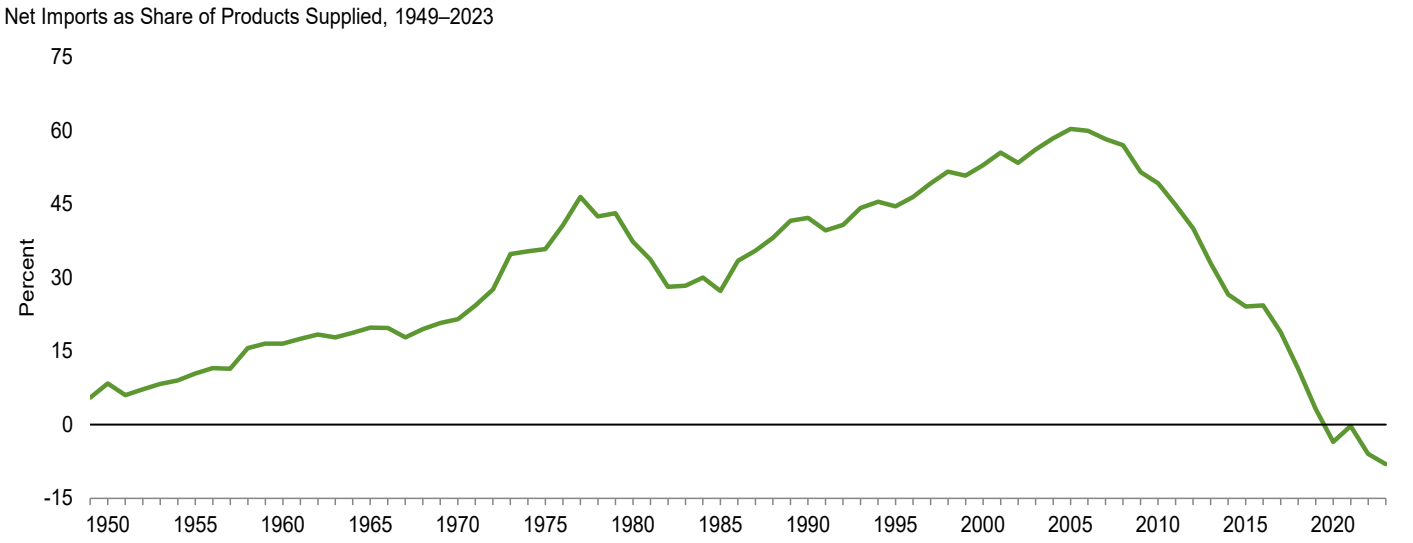
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: See end of section.

Figure 3.3a Petroleum Trade: Overview







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

	Thousand Barrels per Day						Percent					
	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Exports	Net Imports	Products Supplied	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Net Imports	Imports From Persian Gulf[a]	Imports From OPEC[b]
	As Share of Products Supplied						As Share of Total Imports					
1950 Average	**NA**	**NA**	**850**	**305**	**545**	**6,458**	**NA**	**NA**	**13.2**	**8.4**	**NA**	**NA**
1955 Average	**NA**	**NA**	**1,248**	**368**	**880**	**8,455**	**NA**	**NA**	**14.8**	**10.4**	**NA**	**NA**
1960 Average	**326**	**1,233**	**1,815**	**202**	**1,613**	**9,797**	**3.3**	**12.6**	**18.5**	**16.5**	**17.9**	**68.0**
1965 Average	**359**	**1,439**	**2,468**	**187**	**2,281**	**11,512**	**3.1**	**12.5**	**21.4**	**19.8**	**14.5**	**58.3**
1970 Average	**184**	**1,294**	**3,419**	**259**	**3,161**	**14,697**	**1.3**	**8.8**	**23.3**	**21.5**	**5.4**	**37.8**
1975 Average	**1,165**	**3,601**	**6,056**	**209**	**5,846**	**16,322**	**7.1**	**22.1**	**37.1**	**35.8**	**19.2**	**59.5**
1980 Average	**1,519**	**4,300**	**6,909**	**544**	**6,365**	**17,056**	**8.9**	**25.2**	**40.5**	**37.3**	**22.0**	**62.2**
1985 Average	**311**	**1,830**	**5,067**	**781**	**4,286**	**15,726**	**2.0**	**11.6**	**32.2**	**27.3**	**6.1**	**36.1**
1990 Average	**1,966**	**4,296**	**8,018**	**857**	**7,161**	**16,988**	**11.6**	**25.3**	**47.2**	**42.2**	**24.5**	**53.6**
1995 Average	**1,573**	**4,002**	**8,835**	**949**	**7,886**	**17,725**	**8.9**	**22.6**	**49.8**	**44.5**	**17.8**	**45.3**
2000 Average	**2,488**	**5,203**	**11,459**	**1,040**	**10,419**	**19,701**	**12.6**	**26.4**	**58.2**	**52.9**	**21.7**	**45.4**
2005 Average	**2,334**	**5,587**	**13,714**	**1,165**	**12,549**	**20,802**	**11.2**	**26.9**	**65.9**	**60.3**	**17.0**	**40.7**
2010 Average	**1,711**	**4,906**	**11,793**	**2,353**	**9,441**	**19,178**	**8.9**	**25.6**	**61.5**	**49.2**	**14.5**	**41.6**
2011 Average	**1,861**	**4,555**	**11,436**	**2,986**	**8,450**	**18,896**	**9.9**	**24.1**	**60.5**	**44.7**	**16.3**	**39.8**
2012 Average	**2,156**	**4,271**	**10,598**	**3,205**	**7,393**	**18,482**	**11.7**	**23.1**	**57.3**	**40.0**	**20.3**	**40.3**
2013 Average	**2,009**	**3,720**	**9,859**	**3,621**	**6,237**	**18,967**	**10.6**	**19.6**	**52.0**	**32.9**	**20.4**	**37.7**
2014 Average	**1,875**	**3,237**	**9,241**	**4,176**	**5,065**	**19,100**	**9.8**	**16.9**	**48.4**	**26.5**	**20.3**	**35.0**
2015 Average	**1,507**	**2,894**	**9,449**	**4,738**	**4,711**	**19,532**	**7.7**	**14.8**	**48.4**	**24.1**	**15.9**	**30.6**
2016 Average	**1,766**	**3,446**	**10,055**	**5,261**	**4,795**	**19,692**	**9.0**	**17.5**	**51.1**	**24.3**	**17.6**	**34.3**
2017 Average	**1,746**	**3,366**	**10,144**	**6,376**	**3,768**	**19,952**	**8.8**	**16.9**	**50.8**	**18.9**	**17.2**	**33.2**
2018 Average	**1,578**	**2,888**	**9,943**	**7,601**	**2,341**	**20,512**	**7.7**	**14.1**	**48.5**	**11.4**	**15.9**	**29.0**
2019 Average	**963**	**1,639**	**9,141**	**8,471**	**670**	**20,543**	**4.7**	**8.0**	**44.5**	**3.3**	**10.5**	**17.9**
2020 Average	**766**	**886**	**7,863**	**8,498**	**-635**	**18,186**	**4.2**	**4.9**	**43.2**	**-3.5**	**9.7**	**11.3**
2021 Average	**691**	**959**	**8,474**	**8,536**	**-62**	**19,890**	**3.5**	**4.8**	**42.6**	**-0.3**	**8.2**	**11.3**
2022 January	985	1,096	8,177	8,690	-513	19,613	5.0	5.6	41.7	-2.6	12.0	13.4
February	810	1,099	8,457	8,735	-278	20,190	4.0	5.4	41.9	-1.4	9.6	13.0
March	808	978	8,449	9,070	-621	20,483	3.9	4.8	41.2	-3.0	9.6	11.6
April	1,007	1,238	8,247	9,665	-1,418	19,727	5.1	6.3	41.8	-7.2	12.2	15.0
May	1,005	1,334	8,348	9,379	-1,031	19,840	5.1	6.7	42.1	-5.2	12.0	16.0
June	1,209	1,554	8,625	9,798	-1,173	20,433	5.9	7.6	42.2	-5.7	14.0	18.0
July	1,228	1,503	8,744	9,675	-931	19,926	6.2	7.5	43.9	-4.7	14.0	17.2
August	882	1,233	8,367	9,747	-1,380	20,265	4.4	6.1	41.3	-6.8	10.5	14.7
September	863	1,123	8,029	9,854	-1,825	20,129	4.3	5.6	39.9	-9.1	10.8	14.0
October	892	1,206	8,145	9,575	-1,430	20,007	4.5	6.0	40.7	-7.1	10.9	14.8
November	1,046	1,384	8,342	9,979	-1,637	20,214	5.2	6.8	41.3	-8.1	12.5	16.6
December	1,026	1,290	8,026	10,035	-2,009	19,327	5.3	6.7	41.5	-10.4	12.8	16.1
Average	**981**	**1,254**	**8,329**	**9,520**	**-1,191**	**20,010**	**4.9**	**6.3**	**41.6**	**-6.0**	**11.8**	**15.1**
2023 January	956	1,267	8,402	9,367	-964	19,149	5.0	6.6	43.9	-5.0	11.4	15.1
February	1,047	1,391	8,892	9,736	-843	19,759	5.3	7.0	45.0	-4.3	11.8	15.6
March	952	1,404	8,236	11,271	-3,035	20,083	4.7	7.0	41.0	-15.1	11.6	17.1
April	956	1,569	8,470	9,782	-1,312	20,037	4.8	7.8	42.3	-6.5	11.3	18.5
May	764	1,311	8,552	9,652	-1,100	20,396	3.7	6.4	41.9	-5.4	8.9	15.3
June	883	1,391	8,836	10,028	-1,192	20,716	4.3	6.7	42.7	-5.8	10.0	15.7
July	886	1,383	8,270	10,029	-1,758	20,124	4.4	6.9	41.1	-8.7	10.7	16.7
August	884	1,466	8,968	9,998	-1,030	20,881	4.2	7.0	42.9	-4.9	9.9	16.3
September	964	1,493	8,575	10,060	-1,485	20,092	4.8	7.4	42.7	-7.4	11.2	17.4
October	712	1,174	7,893	10,053	-2,160	20,680	3.4	5.7	38.2	-10.4	9.0	14.9
November	599	1,053	8,666	10,222	-1,556	20,710	2.9	5.1	41.8	-7.5	6.9	12.2
December	738	1,186	8,458	11,544	-3,085	20,293	3.6	5.8	41.7	-15.2	8.7	14.0
Average	**861**	**1,340**	**8,514**	**10,150**	**-1,636**	**20,246**	**4.3**	**6.6**	**42.1**	**-8.1**	**10.1**	**15.7**
2024 January	R 647	R 1,102	R 8,449	R 10,372	R -1,923	R 19,587	R 3.3	R 5.6	R 43.1	R -9.8	R 7.7	R 13.0
February	NA	NA	E 8,449	E 11,031	E -2,583	E 19,524	NA	NA	E 43.3	E -13.2	NA	NA
March	NA	NA	E 8,060	E 10,373	E -2,313	E 20,235	NA	NA	E 39.8	E -11.4	NA	NA
3-Month Average	**NA**	**NA**	**E 8,316**	**E 10,582**	**E -2,266**	**E 19,788**	**NA**	**NA**	**E 42.0**	**E -11.5**	**NA**	**NA**
2023 3-Month Average	**983**	**1,353**	**8,497**	**10,137**	**-1,640**	**19,660**	**5.0**	**6.9**	**43.2**	**-8.3**	**11.6**	**15.9**
2022 3-Month Average	**870**	**1,056**	**8,357**	**8,835**	**-477**	**20,093**	**4.3**	**5.3**	**41.6**	**-2.4**	**10.4**	**12.6**

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

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

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

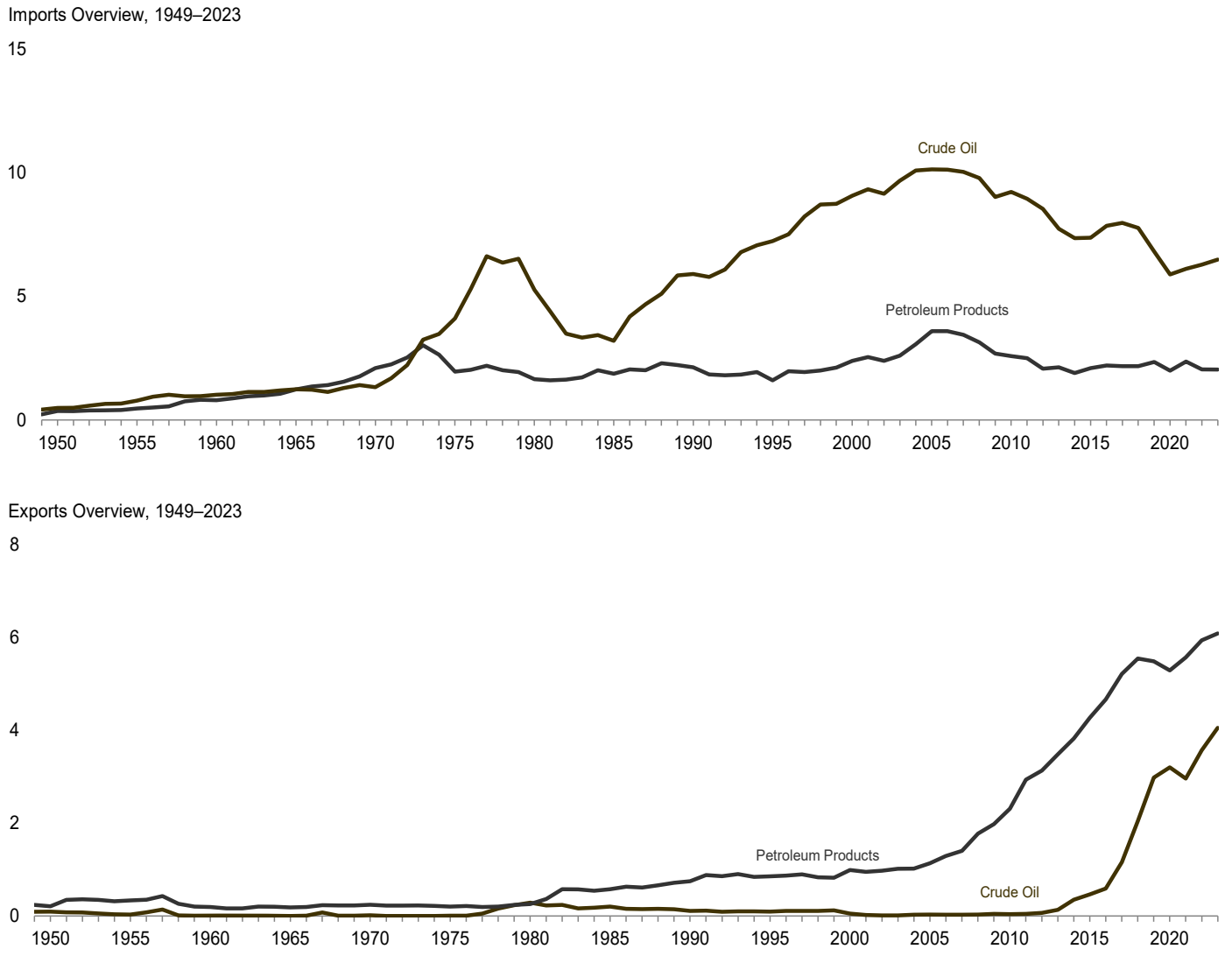
Notes: • For the feature article "Measuring Dependence on Imported Oil," published in the August 1995 *Monthly Energy Review*, see http://www.eia.gov/totalenergy/data/monthly/pdf/historical/imported_oil.pdf. • Beginning in October 1977, data include Strategic Petroleum Reserve imports. See Table 3.3b.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

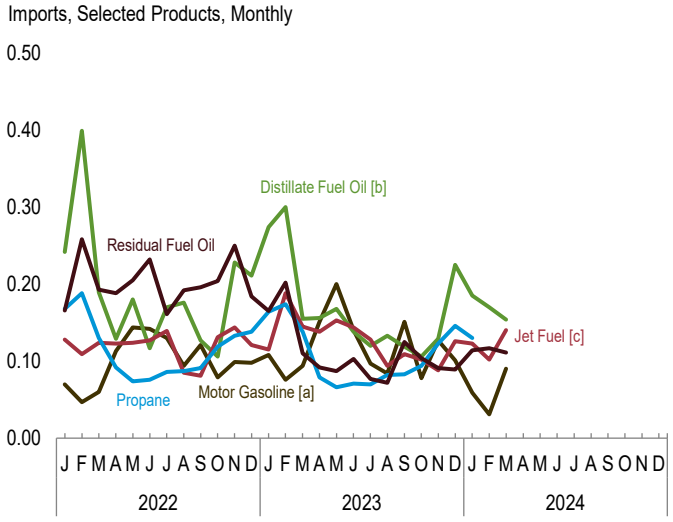
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

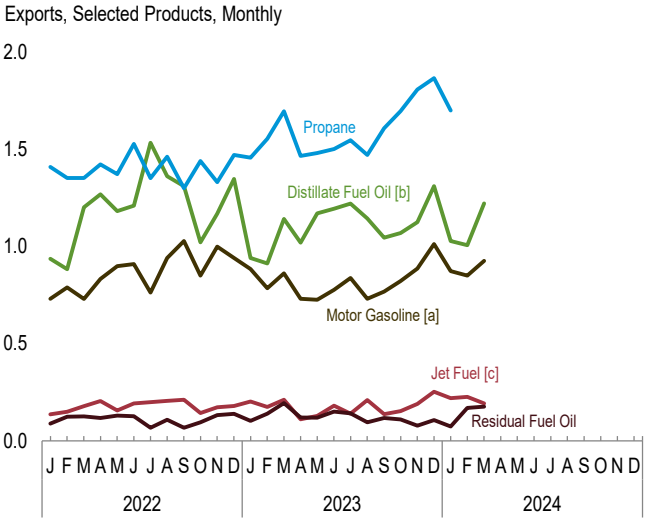
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Figure 3.3b Petroleum Trade: Imports and Exports by Type

(Million Barrels per Day)







[a] Includes fuel ethanol blended into motor gasoline.
[b] Includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[c] Includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.3b and 3.3e.

Table 3.3b Petroleum Trade: Imports by Type

(Thousand Barrels per Day)

	Crude Oil[a]		Distillate Fuel Oil	Hydrocarbon Gas Liquids				Jet Fuel[e]	Motor Gasoline[f]	Residual Fuel Oil	Other[g]	Total
				Propane/Propylene								
	SPR[b]	Total		Propane	Propylene	Total[c]	Total[d]					
1950 Average	– –	487	7	NA	NA	–	–	(e)	(s)	329	27	850
1955 Average	– –	782	12	NA	NA	–	–	(e)	13	417	24	1,248
1960 Average	– –	1,015	35	NA	NA	NA	4	34	27	637	62	1,815
1965 Average	– –	1,238	36	NA	NA	NA	21	81	28	946	119	2,468
1970 Average	– –	1,324	147	NA	NA	26	58	144	67	1,528	150	3,419
1975 Average	– –	4,105	155	NA	NA	60	185	133	184	1,223	70	6,056
1980 Average	44	5,263	142	NA	NA	84	226	80	140	939	120	6,909
1985 Average	118	3,201	200	NA	NA	67	235	39	381	510	501	5,067
1990 Average	27	5,894	278	NA	NA	115	197	108	342	504	695	8,018
1995 Average	–	7,230	193	95	6	102	192	106	265	187	662	8,835
2000 Average	8	9,071	295	154	7	161	256	162	427	352	897	11,459
2005 Average	52	10,126	329	219	14	233	374	190	603	530	1,562	13,714
2010 Average	–	9,213	228	93	29	121	179	98	134	366	1,574	11,793
2011 Average	–	8,935	179	82	28	110	183	69	105	328	1,637	11,436
2012 Average	–	8,527	126	85	31	116	170	55	44	256	1,421	10,598
2013 Average	–	7,730	155	103	24	127	182	84	45	225	1,438	9,859
2014 Average	–	7,344	195	89	19	108	143	94	49	173	1,242	9,241
2015 Average	–	7,363	200	104	19	124	156	132	71	192	1,335	9,449
2016 Average	–	7,850	147	120	22	142	180	147	59	205	1,468	10,055
2017 Average	–	7,969	151	133	23	156	196	160	32	189	1,448	10,144
2018 Average	–	7,768	175	139	18	157	197	124	45	211	1,422	9,943
2019 Average	–	6,801	202	133	16	149	207	164	94	149	1,525	9,141
2020 Average	–	5,875	218	113	13	126	160	150	106	166	1,188	7,863
2021 Average	–	6,114	288	114	14	128	173	158	108	186	1,446	8,474
2022 January	–	6,397	242	168	13	182	224	128	70	166	951	8,177
February	–	6,160	399	188	14	202	243	109	47	258	1,241	8,457
March	–	6,417	189	130	17	146	195	124	60	193	1,270	8,449
April	–	6,060	129	92	15	107	155	123	113	188	1,481	8,247
May	–	6,164	180	74	14	88	138	124	144	205	1,394	8,348
June	–	6,474	117	76	12	88	125	127	142	232	1,409	8,625
July	–	6,597	170	86	14	100	139	139	130	161	1,408	8,744
August	–	6,333	176	87	14	101	163	85	94	192	1,324	8,367
September	–	6,269	127	91	8	99	148	81	121	196	1,087	8,029
October	–	6,239	106	119	6	125	175	131	79	204	1,211	8,145
November	–	6,253	228	133	11	143	195	144	99	250	1,173	8,342
December	–	5,999	211	138	14	152	195	121	98	184	1,217	8,026
Average	–	6,281	188	115	13	127	174	120	100	202	1,264	8,329
2023 January	–	6,277	274	164	16	180	227	115	108	165	1,236	8,402
February	–	6,596	300	174	15	188	231	188	76	202	1,299	8,892
March	–	6,295	155	138	14	153	203	145	94	110	1,234	8,236
April	–	6,194	156	79	14	93	137	138	151	92	1,602	8,470
May	–	6,470	168	66	16	82	129	153	200	87	1,346	8,552
June	–	6,494	138	71	15	86	130	144	140	103	1,687	8,836
July	–	6,287	120	70	15	84	132	128	97	77	1,430	8,270
August	–	7,019	133	82	16	99	145	94	84	72	1,420	8,968
September	–	6,640	119	83	15	98	147	109	151	125	1,283	8,575
October	–	6,135	106	94	12	107	151	102	78	104	1,217	7,893
November	–	6,935	129	123	12	136	183	88	127	91	1,113	8,666
December	–	6,417	225	146	17	163	208	126	101	89	1,292	8,458
Average	–	6,478	168	107	15	122	168	127	117	109	1,346	8,514
2024 January	–	R 6,627	R 185	R 130	R 11	R 142	R 192	R 123	R 59	R 114	R 1,149	R 8,449
February	–	E 6,690	E 170	NA	NA	E 144	NA	E 102	E 31	E 117	NA	E 8,449
March	–	E 6,288	E 154	NA	NA	E 120	NA	E 140	E 90	E 111	NA	E 8,060
3-Month Average	–	E 6,532	E 170	NA	NA	E 135	NA	E 122	E 61	E 114	NA	E 8,316
2023 3-Month Average	–	6,383	241	158	15	173	220	148	93	158	1,255	8,497
2022 3-Month Average	–	6,330	273	161	15	176	220	121	59	204	1,151	8,357

[a] Includes lease condensate.

[b] "SPR" is the Strategic Petroleum Reserve, which began in October 1977. Through 2003, includes crude oil imports by SPR only; beginning in 2004, includes crude oil imports by SPR, and crude oil imports into SPR by others.

[c] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[d] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[e] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other.") For 1956–2004, also includes naphtha-type jet fuel. (Through 1955, naphtha-type jet fuel is included in "Motor Gasoline." Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[f] Finished motor gasoline. Through 1955, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components. Beginning in 1981, also includes motor gasoline blending components. Beginning in 1993, also includes fuel ethanol. Beginning in 2005, also includes naphtha-type jet fuel. Beginning in 2009, also includes biofuels (excluding fuel ethanol) and other hydrocarbons. For 2011–2018, also includes oxygenates (excluding fuel ethanol).

[g] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas.

R=Revised. E=Estimate. NA=Not available. – – =Not applicable. – =No data reported. (s)=Less than 500 barrels per day.

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

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

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.3c Petroleum Trade: Imports From OPEC Countries

(Thousand Barrels per Day)

	Algeria[a]	Iraq	Kuwait[b]	Libya[c]	Nigeria[d]	Saudi Arabia[b]	United Arab Emirates	Venezuela	Other[e]	Total OPEC
1960 Average	([a])	**22**	**182**	([c])	([d])	**84**	**NA**	**911**	**34**	**1,233**
1965 Average	([a])	**16**	**74**	**42**	([d])	**158**	**14**	**994**	**142**	**1,439**
1970 Average	**8**	**–**	**48**	**47**	([d])	**30**	**63**	**989**	**109**	**1,294**
1975 Average	**282**	**2**	**16**	**232**	**762**	**715**	**117**	**702**	**773**	**3,601**
1980 Average	**488**	**28**	**27**	**554**	**857**	**1,261**	**172**	**481**	**432**	**4,300**
1985 Average	**187**	**46**	**21**	**4**	**293**	**168**	**45**	**605**	**461**	**1,830**
1990 Average	**280**	**518**	**86**	**–**	**800**	**1,339**	**17**	**1,025**	**231**	**4,296**
1995 Average	**234**	**–**	**218**	**–**	**627**	**1,344**	**10**	**1,480**	**88**	**4,002**
2000 Average	**225**	**620**	**272**	**–**	**896**	**1,572**	**15**	**1,546**	**57**	**5,203**
2005 Average	**478**	**531**	**243**	**56**	**1,166**	**1,537**	**18**	**1,529**	**28**	**5,587**
2010 Average	**510**	**415**	**197**	**70**	**1,023**	**1,096**	**2**	**988**	[R]**606**	**4,906**
2011 Average	**358**	**459**	**191**	**15**	**818**	**1,195**	**10**	**951**	[R]**558**	**4,555**
2012 Average	**242**	**476**	**305**	**61**	**441**	**1,365**	**3**	**960**	[R]**419**	**4,271**
2013 Average	**115**	**341**	**328**	**59**	**281**	**1,329**	**3**	**806**	[R]**459**	**3,720**
2014 Average	**110**	**369**	**311**	**6**	**92**	**1,166**	**13**	**789**	[R]**379**	**3,237**
2015 Average	**108**	**229**	**204**	**7**	**81**	**1,059**	**4**	**827**	[R]**375**	**2,894**
2016 Average	**182**	**424**	**210**	**16**	**235**	**1,106**	**14**	**796**	[R]**463**	**3,446**
2017 Average	**189**	**604**	**145**	**65**	**334**	**955**	**34**	**674**	[R]**366**	**3,366**
2018 Average	**176**	**521**	**79**	**56**	**189**	**901**	**58**	**586**	[R]**321**	**2,888**
2019 Average	**78**	**341**	**45**	**63**	**193**	**530**	**27**	**92**	[R]**269**	**1,639**
2020 Average	**15**	**176**	**28**	**9**	**75**	**522**	**19**	**–**	[R]**42**	**886**
2021 Average	**40**	**157**	**33**	**91**	**125**	**430**	**40**	**–**	[R]**44**	**959**
2022 January	–	261	58	76	29	553	34	–	[R]86	1,096
February	29	235	14	79	127	518	14	–	[R]84	1,099
March	29	204	22	97	49	536	8	–	[R]33	978
April	38	269	54	82	95	537	135	–	[R]29	1,238
May	96	303	65	54	169	595	19	–	[R]34	1,334
June	74	335	50	83	156	802	9	–	[R]47	1,554
July	106	536	23	54	103	553	83	–	[R]46	1,503
August	53	306	25	68	163	483	52	–	[R]83	1,233
September	47	282	–	62	61	500	67	–	[R]104	1,123
October	59	295	77	121	52	480	17	–	[R]106	1,206
November	133	380	59	76	131	553	14	–	[R]40	1,384
December	43	326	61	93	134	605	13	–	[R]15	1,290
Average	**59**	**311**	**42**	**79**	**105**	**559**	**39**	**–**	[R]**59**	**1,254**
2023 January	41	370	31	60	194	497	23	40	11	1,267
February	61	435	67	56	168	512	4	58	[R]30	1,391
March	31	368	25	56	205	483	54	109	[R]73	1,404
April	97	365	26	87	232	526	15	140	[R]81	1,569
May	87	304	40	75	161	356	48	185	[R]55	1,311
June	78	311	60	112	154	485	17	126	[R]50	1,391
July	98	303	48	20	164	514	6	153	[R]77	1,383
August	91	320	65	92	202	458	15	145	[R]77	1,466
September	115	328	47	55	112	469	71	163	[R]133	1,493
October	68	294	10	141	48	307	49	166	[R]91	1,174
November	48	178	37	95	160	318	39	147	[R]28	1,053
December	44	223	100	113	119	352	39	164	[R]31	1,186
Average	**72**	**316**	**46**	**80**	**160**	**439**	**32**	**134**	[R]**62**	**1,340**
2024 January	73	217	16	56	179	386	16	159	–	1,102

[a] Algeria joined OPEC in 1969. For 1960–1968, Algeria is included in "Total Non-OPEC" on Table 3.3d.

[b] Through 1970, includes half the imports from the Neutral Zone between Kuwait and Saudi Arabia. Beginning in 1971, imports from the Neutral Zone are reported as originating in either Kuwait or Saudi Arabia depending on the country reported to U.S. Customs.

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

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

[e] Includes these countries for the dates indicated: Angola (2007–2023), Congo-Brazzaville (June 2018 forward), Ecuador (1973–1992 and November 2007–2019), Equatorial Guinea (May 2017 forward), Gabon (1975–1994 and July 2016 forward), Indonesia (1962–2008 and January–November 2016), Iran (1960 forward), and Qatar (1961–2018).

R=Revised. NA=Not available. – =No data reported.

Notes: • See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary. Petroleum imports not classified as "OPEC" on this table are included on Table 3.3d. • The country of origin for petroleum products may not be the country of origin for the crude oil from which the products were produced. For example, refined products imported from West European refining areas may have been produced from Middle East crude oil. • Includes imports for the Strategic Petroleum Reserve, which began in October 1977. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1973.

Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports.

This table has been modified to remove a column for "Angola."

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

(Thousand Barrels per Day)

	Brazil	Canada	Colombia	Ecuador[a]	Mexico	Nether-lands	Norway	Russia[b]	United Kingdom	U.S. Virgin Islands	Other	Total Non-OPEC
1960 Average	**1**	**120**	**42**	**NA**	**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**	**(a)**	**71**	**19**	**17**	**14**	**14**	**406**	**1,052**	**2,454**
1980 Average	**3**	**455**	**4**	**(a)**	**533**	**2**	**144**	**1**	**176**	**388**	**903**	**2,609**
1985 Average	**61**	**770**	**23**	**(a)**	**816**	**58**	**32**	**8**	**310**	**247**	**913**	**3,237**
1990 Average	**49**	**934**	**182**	**(a)**	**755**	**55**	**102**	**45**	**189**	**282**	**1,128**	**3,721**
1995 Average	**8**	**1,332**	**219**	**97**	**1,068**	**15**	**273**	**25**	**383**	**278**	**1,136**	**4,833**
2000 Average	**51**	**1,807**	**342**	**128**	**1,373**	**30**	**343**	**72**	**366**	**291**	**1,453**	**6,257**
2005 Average	**156**	**2,181**	**196**	**283**	**1,662**	**151**	**233**	**410**	**396**	**328**	**2,130**	**8,127**
2010 Average	**272**	**2,535**	**365**	**(a)**	**1,284**	**108**	**89**	**612**	**256**	**253**	**1,112**	**6,887**
2011 Average	**253**	**2,729**	**433**	**(a)**	**1,206**	**100**	**113**	**624**	**159**	**186**	**1,077**	**6,881**
2012 Average	**226**	**2,946**	**433**	**(a)**	**1,035**	**99**	**75**	**477**	**149**	**12**	**874**	**6,327**
2013 Average	**151**	**3,142**	**389**	**(a)**	**919**	**89**	**54**	**460**	**147**	**–**	**786**	**6,138**
2014 Average	**160**	**3,388**	**318**	**(a)**	**842**	**85**	**45**	**330**	**117**	**–**	**720**	**6,004**
2015 Average	**215**	**3,765**	**395**	**(a)**	**758**	**57**	**61**	**371**	**123**	**–**	**811**	**6,554**
2016 Average	**167**	**3,780**	**483**	**(a)**	**669**	**60**	**76**	**441**	**122**	**(s)**	**812**	**6,610**
2017 Average	**224**	**4,054**	**362**	**(a)**	**682**	**62**	**79**	**389**	**111**	**–**	**814**	**6,778**
2018 Average	**171**	**4,292**	**333**	**(a)**	**719**	**62**	**94**	**375**	**146**	**–**	**862**	**7,055**
2019 Average	**193**	**4,432**	**373**	**(a)**	**650**	**113**	**91**	**520**	**146**	**–**	**984**	**7,502**
2020 Average	**126**	**4,125**	**284**	**186**	**751**	**82**	**29**	**540**	**85**	**1**	**770**	**6,977**
2021 Average	**143**	**4,340**	**203**	**168**	**711**	**126**	**72**	**673**	**104**	**22**	**952**	**7,514**
2022 January	110	4,576	200	100	758	69	48	283	81	–	856	7,081
February	175	4,485	240	130	778	113	43	586	76	–	731	7,357
March	166	4,614	257	144	832	81	19	575	51	–	731	7,471
April	139	4,222	261	132	788	59	54	360	70	–	924	7,009
May	150	4,214	308	212	938	113	38	–	128	–	913	7,014
June	205	4,290	240	182	813	119	42	–	142	–	1,036	7,071
July	262	4,389	298	141	897	85	44	–	94	–	1,031	7,241
August	208	4,412	233	186	802	65	30	–	106	–	1,094	7,135
September	223	4,429	173	272	794	104	48	–	122	–	744	6,906
October	248	4,249	252	151	867	50	36	–	163	–	924	6,939
November	238	4,324	223	197	657	85	33	–	119	–	1,081	6,958
December	189	4,183	218	178	762	56	56	–	118	–	976	6,736
Average	**193**	**4,365**	**242**	**169**	**808**	**83**	**41**	**147**	**106**	**–**	**921**	**7,075**
2023 January	126	4,514	204	176	896	66	31	–	110	–	1,011	7,135
February	184	4,698	220	146	957	114	23	–	118	–	1,041	7,501
March	192	4,424	219	111	933	63	(s)	–	56	–	832	6,831
April	155	4,140	204	140	813	117	84	–	107	–	1,142	6,901
May	157	4,523	241	191	913	107	65	–	78	–	968	7,242
June	302	4,330	213	88	1,030	123	53	–	140	–	1,166	7,445
July	245	4,110	214	192	948	137	46	–	100	–	895	6,888
August	273	4,588	291	231	867	114	42	–	48	–	1,047	7,503
September	419	4,232	253	100	908	48	38	–	109	–	974	7,081
October	287	4,249	193	83	871	51	32	–	82	–	871	6,719
November	346	4,820	289	117	870	51	32	[c] (s)	96	–	992	7,613
December	398	4,471	196	103	921	25	29	–	94	–	1,036	7,272
Average	**257**	**4,423**	**228**	**140**	**910**	**84**	**40**	**(s)**	**95**	**–**	**997**	**7,174**
2024 January	305	4,841	289	87	717	39	28	–	90	–	951	7,347

[a] Ecuador was a member of OPEC from 1973–1992 and November 2007–2019. For those time periods, Ecuador is included in "Total OPEC" on Table 3.3c.

[b] 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.

[c] A small amount of Russian crude oil entered the United States in November 2023 from the Bahamas. The oil originated in Russia and was exported to the Bahamas prior to the signing of Executive Order 14066 on March 8, 2022.

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. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports.

Table 3.3e Petroleum Trade: Exports by Type

(Thousand Barrels per Day)

	Crude Oil[a]	Distillate Fuel Oil	Hydrocarbon Gas Liquids		Jet Fuel[d]	Motor Gasoline[e]	Residual Fuel Oil	Other[f]	Total
			Propane[b]	Total[c]					
1950 Average	**95**	**34**	**NA**	**4**	**(d)**	**68**	**44**	**58**	**305**
1955 Average	**32**	**67**	**NA**	**12**	**(s)**	**95**	**93**	**69**	**368**
1960 Average	**8**	**27**	**NA**	**8**	**(s)**	**37**	**51**	**71**	**202**
1965 Average	**3**	**10**	**NA**	**21**	**3**	**2**	**41**	**108**	**187**
1970 Average	**14**	**2**	**13**	**27**	**6**	**1**	**54**	**154**	**259**
1975 Average	**6**	**1**	**13**	**26**	**2**	**2**	**15**	**158**	**209**
1980 Average	**287**	**3**	**10**	**21**	**1**	**1**	**33**	**197**	**544**
1985 Average	**204**	**67**	**48**	**64**	**13**	**10**	**197**	**225**	**781**
1990 Average	**109**	**109**	**28**	**41**	**43**	**55**	**211**	**287**	**857**
1995 Average	**95**	**183**	**38**	**59**	**26**	**104**	**136**	**12**	**949**
2000 Average	**50**	**173**	**53**	**78**	**32**	**144**	**139**	**46**	**1,040**
2005 Average	**32**	**138**	**37**	**60**	**53**	**136**	**251**	**496**	**1,165**
2010 Average	**42**	**656**	**109**	**164**	**84**	**296**	**405**	**706**	**2,353**
2011 Average	**47**	**854**	**124**	**249**	**97**	**479**	**424**	**835**	**2,986**
2012 Average	**67**	**1,007**	**171**	**314**	**132**	**409**	**388**	**886**	**3,205**
2013 Average	**134**	**1,134**	**302**	**468**	**156**	**373**	**362**	**994**	**3,621**
2014 Average	**351**	**1,101**	**423**	**703**	**163**	**442**	**364**	**1,052**	**4,176**
2015 Average	**465**	**1,176**	**615**	**966**	**168**	**476**	**326**	**1,161**	**4,738**
2016 Average	**591**	**1,179**	**799**	**1,211**	**175**	**635**	**298**	**1,171**	**5,261**
2017 Average	**1,158**	**1,381**	**914**	**1,404**	**184**	**749**	**308**	**1,192**	**6,376**
2018 Average	**2,048**	**1,289**	**949**	**1,602**	**223**	**879**	**321**	**1,240**	**7,601**
2019 Average	**2,982**	**1,306**	**1,098**	**1,830**	**220**	**815**	**229**	**1,090**	**8,471**
2020 Average	**3,206**	**1,187**	**1,262**	**2,081**	**96**	**722**	**148**	**1,058**	**8,498**
2021 Average	**2,963**	**1,069**	**1,327**	**2,309**	**107**	**816**	**97**	**1,173**	**8,536**
2022 January	3,354	937	1,409	2,267	136	731	89	1,176	8,690
February	3,244	883	1,352	2,269	150	789	124	1,275	8,735
March	3,196	1,202	1,352	2,328	178	729	126	1,312	9,070
April	3,505	1,267	1,421	2,421	205	833	118	1,316	9,665
May	3,306	1,182	1,372	2,449	156	898	130	1,259	9,379
June	3,454	1,210	1,527	2,643	193	909	127	1,262	9,798
July	3,680	1,532	1,351	2,339	200	763	68	1,093	9,675
August	3,564	1,361	1,461	2,478	206	940	109	1,088	9,747
September	3,716	1,309	1,299	2,381	212	1,028	68	1,141	9,854
October	4,002	1,021	1,439	2,402	143	849	95	1,063	9,575
November	4,105	1,169	1,330	2,372	173	998	132	1,029	9,979
December	3,771	1,346	1,470	2,556	180	941	139	1,102	10,035
Average	**3,576**	**1,204**	**1,399**	**2,409**	**178**	**867**	**110**	**1,175**	**9,520**
2023 January	3,514	940	1,456	2,565	202	884	104	1,158	9,367
February	3,998	913	1,553	2,646	174	785	141	1,079	9,736
March	4,807	1,141	1,695	2,841	211	862	195	1,214	11,271
April	4,009	1,020	1,465	2,619	111	731	120	1,172	9,782
May	3,789	1,170	1,479	2,413	128	725	119	1,308	9,652
June	3,821	1,194	1,501	2,528	181	777	151	1,376	10,028
July	3,835	1,220	1,545	2,501	140	837	142	1,353	10,029
August	4,141	1,144	1,470	2,513	210	731	95	1,164	9,998
September	4,157	1,045	1,607	2,682	138	768	118	1,152	10,060
October	4,112	1,068	1,696	2,658	153	822	110	1,130	10,053
November	3,967	1,125	1,806	2,807	191	887	79	1,165	10,222
December	4,527	1,309	1,865	2,816	252	1,011	107	1,521	11,544
Average	**4,058**	**1,109**	**1,595**	**2,632**	**175**	**819**	**123**	**1,234**	**10,150**
2024 January	R 4,049	R 1,027	R 1,699	R 2,714	R 220	R 873	R 74	R 1,415	R 10,372
February	E 4,632	E 1,007	NA	NA	E 226	E 849	E 170	NA	E 11,031
March	E 3,927	E 1,221	NA	NA	E 193	E 926	E 176	NA	E 10,373
3-Month Average	**E 4,193**	**E 1,087**	**NA**	**NA**	**E 213**	**E 883**	**E 139**	**NA**	**E 10,582**
2023 3-Month Average	**4,110**	**1,001**	**1,569**	**2,685**	**196**	**846**	**147**	**1,153**	**10,137**
2022 3-Month Average	**3,265**	**1,012**	**1,372**	**2,289**	**155**	**748**	**113**	**1,253**	**8,835**

[a] Includes lease condensate.

[b] Through 1983, also includes 40% of "Butane-Propane Mixtures." Through 2012, also includes propylene.

[c] Ethane, propane, normal butane, isobutane, and natural gasoline (pentanes plus). Through 2012, also includes refinery olefins (ethylene, propylene, butylene, and isobutylene).

[d] Beginning in 1965, includes kerosene-type jet fuel. (Through 1964, kerosene-type jet fuel is included with kerosene in "Other.") For 1953–2004, also includes naphtha-type jet fuel. (Through 1952, naphtha-type jet fuel is included in the products from which it was blended: motor gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

[e] Finished motor gasoline. Through 1952, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components.

[f] Asphalt and road oil, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 1981, also includes motor gasoline blending components. Beginning in 2005, also includes naphtha-type jet fuel. For 2009–2018, also includes oxygenates (excluding fuel ethanol). Beginning in 2010, also includes fuel ethanol. Beginning in 2011, also includes biofuels (excluding fuel ethanol).

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

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

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

Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.3f Petroleum Trade: Exports by Country of Destination

(Thousand Barrels per Day)

	Brazil	Canada	China	India	Japan	Mexico	Nether-lands	Singa-pore	South Korea	United Kingdom	Other	Total
1960 Average	**4**	**34**	**NA**	**NA**	**62**	**18**	**6**	**NA**	**NA**	**12**	**NA**	**202**
1965 Average	**3**	**26**	**NA**	**NA**	**40**	**27**	**10**	**NA**	**NA**	**12**	**NA**	**187**
1970 Average	**7**	**31**	**NA**	**NA**	**69**	**33**	**15**	**NA**	**NA**	**12**	**NA**	**259**
1975 Average	**6**	**22**	**NA**	**1**	**27**	**42**	**23**	**NA**	**NA**	**7**	**NA**	**209**
1980 Average	**4**	**108**	**–**	**1**	**32**	**28**	**23**	**6**	**2**	**7**	**335**	**544**
1985 Average	**3**	**74**	**–**	**2**	**108**	**61**	**44**	**24**	**27**	**14**	**424**	**781**
1990 Average	**2**	**91**	**–**	**6**	**92**	**89**	**54**	**15**	**60**	**11**	**438**	**857**
1995 Average	**16**	**73**	**2**	**3**	**76**	**125**	**33**	**46**	**57**	**14**	**505**	**949**
2000 Average	**28**	**110**	**3**	**3**	**90**	**358**	**42**	**36**	**20**	**10**	**342**	**1,040**
2005 Average	**39**	**181**	**12**	**11**	**56**	**268**	**25**	**43**	**16**	**21**	**492**	**1,165**
2010 Average	**123**	**233**	**52**	**10**	**88**	**448**	**165**	**128**	**13**	**19**	**1,073**	**2,353**
2011 Average	**157**	**351**	**73**	**17**	**79**	**570**	**248**	**121**	**15**	**35**	**1,320**	**2,986**
2012 Average	**166**	**416**	**85**	**36**	**89**	**565**	**239**	**115**	**16**	**41**	**1,435**	**3,205**
2013 Average	**179**	**549**	**129**	**41**	**117**	**532**	**274**	**136**	**13**	**36**	**1,616**	**3,621**
2014 Average	**217**	**809**	**89**	**70**	**150**	**559**	**241**	**124**	**46**	**53**	**1,817**	**4,176**
2015 Average	**188**	**955**	**191**	**78**	**166**	**690**	**226**	**122**	**65**	**89**	**1,968**	**4,738**
2016 Average	**260**	**935**	**203**	**140**	**250**	**880**	**265**	**147**	**108**	**92**	**1,980**	**5,261**
2017 Average	**395**	**871**	**447**	**200**	**350**	**1,081**	**251**	**210**	**176**	**186**	**2,209**	**6,376**
2018 Average	**400**	**1,024**	**374**	**297**	**466**	**1,194**	**337**	**185**	**382**	**272**	**2,670**	**7,601**
2019 Average	**474**	**1,035**	**196**	**460**	**555**	**1,158**	**451**	**126**	**580**	**336**	**3,102**	**8,471**
2020 Average	**438**	**932**	**715**	**471**	**519**	**1,042**	**456**	**167**	**451**	**350**	**2,959**	**8,498**
2021 Average	**418**	**835**	**632**	**566**	**488**	**1,156**	**419**	**227**	**565**	**318**	**2,913**	**8,536**
2022 January	301	757	430	685	514	1,062	307	452	555	289	3,337	8,690
February	268	781	790	517	505	1,067	566	431	539	275	2,997	8,735
March	522	761	599	344	400	1,054	539	486	470	263	3,631	9,070
April	518	852	646	345	426	1,289	548	401	471	537	3,632	9,665
May	412	773	502	472	511	1,270	414	346	535	404	3,739	9,379
June	475	1,004	479	416	382	1,161	574	459	546	290	4,012	9,798
July	531	954	669	344	437	1,059	535	326	517	406	3,897	9,675
August	361	906	757	253	646	1,332	492	322	576	491	3,612	9,747
September	449	846	554	620	448	1,276	608	452	640	571	3,389	9,854
October	213	809	869	651	576	1,018	559	327	608	496	3,449	9,575
November	328	880	731	820	586	1,060	591	360	651	351	3,620	9,979
December	347	815	671	381	578	1,169	674	337	491	582	3,990	10,035
Average	**394**	**845**	**641**	**486**	**501**	**1,152**	**533**	**391**	**550**	**414**	**3,613**	**9,520**
2023 January	209	817	773	276	621	1,164	602	330	481	328	3,767	9,367
February	218	847	956	363	619	1,153	516	529	650	357	3,527	9,736
March	282	786	1,478	459	633	1,413	925	88	534	494	4,180	11,271
April	198	732	1,331	490	476	1,058	767	393	567	422	3,349	9,782
May	302	740	805	470	507	1,007	748	267	580	438	3,790	9,652
June	305	852	914	421	500	1,083	1,174	364	534	370	3,511	10,028
July	208	823	873	402	658	1,178	1,147	222	452	411	3,654	10,029
August	283	852	763	391	618	1,136	714	424	687	261	3,870	9,998
September	226	734	1,055	364	678	1,208	781	340	708	242	3,724	10,060
October	202	692	1,162	353	863	1,246	1,063	319	680	311	3,164	10,053
November	208	863	946	386	636	1,137	761	332	669	319	3,965	10,222
December	234	862	681	368	636	1,192	1,134	549	691	408	4,789	11,544
Average	**240**	**799**	**977**	**395**	**621**	**1,165**	**864**	**345**	**602**	**364**	**3,778**	**10,150**
2024 January	332	892	867	319	515	1,086	1,130	336	584	533	3,778	10,372

NA=Not available. – =No data reported.

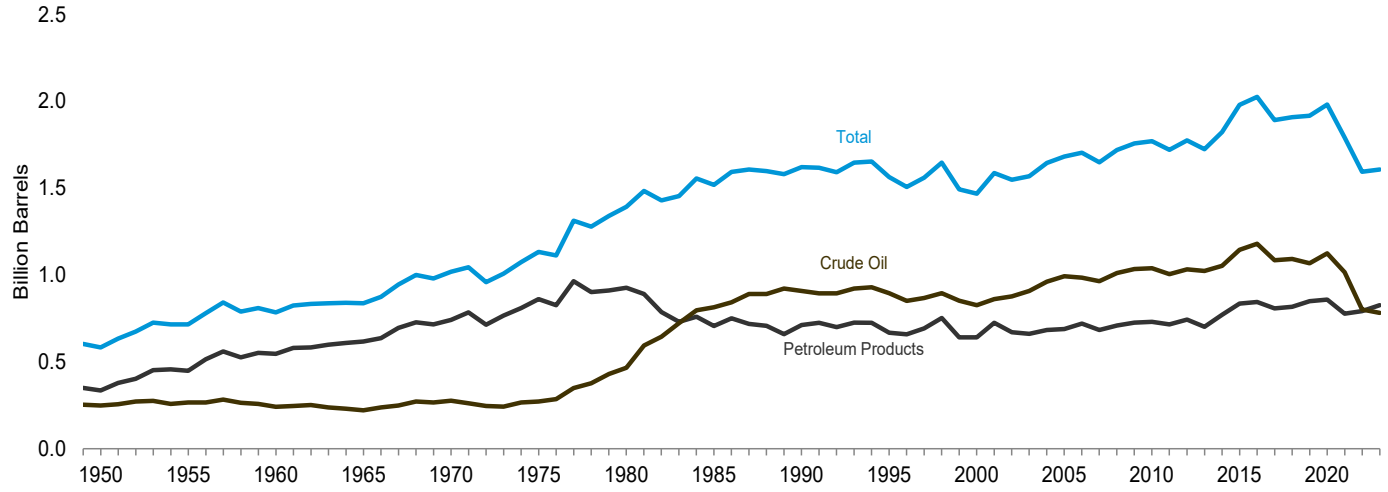
Notes: • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1981.

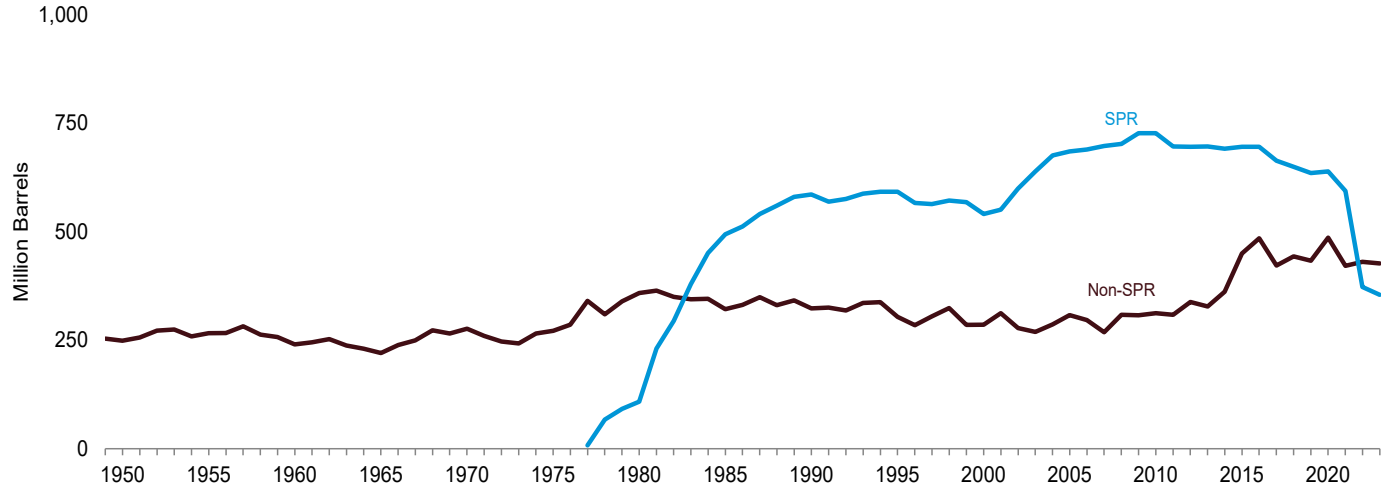
Sources: • **1960–1972:** Bureau of Mines, *Minerals Yearbook,* annual reports. • **1973–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports.

Figure 3.4 Petroleum Stocks

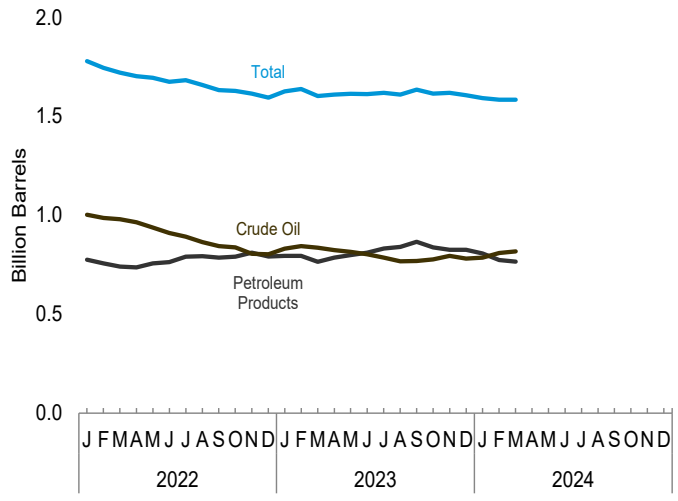
Overview, 1949–2023



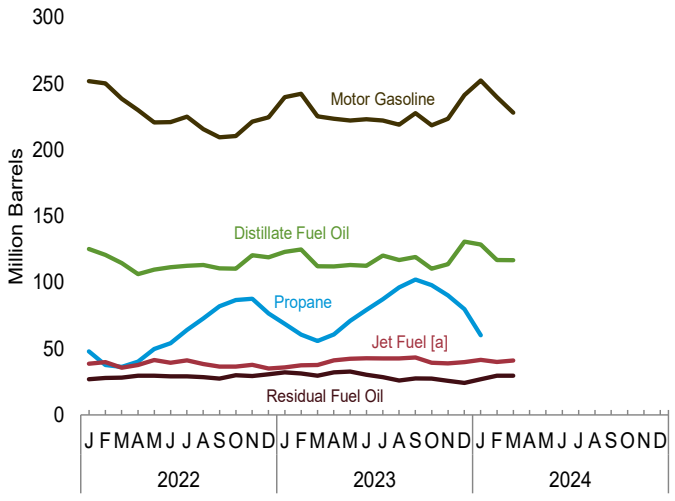
SPR and Non-SPR Crude Oil Stocks, 1949–2023



Overview, Monthly



Selected Products, Monthly



[a] Includes kerosene-type jet fuel only.
Notes: • SPR=Strategic Petroleum Reserve. • Stocks are at end of period.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.4.

Table 3.4 Petroleum Stocks

(Million Barrels)

	Crude Oil[a]				Hydrocarbon Gas Liquids								
					Propane/Propylene								
	SPR[b]	Non-SPR[c,d]	Total[d]	Distillate Fuel Oil[e]	Propane	Propylene[f]	Total[g]	Total[h]	Jet Fuel[i]	Motor Gasoline[j]	Residual Fuel Oil[k]	Other[l]	Total
1950 Year	--	248	248	72	NA	NA	NA	2	([i])	116	41	104	583
1955 Year	--	266	266	111	NA	NA	NA	7	3	165	39	123	715
1960 Year	--	240	240	138	NA	NA	NA	23	7	195	45	137	785
1965 Year	--	220	220	155	NA	NA	NA	35	19	175	56	176	836
1970 Year	--	276	276	195	NA	NA	44	74	28	209	54	181	1,018
1975 Year	--	271	271	209	NA	NA	82	133	30	235	74	181	1,133
1980 Year	108	358	466	205	NA	NA	71	137	42	261	92	189	1,392
1985 Year	493	321	814	144	NA	NA	39	82	40	223	50	165	1,519
1990 Year	586	323	908	132	NA	NA	49	104	52	220	49	156	1,621
1995 Year	592	303	895	130	NA	NA	43	100	40	202	37	158	1,563
2000 Year	541	286	826	118	NA	NA	41	88	45	196	36	159	1,468
2005 Year	685	308	992	136	NA	NA	57	117	42	208	37	148	1,682
2010 Year	727	312	1,039	164	46	2	47	118	43	219	41	145	1,770
2011 Year	696	308	1,004	149	48	2	50	121	41	223	34	146	1,720
2012 Year	695	338	1,033	135	63	2	64	148	40	231	34	154	1,775
2013 Year	696	327	1,023	128	40	1	42	121	37	228	38	149	1,724
2014 Year	691	361	1,052	136	72	2	74	170	38	240	34	151	1,822
2015 Year	695	449	1,144	161	91	2	93	192	40	235	42	164	1,979
2016 Year	695	485	1,180	166	77	2	79	196	43	239	41	161	2,025
2017 Year	663	422	1,084	146	62	2	64	187	41	237	29	167	1,892
2018 Year	649	443	1,092	140	64	2	66	184	42	247	28	176	1,908
2019 Year	635	433	1,068	140	80	2	81	212	40	254	31	172	1,917
2020 Year	638	485	1,124	161	70	1	71	228	39	243	30	156	1,981
2021 Year	594	421	1,015	130	64	1	65	193	36	232	26	161	1,792
2022 January	588	414	1,002	125	48	1	49	161	39	252	27	173	1,778
February	579	409	987	121	38	1	39	141	40	250	28	177	1,744
March	566	414	980	115	36	1	37	142	36	239	28	181	1,720
April	548	417	965	106	40	1	41	154	38	230	29	179	1,702
May	523	415	938	110	50	1	51	177	41	221	29	178	1,695
June	493	418	911	111	54	1	55	187	39	221	29	175	1,674
July	468	424	892	113	64	1	65	209	41	225	29	175	1,683
August	445	420	865	113	73	1	74	231	38	216	29	166	1,658
September	416	429	845	111	82	1	83	244	37	210	27	159	1,632
October	399	440	838	110	87	1	88	243	36	210	30	160	1,629
November	388	417	805	121	88	1	89	236	38	221	29	165	1,615
December	372	430	802	119	77	1	78	211	35	224	31	172	1,595
2023 January	372	460	831	123	69	1	70	188	36	240	32	176	1,626
February	372	472	844	125	61	1	61	175	38	242	31	184	1,638
March	371	465	837	112	56	1	57	174	38	225	30	186	1,602
April	364	460	824	112	61	1	62	188	41	224	32	189	1,609
May	354	461	815	113	71	1	72	207	42	222	33	182	1,614
June	347	455	802	113	79	1	80	225	43	223	30	175	1,612
July	347	440	787	120	87	1	89	243	43	222	29	175	1,619
August	350	417	768	117	96	1	97	267	43	219	26	170	1,609
September	351	417	769	119	102	1	103	279	43	228	28	169	1,635
October	351	426	777	110	98	1	99	274	40	219	27	168	1,615
November	352	442	794	114	90	2	92	255	39	224	26	168	1,619
December	355	426	781	131	80	1	81	223	40	241	24	167	1,607
2024 January	358	R 428	R 786	R 129	R 60	R 1	61	R 186	R 42	R 252	27	R 171	R 1,592
February	E 361	E 449	E 809	E 117	NA	NA	E 51	RF 169	E 40	E 240	E 30	RE 179	E 1,584
March	E 364	E 454	E 818	E 117	NA	NA	E 52	F 165	E 41	E 228	E 30	E 186	E 1,584

[a] Includes lease condensate.

[b] "SPR" is the Strategic Petroleum Reserve, which began in October 1977. Crude oil stocks in the SPR include non-U.S. stocks held under foreign or commercial storage agreements.

[c] All crude oil stocks other than those in "SPR."

[d] Beginning in 1981, includes stocks of Alaskan crude oil in transit.

[e] Excludes stocks in the Northeast Home Heating Oil Reserve. Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. Beginning in 2021, also includes renewable heating oil blended into distillate fuel oil.

[f] Includes propylene stocks at refineries only.

[g] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[h] Ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[i] 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.")

[j] Includes finished motor gasoline and motor gasoline blending components; excludes oxygenates. Through 1963, also includes aviation gasoline and special naphthas.

[k] Through 2019, includes residual fuel oil stocks at (or in) refineries, bulk terminals, and pipelines. Beginning in 2020, includes residual fuel oil stocks at refineries and bulk terminals only.

[l] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, and miscellaneous products. Through 1964, also includes kerosene-type jet fuel. Beginning in 1964, also includes finished aviation gasoline and special naphthas. Beginning in 1993, also includes fuel ethanol. Beginning in 2005, also includes naphtha-type jet fuel. For 2005–2018, also includes oxygenates (excluding fuel ethanol). Beginning in 2009, also includes biofuels (excluding fuel ethanol) and other hydrocarbons.

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

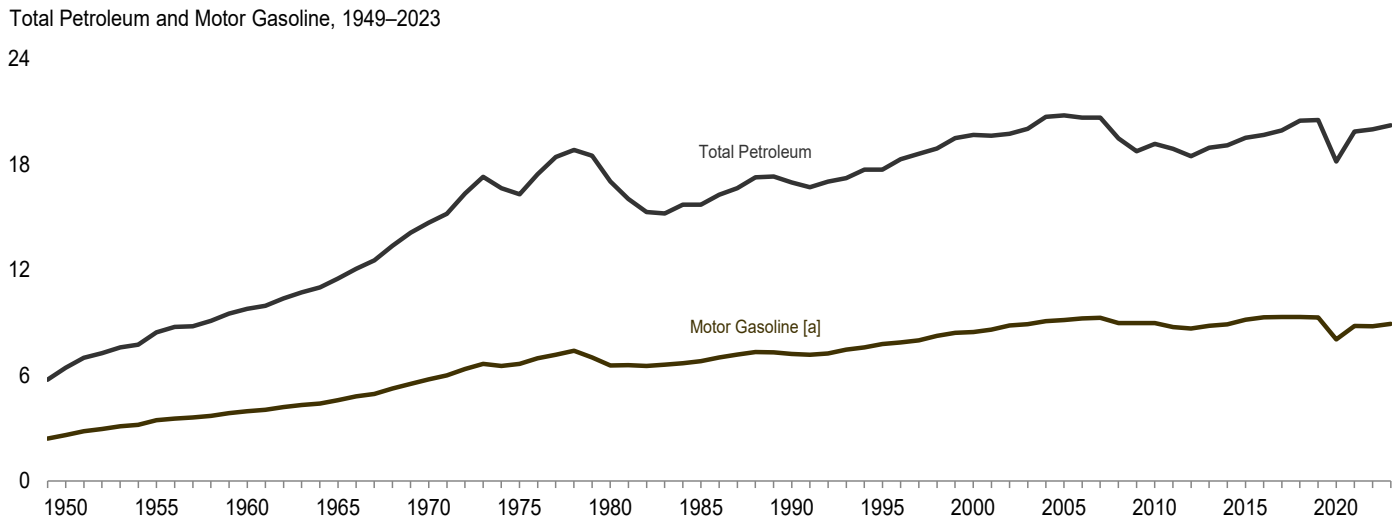
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

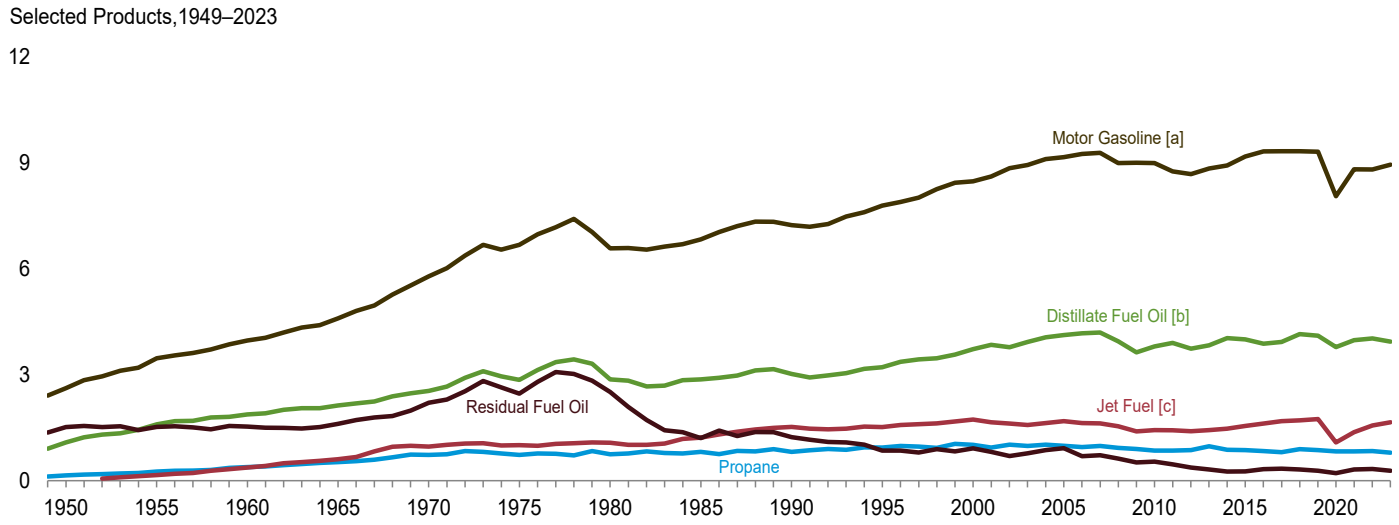
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

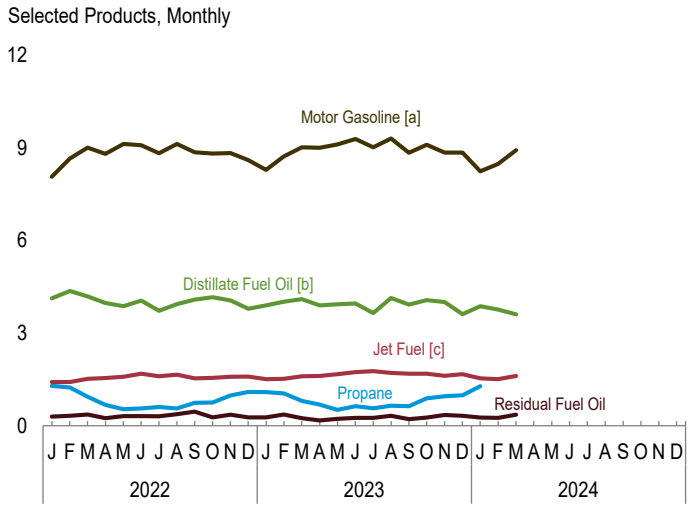
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2022:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2023 and 2024:** EIA, *Petroleum Supply Monthly,* monthly reports, and unpublished revisions; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

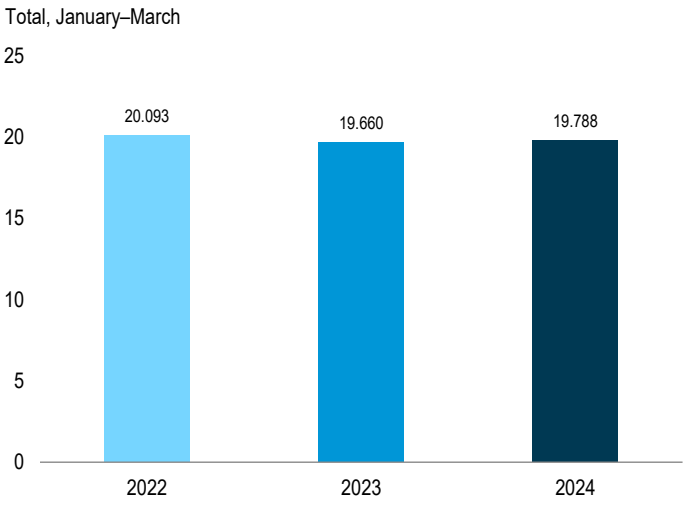
Figure 3.5 Petroleum Products Supplied by Type

(Million Barrels per Day)









[a] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[b] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[c] Beginning in 2005, includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.5.

Table 3.5 Petroleum Products Supplied by Type

(Thousand Barrels per Day)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[a]	Hydrocarbon Gas Liquids			Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene										
				Propane	Propylene	Total[b]	Total[c]								
1950 Average	180	108	1,082	E 146	E 13	E 158	234	(d)	323	106	2,616	41	1,517	250	6,458
1955 Average	254	192	1,592	E 251	E 22	E 273	404	154	320	116	3,463	67	1,526	366	8,455
1960 Average	302	161	1,872	E 386	E 33	E 419	621	371	271	117	3,969	149	1,529	435	9,797
1965 Average	368	120	2,126	E 523	E 45	E 568	841	602	267	129	4,593	202	1,608	657	11,512
1970 Average	447	55	2,540	E 727	E 55	782	1,224	967	263	136	5,785	212	2,204	866	14,697
1975 Average	419	39	2,851	E 730	E 60	790	1,352	1,001	159	137	6,675	247	2,462	982	16,322
1980 Average	396	35	2,866	E 742	E 72	813	1,590	1,068	158	159	6,579	237	2,508	1,460	17,056
1985 Average	425	27	2,868	E 810	E 72	883	1,721	1,218	114	145	6,831	264	1,202	909	15,726
1990 Average	483	24	3,021	E 812	E 105	917	1,705	1,522	43	164	7,235	339	1,229	1,225	16,988
1995 Average	486	21	3,207	E 938	E 157	1,096	2,100	1,514	54	156	7,789	365	852	1,180	17,725
2000 Average	525	20	3,722	E 1,011	E 224	1,235	2,434	1,725	67	166	8,472	406	909	1,255	19,701
2005 Average	546	19	4,118	E 986	E 243	1,229	2,146	1,679	70	141	9,159	515	920	1,489	20,802
2010 Average	362	15	3,800	852	305	1,157	2,263	1,432	20	131	8,993	376	535	1,251	19,178
2011 Average	355	15	3,899	851	310	1,161	2,250	1,425	12	125	8,753	361	461	1,240	18,896
2012 Average	340	14	3,741	862	308	1,170	2,293	1,398	5	114	8,682	360	369	1,165	18,482
2013 Average	323	12	3,827	969	306	1,275	2,501	1,434	5	121	8,843	354	319	1,227	18,967
2014 Average	327	12	4,037	870	298	1,167	2,443	1,470	9	126	8,921	347	257	1,151	19,100
2015 Average	343	11	3,995	865	295	1,160	2,550	1,548	6	138	9,178	349	259	1,153	19,532
2016 Average	351	11	3,877	833	301	1,134	2,541	1,614	9	130	9,317	345	326	1,170	19,692
2017 Average	351	11	3,932	803	309	1,111	2,637	1,682	5	121	9,327	316	342	1,228	19,952
2018 Average	327	12	4,146	888	311	1,199	3,014	1,707	5	117	9,329	327	318	1,210	20,512
2019 Average	348	13	4,103	868	298	1,166	3,139	1,743	7	113	9,309	303	275	1,189	20,543
2020 Average	343	11	3,786	824	278	1,101	3,228	1,076	7	102	8,049	260	208	1,116	18,186
2021 Average	371	12	3,972	829	305	1,134	3,440	1,370	6	105	8,816	269	314	1,215	19,890
2022 January	243	7	4,129	1,294	298	1,592	3,979	1,418	32	125	8,062	240	304	1,072	19,613
February	264	13	4,365	1,239	291	1,529	3,730	1,418	2	114	8,650	229	327	1,078	20,190
March	272	14	4,183	941	304	1,246	3,592	1,520	1	139	9,005	251	366	1,140	20,483
April	335	11	3,976	681	302	983	3,263	1,547	3	123	8,799	237	255	1,178	19,727
May	401	9	3,876	540	297	837	3,030	1,591	6	112	9,119	197	321	1,177	19,840
June	493	17	4,049	565	281	846	3,243	1,686	1	93	9,075	233	318	1,225	20,433
July	465	9	3,722	613	290	903	3,353	1,603	3	46	8,812	371	312	1,231	19,926
August	510	18	3,940	563	281	844	2,996	1,654	(s)	134	9,115	285	376	1,236	20,265
September	472	11	4,087	746	261	1,006	3,160	1,534	3	99	8,847	273	465	1,178	20,129
October	453	12	4,163	758	232	989	3,225	1,558	1	130	8,807	192	277	1,189	20,007
November	369	13	4,059	986	240	1,226	3,423	1,584	5	107	8,827	303	359	1,164	20,214
December	256	11	3,793	1,104	237	1,341	3,319	1,593	6	105	8,596	227	273	1,149	19,327
Average	378	12	4,026	834	276	1,110	3,357	1,560	5	111	8,810	253	329	1,169	20,010
2023 January	231	6	3,902	1,095	261	1,356	3,479	1,510	37	117	8,282	127	279	1,179	19,149
February	239	11	4,018	1,046	245	1,291	3,410	1,520	19	112	8,715	225	365	1,125	19,759
March	258	12	4,103	806	252	1,058	3,309	1,606	3	57	9,007	298	248	1,181	20,083
April	328	9	3,900	692	270	963	3,334	1,615	10	84	8,996	311	176	1,274	20,037
May	406	14	3,930	520	276	796	3,344	1,673	15	97	9,105	225	223	1,365	20,396
June	472	14	3,958	636	267	903	3,403	1,735	5	95	9,279	184	261	1,310	20,716
July	461	15	3,648	569	266	835	3,391	1,770	13	94	9,013	138	261	1,321	20,124
August	512	15	4,134	655	272	927	3,184	1,710	2	74	9,299	312	326	1,312	20,881
September	476	7	3,921	636	260	896	3,172	1,692	4	81	8,832	387	221	1,298	20,092
October	451	17	4,067	893	239	1,132	3,543	1,688	5	94	9,094	244	266	1,212	20,680
November	331	10	4,011	957	279	1,236	3,817	1,618	1	55	8,845	426	356	1,241	20,710
December	253	9	3,614	988	313	1,301	4,080	1,674	19	37	8,840	152	324	1,292	20,293
Average	369	12	3,933	790	267	1,057	3,456	1,652	11	83	8,944	252	275	1,260	20,246
2024 January	R 229	R 7	R 3,870	R 1,285	R 264	R 1,549	R 3,934	R 1,536	R 16	R 85	R 8,238	R 206	R 270	R 1,197	R 19,587
February	F 234	RF 9	E 3,768	NA	NA	E 1,162	RF 3,736	E 1,509	RF 5	RF 84	E 8,474	RF 201	E 259	RE 1,246	E 19,524
March	F 270	F 9	E 3,605	NA	NA	E 1,104	F 3,570	E 1,615	F 7	F 72	E 8,918	F 240	E 357	E 1,572	E 20,235
3-Month Average	E **244**	E **8**	E **3,747**	**NA**	**NA**	E **1,274**	E **3,747**	E **1,554**	E **9**	E **80**	E **8,545**	E **216**	E **296**	E **1,340**	E **19,788**
2023 3-Month Average	243	10	4,007	980	253	1,233	3,399	1,546	20	95	8,666	216	295	1,163	19,660
2022 3-Month Average	260	12	4,221	1,155	298	1,453	3,768	1,453	12	126	8,570	240	333	1,097	20,093

[a] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. For 2011–2020, also includes biodiesel adjustments (supply of biodiesel not reported as input on surveys) reclassified as distillate fuel oil adjustments. Beginning in 2021, also includes renewable heating oil blended into distillate fuel oil.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream. Through 2021, also includes natural gasoline (pentanes plus).

[d] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

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

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils (through 2021), 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. Beginning in 2021, also includes biofuels (excluding fuel ethanol) products supplied.

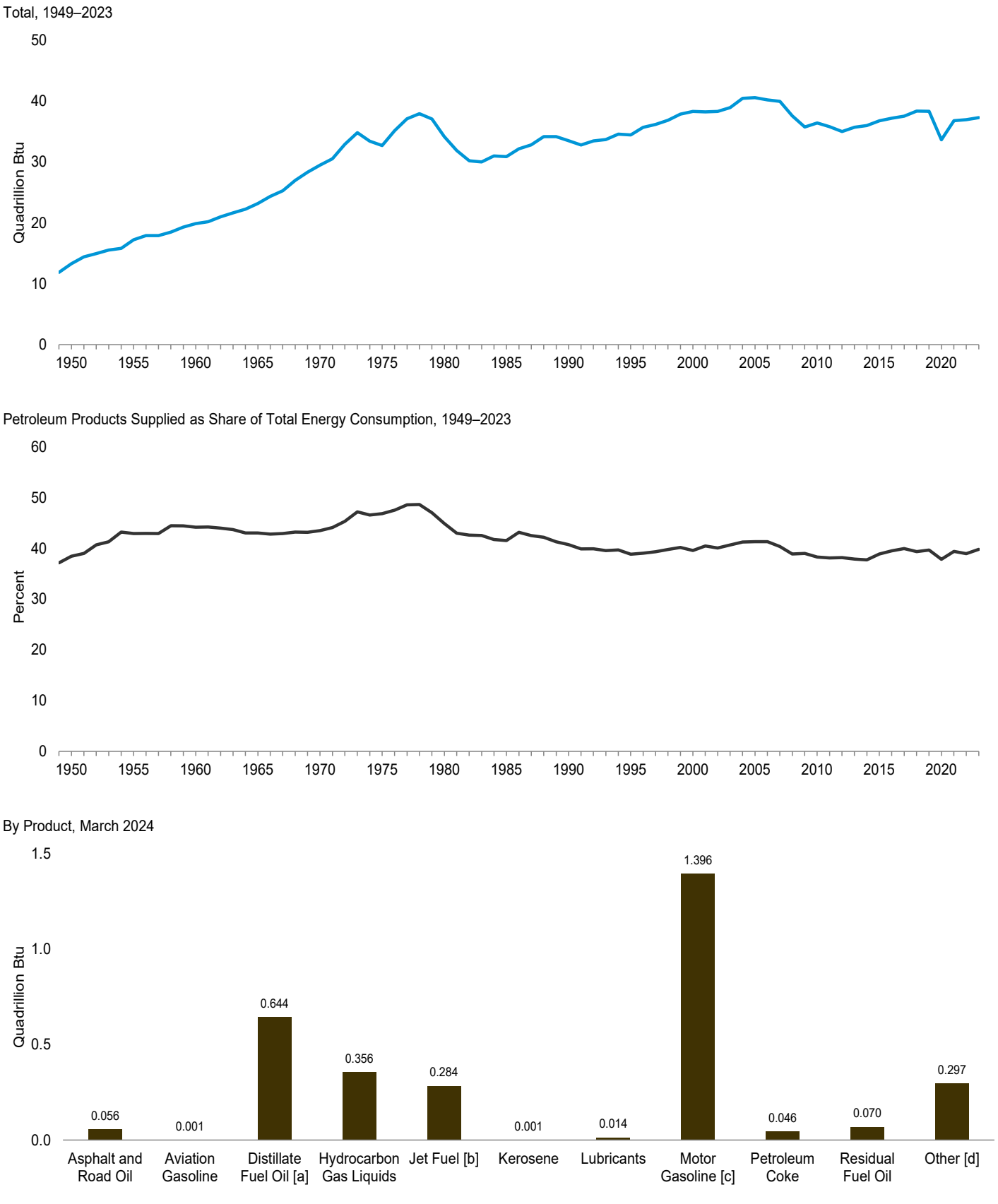
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

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

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

Sources: See end of section.

Figure 3.6 Heat Content of Petroleum Products Supplied by Type



[a] Includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[b] Includes kerosene-type jet fuel only.
[c] Includes fuel ethanol blended into motor gasoline.
[d] All petroleum products not separately displayed.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 1.1 and 3.6.

Table 3.6 Heat Content of Petroleum Products Supplied by Type

(Trillion Btu)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[a]	Hydrocarbon Gas Liquids			Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene										
				Propane	Propylene	Total[b]	Total[c]								
1950 Total	435	199	2,300	E 204	E 18	E 222	326	(d)	668	236	5,015	90	3,482	546	13,298
1955 Total	615	354	3,385	E 352	E 30	E 383	562	301	662	258	6,640	147	3,502	798	17,225
1960 Total	734	298	3,992	E 543	E 47	E 589	866	739	563	259	7,631	328	3,517	947	19,874
1965 Total	890	222	4,519	E 733	E 63	E 796	1,170	1,215	553	286	8,806	444	3,691	1,390	23,184
1970 Total	1,082	100	5,401	E 1,019	E 77	1,096	1,667	1,973	544	301	11,091	465	5,057	1,817	29,499
1975 Total	1,014	71	6,061	E 1,024	E 84	1,108	1,811	2,047	329	304	12,798	542	5,649	2,071	32,699
1980 Total	962	64	6,110	E 1,043	E 100	1,143	2,135	2,190	329	354	12,648	522	5,772	3,073	34,159
1985 Total	1,029	50	6,098	E 1,136	E 101	1,237	2,252	2,497	236	322	13,098	582	2,759	1,945	30,866
1990 Total	1,170	45	6,422	E 1,138	E 147	1,285	2,259	3,129	88	362	13,872	745	2,820	2,589	33,500
1995 Total	1,178	40	6,812	E 1,316	E 220	1,536	2,791	3,132	112	346	14,794	802	1,955	2,499	34,458
2000 Total	1,276	36	7,927	E 1,421	E 315	1,735	3,216	3,580	140	369	16,127	895	2,091	2,636	38,292
2005 Total	1,323	35	8,745	E 1,382	E 341	1,723	2,812	3,475	144	312	17,358	1,125	2,111	3,122	40,561
2010 Total	878	27	8,011	1,194	428	1,621	2,881	2,963	41	291	16,632	831	1,228	2,645	36,427
2011 Total	859	27	8,211	1,194	434	1,628	2,811	2,950	25	276	16,175	801	1,058	2,621	35,815
2012 Total	827	25	7,898	1,212	432	1,645	2,887	2,901	11	254	16,085	802	849	2,474	35,012
2013 Total	783	22	8,051	1,358	429	1,787	3,166	2,969	11	268	16,332	786	731	2,583	35,702
2014 Total	793	22	8,492	1,219	417	1,636	3,067	3,042	19	280	16,473	772	590	2,430	35,978
2015 Total	832	21	8,402	1,212	413	1,626	3,221	3,204	13	305	16,941	776	595	2,435	36,745
2016 Total	853	20	8,170	1,171	423	1,594	3,184	3,350	18	289	17,238	771	751	2,553	37,198
2017 Total	849	21	8,263	1,126	432	1,557	3,272	3,481	11	267	17,201	708	784	2,667	37,525
2018 Total	793	22	8,715	1,245	436	1,680	3,720	3,533	11	259	17,209	730	729	2,630	38,351
2019 Total	844	23	8,625	1,217	418	1,635	3,897	3,608	14	250	17,166	678	631	2,585	38,322
2020 Total	832	20	7,976	1,158	390	1,548	3,956	2,234	16	227	14,883	583	478	2,433	33,638
2021 Total	898	22	8,357	1,162	427	1,589	4,230	2,835	12	233	16,250	603	721	2,623	36,784
2022 January	50	1	738	154	35	190	405	249	6	24	1,262	46	59	197	3,037
February	49	2	705	133	31	164	341	225	(s)	19	1,223	39	58	179	2,841
March	56	2	748	112	36	148	362	267	(s)	26	1,409	48	71	209	3,200
April	67	2	687	78	35	113	313	263	1	22	1,333	44	48	210	2,989
May	83	1	693	64	35	100	298	280	1	21	1,427	38	62	217	3,121
June	98	3	700	65	32	97	310	287	(s)	17	1,375	43	60	218	3,110
July	96	1	665	73	34	107	331	282	(s)	9	1,379	71	61	227	3,122
August	105	3	704	67	33	100	300	291	(s)	25	1,427	55	73	227	3,210
September	94	2	707	86	30	116	305	261	1	18	1,340	51	88	210	3,075
October	93	2	744	90	28	118	320	274	(s)	24	1,378	37	54	219	3,146
November	73	2	702	114	28	141	335	270	1	20	1,337	56	68	207	3,070
December	53	2	678	131	28	160	337	280	1	20	1,345	43	53	211	3,023
Total	916	22	8,470	1,169	386	1,555	3,957	3,228	11	245	16,236	570	756	2,532	36,943
2023 January	48	1	R 697	130	31	161	353	265	7	22	1,296	24	54	216	R 2,984
February	44	1	R 649	113	26	139	307	241	3	19	1,232	39	64	187	R 2,787
March	53	2	R 733	96	30	126	330	282	1	11	1,410	57	48	216	R 3,143
April	65	1	R 675	80	31	111	319	275	2	15	1,363	57	33	225	R 3,030
May	84	2	R 702	62	33	95	328	294	3	18	1,425	43	43	249	R 3,192
June	94	2	R 685	73	31	104	326	295	1	17	1,405	34	49	232	R 3,141
July	95	2	R 652	68	32	99	336	311	2	18	1,411	26	51	242	R 3,146
August	105	2	R 739	78	32	110	316	301	(s)	14	1,456	59	64	240	R 3,296
September	95	1	R 678	73	30	103	305	288	1	15	1,338	71	42	229	R 3,062
October	93	3	R 727	106	28	135	357	297	1	18	1,423	46	52	221	R 3,237
November	66	1	R 694	110	32	142	376	275	(s)	10	1,340	79	67	219	R 3,127
December	52	1	R 646	118	37	155	409	294	3	7	1,384	29	63	235	R 3,123
Total	893	21	R 8,276	1,107	374	1,481	4,062	3,418	23	184	16,482	565	631	2,712	R 37,268
2024 January	R 47	1	R 692	R 153	R 31	184	R 402	R 270	R 3	R 16	R 1,289	R 39	53	R 218	R 3,030
February	F 45	F 1	RE 630	NA	NA	E 129	RF 349	E 248	F 1	RF 15	E 1,241	RF 36	E 47	RE 243	RE 2,856
March	F 56	F 1	E 644	NA	NA	E 131	F 356	E 284	F 1	F 14	E 1,396	F 46	E 70	E 297	E 3,164
3-Month Total	E 148	E 4	E 1,966	NA	NA	E 445	E 1,107	E 802	E 5	E 44	E 3,926	E 121	E 169	E 758	E 9,050
2023 3-Month Total	145	4	2,079	339	87	426	990	789	10	52	3,938	120	167	619	8,913
2022 3-Month Total	155	5	2,190	399	103	502	1,109	742	6	69	3,894	133	188	586	9,078

[a] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. For 2011–2020, also includes biodiesel adjustments (supply of biodiesel not reported as input on surveys) reclassified as distillate fuel oil adjustments. Beginning in 2021, also includes renewable heating oil blended into distillate fuel oil.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream. Through 2021, also includes natural gasoline (pentanes plus).

[d] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other.")

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

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils (through 2021), 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. Beginning in 2021, also includes biofuels (excluding fuel ethanol) products supplied.

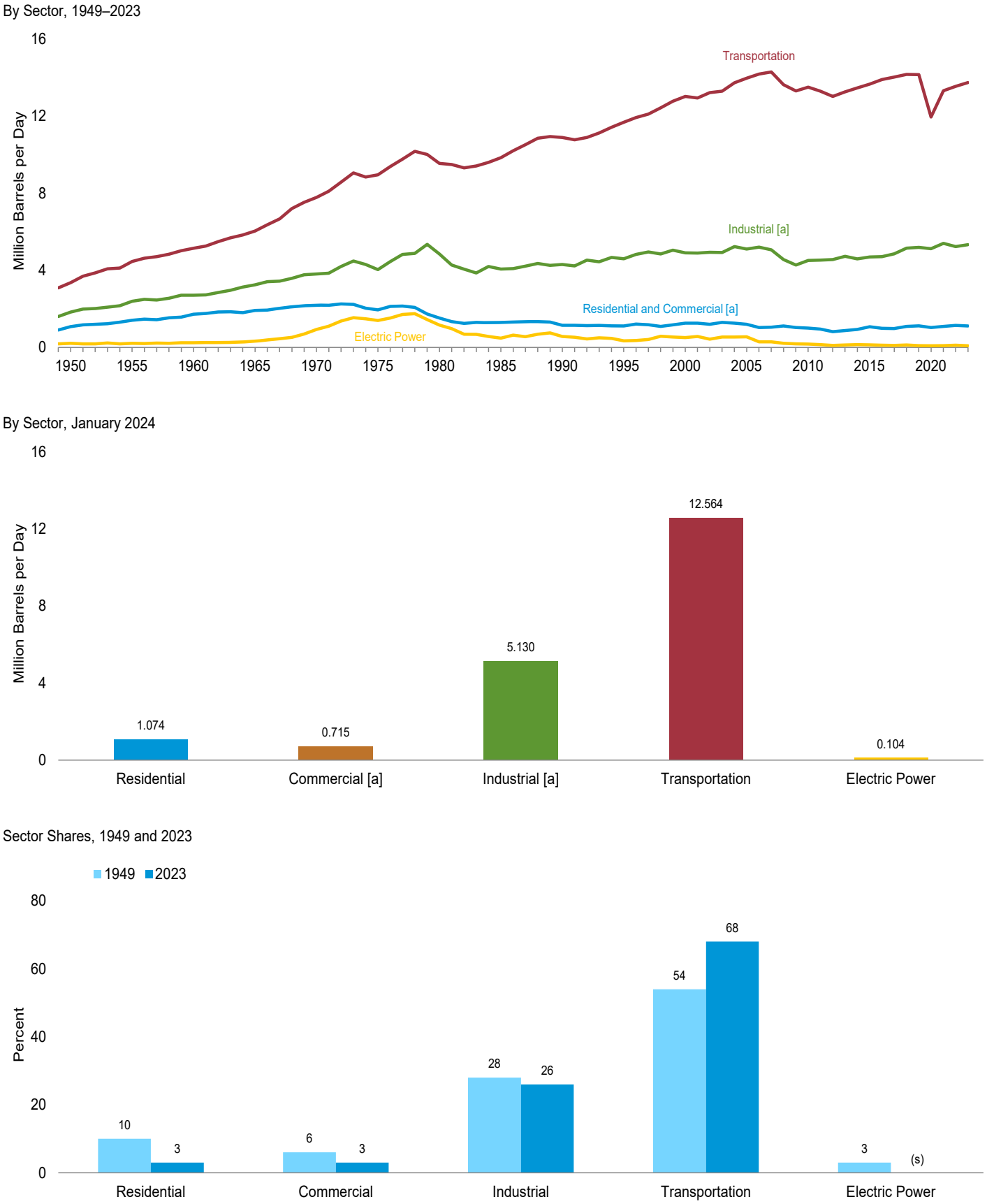
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

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

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

Sources: See end of section.

Figure 3.7 Petroleum Consumption by Sector



[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
(s)=Less than 0.5 percent.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.7a–3.7c.

Table 3.7a Petroleum Consumption: Residential and Commercial Sectors

(Thousand Barrels per Day)

	Residential Sector				Commercial Sector[a]						
	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Total	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Motor Gasoline[c,d]	Petroleum Coke	Residual Fuel Oil	Total
1950 Average	**390**	**104**	**168**	**662**	**123**	**28**	**23**	**52**	**NA**	**185**	**411**
1955 Average	**562**	**144**	**179**	**885**	**177**	**38**	**24**	**69**	**NA**	**209**	**519**
1960 Average	**736**	**217**	**171**	**1,123**	**232**	**58**	**23**	**35**	**NA**	**243**	**590**
1965 Average	**805**	**275**	**161**	**1,242**	**251**	**74**	**26**	**40**	**NA**	**281**	**672**
1970 Average	**883**	**392**	**144**	**1,419**	**276**	**102**	**30**	**45**	**NA**	**311**	**764**
1975 Average	**850**	**365**	**78**	**1,293**	**276**	**92**	**24**	**46**	**NA**	**214**	**653**
1980 Average	**617**	**222**	**51**	**890**	**243**	**63**	**20**	**56**	**NA**	**245**	**626**
1985 Average	**514**	**224**	**77**	**815**	**297**	**68**	**16**	**50**	**NA**	**99**	**530**
1990 Average	**460**	**252**	**31**	**742**	**252**	**73**	**6**	**58**	**0**	**100**	**489**
1995 Average	**426**	**282**	**36**	**743**	**225**	**78**	**11**	**10**	**(s)**	**62**	**385**
2000 Average	**424**	**395**	**46**	**865**	**230**	**107**	**14**	**23**	**(s)**	**40**	**415**
2005 Average	**402**	**366**	**40**	**809**	**210**	**94**	**10**	**24**	**(s)**	**50**	**389**
2010 Average	**266**	**378**	**14**	**658**	**185**	**100**	**2**	**28**	**(s)**	**27**	**343**
2011 Average	**248**	**351**	**9**	**608**	**186**	**102**	**2**	**24**	**(s)**	**23**	**336**
2012 Average	**228**	**281**	**4**	**513**	**168**	**96**	**1**	**21**	**(s)**	**14**	**300**
2013 Average	**233**	**331**	**4**	**568**	**163**	**108**	**(s)**	**22**	**(s)**	**11**	**304**
2014 Average	**253**	**349**	**7**	**609**	**169**	**114**	**1**	**29**	**(s)**	**3**	**318**
2015 Average	**262**	**318**	**5**	**584**	**171**	**106**	**1**	**[d] 204**	**(s)**	**2**	**483**
2016 Average	**206**	**306**	**7**	**518**	**154**	**107**	**1**	**203**	**(s)**	**2**	**467**
2017 Average	**205**	**307**	**4**	**517**	**153**	**111**	**1**	**196**	**(s)**	**2**	**462**
2018 Average	**241**	**361**	**4**	**606**	**153**	**126**	**1**	**199**	**(s)**	**1**	**480**
2019 Average	**223**	**402**	**5**	**630**	**155**	**130**	**1**	**200**	**(s)**	**1**	**487**
2020 Average	**193**	**352**	**5**	**551**	**131**	**143**	**1**	**201**	**(s)**	**1**	**477**
2021 Average	**225**	**345**	**5**	**575**	**156**	**155**	**1**	**203**	**(s)**	**1**	**516**
2022 January	373	R719	25	R1,117	259	R243	4	218	(s)	2	R727
February	468	R637	2	R1,107	324	R221	(s)	234	(s)	3	R783
March	303	R466	1	R770	210	R173	(s)	244	(s)	2	R630
April	203	R355	2	R560	141	R142	(s)	238	(s)	1	R524
May	170	R205	5	R380	118	R101	1	247	(s)	1	R468
June	150	R143	1	R293	104	R84	(s)	246	(s)	1	R435
July	101	R128	2	R231	70	R80	(s)	239	(s)	1	R389
August	86	R130	(s)	R216	60	R80	(s)	247	0	1	R388
September	151	R156	2	R309	105	R87	(s)	240	(s)	1	R433
October	198	R293	(s)	R491	137	R125	(s)	239	0	1	R503
November	233	R469	4	R705	161	R174	1	239	(s)	1	R577
December	311	R633	4	R948	215	R219	1	233	(s)	2	R670
Average	**227**	**R360**	**4**	**R591**	**158**	**R144**	**1**	**239**	**(s)**	**1**	**R542**
2023 January	366	R610	29	R1,005	254	R211	4	224	(s)	2	R696
February	459	R591	15	R1,064	318	R205	2	236	(s)	2	R764
March	297	R521	2	R821	206	R186	(s)	244	(s)	2	R638
April	199	R329	8	R537	138	R133	1	244	0	1	R517
May	167	R219	11	R397	116	R103	2	247	0	1	R468
June	147	R150	4	R301	102	R84	1	251	0	1	R438
July	99	R123	10	R231	68	R76	2	244	0	1	R390
August	85	R126	2	R212	59	R77	(s)	252	0	(s)	R388
September	148	R152	3	R304	103	R84	1	239	0	1	R427
October	194	R261	4	R459	135	R114	1	246	0	1	R497
November	228	R477	1	R706	158	R174	(s)	240	0	1	R573
December	305	R547	15	R867	211	R193	2	240	(s)	2	R648
Average	**223**	**R341**	**9**	**R573**	**155**	**R136**	**1**	**242**	**(s)**	**1**	**R536**
2024 January	366	695	12	1,074	254	234	2	223	(s)	2	715

[a] Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Hydrocarbon gas liquids.

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

[d] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

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

Notes: • Data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report*, sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Table 3.7b Petroleum Consumption: Industrial Sector

(Thousand Barrels per Day)

	Industrial Sector[a]												
			Hydrocarbon Gas Liquids										
			Propane/Propylene										
	Asphalt and Road Oil	Distillate Fuel Oil	Propane	Propylene	Total[b]	Total[c]	Kerosene	Lubricants	Motor Gasoline[d,e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
1950 Average	**180**	**328**	**12**	**13**	**24**	**100**	**132**	**43**	**131**	**41**	**617**	**250**	**1,822**
1955 Average	**254**	**466**	**59**	**22**	**81**	**212**	**116**	**47**	**173**	**67**	**686**	**366**	**2,387**
1960 Average	**302**	**476**	**98**	**33**	**131**	**333**	**78**	**48**	**198**	**149**	**689**	**435**	**2,708**
1965 Average	**368**	**541**	**152**	**45**	**197**	**470**	**80**	**62**	**179**	**202**	**689**	**657**	**3,247**
1970 Average	**447**	**577**	**201**	**55**	**256**	**699**	**89**	**70**	**150**	**203**	**708**	**866**	**3,808**
1975 Average	**419**	**630**	**242**	**60**	**302**	**863**	**58**	**68**	**116**	**246**	**658**	**982**	**4,038**
1980 Average	**396**	**621**	**445**	**72**	**516**	**1,293**	**87**	**82**	**82**	**234**	**586**	**1,460**	**4,842**
1985 Average	**425**	**526**	**497**	**72**	**569**	**1,408**	**21**	**75**	**114**	**261**	**326**	**909**	**4,065**
1990 Average	**483**	**541**	**471**	**105**	**576**	**1,364**	**6**	**84**	**97**	**325**	**179**	**1,225**	**4,304**
1995 Average	**486**	**532**	**566**	**157**	**723**	**1,727**	**7**	**80**	**105**	**328**	**147**	**1,180**	**4,594**
2000 Average	**525**	**563**	**500**	**224**	**724**	**1,923**	**8**	**86**	**79**	**361**	**105**	**1,255**	**4,903**
2005 Average	**546**	**594**	**506**	**243**	**749**	**1,666**	**19**	**72**	**187**	**404**	**123**	**1,489**	**5,100**
2010 Average	**362**	**547**	**371**	**305**	**676**	**1,782**	**4**	**61**	**140**	**310**	**52**	**1,251**	**4,510**
2011 Average	**355**	**586**	**395**	**310**	**705**	**1,794**	**2**	**58**	**138**	**295**	**59**	**1,240**	**4,525**
2012 Average	**340**	**602**	**481**	**308**	**789**	**1,912**	**1**	**53**	**136**	**319**	**30**	**1,165**	**4,559**
2013 Average	**323**	**601**	**526**	**306**	**832**	**2,058**	**1**	**57**	**142**	**295**	**21**	**1,227**	**4,724**
2014 Average	**327**	**648**	**401**	**298**	**698**	**1,974**	**1**	**59**	**114**	**290**	**18**	**1,151**	**4,582**
2015 Average	**343**	**555**	**434**	**295**	**729**	**2,119**	**1**	**64**	**[e] 140**	**295**	**15**	**1,153**	**4,685**
2016 Average	**351**	**548**	**412**	**301**	**714**	**2,120**	**1**	**61**	**142**	**289**	**23**	**1,170**	**4,703**
2017 Average	**351**	**572**	**376**	**309**	**684**	**2,210**	**1**	**56**	**143**	**269**	**22**	**1,228**	**4,852**
2018 Average	**327**	**595**	**392**	**311**	**703**	**2,518**	**1**	**55**	**146**	**278**	**19**	**1,210**	**5,149**
2019 Average	**348**	**573**	**327**	**298**	**626**	**2,598**	**1**	**53**	**145**	**267**	**18**	**1,189**	**5,191**
2020 Average	**343**	**506**	**323**	**278**	**600**	**2,726**	**1**	**50**	**146**	**218**	**14**	**1,116**	**5,120**
2021 Average	**371**	**563**	**322**	**305**	**627**	**2,933**	**1**	**51**	**143**	**227**	**20**	**1,082**	**5,392**
2022 January	243	R 692	R 324	298	R 622	R 3,009	3	R 59	137	201	15	948	R 5,307
February	264	R 690	R 373	291	R 664	R 2,864	(s)	R 53	147	183	18	937	R 5,158
March	272	R 687	R 294	304	R 598	R 2,945	(s)	R 65	153	216	23	987	R 5,348
April	335	565	R 176	302	R 478	R 2,758	(s)	R 58	150	200	19	1,015	R 5,100
May	401	R 486	226	297	523	2,716	1	R 53	155	157	21	1,021	R 5,010
June	493	R 548	R 330	281	R 611	R 3,008	(s)	R 44	154	186	22	1,025	R 5,481
July	465	R 370	R 397	290	R 687	R 3,137	(s)	R 22	150	336	21	1,066	R 5,567
August	510	R 513	R 345	281	R 627	R 2,778	(s)	R 63	155	247	21	1,052	R 5,339
September	472	641	R 495	261	R 755	R 2,909	(s)	R 46	151	227	27	1,008	5,481
October	453	R 649	332	232	R 563	R 2,799	(s)	R 61	150	150	18	991	R 5,271
November	369	639	R 336	240	R 576	R 2,773	(s)	R 50	150	265	22	973	R 5,242
December	256	R 367	R 244	237	R 482	R 2,459	1	R 49	146	179	19	963	R 4,439
Average	**378**	**569**	**R 322**	**276**	**R 598**	**R 2,846**	**1**	**R 52**	**150**	**212**	**20**	**999**	**R 5,228**
2023 January	231	R 621	R 267	261	R 528	R 2,651	4	R 55	141	100	19	970	R 4,792
February	239	R 516	R 242	245	R 487	R 2,606	2	R 53	148	198	21	916	R 4,699
March	258	R 676	R 91	252	R 343	R 2,594	(s)	R 27	153	279	18	944	R 4,950
April	328	554	R 222	270	R 492	R 2,864	1	R 39	153	292	13	1,039	R 5,284
May	406	R 559	191	276	467	3,015	1	R 46	155	206	14	1,054	R 5,455
June	472	R 533	394	267	R 662	R 3,162	1	R 45	158	159	16	1,010	R 5,555
July	461	R 366	R 363	266	R 629	R 3,184	1	R 44	153	98	15	1,064	R 5,388
August	512	R 676	R 444	272	R 716	R 2,974	(s)	R 35	158	271	19	1,019	R 5,664
September	476	575	392	260	652	R 2,928	(s)	R 38	150	350	13	992	R 5,523
October	451	R 627	510	239	749	R 3,160	(s)	R 44	155	224	16	931	R 5,609
November	331	R 646	R 298	279	R 578	R 3,158	(s)	R 26	151	411	21	989	R 5,733
December	253	R 349	R 240	313	R 553	R 3,331	2	18	150	132	21	977	R 5,233
Average	**369**	**558**	**R 305**	**267**	**R 572**	**R 2,971**	**1**	**R 39**	**152**	**226**	**17**	**993**	**R 5,327**
2024 January	229	585	348	264	611	2,997	2	40	140	184	21	931	5,130

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream. Through 2021, also includes natural gasoline (pentanes plus).

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

[e] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils (through 2021), 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.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report,* sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Table 3.7c Petroleum Consumption: Transportation and Electric Power Sectors

(Thousand Barrels per Day)

	Transportation Sector									Electric Power Sector[a]			
	Aviation Gasoline	Distillate Fuel Oil[c]	HGL[b] Propane[d]	Jet Fuel[e]	Lubricants	Motor Gasoline[f,g]	Residual Fuel Oil	Other[h]	Total	Distillate Fuel Oil[i]	Petroleum Coke	Residual Fuel Oil[j]	Total
1950 Average	108	226	2	(e)	64	2,433	524	NA	3,356	15	NA	192	207
1955 Average	192	372	9	154	70	3,221	440	NA	4,458	15	NA	191	206
1960 Average	161	418	13	371	68	3,736	367	NA	5,135	10	NA	231	241
1965 Average	120	514	23	602	67	4,374	336	NA	6,036	14	NA	302	316
1970 Average	55	738	32	967	66	5,589	332	NA	7,778	66	9	853	928
1975 Average	39	998	31	992	70	6,512	310	NA	8,951	107	1	1,280	1,388
1980 Average	35	1,311	13	1,062	77	6,441	608	NA	9,546	79	2	1,069	1,151
1985 Average	27	1,491	21	1,218	71	6,667	342	NA	9,838	40	3	435	478
1990 Average	24	1,722	16	1,522	80	7,080	443	NA	10,888	45	14	507	566
1995 Average	21	1,973	13	1,514	76	7,674	397	NA	11,668	51	37	247	334
2000 Average	20	2,422	8	1,725	81	8,370	386	NA	13,012	82	45	378	505
2005 Average	19	2,858	20	1,679	68	8,948	365	NA	13,957	54	111	382	547
2010 Average	15	2,764	[d] 3	1,432	70	8,824	389	(h)	13,496	38	65	67	170
2011 Average	15	2,849	3	1,425	67	8,591	338	(h)	13,289	30	66	41	137
2012 Average	14	2,719	3	1,398	61	8,525	291	(h)	13,011	25	41	33	99
2013 Average	12	2,804	4	1,434	65	8,679	253	(h)	13,252	26	59	34	119
2014 Average	12	2,928	5	1,470	67	8,778	195	(h)	13,455	39	57	41	137
2015 Average	11	2,974	7	1,548	74	[g] 8,835	202	(h)	13,651	33	54	41	128
2016 Average	11	2,944	8	1,614	70	8,973	271	(h)	13,891	26	57	31	113
2017 Average	11	2,976	9	1,682	64	8,988	290	(h)	14,019	26	47	29	101
2018 Average	12	3,118	9	1,707	62	8,984	263	(h)	14,156	38	49	34	121
2019 Average	13	3,127	9	1,743	59	8,965	231	(h)	14,146	26	36	26	88
2020 Average	11	2,935	6	1,076	52	7,703	170	(h)	11,953	21	42	23	86
2021 Average	12	2,999	7	1,370	54	8,469	268	133	13,312	28	42	25	95
2022 January	7	R 2,722	R 8	1,418	R 67	7,706	209	125	R 12,262	83	39	78	199
February	13	R 2,846	R 8	1,418	R 60	8,269	275	141	R 13,030	37	45	31	113
March	14	R 2,956	R 8	1,520	R 74	8,608	317	153	R 13,650	27	35	24	86
April	11	3,044	R 8	1,547	R 65	8,411	216	163	R 13,464	22	37	20	80
May	9	3,075	R 8	1,591	R 60	8,717	277	156	R 13,893	26	39	22	88
June	17	R 3,218	R 8	1,686	R 50	8,675	274	200	R 14,127	30	46	21	97
July	9	R 3,152	R 8	1,603	R 25	8,423	262	165	R 13,646	30	34	29	92
August	18	R 3,254	R 8	1,654	R 71	8,713	328	183	R 14,229	28	38	26	93
September	11	R 3,167	R 8	1,534	R 52	8,456	407	170	R 13,807	23	46	29	99
October	12	R 3,155	R 8	1,558	R 69	8,418	229	198	R 13,647	24	42	29	95
November	13	3,001	R 8	1,584	R 57	8,437	309	190	R 13,600	25	38	26	90
December	11	R 2,782	R 8	1,593	R 55	8,217	194	187	R 13,046	118	48	59	224
Average	12	3,032	R 8	1,560	R 59	8,421	275	169	R 13,535	40	41	33	113
2023 January	6	R 2,637	R 8	1,510	R 62	7,917	231	209	R 12,579	24	26	27	77
February	11	R 2,700	R 8	1,520	R 60	8,330	301	209	R 13,139	26	27	40	93
March	12	R 2,900	R 8	1,606	R 30	8,609	202	237	R 13,606	23	18	26	68
April	9	R 2,986	R 8	1,615	R 45	8,599	136	235	R 13,633	22	18	26	66
May	14	R 3,064	R 8	1,673	R 52	8,703	183	311	R 14,008	24	19	25	68
June	14	R 3,154	R 8	1,735	R 51	8,869	219	299	R 14,349	22	24	26	73
July	15	R 3,094	R 8	1,770	R 50	8,616	216	257	R 14,024	20	40	30	90
August	15	R 3,291	R 8	1,710	R 39	8,889	279	293	R 14,524	24	41	28	93
September	7	3,076	R 8	1,692	R 43	8,443	176	306	R 13,751	19	37	31	87
October	17	R 3,090	R 8	1,688	R 50	8,692	219	281	R 14,045	21	20	30	70
November	10	R 2,954	R 8	1,618	R 29	8,454	306	252	R 13,631	24	15	28	67
December	9	R 2,723	R 8	1,674	R 20	8,450	274	315	R 13,473	26	20	27	72
Average	12	2,974	R 8	1,652	R 44	8,549	228	267	R 13,734	23	26	29	77
2024 January	7	2,616	8	1,536	45	7,874	212	265	12,564	48	22	35	104

[a] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[b] Hydrocarbon gas liquids.

[c] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. For 2011–2020, also includes biodiesel adjustments (supply of biodiesel not reported as input on surveys) reclassified as distillate fuel oil adjustments.

[d] There is a discontinuity in this time series between 2009 and 2010 due to a change in data sources.

[e] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other" on Table 3.7b.)

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

[g] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[h] Biofuels (excluding fuel ethanol) products supplied. Includes supply of non-fuel ethanol biofuels (such as B100 biodiesel and R100 renewable diesel fuel) not reported as input on surveys. For 2009–2020, data in this category were classified as biofuels (excluding fuel ethanol) adjustments.

[i] 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.

[j] Fuel oil nos. 5 and 6. Through 1979, data are for steam plant use of petroleum. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

R=Revised. NA=Not available.

Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S-flagged aircraft. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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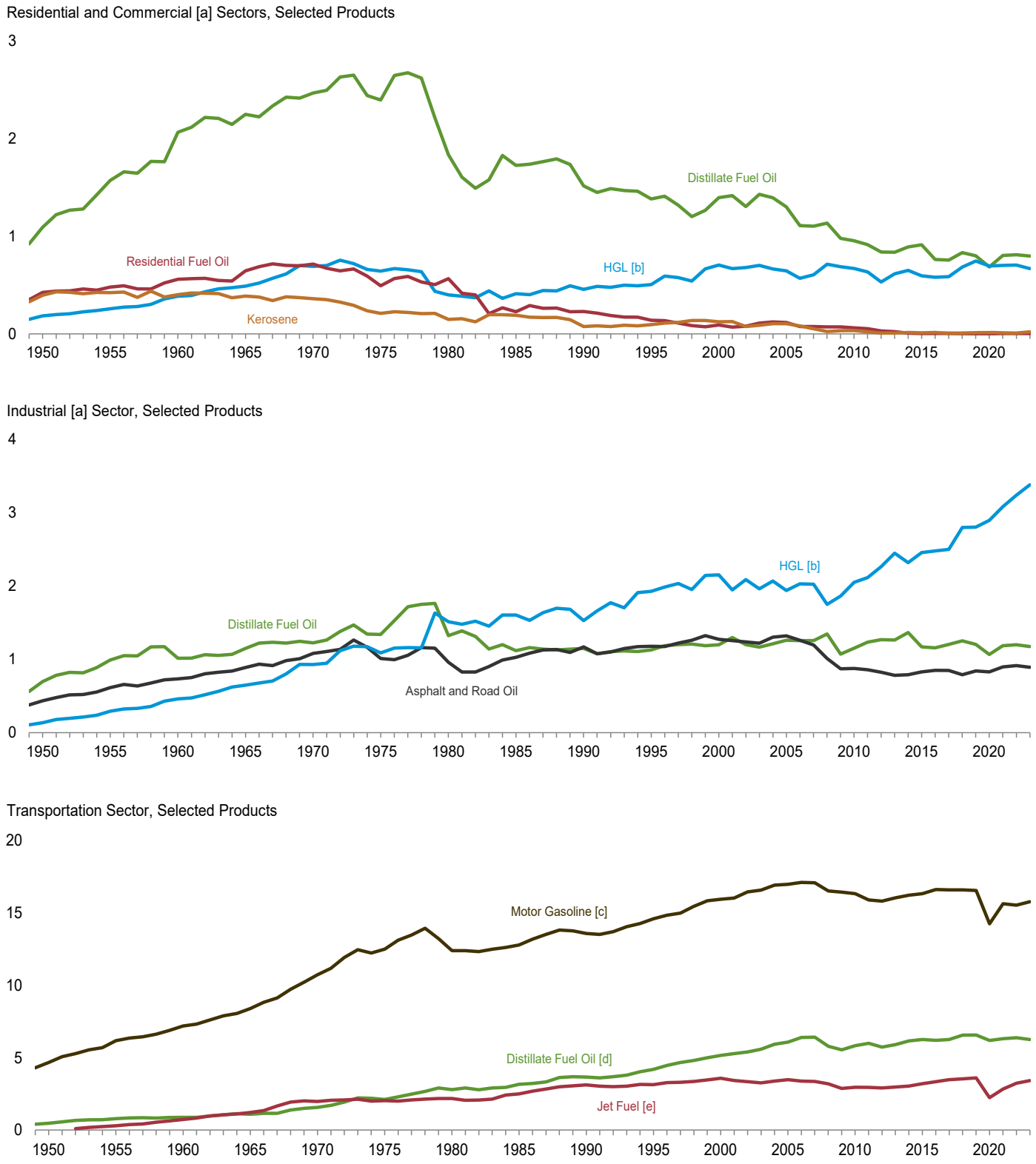
Sources: See end of section.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report*, sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Figure 3.8a Heat Content of Petroleum Consumption by End-Use Sector, 1949-2023

(Quadrillion Btu)

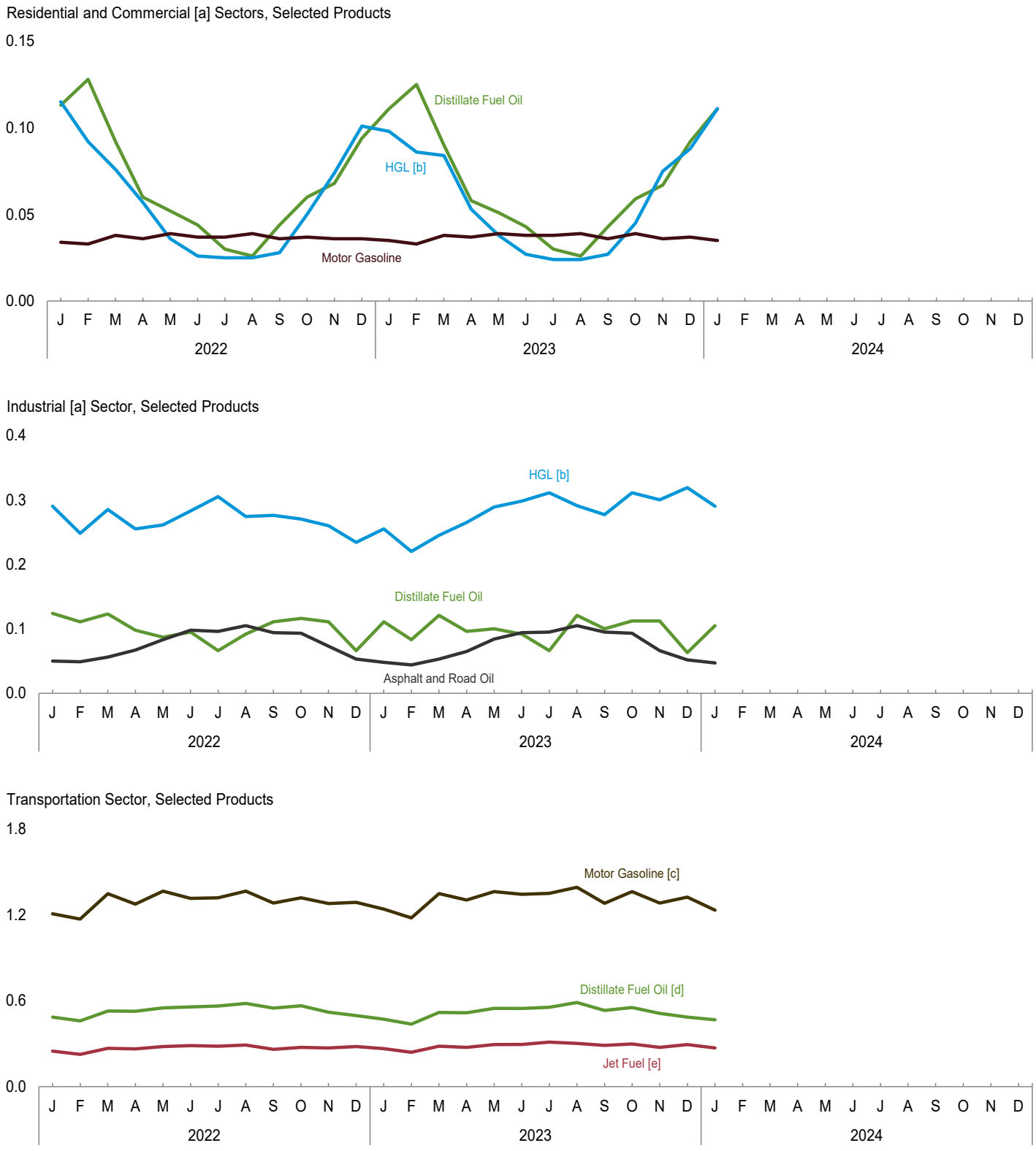


[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[d] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[e] Beginning in 2005, includes kerosene-type jet fuel only.

Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

Figure 3.8b Heat Content of Petroleum Consumption by End-Use Sector, Monthly

(Quadrillion Btu)



[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Includes fuel ethanol blended into motor gasoline.
[d] Includes biodiesel and renewable diesel fuel blended into distillate fuel oil.
[e] Includes kerosene-type jet fuel only.

Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

Table 3.8a Heat Content of Petroleum Consumption: Residential and Commercial Sectors

(Trillion Btu)

	Residential Sector				Commercial Sector[a]						
	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Total	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Motor Gasoline[c,d]	Petroleum Coke	Residual Fuel Oil	Total
1950 Total	**829**	**146**	**347**	**1,322**	**262**	**39**	**47**	**100**	**NA**	**424**	**872**
1955 Total	**1,194**	**202**	**371**	**1,767**	**377**	**54**	**51**	**133**	**NA**	**480**	**1,095**
1960 Total	**1,568**	**305**	**354**	**2,228**	**494**	**81**	**48**	**67**	**NA**	**559**	**1,248**
1965 Total	**1,713**	**386**	**334**	**2,432**	**534**	**103**	**54**	**77**	**NA**	**645**	**1,413**
1970 Total	**1,678**	**549**	**298**	**2,726**	**587**	**143**	**61**	**86**	**NA**	**714**	**1,592**
1975 Total	**1,807**	**512**	**161**	**2,479**	**587**	**130**	**49**	**89**	**NA**	**492**	**1,346**
1980 Total	**1,316**	**312**	**107**	**1,734**	**518**	**88**	**41**	**107**	**NA**	**565**	**1,318**
1985 Total	**1,092**	**315**	**159**	**1,566**	**631**	**95**	**33**	**96**	**NA**	**228**	**1,083**
1990 Total	**978**	**353**	**64**	**1,395**	**536**	**102**	**12**	**111**	**0**	**230**	**991**
1995 Total	**904**	**395**	**74**	**1,374**	**478**	**109**	**22**	**18**	**(s)**	**141**	**769**
2000 Total	**904**	**556**	**95**	**1,554**	**490**	**151**	**30**	**44**	**(s)**	**92**	**807**
2005 Total	**853**	**514**	**84**	**1,450**	**447**	**132**	**22**	**46**	**(s)**	**116**	**762**
2010 Total	**562**	**530**	**29**	**1,120**	**391**	**140**	**5**	**52**	**(s)**	**62**	**650**
2011 Total	**523**	**493**	**19**	**1,034**	**391**	**143**	**3**	**44**	**(s)**	**54**	**635**
2012 Total	**482**	**396**	**8**	**886**	**355**	**136**	**1**	**39**	**(s)**	**31**	**562**
2013 Total	**491**	**463**	**8**	**963**	**344**	**152**	**1**	**40**	**(s)**	**24**	**561**
2014 Total	**533**	**490**	**14**	**1,036**	**357**	**160**	**2**	**54**	**1**	**8**	**581**
2015 Total	**551**	**446**	**10**	**1,007**	**360**	**148**	**1**	**[d]376**	**1**	**4**	**890**
2016 Total	**435**	**430**	**14**	**878**	**326**	**150**	**2**	**375**	**(s)**	**4**	**858**
2017 Total	**432**	**431**	**8**	**871**	**323**	**156**	**1**	**361**	**(s)**	**4**	**845**
2018 Total	**508**	**507**	**8**	**1,022**	**323**	**176**	**1**	**366**	**(s)**	**3**	**870**
2019 Total	**471**	**563**	**11**	**1,045**	**327**	**182**	**2**	**369**	**(s)**	**2**	**883**
2020 Total	**408**	**495**	**11**	**914**	**276**	**201**	**2**	**371**	**(s)**	**2**	**853**
2021 Total	**474**	**484**	**9**	**967**	**328**	**217**	**1**	**375**	**(s)**	**3**	**925**
2022 January	67	R86	4	R157	46	R29	1	34	(s)	(s)	R111
February	76	R69	(s)	R144	52	R24	(s)	33	(s)	1	R110
March	54	R56	(s)	R110	38	R21	(s)	38	(s)	(s)	R97
April	35	R41	(s)	R76	24	R16	(s)	36	(s)	(s)	R77
May	30	24	1	R56	21	R12	(s)	39	(s)	(s)	R72
June	26	R17	(s)	R43	18	10	(s)	37	(s)	(s)	R65
July	18	15	(s)	R34	12	R9	(s)	37	(s)	(s)	60
August	15	15	(s)	R31	11	10	(s)	39	0	(s)	R59
September	26	R18	(s)	R45	18	R10	(s)	36	(s)	(s)	R65
October	35	R35	(s)	R70	25	R15	(s)	37	0	(s)	R77
November	40	R54	1	R95	28	R20	(s)	36	(s)	(s)	R85
December	56	R75	1	R132	39	R26	(s)	36	(s)	(s)	R102
Total	**479**	**R504**	**8**	**R992**	**332**	**R202**	**1**	**440**	**(s)**	**3**	**R979**
2023 January	66	R73	5	R143	R45	R25	1	35	(s)	(s)	R107
February	R74	R64	2	R140	R51	R22	(s)	33	(s)	(s)	R108
March	R53	R62	(s)	R116	37	R22	(s)	38	(s)	(s)	R98
April	35	R38	1	R74	24	R15	(s)	37	0	(s)	R77
May	30	R26	2	R58	21	R12	(s)	39	0	(s)	R72
June	R25	17	1	43	18	10	(s)	38	0	(s)	R66
July	18	R15	2	34	12	R9	(s)	38	0	(s)	R60
August	15	R15	(s)	30	R10	R9	(s)	39	0	(s)	R59
September	26	R18	1	R44	18	10	(s)	36	0	(s)	R64
October	35	R31	1	R67	24	R14	(s)	39	0	(s)	R77
November	40	R55	(s)	R95	R27	R20	(s)	36	0	(s)	R84
December	55	R65	3	R122	38	R23	(s)	37	(s)	(s)	R99
Total	**R470**	**R478**	**18**	**R966**	**R326**	**R191**	**3**	**447**	**(s)**	**3**	**R969**
2024 January	66	83	2	150	45	28	(s)	35	(s)	(s)	109

[a] Commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Hydrocarbon gas liquids.

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

[d] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

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

Notes: • Data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report*, sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Table 3.8b Heat Content of Petroleum Consumption: Industrial Sector

(Trillion Btu)

	Industrial Sector[a]												
			Hydrocarbon Gas Liquids										
			Propane/Propylene										
	Asphalt and Road Oil	Distillate Fuel Oil	Propane	Propylene	Total[b]	Total[c]	Kerosene	Lubricants	Motor Gasoline[d,e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
1950 Total	**435**	**698**	**17**	**18**	**34**	**138**	**274**	**94**	**251**	**90**	**1,416**	**546**	**3,943**
1955 Total	**615**	**991**	**83**	**30**	**113**	**293**	**241**	**103**	**332**	**147**	**1,573**	**798**	**5,093**
1960 Total	**734**	**1,016**	**137**	**47**	**184**	**461**	**161**	**107**	**381**	**328**	**1,584**	**947**	**5,720**
1965 Total	**890**	**1,150**	**213**	**63**	**276**	**649**	**165**	**137**	**342**	**444**	**1,582**	**1,390**	**6,750**
1970 Total	**1,082**	**1,226**	**282**	**77**	**359**	**930**	**185**	**155**	**288**	**446**	**1,624**	**1,817**	**7,754**
1975 Total	**1,014**	**1,339**	**339**	**84**	**423**	**1,126**	**119**	**149**	**223**	**540**	**1,509**	**2,071**	**8,092**
1980 Total	**962**	**1,324**	**625**	**100**	**726**	**1,718**	**181**	**182**	**158**	**516**	**1,349**	**3,073**	**9,464**
1985 Total	**1,029**	**1,119**	**696**	**101**	**798**	**1,813**	**44**	**166**	**218**	**575**	**748**	**1,945**	**7,656**
1990 Total	**1,170**	**1,150**	**660**	**147**	**807**	**1,781**	**12**	**186**	**185**	**714**	**411**	**2,589**	**8,200**
1995 Total	**1,178**	**1,130**	**794**	**220**	**1,014**	**2,269**	**15**	**178**	**200**	**721**	**337**	**2,499**	**8,527**
2000 Total	**1,276**	**1,199**	**703**	**315**	**1,017**	**2,498**	**16**	**190**	**150**	**796**	**241**	**2,636**	**9,001**
2005 Total	**1,323**	**1,262**	**709**	**341**	**1,050**	**2,138**	**39**	**160**	**354**	**894**	**281**	**3,122**	**9,574**
2010 Total	**878**	**1,153**	**520**	**428**	**947**	**2,207**	**7**	**136**	**260**	**694**	**120**	**2,645**	**8,099**
2011 Total	**859**	**1,236**	**554**	**434**	**988**	**2,172**	**4**	**127**	**254**	**663**	**135**	**2,621**	**8,071**
2012 Total	**827**	**1,271**	**677**	**432**	**1,109**	**2,351**	**2**	**118**	**252**	**717**	**70**	**2,474**	**8,082**
2013 Total	**783**	**1,266**	**737**	**429**	**1,165**	**2,545**	**1**	**125**	**263**	**663**	**48**	**2,583**	**8,278**
2014 Total	**793**	**1,366**	**562**	**417**	**978**	**2,409**	**3**	**131**	**210**	**653**	**41**	**2,430**	**8,035**
2015 Total	**832**	**1,170**	**609**	**413**	**1,022**	**2,618**	**2**	**142**	[e] **258**	**663**	**34**	**2,435**	**8,153**
2016 Total	**853**	**1,157**	**579**	**423**	**1,002**	**2,592**	**2**	**135**	**262**	**653**	**52**	**2,553**	**8,261**
2017 Total	**849**	**1,205**	**527**	**432**	**959**	**2,673**	**1**	**125**	**264**	**610**	**50**	**2,667**	**8,446**
2018 Total	**793**	**1,254**	**550**	**436**	**985**	**3,024**	**2**	**122**	**269**	**629**	**43**	**2,630**	**8,766**
2019 Total	**844**	**1,206**	**459**	**418**	**877**	**3,139**	**1**	**118**	**267**	**602**	**41**	**2,585**	**8,803**
2020 Total	**832**	**1,068**	**454**	**390**	**843**	**3,252**	**3**	**111**	**269**	**495**	**32**	**2,433**	**8,495**
2021 Total	**898**	**1,186**	**451**	**427**	**878**	**3,519**	**1**	**113**	**264**	**515**	**46**	**2,360**	**8,904**
2022 January	50	124	39	35	R 74	290	1	R 11	21	39	3	176	R 714
February	49	111	R 40	31	R 71	R 248	(s)	9	21	32	3	158	R 632
March	56	123	35	36	R 71	R 285	(s)	R 12	24	42	5	184	R 730
April	67	98	20	35	55	255	(s)	11	23	37	4	183	R 676
May	83	87	27	35	62	261	(s)	10	24	31	4	191	690
June	98	95	38	32	70	R 283	(s)	8	23	35	4	186	732
July	96	66	47	34	82	305	(s)	4	23	65	4	199	763
August	105	92	41	33	R 75	274	(s)	12	24	48	4	196	755
September	94	111	57	30	87	276	(s)	R 8	23	43	5	182	R 742
October	93	116	R 39	28	67	270	(s)	R 11	23	29	4	185	732
November	73	111	39	28	R 66	260	(s)	R 9	23	50	4	176	706
December	53	66	R 29	28	R 57	R 234	(s)	R 9	23	35	4	180	R 603
Total	**916**	**1,199**	**R 452**	**386**	**R 838**	**R 3,240**	**1**	**R 115**	**276**	**485**	**47**	**2,196**	**R 8,475**
2023 January	48	R 111	32	31	63	255	1	R 10	22	19	4	181	R 650
February	44	R 83	R 26	26	R 52	R 220	(s)	9	21	34	4	155	R 571
March	53	R 121	11	30	41	R 245	(s)	5	24	53	3	176	R 681
April	65	R 96	26	31	57	265	(s)	7	23	54	2	187	R 700
May	84	R 100	23	33	56	289	(s)	9	24	39	3	196	R 744
June	94	R 92	45	31	76	298	(s)	8	24	30	3	183	R 732
July	95	R 66	43	32	75	311	(s)	R 8	24	19	3	199	R 725
August	105	R 121	53	32	85	291	(s)	7	25	52	4	191	R 795
September	95	R 100	45	30	75	277	(s)	7	23	65	3	179	R 748
October	93	R 112	61	28	89	311	(s)	R 8	24	43	3	174	R 768
November	66	R 112	R 34	32	67	R 300	(s)	5	23	76	4	178	R 763
December	52	R 63	29	37	66	R 319	(s)	3	24	25	4	182	R 673
Total	**893**	**R 1,176**	**R 427**	**374**	**R 801**	**R 3,382**	**2**	**R 86**	**281**	**512**	**39**	**2,180**	**R 8,552**
2024 January	47	105	41	31	73	290	(s)	8	22	35	4	173	685

[a] Industrial sector fuel use, including that at industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[b] Propane and propylene. Through 1983, also includes 40% of "Butane-Propane Mixtures" and 30% of "Ethane-Propane Mixtures."

[c] Ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream. Through 2021, also includes natural gasoline (pentanes plus).

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

[e] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils (through 2021), 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.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report*, sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Table 3.8c Heat Content of Petroleum Consumption: Transportation and Electric Power Sectors (Trillion Btu)

	Transportation Sector									Electric Power Sector[a]			
	Aviation Gasoline	Distillate Fuel Oil[c]	HGL[b] Propane[d]	Jet Fuel[e]	Lubricants	Motor Gasoline[f,g]	Residual Fuel Oil	Other[h]	Total	Distillate Fuel Oil[i]	Petroleum Coke	Residual Fuel Oil[j]	Total
1950 Total	199	480	3	(e)	141	4,664	1,201	NA	6,690	32	NA	440	472
1955 Total	354	791	13	301	155	6,175	1,009	NA	8,799	32	NA	439	471
1960 Total	298	892	19	739	152	7,183	844	NA	10,125	22	NA	530	553
1965 Total	222	1,093	32	1,215	149	8,386	770	NA	11,866	29	NA	693	722
1970 Total	100	1,569	44	1,973	147	10,716	761	NA	15,311	141	19	1,958	2,117
1975 Total	71	2,121	43	2,029	155	12,485	711	NA	17,615	226	2	2,937	3,166
1980 Total	64	2,795	18	2,179	172	12,383	1,398	NA	19,009	169	5	2,459	2,634
1985 Total	50	3,170	30	2,497	156	12,784	786	NA	19,472	85	7	998	1,090
1990 Total	45	3,661	23	3,129	176	13,575	1,016	NA	21,626	97	30	1,163	1,289
1995 Total	40	4,191	18	3,132	168	14,576	911	NA	23,036	108	81	566	755
2000 Total	36	5,159	12	3,580	179	15,933	888	NA	25,787	175	99	871	1,144
2005 Total	35	6,068	28	3,475	151	16,958	837	NA	27,553	114	231	876	1,222
2010 Total	27	5,826	[d]5	2,963	155	16,320	892	(h)	26,187	80	137	154	370
2011 Total	27	5,997	5	2,950	148	15,877	776	(h)	25,780	64	138	93	295
2012 Total	25	5,736	5	2,901	135	15,795	671	(h)	25,268	52	85	77	214
2013 Total	22	5,894	6	2,969	143	16,030	581	(h)	25,645	55	123	77	255
2014 Total	22	6,154	8	3,042	149	16,209	447	(h)	26,030	82	118	95	295
2015 Total	21	6,251	10	3,204	163	[g]16,308	463	(h)	26,420	70	112	94	276
2016 Total	20	6,197	12	3,350	154	16,601	623	(h)	26,958	55	118	71	244
2017 Total	21	6,248	12	3,481	142	16,576	665	(h)	27,146	55	97	66	218
2018 Total	22	6,550	13	3,533	137	16,573	604	(h)	27,432	81	101	78	260
2019 Total	23	6,567	12	3,608	131	16,531	529	(h)	27,402	54	76	59	189
2020 Total	20	6,179	9	2,234	116	14,243	391	(h)	23,191	44	87	53	184
2021 Total	22	6,309	10	2,835	119	15,611	615	263	25,783	60	88	57	205
2022 January	1	R 486	1	249	R 13	1,206	41	21	2,018	15	7	15	37
February	2	459	1	225	10	1,169	48	21	1,936	6	7	5	19
March	2	528	1	267	R 14	1,347	62	26	2,247	5	6	5	16
April	2	526	1	263	R 12	1,274	41	27	R 2,145	4	6	4	14
May	1	549	1	280	11	1,364	54	26	2,287	5	7	4	16
June	3	556	1	287	9	1,314	52	33	R 2,254	5	8	4	17
July	1	563	1	282	R 5	1,318	51	28	R 2,249	5	6	6	17
August	3	581	1	291	13	1,364	64	31	R 2,348	5	7	5	17
September	2	548	1	261	R 10	1,281	77	28	2,206	4	8	5	17
October	2	564	1	274	13	1,318	45	33	R 2,249	4	7	6	17
November	2	519	1	270	10	1,278	58	31	2,169	4	7	5	16
December	2	497	1	280	10	1,286	38	31	2,145	21	8	11	41
Total	**22**	**6,377**	R **11**	**3,228**	R **130**	**15,519**	**630**	**336**	R **26,254**	**83**	**85**	**76**	**244**
2023 January	1	R 471	1	265	R 12	1,239	45	35	R 2,069	4	5	5	14
February	1	R 436	1	241	10	1,178	53	32	R 1,952	4	4	7	16
March	2	R 518	1	282	R 6	1,348	39	40	R 2,236	4	3	5	13
April	1	R 516	1	275	8	1,303	26	38	R 2,168	4	3	5	12
May	2	R 547	1	294	R 10	1,362	36	53	R 2,305	4	3	5	R 12
June	2	R 545	1	295	9	1,343	41	49	R 2,286	4	4	5	13
July	2	R 553	1	311	9	1,349	42	43	R 2,310	4	7	6	17
August	2	R 588	1	301	7	1,391	54	49	R 2,394	4	7	5	17
September	1	R 532	1	288	8	1,279	33	50	R 2,191	3	6	6	16
October	3	R 552	1	297	9	1,361	43	47	R 2,312	4	4	6	13
November	1	R 511	1	275	5	1,281	58	41	R 2,173	4	3	5	12
December	1	R 486	1	294	4	1,323	53	53	R 2,216	5	4	5	13
Total	**21**	R **6,256**	R **11**	**3,418**	R **97**	**15,755**	**524**	**532**	R **26,614**	R **48**	**53**	**66**	R **167**
2024 January	1	467	1	270	8	1,232	41	45	2,067	9	4	7	19

[a] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[b] Hydrocarbon gas liquids.

[c] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil. For 2011–2020, also includes biodiesel adjustments (supply of biodiesel not reported as input on surveys) reclassified as distillate fuel oil adjustments.

[d] There is a discontinuity in this time series between 2009 and 2010 due to a change in data sources.

[e] Beginning in 1957, includes kerosene-type jet fuel. For 1952–2004, also includes naphtha-type jet fuel. (Through 1951, naphtha-type jet fuel is included in the products from which it was blended—gasoline, kerosene, and distillate fuel oil. Beginning in 2005, naphtha-type jet fuel is included in "Other" on Table 3.8b.)

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

[g] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of motor gasoline consumption are larger than in 2014, while the transportation sector share is smaller.

[h] Biofuels (excluding fuel ethanol) products supplied. Includes supply of non-fuel ethanol biofuels (such as B100 biodiesel and R100 renewable diesel fuel) not reported as input on surveys. For 2009–2020, data in this category were classified as biofuels (excluding fuel ethanol) adjustments.

[i] 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.

[j] Fuel oil nos. 5 and 6. Through 1979, data are for steam plant use of petroleum. Through 2000, electric utility data also include a small amount of fuel oil no. 4.

R=Revised. NA=Not available.

Notes: • Transportation sector data are estimates. • For total heat content of petroleum consumption by all sectors, see data for heat content of petroleum products supplied in Table 3.6. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft. See Note 1, "Petroleum Products Supplied and Petroleum Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Due to the suspension of Form EIA-782A, *Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report*, sectoral distillate and residual fuel oil consumption after April 2022 are estimates.

Note 1. Petroleum Products Supplied and Petroleum Consumption. Total petroleum products supplied is the sum of the products supplied for each petroleum product, crude oil, unfinished oils, and gasoline blending components. This also includes petroleum products supplied for non-combustion use in the industrial and transportation sectors (see Tables 1.12a and 1.12b). In general, except for crude oil, product supplied of each product is computed as follows: field production, plus transfers to crude oil supply, plus biofuels plant net production, plus refinery and blender net production, plus imports, plus net receipts, plus adjustments, minus stock change, minus refinery and blender net inputs, minus exports. Crude oil product supplied is the sum of crude oil burned on leases and at pipeline pump stations as reported on Form EIA-813, "Monthly Crude Oil Report." Prior to 1983, crude oil burned on leases and used at pipeline pump stations was reported as either distillate or residual fuel oil and was included as product supplied for these products. Petroleum product supplied (see Tables 3.5 and 3.6) is an approximation of petroleum consumption and is synonymous with the term "Petroleum Consumption" in Tables 3.7a–3.8c.

Note 2. Petroleum Survey Respondents. The U.S. Energy Information Administration (EIA) uses a number of sources and methods to maintain the survey respondent lists. On a regular basis, survey managers review such industry publications as the *Oil & Gas Journal* and *Oil Daily* for information on facilities or companies starting up or closing down operations. Those sources are augmented by articles in newspapers, communications from respondents indicating changes in status, and information received from survey systems.

To supplement routine frames maintenance and to provide more thorough coverage, a comprehensive frames investigation is conducted every 3 years. This investigation results in the reassessment and recompilation of the complete frame for each survey. The effort also includes the evaluation of the impact of potential frame changes on the historical time series of data from these respondents. The results of this frame study are usually implemented in January to provide a full year under the same frame.

Note 3. Historical Petroleum Data. Detailed information on petroleum data through 1993 can be found in Notes 1–6 on pages 60 and 61 in the July 2013 *Monthly Energy Review* (MER) at http://www.eia.gov/totalenergy/data/monthly/archive/00351307.pdf. The notes discuss:

Note 1, "Petroleum Survey Respondents": In 1993, EIA added numerous companies that produce, blend, store, or import oxygenates to the monthly surveys.

Note 2, "Motor Gasoline": In 1981, EIA expanded its universe to include nonrefinery blenders and separated blending components from finished motor gasoline as a reporting category. In 1993, EIA made adjustments to finished motor gasoline product supplied data to more accurately account for fuel ethanol and motor gasoline blending components blended into finished motor gasoline.

Note 3, "Distillate and Residual Fuel Oils": In 1981, EIA eliminated the requirement to report crude oil in pipelines or burned on leases as either distillate or residual fuel oil.

Note 4, "Petroleum New Stock Basis": In 1975, 1979, 1981, and 1983, EIA added numerous respondents to bulk terminal and pipeline surveys; in 1984, EIA made changes in the reporting of natural gas liquids; and in 1993, EIA changed how it collected bulk terminal and pipeline stocks of oxygenates. These changes affected stocks reported and stock change calculations.

Note 5, "Stocks of Alaskan Crude Oil": In 1981, EIA began to include data for stocks of Alaskan crude oil in transit.

Note 6, "Petroleum Data Discrepancies": In 1976, 1978, and 1979, there are some small discrepancies between data in the MER and the *Petroleum Supply Annual*.

Table 3.1 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports.

1976–1980: U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement*, *Annual*, annual reports.

1981–2001: EIA, *Petroleum Supply Annual* (PSA), annual reports.

2002 forward: EIA, PSA, annual reports, and revisions at https://www.eia.gov/petroleum/data.php#summary; *Petroleum Supply Monthly*, monthly reports, and revisions at https://www.eia.gov/petroleum/data.php#summary; revisions to crude oil production, total field production, and adjustments (based on crude oil production data from: Form EIA-914, "Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report"; state government agencies; U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, and predecessor agencies; and Form EIA-182, "Domestic Crude Oil First Purchase Report"); and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.2 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports; and U.S. Energy Information Administration (EIA) estimates. (For 1967–1975, refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Chemical Use"; and estimates for propane are equal to total propane/propylene minus propylene.)

1976–1980: EIA, Energy Data Reports, *Petroleum Statement, Annual,* annual reports, and estimates. (Refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Chemical Use"; and estimates for propane are equal to total propane/propylene minus propylene.)

1981–2022: EIA, *Petroleum Supply Annual*, annual reports, revisions at https://www.eia.gov/petroleum/data.php#summary, and estimates. (For 1981–1985, refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Petrochemical Use"; and estimates for propane are equal to total propane/propylene minus propylene. For 1986–1988, refinery and blender net production estimates for propylene are created using the 1989 annual propylene share of "Net Refinery Production of Propane/Propylene"; and estimates for propane are equal to total propane/propylene minus propylene.)

2023 and 2024: EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Table 3.5 Sources

1949–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement*, *Annual*, annual reports; and U.S. Energy Information Administration (EIA) estimates. (For 1949–1966, product supplied estimates for total propane/propylene are created using sales and shipments data from Bureau of Mines, Mineral Industry Surveys, *Sales of Liquefied Petroleum Gases and Ethane,* annual reports, and *Shipments of Liquefied Petroleum Gases and Ethane,* annual reports–annual growth rates of sales and shipments are applied to the 1967 total propane/propylene product supplied value to create historical annual estimates. For 1949–1966, product supplied estimates for propylene are created using the 1967 annual propylene share of total propane/propylene product supplied; and estimates for propane are equal to total propane/propylene minus propylene. For 1967–1975, product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene.)

1976–1980: EIA, Energy Data Reports, *Petroleum Statement, Annual,* annual reports, and estimates. (Product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene.)

1981–2022: EIA, *Petroleum Supply Annual*, annual reports, revisions at https://www.eia.gov/petroleum/data.php#summary, and estimates. (For 1981–1992, product supplied estimates for propylene are equal to propylene refinery and blender

net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene. For 1993–2009, product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2, plus propylene imports from Table 3.3b; and estimates for propane are equal to total propane/propylene minus propylene.)

2023 and 2024: EIA, *Petroleum Supply Monthly,* monthly reports, and revisions at https://www.eia.gov/petroleum/data.php#summary; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Table 3.6 Sources

Asphalt and Road Oil

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

Aviation Gasoline

Product supplied data in thousand barrels per day for aviation gasoline are from Table 3.5, and are converted to trillion Btu by multiplying by the aviation gasoline (finished) heat content factor in Table A1.

Distillate Fuel Oil

1949–2008: Product supplied data in thousand barrels per day for distillate fuel oil are from Table 3.5, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and "biomass-based diesel fuel" data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Refinery and blender net inputs data for renewable diesel fuel are set equal to "other renewable diesel fuel" data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the renewable diesel fuel heat content factor in Table A1). Product supplied data for distillate fuel oil from Table 3.5, minus consumption data for biodiesel and refinery and blender net inputs data for renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total distillate fuel oil product supplied is the sum of values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

2012–2020: Consumption data for biodiesel are from Table 10.4a. Refinery and blender net inputs data for renewable diesel fuel are set equal to "other renewable diesel fuel" data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the renewable diesel fuel heat content factor in Table A1). Product supplied data for distillate fuel oil from Table 3.5, minus consumption data for biodiesel and refinery and blender net inputs data for renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total distillate fuel oil product supplied is the sum of the values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

2021 forward: Refinery and blender net inputs data for biodiesel and renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, "Monthly Refinery Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel and renewable diesel fuel heat content factors in Table A1). Product supplied data for distillate fuel oil from Table 3.5, minus refinery and blender net inputs data for biodiesel and renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total distillate fuel oil product supplied is the sum of the values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

Hydrocarbon Gas Liquids (HGL)—Propane

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

Hydrocarbon Gas Liquids (HGL)—Propylene
Product supplied data in thousand barrels per day for propylene are from Table 3.5, and are converted to trillion Btu by multiplying by the propylene heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total
Prior to the current two months, total propane/propylene product supplied is the sum of the data in trillion Btu for propane and propylene.

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

Hydrocarbon Gas Liquids (HGL)—Total
Prior to the current two months, product supplied data in thousand barrels per day for the component products of HGL (ethane, propane, normal butane, isobutane, natural gasoline (through 2021), and refinery olefins—ethylene, propylene, butylene, and isobutylene) are from the PSA, PSM, and earlier publications (see sources for Table 3.5). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total HGL product supplied is the sum of the data in trillion Btu for the HGL component products.

For the current two months: Note that "liquefied petroleum gases" ("LPG") below include ethane, propane, normal butane, isobutane, and refinery olefins (ethylene, propylene, butylene, and isobutylene). Product supplied data in thousand barrels per day for LPG are from EIA's Short-Term Integrated Forecasting System (STIFS). (The STIFS model results are used in EIA's *Short-Term Energy Outlook*, which is accessible on the Web at https://www.eia.gov/outlooks/steo/.) These data are converted to trillion Btu by multiplying by the previous year's quantity-weighted LPG heat content factor (derived using LPG component heat content factors in Table A1). Total HGL product supplied is equal to the data in trillion Btu for LPG.

Jet Fuel
Product supplied data in thousand barrels per day for kerosene-type jet fuel and, through 2004, naphtha-type jet fuel are from the PSA, PSM, and earlier publications (see sources for Table 3.5). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total jet fuel product supplied is the sum of the data in trillion Btu for kerosene-type and naphtha-type jet fuel.

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

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

Motor Gasoline
Product supplied data in thousand barrels per day for motor gasoline are from Table 3.5, and are converted to trillion Btu by multiplying by the motor gasoline heat content factors in Table A3.

Petroleum Coke
Product supplied data in thousand barrels per day for petroleum coke are from Table 3.5, and are converted to trillion Btu by multiplying by the petroleum coke heat content factors in Table A3.

Residual Fuel Oil
Product supplied data in thousand barrels per day for residual fuel oil are from Table 3.5, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Other Products
Prior to the current two months, product supplied data in thousand barrels per day for "other" products are from the PSA, PSM, and earlier publications (see sources for Table 3.5). "Other" products include petrochemical feedstocks,

special naphthas, still gas (refinery gas), waxes, and miscellaneous products; beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components; beginning in 1983, also includes crude oil burned as fuel; beginning in 2005, also includes naphtha-type jet fuel; and beginning in 2021, also includes biofuels excluding fuel ethanol (biodiesel, renewable diesel fuel, and other biofuels). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in MER Table A1. Total "Other" products supplied is the sum of the data in trillion Btu for the individual products.

For the current two months, total "Other" products supplied is calculated by first estimating total petroleum products supplied (product supplied data in thousand barrels per day for total petroleum from Table 3.5 are converted to trillion Btu by multiplying by the total petroleum consumption heat content factor in Table A3), and then subtracting data in trillion Btu (from Table 3.6) for asphalt and road oil, aviation gasoline, distillate fuel oil, jet fuel, kerosene, total HGL, lubricants, motor gasoline, petroleum coke, and residual fuel oil.

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.

1981–2022: EIA, *Petroleum Supply Annual* (PSA), annual reports, and revisions at https://www.eia.gov/petroleum/data.php#summary.

2023 and 2024: EIA, *Petroleum Supply Monthly* (PSM), monthly reports, and revisions at https://www.eia.gov/petroleum/data.php#summary.

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.

Biofuels Excluding Fuel Ethanol

Beginning in 2021, biofuels excluding fuel ethanol consumption is assigned to the transportation sector. Biofuels excluding fuel ethanol consumption consists of products supplied of biodiesel, renewable diesel fuel, and other biofuels.

Distillate Fuel Oil

Distillate fuel oil consumption is assigned to the sectors as follows:

Distillate Fuel Oil, Electric Power Sector

See sources for Table 7.4b. For 1973–1979, electric utility consumption of distillate fuel oil is assumed to be the amount of petroleum (minus small amounts of kerosene and kerosene-type jet fuel deliveries) consumed in gas turbine and internal combustion plants. For 1980–2000, electric utility consumption of distillate fuel oil is assumed to be the amount of light oil (fuel oil nos. 1 and 2, plus small amounts of kerosene and jet fuel) consumed.

Distillate Fuel Oil, End-Use Sectors, Annual Data

The aggregate end-use amount is total distillate fuel oil product supplied minus the amount consumed by the electric power sector. Through 2020, 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), annual reports.

1973–1978: 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 (including farm) portion is added to sales for oil company, off-highway diesel, and all other uses. The transportation sector sales total is the sum of sales for railroad, vessel bunkering, on-highway diesel, and military uses.

1979–2020: The residential sector and commercial sector sales totals are directly from the Sales reports. The industrial sector sales total is the sum of sales for industrial, farm, oil company, off-highway diesel, and all other uses. The transportation sector sales total is the sum of sales for railroad, vessel bunkering, on-highway diesel, and military uses.

2021 forward: 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 consumption as reported in EIA's State Energy Data System (SEDS). Shares for the current year are based on the most recent data year in SEDS.

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. (Note that beginning in May 2022, residential sector and commercial sector consumption estimates for each month are based on the previous year's monthly percent increase in No. 2 heating oil sales.)

The transportation highway use portion is allocated into the months in proportion to each month's share of the year's total sales for highway use as reported by the Federal Highway Administration's Table MF-25, "Private and Commercial Highway Use of Special Fuels by Months." Beginning in 1994, the sales-for-highway-use data are no longer available as a monthly series; the 1993 data are used for allocating succeeding year's totals into months.

A distillate fuel oil "balance" is calculated as total distillate fuel oil product supplied minus the amount consumed by the electric power sector, residential sector, commercial sector, and for highway use.

Industrial sector monthly consumption is estimated by multiplying each month's distillate fuel oil "balance" by the annual industrial consumption share of the annual distillate fuel oil "balance."

Total transportation sector monthly consumption is estimated as total distillate fuel oil product supplied minus the amount consumed by the residential, commercial, industrial, and electric power sectors.

Hydrocarbon Gas Liquids (HGL)—Propane

Annual residential sector propane consumption: Through 2002, annual residential sector propane consumption is estimated by applying the average of the state residential shares for 2003–2008 to the combined residential and

commercial propane sales. Beginning in 2003, annual residential sector propane consumption is assumed to equal propane retail sales to the residential sector and sales to retailers/cylinder markets.

Monthly residential sector propane consumption: Beginning in 1973, annual residential sector propane consumption is split into the estimated portion for residential space heating and water heating, and the estimated portion for all other residential uses. The annual values in thousand barrels for residential space heating and water heating are allocated to the months in proportion to U.S. heating degree days in Table 1.10. The annual values in thousand barrels for all other residential uses are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month. Monthly total residential sector propane consumption is the sum of the monthly values for residential space heating and water heating and for all other residential uses.

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

Monthly commercial sector propane consumption: Beginning in 1973, annual commercial sector propane consumption is split into the estimated portion for commercial space heating and water heating, and the estimated portion for all other commercial uses. The annual values in thousand barrels for commercial space heating and water heating are allocated to the months in proportion to U.S. heating degree days in Table 1.10. The annual values in thousand barrels for all other commercial uses are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month. Monthly total commercial sector propane consumption is the sum of the monthly values for commercial space heating and water heating and for all other commercial uses.

Annual transportation sector propane consumption: Through 2009, annual transportation sector propane consumption is assumed to equal the transportation portion of propane sales for internal combustion engines (these sales are allocated between the transportation and industrial sectors using data for special fuels used on highways provided by the U.S. Department of Transportation, Federal Highway Administration). Beginning in 2010, annual transportation sector propane consumption is from EIA, *Annual Energy Outlook,* Table 37, “Transportation Sector Energy Use by Fuel Type within a Mode.”

Monthly transportation sector propane consumption: Beginning in 1973, the annual values in thousand barrels for transportation sector propane consumption are allocated to the months by dividing the annual values by the number of days in the year and then multiplying by the number of days in the month.

Annual and monthly industrial sector propane consumption: Industrial sector propane consumption is estimated as the difference between propane total product supplied from Table 3.5 and the sum of the estimated propane consumption by the residential, commercial, and transportation sectors.

Sources of the annual consumption estimates for creating annual sector shares are:

1973–1982: EIA's "Sales of Liquefied Petroleum Gases and Ethane" reports, based primarily on data collected by Form EIA-174, "Sales of Liquefied Petroleum Gases."

1983: End-use consumption estimates for 1983 are based on 1982 end-use consumption because the collection of data under Form EIA-174 was discontinued after data year 1982.

1984–2007: American Petroleum Institute (API), "Sales of Natural Gas Liquids and Liquefied Refinery Gases," table on sales of natural gas liquids and liquefied refinery gases by end use. EIA adjusts the data to remove quantities of natural gasoline and to estimate withheld values.

2008 and 2009: Propane consumption is from API, “Sales of Natural Gas Liquids and Liquefied Refinery Gases,” table on sales of propane by end use. EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

2010–2016: Propane consumption is from API, “Sales of Natural Gas Liquids and Liquefied Refinery Gases,” table on sales of odorized propane by end use; and EIA, *Annual Energy Outlook*, Table 37, “Transportation Sector Energy Use by Fuel Type Within a Mode.” EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

2017 forward: Propane consumption is from Propane Education & Research Council, “Retail Propane Sales Report,” data on propane sales by sector; and EIA, *Annual Energy Outlook,* Table 37, “Transportation Sector Energy Use by Fuel Type Within a Mode.” EIA adjusts the data to estimate withheld values. Other LPG consumption is from EIA, PSA, annual reports, and is allocated to the industrial sector.

Hydrocarbon Gas Liquids (HGL)—Propylene

Industrial sector propylene consumption is equal to propylene product supplied in Table 3.5.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total

Industrial sector total propane/propylene consumption is the sum of the industrial sector consumption values for propane and propylene.

Hydrocarbon Gas Liquids (HGL)—Total

The residential, commercial, and transportation sector total HGL consumption values are equal to the propane consumption values for those sectors. The industrial sector total HGL consumption value is equal to total HGL product supplied in Table 3.5 minus propane consumption in the residential, commercial, and transportation sectors.

Jet Fuel

Through 1982, small amounts of kerosene-type jet fuel were consumed by the electric power sector. Kerosene-type jet fuel deliveries to the electric power sector as reported on Form FERC-423 (formerly Form FPC-423) were used as estimates of this consumption. Through 2004, all remaining jet fuel (kerosene-type and naphtha-type) is assigned to the transportation sector. Beginning in 2005, kerosene-type jet fuel is assigned to the transportation sector, while naphtha-type jet fuel is classified under "Other Petroleum Products," which is assigned to the industrial sector. (Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.)

Kerosene

Through 2020, 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), annual reports.

1973–1978: Each year's sales category called "heating" is allocated to the residential, commercial, and industrial (including farm) sectors in proportion to the 1979 shares; and this estimated industrial (including farm) portion is added to sales for all other uses.

1979–2020: The residential sector and commercial sector sales totals are directly from the Sales reports. The industrial sector sales total is the sum of sales for industrial, farm, and all other uses.

2021 forward: Kerosene product supplied is allocated to the individual end-use sectors (residential, commercial, and industrial) in proportion to each sector’s share of consumption as reported in EIA’s State Energy Data System (SEDS). Shares for the current year are based on the most recent data year in SEDS.

Lubricants

1973–2009: The consumption of lubricants is allocated to the industrial and transportation sectors for all months according to proportions developed from annual sales of lubricants to the two sectors from U.S. Department of Commerce, U.S. Census Bureau, *Current Industrial Reports*, "Sales of Lubricating and Industrial Oils and Greases." The 1973 shares are applied to 1973 and 1974; the 1975 shares are applied to 1975 and 1976; and the 1977 shares are applied to 1977 through 2009.

2010 forward: The consumption of lubricants in the industrial sector is estimated by EIA based on Kline & Company data on finished lubricant demand for industrial (less marine and railroad) use. The consumption of lubricants in the transportation sector is estimated by EIA based on Kline & Company data on finished lubricant demand for consumer total, commercial total, marine, and railroad use. Estimates for lubricant consumption from 2010 forward are not compatible with data before 2010.

Motor Gasoline

The total monthly consumption of motor gasoline is allocated to the sectors in proportion to aggregations of annual sales categories created on the basis of the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Tables MF-21, MF-24, and MF-25, as follows:

Through 2014, commercial sales are the sum of sales for public non-highway use and miscellaneous use. Beginning in 2015, commercial sales are the sum of sales for public non-highway use, lawn and garden use, and miscellaneous use.

For all years, industrial sales are the sum of sales for agriculture, construction, and "industrial and commercial" use (as classified in the *Highway Statistics*).

Through 2014, transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for marine use. Beginning in 2015, transportation sales are the sum of sales for highway use (minus the sales of special fuels, which are primarily diesel fuel and are accounted for in the transportation sector of distillate fuel) and sales for boating use and recreational vehicle use.

Petroleum Coke

Portions of petroleum coke are consumed by the electric power sector (see sources for Table 7.4b) and the commercial sector (see sources for Table 7.4c). The remaining petroleum coke is assigned to the industrial sector.

Residual Fuel Oil

Residual fuel oil consumption is assigned to the sectors as follows:

Residual Fuel Oil, Electric Power Sector

See sources for Table 7.4b. For 1973–1979, electric utility consumption of residual fuel oil is assumed to be the amount of petroleum consumed in steam-electric power plants. For 1980–2000, electric utility consumption of residual fuel oil is assumed to be the amount of heavy oil (fuel oil nos. 4, 5, and 6) consumed.

Residual Fuel Oil, End-Use Sectors, Annual Data

The aggregate end-use amount is total residual fuel oil product supplied minus the amount consumed by the electric power sector. Through 2020, 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), annual reports.

1973–1978: 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 this estimated industrial portion is added to sales for oil company and all other uses. Transportation sector sales are the sum of sales for railroad, vessel bunkering, and military uses.

1979–2020: Commercial sector sales are directly from the Sales reports. Industrial sector sales are the sum of sales for industrial, oil company, and all other uses. Transportation sector sales are the sum of sales for railroad, vessel bunkering, and military uses.

2021 forward: 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 consumption as reported in EIA’s State Energy Data System (SEDS). Shares for the current year are based on the most recent data year in SEDS.

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. (Note that beginning in May 2022, commercial sector consumption estimates for each month are based on the previous year's monthly percent increase in No. 2 heating oil sales.)

A residual fuel oil "balance" is calculated as total residual fuel oil product supplied minus the amount consumed by the electric power sector, commercial sector, and by industrial combined-heat-and-power plants (see sources for Table 7.4c).

Transportation sector monthly consumption is estimated by multiplying each month's residual fuel oil "balance" by the annual transportation consumption share of the annual residual fuel oil "balance."

Total industrial sector monthly consumption is estimated as total residual fuel oil product supplied minus the amount consumed by the commercial, transportation, and electric power sectors.

Other Products

Consumption of biofuels excluding fuel ethanol is assigned to the transportation sector. Consumption of all remaining products, which include petrochemical feedstocks, special naphthas, still gas (refinery gas), waxes, and miscellaneous products, is assigned to the industrial sector. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

Table 3.8a Sources

Distillate Fuel Oil

Residential and commercial sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7a, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Hydrocarbon Gas Liquids (HGL)—Propane

Residential and commercial sector consumption data in thousand barrels per day for propane are from Table 3.7a, and are converted to trillion Btu by multiplying by the propane heat content factor in Table A1. The residential and commercial sector total HGL consumption values are equal to the propane consumption values for those sectors.

Kerosene

Residential and commercial sector consumption data in thousand barrels per day for kerosene are from Table 3.7a, and are converted to trillion Btu by multiplying by the kerosene heat content factor in Table A1.

Motor Gasoline

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

Petroleum Coke

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

2004 forward: Commercial sector consumption data in thousand barrels per day for petroleum coke are from Table 3.7a, and are converted to trillion Btu by multiplying by the marketable petroleum coke heat content factor in Table A1.

Residual Fuel Oil
Commercial sector consumption data in thousand barrels per day for residual fuel oil are from Table 3.7a, and are converted to trillion Btu by multiplying by the residual fuel oil heat content factor in Table A1.

Total Petroleum
Residential sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Residential Sector" in Table 3.8a. Commercial sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown under "Commercial Sector" in Table 3.8a.

Table 3.8b Sources

Asphalt and Road Oil
Industrial sector consumption data in thousand barrels per day for asphalt and road oil are from Table 3.7b, and are converted to trillion Btu by multiplying by the asphalt and road oil heat content factor in Table A1.

Distillate Fuel Oil
Industrial sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7b, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Hydrocarbon Gas Liquids (HGL)—Propane
Industrial sector propane consumption data are calculated by subtracting propane consumption data in trillion Btu for the residential (Table 3.8a), commercial (Table 3.8a), and transportation (Table 3.8c) sectors from total propane consumption (see sources for Table 3.6).

Hydrocarbon Gas Liquids (HGL)—Propylene
Product supplied data in thousand barrels per day for propylene are from Table 3.5, and are converted to trillion Btu by multiplying by the propylene heat content factor in Table A1.

Hydrocarbon Gas Liquids (HGL)—Propane/Propylene Total
Total industrial sector propane/propylene consumption is the sum of the data in trillion Btu for propane and propylene.

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

Kerosene
Industrial sector consumption data in thousand barrels per day for kerosene are from Table 3.7b, and are converted to trillion Btu by multiplying by the kerosene heat content factor in Table A1.

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

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

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.

Other Products
Industrial sector "Other" data are equal to the "Other" data in Table 3.6 minus transportation sector “Other” (biofuels excluding fuel ethanol) data (see sources for Table 3.8c).

Total Petroleum
Industrial sector total petroleum consumption is the sum of the data in trillion Btu for the petroleum products shown in Table 3.8b.

Table 3.8c Sources

Aviation Gasoline
Transportation sector consumption data in thousand barrels per day for aviation gasoline are from Table 3.7c, and are converted to trillion Btu by multiplying by the aviation gasoline (finished) heat content factor in Table A1.

Distillate Fuel Oil, Electric Power Sector
Electric power sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7c, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

Distillate Fuel Oil, Transportation Sector
1949–2008: Transportation sector consumption data in thousand barrels per day for distillate fuel oil are from Table 3.7c, and are converted to trillion Btu by multiplying by the distillate fuel oil heat content factors in Table A3.

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, “Monthly Biodiesel Production Survey”; and “biomass-based diesel fuel” data from EIA-810, “Monthly Refinery Report,” EIA-812, “Monthly Product Pipeline Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). Refinery and blender net inputs data for renewable diesel fuel are set equal to “other renewable diesel fuel” data from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the renewable diesel fuel heat content factor in Table A1). Transportation sector distillate fuel oil consumption data from Table 3.7c, minus consumption data for biodiesel and refinery and blender net inputs data for renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total transportation sector distillate fuel oil consumption is the sum of the values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

2012–2020: Consumption data for biodiesel are from Table 10.4a. Refinery and blender net inputs data for renewable diesel fuel are set equal to “other renewable diesel fuel” data from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the renewable diesel fuel heat content factor in Table A1). Transportation sector distillate fuel oil consumption data from Table 3.7c, minus consumption data for biodiesel and refinery and blender net inputs data for renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total transportation sector distillate fuel oil consumption is the sum of the values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

2021 forward: Refinery and blender net inputs data for biodiesel and renewable diesel fuel are set equal to refinery and blender net inputs data from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report” (the data are converted to Btu by multiplying by the biodiesel and renewable diesel fuel heat content factors in Table A1). Transportation sector distillate fuel oil consumption data from Table 3.7c, minus refinery and blender net inputs data for biodiesel and renewable diesel fuel, are converted to Btu by multiplying by the distillate fuel oil heat content factors in Table A3. Total transportation sector distillate fuel oil consumption is the sum of the values for distillate fuel oil (excluding biodiesel and renewable diesel fuel), biodiesel, and renewable diesel fuel.

Hydrocarbon Gas Liquids (HGL)—Propane
Transportation sector consumption data in thousand barrels per day for propane are from Table 3.7c, and are converted to trillion Btu by multiplying by the propane heat content factor in Table A1. The transportation sector total HGL consumption values are equal to the transportation sector propane consumption values.

Jet Fuel
Transportation sector consumption data in thousand barrels per day for kerosene-type jet fuel and, through 2004, naphtha-type jet fuel (see sources for Table 3.7c) are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total transportation sector jet fuel consumption is the sum of the data in trillion Btu for kerosene-type and naphtha-type jet fuel. (Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.)

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

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

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

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

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

Other Products
Beginning in 2021, transportation sector consumption data in thousand barrels per day for biofuels excluding fuel ethanol are from Table 3.7c, and are converted to trillion Btu by multiplying the fuel types (biodiesel, renewable diesel fuel, and other biofuels) by the appropriate heat content factors in Table A1.

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

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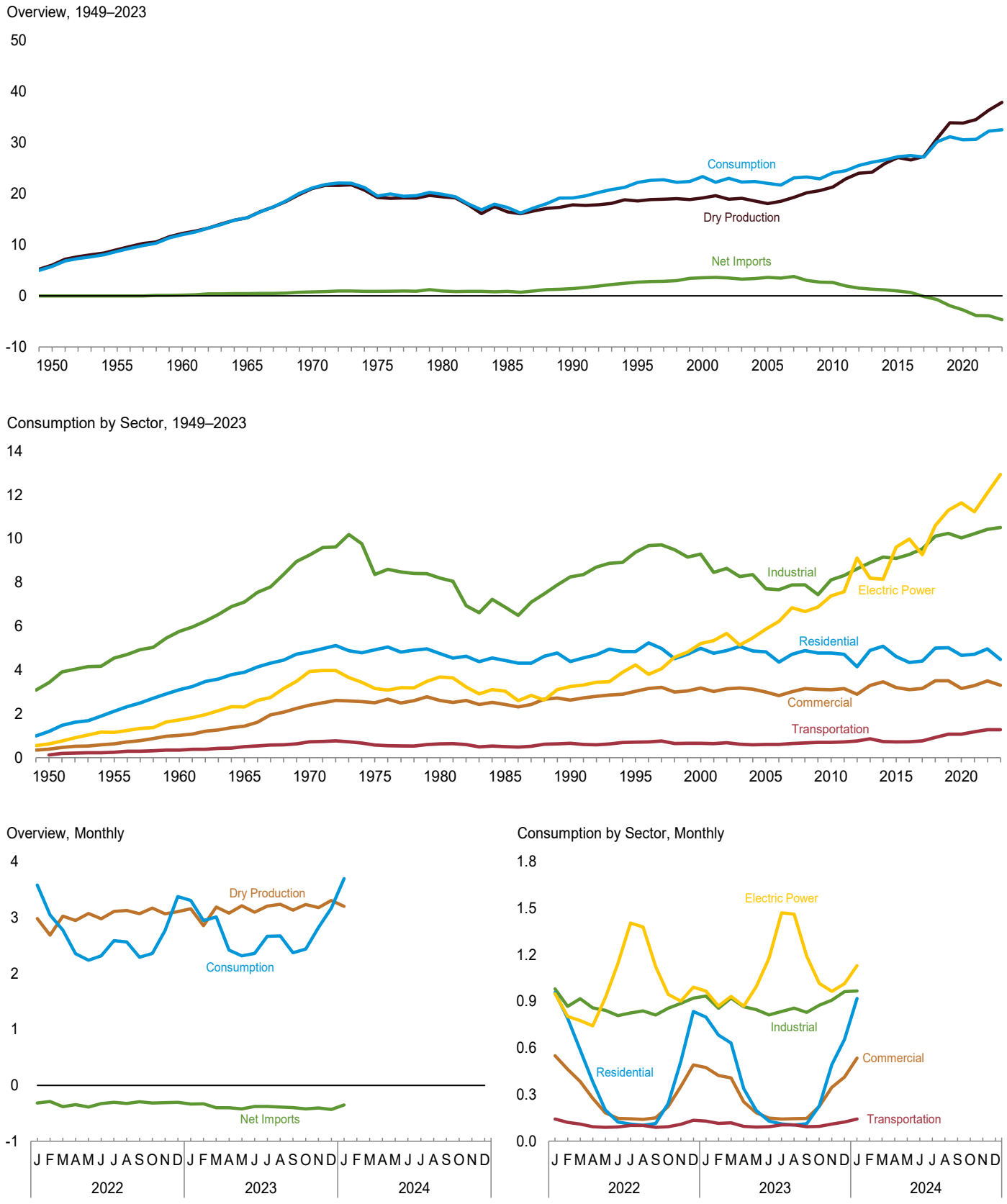
4. Natural Gas

Figure 4.1 Natural Gas

(Trillion Cubic Feet)



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

Table 4.1 Natural Gas Overview

(Billion Cubic Feet)

	Gross Withdrawals[a]	Marketed Production (Wet)[b]	NGPL Production[c]	Dry Gas Production[d]	Supplemental Gaseous Fuels[e]	Trade			Net Storage Withdrawals[f]	Balancing Item[g]	Consumption[h]
						Imports	Exports	Net Imports			
1950 Total	**8,480**	**[i] 6,282**	**260**	**[i] 6,022**	**NA**	**0**	**26**	**-26**	**-54**	**-175**	**5,767**
1955 Total	**11,720**	**[i] 9,405**	**377**	**[i] 9,029**	**NA**	**11**	**31**	**-20**	**-68**	**-247**	**8,694**
1960 Total	**15,088**	**[i] 12,771**	**543**	**[i] 12,228**	**NA**	**156**	**11**	**144**	**-132**	**-274**	**11,967**
1965 Total	**17,963**	**[i] 16,040**	**753**	**[i] 15,286**	**NA**	**456**	**26**	**430**	**-118**	**-319**	**15,280**
1970 Total	**23,786**	**[i] 21,921**	**906**	**[i] 21,014**	**NA**	**821**	**70**	**751**	**-398**	**-228**	**21,139**
1975 Total	**21,104**	**[i] 20,109**	**872**	**[i] 19,236**	**NA**	**953**	**73**	**880**	**-344**	**-235**	**19,538**
1980 Total	**21,870**	**20,180**	**777**	**19,403**	**155**	**985**	**49**	**936**	**23**	**-640**	**19,877**
1985 Total	**19,607**	**17,270**	**816**	**16,454**	**126**	**950**	**55**	**894**	**235**	**-428**	**17,281**
1990 Total	**21,523**	**18,594**	**784**	**17,810**	**123**	**1,532**	**86**	**1,447**	**-513**	**307**	**[i] 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**
2005 Total	**23,457**	**18,927**	**876**	**18,051**	**64**	**4,341**	**729**	**3,612**	**52**	**236**	**22,014**
2010 Total	**26,816**	**22,382**	**1,066**	**21,316**	**65**	**3,741**	**1,137**	**2,604**	**-13**	**115**	**24,087**
2011 Total	**28,479**	**24,036**	**1,134**	**22,902**	**60**	**3,469**	**1,506**	**1,963**	**-354**	**-94**	**24,477**
2012 Total	**29,542**	**25,283**	**1,250**	**24,033**	**61**	**3,138**	**1,619**	**1,519**	**-9**	**-66**	**25,538**
2013 Total	**29,523**	**25,562**	**1,357**	**24,206**	**55**	**2,883**	**1,572**	**1,311**	**546**	**38**	**26,155**
2014 Total	**31,405**	**27,498**	**1,608**	**25,890**	**60**	**2,695**	**1,514**	**1,181**	**-254**	**-283**	**26,593**
2015 Total	**32,915**	**28,772**	**1,707**	**27,065**	**59**	**2,718**	**1,784**	**935**	**-547**	**-268**	**27,244**
2016 Total	**32,592**	**28,400**	**1,808**	**26,592**	**57**	**3,006**	**2,335**	**671**	**340**	**-216**	**27,444**
2017 Total	**33,292**	**29,204**	**1,897**	**27,306**	**66**	**3,033**	**3,154**	**-121**	**254**	**-360**	**27,146**
2018 Total	**37,326**	**33,009**	**2,235**	**30,774**	**69**	**2,889**	**3,608**	**-719**	**314**	**-290**	**30,149**
2019 Total	**40,780**	**36,447**	**2,548**	**33,899**	**61**	**2,742**	**4,658**	**-1,916**	**-503**	**-397**	**31,143**
2020 Total	**40,730**	**36,521**	**2,710**	**33,811**	**63**	**2,551**	**5,285**	**-2,734**	**-180**	**-387**	**30,574**
2021 Total	**41,677**	**37,338**	**2,809**	**34,529**	**66**	**2,808**	**6,653**	**-3,845**	**83**	**-188**	**30,646**
2022 January	3,628	3,235	252	2,983	6	296	611	-315	1,013	-107	3,581
February	3,266	2,914	227	2,687	5	258	546	-288	673	-28	3,048
March	3,663	3,282	256	3,026	6	259	639	-380	171	-45	2,778
April	3,568	3,199	250	2,950	6	245	587	-342	-220	-38	2,355
May	3,695	3,332	260	3,072	6	231	617	-386	-412	-42	2,239
June	3,565	3,232	252	2,980	6	229	554	-325	-332	-14	2,315
July	3,736	3,375	263	3,112	6	257	560	-303	-187	-41	2,588
August	3,730	3,392	265	3,128	6	236	558	-322	-213	-34	2,564
September	3,669	3,330	260	3,071	6	234	526	-293	-446	-47	2,291
October	3,814	3,438	268	3,170	6	240	554	-315	-432	-69	2,360
November	3,712	3,327	259	3,067	6	246	554	-308	78	-78	2,766
December	3,755	3,370	263	3,107	6	293	597	-304	588	-22	3,375
Total	**43,802**	**39,428**	**3,075**	**36,353**	**73**	**3,024**	**6,904**	**-3,880**	**281**	**-565**	**32,262**
2023 January	[E] 3,820	[E] 3,429	270	[E] 3,159	7	275	609	-333	456	17	3,305
February	[E] 3,456	[E] 3,103	247	[E] 2,856	6	244	575	-331	399	18	2,947
March	[E] 3,858	[E] 3,475	286	[E] 3,189	6	250	651	-401	224	-6	3,012
April	[E] 3,729	[E] 3,362	283	[E] 3,079	5	220	621	-400	-269	5	2,421
May	[E] 3,869	[E] 3,500	289	[E] 3,210	6	216	638	-422	-452	-27	2,315
June	[E] 3,720	[E] 3,375	278	[E] 3,098	4	232	607	-376	-344	-22	2,360
July	[E] 3,827	[E] 3,495	290	[E] 3,205	6	256	634	-378	-134	-34	2,666
August	[E] 3,850	[E] 3,534	294	[E] 3,240	5	246	634	-388	-133	-50	2,674
September	[E] 3,761	[E] 3,426	291	[E] 3,135	3	230	626	-396	-323	-46	2,373
October	[E] 3,909	[E] 3,537	302	[E] 3,235	3	231	652	-421	-321	-58	2,438
November	[E] 3,841	[E] 3,469	292	[E] 3,177	5	252	655	-403	65	[R] -20	2,823
December	[RE] 3,998	[RE] 3,597	292	[RE] 3,305	6	277	709	-432	284	[R] 7	3,169
Total	**[E] 45,637**	**[E] 41,300**	**3,413**	**[E] 37,887**	**63**	**2,929**	**7,611**	**-4,682**	**-548**	**[R] -217**	**32,504**
2024 January	[E] 3,862	[E] 3,471	269	[E] 3,202	6	323	674	-350	844	-5	3,696

[a] Gases withdrawn from natural gas, crude oil, coalbed, and shale gas wells. Includes natural gas, natural gas plant liquids, and nonhydrocarbon gases; but excludes lease condensate.

[b] Gross withdrawals minus repressuring, nonhydrocarbon gases removed, and vented and flared. See Note 1, "Natural Gas Production," at end of section.

[c] Natural gas plant liquids (NGPL) production, gaseous equivalent. This data series was previously called "Extraction Loss." See Note 2, "Natural Gas Plant Liquids Production," at end of section.

[d] Marketed production (wet) minus NGPL production.

[e] See Note 3, "Supplemental Gaseous Fuels," at end of section.

[f] Net withdrawals from underground storage. For 1980–2017, also includes net withdrawals of liquefied natural gas in above-ground tanks. See Note 4, "Natural Gas Storage," at end of section.

[g] See Note 5, "Natural Gas Balancing Item," at end of section. Beginning in 1980, excludes transit shipments that cross the U.S.-Canada border (i.e., natural gas delivered to its destination via the other country).

[h] See Note 6, "Natural Gas Consumption," at end of section.

[i] Through 1979, may include unknown quantities of nonhydrocarbon gases.

[j] For 1989–1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector" on Table 4.3. See Note 7, "Natural Gas Consumption, 1989–1992," at end of section.

R=Revised. E=Estimate. 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:** Tables 4.2a and 4.2b. • **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: 1949–2021**—U.S. Energy Information Administration (EIA), *Natural Gas Annual*, annual reports. **2022 forward**—EIA, *Natural Gas Monthly*, March 2024, Table 1.

Table 4.2a Natural Gas Imports by Country

(Billion Cubic Feet)

	Algeria[a]	Austr-alia[a]	Canada[b]	Egypt[a]	Mexico[b]	Nigeria[a]	Norway[a]	Oman[a]	Qatar[a]	Trinidad and Tobago[a]	United Arab Emirates[a]	Yemen[a]	Other[a]	Total
1950 Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1955 Total	**0**	**0**	**11**	**0**	**(s)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**
1960 Total	**0**	**0**	**109**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**156**
1965 Total	**0**	**0**	**405**	**0**	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**456**
1970 Total	**1**	**0**	**779**	**0**	**(s)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**821**
1975 Total	**5**	**0**	**948**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**953**
1980 Total	**86**	**0**	**797**	**0**	**102**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**985**
1985 Total	**24**	**0**	**926**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**950**
1990 Total	**84**	**0**	**1,448**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,532**
1995 Total	**18**	**0**	**2,816**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,841**
2000 Total	**47**	**6**	**3,544**	**0**	**12**	**13**	**0**	**10**	**46**	**99**	**3**	**0**	**21**	**3,782**
2005 Total	**97**	**0**	**3,700**	**73**	**9**	**8**	**0**	**2**	**3**	**439**	**0**	**0**	**11**	**4,341**
2010 Total	**0**	**0**	**3,280**	**73**	**30**	**42**	**26**	**0**	**46**	**190**	**0**	**39**	**81**	**3,741**
2011 Total	**0**	**0**	**3,117**	**35**	**3**	**2**	**15**	**0**	**91**	**129**	**0**	**60**	**92**	**3,469**
2012 Total	**0**	**0**	**2,963**	**3**	**(s)**	**0**	**6**	**0**	**34**	**112**	**0**	**20**	**26**	**3,138**
2013 Total	**0**	**0**	**2,786**	**0**	**1**	**3**	**6**	**0**	**7**	**70**	**0**	**11**	**0**	**2,883**
2014 Total	**0**	**0**	**2,635**	**0**	**1**	**0**	**6**	**0**	**0**	**43**	**0**	**8**	**3**	**2,695**
2015 Total	**0**	**0**	**2,626**	**0**	**1**	**0**	**12**	**0**	**0**	**71**	**0**	**7**	**0**	**2,718**
2016 Total	**0**	**0**	**2,918**	**0**	**1**	**0**	**3**	**0**	**0**	**84**	**0**	**0**	**0**	**3,006**
2017 Total	**0**	**0**	**2,955**	**0**	**1**	**6**	**0**	**0**	**0**	**70**	**0**	**0**	**0**	**3,033**
2018 Total	**0**	**0**	**2,811**	**0**	**3**	**3**	**0**	**0**	**0**	**66**	**0**	**0**	**6**	**2,889**
2019 Total	**0**	**0**	**2,687**	**0**	**2**	**3**	**0**	**0**	**0**	**47**	**0**	**0**	**3**	**2,742**
2020 Total	**0**	**0**	**2,500**	**0**	**2**	**7**	**3**	**0**	**0**	**39**	**0**	**0**	**0**	**2,551**
2021 Total	**0**	**0**	**2,785**	**0**	**2**	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**2,808**
2022 January	0	0	290	0	(s)	0	0	0	0	6	0	0	(s)	296
February	0	0	253	0	(s)	0	0	0	0	4	0	0	(s)	258
March	0	0	257	0	(s)	0	0	0	0	3	0	0	(s)	259
April	0	0	245	0	(s)	0	0	0	0	0	0	0	(s)	245
May	0	0	230	0	(s)	0	0	0	0	(s)	0	0	(s)	231
June	0	0	229	0	(s)	0	0	0	0	0	0	0	(s)	229
July	0	0	254	0	(s)	0	0	0	0	3	0	0	0	257
August	0	0	233	0	(s)	0	0	0	0	3	0	0	(s)	236
September	0	0	234	0	(s)	0	0	0	0	0	0	0	(s)	234
October	0	0	239	0	(s)	0	0	0	0	0	0	0	0	240
November	0	0	245	0	(s)	0	0	0	0	1	0	0	0	246
December	0	0	290	0	(s)	0	0	0	0	3	0	0	0	293
Total	**0**	**0**	**3,000**	**0**	**1**	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**0**	**3,024**
2023 January	0	0	272	0	(s)	0	0	0	0	1	0	0	1	275
February	0	0	239	0	1	0	0	0	0	4	0	0	(s)	244
March	0	0	248	0	(s)	0	0	0	0	1	0	0	(s)	250
April	0	0	220	0	(s)	0	0	0	0	0	0	0	(s)	220
May	0	0	215	0	(s)	0	0	0	0	1	0	0	(s)	216
June	0	0	232	0	(s)	0	0	0	0	0	0	0	0	232
July	0	0	255	0	(s)	0	0	0	0	1	0	0	0	256
August	0	0	246	0	(s)	0	0	0	0	0	0	0	0	246
September	0	0	230	0	(s)	0	0	0	0	0	0	0	0	230
October	0	0	231	0	(s)	0	0	0	0	0	0	0	0	231
November	0	0	252	0	(s)	0	0	0	0	0	0	0	0	252
December	0	0	275	0	(s)	0	0	0	0	3	0	0	0	277
Total	**0**	**0**	**2,915**	**0**	**1**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**1**	**2,929**
2024 January	0	0	319	0	(s)	0	3	0	0	1	0	0	0	323

[a] As liquefied natural gas.

[b] By pipeline, except for small amounts of: liquefied natural gas (LNG) imported from Canada in 1973, 1977, 1981, and 2013 forward; and compressed natural gas (CNG) imported from Canada in 2014 forward; See Note 9, "Natural Gas Imports and Exports," at end of section.

(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." • **1988–2021:** EIA, *Natural Gas Annual,* annual reports. • **2022 forward:** EIA, *Natural Gas Monthly*, March 2024, Table 4; and U.S. Department of Energy, Office of Fossil Energy, "Natural Gas Imports and Exports."

Table 4.2b Natural Gas Exports by Country

(Billion Cubic Feet)

	Brazil[a]	Canada[b]	Chile[a]	China[a]	France[a]	India[a]	Japan[a]	Mexico[b]	South Korea[a]	Spain[a]	Turkey[a]	United Kingdom[a]	Other[a]	Total
1950 Total	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**26**
1955 Total	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**31**
1960 Total	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**11**
1965 Total	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**26**
1970 Total	**0**	**11**	**0**	**0**	**0**	**0**	**44**	**15**	**0**	**0**	**0**	**0**	**0**	**70**
1975 Total	**0**	**10**	**0**	**0**	**0**	**0**	**53**	**9**	**0**	**0**	**0**	**0**	**0**	**73**
1980 Total	**0**	**(s)**	**0**	**0**	**0**	**0**	**45**	**4**	**0**	**0**	**0**	**0**	**0**	**49**
1985 Total	**0**	**(s)**	**0**	**0**	**0**	**0**	**53**	**2**	**0**	**0**	**0**	**0**	**0**	**55**
1990 Total	**0**	**17**	**0**	**0**	**0**	**0**	**53**	**16**	**0**	**0**	**0**	**0**	**0**	**86**
1995 Total	**0**	**28**	**0**	**0**	**0**	**0**	**65**	**61**	**0**	**0**	**0**	**0**	**0**	**154**
2000 Total	**0**	**73**	**0**	**0**	**0**	**0**	**66**	**106**	**0**	**0**	**0**	**0**	**0**	**244**
2005 Total	**0**	**358**	**0**	**0**	**0**	**0**	**65**	**305**	**0**	**0**	**0**	**0**	**0**	**729**
2010 Total	**3**	**739**	**0**	**0**	**0**	**3**	**33**	**333**	**12**	**4**	**0**	**10**	**32**	**1,137**
2011 Total	**11**	**937**	**3**	**7**	**0**	**13**	**18**	**499**	**9**	**6**	**0**	**3**	**52**	**1,506**
2012 Total	**8**	**971**	**0**	**0**	**0**	**3**	**14**	**620**	**0**	**0**	**0**	**0**	**14**	**1,619**
2013 Total	**0**	**911**	**0**	**0**	**0**	**0**	**0**	**661**	**0**	**0**	**0**	**0**	**0**	**1,572**
2014 Total	**3**	**770**	**0**	**0**	**0**	**0**	**13**	**729**	**0**	**0**	**0**	**0**	**0**	**1,514**
2015 Total	**6**	**701**	**0**	**0**	**0**	**0**	**8**	**1,054**	**0**	**0**	**3**	**0**	**11**	**1,784**
2016 Total	**11**	**771**	**29**	**17**	**0**	**17**	**11**	**1,405**	**10**	**3**	**9**	**0**	**51**	**2,335**
2017 Total	**18**	**917**	**26**	**103**	**0**	**21**	**53**	**1,671**	**130**	**29**	**25**	**3**	**157**	**3,154**
2018 Total	**36**	**836**	**41**	**90**	**18**	**58**	**126**	**1,871**	**252**	**10**	**23**	**51**	**194**	**3,608**
2019 Total	**54**	**973**	**90**	**7**	**118**	**91**	**201**	**2,010**	**270**	**167**	**31**	**119**	**527**	**4,658**
2020 Total	**112**	**904**	**81**	**214**	**90**	**124**	**288**	**2,026**	**317**	**200**	**124**	**160**	**644**	**5,285**
2021 Total	**308**	**937**	**122**	**453**	**171**	**196**	**355**	**2,171**	**453**	**215**	**189**	**195**	**887**	**6,653**
2022 January	17	82	3	0	50	7	22	176	22	49	45	60	78	611
February	11	75	0	3	40	7	10	155	27	39	44	25	110	546
March	2	105	3	8	64	10	18	170	19	59	17	57	107	639
April	3	80	4	10	56	14	13	177	14	40	7	40	129	587
May	15	79	10	0	47	7	24	186	18	40	7	11	172	617
June	4	70	0	7	38	11	22	186	25	30	8	3	151	554
July	5	70	7	1	53	14	18	190	34	34	0	4	129	560
August	11	75	0	10	34	10	20	183	36	26	0	21	132	558
September	0	62	3	10	58	11	7	169	20	21	5	51	108	526
October	3	73	0	23	42	7	11	172	39	26	10	46	102	554
November	0	90	0	17	51	10	24	161	14	26	31	77	51	554
December	0	99	0	7	38	14	21	159	25	34	18	69	113	597
Total	**72**	**960**	**30**	**97**	**571**	**123**	**209**	**2,084**	**293**	**427**	**192**	**464**	**1,382**	**6,904**
2023 January	0	105	3	18	34	7	18	169	25	14	39	63	113	609
February	0	96	0	3	39	14	14	153	23	32	13	72	116	575
March	1	106	7	5	29	10	20	181	11	38	12	70	160	651
April	4	76	0	3	53	15	14	169	25	14	14	76	159	621
May	4	78	6	7	52	7	31	194	11	12	0	25	211	638
June	9	75	4	20	46	14	28	204	17	12	0	0	178	607
July	0	77	7	35	21	20	44	211	16	34	0	0	169	634
August	3	68	3	14	34	14	31	213	35	20	0	4	194	634
September	7	77	0	10	32	24	33	202	24	10	4	7	195	626
October	4	67	0	18	54	14	24	202	28	50	5	25	161	652
November	4	89	0	26	59	7	25	179	26	17	28	48	147	655
December	4	112	0	14	41	17	27	178	35	16	42	60	163	709
Total	**39**	**1,026**	**31**	**173**	**493**	**164**	**310**	**2,256**	**276**	**269**	**156**	**451**	**1,967**	**7,611**
2024 January	8	93	4	8	28	11	19	185	21	39	43	43	173	674

[a] As liquefied natural gas.

[b] By pipeline, except for small amounts of: liquefied natural gas (LNG) exported to Canada in 2007 and 2012 forward; compressed natural gas (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.

(s)=Less than 500 million cubic feet.

Notes: • Exports include re-exports. • 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." • **1988–2021:** EIA, *Natural Gas Annual,* annual reports. • **2022 forward:** EIA, *Natural Gas Monthly,* March 2024, Table 5; and U.S. Department of Energy, Office of Fossil Energy, "Natural Gas Imports and Exports."

Table 4.3 Natural Gas Consumption by Sector

(Billion Cubic Feet)

	End-Use Sectors											
			Industrial					Transportation				
				Other Industrial								
	Residential	Commercial[a]	Lease and Plant Fuel	CHP[b]	Non-CHP[c]	Total	Total	Pipelines[d] and Distribution[e]	Vehicle Fuel	Total	Electric Power Sector[f,g]	Total
1950 Total	**1,198**	**388**	**928**	([h])	**2,498**	**2,498**	**3,426**	**126**	**NA**	**126**	**629**	**5,767**
1955 Total	**2,124**	**629**	**1,131**	([h])	**3,411**	**3,411**	**4,542**	**245**	**NA**	**245**	**1,153**	**8,694**
1960 Total	**3,103**	**1,020**	**1,237**	([h])	**4,535**	**4,535**	**5,771**	**347**	**NA**	**347**	**1,725**	**11,967**
1965 Total	**3,903**	**1,444**	**1,156**	([h])	**5,955**	**5,955**	**7,112**	**501**	**NA**	**501**	**2,321**	**15,280**
1970 Total	**4,837**	**2,399**	**1,399**	([h])	**7,851**	**7,851**	**9,249**	**722**	**NA**	**722**	**3,932**	**21,139**
1975 Total	**4,924**	**2,508**	**1,396**	([h])	**6,968**	**6,968**	**8,365**	**583**	**NA**	**583**	**3,158**	**19,538**
1980 Total	**4,752**	**2,611**	**1,026**	([h])	**7,172**	**7,172**	**8,198**	**635**	**NA**	**635**	**3,682**	**19,877**
1985 Total	**4,433**	**2,432**	**966**	([h])	**5,901**	**5,901**	**6,867**	**504**	**NA**	**504**	**3,044**	**17,281**
1990 Total	**4,391**	**2,623**	**1,236**	**1,055**	[i]**5,963**	[i]**7,018**	**8,255**	**660**	**(s)**	**660**	[i]**3,245**	[i]**19,174**
1995 Total	**4,850**	**3,031**	**1,220**	**1,258**	**6,906**	**8,164**	**9,384**	**700**	**5**	**705**	**4,237**	**22,207**
2000 Total	**4,996**	**3,182**	**1,151**	**1,386**	**6,757**	**8,142**	**9,293**	**642**	**13**	**655**	**5,206**	**23,333**
2005 Total	**4,827**	**2,999**	**1,112**	**1,084**	**5,518**	**6,601**	**7,713**	**584**	**23**	**607**	**5,869**	**22,014**
2010 Total	**4,782**	**3,103**	**1,286**	**1,029**	**5,797**	**6,826**	**8,112**	**674**	**29**	**703**	**7,387**	**24,087**
2011 Total	**4,714**	**3,155**	**1,323**	**1,063**	**5,931**	**6,994**	**8,317**	**688**	**30**	**718**	**7,574**	**24,477**
2012 Total	**4,150**	**2,895**	**1,396**	**1,149**	**6,077**	**7,226**	**8,622**	**731**	**30**	**761**	**9,111**	**25,538**
2013 Total	**4,897**	**3,295**	**1,483**	**1,170**	**6,255**	**7,425**	**8,909**	**833**	**30**	**863**	**8,191**	**26,155**
2014 Total	**5,087**	**3,466**	**1,512**	**1,145**	**6,501**	**7,646**	**9,158**	**700**	**35**	**735**	**8,146**	**26,593**
2015 Total	**4,613**	**3,202**	**1,576**	**1,222**	**6,300**	**7,522**	**9,098**	**678**	**39**	**718**	**9,613**	**27,244**
2016 Total	**4,347**	**3,110**	**1,545**	**1,209**	**6,519**	**7,729**	**9,274**	**687**	**42**	**729**	**9,985**	**27,444**
2017 Total	**4,412**	**3,164**	**1,584**	**1,257**	**6,693**	**7,949**	**9,533**	**722**	**48**	**770**	**9,266**	**27,146**
2018 Total	**4,998**	**3,514**	**1,694**	**1,314**	**7,103**	**8,417**	**10,112**	**877**	**50**	**927**	**10,599**	**30,149**
2019 Total	**5,019**	**3,515**	**1,823**	**1,374**	**7,042**	**8,417**	**10,240**	**1,018**	**53**	**1,071**	**11,299**	**31,143**
2020 Total	**4,674**	**3,163**	**1,825**	**1,458**	**6,755**	**8,213**	**10,038**	**1,018**	**49**	**1,067**	**11,632**	**30,574**
2021 Total	**4,717**	**3,289**	**1,851**	**1,379**	**6,995**	**8,375**	**10,225**	**1,131**	**54**	**1,186**	**11,229**	**30,646**
2022 January	958	551	154	124	702	826	981	137	6	143	949	3,581
February	791	464	139	108	621	729	868	116	5	121	804	3,048
March	588	385	157	115	645	761	918	105	6	110	777	2,778
April	384	276	153	108	598	706	858	88	5	93	743	2,355
May	201	183	159	111	573	684	843	83	6	89	923	2,239
June	124	146	154	112	543	655	809	86	5	92	1,145	2,315
July	110	144	161	121	544	665	826	97	6	102	1,405	2,588
August	103	141	162	122	555	677	839	96	6	101	1,380	2,564
September	114	150	159	111	542	653	812	85	5	90	1,125	2,291
October	242	223	164	112	580	692	856	88	6	93	946	2,360
November	513	353	159	115	615	729	888	104	5	109	902	2,766
December	835	492	161	117	644	761	922	128	6	134	992	3,375
Total	**4,964**	**3,509**	**1,883**	**1,375**	**7,161**	**8,537**	**10,420**	**1,212**	**65**	**1,277**	**12,092**	**32,262**
2023 January	799	475	[E]164	123	648	771	935	[E]124	[E]5	[E]129	967	3,305
February	683	423	[E]148	110	598	708	856	[E]111	[E]4	[E]115	870	2,947
March	633	408	[E]166	120	636	756	922	[E]113	[E]5	[E]118	932	3,012
April	338	253	[E]161	104	602	706	866	[E]91	[E]4	[E]95	869	2,421
May	197	183	[E]167	110	571	681	848	[E]87	[E]5	[E]91	996	2,315
June	129	149	[E]161	114	538	652	813	[E]89	[E]4	[E]93	1,176	2,360
July	111	143	[E]167	118	551	669	835	[E]100	[E]5	[E]105	1,471	2,666
August	104	145	[E]169	117	571	689	857	[E]100	[E]5	[E]105	1,462	2,674
September	113	146	[E]164	116	550	665	829	[E]89	[E]4	[E]93	1,191	2,373
October	227	224	[E]169	113	593	706	875	[E]92	[E]5	[E]96	1,016	2,438
November	493	347	[E]166	118	624	743	908	[E]106	[E]4	[E]110	965	2,823
December	656	413	[E]172	129	662	791	963	[E]119	[E]5	[E]124	1,014	3,169
Total	**4,482**	**3,309**	[E]**1,972**	**1,392**	**7,144**	**8,536**	**10,508**	[E]**1,220**	[E]**53**	[E]**1,274**	**12,930**	**32,504**
2024 January	919	535	[E]166	132	670	802	968	[E]139	[E]5	[E]143	1,131	3,696

[a] All commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Table 7.4c for CHP fuel use.

[b] Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants.

[c] All industrial sector fuel use other than that in "Lease and Plant Fuel" and "CHP."

[d] Natural gas consumed in the operation of pipelines, primarily in compressors. Beginning in 2009, includes line loss, which is known volumes of natural gas that are the result of leaks, damage, accidents, migration, and/or blow down.

[e] Natural gas used as fuel in the delivery of natural gas to consumers. Beginning in 2009, includes line loss, which is known volumes of natural gas that are the result of leaks, damage, accidents, migration, and/or blow down.

[f] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[g] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

[h] Included in "Non-CHP."

[i] For 1989–1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector." See Note 7, "Natural Gas Consumption, 1989–1992," at end of section.

E=Estimate. NA=Not available. (s)=Less than 500 million cubic feet.

Notes: • Data are for natural gas, plus a small amount of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of section. • See Note 8, "Natural Gas Data Adjustments, 1993–2000," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Residential, Commercial, Lease and Plant Fuel, Other Industrial Total** and **Pipelines and Distribution: 1949–2021**—U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA)*, annual reports and unpublished revisions. **2022 forward**—EIA, *Natural Gas Monthly (NGM)*, March 2024, Table 2. • **Other Industrial CHP:** Table 7.4c. • **Other Industrial Non-CHP:** Calculated as other industrial total minus other industrial CHP. • **Industrial Total:** Calculated as lease and plant fuel plus other industrial total. • **Vehicle Fuel: 1990 and 1991**—EIA, NGA 2000, (November 2001), Table 95. **1992–1998**—EIA, "Alternatives to Traditional Transportation Fuels 1999" (October 1999), Table 10, and "Alternatives to Traditional Transportation Fuels 2003" (February 2004), Table 10. Data for compressed natural gas and liquefied natural gas in gasoline-equivalent gallons were converted to cubic feet by multiplying by the motor gasoline conversion factor (see Table A3) and dividing by the natural gas end-use sectors conversion factor (see Table A4). **1999–2021**—EIA, NGA, annual reports. **2022 forward**—EIA, NGM, March 2024, Table 2. • **Transportation Total:** Calculated as pipelines and distribution plus vehicle fuel. • **Electric Power Sector:** Table 7.4b. • **Total Consumption:** Calculated as the sum of residential, commercial, industrial total, transportation total, and electric power sector.

Table 4.4 Natural Gas in Underground Storage

(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas From Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total[a]	Volume	Percent	Withdrawals	Injections	Net[b,c]
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**175**	**230**	**-54**
1955 Total	**863**	**505**	**1,368**	**40**	**8.7**	**437**	**505**	**-68**
1960 Total	**NA**	**NA**	**2,184**	**NA**	**NA**	**713**	**844**	**-132**
1965 Total	**1,848**	**1,242**	**3,090**	**83**	**7.2**	**960**	**1,078**	**-118**
1970 Total	**2,326**	**1,678**	**4,004**	**257**	**18.1**	**1,459**	**1,857**	**-398**
1975 Total	**3,162**	**2,212**	**5,374**	**162**	**7.9**	**1,760**	**2,104**	**-344**
1980 Total	**3,642**	**2,655**	**6,297**	**-99**	**-3.6**	**1,910**	**1,896**	**14**
1985 Total	**3,842**	**2,607**	**6,448**	**-270**	**-9.4**	**2,359**	**2,128**	**231**
1990 Total	**3,868**	**3,068**	**6,936**	**555**	**22.1**	**1,934**	**2,433**	**-499**
1995 Total	**4,349**	**2,153**	**6,503**	**-453**	**-17.4**	**2,974**	**2,566**	**408**
2000 Total	**4,352**	**1,719**	**6,071**	**-806**	**-31.9**	**3,498**	**2,684**	**814**
2005 Total	**4,200**	**2,635**	**6,835**	**-61**	**-2.3**	**3,057**	**3,002**	**55**
2010 Total	**4,301**	**3,111**	**7,412**	**-19**	**-.6**	**3,274**	**3,291**	**-17**
2011 Total	**4,302**	**3,462**	**7,764**	**351**	**11.3**	**3,074**	**3,422**	**-348**
2012 Total	**4,372**	**3,413**	**7,785**	**-49**	**-1.4**	**2,818**	**2,825**	**-7**
2013 Total	**4,365**	**2,890**	**7,255**	**-523**	**-15.3**	**3,702**	**3,156**	**546**
2014 Total	**4,365**	**3,141**	**7,506**	**251**	**8.7**	**3,586**	**3,839**	**-253**
2015 Total	**4,372**	**3,667**	**8,038**	**525**	**16.7**	**3,100**	**3,638**	**-539**
2016 Total	**4,380**	**3,297**	**7,677**	**-370**	**-10.1**	**3,325**	**2,977**	**348**
2017 Total	**4,360**	**3,033**	**7,392**	**-264**	**-8.0**	**3,590**	**3,337**	**254**
2018 Total	**4,361**	**2,708**	**7,069**	**-324**	**-10.7**	**3,999**	**3,676**	**324**
2019 Total	**4,380**	**3,188**	**7,568**	**480**	**17.7**	**3,653**	**4,153**	**-500**
2020 Total	**4,394**	**3,341**	**7,735**	**153**	**4.8**	**3,412**	**3,590**	**-178**
2021 Total	**4,438**	**3,210**	**7,648**	**-131**	**-3.9**	**3,761**	**3,678**	**83**
2022 January	4,437	2,216	6,653	-419	-15.9	1,069	76	994
February	4,434	1,562	5,997	-297	-16.0	761	102	658
March	4,434	1,401	5,835	-400	-22.2	394	231	163
April	4,440	1,612	6,052	-363	-18.4	140	354	-214
May	4,442	2,002	6,444	-388	-16.2	81	485	-403
June	4,443	2,325	6,768	-260	-10.0	114	438	-324
July	4,444	2,505	6,950	-250	-9.1	182	362	-180
August	4,446	2,709	7,155	-208	-7.1	176	382	-206
September	4,445	3,146	7,590	-160	-4.8	100	536	-436
October	4,443	3,569	8,012	-96	-2.6	89	511	-422
November	4,442	3,501	7,943	-32	-.9	333	261	72
December	4,451	2,925	7,376	-285	-8.9	735	160	574
Total	**4,451**	**2,925**	**7,376**	**-285**	**-8.9**	**4,175**	**3,898**	**277**
2023 January	4,452	2,470	6,922	254	11.5	609	153	456
February	4,451	2,072	6,523	510	32.7	529	130	399
March	4,450	1,850	6,300	448	32.0	395	171	224
April	4,452	2,116	6,569	505	31.3	126	395	-269
May	4,466	2,576	7,042	575	28.7	82	534	-452
June	4,464	2,902	7,365	576	24.8	105	448	-344
July	4,465	3,035	7,500	530	21.2	186	320	-134
August	4,464	3,168	7,632	459	16.9	233	365	-133
September	4,463	3,490	7,952	344	10.9	155	478	-323
October	4,463	3,809	8,273	240	6.7	121	442	-321
November	4,464	3,742	8,206	241	6.9	298	233	65
December	4,468	3,457	7,925	532	18.2	454	170	284
Total	**4,468**	**3,457**	**7,925**	**532**	**18.2**	**3,292**	**3,840**	**-548**
2024 January	4,468	2,613	7,081	143	5.8	950	107	844

[a] For total underground storage capacity at the end of each calendar year, see Note 4, "Natural Gas Storage," at end of section.

[b] For 1980–2018, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.

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

NA=Not available.

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

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

Sources: • **Storage Activity: 1949–1975**—U.S. Energy Information Administration (EIA), *Natural Gas Annual 1994, Volume 2,* Table 9. **1976–1979**—EIA, *Natural Gas Production and Consumption 1979,* Table 1. **1980–1995**—EIA, *Historical Natural Gas Annual 1930 Through 2000,* Table 11. **1996–2014**—EIA, *Natural Gas Monthly (NGM),* monthly issues. **2015–2021**—EIA, NGA, annual reports. **2022 forward**—EIA, NGM, March 2024, 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." **1996–2021**—EIA, NGA, annual reports. **2022 forward**—EIA, NGM, March 2024, Table 8.

Note 1. Natural Gas Production. Final annual data are from the U.S. Energy Information Administration's (EIA) *Natural Gas Annual (NGA)*.

Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see EIA's *Natural Gas Monthly (NGM)*.

Monthly data are considered preliminary until after publication of the NGA. Preliminary monthly data are gathered from reports to the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary, to a standard pressure base of 14.73 psia (pounds per square inch absolute) at 60° Fahrenheit. Unless there are major changes, data are not revised until after publication of the NGA.

Differences between annual data in the NGA and the sum of preliminary monthly data (January–December) are allocated proportionally to the months to create final monthly data.

Note 2. Natural Gas Plant Liquids Production. Natural gas plant liquids (NGPL) production is the reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants—these natural gas plant liquids are transferred to petroleum supply.

Annual data are from EIA's *Natural Gas Annual (NGA)*, where they are estimated on the basis of the type and quantity of liquid products extracted from the gas stream and the calculated volume of such products at standard conditions. For a detailed explanation of the calculations used to derive estimated NGPL production, see the NGA.

Through 2006, preliminary monthly data are estimated on the basis of NGPL production as an annual percentage of marketed production. Beginning in 2007, preliminary monthly data are estimated on the basis of NGPL production reported on Form EIA-816, "Monthly Natural Gas Liquids Report."

Monthly data are revised and considered final after publication of the NGA. Final monthly data are estimated by allocating annual NGPL production data to the months on the basis of total natural gas marketed production data from the NGA.

Note 3. Supplemental Gaseous Fuels. Supplemental gaseous fuels are any substances that, introduced into or commingled with natural gas, increase the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, and air or inert gases added for Btu stabilization.

Annual data beginning with 1980 are from EIA's *Natural Gas Annual (NGA)*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years. Monthly data are considered preliminary until after publication of the NGA. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. The ratio is applied to the monthly sum of the three elements to compute a monthly supplemental gaseous fuels figure.

Although the total amount of supplemental gaseous fuels consumed is known for 1980 forward, the amount consumed by each energy-use sector is estimated by EIA. These estimates are used to create natural gas (without supplemental gaseous fuels) data for Tables 1.3, 2.2, 2.3, 2.4, and 2.6 (note: to avoid double-counting in these tables, supplemental gaseous fuels are accounted for in their primary energy category: "Coal," "Petroleum," or "Biomass"). It is assumed that supplemental gaseous fuels are commingled with natural gas consumed by the residential, commercial, other industrial, and electric power sectors, but are not commingled with natural gas used for lease and plant fuel, pipelines and distribution, or vehicle fuel. The estimated consumption of supplemental gaseous fuels by each sector (residential, commercial, other industrial, and electric power) is calculated as that sector's natural gas consumption (see Table 4.3) divided by the sum of natural gas consumption by the residential, commercial, other industrial, and electric power sectors (see Table 4.3), and then multiplied by total supplemental gaseous fuels consumption (see Table 4.1). For estimated sectoral consumption of supplemental gaseous fuels in Btu, the residential, commercial, and other industrial values in cubic feet are multiplied by the "End-Use Sectors" conversion factors (see Table A4), and the electric power

values in cubic feet are multiplied by the "Electric Power Sector" conversion factors (see Table A4). Total supplemental gaseous fuels consumption in Btu is calculated as the sum of the Btu values for the sectors.

Note 4. Natural Gas Storage. Natural gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals from the quantity in storage at the end of the previous period. Injection and withdrawal data from the FERC-8/EIA-191 survey may be adjusted to correspond to data from Form EIA-176 for publication of EIA's *Natural Gas Annual (NGA)*.

Total underground storage capacity, which includes both active and inactive fields, at the end of each calendar year since 1975 (first year data were available), in billion cubic feet, was:

Total underground storage capacity, including active and inactive fields (billion cubic feet)

Decade	Year-0	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9
1970s						6,280	6,544	6,678	6,890	6,929
1980s	7,434	7,805	7,915	7,985	8,043	8,087	8,145	8,124	8,124	8,120
1990s	7,794	7,993	7,932	7,989	8,043	7,953	7,980	8,332	8,179	8,229
2000s	8,241	8,182	8,207	8,206	8,255	8,268	8,330	8,402	8,499	8,656
2010s	8,764	8,849	8,991	9,173	9,233	9,231	9,239	9,261	9,241	9,231
2020s	9,259	9,265	9,269	9,278[P]						

P=Preliminary

Through 1990, monthly underground storage data are collected from the Federal Energy Regulatory Commission Form FERC-8 (interstate data) and EIA Form EIA-191 (intrastate data). Beginning in 1991, all data are collected on the revised Form EIA-191. Injection and withdrawal data from the EIA-191 survey may be adjusted to correspond to data from Form EIA-176 following publication of EIA's NGA.

The final monthly and annual storage and withdrawal data for 1980–2017 include both underground and liquefied natural gas (LNG) storage. Annual data on LNG additions and withdrawals are from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying the ratio to the annual LNG data.

Note 5. Natural Gas Balancing Item. The balancing item for natural gas represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition. The differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Note 6. Natural Gas Consumption. Natural gas consumption statistics include data for the following: "Residential Sector": residential deliveries; "Commercial Sector": commercial deliveries, including to commercial combined-heat-and-power (CHP) and commercial electricity-only plants; "Industrial Sector": lease and plant fuel use, and other industrial deliveries, including to industrial CHP and industrial electricity-only plants also includes the relatively small amount of natural gas consumption for non-combustion use (see Tables 1.12a and 1.12b); "Transportation Sector": pipelines and distribution use, and vehicle fuel use; and "Electric Power Sector": electric utility and independent power producer use.

Final data for series other than "Other Industrial CHP" and "Electric Power Sector" are from EIA's *Natural Gas Annual (NGA)*. Monthly data are considered preliminary until after publication of the NGA. For more detailed information on the methods of estimating preliminary and final monthly data, see EIA's *Natural Gas Monthly*.

Note 7. Natural Gas Consumption, 1989–1992. Prior to 1993, deliveries to nonutility generators were not separately collected from natural gas companies on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." As a result, for 1989–1992, those volumes are probably included in both the industrial and electric power

sectors and double-counted in total consumption. In 1993, 0.28 trillion cubic feet was reported as delivered to nonutility generators.

Note 8. Natural Gas Data Adjustments, 1993–2000. For 1993–2000, the original data for natural gas delivered to industrial consumers (now "Other Industrial" in Table 4.3) included deliveries to both industrial users and independent power producers (IPPs). These data were adjusted to remove the estimated consumption at IPPs from "Other Industrial" and include it with electric utilities under "Electric Power Sector." (To estimate the monthly IPP consumption, the monthly pattern for Other Industrial CHP in Table 4.3 was used.)

For 1996–2000, monthly data for several natural gas series shown in EIA's Natural Gas Navigator (see http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm) were not reconciled and updated to be consistent with the final annual data in EIA's *Natural Gas Annual*. In the *Monthly Energy Review*, monthly data for these series were adjusted so that the monthly data sum to the final annual values. The Table 4.1 data series (and years) that were adjusted are: Gross Withdrawals (1996, 1997), Marketed Production (1997), NGPL Production (1997, 1998, and 2000), Dry Gas Production (1996, 1997), Supplemental Gaseous Fuels (1997–2000), Balancing Item (1997–2000), and Total Consumption (1997–2000). The Table 4.3 data series (and years) that were adjusted are: Lease and Plant Fuel (1997–2000), Total Industrial (1997–2000), Pipelines and Distribution (2000), Total Transportation (2000), and Total Consumption (1997–2000).

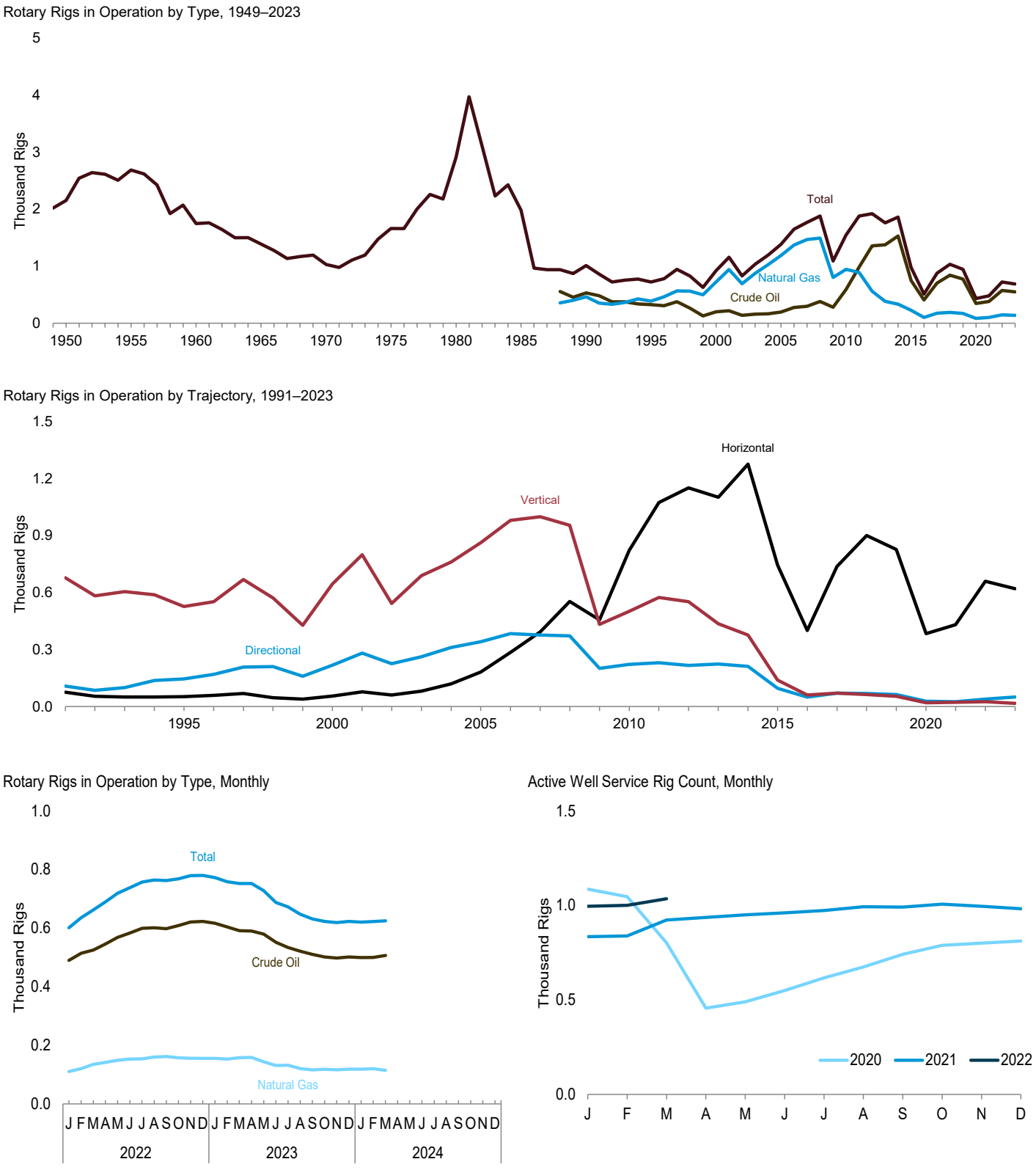
Note 9. Natural Gas Imports and Exports. The United States imports natural gas via pipeline from Canada and Mexico; and imports liquefied natural gas (LNG) via vessel from other countries. In addition, small amounts of LNG arrived from Canada via truck in 1973, 1977, 1981, and 2013 forward. Also, small amounts of compressed natural gas (CNG) were imported from Canada in 2014 forward. The United States exports natural gas via pipeline to Canada and Mexico; and exports LNG via vessel to other countries. Also, small amounts of LNG have gone to Mexico via truck since 1998 and via vessel since 2016, and to Canada via truck in 2007 and 2012 forward. Small amounts of CNG have been exported to Canada since 2013. Natural gas exports include re-exports**.**

Annual and final monthly data are from the annual EIA Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and FE-746R, "Import and Export of Natural Gas."

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 *Natural Gas Annual*.

5. Crude Oil and Natural Gas Resource Development

Figure 5.1 Crude Oil and Natural Gas Drilling Activity Measurements



Web Page: http://www.eia.gov/totalenergy/data/monthly/#crude.
Sources: Table 5.1.

Table 5.1 Crude Oil and Natural Gas Drilling Activity Measurements

(Number of Rigs)

	Rotary Rigs in Operation[a,b]								
	By Location[c]		By Type[c]		By Trajectory[c]				
	Onshore	Offshore	Crude Oil	Natural Gas	Horizontal	Directional	Vertical	Total[c]	Active Well Service Rig Count[d]
1950 Average	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**2,154**	**NA**
1955 Average	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**2,686**	**NA**
1960 Average	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**1,748**	**NA**
1965 Average	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**1,388**	**NA**
1970 Average	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**1,028**	**NA**
1975 Average	**1,554**	**106**	**NA**	**NA**	**NA**	**NA**	**NA**	**1,660**	**2,486**
1980 Average	**2,678**	**231**	**NA**	**NA**	**NA**	**NA**	**NA**	**2,909**	**4,089**
1985 Average	**1,774**	**206**	**NA**	**NA**	**NA**	**NA**	**NA**	**1,980**	**4,716**
1990 Average	**902**	**108**	**532**	**464**	**NA**	**NA**	**NA**	**1,010**	**3,658**
1995 Average	**622**	**101**	**323**	**385**	**52**	**145**	**526**	**723**	**3,041**
2000 Average	**778**	**140**	**197**	**720**	**55**	**217**	**645**	**918**	**2,692**
2005 Average	**1,290**	**93**	**194**	**1,186**	**181**	**341**	**862**	**1,383**	**2,222**
2010 Average	**1,514**	**31**	**591**	**943**	**822**	**222**	**501**	**1,546**	**1,854**
2011 Average	**1,846**	**32**	**984**	**887**	**1,074**	**230**	**574**	**1,879**	**2,075**
2012 Average	**1,871**	**48**	**1,357**	**558**	**1,151**	**216**	**552**	**1,919**	**2,113**
2013 Average	**1,705**	**56**	**1,373**	**383**	**1,102**	**224**	**435**	**1,761**	**2,064**
2014 Average	**1,804**	**57**	**1,527**	**333**	**1,275**	**211**	**376**	**1,862**	**2,024**
2015 Average	**943**	**35**	**750**	**226**	**744**	**95**	**139**	**978**	**1,481**
2016 Average	**486**	**23**	**408**	**100**	**400**	**49**	**60**	**509**	**1,061**
2017 Average	**856**	**20**	**703**	**172**	**737**	**70**	**70**	**876**	**1,187**
2018 Average	**1,013**	**19**	**841**	**190**	**900**	**69**	**63**	**1,032**	**1,292**
2019 Average	**920**	**23**	**774**	**169**	**826**	**63**	**54**	**943**	**1,253**
2020 Average	**417**	**15**	**345**	**85**	**384**	**28**	**20**	**433**	**738**
2021 Average	**464**	**14**	**380**	**98**	**431**	**25**	**22**	**478**	**949**
2022 January	583	18	490	111	543	35	23	601	995
February	622	14	514	121	578	32	26	636	1,000
March	649	12	525	135	605	34	24	662	1,035
April	677	13	546	142	632	32	25	690	NA
May	701	17	568	149	657	37	25	719	NA
June	723	16	583	153	673	39	27	738	NA
July	740	16	599	154	687	41	29	757	NA
August	746	18	601	160	695	39	30	764	NA
September	747	16	598	162	694	44	24	762	NA
October	754	14	609	157	704	42	23	768	NA
November	763	16	621	156	711	45	23	779	NA
December	763	16	623	155	708	45	26	780	NA
Average	**708**	**15**	**574**	**147**	**659**	**39**	**25**	**723**	**NA**
2023 January	756	16	616	155	701	47	24	772	NA
February	742	16	604	153	698	42	18	758	NA
March	736	17	591	158	691	47	14	752	NA
April	733	19	590	159	685	48	19	752	NA
May	707	21	580	144	657	52	19	728	NA
June	667	20	551	131	617	51	18	687	NA
July	654	19	534	132	602	52	18	672	NA
August	629	18	521	121	576	52	19	647	NA
September	613	19	510	116	561	55	15	631	NA
October	600	23	501	118	556	52	15	623	NA
November	599	20	498	117	552	54	13	619	NA
December	603	20	501	119	561	49	13	623	NA
Average	**669**	**19**	**549**	**135**	**620**	**50**	**17**	**687**	**NA**
2024 January	601	20	499	119	561	48	12	620	NA
February	603	20	500	120	560	50	13	622	NA
March	603	22	507	115	559	53	13	625	NA
3-Month Average	**602**	**21**	**502**	**117**	**560**	**50**	**13**	**623**	**NA**
2023 3-Month Average	**744**	**16**	**603**	**155**	**697**	**45**	**18**	**760**	**NA**
2022 3-Month Average	**618**	**15**	**510**	**122**	**575**	**34**	**24**	**633**	**1,010**

[a] Data are for rigs drilling for crude oil, rigs drilling for natural gas, and other rigs (not shown separately) drilling for miscellaneous purposes, such as service wells, injection wells, and stratigraphic tests.

[b] Rotary rigs in operation are reported weekly on Fridays. Monthly data are averages of 4- or 5-week reporting periods. Multi-month data are averages of the reported weekly data over the covered months. Annual data are averages of 52- or 53-week reporting periods. Published data are rounded to the nearest whole number.

[c] Not shown under "By Type" are other rigs drilling for miscellaneous purposes, such as service wells, injection wells, and stratigraphic tests. Therefore, the sum of "Crude Oil" and "Natural Gas" may not equal "Total" values. In addition, for "By Location," "By Type," and "By Trajectory," the sum of the components in each category may not equal "Total" values due to independent rounding.

[d] 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.

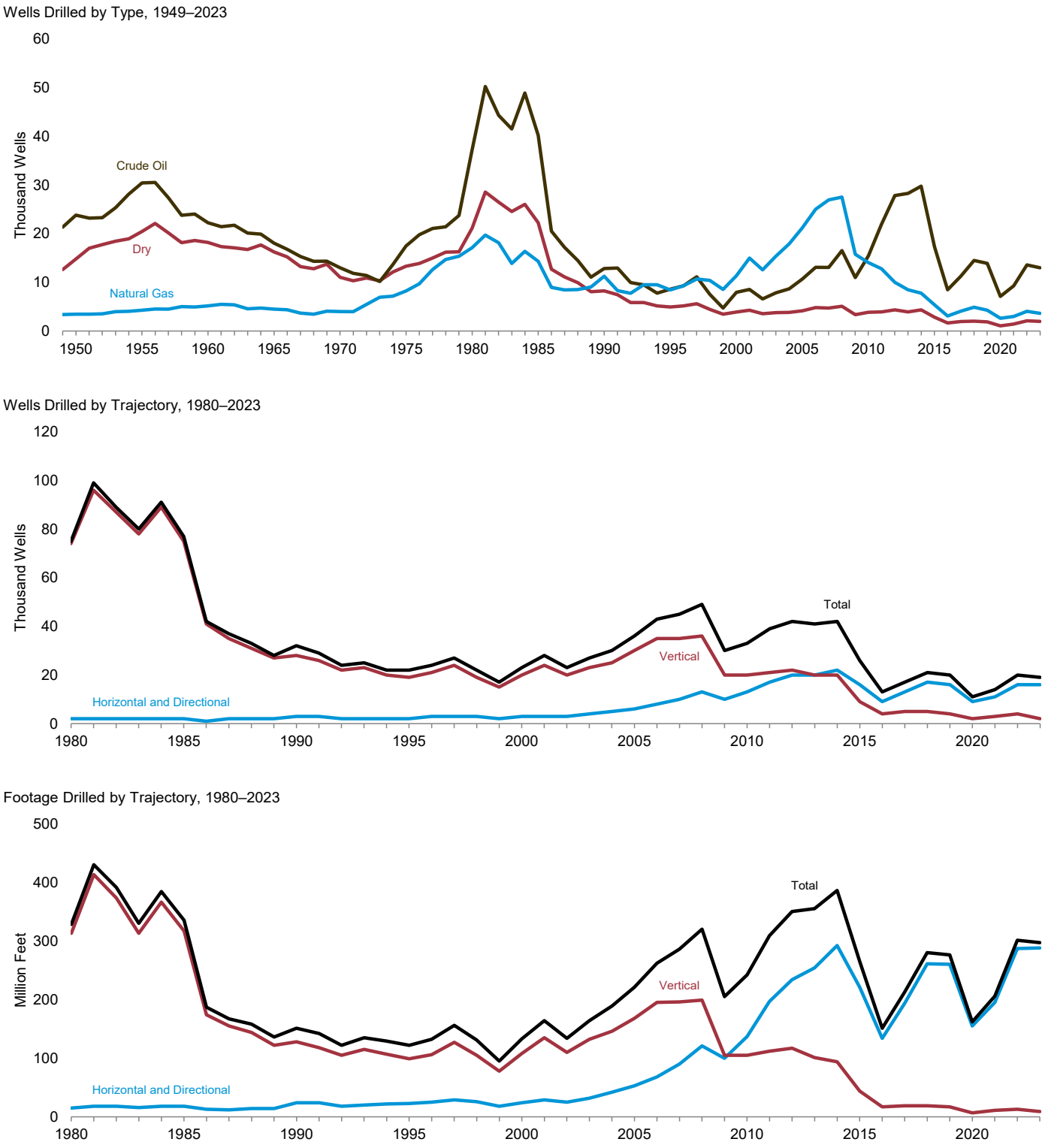
NA=Not available.

Note: Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, TX, "North America Rig Count," used with permission. See http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother. • **Active Well Service Rig Count:** Energy Workforce & Technology Council, Houston, TX.

Figure 5.2 Crude Oil and Natural Gas Wells and Footage Drilled



Web Page: http://www.eia.gov/totalenergy/data/monthly/#crude.
Sources: Table 5.2.

Table 5.2 Crude Oil and Natural Gas Wells and Footage Drilled

	Wells Drilled						Footage Drilled					
	By Type			By Trajectory			By Type			By Trajectory		
	Crude Oil	Natural Gas	Dry	Horizontal and Directional	Vertical	Total	Crude Oil	Natural Gas	Dry	Horizontal and Directional	Vertical	Total
	Number						Thousand Feet					
1950 Total	23,812	3,439	14,799	NA	NA	42,050	NA	NA	NA	NA	NA	157,358
1955 Total	30,432	4,266	20,452	NA	NA	55,150	NA	NA	NA	NA	NA	226,182
1960 Total	22,258	5,149	18,212	NA	NA	45,619	NA	NA	NA	NA	NA	192,176
1965 Total	18,065	4,482	16,226	NA	NA	38,773	NA	NA	NA	NA	NA	174,882
1970 Total	12,968	4,011	11,031	NA	NA	28,010	NA	NA	NA	NA	NA	138,556
1975 Total	17,449	8,200	13,321	NA	NA	38,970	NA	NA	NA	NA	NA	182,199
1980 Total	37,209	17,108	21,125	1,677	73,765	75,442	137,273	92,649	98,054	14,607	313,369	327,976
1985 Total	40,217	14,309	22,270	2,184	74,612	76,796	152,575	77,699	104,791	17,944	317,122	335,066
1990 Total	12,839	11,246	8,245	2,839	27,987	32,330	57,153	52,870	41,360	23,619	127,764	151,383
1995 Total	R 8,589	R 8,436	R 4,932	R 2,491	R 19,466	R 21,957	R 41,684	R 53,352	R 26,574	R 23,101	R 98,508	R 121,609
2000 Total	7,942	R 11,364	R 3,881	2,913	R 20,274	R 23,187	R 34,789	R 75,268	R 22,690	R 24,352	R 108,396	R 132,747
2005 Total	R 10,649	R 21,191	R 4,138	R 5,992	29,986	R 35,978	R 49,572	R 148,782	R 22,877	R 52,967	R 168,264	R 221,231
2010 Total	15,437	14,046	R 3,856	R 12,903	20,436	R 33,339	R 93,195	R 129,978	R 19,128	R 137,159	105,142	R 242,301
2011 Total	R 21,915	R 12,807	R 3,926	R 17,198	R 21,450	R 38,648	R 154,451	R 135,727	R 18,928	R 197,038	R 112,068	R 309,107
2012 Total	R 27,848	R 10,005	4,335	R 19,798	R 22,390	R 42,188	R 218,264	R 111,335	20,675	R 233,764	R 116,510	R 350,274
2013 Total	R 28,275	R 8,459	3,929	R 20,461	R 20,202	R 40,663	R 235,681	R 99,737	R 19,828	R 254,431	R 100,816	R 355,247
2014 Total	R 29,753	R 7,784	R 4,343	R 22,332	R 19,548	R 41,880	R 267,611	R 95,695	R 23,184	R 292,092	R 94,398	R 386,491
2015 Total	R 17,313	R 5,363	2,829	R 16,019	9,486	R 25,505	R 177,608	R 70,826	R 16,597	R 221,406	R 43,625	R 265,030
2016 Total	R 8,488	R 3,062	1,627	R 9,067	R 4,110	R 13,177	R 98,418	R 43,398	9,469	R 134,213	R 17,072	R 151,285
2017 Total	R 11,246	4,067	R 1,939	R 12,642	R 4,610	R 17,252	R 139,013	61,126	R 12,934	R 193,627	R 19,446	R 213,073
2018 Total	R 14,482	R 4,883	2,016	R 16,515	4,866	R 21,381	R 188,541	R 77,273	13,789	R 260,652	18,951	R 279,603
2019 Total	R 13,895	R 4,269	R 1,851	R 15,808	R 4,207	R 20,015	R 191,323	R 71,439	R 13,499	R 259,556	R 16,704	R 276,260
2020 Total	R 7,111	R 2,592	1,042	8,875	R 1,870	R 10,745	R 106,852	R 47,348	R 8,111	R 155,175	R 7,137	R 162,311
2021 Total	R 9,294	R 2,970	R 1,425	R 10,785	R 2,904	R 13,689	R 141,093	R 55,101	R 9,879	R 194,974	R 11,099	R 206,073
2022 January	R 1,002	R 256	R 150	R 1,101	R 307	R 1,408	R 15,234	R 4,748	R 1,101	R 19,931	R 1,152	R 21,083
February	R 1,010	R 269	R 152	R 1,200	R 231	R 1,431	R 15,992	R 5,196	R 1,096	R 21,347	937	R 22,284
March	R 1,031	R 329	R 159	R 1,241	R 278	R 1,519	R 15,755	R 6,296	R 1,106	R 22,076	1,080	R 23,156
April	R 1,077	R 316	R 166	R 1,266	R 293	R 1,559	R 16,529	R 5,917	R 1,160	R 22,521	R 1,085	R 23,606
May	R 1,125	R 333	R 174	R 1,322	R 310	R 1,632	R 17,273	R 6,238	R 1,216	R 23,517	R 1,210	R 24,727
June	R 1,148	R 340	R 178	R 1,356	R 310	R 1,666	R 17,614	R 6,364	R 1,243	R 24,122	R 1,100	R 25,222
July	R 1,176	R 371	R 181	R 1,427	R 301	R 1,728	R 18,185	R 7,022	R 1,274	R 25,385	R 1,096	R 26,481
August	R 1,182	R 353	R 183	R 1,401	R 317	R 1,718	R 18,173	R 6,621	R 1,281	R 24,922	R 1,152	R 26,075
September	R 1,179	R 359	R 184	R 1,406	R 316	R 1,722	R 18,116	R 6,730	R 1,287	R 25,011	R 1,121	R 26,132
October	R 1,209	R 362	R 186	R 1,420	R 337	R 1,757	R 18,534	R 6,770	R 1,298	R 25,260	1,342	R 26,603
November	R 1,220	R 393	R 187	R 1,498	R 302	R 1,800	R 18,991	R 7,463	R 1,325	R 26,648	R 1,131	R 27,779
December	R 1,224	R 343	R 187	R 1,487	R 267	R 1,754	R 19,416	R 6,638	R 1,350	R 26,452	R 952	R 27,404
Total	R 13,583	R 4,024	R 2,087	R 16,125	R 3,569	R 19,694	R 209,811	R 76,003	R 14,738	R 287,192	R 13,360	R 300,552
2023 January	R 1,210	R 343	R 185	1,489	R 249	R 1,738	R 19,422	R 6,717	R 1,352	R 26,488	R 1,002	R 27,490
February	R 1,186	R 338	R 182	R 1,510	196	R 1,706	R 19,419	R 6,849	R 1,357	R 26,861	R 764	R 27,625
March	R 1,162	R 351	R 180	1,456	R 237	R 1,693	R 18,689	R 6,887	R 1,318	R 25,901	R 993	R 26,894
April	R 1,160	R 352	R 180	R 1,485	R 207	R 1,692	R 18,876	R 6,988	R 1,333	R 26,417	R 781	R 27,197
May	R 1,142	R 320	R 175	R 1,429	R 208	R 1,637	R 18,531	R 6,335	R 1,293	R 25,420	R 738	R 26,158
June	R 1,087	R 292	R 166	R 1,366	R 179	R 1,545	R 17,878	R 5,859	R 1,243	R 24,300	R 680	R 24,979
July	R 1,056	R 294	R 162	R 1,320	R 192	R 1,512	R 17,084	R 5,957	R 1,193	R 23,481	R 753	R 24,234
August	R 1,022	R 278	R 155	R 1,222	R 233	R 1,455	R 15,970	R 5,632	R 1,103	R 21,738	R 966	R 22,704
September	R 1,009	R 260	R 152	R 1,219	R 202	R 1,421	R 16,216	R 5,098	R 1,112	R 21,685	R 741	R 22,425
October	R 984	R 272	R 149	R 1,212	R 193	R 1,405	R 15,823	R 5,336	R 1,091	R 21,560	R 689	R 22,249
November	R 983	R 260	R 149	R 1,221	R 171	R 1,392	R 16,043	R 5,177	R 1,107	R 21,720	R 607	R 22,327
December	R 989	R 263	R 150	R 1,256	R 146	R 1,402	R 16,406	R 5,322	R 1,133	R 22,343	R 518	R 22,861
Total	R 12,990	R 3,623	R 1,985	R 16,185	R 2,413	R 18,598	R 210,354	R 72,156	R 14,634	R 287,914	R 9,231	R 297,144
2024 January	R 983	R 264	R 149	R 1,293	R 103	R 1,396	R 16,730	R 5,482	R 1,154	R 23,001	R 365	R 23,367
February	R 985	R 265	R 150	R 1,283	R 117	R 1,400	R 16,628	R 5,458	R 1,153	R 22,823	R 415	R 23,238
March	1,000	255	151	1,288	118	1,406	16,908	5,260	1,162	22,912	419	23,331
3-Month Total	2,968	784	450	3,864	338	4,202	50,267	16,199	3,470	68,736	1,199	69,936
2023 3-Month Total	3,558	1,032	547	4,455	682	5,137	57,529	20,453	4,026	79,250	2,759	82,009
2022 3-Month Total	3,043	854	461	3,542	816	4,358	46,981	16,240	3,303	63,354	3,170	66,524

R=Revised. NA=Not available.

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. 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 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 Markit, Inc.

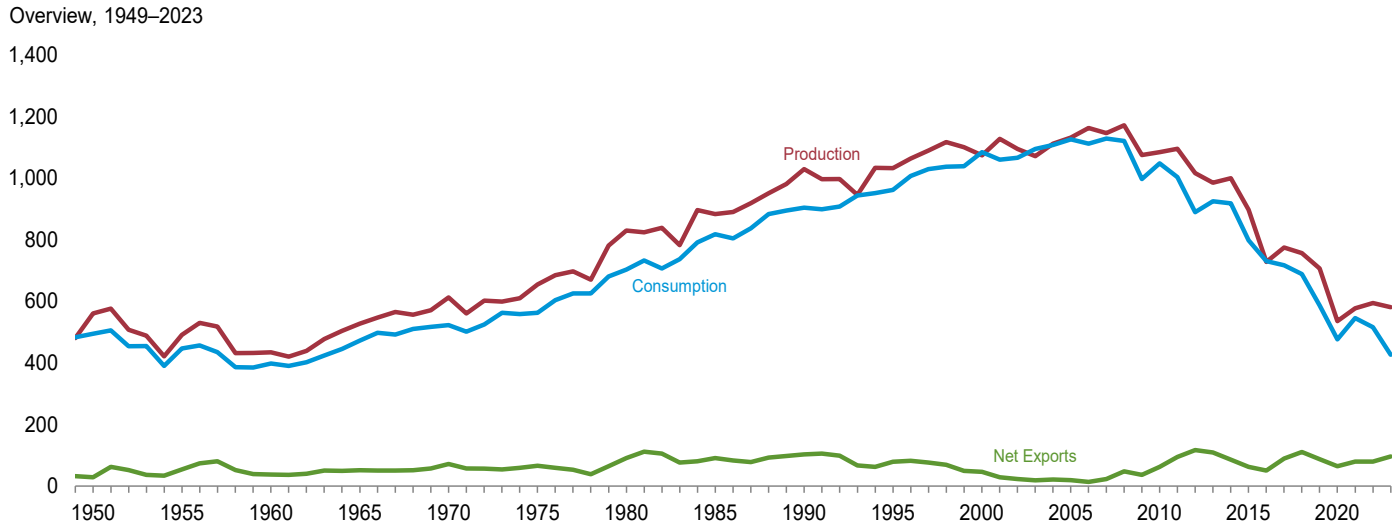
Note. Crude Oil and Natural Gas Wells. The U.S. Energy Information Administration (EIA) considers six well types in the *Monthly Energy Review* (MER): "completed for crude oil," "completed for natural gas," "dry hole," "vertical," "horizontal and directional," and "total." Wells that produce both crude oil and natural gas are categorized by the state. EIA includes both developmental wells and exploratory wells in the six well types, but excludes all other classes of wells drilled in connection with the search for producible hydrocarbons. If a lateral well (such as a service well, stratigraphic test well, observation well, etc.) is drilled at the same time as the original hole, EIA does not separately count the lateral well. However, EIA includes all of the well footage. EIA counts only horizontal wells after the first lateral is drilled and does not count pilot holes.

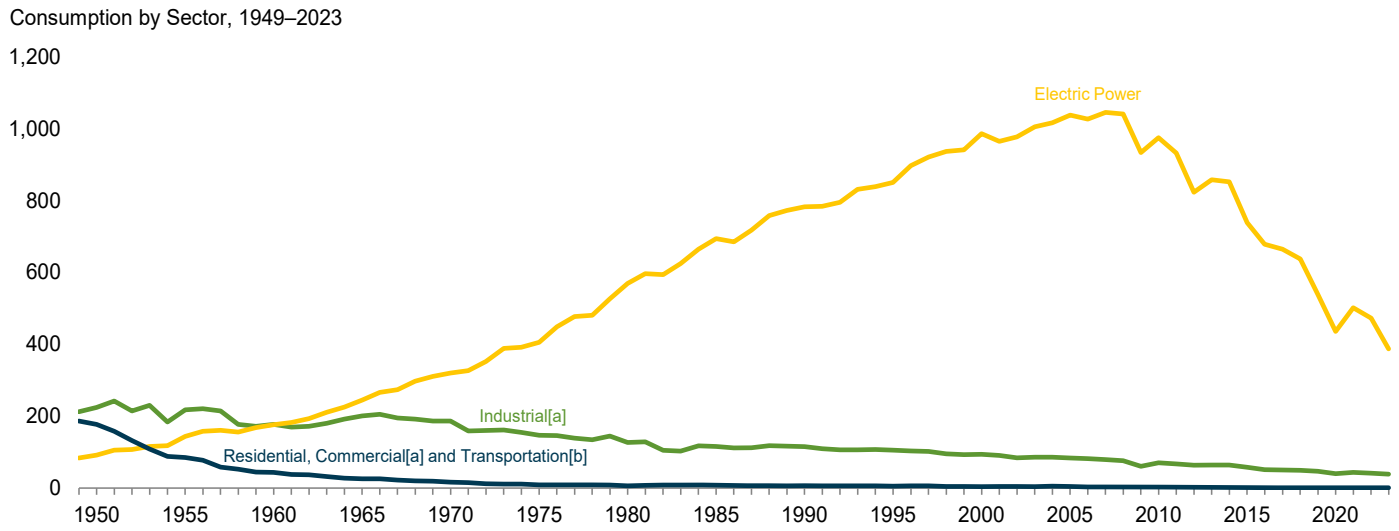
Prior to the March 1985 MER, drilling statistics consisted of completion data for crude oil, natural gas, and dry wells as reported to the American Petroleum Institute (API) during a given month. Due to time lags between the date of well completion and the date of completion reporting to the API, as-reported well completions were an inaccurate indicator of drilling activity. For example, in 1982, as-reported well completions increased, while the number of actual completions decreased. As a result, for 1973 forward, the data shown in this section are revised estimates based on the partial data available from IHS Markit. EIA continuously revises these estimates as new data become available. Each month, EIA estimates the latest 36 months of wells using the rig count and a 3-month average wells per rig ratio. EIA applies three conditions to the result: 1) if the model result is less than the actual reported value, then EIA uses the reported value, and 2) the published total well count is the maximum of the modeled total, or the sum of modeled oil, gas, and dry, or the sum of modeled horizontal and vertical well counts, and 3) the modeled component well counts are prorated so that they add exactly to the total published well count. EIA uses a similar process to estimate drilled footage using a 6-month average footage-per-well ratio. Because there is no reported dry rig count data, EIA estimates the number of dry wells using a 6-month average dry-wells-to-total-wells ratio, which EIA then applies to the modeled total wells. In general, the most recent 12 months of estimated well counts will have the highest errors because they are the farthest from the average well-per-rig ratio used in the model (at least 25 months).

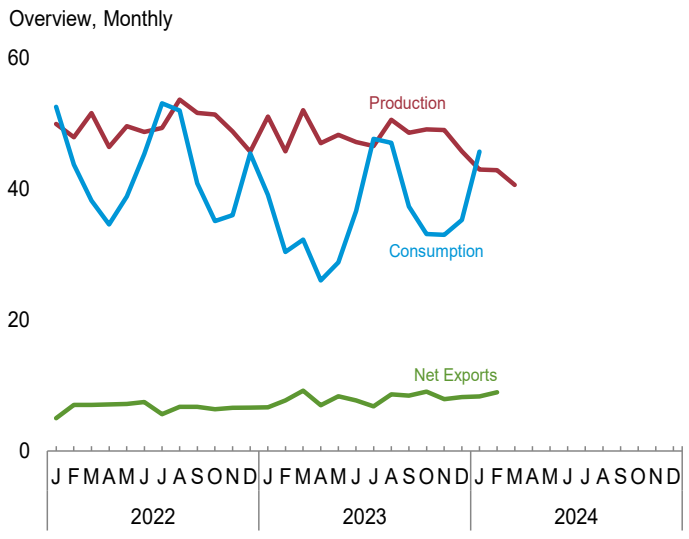
6. Coal

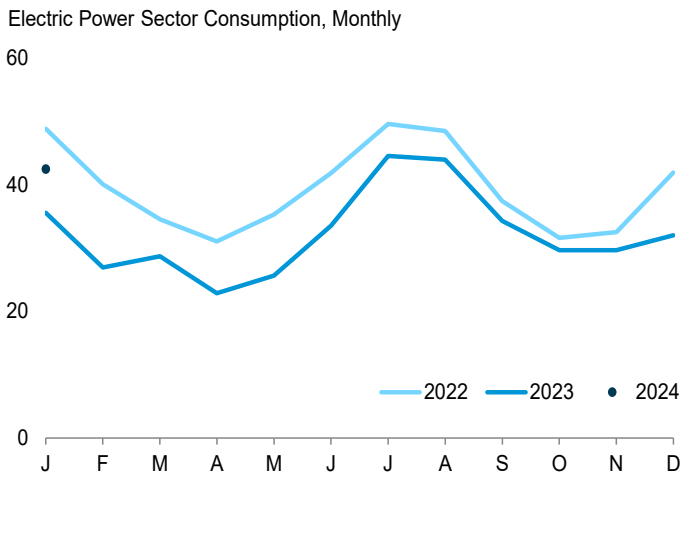
Figure 6.1 Coal

(Million Short Tons)









[a] Includes combined-heat-power (CHP) plants and a small number of electricity-only-plants.
[b] For 1978 forward, small amounts of transportation sector use are included in "Industrial."

Web Page: http://www.eia.gov/totalenergy/data/monthly/#coal.
Sources: Tables 6.1 and 6.2.

Table 6.1 Coal Overview

(Thousand Short Tons)

	Production[a]	Waste Coal Supplied[b]	Trade			Stock Change[d,e]	Losses and Unaccounted for[e,f]	Consumption
			Imports	Exports	Net Imports[c]			
1950 Total	**560,388**	**NA**	**365**	**29,360**	**-28,995**	**27,829**	**9,462**	**494,102**
1955 Total	**490,838**	**NA**	**337**	**54,429**	**-54,092**	**-3,974**	**-6,292**	**447,012**
1960 Total	**434,329**	**NA**	**262**	**37,981**	**-37,719**	**-3,194**	**1,722**	**398,081**
1965 Total	**526,954**	**NA**	**184**	**51,032**	**-50,848**	**1,897**	**2,244**	**471,965**
1970 Total	**612,661**	**NA**	**36**	**71,733**	**-71,697**	**11,100**	**6,633**	**523,231**
1975 Total	**654,641**	**NA**	**940**	**66,309**	**-65,369**	**32,154**	**-5,522**	**562,640**
1980 Total	**829,700**	**NA**	**1,194**	**91,742**	**-90,548**	**25,595**	**10,827**	**702,730**
1985 Total	**883,638**	**NA**	**1,952**	**92,680**	**-90,727**	**-27,934**	**2,796**	**818,049**
1990 Total	**1,029,076**	**3,339**	**2,699**	**105,804**	**-103,104**	**26,542**	**-1,730**	**904,498**
1995 Total	**1,032,974**	**8,561**	**9,473**	**88,547**	**-79,074**	**-275**	**632**	**962,104**
2000 Total	**1,073,612**	**9,089**	**12,513**	**58,489**	**-45,976**	**-48,309**	**938**	**1,084,095**
2005 Total	**1,131,498**	**13,352**	**30,460**	**49,942**	**-19,482**	**-9,702**	**9,092**	**1,125,978**
2010 Total	**1,084,368**	**13,651**	**19,353**	**81,716**	**-62,363**	**-13,039**	**182**	**1,048,514**
2011 Total	**1,095,628**	**13,209**	**13,088**	**107,259**	**-94,171**	**211**	**11,506**	**1,002,948**
2012 Total	**1,016,458**	**11,196**	**9,159**	**125,746**	**-116,586**	**6,902**	**14,980**	**889,185**
2013 Total	**984,842**	**11,279**	**8,906**	**117,659**	**-108,753**	**-38,525**	**1,451**	**924,442**
2014 Total	**1,000,049**	**12,090**	**11,350**	**97,257**	**-85,907**	**-2,357**	**10,858**	**917,731**
2015 Total	**896,941**	**9,969**	**11,318**	**73,958**	**-62,640**	**40,824**	**5,331**	**798,115**
2016 Total	**728,364**	**10,138**	**9,846**	**60,271**	**-50,425**	**-45,338**	**2,346**	**731,071**
2017 Total	**774,609**	**9,951**	**7,803**	**96,945**	**-89,142**	**-26,467**	**5,029**	**716,856**
2018 Total	**756,167**	**10,431**	**5,954**	**116,244**	**-110,290**	**-37,194**	**5,397**	**688,105**
2019 Total	**706,309**	**8,003**	**6,697**	**93,765**	**-87,068**	**35,463**	**5,238**	**586,543**
2020 Total	**535,434**	**6,880**	**5,137**	**69,067**	**-63,929**	**-5,438**	**7,129**	**476,693**
2021 Total	**577,431**	**7,663**	**5,388**	**85,115**	**-79,727**	**-44,466**	**4,154**	**545,679**
2022 January	49,887	838	503	5,518	-5,016	-7,345	522	52,533
February	47,875	711	289	7,305	-7,016	-3,364	1,240	43,694
March	51,548	662	530	7,578	-7,048	5,320	1,623	38,219
April	46,387	667	684	7,803	-7,118	4,731	652	34,554
May	49,553	861	325	7,538	-7,213	2,345	2,011	38,843
June	48,670	718	627	8,092	-7,465	-5,426	2,010	45,340
July	49,301	812	660	6,289	-5,629	-7,785	-790	53,059
August	53,601	813	779	7,545	-6,766	-3,656	-659	51,963
September	51,574	691	531	7,280	-6,749	3,984	690	40,842
October	51,332	690	404	6,782	-6,378	8,366	2,169	35,109
November	48,754	752	689	7,286	-6,596	6,020	902	35,987
December	45,673	719	292	6,940	-6,648	-4,575	-1,074	45,392
Total	**594,155**	**8,934**	**6,313**	**85,956**	**-79,642**	**-1,383**	**9,296**	**515,534**
2023 January	51,010	640	479	7,140	-6,661	4,360	1,563	39,067
February	45,713	692	260	7,995	-7,735	8,093	202	30,374
March	51,984	698	281	9,485	-9,204	9,231	1,992	32,255
April	46,969	625	426	7,408	-6,982	9,049	5,534	26,029
May	48,223	618	305	8,692	-8,387	8,398	3,276	28,780
June	47,146	612	282	8,003	-7,721	1,307	2,086	36,644
July	46,520	851	326	7,141	-6,816	-7,174	93	47,636
August	50,543	808	355	8,999	-8,644	-4,973	650	47,031
September	48,542	500	314	8,747	-8,433	-2,551	5,830	37,330
October	49,074	F 638	413	9,453	-9,040	5,266	2,300	33,107
November	48,951	F 780	335	8,252	-7,917	9,614	-795	32,995
December	45,712	F 587	233	8,475	-8,242	115	2,680	35,262
Total	**580,386**	**E 8,050**	**4,010**	**99,791**	**-95,781**	**40,735**	**25,411**	**426,509**
2024 January	42,950	RF 399	94	8,411	-8,318	R -9,323	R -1,312	R 45,667
February	42,837	NA	R 151	R 9,119	R -8,969	NA	NA	NA
March	40,612	NA	NA	NA	NA	NA	NA	NA
3-Month Total	**126,399**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
2023 3-Month Total	**148,706**	**2,030**	**1,020**	**24,620**	**-23,600**	**21,684**	**3,757**	**101,696**
2022 3-Month Total	**149,310**	**2,211**	**1,322**	**20,401**	**-19,080**	**-5,388**	**3,385**	**134,445**

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

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

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

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

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

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

R=Revised. 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 6.2 Coal Consumption by Sector

(Thousand Short Tons)

	End-Use Sectors										Electric Power Sector[e,f]	Total
		Commercial			Industrial							
						Other Industrial						
	Resi-dential	CHP[a]	Other[b]	Total	Coke Plants	CHP[c]	Non-CHP[d]	Total	Total	Trans-portation		
1950 Total	51,562	(g)	63,021	63,021	104,014	(h)	120,623	120,623	224,637	63,011	91,871	494,102
1955 Total	35,590	(g)	32,852	32,852	107,743	(h)	110,096	110,096	217,839	16,972	143,759	447,012
1960 Total	24,159	(g)	16,789	16,789	81,385	(h)	96,017	96,017	177,402	3,046	176,685	398,081
1965 Total	14,635	(g)	11,041	11,041	95,286	(h)	105,560	105,560	200,846	655	244,788	471,965
1970 Total	9,024	(g)	7,090	7,090	96,481	(h)	90,156	90,156	186,637	298	320,182	523,231
1975 Total	2,823	(g)	6,587	6,587	83,598	(h)	63,646	63,646	147,244	24	405,962	562,640
1980 Total	1,355	(g)	5,097	5,097	66,657	(h)	60,347	60,347	127,004	(h)	569,274	702,730
1985 Total	1,711	(g)	6,068	6,068	41,056	(h)	75,372	75,372	116,429	(h)	693,841	818,049
1990 Total	1,345	1,191	4,189	5,379	38,877	27,781	48,549	76,330	115,207	(h)	f782,567	904,498
1995 Total	755	1,419	3,633	5,052	33,011	29,363	43,693	73,055	106,067	(h)	850,230	962,104
2000 Total	454	1,547	2,126	3,673	28,939	28,031	37,177	65,208	94,147	(h)	985,821	1,084,095
2005 Total	378	1,922	2,420	4,342	23,434	25,875	34,465	60,340	83,774	(h)	1,037,485	1,125,978
2010 Total	(i)	1,720	1,361	3,081	21,092	24,638	24,650	49,289	70,381	(h)	975,052	1,048,514
2011 Total	(i)	1,668	1,125	2,793	21,434	22,319	23,919	46,238	67,671	(h)	932,484	1,002,948
2012 Total	(i)	1,450	595	2,045	20,751	20,065	22,773	42,838	63,589	(h)	823,551	889,185
2013 Total	(i)	1,356	595	1,951	21,474	19,761	23,294	43,055	64,529	(h)	857,962	924,442
2014 Total	(i)	1,063	824	1,887	21,297	19,076	23,870	42,946	64,243	(h)	851,602	917,731
2015 Total	(i)	798	706	1,503	19,708	16,984	21,475	38,459	58,167	(h)	738,444	798,115
2016 Total	(i)	683	500	1,183	16,485	14,720	20,129	34,849	51,333	(h)	678,554	731,071
2017 Total	(i)	610	451	1,061	17,538	12,975	20,289	33,264	50,801	(h)	664,993	716,856
2018 Total	(i)	577	395	972	18,337	12,233	19,347	31,580	49,917	(h)	637,217	688,105
2019 Total	(i)	519	357	876	17,967	10,892	18,203	29,095	47,062	(h)	538,606	586,543
2020 Total	(i)	473	320	793	14,414	9,453	16,207	25,660	40,073	(h)	435,827	476,693
2021 Total	(i)	534	277	811	17,589	9,700	16,145	25,845	43,434	(h)	501,435	545,679
2022 January	(i)	56	36	92	1,432	881	1,322	2,203	3,636	(h)	48,805	52,533
February	(i)	55	36	91	1,309	762	1,469	2,231	3,540	(h)	40,063	43,694
March	(i)	37	24	61	1,412	845	1,402	2,248	3,659	(h)	34,498	38,219
April	(i)	25	13	39	1,318	765	1,420	2,185	3,503	(h)	31,012	34,554
May	(i)	27	14	41	1,349	824	1,366	2,189	3,539	(h)	35,264	38,843
June	(i)	42	22	63	1,281	781	1,397	2,179	3,460	(h)	41,817	45,340
July	(i)	44	13	57	1,334	787	1,325	2,112	3,446	(h)	49,556	53,059
August	(i)	46	14	60	1,334	803	1,297	2,099	3,434	(h)	48,469	51,963
September	(i)	47	14	60	1,263	751	1,358	2,109	3,373	(h)	37,409	40,842
October	(i)	46	24	70	1,373	791	1,322	2,113	3,485	(h)	31,554	35,109
November	(i)	52	27	79	1,288	746	1,371	2,117	3,405	(h)	32,503	35,987
December	(i)	57	30	88	1,315	828	1,279	2,106	3,421	(h)	41,883	45,392
Total	**(i)**	**535**	**265**	**800**	**16,009**	**9,563**	**16,328**	**25,891**	**41,900**	**(h)**	**472,834**	**515,534**
2023 January	(i)	46	36	82	1,354	826	1,255	2,081	3,435	(h)	35,549	39,067
February	(i)	40	38	78	1,266	724	1,372	2,096	3,362	(h)	26,934	30,374
March	(i)	37	35	71	1,405	734	1,353	2,087	3,492	(h)	28,692	32,255
April	(i)	36	17	53	1,263	704	1,136	1,840	3,103	(h)	22,873	26,029
May	(i)	31	15	46	1,302	720	1,110	1,831	3,133	(h)	25,601	28,780
June	(i)	25	12	37	1,287	699	1,125	1,825	3,112	(h)	33,496	36,644
July	(i)	27	12	38	1,344	711	995	1,706	3,050	(h)	44,548	47,636
August	(i)	28	12	41	1,350	663	1,051	1,714	3,064	(h)	43,926	47,031
September	(i)	30	13	43	1,303	680	1,041	1,721	3,024	(h)	34,263	37,330
October	(i)	33	F25	F58	F1,377	695	F1,330	F2,026	F3,403	(h)	29,646	33,107
November	(i)	35	F36	F71	F1,244	712	F1,330	F2,041	F3,285	(h)	29,639	32,995
December	(i)	40	F35	F75	F1,292	738	F1,151	F1,890	F3,181	(h)	32,005	35,262
Total	**(i)**	**409**	**E285**	**E694**	**E15,787**	**8,608**	**E14,249**	**E22,857**	**E38,645**	**(h)**	**387,170**	**426,509**
2024 January	(i)	56	F45	F102	F1,257	823	F1,021	F1,845	F3,101	(h)	42,464	45,667

[a] Commercial combined-heat-and-power (CHP) and a small number of commercial electricity-only plants, such as those at hospitals and universities. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[b] All commercial sector fuel use other than that in "Commercial CHP."

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

[d] All industrial sector fuel use other than that in "Coke Plants" and "Industrial CHP."

[e] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

[f] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

[g] Included in "Commercial Other."

[h] Included in "Industrial Non-CHP."

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

R=Revised. E=Estimate. F=Forecast.

Notes: • CHP monthly values are from Table 7.4c; electric power sector monthly values are from Table 7.4b; all other monthly values are estimates derived from collected quarterly and annual data. See Note 2, "Coal Consumption," at end of section. • Data values preceded by "F" are derived from EIA's Short-Term Integrated Forecasting System. See Note 4, "Coal Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 6.3 Coal Stocks by Sector

(Thousand Short Tons)

	Producers[a] and Distributors	End-Use Sectors					Electric Power Sector[d,e]	Total
		Residential[b] and Commercial	Industrial			Total		
			Coke Plants	Other[c]	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**
2005 Year	**34,971**	**NA**	**2,615**	**5,582**	**8,196**	**8,196**	**101,137**	**144,304**
2010 Year	**49,820**	**552**	**1,925**	**4,525**	**6,451**	**7,003**	**174,917**	**231,740**
2011 Year	**51,897**	**603**	**2,610**	**4,455**	**7,065**	**7,668**	**172,387**	**231,951**
2012 Year	**46,157**	**583**	**2,522**	**4,475**	**6,997**	**7,581**	**185,116**	**238,853**
2013 Year	**45,652**	**495**	**2,200**	**4,097**	**6,297**	**6,792**	**147,884**	**200,328**
2014 Year	**38,894**	**449**	**2,640**	**4,196**	**6,836**	**7,285**	**151,792**	**197,971**
2015 Year	**35,871**	**394**	**2,236**	**4,382**	**6,618**	**7,012**	**195,912**	**238,795**
2016 Year	**25,309**	**360**	**1,675**	**3,637**	**5,312**	**5,672**	**162,476**	**193,457**
2017 Year	**23,999**	**310**	**1,718**	**3,242**	**4,960**	**5,270**	**137,721**	**166,991**
2018 Year	**21,692**	**247**	**1,807**	**3,258**	**5,065**	**5,312**	**102,793**	**129,796**
2019 Year	**31,320**	**246**	**2,333**	**3,258**	**5,591**	**5,838**	**128,102**	**165,260**
2020 Year	**23,640**	**250**	**1,654**	**2,848**	**4,501**	**4,751**	**131,431**	**159,822**
2021 Year	**19,013**	**176**	**1,658**	**2,624**	**4,283**	**4,459**	**91,884**	**115,356**
2022 January	19,114	170	1,636	2,551	4,187	4,356	84,541	108,011
February	19,360	163	1,613	2,478	4,090	4,254	81,034	104,648
March	19,674	157	1,590	2,404	3,994	4,151	86,143	109,968
April	19,801	158	1,600	2,394	3,994	4,152	90,746	114,699
May	20,200	158	1,610	2,384	3,994	4,152	92,692	117,044
June	20,597	158	1,620	2,374	3,994	4,153	86,869	111,618
July	20,439	168	1,629	2,426	4,055	4,223	79,172	103,834
August	20,315	177	1,638	2,478	4,115	4,293	75,570	100,178
September	20,445	187	1,646	2,529	4,176	4,363	79,354	104,162
October	20,846	180	1,640	2,519	4,159	4,339	87,342	112,527
November	21,029	173	1,633	2,509	4,143	4,316	93,203	118,548
December	**20,820**	**167**	**1,627**	**2,499**	**4,126**	**4,293**	**88,861**	**113,973**
2023 January	F 21,446	165	1,635	2,483	4,118	4,283	92,604	118,333
February	F 22,453	163	1,643	2,467	4,110	4,273	99,700	126,426
March	F 22,390	162	1,650	2,451	4,102	4,263	109,004	135,657
April	F 22,292	161	1,662	2,556	4,217	4,379	118,035	144,706
May	F 22,196	161	1,673	2,660	4,333	4,494	126,414	153,104
June	F 22,092	160	1,684	2,765	4,449	4,609	127,710	154,411
July	F 21,051	163	1,674	2,760	4,434	4,597	121,590	147,238
August	F 19,536	165	1,664	2,755	4,419	4,585	118,144	142,265
September	F 18,506	168	1,655	2,750	4,404	4,572	116,635	139,713
October	F 18,488	F 208	F 1,722	F 2,940	F 4,663	F 4,871	121,621	144,979
November	F 18,465	F 207	F 1,701	F 2,955	F 4,655	F 4,862	131,266	154,593
December	**F 18,427**	**F 206**	**F 1,684**	**F 2,964**	**F 4,649**	**F 4,855**	**131,426**	**154,708**
2024 January	F 19,049	F 194	F 1,611	F 2,808	F 4,419	F 4,614	121,722	145,385

[a] Excludes stocks in transit or held outside of the United States.

[b] Through 1979, data are for the residential and commercial sectors. Beginning in 2008, data are for the commercial sector only.

[c] 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.

[d] 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.

[e] Excludes waste coal. Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

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

Notes: • Stocks are at end of period. • Electric power sector monthly values are from Table 7.5; producers and distributors monthly values are estimates derived from collected annual data; all other monthly values are estimates derived from collected quarterly values. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 4, "Coal Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Note 1. Coal Production. Preliminary monthly estimates of national coal production are the sum of weekly estimates developed by the U.S. Energy Information Administration (EIA) and published in the *Weekly Coal Production* report. When a week extends into a new month, production is allocated on a daily basis and added to the appropriate month. Weekly estimates are based on Association of American Railroads (AAR) data showing the number of railcars loaded with coal during the week by Class I and certain other railroads.

Through 2001, the weekly coal production model converted AAR data into short tons of coal by using the average number of short tons of coal per railcar loaded reported in the "Quarterly Freight Commodity Statistics" from the Surface Transportation Board. If an average coal tonnage per railcar loaded was not available for a specific railroad, the national average was used. To derive the estimate of total weekly production, the total rail tonnage for the week was divided by the ratio of quarterly production shipped by rail and total quarterly production. Data for the corresponding quarter of previous years were used to derive this ratio. This method ensured that the seasonal variations were preserved in the production estimates.

From 2002 through 2014, the weekly coal production model used statistical auto regressive methods to estimate national coal production as a function of railcar loadings of coal, heating degree-days, and cooling degree-days. On Thursday of each week, EIA received from the AAR data for the previous week. The latest weekly national data for heating degree-days and cooling degree-days were obtained from the National Oceanic and Atmospheric Administration's Climate Prediction Center.

Beginning in 2015, the revised weekly coal production model uses statistical auto regressive methods to estimate national coal production as a function of railcar loadings of coal. EIA receives AAR data on Thursday of each week for prior week car loadings. The weekly coal model is run and a national level coal production estimate is obtained. From there, state-level estimates are calculated using historical state production share. The state estimates are then aggregated to various regional-level estimates. The weekly coal model is refit every quarter after preliminary coal data are available.

When preliminary quarterly data become available, the monthly and weekly estimates are adjusted to conform to the quarterly figures. The adjustment procedure uses historical state-level production data, the methodology for which can be seen in the documentation located at http://www.eia.gov/coal/production/weekly/. Initial estimates of annual production published in January of the following year are based on preliminary production data covering the first nine months (three quarters) and weekly/monthly estimates for the fourth quarter. All quarterly, monthly, and weekly production figures are adjusted to conform to the final annual production data published in the *Monthly Energy Review* in the fall of the following year.

Note 2. Coal Consumption. Forecast data (designated by an "F") are derived from forecasted values shown in EIA's *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "U.S. Coal Supply, Consumption, and Inventories." The monthly estimates are based on the quarterly values, which are released in March, June, September, and December. The estimates are revised quarterly as collected data become available from the data sources. Sector-specific information follows.

Residential and Commercial—Through 2007, coal consumption by the residential and commercial sectors is reported to EIA for the two sectors combined; EIA estimates the amount consumed by the sectors individually. To create the estimates, it is first assumed that an occupied coal-heated housing unit consumes fuel at the same Btu rate as an oil-heated housing unit. Then, for the years in which data are available on the number of occupied housing units by heating source (1973–1981 and subsequent odd-numbered years), residential consumption of coal is estimated using the following steps: a ratio is created of the number of occupied housing units heated by coal to the number of occupied housing units heated by oil; that ratio is then multiplied by the Btu quantity of oil consumed by the residential sector to derive an estimate of the Btu quantity of coal consumed by the residential sector; and, finally, the amount estimated as the residential sector consumption is subtracted from the residential and commercial sectors' combined consumption to derive the commercial sector's estimated consumption. Beginning in 2008, residential coal consumption data are not collected by EIA, and commercial coal consumption data are taken directly from reported data.

Industrial Coke Plants—Through 1979, monthly coke plant consumption data were taken directly from reported data. For 1980–1987, coke plant consumption estimates were derived by proportioning reported quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported. Beginning in 1988, monthly coke plant consumption estimates are derived from the reported quarterly data by using monthly ratios of raw steel production data from the American Iron and Steel Institute. The ratios are the monthly raw steel production from open hearth and basic oxygen process furnaces as a proportion of the quarterly production from those kinds of furnaces. Coal coke consumption values also include the relativity small amount consumed for non-combustion use (See Tables 1.12a and 1.12b).

Industrial Other—Through 1977, monthly consumption data for the other industrial sector (all industrial users minus coke plants) were derived by using reported data to modify baseline consumption figures from the most recent U.S. Census Bureau Annual Survey of Manufactures or Census of Manufactures. For 1978 and 1979, monthly estimates were derived from data reported on Forms EIA-3 and EIA-6. For 1980–1987, monthly figures were estimated by proportioning quarterly data by using the ratios of monthly-to-quarterly consumption data in 1979, the last year in which monthly data were reported on Form EIA-3. Beginning in 1988, monthly consumption for the other industrial sector is estimated from reported quarterly data by using ratios derived from industrial production indices published by the Board of Governors of the Federal Reserve System. Indices for six major industry groups are used as the basis for calculating the ratios: food manufacturing, which is North American Industry Classification System (NAICS) code 311; paper manufacturing, NAICS 322; chemical manufacturing, NAICS 325; petroleum and coal products, NAICS 324; non-metallic mineral products manufacturing, NAICS 327; and primary metal manufacturing, NAICS 331. The monthly ratios are computed as the monthly sum of the weighted indices as a proportion of the quarterly sum of the weighted indices by using the 1977 proportion as the weights. Through 2007, quarterly consumption data for the other industrial sector were derived by adding beginning stocks at manufacturing plants to current receipts and subtracting ending stocks at manufacturing plants. In this calculation, current receipts are the greater of either reported receipts from manufacturing plants (Form EIA-3) or reported shipments to the other industrial sector (Form EIA-6), thereby ensuring that agriculture, forestry, fishing, and construction consumption data were included where appropriate. Beginning in 2008, quarterly consumption totals for other industrial coal include data for manufacturing and mining only. Over time, surveyed coal consumption data for agriculture, forestry, fishing, and construction dwindled to about 20–30 thousand short tons annually. Therefore, in 2008, EIA consolidated its programs by eliminating agriculture, forestry, fishing, and construction as surveyed sectors.

Electric Power Sector—Monthly consumption data for electric power plants are taken directly from reported data.

Note 3. Coal Stocks. Coal stocks data are reported by major end-use sector. Forecast data (designated by an "F") are derived from forecasted values shown in EIA's *Short-Term Energy Outlook* (DOE/EIA-0202) table titled "U.S. Coal Supply, Consumption, and Inventories." The monthly estimates are based on the quarterly values (released in March, June, September, and December) or annual values. The estimates are revised as collected data become available from the data sources. Sector-specific information follows.

Producers and Distributors—Through 1997, quarterly stocks at producers and distributors were taken directly from reported data. Monthly data were estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Beginning in 1998, end-of-year stocks are taken from reported data. Monthly stocks are estimated by a model.

Residential and Commercial—Through 1979, stock estimates for the residential and commercial sector were taken directly from reported data. For 1980–2007, stock estimates were not collected. Beginning in 2008, quarterly commercial (excluding residential) stocks data are collected on Form EIA-3 (data for "Commercial and Institutional Coal Users").

Industrial Coke Plants—Through 1979, monthly stocks at coke plants were taken directly from reported data. Beginning in 1980, coke plant stocks are estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Quarterly stocks are taken directly from data reported on Form EIA-5.

Industrial Other—Through 1977, stocks for the other industrial sector were derived by using reported data to modify baseline figures from a one-time Bureau of Mines survey of consumers. For 1978–1982, monthly estimates were derived by judgmentally proportioning reported quarterly data based on representative seasonal patterns of supply and demand. Beginning in 1983, other industrial coal stocks are estimated as indicated above for coke plants. Quarterly stocks are taken directly from data reported on Form EIA-3 and therefore include only manufacturing industries; data for agriculture, forestry, fishing, mining, and construction stocks are not available.

Electric Power Sector—Monthly stocks data at electric power plants are taken directly from reported data.

Note 4. Coal Forecast Values. Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). The model is driven primarily by data and assumptions about key macroeconomic variables, the world oil price, and weather. The coal forecast relies on other variables as well, such as alternative fuel prices (natural gas and oil) and power generation by sources other than fossil fuels, including nuclear and hydroelectric power. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the coal industry.

The STIFS model results are published monthly in EIA's *Short-Term Energy Outlook*, which is accessible on the Web at http://www.eia.gov/forecasts/steo/.

Table 6.1 Sources

Production

1949–September 1977: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook and Minerals Industry Surveys*.
October 1977 forward: U.S. Energy Information Administration (EIA), *Weekly Coal Production*.

Waste Coal Supplied

1989–1997: EIA, Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report," and Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

2004–2007: EIA, Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report," and Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, Short-Term Integrated Forecasting System.

Imports and Exports

1949 forward: U.S. Department of Commerce, U.S. Census Bureau, Monthly Reports IM 145 (Imports) and EM 545 (Exports).

Stock Change

1950 forward: Calculated from data in Table 6.3.

Losses and Unaccounted for

1949 forward: Calculated as the sum of production, imports, and waste coal supplied, minus exports, stock change, and consumption.

Consumption

1949 forward: Table 6.2.

Table 6.2 Sources

Residential and Commercial Total

Through 2007, coal consumption by the residential and commercial sectors combined is reported to the U.S. Energy Information Administration (EIA). EIA estimates the sectors individually using the method described in Note 2, "Consumption," at the end of Section 6. Data for the residential and commercial sectors combined are from:
1949–1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook*.
January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks." October 1977–1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

1980–1997: EIA, Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: DOI, Mine Safety and Health Administration, Form 7000-2, "Quarterly Coal Consumption and Quality Report—Coke Plants."

Commercial Total

Beginning in 2008, coal consumption by the commercial (excluding residential) sector is reported to EIA. Data for total commercial consumption are from: 2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, Short-Term Integrated Forecasting System (STIFS).

Commercial CHP

1989 forward: Table 7.4c.

Commercial Other

1949 forward: Calculated as "Commercial Total" minus "Commercial CHP."

Industrial Coke Plants

1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.
October 1977–1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals—Monthly/Annual Supplement."

1981–1984: EIA, Form EIA-5/5A, "Coke Plant Report—Quarterly/Annual Supplement."

1985 forward: EIA, Form EIA–5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; and, for forecast values, EIA, STIFS.

Other Industrial Total

1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.

October 1977–1979: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

1980–1997: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms and Form EIA-6, "Coal Distribution Report," quarterly.

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

2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data") and Form EIA-7A, "Coal Production Report," annual; and, for forecast values, EIA, STIFS.

Other Industrial CHP

1989 forward: Table 7.4c.

Other Industrial Non-CHP

1949 forward: Calculated as "Other Industrial Total" minus "Other Industrial CHP."

Transportation
1949–1976: DOI, BOM, Minerals Yearbook.
January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks." October–December 1977: EIA, Form EIA-6, "Coal Distribution Report," quarterly.

Electric Power
1949 forward: Table 7.4b.

Table 6.3 Sources

Producers and Distributors
1973–1979: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Form 6-1419Q, "Distribution of Bituminous Coal and Lignite Shipments."

1980–1997: U.S. Energy Information Administration (EIA), Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: EIA, Form EIA-6A, "Coal Distribution Report," annual.

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

Residential and Commercial
1949–1976: DOI, BOM, *Minerals Yearbook*.

January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

October 1977–1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

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

Industrial Coke Plants
1949–September 1977: DOI, BOM, *Minerals Yearbook* and *Minerals Industry Surveys*.

October 1977–1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals—Monthly/Annual."

1981–1984: EIA, Form EIA-5/5A, "Coke Plant Report—Quarterly/Annual Supplement."

1985 forward: EIA, Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" and, for forecast values, EIA, STIFS.

Industrial Other
1949–September 1977: DOI, BOM, *Minerals Yearbook and Minerals Industry Surveys*.

October 1977–2007: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

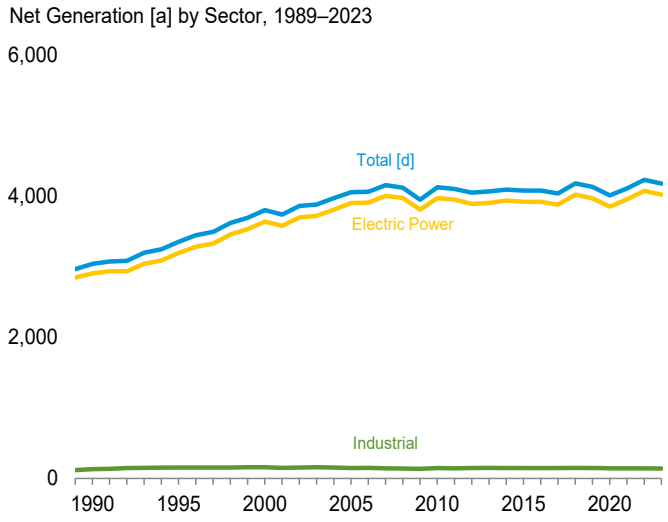
2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, STIFS.

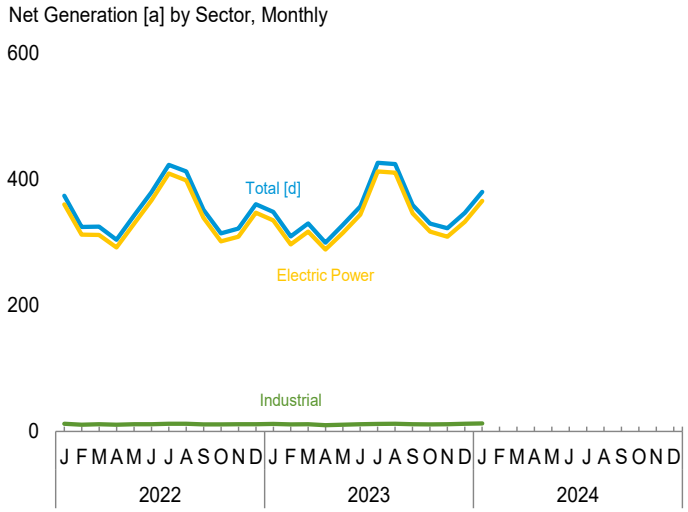
Electric Power
1949 forward: Table 7.5.

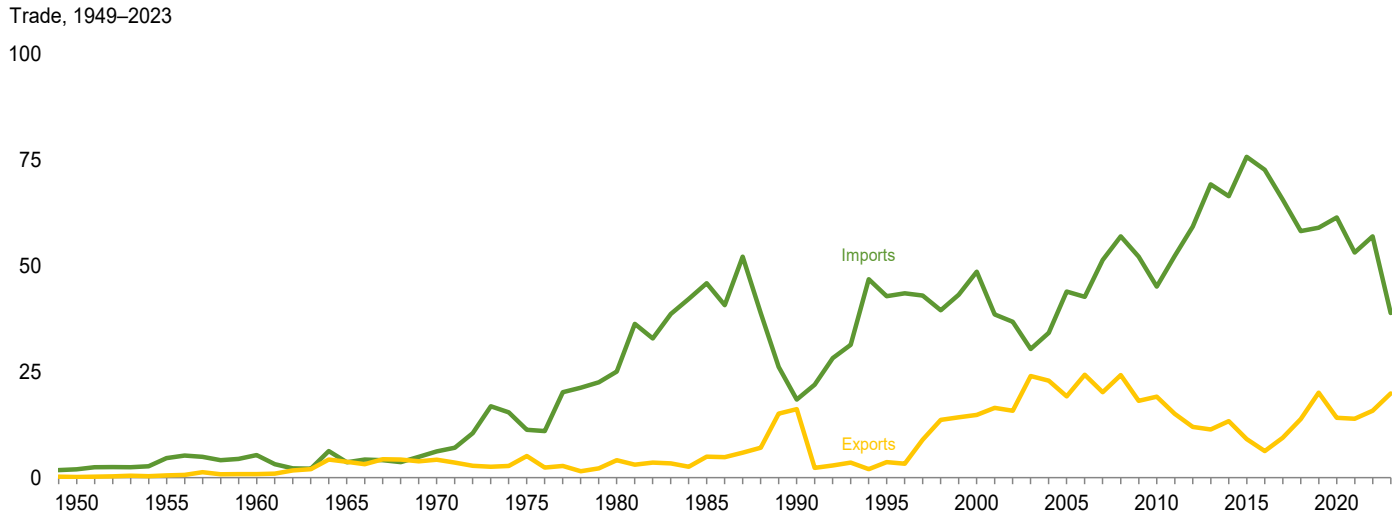
7. Electricity

Figure 7.1 Electricity Overview

(Billion Kilowatthours)







[a] Data are for utility-scale facilities.
[b] Electricity retail sales to ultimate customers reported by electric utilities and other energy service providers.
[c] See "Direct Use" in Glossary.
[d] Includes commercial sector.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.1.

Table 7.1 Electricity Overview

(Billion Kilowatthours)

	Net Generation[a]				Trade			T&D Losses[f] and Unaccounted for[g]	End Use		
	Electric Power Sector[b]	Commercial Sector[c]	Industrial Sector[d]	Total	Imports[e]	Exports[e]	Net Imports[e]		Sales to Ultimate Customers[h]	Direct Use[i]	Total
1950 Total	**329**	**NA**	**5**	**334**	**2**	**(s)**	**2**	**44**	**291**	**NA**	**291**
1955 Total	**547**	**NA**	**3**	**550**	**5**	**(s)**	**4**	**58**	**497**	**NA**	**497**
1960 Total	**756**	**NA**	**4**	**759**	**5**	**1**	**5**	**76**	**688**	**NA**	**688**
1965 Total	**1,055**	**NA**	**3**	**1,058**	**4**	**4**	**(s)**	**104**	**954**	**NA**	**954**
1970 Total	**1,532**	**NA**	**3**	**1,535**	**6**	**4**	**2**	**145**	**1,392**	**NA**	**1,392**
1975 Total	**1,918**	**NA**	**3**	**1,921**	**11**	**5**	**6**	**180**	**1,747**	**NA**	**1,747**
1980 Total	**2,286**	**NA**	**3**	**2,290**	**25**	**4**	**21**	**216**	**2,094**	**NA**	**2,094**
1985 Total	**2,470**	**NA**	**3**	**2,473**	**46**	**5**	**41**	**190**	**2,324**	**NA**	**2,324**
1990 Total	**2,901**	**6**	**[d] 131**	**3,038**	**18**	**16**	**2**	**203**	**2,713**	**125**	**2,837**
1995 Total	**3,194**	**8**	**151**	**3,353**	**43**	**4**	**39**	**229**	**3,013**	**151**	**3,164**
2000 Total	**3,638**	**8**	**157**	**3,802**	**49**	**15**	**34**	**244**	**3,421**	**171**	**3,592**
2005 Total	**3,902**	**8**	**145**	**4,055**	**44**	**19**	**25**	**269**	**3,661**	**150**	**3,811**
2010 Total	**3,972**	**9**	**144**	**4,125**	**45**	**19**	**26**	**264**	**3,755**	**132**	**3,887**
2011 Total	**3,948**	**10**	**142**	**4,100**	**52**	**15**	**37**	**255**	**3,750**	**133**	**3,883**
2012 Total	**3,890**	**11**	**146**	**4,048**	**59**	**12**	**47**	**263**	**3,695**	**138**	**3,832**
2013 Total	**3,904**	**12**	**150**	**4,066**	**69**	**11**	**58**	**256**	**3,725**	**143**	**3,868**
2014 Total	**3,937**	**13**	**144**	**4,094**	**67**	**13**	**53**	**244**	**3,765**	**139**	**3,903**
2015 Total	**3,920**	**13**	**146**	**4,079**	**76**	**9**	**67**	**245**	**3,759**	**141**	**3,900**
2016 Total	**3,919**	**13**	**146**	**4,078**	**73**	**6**	**67**	**242**	**3,762**	**140**	**3,902**
2017 Total	**3,879**	**13**	**144**	**4,035**	**66**	**9**	**56**	**227**	**3,723**	**141**	**3,864**
2018 Total	**4,021**	**13**	**147**	**4,181**	**58**	**14**	**44**	**222**	**3,859**	**144**	**4,003**
2019 Total	**3,968**	**14**	**149**	**4,131**	**59**	**20**	**39**	**215**	**3,811**	**143**	**3,954**
2020 Total	**3,854**	**13**	**143**	**4,010**	**61**	**14**	**47**	**201**	**3,718**	**139**	**3,856**
2021 Total	**3,957**	**13**	**140**	**4,110**	**53**	**14**	**39**	**204**	**3,806**	**139**	**3,945**
2022 January	360	1	13	374	4	1	3	26	339	[E] 12	351
February	312	1	11	324	3	2	2	9	306	[E] 11	317
March	312	1	12	325	4	2	2	11	304	[E] 12	316
April	292	1	11	304	4	1	2	11	285	[E] 11	296
May	329	1	11	342	4	2	3	24	310	[E] 11	321
June	366	1	12	379	6	1	4	25	347	[E] 12	359
July	409	2	13	423	7	1	5	27	389	[E] 13	402
August	398	2	12	412	7	1	6	16	390	[E] 13	402
September	339	1	11	352	5	1	4	4	341	[E] 11	352
October	301	1	11	314	4	1	3	8	297	[E] 11	308
November	309	1	12	322	4	1	3	21	292	[E] 12	304
December	347	1	12	360	5	1	4	25	328	[E] 12	340
Total	**4,074**	**17**	**140**	**4,231**	**57**	**16**	**41**	**205**	**3,927**	**140**	**4,067**
2023 January	335	1	12	348	4	1	3	17	322	[E] 12	334
February	297	1	11	309	4	2	2	10	291	[E] 11	302
March	317	1	12	330	4	1	3	15	306	[E] 12	317
April	288	1	10	300	4	2	2	11	280	[E] 10	290
May	315	1	11	327	4	1	3	21	298	[E] 11	309
June	344	1	12	357	3	1	2	19	328	[E] 12	340
July	412	2	12	426	3	2	1	29	386	[E] 12	399
August	410	2	12	424	3	2	1	21	392	[E] 12	404
September	346	1	12	359	2	2	(s)	1	346	[E] 12	358
October	317	1	11	329	2	2	(s)	11	308	[E] 11	319
November	309	1	12	322	2	2	1	18	293	[E] 12	305
December	332	1	13	346	3	2	1	24	311	[E] 12	323
Total	**4,022**	**17**	**139**	**4,178**	**39**	**20**	**19**	**197**	**3,861**	**[E] 139**	**4,000**
2024 January	366	1	13	380	[F] 4	[F] 2	[F] 2	28	341	[E] 13	354

[a] Electricity net generation at utility-scale facilities. Does not include small-scale solar photovoltaic (PV) generation shown on Table 10.6. See Note 1, "Coverage of Electricity Statistics," at end of section.

[b] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[c] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[d] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. Through 1988, data are for industrial hydroelectric power only.

[e] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

[f] Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note 1, "Electrical System Energy Losses," at end of Section 2.

[g] Data collection frame differences and nonsampling error.

[h] Electricity sales to ultimate customers by electric utilities and, beginning in 1996, other energy service providers.

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

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

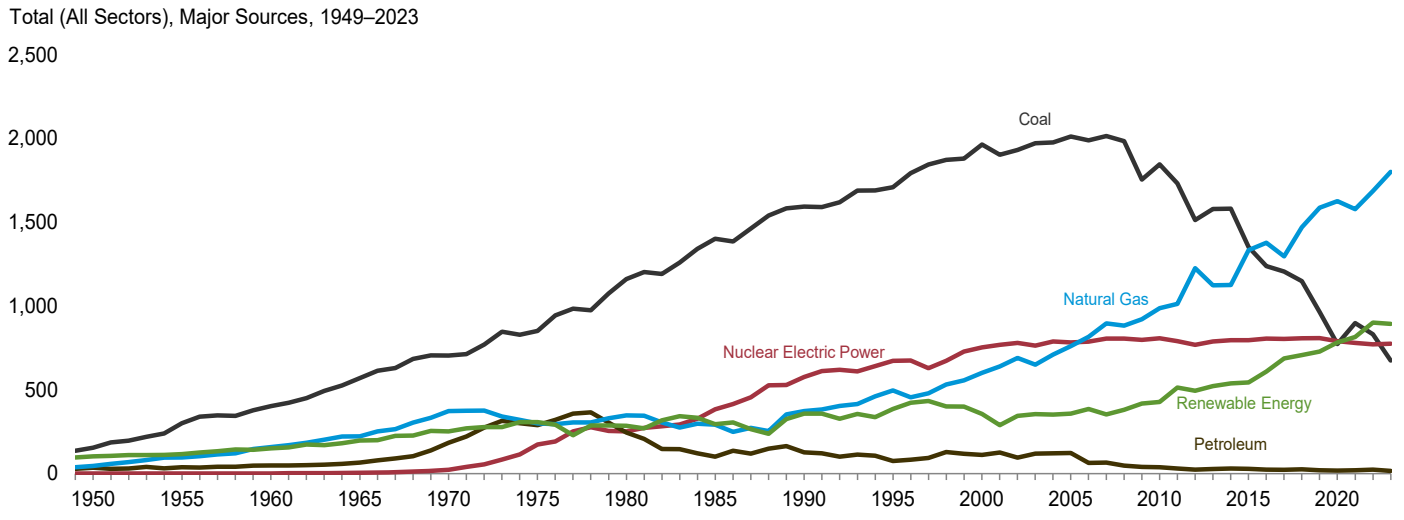
Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 3, "Electricity Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

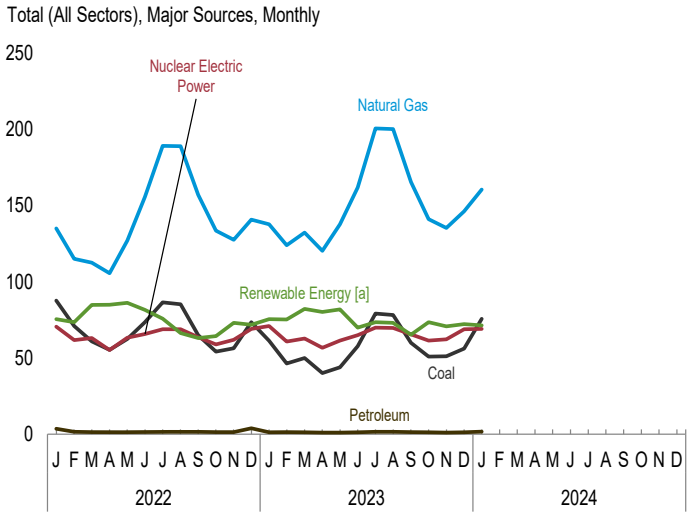
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

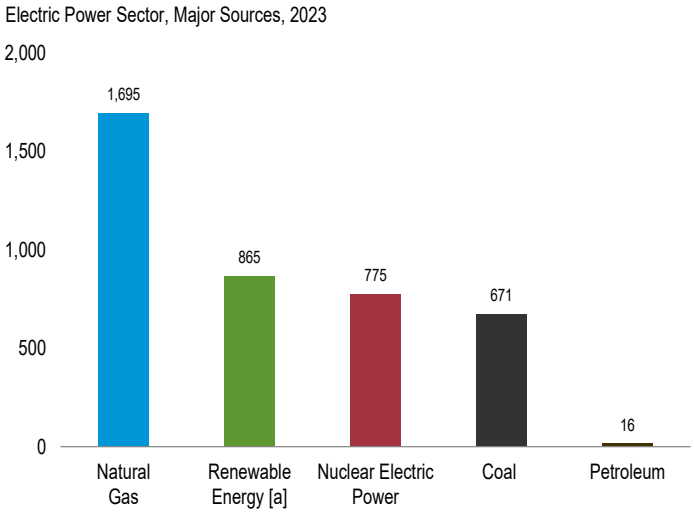
Sources: See end of section.

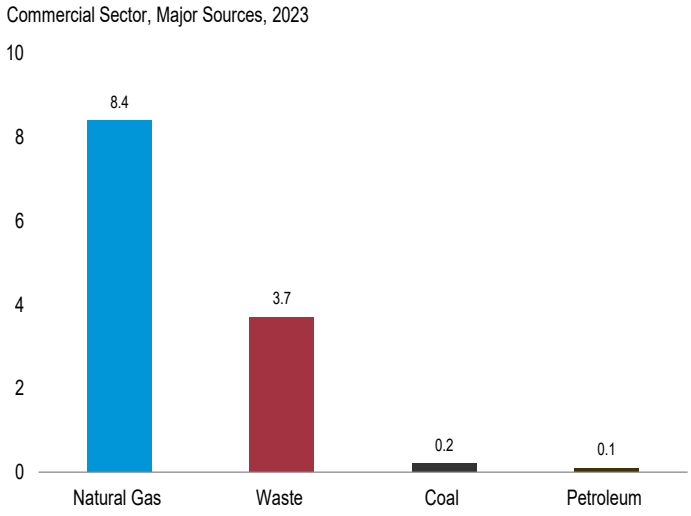
Figure 7.2 Electricity Net Generation

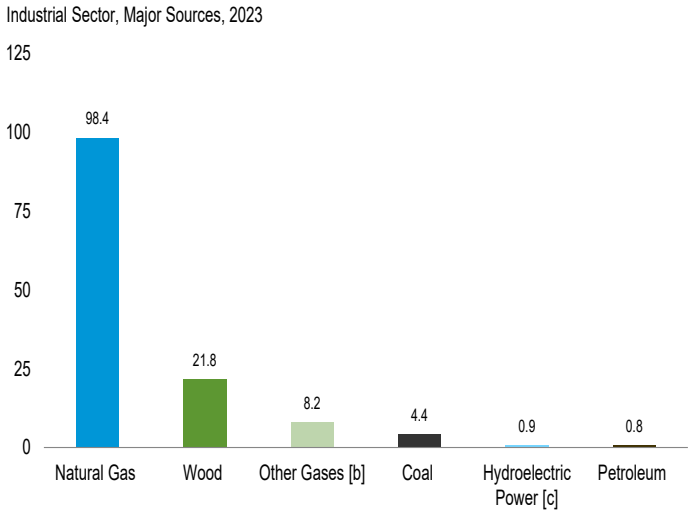
(Billion Kilowatthours)











[a] Conventional hydroelectric power, wood, waste, geothermal, solar, and wind.

[b] Blast furnace gas, and other manufactured and waste derived from fossil fuels.

[c] Conventional hydroelectric power.

Note: Data are for utility-scale facilities.

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

Sources: Tables 7.2a-7.2c.

Table 7.2a Electricity Net Generation: Total (All Sectors)

(Sum of Tables 7.2b and 7.2c; Million Kilowatthours)

	Fossil Fuels						Renewable Energy						
								Biomass					
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power[f]	Wood[g]	Waste[h]	Geothermal	Solar[i]	Wind	Total[j]
1950 Total	154,520	33,734	44,559	NA	0	([f])	100,885	390	NA	NA	NA	NA	334,088
1955 Total	301,363	37,138	95,285	NA	0	([f])	116,236	276	NA	NA	NA	NA	550,299
1960 Total	403,067	47,987	157,970	NA	518	([f])	149,440	140	NA	33	NA	NA	759,156
1965 Total	570,926	64,801	221,559	NA	3,657	([f])	196,984	269	NA	189	NA	NA	1,058,386
1970 Total	704,394	184,183	372,890	NA	21,804	([f])	250,957	136	220	525	NA	NA	1,535,111
1975 Total	852,786	289,095	299,778	NA	172,505	([f])	303,153	18	174	3,246	NA	NA	1,920,755
1980 Total	1,161,562	245,994	346,240	NA	251,116	([f])	279,182	275	158	5,073	NA	NA	2,289,600
1985 Total	1,402,128	100,202	291,946	NA	383,691	([f])	284,311	743	640	9,325	11	6	2,473,002
1990 Total[k]	1,594,011	126,460	372,765	10,383	576,862	-3,508	292,866	32,522	13,260	15,434	367	2,789	3,037,827
1995 Total	1,709,426	74,554	496,058	13,870	673,402	-2,725	310,833	36,521	20,405	13,378	497	3,164	3,353,487
2000 Total	1,966,265	111,221	601,038	13,955	753,893	-5,539	275,573	37,595	23,131	14,093	493	5,593	3,802,105
2005 Total	2,012,873	122,225	760,960	13,464	781,986	-6,558	270,321	38,856	15,420	14,692	550	17,811	4,055,423
2010 Total	1,847,290	37,061	987,697	11,313	806,968	-5,501	260,203	37,172	18,917	15,219	1,212	94,652	4,125,060
2011 Total	1,733,430	30,182	1,013,689	11,566	790,204	-6,421	319,355	37,449	19,222	15,316	1,818	120,177	4,100,141
2012 Total	1,514,043	23,190	1,225,894	11,898	769,331	-4,950	276,240	37,799	19,823	15,562	4,327	140,822	4,047,765
2013 Total	1,581,115	27,164	1,124,836	12,853	789,016	-4,681	268,565	40,028	20,830	15,775	9,036	167,840	4,065,964
2014 Total	1,581,710	30,232	1,126,635	12,022	797,166	-6,174	259,367	42,340	21,650	15,877	17,691	181,655	4,093,564
2015 Total	1,352,398	28,249	1,334,668	13,117	797,178	-5,091	249,080	41,929	21,703	15,918	24,893	190,719	4,078,714
2016 Total	1,239,149	24,205	1,379,271	12,807	805,694	-6,686	267,812	40,947	21,813	15,826	36,054	226,993	4,077,574
2017 Total	1,205,835	21,390	1,297,703	12,469	804,950	-6,495	300,333	41,124	21,610	15,927	53,287	254,303	4,035,443
2018 Total	1,149,487	25,226	1,471,843	13,463	807,084	-5,905	292,524	40,936	20,896	15,967	63,825	272,667	4,180,988
2019 Total	964,957	18,341	1,588,533	12,591	809,409	-5,261	287,874	38,543	18,964	15,473	71,937	295,882	4,130,574
2020 Total	773,393	17,341	1,626,790	11,818	789,879	-5,321	285,274	36,219	18,493	15,890	89,199	337,938	4,009,767
2021 Total	897,999	19,173	1,579,190	11,397	779,645	-5,112	251,585	36,463	17,790	15,975	115,258	378,197	4,109,699
2022 January	87,588	3,669	134,948	1,005	70,577	-493	24,198	3,106	1,432	1,470	7,822	37,416	373,766
February	70,966	1,735	114,945	886	61,852	-412	21,321	2,897	1,306	1,243	9,027	37,645	324,311
March	61,019	1,459	112,477	953	63,154	-318	24,436	2,934	1,426	1,286	11,695	43,031	324,531
April	55,329	1,277	105,506	921	55,290	-265	20,066	2,736	1,342	1,282	13,402	46,167	303,994
May	62,532	1,431	127,094	1,036	63,382	-467	23,359	2,905	1,371	1,327	15,121	42,124	342,184
June	73,463	1,580	155,517	987	65,715	-589	25,988	3,045	1,373	1,276	16,053	33,768	379,134
July	86,415	1,532	189,042	1,083	68,857	-768	24,567	3,276	1,406	1,341	15,766	29,475	422,976
August	85,215	1,577	188,860	1,008	68,897	-640	21,133	3,206	1,379	1,354	14,503	24,718	412,134
September	64,998	1,590	156,948	987	63,733	-598	17,026	2,864	1,315	1,329	13,287	27,331	351,655
October	54,228	1,561	133,492	968	58,945	-434	14,367	2,624	1,368	1,298	11,942	32,745	313,949
November	56,377	1,479	127,523	911	62,041	-495	17,898	2,865	1,318	1,397	8,403	41,199	321,781
December	73,381	4,039	140,716	978	69,094	-548	20,430	3,005	1,348	1,482	6,777	38,680	360,257
Total	**831,512**	**22,931**	**1,687,067**	**11,722**	**771,537**	**-6,028**	**254,789**	**35,464**	**16,383**	**16,087**	**143,797**	**434,297**	**4,230,672**
2023 January	61,275	1,401	137,725	990	70,870	-612	22,287	3,042	1,420	1,558	7,982	39,212	348,031
February	46,488	1,464	123,928	912	60,807	-448	18,680	2,613	1,275	1,302	9,251	42,184	309,258
March	50,057	1,299	132,207	961	62,820	-511	20,197	2,623	1,348	1,380	12,144	44,580	329,920
April	40,141	1,195	120,294	717	56,662	-281	17,479	2,295	1,212	1,347	14,755	43,072	299,628
May	43,835	1,189	137,728	901	61,473	-450	27,445	2,783	1,369	1,371	16,927	32,066	327,493
June	57,700	1,288	161,827	894	64,965	-542	19,467	2,646	1,321	1,273	17,631	27,545	356,863
July	79,121	1,669	200,554	995	69,888	-648	21,199	2,807	1,362	1,303	18,880	27,903	425,902
August	78,187	1,691	199,995	1,151	69,744	-644	21,120	2,890	1,352	1,341	17,816	28,546	424,042
September	60,001	1,554	165,406	951	65,560	-544	16,469	2,476	1,256	1,351	15,563	28,230	359,047
October	50,956	1,284	140,963	913	61,403	-371	18,076	2,126	1,343	1,414	14,082	36,484	329,497
November	51,231	1,166	135,260	999	62,258	-339	18,100	2,555	1,322	1,410	10,271	37,042	322,103
December	56,271	1,271	146,174	1,067	68,898	-506	19,336	2,584	1,447	1,413	9,200	38,371	346,387
Total	**675,264**	**16,472**	**1,802,062**	**11,451**	**775,347**	**-5,897**	**239,855**	**31,439**	**16,025**	**16,462**	**164,502**	**425,235**	**4,178,171**
2024 January	75,662	1,809	160,450	1,029	69,080	-411	21,237	2,821	1,322	1,368	9,651	34,976	379,799

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

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

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generation. See Table 10.6.

[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

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

NA=Not available.

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

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

Sources: Tables 7.2b and 7.2c.

Table 7.2b Electricity Net Generation: Electric Power Sector

(Subset of Table 7.2a; Million Kilowatthours)

	Fossil Fuels				Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Renewable Energy						
							Conventional Hydroelectric Power[f]	Biomass		Geothermal	Solar[i]	Wind	Total[j]
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]				Wood[g]	Waste[h]				
1950 Total	154,520	33,734	44,559	NA	0	([f])	95,938	390	NA	NA	NA	NA	329,141
1955 Total	301,363	37,138	95,285	NA	0	([f])	112,975	276	NA	NA	NA	NA	547,038
1960 Total	403,067	47,987	157,970	NA	518	([f])	145,833	140	NA	33	NA	NA	755,549
1965 Total	570,926	64,801	221,559	NA	3,657	([f])	193,851	269	NA	189	NA	NA	1,055,252
1970 Total	704,394	184,183	372,890	NA	21,804	([f])	247,714	136	220	525	NA	NA	1,531,868
1975 Total	852,786	289,095	299,778	NA	172,505	([f])	300,047	18	174	3,246	NA	NA	1,917,649
1980 Total	1,161,562	245,994	346,240	NA	251,116	([f])	276,021	275	158	5,073	NA	NA	2,286,439
1985 Total	1,402,128	100,202	291,946	NA	383,691	([f])	281,149	743	640	9,325	11	6	2,469,841
1990 Total[k]	1,572,109	118,864	309,486	621	576,862	-3,508	289,753	7,032	11,500	15,434	367	2,789	2,901,322
1995 Total	1,686,056	68,146	419,179	1,927	673,402	-2,725	305,410	7,597	17,986	13,378	497	3,164	3,194,230
2000 Total	1,943,111	105,192	517,978	2,028	753,893	-5,539	271,338	8,916	20,307	14,093	493	5,593	3,637,529
2005 Total	1,992,054	116,482	683,829	3,777	781,986	-6,558	267,040	10,570	13,031	14,692	550	17,811	3,902,192
2010 Total	1,827,738	34,679	901,389	2,967	806,968	-5,501	258,455	11,446	16,376	15,219	1,206	94,636	3,972,386
2011 Total	1,717,891	28,202	926,290	2,939	790,204	-6,421	317,531	10,733	15,989	15,316	1,727	120,121	3,948,186
2012 Total	1,500,557	20,072	1,132,791	2,984	769,331	-4,950	273,859	11,050	16,555	15,562	4,164	140,749	3,890,358
2013 Total	1,567,722	24,510	1,028,949	4,322	789,016	-4,681	265,058	12,302	16,918	15,775	8,724	167,742	3,903,715
2014 Total	1,568,774	28,043	1,033,198	3,358	797,166	-6,174	258,046	15,027	17,602	15,877	17,304	181,496	3,936,961
2015 Total	1,340,993	26,505	1,238,842	3,715	797,178	-5,091	247,636	14,563	17,823	15,918	24,456	190,547	3,920,407
2016 Total	1,229,663	22,710	1,280,344	3,912	805,694	-6,686	266,326	13,420	18,183	15,826	35,497	226,790	3,918,977
2017 Total	1,197,838	20,039	1,198,014	4,126	804,950	-6,495	298,711	13,641	18,084	15,927	52,724	254,074	3,878,625
2018 Total	1,142,173	23,928	1,368,532	4,086	807,084	-5,905	291,148	13,385	17,623	15,934	63,253	272,396	4,020,877
2019 Total	958,732	17,220	1,479,858	4,037	809,409	-5,261	286,652	12,020	16,091	15,031	71,265	295,604	3,968,348
2020 Total	767,702	16,333	1,522,299	3,174	789,879	-5,321	284,059	11,211	15,625	15,441	88,511	337,153	3,853,656
2021 Total	892,440	18,308	1,476,603	3,304	779,645	-5,112	250,391	11,897	14,834	15,473	114,523	377,917	3,957,181
2022 January	87,114	3,564	125,609	292	70,577	-493	24,097	1,042	1,032	1,470	7,773	37,386	359,856
February	70,538	1,651	106,942	251	61,852	-412	21,216	1,019	947	1,243	8,969	37,613	312,158
March	60,541	1,381	103,941	270	63,154	-318	24,302	964	1,032	1,286	11,618	42,997	311,530
April	54,915	1,200	97,597	291	55,290	-265	19,943	825	952	1,282	13,312	46,134	291,815
May	62,061	1,349	118,690	365	63,382	-467	23,248	929	973	1,327	15,022	42,096	329,318
June	72,986	1,498	146,881	281	65,715	-589	25,897	1,037	994	1,276	15,946	33,746	366,018
July	85,936	1,448	179,569	342	68,857	-768	24,489	1,170	1,018	1,341	15,663	29,458	408,874
August	84,733	1,500	179,279	277	68,897	-640	21,050	1,157	990	1,354	14,403	24,706	398,041
September	64,564	1,510	148,410	306	63,733	-598	16,948	992	949	1,329	13,199	27,315	338,966
October	53,805	1,481	125,017	276	58,945	-434	14,301	870	973	1,298	11,866	32,721	301,419
November	55,978	1,392	118,778	236	62,041	-495	17,818	940	927	1,397	8,345	41,168	308,816
December	72,925	3,853	131,973	264	69,094	-548	20,318	1,057	953	1,482	6,735	38,653	347,081
Total	**826,097**	**21,827**	**1,582,687**	**3,451**	**771,537**	**-6,028**	**253,627**	**12,002**	**11,739**	**16,087**	**142,852**	**433,994**	**4,073,892**
2023 January	60,855	NM	128,757	285	70,870	-612	22,173	1,033	1,033	1,558	7,930	39,184	334,696
February	46,115	NM	115,515	239	60,807	-448	18,584	833	939	1,302	9,193	42,153	296,905
March	49,688	1,207	123,369	261	62,820	-511	20,093	767	993	1,380	12,063	44,548	316,973
April	39,779	1,127	112,809	171	56,662	-281	17,391	593	871	1,347	14,666	43,043	288,428
May	43,463	1,127	129,494	282	61,473	-450	27,333	858	991	1,371	16,822	32,043	315,117
June	57,318	1,218	152,789	242	64,965	-542	19,383	864	945	1,273	17,528	27,527	343,813
July	78,715	1,587	191,069	292	69,888	-648	21,105	1,003	976	1,303	18,769	27,889	412,235
August	77,801	1,614	190,358	344	69,744	-644	21,024	1,005	979	1,341	17,711	28,530	410,087
September	59,625	1,485	156,193	277	65,560	-544	16,389	780	914	1,351	15,473	28,214	345,956
October	50,587	1,223	132,178	246	61,403	-371	17,987	464	961	1,414	14,003	36,464	316,802
November	50,872	1,106	126,257	277	62,258	-339	18,012	679	929	1,410	10,192	37,019	308,934
December	55,884	1,204	136,471	317	68,898	-506	19,238	666	1,043	1,413	9,133	38,349	332,392
Total	**670,700**	**15,596**	**1,695,259**	**3,234**	**775,347**	**-5,897**	**238,712**	**9,545**	**11,573**	**16,462**	**163,485**	**424,963**	**4,022,339**
2024 January	75,245	1,720	150,546	286	69,080	-411	21,125	935	934	1,368	9,586	34,955	365,625

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

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

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generation. See Table 10.6.

[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilites and independent power producers.

NA=Not available. NM=Not meaningful.

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

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

Sources: See end of section.

Table 7.2c Electricity Net Generation: Commercial and Industrial Sectors

(Subset of Table 7.2a; Million Kilowatthours)

	Commercial Sector[a]					Industrial Sector[b]							
				Biomass							Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Total[g]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[h]	Hydroelectric Power[i]	Wood[j]	Waste[f]	Total[k]
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**4,946**	**NA**	**NA**	**4,946**
1955 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,261**	**NA**	**NA**	**3,261**
1960 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,607**	**NA**	**NA**	**3,607**
1965 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,134**	**NA**	**NA**	**3,134**
1970 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,244**	**NA**	**NA**	**3,244**
1975 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,106**	**NA**	**NA**	**3,106**
1980 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**3,161**	**NA**	**NA**	**3,161**
1990 Total	**796**	**589**	**3,272**	**812**	**5,837**	**21,107**	**7,008**	**60,007**	**9,641**	**2,975**	**25,379**	**949**	**130,830**
1995 Total	**998**	**379**	**5,162**	**1,519**	**8,232**	**22,372**	**6,030**	**71,717**	**11,943**	**5,304**	**28,868**	**900**	**151,025**
2000 Total	**1,097**	**432**	**4,262**	**1,985**	**7,903**	**22,056**	**5,597**	**78,798**	**11,927**	**4,135**	**28,652**	**839**	**156,673**
2005 Total	**1,353**	**375**	**4,249**	**1,657**	**8,492**	**19,466**	**5,368**	**72,882**	**9,687**	**3,195**	**28,271**	**733**	**144,739**
2010 Total	**1,111**	**124**	**4,725**	**1,672**	**8,592**	**18,441**	**2,258**	**81,583**	**8,343**	**1,668**	**25,706**	**869**	**144,082**
2011 Total	**1,049**	**89**	**5,487**	**2,315**	**10,080**	**14,490**	**1,891**	**81,911**	**8,624**	**1,799**	**26,691**	**917**	**141,875**
2012 Total	**883**	**196**	**6,603**	**2,319**	**11,301**	**12,603**	**2,922**	**86,500**	**8,913**	**2,353**	**26,725**	**948**	**146,107**
2013 Total	**839**	**124**	**7,154**	**2,567**	**12,234**	**12,554**	**2,531**	**88,733**	**8,531**	**3,463**	**27,691**	**1,346**	**150,015**
2014 Total	**595**	**255**	**7,227**	**2,681**	**12,520**	**12,341**	**1,934**	**86,209**	**8,664**	**1,282**	**27,239**	**1,367**	**144,083**
2015 Total	**509**	**191**	**7,471**	**2,637**	**12,595**	**10,896**	**1,552**	**88,355**	**9,401**	**1,410**	**27,318**	**1,243**	**145,712**
2016 Total	**383**	**82**	**7,730**	**2,496**	**12,706**	**9,103**	**1,412**	**91,197**	**8,895**	**1,269**	**27,458**	**1,134**	**145,890**
2017 Total	**329**	**112**	**8,042**	**2,515**	**13,060**	**7,669**	**1,239**	**91,647**	**8,343**	**1,382**	**27,412**	**1,012**	**143,758**
2018 Total	**303**	**140**	**8,419**	**2,404**	**13,312**	**7,011**	**1,157**	**94,892**	**9,377**	**1,149**	**27,475**	**868**	**146,798**
2019 Total	**268**	**121**	**8,610**	**2,129**	**13,689**	**5,957**	**1,000**	**100,065**	**8,554**	**1,033**	**26,433**	**743**	**148,537**
2020 Total	**240**	**100**	**8,110**	**2,053**	**13,046**	**5,451**	**908**	**96,381**	**8,644**	**1,001**	**24,916**	**814**	**143,064**
2021 Total	**280**	**98**	**7,346**	**2,156**	**12,768**	**5,278**	**767**	**95,240**	**8,093**	**936**	**24,413**	**800**	**139,750**
2022 January	29	24	655	325	1,403	445	82	8,683	713	77	2,049	75	12,508
February	19	8	563	292	1,232	409	NM	7,440	635	83	1,864	67	10,921
March	18	6	606	317	1,328	459	71	7,931	683	111	1,960	77	11,673
April	13	7	559	318	1,308	402	70	7,350	630	102	1,901	71	10,871
May	10	8	611	325	1,381	461	75	7,792	671	84	1,959	72	11,485
June	27	9	672	322	1,455	450	74	7,964	706	63	1,988	57	11,661
July	26	8	807	331	1,592	453	77	8,667	741	53	2,088	57	12,510
August	29	8	822	325	1,595	453	69	8,759	731	61	2,022	63	12,498
September	30	5	696	313	1,417	404	75	7,842	680	60	1,860	53	11,272
October	28	5	571	326	1,300	396	76	7,903	692	51	1,748	69	11,230
November	28	7	601	322	1,330	372	81	8,144	675	62	1,914	70	11,635
December	30	19	668	320	1,397	425	168	8,075	714	92	1,936	75	11,779
Total	**287**	**112**	**7,830**	**3,838**	**16,737**	**5,128**	**993**	**96,550**	**8,271**	**899**	**23,287**	**806**	**140,043**
2023 January	22	9	664	313	1,365	398	NM	8,304	705	90	1,998	73	11,969
February	20	8	619	269	1,231	353	NM	7,794	673	77	1,773	67	11,122
March	16	7	651	283	1,300	353	85	8,187	700	85	1,849	72	11,647
April	20	NM	599	275	1,233	342	NM	6,885	546	71	1,697	65	9,966
May	18	NM	624	308	1,345	355	56	7,611	618	80	1,922	70	11,032
June	NM	4	727	317	1,447	375	NM	8,312	652	63	1,772	60	11,603
July	12	6	820	326	1,566	394	NM	8,665	703	73	1,794	59	12,102
August	11	5	820	315	1,542	375	NM	8,817	807	74	1,870	58	12,413
September	14	5	765	291	1,427	362	NM	8,448	674	66	1,683	51	11,664
October	19	5	673	310	1,364	350	56	8,112	667	NM	1,654	72	11,330
November	18	6	678	316	1,393	341	55	8,325	721	71	1,867	77	11,776
December	21	7	729	329	1,462	366	60	8,973	750	79	1,907	75	12,534
Total	**200**	**72**	**8,370**	**3,652**	**16,675**	**4,364**	**804**	**98,433**	**8,217**	**904**	**21,786**	**799**	**139,157**
2024 January	30	12	751	317	1,481	387	78	9,153	743	90	1,871	70	12,693

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[e] Natural gas, plus a small amount of supplemental gaseous fuels.

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

[g] Includes a small amount of conventional hydroelectric power, geothermal, other gases, solar photovoltaic (PV) energy, wind, wood, and other, which are not separately displayed. Does not include small-scale solar photovoltaic generation. shown on Table 10.6.

[h] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[i] Conventional hydroelectric power.

[j] Wood and wood-derived fuels.

[k] Includes photovoltaic (PV) energy, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels). Does not include small-scale solar photovoltaic generation shown on Table 10.6.

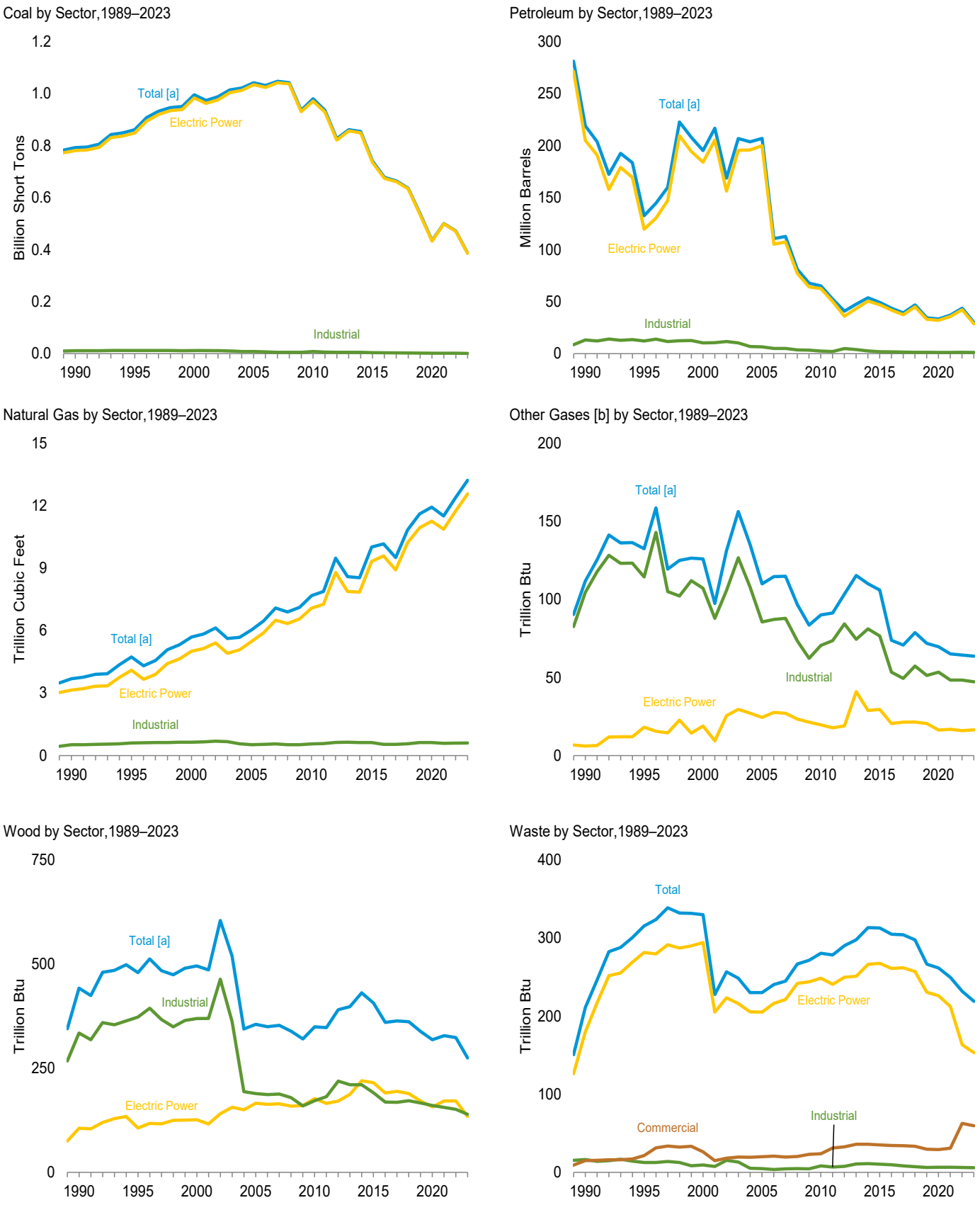
NA=Not available. NM=Not meaningful.

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

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

Sources: See end of section.

Figure 7.3 Consumption of Selected Combustible Fuels for Electricity Generation



[a] Includes commercial sector.
[b] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.3a-7.3c.

Table 7.3a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors) (Sum of Tables 7.3b and 7.3c)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**792,457**	**18,143**	**190,652**	**437**	**1,914**	**218,800**	**3,692**	**112**	**442**	**211**	**36**
1995 Total	**860,594**	**19,615**	**95,507**	**680**	**3,355**	**132,578**	**4,738**	**133**	**480**	**316**	**42**
2000 Total	**994,933**	**31,675**	**143,381**	**1,450**	**3,744**	**195,228**	**5,691**	**126**	**496**	**330**	**46**
2005 Total	**1,041,448**	**20,651**	**141,518**	**2,968**	**8,330**	**206,785**	**6,036**	**110**	**355**	**230**	**173**
2010 Total	**979,684**	**14,050**	**23,997**	**2,056**	**4,994**	**65,071**	**7,680**	**90**	**350**	**281**	**184**
2011 Total	**934,938**	**11,231**	**14,251**	**1,844**	**5,012**	**52,387**	**7,884**	**91**	**348**	**279**	**205**
2012 Total	**825,734**	**9,285**	**11,755**	**1,565**	**3,675**	**40,977**	**9,485**	**103**	**390**	**290**	**204**
2013 Total	**860,729**	**9,784**	**11,766**	**1,681**	**4,852**	**47,492**	**8,596**	**115**	**398**	**298**	**200**
2014 Total	**853,634**	**14,465**	**14,704**	**2,363**	**4,412**	**53,593**	**8,544**	**110**	**431**	**314**	**200**
2015 Total	**739,594**	**12,438**	**14,124**	**2,363**	**4,044**	**49,145**	**10,017**	**106**	**407**	**313**	**204**
2016 Total	**677,371**	**9,662**	**11,195**	**1,548**	**4,253**	**43,671**	**10,170**	**74**	**360**	**305**	**199**
2017 Total	**663,911**	**9,707**	**10,442**	**1,547**	**3,490**	**39,144**	**9,508**	**71**	**364**	**304**	**190**
2018 Total	**636,213**	**14,223**	**12,407**	**1,985**	**3,623**	**46,727**	**10,842**	**79**	**362**	**298**	**190**
2019 Total	**537,620**	**9,620**	**9,251**	**1,965**	**2,724**	**34,454**	**11,613**	**72**	**338**	**267**	**199**
2020 Total	**435,351**	**7,991**	**8,299**	**1,719**	**3,077**	**33,391**	**11,928**	**70**	**318**	**262**	**193**
2021 Total	**500,367**	**10,623**	**8,998**	**2,012**	**3,070**	**36,982**	**11,503**	**65**	**328**	**250**	**187**
2022 January	48,671	2,591	2,392	234	240	6,419	973	5	29	20	14
February	39,951	1,063	856	147	248	3,305	824	5	27	19	12
March	34,396	862	727	142	216	2,810	800	5	27	20	13
April	30,904	694	591	123	225	2,534	768	5	24	19	13
May	35,210	834	678	76	248	2,826	947	6	26	19	13
June	41,748	928	623	153	281	3,108	1,169	6	28	20	13
July	49,433	949	881	190	219	3,117	1,431	6	30	20	14
August	48,356	890	812	195	241	3,102	1,408	5	30	20	13
September	37,302	714	861	163	280	3,140	1,150	5	26	19	12
October	31,458	751	900	164	263	3,129	972	5	24	19	13
November	32,398	783	778	139	227	2,836	928	5	26	19	13
December	41,750	3,679	1,809	387	296	7,357	1,016	5	28	19	13
Total	**471,576**	**14,738**	**11,909**	**2,112**	**2,985**	**43,684**	**12,384**	**64**	**324**	**232**	**157**
2023 January	35,469	773	825	190	163	2,603	992	5	27	19	12
February	26,887	742	1,117	144	135	2,680	892	5	23	17	11
March	28,612	738	816	159	115	2,290	956	5	23	18	11
April	22,864	677	760	141	107	2,111	888	4	20	17	11
May	25,567	758	762	179	117	2,285	1,020	5	24	19	12
June	33,457	693	764	153	147	2,346	1,202	5	24	18	12
July	44,484	649	917	121	252	2,945	1,496	6	26	19	13
August	43,865	772	853	129	254	3,025	1,488	6	26	19	13
September	34,207	581	927	135	226	2,772	1,217	5	22	18	12
October	29,616	670	901	164	121	2,340	1,041	5	18	18	12
November	29,605	746	842	135	87	2,158	989	5	21	17	12
December	31,968	824	819	135	123	2,395	1,043	6	22	20	12
Total	**386,601**	**8,623**	**10,304**	**1,785**	**1,848**	**29,951**	**13,223**	**64**	**274**	**219**	**143**
2024 January	42,396	1,507	1,077	198	134	3,453	1,158	5	25	18	12

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Data are for fuels consumed to produce electricity. Data also include fuels consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: Tables 7.3b and 7.3c.

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

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**781,301**	**16,394**	**183,285**	**25**	**1,008**	**204,745**	**3,147**	**6**	**106**	**180**	**(s)**
1995 Total	**847,854**	**18,066**	**88,895**	**441**	**2,452**	**119,663**	**4,094**	**18**	**106**	**282**	**2**
2000 Total	**982,713**	**29,722**	**138,047**	**403**	**3,155**	**183,946**	**5,014**	**19**	**126**	**294**	**1**
2005 Total	**1,033,567**	**19,450**	**138,337**	**2,591**	**7,877**	**199,760**	**5,485**	**24**	**166**	**205**	**116**
2010 Total	**971,245**	**13,677**	**23,560**	**1,848**	**4,679**	**62,477**	**7,085**	**20**	**177**	**249**	**116**
2011 Total	**928,857**	**10,961**	**13,861**	**1,655**	**4,726**	**50,105**	**7,265**	**18**	**166**	**241**	**133**
2012 Total	**820,762**	**9,000**	**11,292**	**1,339**	**2,861**	**35,937**	**8,788**	**19**	**171**	**250**	**132**
2013 Total	**855,546**	**9,511**	**11,322**	**1,488**	**4,189**	**43,265**	**7,888**	**41**	**187**	**251**	**130**
2014 Total	**848,803**	**14,052**	**14,132**	**2,157**	**4,039**	**50,537**	**7,849**	**29**	**220**	**266**	**127**
2015 Total	**735,433**	**12,056**	**13,893**	**2,086**	**3,789**	**46,978**	**9,322**	**29**	**215**	**268**	**127**
2016 Total	**674,239**	**9,421**	**11,056**	**1,284**	**4,018**	**41,853**	**9,590**	**20**	**191**	**261**	**126**
2017 Total	**661,033**	**9,398**	**10,299**	**1,332**	**3,273**	**37,394**	**8,917**	**21**	**195**	**262**	**121**
2018 Total	**633,593**	**13,795**	**12,259**	**1,757**	**3,444**	**45,030**	**10,224**	**21**	**189**	**257**	**125**
2019 Total	**535,382**	**9,254**	**9,163**	**1,724**	**2,545**	**32,868**	**10,939**	**21**	**171**	**231**	**133**
2020 Total	**433,477**	**7,609**	**8,228**	**1,523**	**2,917**	**31,947**	**11,258**	**16**	**157**	**226**	**132**
2021 Total	**498,614**	**10,246**	**8,908**	**1,798**	**2,942**	**35,660**	**10,872**	**17**	**171**	**212**	**124**
2022 January	48,518	2,527	2,374	218	229	6,266	916	1	15	14	7
February	39,807	1,034	839	135	235	3,181	775	1	15	13	6
March	34,239	831	707	131	205	2,695	747	1	14	15	7
April	30,777	667	574	108	215	2,423	718	1	12	13	6
May	35,059	804	661	61	235	2,701	895	2	13	14	6
June	41,592	894	606	137	271	2,991	1,115	1	15	14	6
July	49,282	914	864	173	208	2,992	1,372	2	16	14	6
August	48,204	861	798	179	230	2,988	1,348	1	16	14	6
September	37,163	690	843	143	270	3,027	1,097	1	14	13	6
October	31,323	726	882	150	252	3,015	920	1	12	13	6
November	32,267	758	760	125	214	2,713	875	1	13	13	6
December	41,602	3,619	1,778	277	286	7,103	962	1	15	13	6
Total	**469,833**	**14,325**	**11,687**	**1,836**	**2,849**	**42,096**	**11,740**	**16**	**171**	**163**	**75**
2023 January	35,327	739	808	161	153	2,473	937	1	14	14	6
February	26,763	712	1,100	130	127	2,579	841	1	11	12	5
March	28,490	704	798	143	NM	NM	902	1	11	13	6
April	22,743	650	745	126	NM	NM	841	1	9	12	5
May	25,440	728	750	163	110	2,190	969	1	12	13	6
June	33,330	668	751	130	140	2,247	1,147	1	12	13	6
July	44,344	621	906	100	240	2,829	1,438	1	14	13	6
August	43,734	742	842	111	244	2,915	1,429	2	14	13	6
September	34,080	557	915	120	217	2,677	1,161	1	11	13	6
October	29,485	643	890	146	114	2,250	987	1	7	12	6
November	29,480	716	829	120	81	2,069	934	1	9	11	5
December	31,835	793	803	120	115	2,292	983	2	10	14	6
Total	**385,051**	**8,276**	**10,136**	**1,570**	**1,744**	**28,701**	**12,569**	**16**	**134**	**153**	**70**
2024 January	42,255	1,468	1,051	183	126	3,333	1,098	1	13	12	6

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

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

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

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

Sources: See end of section.

Table 7.3c Consumption of Selected Combustible Fuels for Electricity Generation: Commercial and Industrial Sectors (Subset of Table 7.3a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**417**	**953**	**28**	**15**	**10,740**	**13,103**	**517**	**104**	**335**	**16**	**36**
1995 Total	**569**	**649**	**43**	**21**	**12,171**	**12,265**	**601**	**114**	**373**	**13**	**40**
2000 Total	**514**	**823**	**37**	**26**	**11,706**	**10,459**	**640**	**107**	**369**	**10**	**45**
2005 Total	**377**	**585**	**34**	**20**	**7,504**	**6,440**	**518**	**85**	**189**	**5**	**46**
2010 Total	**314**	**172**	**39**	**24**	**8,125**	**2,422**	**555**	**70**	**172**	**8**	**55**
2011 Total	**347**	**137**	**47**	**31**	**5,735**	**2,145**	**572**	**74**	**182**	**7**	**57**
2012 Total	**307**	**279**	**63**	**33**	**4,665**	**4,761**	**633**	**84**	**219**	**8**	**54**
2013 Total	**513**	**335**	**67**	**36**	**4,670**	**3,892**	**642**	**74**	**210**	**11**	**50**
2014 Total	**202**	**462**	**72**	**36**	**4,629**	**2,594**	**623**	**81**	**210**	**11**	**54**
2015 Total	**163**	**260**	**70**	**35**	**3,999**	**1,907**	**625**	**77**	**191**	**10**	**58**
2016 Total	**111**	**116**	**46**	**34**	**3,021**	**1,701**	**534**	**53**	**169**	**10**	**53**
2017 Total	**95**	**204**	**50**	**34**	**2,783**	**1,545**	**541**	**49**	**169**	**8**	**49**
2018 Total	**87**	**279**	**53**	**33**	**2,534**	**1,418**	**565**	**57**	**172**	**7**	**46**
2019 Total	**76**	**257**	**56**	**30**	**2,161**	**1,329**	**618**	**51**	**167**	**6**	**45**
2020 Total	**72**	**242**	**52**	**29**	**1,802**	**1,202**	**619**	**53**	**160**	**6**	**40**
2021 Total	**87**	**256**	**46**	**31**	**1,666**	**1,066**	**585**	**48**	**156**	**6**	**39**
2022 January	8	46	4	5	145	107	52	4	13	1	2
February	7	18	4	5	137	105	45	4	12	1	2
March	5	16	4	5	151	98	49	4	13	1	2
April	4	18	4	5	124	93	46	4	12	1	1
May	3	22	4	5	148	104	48	4	13	1	2
June	9	22	4	5	147	95	50	4	13	(s)	2
July	8	22	5	5	143	102	54	4	14	(s)	2
August	9	19	5	5	142	96	54	4	13	(s)	1
September	9	13	4	5	130	100	49	4	12	(s)	1
October	8	14	4	5	126	101	48	4	11	1	1
November	8	15	4	5	122	107	49	4	12	1	1
December	9	43	4	5	139	210	49	4	13	1	1
Total	**87**	**269**	**49**	**63**	**1,655**	**1,319**	**595**	**48**	**151**	**6**	**18**
2023 January	7	23	4	5	134	107	52	4	13	1	1
February	6	17	4	5	118	84	47	4	11	1	1
March	5	16	4	5	117	113	50	4	12	1	1
April	6	NM	4	5	115	81	42	3	11	(s)	1
May	6	16	4	5	121	79	47	4	12	1	1
June	3	12	4	5	124	87	51	4	11	(s)	1
July	4	14	5	5	136	102	53	4	11	(s)	1
August	4	15	5	5	127	95	54	5	12	(s)	1
September	5	13	5	5	122	82	51	4	11	(s)	1
October	7	14	4	5	124	77	50	4	11	1	1
November	6	16	4	5	119	74	51	4	12	1	1
December	7	22	4	5	126	81	56	4	12	1	1
Total	**66**	**188**	**51**	**60**	**1,484**	**1,061**	**603**	**47**	**139**	**6**	**12**
2024 January	9	25	5	5	131	96	56	4	12	1	1

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[e] Natural gas, plus a small amount of supplemental gaseous fuels.

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

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

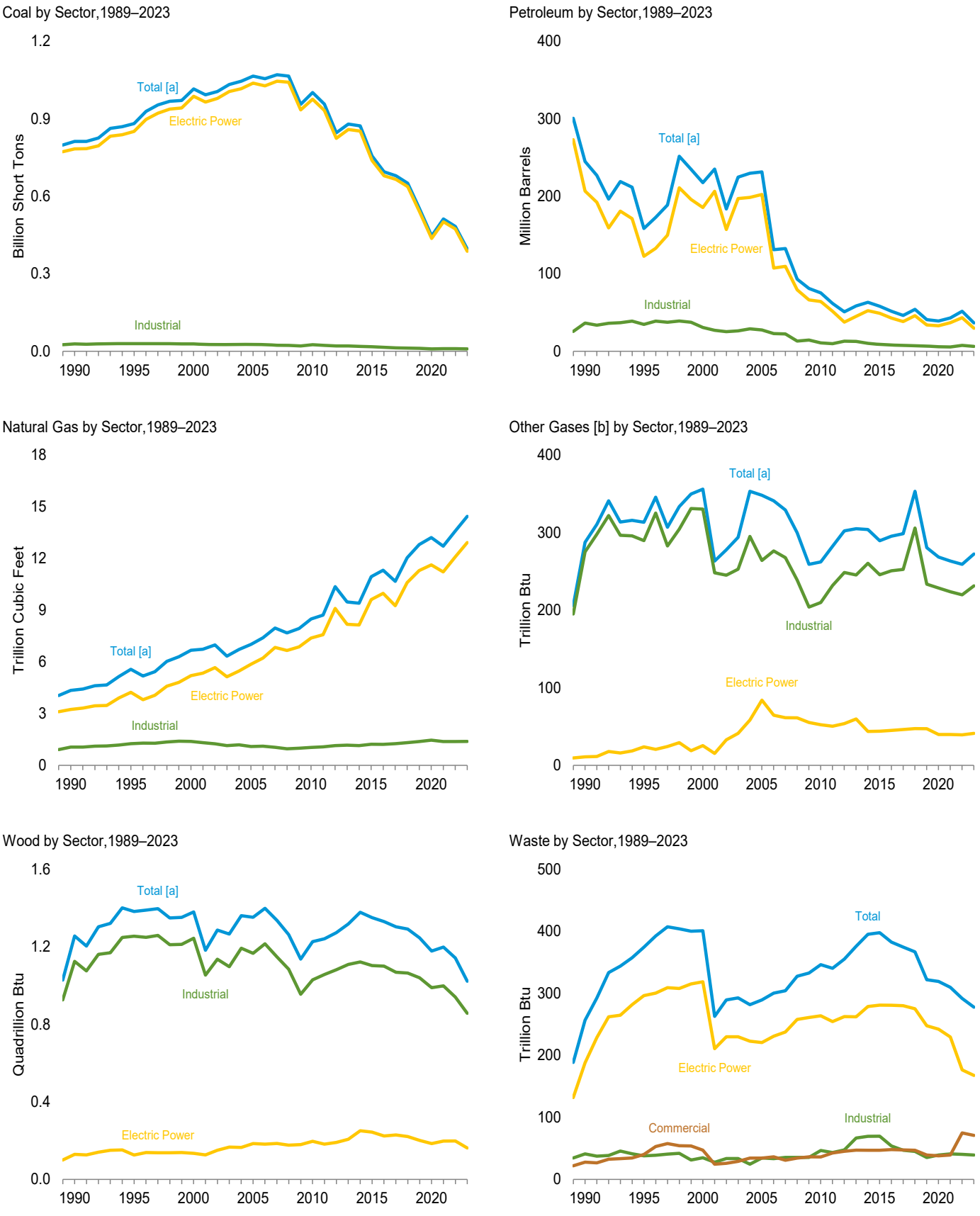
NM=Not meaningful. (s)=Less than 0.5 trillion Btu.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data are for fuels consumed to produce electricity. Through 1988, data are not available. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 1989.

Sources: • **1989–1997:** U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

Figure 7.4 Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output



[a] Includes commercial sector.
[b] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.4a-7.4c.

Table 7.4a Consumption of Combustible Fuels for Electricity Generation and Useful Thermal Output: Total (All Sectors) (Sum of Tables 7.4b and 7.4c)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**811,538**	**20,194**	**209,081**	**1,332**	**2,832**	**244,765**	**4,346**	**288**	**1,256**	**257**	**86**
1995 Total	**881,012**	**21,697**	**112,168**	**1,322**	**4,590**	**158,140**	**5,572**	**313**	**1,382**	**374**	**97**
2000 Total	**1,015,398**	**34,572**	**156,673**	**2,904**	**4,669**	**217,494**	**6,677**	**356**	**1,380**	**401**	**109**
2005 Total	**1,065,281**	**24,446**	**156,915**	**4,270**	**9,113**	**231,193**	**7,021**	**348**	**1,353**	**289**	**237**
2010 Total	**1,001,411**	**15,247**	**26,944**	**2,777**	**6,053**	**75,231**	**8,502**	**262**	**1,226**	**346**	**237**
2011 Total	**956,470**	**11,735**	**16,877**	**2,540**	**6,092**	**61,610**	**8,724**	**282**	**1,241**	**340**	**261**
2012 Total	**845,066**	**9,945**	**13,571**	**2,185**	**5,021**	**50,805**	**10,371**	**302**	**1,273**	**355**	**252**
2013 Total	**879,078**	**10,277**	**14,199**	**2,212**	**6,338**	**58,378**	**9,479**	**305**	**1,318**	**376**	**236**
2014 Total	**871,741**	**15,107**	**16,615**	**2,908**	**5,695**	**63,106**	**9,410**	**304**	**1,378**	**395**	**236**
2015 Total	**756,226**	**12,924**	**16,136**	**3,008**	**5,188**	**58,009**	**10,952**	**290**	**1,351**	**398**	**237**
2016 Total	**693,958**	**10,278**	**12,231**	**2,173**	**5,352**	**51,441**	**11,322**	**296**	**1,330**	**383**	**238**
2017 Total	**678,578**	**10,168**	**11,508**	**2,033**	**4,467**	**46,043**	**10,677**	**299**	**1,303**	**375**	**226**
2018 Total	**650,027**	**15,066**	**13,584**	**2,578**	**4,552**	**53,988**	**12,048**	**353**	**1,291**	**367**	**226**
2019 Total	**550,017**	**10,369**	**10,049**	**2,580**	**3,563**	**40,811**	**12,809**	**281**	**1,246**	**322**	**234**
2020 Total	**445,753**	**8,604**	**8,974**	**2,160**	**3,856**	**39,020**	**13,221**	**269**	**1,178**	**319**	**226**
2021 Total	**511,669**	**11,340**	**9,895**	**2,470**	**3,830**	**42,855**	**12,724**	**264**	**1,199**	**310**	**218**
2022 January	49,742	2,776	2,582	284	295	7,119	1,085	23	101	26	16
February	40,880	1,115	1,011	180	315	3,879	922	20	93	24	15
March	35,381	912	985	171	275	3,445	902	22	95	27	16
April	31,802	733	847	162	282	3,150	860	21	93	24	15
May	36,114	882	908	107	315	3,475	1,043	23	96	24	16
June	42,640	968	894	187	333	3,716	1,266	22	97	23	16
July	50,387	1,012	1,138	231	270	3,730	1,537	23	101	24	17
August	49,318	932	979	229	310	3,691	1,514	22	100	24	16
September	38,207	744	1,099	197	330	3,689	1,246	21	91	22	15
October	32,391	798	1,134	199	325	3,754	1,067	21	89	24	15
November	33,301	832	1,010	169	298	3,499	1,026	20	93	24	15
December	42,768	3,895	2,128	512	355	8,307	1,120	21	96	25	15
Total	**482,931**	**15,599**	**14,715**	**2,626**	**3,702**	**51,452**	**13,590**	**259**	**1,143**	**292**	**187**
2023 January	36,421	867	1,068	241	206	3,205	1,101	23	98	26	15
February	27,698	808	1,309	174	184	3,210	990	21	85	23	13
March	29,462	811	1,057	194	173	2,928	1,062	22	89	24	14
April	23,614	726	954	175	157	2,640	982	20	78	22	13
May	26,353	798	910	215	173	2,789	1,115	22	88	24	14
June	34,220	723	907	198	198	2,816	1,300	22	83	22	14
July	45,286	684	1,055	158	306	3,427	1,600	22	86	23	15
August	44,618	810	999	167	315	3,550	1,591	24	87	22	15
September	34,973	620	1,077	169	278	3,258	1,317	28	79	22	14
October	30,374	711	1,061	201	177	2,859	1,140	26	78	23	14
November	30,386	804	1,017	169	136	2,670	1,094	20	85	22	15
December	32,784	944	1,056	177	176	3,058	1,154	22	86	26	16
Total	**396,188**	**9,308**	**12,471**	**2,238**	**2,479**	**36,410**	**14,446**	**273**	**1,022**	**278**	**171**
2024 January	43,343	1,636	1,418	237	188	4,232	1,275	22	89	24	15

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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

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

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

Sources: Tables 7.4b and 7.4c.

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

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**782,567**	**16,567**	**184,915**	**26**	**1,008**	**206,550**	**3,245**	**11**	**129**	**188**	**(s)**
1995 Total	**850,230**	**18,553**	**90,023**	**499**	**2,674**	**122,447**	**4,237**	**24**	**125**	**296**	**2**
2000 Total	**985,821**	**30,016**	**138,513**	**454**	**3,275**	**185,358**	**5,206**	**25**	**134**	**318**	**1**
2005 Total	**1,037,485**	**19,675**	**139,409**	**2,685**	**8,083**	**202,184**	**5,869**	**84**	**185**	**221**	**123**
2010 Total	**975,052**	**13,790**	**24,503**	**1,877**	**4,777**	**64,055**	**7,387**	**52**	**196**	**264**	**124**
2011 Total	**932,484**	**11,021**	**14,803**	**1,658**	**4,837**	**51,667**	**7,574**	**50**	**182**	**255**	**143**
2012 Total	**823,551**	**9,080**	**12,203**	**1,339**	**2,974**	**37,495**	**9,111**	**54**	**190**	**262**	**143**
2013 Total	**857,962**	**9,598**	**12,283**	**1,489**	**4,285**	**44,794**	**8,191**	**60**	**207**	**262**	**139**
2014 Total	**851,602**	**14,235**	**15,132**	**2,208**	**4,132**	**52,235**	**8,146**	**44**	**251**	**279**	**137**
2015 Total	**738,444**	**12,193**	**14,929**	**2,131**	**3,907**	**48,787**	**9,613**	**44**	**244**	**281**	**136**
2016 Total	**678,554**	**9,510**	**11,242**	**1,322**	**4,138**	**42,763**	**9,985**	**45**	**224**	**281**	**139**
2017 Total	**664,993**	**9,481**	**10,464**	**1,375**	**3,399**	**38,318**	**9,266**	**46**	**229**	**280**	**132**
2018 Total	**637,217**	**13,967**	**12,446**	**1,855**	**3,549**	**46,013**	**10,599**	**47**	**221**	**275**	**136**
2019 Total	**538,606**	**9,336**	**9,352**	**1,750**	**2,655**	**33,712**	**11,299**	**47**	**201**	**248**	**145**
2020 Total	**435,827**	**7,673**	**8,382**	**1,543**	**3,057**	**32,885**	**11,632**	**40**	**185**	**242**	**144**
2021 Total	**501,435**	**10,359**	**9,115**	**1,835**	**3,075**	**36,686**	**11,229**	**40**	**197**	**229**	**134**
2022 January	48,805	2,563	2,425	228	239	6,410	949	3	18	16	7
February	40,063	1,044	859	136	254	3,307	804	3	17	15	6
March	34,498	840	738	133	216	2,788	777	3	16	16	7
April	31,012	672	598	109	223	2,495	743	4	14	14	7
May	35,264	810	686	63	244	2,778	923	4	15	14	7
June	41,817	900	631	139	278	3,060	1,145	3	17	15	7
July	49,556	921	886	174	211	3,034	1,405	4	19	15	7
August	48,469	865	821	183	239	3,062	1,380	3	19	15	7
September	37,409	695	870	144	279	3,102	1,125	3	16	14	6
October	31,554	731	912	151	260	3,096	946	3	14	14	6
November	32,503	763	791	126	228	2,821	902	3	15	14	6
December	41,883	3,658	1,815	278	295	7,226	992	3	17	15	7
Total	**472,834**	**14,463**	**12,031**	**1,864**	**2,965**	**43,181**	**12,092**	**39**	**198**	**176**	**81**
2023 January	35,549	750	836	162	162	2,558	967	3	16	15	7
February	26,934	724	1,124	132	151	2,737	870	3	13	14	6
March	28,692	712	819	145	NM	NM	932	3	14	14	6
April	22,873	660	768	128	NM	NM	869	3	11	13	6
May	25,601	736	775	165	118	2,266	996	3	14	14	6
June	33,496	674	774	132	146	2,312	1,176	3	15	13	6
July	44,548	626	929	101	249	2,902	1,471	3	16	14	7
August	43,926	746	864	113	254	2,990	1,462	4	16	14	7
September	34,263	561	939	121	224	2,742	1,191	4	13	14	6
October	29,646	649	921	148	122	2,331	1,016	4	10	13	6
November	29,639	721	852	122	89	2,139	965	3	12	13	6
December	32,005	797	831	123	124	2,369	1,014	4	12	15	7
Total	**387,170**	**8,357**	**10,433**	**1,592**	**1,863**	**29,699**	**12,930**	**41**	**162**	**167**	**76**
2024 January	42,464	1,485	1,075	187	134	3,420	1,131	3	15	14	7

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Natural gas, plus a small amount of supplemental gaseous fuels.

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

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

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

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

Sources: See end of section.

Table 7.4c Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors (Subset of Table 7.4a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**1,191**	**2,056**	**46**	**28**	**27,781**	**36,159**	**1,055**	**275**	**1,125**	**41**	**86**
1995 Total	**1,419**	**1,245**	**78**	**40**	**29,363**	**34,448**	**1,258**	**290**	**1,255**	**38**	**95**
2000 Total	**1,547**	**1,615**	**85**	**47**	**28,031**	**30,520**	**1,386**	**331**	**1,244**	**35**	**108**
2005 Total	**1,922**	**1,630**	**68**	**34**	**25,875**	**27,380**	**1,084**	**264**	**1,166**	**34**	**94**
2010 Total	**1,720**	**437**	**86**	**36**	**24,638**	**10,740**	**1,029**	**210**	**1,029**	**47**	**91**
2011 Total	**1,668**	**333**	**87**	**43**	**22,319**	**9,610**	**1,063**	**232**	**1,057**	**43**	**94**
2012 Total	**1,450**	**457**	**111**	**45**	**20,065**	**12,853**	**1,149**	**249**	**1,082**	**47**	**81**
2013 Total	**1,356**	**887**	**118**	**47**	**19,761**	**12,697**	**1,170**	**246**	**1,109**	**67**	**69**
2014 Total	**1,063**	**758**	**119**	**47**	**19,076**	**10,112**	**1,145**	**260**	**1,122**	**70**	**72**
2015 Total	**798**	**622**	**116**	**47**	**16,984**	**8,600**	**1,222**	**246**	**1,103**	**70**	**73**
2016 Total	**683**	**404**	**127**	**48**	**14,720**	**8,273**	**1,209**	**251**	**1,100**	**54**	**70**
2017 Total	**610**	**516**	**154**	**48**	**12,975**	**7,209**	**1,257**	**253**	**1,069**	**47**	**65**
2018 Total	**577**	**681**	**135**	**47**	**12,233**	**7,294**	**1,314**	**306**	**1,065**	**45**	**62**
2019 Total	**519**	**707**	**135**	**39**	**10,892**	**6,393**	**1,374**	**234**	**1,040**	**35**	**61**
2020 Total	**473**	**527**	**131**	**38**	**9,453**	**5,609**	**1,458**	**229**	**989**	**39**	**55**
2021 Total	**534**	**614**	**117**	**39**	**9,700**	**5,555**	**1,379**	**224**	**999**	**41**	**55**
2022 January	56	168	11	6	881	540	124	19	83	4	3
February	55	57	10	6	762	515	108	17	75	4	3
March	37	57	10	6	845	599	115	19	78	4	3
April	25	52	9	6	765	603	108	17	78	4	2
May	27	65	9	6	824	632	111	19	80	4	3
June	42	48	10	6	781	608	112	18	79	2	3
July	44	66	12	7	787	630	121	19	83	2	3
August	46	48	12	6	803	581	122	19	81	3	3
September	47	25	10	6	751	562	111	18	74	2	2
October	46	28	9	6	791	630	112	18	74	3	2
November	52	35	10	6	746	642	115	18	77	4	3
December	57	181	11	6	828	900	117	18	78	4	2
Total	**535**	**830**	**123**	**75**	**9,563**	**7,441**	**1,375**	**220**	**941**	**40**	**32**
2023 January	46	87	11	6	826	561	123	20	81	4	2
February	40	44	10	5	724	428	110	18	72	4	2
March	37	44	11	6	734	638	120	19	75	4	2
April	36	NM	9	6	704	513	104	18	67	4	2
May	31	28	9	6	720	496	110	18	73	4	2
June	25	30	10	6	699	475	114	18	68	2	2
July	27	32	11	6	711	493	118	19	70	2	2
August	28	32	11	6	663	527	117	20	71	2	2
September	30	34	10	6	680	482	116	24	66	2	2
October	33	33	10	6	695	495	113	23	68	3	2
November	35	54	10	6	712	477	118	17	73	4	3
December	40	137	11	6	738	551	129	18	73	4	3
Total	**409**	**576**	**123**	**71**	**8,608**	**6,136**	**1,392**	**231**	**857**	**39**	**24**
2024 January	56	117	12	6	823	695	132	19	74	4	2

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[b] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[e] Natural gas, plus a small amount of supplemental gaseous fuels.

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

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

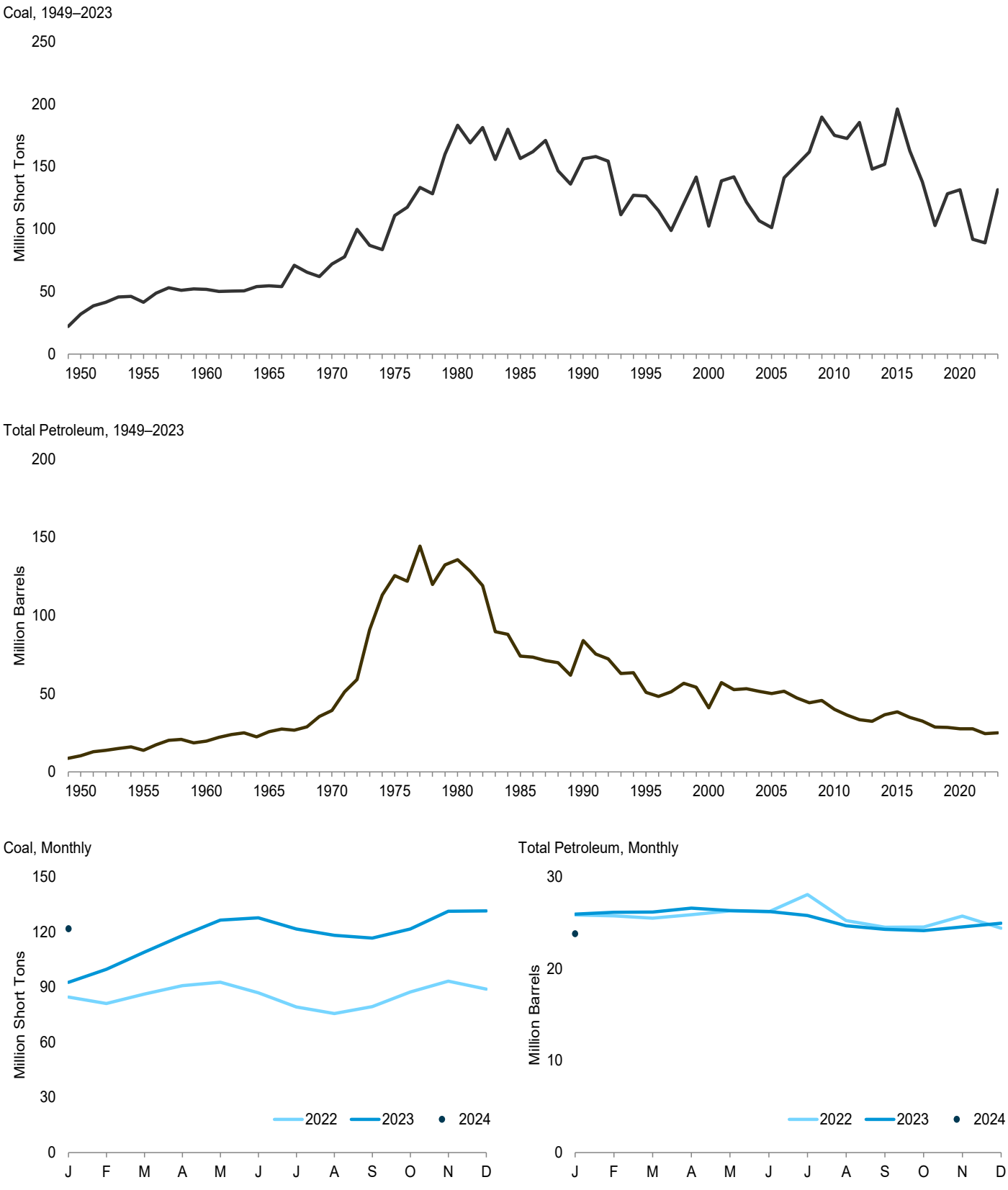
NM=Not meaningful.

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

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 1989.

Sources: • **1989–1997:** U.S. Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

Figure 7.5 Stocks of Coal and Petroleum: Electric Power Sector



Note: Data are for utility-sale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.5.

Table 7.5 Stocks of Coal and Petroleum: Electric Power Sector

	Coal[a]	Petroleum				
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e,f]
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels
1950 Year	**31,842**	**NA**	**NA**	**NA**	**NA**	**10,201**
1955 Year	**41,391**	**NA**	**NA**	**NA**	**NA**	**13,671**
1960 Year	**51,735**	**NA**	**NA**	**NA**	**NA**	**19,572**
1965 Year	**54,525**	**NA**	**NA**	**NA**	**NA**	**25,647**
1970 Year	**71,908**	**NA**	**NA**	**NA**	**239**	**39,151**
1975 Year	**110,724**	**16,432**	**108,825**	**NA**	**31**	**125,413**
1980 Year	**183,010**	**30,023**	**105,351**	**NA**	**52**	**135,635**
1985 Year	**156,376**	**16,386**	**57,304**	**NA**	**49**	**73,933**
1990 Year	**156,166**	**16,471**	**67,030**	**NA**	**94**	**83,970**
1995 Year	**126,304**	**15,392**	**35,102**	**NA**	**65**	**50,821**
2000 Year[g]	**102,296**	**15,127**	**24,748**	**NA**	**211**	**40,932**
2005 Year	**101,137**	**18,778**	**27,624**	**NA**	**530**	**50,062**
2010 Year	**174,917**	**16,758**	**16,629**	**1,454**	**1,019**	**39,936**
2011 Year	**172,387**	**16,649**	**15,491**	**1,603**	**508**	**36,282**
2012 Year	**185,116**	**16,433**	**12,999**	**1,430**	**495**	**33,336**
2013 Year	**147,884**	**16,068**	**12,926**	**1,393**	**390**	**32,336**
2014 Year	**151,792**	**18,309**	**12,764**	**1,249**	**827**	**36,459**
2015 Year	**195,912**	**17,955**	**12,566**	**1,173**	**1,340**	**38,396**
2016 Year	**162,476**	**17,855**	**11,789**	**949**	**845**	**34,818**
2017 Year	**137,721**	**16,342**	**10,930**	**816**	**864**	**32,407**
2018 Year	**102,793**	**16,436**	**8,785**	**756**	**539**	**28,674**
2019 Year	**128,102**	**16,733**	**8,549**	**678**	**471**	**28,317**
2020 Year	**131,431**	**17,116**	**8,269**	**678**	**298**	**27,552**
2021 Year	**91,884**	**18,220**	**7,038**	**744**	**302**	**27,513**
2022 January	84,541	17,370	6,108	688	336	25,848
February	81,034	17,448	6,106	697	299	25,745
March	86,143	17,332	5,772	652	350	25,503
April	90,746	17,185	5,920	654	424	25,877
May	92,692	17,530	5,816	680	454	26,295
June	86,869	17,297	6,119	662	423	26,195
July	79,172	19,050	6,070	587	474	28,075
August	75,570	16,460	5,834	501	490	25,243
September	79,354	16,218	5,775	490	405	24,508
October	87,342	16,263	6,014	494	351	24,524
November	93,203	16,970	6,192	517	408	25,718
December	**88,861**	**16,521**	**5,777**	**513**	**318**	**24,404**
2023 January	92,604	17,382	6,127	545	374	25,923
February	99,700	17,523	6,236	537	368	26,135
March	109,004	16,959	6,138	496	513	26,159
April	118,035	16,806	6,240	500	607	26,579
May	126,414	16,692	6,193	441	600	26,326
June	127,710	16,881	6,248	427	533	26,221
July	121,590	16,714	6,442	418	441	25,777
August	118,144	16,115	6,384	405	356	24,684
September	116,635	16,087	6,393	397	279	24,271
October	121,621	15,995	6,353	388	284	24,157
November	131,266	16,040	6,325	385	362	24,557
December	**131,426**	**16,141**	**6,291**	**381**	**428**	**24,951**
2024 January	121,722	15,747	6,130	361	312	23,798

[a] Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.

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

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

[d] Jet fuel and kerosene. Through 2003, data also include a small amount of waste oil.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Distillate fuel oil and residual fuel oil. Beginning in 1970, also includes petroleum coke. Beginning in 2002, also includes other liquids.

[g] Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

NA=Not available.

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

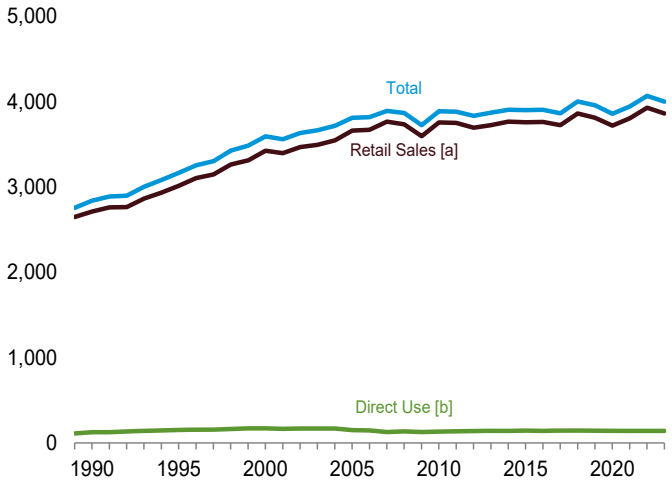
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977–1981:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1982–1988:** U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **1989–1997:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

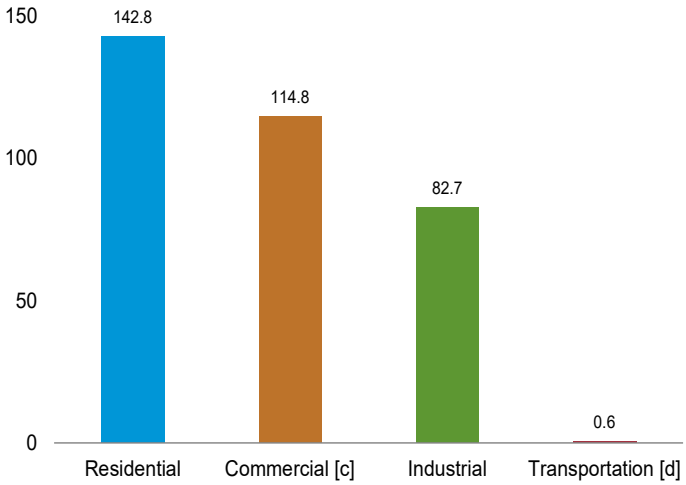
Figure 7.6 Electricity End Use

(Billion Kilowatthours)

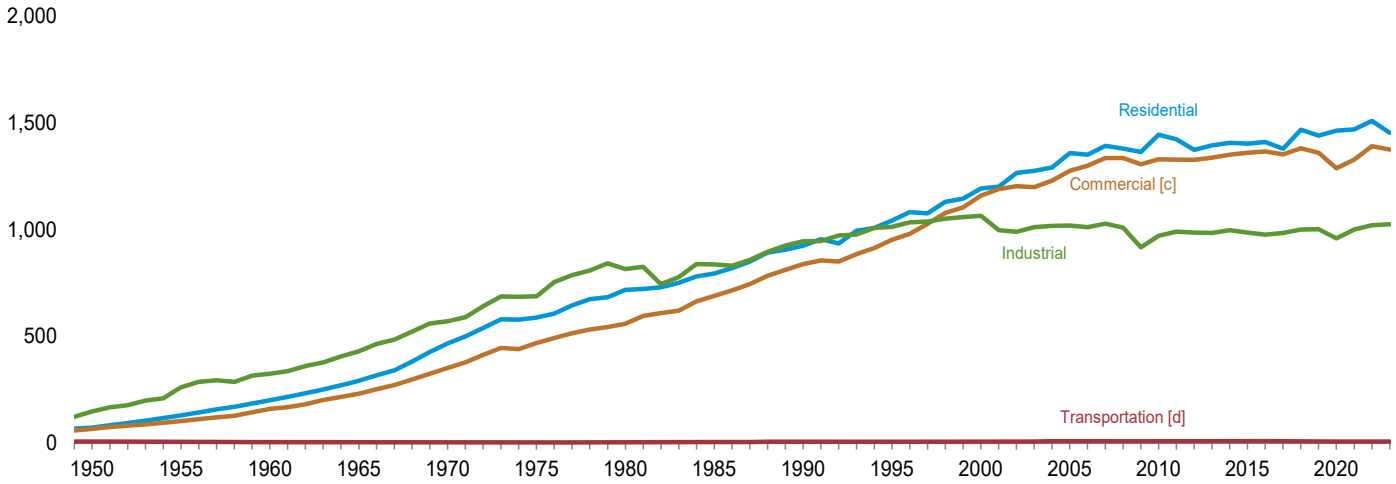
Electricity End Use Overview,1989–2023



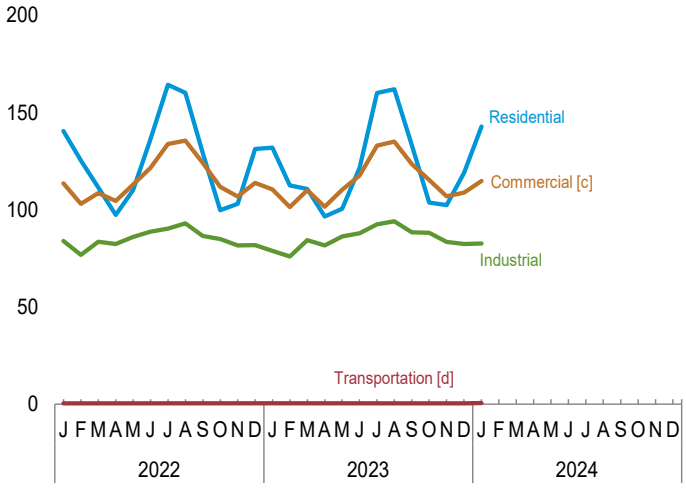
Sales to Ultimate Customers [a] by Sector, January 2024



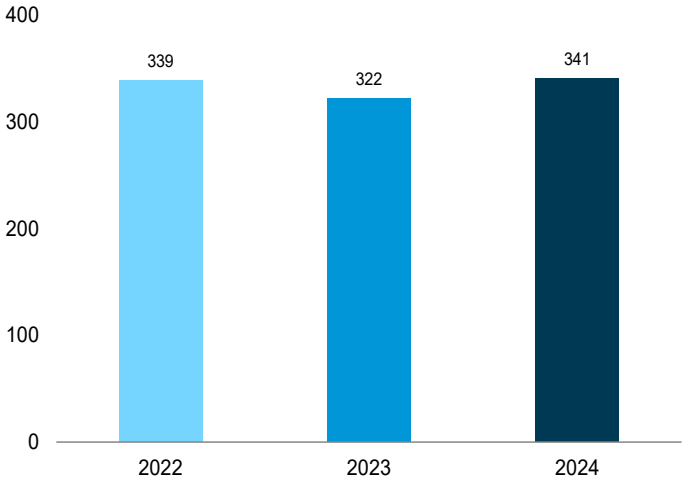
Sales to Ultimate Customers [a] by Sector, 1949–2023



Sales to Ultimate Customers [a] by Sector, Monthly



Sales to Ultimate Customers [a] Total, January



[a] Electricity sales to ultimate customers reported by utilities and other energy service providers.
[b] See "Direct Use" in Glossary.
[c] Commercial sector, including public street and highway lighting, inter-departmental sales, and other sales to public authorities.
[d] Transportation sector, including sales to railroads and railways.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.6.

Table 7.6 Electricity End Use and Electric Vehicle Use

(Million Kilowatthours)

	Sales to Ultimate Customers[a]							
	Residential[b]	Commercial[b,c]	Industrial[b,d]	Transportation[e]	Total Sales[f]	Direct Use[g]	Total End Use[h]	*Electric Vehicle Use*[b,i]
1950 Total	**72,200**	E **65,971**	**146,479**	E **6,793**	**291,443**	**NA**	**291,443**	***NA***
1955 Total	**128,401**	E **102,547**	**259,974**	E **5,826**	**496,748**	**NA**	**496,748**	***NA***
1960 Total	**201,463**	E **159,144**	**324,402**	E **3,066**	**688,075**	**NA**	**688,075**	***NA***
1965 Total	**291,013**	E **231,126**	**428,727**	E **2,923**	**953,789**	**NA**	**953,789**	***NA***
1970 Total	**466,291**	E **352,041**	**570,854**	E **3,115**	**1,392,300**	**NA**	**1,392,300**	***NA***
1975 Total	**588,140**	E **468,296**	**687,680**	E **2,974**	**1,747,091**	**NA**	**1,747,091**	***NA***
1980 Total	**717,495**	**558,643**	**815,067**	**3,244**	**2,094,449**	**NA**	**2,094,449**	***NA***
1985 Total	**793,934**	**689,121**	**836,772**	**4,147**	**2,323,974**	**NA**	**2,323,974**	***NA***
1990 Total	**924,019**	**838,263**	**945,522**	**4,751**	**2,712,555**	**124,529**	**2,837,084**	***NA***
1995 Total	**1,042,501**	**953,117**	**1,012,693**	**4,975**	**3,013,287**	**150,677**	**3,163,963**	***NA***
2000 Total	**1,192,446**	**1,159,347**	**1,064,239**	**5,382**	**3,421,414**	**170,943**	**3,592,357**	***NA***
2005 Total	**1,359,227**	**1,275,079**	**1,019,156**	**7,506**	**3,660,969**	**150,016**	**3,810,984**	***NA***
2010 Total	**1,445,708**	**1,330,199**	**971,221**	**7,712**	**3,754,841**	**131,910**	**3,886,752**	***NA***
2011 Total	**1,422,801**	**1,328,057**	**991,316**	**7,672**	**3,749,846**	**132,754**	**3,882,600**	***NA***
2012 Total	**1,374,515**	**1,327,101**	**985,714**	**7,320**	**3,694,650**	**137,657**	**3,832,306**	***NA***
2013 Total	**1,394,812**	**1,337,079**	**985,352**	**7,625**	**3,724,868**	**143,462**	**3,868,330**	***NA***
2014 Total	**1,407,208**	**1,352,158**	**997,576**	**7,758**	**3,764,700**	**138,574**	**3,903,274**	***NA***
2015 Total	**1,404,096**	**1,360,752**	**986,508**	**7,637**	**3,758,992**	**141,168**	**3,900,160**	***NA***
2016 Total	**1,411,058**	**1,367,191**	**976,715**	**7,497**	**3,762,462**	**139,837**	**3,902,298**	***NA***
2017 Total	**1,378,648**	**1,352,888**	**984,298**	**7,523**	**3,723,356**	**140,959**	**3,864,315**	***NA***
2018 Total	**1,469,093**	**1,381,755**	**1,000,673**	**7,665**	**3,859,185**	**143,904**	**4,003,089**	E ***1,582***
2019 Total	**1,440,289**	**1,360,877**	**1,002,353**	**7,632**	**3,811,150**	**143,270**	**3,954,421**	E ***2,060***
2020 Total	**1,464,605**	**1,287,440**	**959,082**	**6,548**	**3,717,674**	**138,703**	**3,856,377**	E ***2,900***
2021 Total	**1,470,487**	**1,328,439**	**1,000,613**	**6,334**	**3,805,874**	**138,915**	**3,944,789**	E ***3,519***
2022 January	140,504	113,605	83,982	565	338,656	E 12,397	351,053	E *377*
February	125,342	103,063	76,893	566	305,863	E 10,831	316,694	E *366*
March	111,439	108,603	83,679	579	304,300	E 11,587	315,887	E *409*
April	97,432	104,566	82,422	513	284,933	E 10,855	295,788	E *381*
May	110,071	113,007	86,090	529	309,697	E 11,467	321,164	E *412*
June	136,310	121,567	88,716	513	347,106	E 11,689	358,796	E *417*
July	164,277	133,952	90,420	566	389,214	E 12,567	401,782	E *444*
August	160,271	135,676	93,143	536	389,626	E 12,560	402,186	E *453*
September	129,241	124,195	86,550	558	340,544	E 11,309	351,853	E *453*
October	99,792	111,851	85,017	535	297,196	E 11,167	308,363	E *483*
November	103,152	106,858	81,701	546	292,258	E 11,555	303,812	E *498*
December	131,402	113,929	81,852	593	327,776	E 11,742	339,518	E *559*
Total	**1,509,233**	**1,390,873**	**1,020,464**	**6,599**	**3,927,169**	**139,726**	**4,066,895**	E ***5,252***
2023 January	132,059	110,493	78,965	569	322,084	E 11,884	333,968	E *527*
February	112,543	101,434	76,054	550	290,582	E 11,009	301,591	E *512*
March	110,792	110,071	84,426	567	305,856	E 11,539	317,394	E *592*
April	96,542	101,556	81,765	511	280,373	E 9,981	290,354	E *546*
May	100,479	110,404	86,394	518	297,795	E 11,030	308,825	E *602*
June	121,568	117,727	88,009	568	327,872	E 11,631	339,503	E *621*
July	160,085	133,161	92,565	621	386,432	E 12,181	398,612	E *662*
August	162,031	135,067	94,226	577	391,900	E 12,436	404,336	E *678*
September	133,320	123,663	88,495	650	346,129	E 11,667	357,795	E *661*
October	103,767	115,379	88,164	565	307,874	E 11,314	319,188	E *704*
November	102,428	107,051	83,460	549	293,487	E 11,737	305,224	E *714*
December	119,052	108,918	82,427	562	310,959	E 12,473	323,432	E *776*
Total	**1,454,667**	**1,374,922**	**1,024,949**	**6,804**	**3,861,342**	E **138,881**	**4,000,224**	E ***7,596***
2024 January	142,839	114,843	82,723	606	341,010	E 12,632	353,643	E *831*

[a] Electricity sales to ultimate customers based on classes of service reported by electric utilities and, beginning in 1996, other energy service providers.

[b] Electricity sales to the residential, commercial, and industrial sectors, based on class of service, including sales of electricity to operate and move electric vehicles. See Note 4, "Experimental Estimates of Electric Vehicle Use," at end of section.

[c] Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.

[d] Industrial sector. Through 2002, excludes agriculture and irrigation; beginning in 2003, includes agriculture and irrigation.

[e] Sales to public railroads and railway systems only. Excludes the estimated amount of electricity used to operate and move electric vehicles.

[f] The sum of "Residential," "Commercial," "Industrial," and "Transportation."

[g] 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.

[h] The sum of "Total Sales to Ultimate Customers" and "Direct Use."

[i] Electricity used to operate and move on-road light-duty electric vehicles (less than or equal to 8,500 pounds). Excludes motor gasoline consumption by plug-in hybrid electric vehicles. EV use is estimated independently and should not be added to the sales or total end use columns as it will result in double counting. See Note 4, "Experimental Estimates of Electric Vehicle Use," at end of section.

E=Estimate. NA=Not available.

Notes: • See Note 1, "Coverage of Electricity Statistics," at end of section. • See Note 4, "Experimental Estimates of Electric Vehicle Use," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 7.7a Electric Net Summer Capacity: Total (All Sectors)

(Sum of Tables 7.7b, 7.7c, and 7.7d; Million Kilowatts)

	Fossil Fuels				Nuclear Electric Power	Hydroelectric Pumped Storage	Renewable Energy							Battery Storage	Total[i]
							Conventional Hydroelectric Power[e]	Biomass		Geothermal	Solar[h]	Wind	Total		
	Coal[a]	Petroleum[b]	Natural Gas[c]	Total[d]				Wood[f]	Waste[g]						
1950 Year	NA	NA	NA	50.0	0.0	([e])	19.2	(s)	([j])	NA	NA	NA	19.2	NA	69.2
1955 Year	NA	NA	NA	86.8	.0	([e])	27.4	(s)	([j])	NA	NA	NA	27.4	NA	114.2
1960 Year	NA	NA	NA	130.8	.4	([e])	35.8	.1	([j])	(s)	NA	NA	35.9	NA	167.1
1965 Year	NA	NA	NA	182.9	.8	([e])	51.0	.1	([j])	(s)	NA	NA	51.1	NA	234.8
1970 Year	NA	NA	NA	265.4	7.0	([e])	63.8	.1	([j])	.1	NA	NA	64.0	NA	336.4
1975 Year	NA	NA	NA	375.1	37.3	([e])	78.4	.1	([j])	.5	NA	NA	79.0	NA	491.3
1980 Year	NA	NA	NA	444.1	51.8	([e])	81.7	.1	([j])	.9	NA	NA	82.7	NA	578.6
1985 Year	NA	NA	NA	485.0	79.4	([e])	88.9	.2	.2	1.6	([k])	(s)	90.8	NA	655.2
1990 Year[l]	307.4	77.9	140.8	527.8	99.6	19.5	73.9	5.5	2.5	2.7	.3	1.8	86.8	NA	734.1
1995 Year	311.4	66.6	174.5	554.2	99.5	21.4	78.6	6.8	3.5	3.0	.3	1.7	93.9	NA	769.5
2000 Year	315.1	61.8	219.6	598.9	97.9	19.5	79.4	6.1	3.9	2.8	.4	2.4	94.9	NA	811.7
2005 Year	313.4	58.5	383.1	757.1	100.0	21.3	77.5	6.2	3.6	2.3	.4	8.7	98.7	NA	978.0
2010 Year	317.3	55.6	405.1	780.3	101.2	22.2	78.8	7.0	4.4	2.4	.9	39.1	132.6	(s)	1,039.1
2011 Year	317.6	51.5	415.2	786.2	101.4	22.3	78.7	7.1	4.5	2.4	1.5	45.7	139.9	.1	1,051.3
2012 Year	309.7	47.2	422.4	781.2	101.9	22.4	78.7	7.5	4.8	2.6	3.2	59.1	155.9	.1	1,063.0
2013 Year	303.3	43.5	425.4	774.3	99.2	22.4	79.2	8.4	5.0	2.6	6.6	60.0	161.8	.1	1,060.1
2014 Year	299.1	41.1	432.2	774.3	98.6	22.5	79.7	8.4	5.2	2.5	10.3	64.2	170.3	.2	1,068.4
2015 Year	279.7	36.8	439.4	758.5	98.7	22.6	79.7	9.0	5.1	2.5	13.7	72.6	182.5	.3	1,064.1
2016 Year	266.6	34.4	446.8	750.3	99.6	22.8	79.9	8.9	5.1	2.5	22.0	81.3	199.7	.6	1,074.3
2017 Year	256.5	33.3	456.0	748.2	99.6	22.8	79.8	8.8	5.1	2.5	27.0	87.6	210.8	.7	1,084.4
2018 Year	242.8	32.2	470.2	747.8	99.4	22.8	79.9	8.7	5.0	2.4	31.9	94.4	222.3	.9	1,094.7
2019 Year	228.7	31.4	476.6	739.1	98.1	22.8	79.8	8.4	4.7	2.6	37.5	103.6	236.5	1.0	1,099.1
2020 Year	215.6	27.6	485.8	731.2	96.5	23.0	79.9	8.3	4.6	2.6	48.1	118.4	261.9	1.5	1,115.7
2021 Year	209.8	28.2	491.9	731.8	95.5	23.0	79.9	7.9	4.5	2.6	61.6	132.8	289.2	4.7	1,145.9
2022 January	202.0	31.3	498.4	733.4	95.4	23.0	80.0	7.8	4.5	2.6	62.8	133.7	291.5	5.0	1,149.7
February	202.0	31.3	498.5	733.4	95.4	23.0	80.0	7.8	4.5	2.6	63.2	134.0	292.0	5.1	1,150.4
March	200.8	31.2	498.2	732.0	95.4	23.0	80.1	7.8	4.4	2.6	64.1	135.1	294.1	5.3	1,151.3
April	200.4	31.1	498.2	731.5	95.4	23.0	80.1	7.8	4.4	2.6	64.6	137.4	296.9	6.1	1,154.3
May	198.9	31.1	500.4	732.1	95.4	23.0	80.1	7.8	4.4	2.6	65.4	137.6	297.9	6.1	1,155.9
June	195.9	31.0	501.5	730.1	94.7	23.0	80.1	7.8	4.4	2.6	66.6	138.0	299.5	6.6	1,155.3
July	195.9	31.0	502.6	731.2	94.7	23.0	80.1	7.8	4.4	2.6	67.2	138.0	300.1	6.9	1,157.3
August	194.9	31.0	502.5	730.0	94.7	23.0	80.1	7.8	4.4	2.7	67.9	138.0	300.8	7.5	1,157.5
September	192.4	30.9	502.4	727.5	94.7	23.0	80.1	7.8	4.4	2.7	68.7	138.0	301.6	8.0	1,156.2
October	192.4	30.8	502.4	727.4	94.7	23.0	80.1	7.8	4.4	2.6	69.2	138.0	302.1	8.6	1,157.3
November	192.3	30.8	502.7	727.6	94.7	23.0	80.1	7.8	4.4	2.6	70.0	139.7	304.7	8.7	1,160.1
December	189.3	30.8	502.4	724.2	94.7	23.0	80.1	7.8	4.3	2.6	72.9	141.4	309.1	9.0	1,161.4
2023 January	186.9	28.8	504.3	721.7	94.6	23.1	80.1	7.8	4.3	2.6	74.0	141.9	310.8	9.2	1,160.8
February	186.9	28.8	505.5	723.0	94.6	23.1	80.1	7.8	4.3	2.6	74.7	142.7	312.3	9.3	1,163.6
March	186.9	28.8	505.9	723.3	94.6	23.2	80.1	7.8	4.3	2.6	75.4	143.1	313.3	9.5	1,165.3
April	186.9	28.8	507.9	725.3	94.6	23.2	80.1	7.8	4.3	2.7	76.2	143.7	314.9	9.7	1,169.1
May	185.4	29.2	506.8	723.1	94.6	23.2	80.1	7.8	4.3	2.7	77.3	144.5	316.7	9.8	1,168.9
June	183.2	29.1	507.8	721.9	94.6	23.2	80.1	7.8	4.3	2.7	78.9	144.5	318.2	10.9	1,170.2
July	182.6	29.1	508.6	722.0	95.7	23.2	80.1	7.8	4.3	2.7	80.9	144.5	320.3	12.4	1,175.0
August	182.0	29.1	508.6	721.4	95.7	23.2	80.1	7.8	4.3	2.7	81.6	144.5	321.0	12.9	1,175.6
September	182.0	29.1	508.3	721.0	95.7	23.2	80.1	7.8	4.3	2.7	82.5	144.6	321.9	13.4	1,176.7
October	181.5	29.1	508.2	720.5	95.7	23.2	80.1	7.8	4.3	2.7	84.0	145.3	324.2	13.6	1,178.7
November	181.5	29.1	508.9	721.2	95.7	23.2	80.1	7.7	4.3	2.7	84.9	145.3	325.0	14.1	1,180.6
December	180.8	29.1	508.3	719.9	95.7	23.2	80.1	7.7	4.3	2.7	91.3	147.6	333.7	15.4	1,189.4
2024 January	178.3	29.1	509.4	718.6	95.7	23.1	80.0	7.6	4.3	2.7	94.7	148.4	337.7	15.9	1,192.5

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Includes other gases (blast furnace gas, other manufactured and waste gases derived from fossil fuels, and, through 2010, propane gas), which are not separately shown.

[e] Through 1988, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[f] Wood and wood-derived fuels.

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

[h] Electric net summer capacity from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic capacity.

[i] Includes chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, flywheels, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels), which are not separately shown.

[j] Through 1984, waste is included in "Wood."

[k] Through 1988, solar is included in "Wind."

[l] Through 1988, all data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

NA=Not available. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of period. • For plants that use multiple sources of energy, capacity is assigned to the energy source reported as the predominant one. • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Net summer capacity" 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/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: Tables 7.7b–7.7d.

Table 7.7b Electric Net Summer Capacity: Electric Power Sector

(Subset of Table 7.7a; Million Kilowatts)

	Fossil Fuels						Renewable Energy								
								Biomass							
	Coal[a]	Petroleum[b]	Natural Gas[c]	Total[d]	Nuclear Electric Power	Hydroelectric Pumped Storage	Conventional Hydroelectric Power[e]	Wood[f]	Waste[g]	Geothermal	Solar[h]	Wind	Total	Battery Storage	Total[i]
1950 Year	**NA**	**NA**	**NA**	**50.0**	**0.0**	([e])	**19.2**	**(s)**	([j])	**NA**	**NA**	**NA**	**19.2**	**NA**	**69.2**
1955 Year	**NA**	**NA**	**NA**	**86.8**	**.0**	([e])	**27.4**	**(s)**	([j])	**NA**	**NA**	**NA**	**27.4**	**NA**	**114.2**
1960 Year	**NA**	**NA**	**NA**	**130.8**	**.4**	([e])	**35.8**	**.1**	([j])	**(s)**	**NA**	**NA**	**35.9**	**NA**	**167.1**
1965 Year	**NA**	**NA**	**NA**	**182.9**	**.8**	([e])	**51.0**	**.1**	([j])	**(s)**	**NA**	**NA**	**51.1**	**NA**	**234.8**
1970 Year	**NA**	**NA**	**NA**	**265.4**	**7.0**	([e])	**63.8**	**.1**	([j])	**.1**	**NA**	**NA**	**64.0**	**NA**	**336.4**
1975 Year	**NA**	**NA**	**NA**	**375.1**	**37.3**	([e])	**78.4**	**.1**	([j])	**.5**	**NA**	**NA**	**79.0**	**NA**	**491.3**
1980 Year	**NA**	**NA**	**NA**	**444.1**	**51.8**	([e])	**81.7**	**.1**	([j])	**.9**	**NA**	**NA**	**82.7**	**NA**	**578.6**
1985 Year	**NA**	**NA**	**NA**	**485.0**	**79.4**	([e])	**88.9**	**.2**	**.2**	**1.6**	([k])	**(s)**	**90.8**	**NA**	**655.2**
1990 Year[l]	**302.3**	**76.8**	**129.9**	**509.3**	**99.6**	**19.5**	**73.3**	**1.2**	**2.1**	**2.7**	**.3**	**1.8**	**81.4**	**NA**	**709.9**
1995 Year	**306.0**	**65.4**	**161.9**	**533.7**	**99.5**	**21.4**	**77.4**	**1.8**	**3.0**	**3.0**	**.3**	**1.7**	**87.3**	**NA**	**741.8**
2000 Year	**310.2**	**60.7**	**204.7**	**575.9**	**97.9**	**19.5**	**78.2**	**1.7**	**3.3**	**2.8**	**.4**	**2.4**	**88.8**	**NA**	**782.1**
2005 Year	**309.0**	**57.4**	**367.5**	**734.3**	**100.0**	**21.3**	**76.9**	**1.6**	**3.0**	**2.3**	**.4**	**8.7**	**92.9**	**NA**	**948.6**
2010 Year	**312.9**	**54.6**	**389.8**	**757.5**	**101.2**	**22.2**	**78.5**	**2.1**	**3.7**	**2.4**	**.9**	**39.1**	**126.6**	**(s)**	**1,009.2**
2011 Year	**313.7**	**50.4**	**399.7**	**763.8**	**101.4**	**22.3**	**78.3**	**2.0**	**3.8**	**2.4**	**1.5**	**45.6**	**133.6**	**.1**	**1,021.3**
2012 Year	**305.9**	**45.7**	**406.6**	**758.2**	**101.9**	**22.4**	**78.1**	**2.3**	**4.0**	**2.6**	**3.1**	**59.0**	**149.0**	**.1**	**1,032.0**
2013 Year	**299.9**	**42.4**	**409.2**	**751.7**	**99.2**	**22.4**	**78.5**	**2.9**	**4.1**	**2.6**	**6.4**	**59.9**	**154.5**	**.1**	**1,029.0**
2014 Year	**295.9**	**40.1**	**415.6**	**751.7**	**98.6**	**22.5**	**79.4**	**2.9**	**4.2**	**2.5**	**10.1**	**64.2**	**163.3**	**.2**	**1,037.6**
2015 Year	**277.0**	**35.7**	**423.0**	**736.0**	**98.7**	**22.6**	**79.4**	**3.1**	**4.2**	**2.5**	**13.4**	**72.5**	**175.0**	**.3**	**1,032.9**
2016 Year	**264.3**	**33.2**	**430.4**	**728.2**	**99.6**	**22.8**	**79.6**	**3.2**	**4.2**	**2.5**	**21.6**	**81.2**	**192.3**	**.6**	**1,043.6**
2017 Year	**254.4**	**32.1**	**439.5**	**726.3**	**99.6**	**22.8**	**79.4**	**3.0**	**4.2**	**2.5**	**26.6**	**87.5**	**203.3**	**.7**	**1,053.6**
2018 Year	**240.7**	**30.8**	**453.7**	**725.6**	**99.4**	**22.8**	**79.6**	**2.9**	**4.2**	**2.4**	**31.5**	**94.3**	**214.8**	**.8**	**1,063.7**
2019 Year	**226.8**	**30.0**	**459.5**	**716.7**	**98.1**	**22.8**	**79.5**	**2.7**	**3.9**	**2.5**	**37.0**	**103.5**	**229.1**	**1.0**	**1,068.0**
2020 Year	**214.0**	**26.2**	**468.2**	**708.7**	**96.5**	**23.0**	**79.6**	**2.7**	**3.8**	**2.5**	**47.6**	**118.0**	**254.3**	**1.5**	**1,084.2**
2021 Year	**208.3**	**26.8**	**473.5**	**708.9**	**95.5**	**23.0**	**79.6**	**2.4**	**3.7**	**2.5**	**61.0**	**132.6**	**281.9**	**4.7**	**1,114.3**
2022 January	200.6	29.8	479.6	710.4	95.4	23.0	79.7	2.4	3.1	2.6	62.3	133.6	283.7	4.9	1,117.6
February	200.6	29.8	479.7	710.4	95.4	23.0	79.7	2.4	3.1	2.6	62.6	133.8	284.3	5.0	1,118.3
March	199.4	29.7	479.4	708.8	95.4	23.0	79.8	2.4	3.0	2.6	63.6	135.0	286.4	5.3	1,119.1
April	198.9	29.6	479.4	708.3	95.4	23.0	79.8	2.4	3.0	2.6	64.0	137.3	289.1	6.0	1,122.1
May	197.4	29.6	481.6	708.9	95.4	23.0	79.8	2.4	3.0	2.6	64.8	137.5	290.1	6.0	1,123.7
June	194.4	29.4	482.7	706.9	94.7	23.0	79.8	2.4	3.0	2.6	66.0	137.9	291.7	6.5	1,123.1
July	194.4	29.4	483.8	708.0	94.7	23.0	79.8	2.4	3.0	2.6	66.6	137.9	292.3	6.9	1,125.1
August	193.4	29.4	483.7	706.9	94.7	23.0	79.8	2.4	3.0	2.7	67.3	137.9	293.0	7.4	1,125.2
September	191.0	29.4	483.7	704.4	94.7	23.0	79.8	2.4	3.0	2.7	68.1	137.9	293.8	7.9	1,123.9
October	191.0	29.3	483.7	704.3	94.7	23.0	79.8	2.4	3.0	2.6	68.6	137.9	294.3	8.6	1,125.1
November	190.8	29.3	484.0	704.5	94.7	23.0	79.8	2.4	3.0	2.6	69.4	139.6	296.8	8.7	1,127.8
December	**187.9**	**29.2**	**483.6**	**701.1**	**94.7**	**23.0**	**79.8**	**2.4**	**2.9**	**2.6**	**72.2**	**141.3**	**301.3**	**8.9**	**1,129.2**
2023 January	185.4	27.3	485.3	698.4	94.6	23.1	79.8	2.4	2.9	2.6	73.4	141.8	303.0	9.1	1,128.4
February	185.4	27.3	486.5	699.6	94.6	23.1	79.8	2.4	2.9	2.6	74.1	142.5	304.4	9.2	1,131.1
March	185.4	27.3	487.1	700.2	94.6	23.2	79.8	2.4	2.9	2.6	74.7	142.9	305.4	9.5	1,133.1
April	185.4	27.3	489.1	702.2	94.6	23.2	79.8	2.4	2.9	2.7	75.6	143.6	307.0	9.6	1,136.9
May	183.9	27.7	488.0	700.0	94.6	23.2	79.8	2.4	2.9	2.7	76.7	144.4	308.8	9.8	1,136.6
June	181.8	27.6	489.0	698.8	94.6	23.2	79.8	2.4	2.9	2.7	78.3	144.4	310.4	10.8	1,138.0
July	181.1	27.6	489.8	698.9	95.7	23.2	79.8	2.4	2.9	2.7	80.3	144.4	312.5	12.3	1,142.8
August	180.5	27.6	489.8	698.3	95.7	23.2	79.8	2.4	2.9	2.7	81.0	144.4	313.2	12.8	1,143.4
September	180.5	27.6	489.5	697.9	95.7	23.2	79.8	2.4	2.9	2.7	81.9	144.5	314.1	13.4	1,144.5
October	180.0	27.6	489.4	697.4	95.7	23.2	79.8	2.4	2.9	2.7	83.3	145.2	316.3	13.6	1,146.4
November	180.0	27.6	490.1	698.1	95.7	23.2	79.8	2.4	2.9	2.7	84.2	145.2	317.1	14.0	1,148.4
December	**179.4**	**27.6**	**489.5**	**696.9**	**95.7**	**23.2**	**79.8**	**2.4**	**2.9**	**2.7**	**90.5**	**147.5**	**325.8**	**15.4**	**1,157.2**
2024 January	176.9	27.6	490.7	695.5	95.7	23.1	79.7	2.3	2.9	2.7	94.0	148.3	329.9	15.8	1,160.3

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Includes other gases (blast furnace gas, other manufactured and waste gases derived from fossil fuels, and, through 2010, propane gas), which are not separately shown.

[e] Through 1988, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[f] Wood and wood-derived fuels.

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

[h] Electric net summer capacity from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic capacity.

[i] Includes chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, flywheels, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels), which are not separately shown.

[j] Through 1984, waste is included in "Wood."

[k] Through 1988, solar is included in "Wind."

[l] Through 1988, all data are for electric utilities only. Beginning in 1989, data are for electric utilities and independent power producers.

NA=Not available. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of period. • For plants that use multiple sources of energy, capacity is assigned to the energy source reported as the predominant one. • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Net summer capacity" in Glossary. • 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 7.7c Electric Net Summer Capacity: Commercial Sector

(Subset of Table 7.7a; Million Kilowatts)

	Fossil Fuels						Renewable Energy								
								Biomass							
	Coal[a]	Petroleum[b]	Natural Gas[c]	Total[d]	Nuclear Electric Power	Hydroelectric Pumped Storage	Conventional Hydroelectric Power	Wood[e]	Waste[f]	Geothermal	Solar[g]	Wind	Total	Battery Storage	Total[h]
1990 Year	**0.3**	**0.2**	**0.7**	**1.2**	**–**	**–**	**(s)**	**(s)**	**0.2**	**–**	**–**	**–**	**0.2**	**–**	**1.4**
1995 Year	**.3**	**.2**	**1.2**	**1.8**	**–**	**–**	**(s)**	**(s)**	**.3**	**–**	**–**	**–**	**.3**	**–**	**2.1**
2000 Year	**.3**	**.3**	**1.2**	**1.8**	**–**	**–**	**(s)**	**(s)**	**.4**	**–**	**–**	**–**	**.4**	**–**	**2.2**
2005 Year	**.4**	**.3**	**1.0**	**1.8**	**–**	**–**	**(s)**	**(s)**	**.4**	**–**	**–**	**–**	**.5**	**–**	**2.2**
2010 Year	**.4**	**.4**	**1.2**	**1.9**	**–**	**–**	**(s)**	**(s)**	**.5**	**–**	**(s)**	**(s)**	**.5**	**–**	**2.5**
2011 Year	**.4**	**.4**	**1.3**	**2.1**	**–**	**–**	**(s)**	**(s)**	**.6**	**–**	**.1**	**(s)**	**.7**	**–**	**2.8**
2012 Year	**.4**	**.4**	**1.5**	**2.4**	**–**	**–**	**(s)**	**(s)**	**.6**	**–**	**.1**	**(s)**	**.8**	**–**	**3.2**
2013 Year	**.3**	**.5**	**1.8**	**2.6**	**–**	**–**	**(s)**	**(s)**	**.7**	**–**	**.2**	**(s)**	**1.0**	**–**	**3.6**
2014 Year	**.3**	**.5**	**1.8**	**2.6**	**–**	**–**	**(s)**	**.1**	**.7**	**–**	**.2**	**.1**	**1.1**	**–**	**3.7**
2015 Year	**.2**	**.5**	**1.9**	**2.6**	**–**	**–**	**(s)**	**.1**	**.7**	**–**	**.3**	**.1**	**1.2**	**(s)**	**3.8**
2016 Year	**.2**	**.5**	**2.0**	**2.7**	**–**	**–**	**.1**	**.1**	**.7**	**–**	**.3**	**.1**	**1.2**	**(s)**	**3.9**
2017 Year	**.2**	**.6**	**2.0**	**2.8**	**–**	**–**	**.1**	**.1**	**.7**	**–**	**.3**	**.1**	**1.2**	**(s)**	**4.1**
2018 Year	**.1**	**.8**	**2.2**	**3.1**	**–**	**–**	**.1**	**.1**	**.7**	**(s)**	**.3**	**.1**	**1.3**	**(s)**	**4.5**
2019 Year	**.1**	**.9**	**2.2**	**3.2**	**–**	**–**	**.1**	**.1**	**.7**	**(s)**	**.4**	**.1**	**1.3**	**(s)**	**4.6**
2020 Year	**.1**	**.9**	**2.3**	**3.3**	**–**	**–**	**.1**	**.1**	**.7**	**(s)**	**.4**	**.1**	**1.3**	**(s)**	**4.6**
2021 Year	**.1**	**.9**	**2.3**	**3.3**		**–**	**.1**	**.1**	**.7**	**(s)**	**.4**	**.1**	**1.5**	**(s)**	**4.8**
2022 January	(s)	1.0	2.3	3.3	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
February	(s)	1.0	2.3	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
March	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
April	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
May	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
June	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
July	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
August	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
September	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
October	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
November	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
December	**(s)**	**1.0**	**2.4**	**3.4**		**–**	**.1**	**.1**	**1.3**	**–**	**.4**	**.1**	**2.0**	**(s)**	**5.4**
2023 January	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.5
February	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.5
March	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
April	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
May	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
June	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.5
July	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.5
August	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
September	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.4	.1	2.0	(s)	5.4
October	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.5	.1	2.1	(s)	5.5
November	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.5	.1	2.1	(s)	5.5
December	**(s)**	**1.0**	**2.4**	**3.4**		**–**	**.1**	**.1**	**1.3**	**–**	**.5**	**.1**	**2.1**	**(s)**	**5.5**
2024 January	(s)	1.0	2.4	3.4	–	–	.1	.1	1.3	–	.5	.1	2.1	(s)	5.5

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Includes other gases (blast furnace gas, other manufactured and waste gases derived from fossil fuels, and, through 2010, propane gas), which are not separately shown.

[e] Wood and wood-derived fuels.

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

[g] Electric net summer capacity from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic capacity.

[h] Includes chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, flywheels, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels), which are not separately shown.

– =No data reported. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of period. • For plants that use multiple sources of energy, capacity is assigned to the energy source reported as the predominant one. • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Net summer capacity" in Glossary. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors,"at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1989 and monthly data beginning in 2008.

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." • **2001–2007:** EIA, Form EIA-860, "Annual Electric Generator Report." • **2008 forward:** EIA, Form EIA-860, "Annual Electric Generator Report," and Form EIA-860M, "Monthly Update to the Annual Electric Generator Report."

Table 7.7d Electric Net Summer Capacity: Industrial Sector

(Subset of Table 7.7a; Million Kilowatts)

	Fossil Fuels				Nuclear Electric Power	Hydroelectric Pumped Storage	Renewable Energy							Battery Storage	Total[h]
							Conventional Hydroelectric Power	Biomass		Geothermal	Solar[g]	Wind	Total		
	Coal[a]	Petroleum[b]	Natural Gas[c]	Total[d]				Wood[e]	Waste[f]						
1990 Year	**4.8**	**0.9**	**10.3**	**17.3**	**–**	**–**	**0.6**	**4.3**	**0.2**	**–**	**–**	**–**	**5.1**	**–**	**22.9**
1995 Year	**5.0**	**1.0**	**11.3**	**18.7**	**–**	**–**	**1.1**	**4.9**	**.2**	**–**	**–**	**–**	**6.3**	**–**	**25.5**
2000 Year	**4.6**	**.8**	**13.7**	**21.2**	**–**	**–**	**1.1**	**4.4**	**.2**	**–**	**–**	**–**	**5.7**	**–**	**27.3**
2005 Year	**4.0**	**.8**	**14.5**	**21.0**	**–**	**–**	**.7**	**4.5**	**.2**	**–**	**–**	**–**	**5.4**	**–**	**27.2**
2010 Year	**4.0**	**.7**	**14.2**	**20.8**	**–**	**–**	**.3**	**4.9**	**.2**	**–**	**(s)**	**(s)**	**5.5**	**–**	**27.4**
2011 Year	**3.5**	**.7**	**14.3**	**20.4**	**–**	**–**	**.3**	**5.0**	**.2**	**–**	**(s)**	**(s)**	**5.6**	**–**	**27.1**
2012 Year	**3.3**	**1.0**	**14.3**	**20.5**	**–**	**–**	**.6**	**5.2**	**.2**	**–**	**(s)**	**(s)**	**6.1**	**–**	**27.8**
2013 Year	**3.0**	**.7**	**14.4**	**20.0**	**–**	**–**	**.7**	**5.5**	**.2**	**–**	**(s)**	**(s)**	**6.4**	**–**	**27.5**
2014 Year	**2.9**	**.6**	**14.7**	**20.0**	**–**	**–**	**.3**	**5.4**	**.2**	**–**	**(s)**	**(s)**	**5.9**	**–**	**27.2**
2015 Year	**2.5**	**.7**	**14.5**	**19.8**	**–**	**–**	**.3**	**5.8**	**.2**	**–**	**(s)**	**(s)**	**6.4**	**–**	**27.4**
2016 Year	**2.1**	**.7**	**14.5**	**19.4**	**–**	**–**	**.3**	**5.7**	**.2**	**–**	**(s)**	**(s)**	**6.2**	**–**	**26.8**
2017 Year	**2.0**	**.6**	**14.5**	**19.1**	**–**	**–**	**.3**	**5.7**	**.2**	**–**	**(s)**	**(s)**	**6.3**	**(s)**	**26.7**
2018 Year	**2.0**	**.6**	**14.4**	**19.1**	**–**	**–**	**.2**	**5.8**	**.1**	**–**	**(s)**	**(s)**	**6.2**	**(s)**	**26.6**
2019 Year	**1.7**	**.5**	**14.8**	**19.2**	**–**	**–**	**.2**	**5.6**	**.1**	**–**	**.1**	**(s)**	**6.0**	**(s)**	**26.5**
2020 Year	**1.5**	**.5**	**15.3**	**19.3**	**–**	**–**	**.2**	**5.6**	**.1**	**–**	**.1**	**(s)**	**6.3**	**(s)**	**26.8**
2021 Year	**1.4**	**.5**	**16.1**	**19.6**	**–**	**–**	**.2**	**5.4**	**.1**	**–**	**.1**	(s)	**5.9**	**(s)**	**26.8**
2022 January	1.4	.6	16.4	19.7	–	–	.2	5.2	.1	–	.1	(s)	5.8	(s)	26.7
February	1.4	.6	16.4	19.7	–	–	.2	5.2	.1	–	.1	(s)	5.8	(s)	26.7
March	1.4	.6	16.4	19.8	–	–	.2	5.2	.1	–	.1	(s)	5.8	(s)	26.8
April	1.4	.6	16.4	19.8	–	–	.2	5.2	.1	–	.1	(s)	5.8	(s)	26.8
May	1.4	.6	16.4	19.8	–	–	.2	5.2	.1	–	.1	.1	5.8	(s)	26.8
June	1.4	.6	16.4	19.8	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
July	1.4	.6	16.4	19.8	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
August	1.4	.6	16.4	19.8	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
September	1.4	.6	16.4	19.8	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
October	1.4	.6	16.4	19.7	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
November	1.4	.6	16.4	19.7	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
December	**1.4**	**.6**	**16.4**	**19.7**	**–**	**–**	**.2**	**5.3**	**.1**	**–**	**.2**	**.1**	**5.8**	**(s)**	**26.8**
2023 January	1.4	.5	16.6	19.9	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	27.0
February	1.4	.5	16.6	19.9	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	27.0
March	1.4	.5	16.4	19.7	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
April	1.4	.5	16.4	19.7	–	–	.2	5.3	.1	–	.2	.1	5.8	(s)	26.8
May	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
June	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
July	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
August	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
September	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
October	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.8	(s)	26.8
November	1.4	.5	16.4	19.7	–	–	.2	5.2	.1	–	.2	.1	5.7	(s)	26.7
December	**1.4**	**.5**	**16.4**	**19.7**	**–**	**–**	**.2**	**5.2**	**.1**	**–**	**.2**	**.1**	**5.8**	**(s)**	**26.7**
2024 January	1.4	.5	16.4	19.7	–	–	.2	5.1	.1	–	.2	.1	5.7	(s)	26.7

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[c] Natural gas, plus a small amount of supplemental gaseous fuels.

[d] Includes other gases (blast furnace gas, other manufactured and waste gases derived from fossil fuels, and, through 2010, propane gas), which are not separately shown.

[e] Wood and wood-derived fuels.

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

[g] Electric net summer capacity from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic capacity.

[h] Includes chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, flywheels, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels), which are not separately shown.

– =No data reported. (s)=Less than 0.05 million kilowatts.

Notes: • Data are at end of period. • For plants that use multiple sources of energy, capacity is assigned to the energy source reported as the predominant one. • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • See "Net summer capacity" in Glossary. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1989 and monthly data beginning in 2008.

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." • **2001–2007:** EIA, Form EIA-860, "Annual Electric Generator Report." • **2008 forward:** EIA, Form EIA-860, "Annual Electric Generator Report," and Form EIA-860M, "Monthly Update to the Annual Electric Generator Report."

Table 7.8a Capacity Factors and Usage Factors at Electric Generators: Total (All Sectors)

(Percent)

	Capacity Factors[a]												Usage Factors[b]	
			Natural Gas[f]							Solar				
	Coal[c,d]	Petroleum[c,e]	Combined Cycle	Gas Turbine	Steam Turbine	Nuclear Electric Power[g]	Conventional Hydroelectric Power	Biomass[c,h]	Geothermal	Photovoltaic[i]	Thermal	Wind[j]	Hydroelectric Pumped Storage	Battery Storage
2008 Year	**72.4**	**9.7**	**40.3**	**7.6**	**12.1**	**91.1**	**37.1**	**64.0**	**74.3**	**19.2**	**19.5**	**31.7**	**–**	**–**
2009 Year	**64.2**	**9.3**	**43.9**	**6.8**	**10.9**	**90.3**	**39.6**	**62.9**	**73.0**	**20.0**	**23.6**	**28.1**	**–**	**–**
2010 Year	**67.1**	**8.4**	**44.3**	**7.8**	**11.1**	**91.1**	**37.5**	**62.5**	**71.6**	**20.2**	**24.5**	**29.7**	**–**	**–**
2011 Year	**62.8**	**7.4**	**44.3**	**7.9**	**11.7**	**89.1**	**45.8**	**61.4**	**71.5**	**19.0**	**23.9**	**32.1**	**–**	**–**
2012 Year	**56.2**	**7.6**	**52.2**	**8.9**	**13.3**	**86.1**	**39.6**	**62.1**	**68.3**	**20.4**	**23.6**	**32.4**	**–**	**–**
2013 Year	**59.4**	**6.6**	**48.8**	**8.3**	**11.2**	**90.8**	**38.8**	**60.3**	**71.8**	**24.5**	**17.4**	**32.4**	**9.8**	**.7**
2014 Year	**60.5**	**6.7**	**48.6**	**8.3**	**10.3**	**91.7**	**37.2**	**61.0**	**72.0**	**25.6**	**18.3**	**34.0**	**10.2**	**1.7**
2015 Year	**54.3**	**6.7**	**55.8**	**9.8**	**11.3**	**92.3**	**35.7**	**60.5**	**71.9**	**25.5**	**21.7**	**32.2**	**10.2**	**3.6**
2016 Year	**52.8**	**5.9**	**55.4**	**11.0**	**12.3**	**92.3**	**38.2**	**59.9**	**71.6**	**25.0**	**22.1**	**34.5**	**11.2**	**3.8**
2017 Year	**53.1**	**6.3**	**51.2**	**9.6**	**10.7**	**92.3**	**43.0**	**60.8**	**73.2**	**25.6**	**21.8**	**34.6**	**11.4**	**6.8**
2018 Year	**53.6**	**6.6**	**55.1**	**11.9**	**12.6**	**92.5**	**41.9**	**61.1**	**76.0**	**25.1**	**23.6**	**34.6**	**10.8**	**5.2**
2019 Year	**47.5**	**5.5**	**57.4**	**11.4**	**14.1**	**93.5**	**41.2**	**60.3**	**69.6**	**24.3**	**21.2**	**34.8**	**10.4**	**5.4**
2020 Year	**40.5**	**5.2**	**57.1**	**11.6**	**14.2**	**92.5**	**40.7**	**59.5**	**69.1**	**24.2**	**20.6**	**35.4**	**10.5**	**5.2**
2021 Year	**49.1**	**5.5**	**55.0**	**11.7**	**12.5**	**92.8**	**36.0**	**61.1**	**69.8**	**24.4**	**20.5**	**34.4**	**10.2**	**6.1**
2022 January	57.4	7.4	55.6	11.3	14.8	99.4	40.6	60.8	75.1	16.8	11.3	37.5	9.5	5.5
February	52.2	5.7	52.4	9.6	11.7	96.5	39.6	61.9	70.3	21.2	15.9	41.6	8.9	6.6
March	41.0	3.9	46.6	8.3	8.5	89.0	41.0	58.3	65.7	24.4	23.1	42.7	9.1	5.7
April	38.5	4.0	44.2	9.6	9.6	80.5	34.8	56.7	67.1	28.5	30.1	46.6	7.3	6.0
May	42.1	4.9	49.6	12.5	14.6	89.3	39.2	56.8	67.4	30.9	33.5	41.1	10.9	6.4
June	52.5	5.2	61.2	16.9	20.2	96.4	45.1	60.3	67.0	33.2	34.9	33.9	14.8	7.1
July	59.6	4.9	70.5	20.2	28.1	97.8	41.2	61.6	67.1	31.2	26.2	28.6	15.9	6.9
August	59.2	5.2	72.4	18.6	22.4	97.8	35.5	60.4	67.9	28.4	25.3	24.0	16.4	6.6
September	47.3	5.4	63.9	13.9	16.3	93.5	29.5	57.5	68.6	26.5	26.7	27.3	13.2	6.1
October	38.7	5.1	53.0	10.3	13.3	83.7	24.1	53.8	65.3	22.9	26.4	31.6	8.4	6.7
November	40.9	5.2	52.0	11.3	13.7	91.0	31.0	57.8	72.6	16.5	14.1	40.8	9.2	6.7
December	51.4	7.7	56.8	12.5	14.1	98.1	34.3	59.3	74.1	12.5	9.0	36.8	9.6	6.5
Average	**48.4**	**5.4**	**56.6**	**12.9**	**15.6**	**92.7**	**36.3**	**58.7**	**69.0**	**24.4**	**23.1**	**35.9**	**11.1**	**6.4**
2023 January	44.3	3.8	56.8	9.3	9.9	100.7	37.4	60.1	78.4	14.6	7.7	37.1	9.2	5.6
February	37.1	4.2	56.6	8.9	10.0	95.6	34.7	58.5	72.6	18.3	11.0	43.9	9.6	5.2
March	35.9	4.0	52.8	10.4	11.5	89.2	33.9	54.1	69.4	21.5	14.0	41.4	9.2	5.9
April	30.4	4.1	47.4	12.2	13.4	83.2	30.3	50.0	69.6	26.6	27.9	41.5	8.8	5.7
May	32.4	3.9	52.2	13.7	15.5	87.3	46.0	56.2	68.5	29.2	27.5	29.8	11.0	5.2
June	44.1	5.0	62.7	17.0	21.0	95.3	33.8	56.3	65.7	30.8	34.6	26.3	13.8	5.1
July	58.0	6.9	72.5	23.2	30.6	99.1	35.6	56.7	65.2	31.1	35.0	25.9	15.8	5.5
August	57.7	6.8	72.8	22.5	29.6	97.9	35.4	57.5	67.1	29.0	28.4	26.4	15.6	5.7
September	46.1	6.3	64.9	15.2	21.6	95.1	28.6	52.7	69.8	25.7	27.7	27.0	13.3	5.5
October	38.3	4.5	52.6	14.2	16.4	86.2	30.3	48.7	70.7	22.1	26.2	33.6	8.7	6.3
November	39.4	3.6	54.0	12.3	14.2	90.3	31.4	55.7	72.8	16.6	15.7	35.3	8.3	6.0
December	41.7	3.4	59.1	9.9	10.8	96.7	32.4	56.4	70.5	13.7	9.9	34.9	8.1	5.7
Average	**42.1**	**4.7**	**58.8**	**14.1**	**17.1**	**93.1**	**34.2**	**55.2**	**70.0**	**23.3**	**22.2**	**33.5**	**11.0**	**5.7**
2024 January	56.4	4.7	62.7	14.1	16.6	97.1	35.7	58.4	66.5	13.7	7.3	31.6	9.5	5.3

[a] Capacity factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (net generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[b] Usage factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (gross generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[c] Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

[d] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[e] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[f] Natural gas, plus a small amount of supplemental gaseous fuels. Capacity factors for natural gas internal combustion engine, energy storage, fuel cell, and other plants are not displayed.

[g] See Table 8.1 for nuclear capacity factors for 1957–2007.

[h] Wood and wood-derived fuels, municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[i] Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

[j] Onshore wind plants, and, beginning in 2017, offshore wind plants.

– =No data reported.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Monthly factors are based on a time-adjusted total net summer capacity of generators in operation for the entire month. Annual factors are based on a time-weighted average of the monthly time-adjusted capacity. • For plants that use multiple energy sources or technologies, capacity is assigned to the reported combination of predominant energy source and technology. • See EIA's *Electric Power Annual,* "Technical notes," for further information. • See "Capacity factor" in Glossary. • 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 2008.

Sources: U.S. Energy Information Administration (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."

Table 7.8b Capacity Factors and Usage Factors at Electric Generators: Electric Power Sector (Percent)

	Capacity Factors[a]												Usage Factors[b]	
			Natural Gas[f]							Solar				
	Coal[c,d]	Petroleum[c,e]	Combined Cycle	Gas Turbine	Steam Turbine	Nuclear Electric Power[g]	Conventional Hydroelectric Power	Biomass[c,h]	Geothermal	Photovoltaic[i]	Thermal	Wind[j]	Hydroelectric Pumped Storage	Battery Storage
2008 Year	**72.6**	**9.4**	**39.5**	**5.2**	**11.6**	**91.1**	**37.0**	**65.5**	**74.3**	**19.7**	**19.5**	**31.7**	**–**	**–**
2009 Year	**64.4**	**9.1**	**43.5**	**4.4**	**10.4**	**90.3**	**39.5**	**64.6**	**73.0**	**20.3**	**23.6**	**28.1**	**–**	**–**
2010 Year	**67.3**	**8.1**	**43.5**	**5.2**	**10.6**	**91.1**	**37.5**	**63.4**	**71.6**	**20.3**	**24.5**	**29.8**	**–**	**–**
2011 Year	**62.9**	**7.1**	**43.6**	**5.1**	**11.2**	**89.1**	**45.7**	**62.5**	**71.5**	**19.0**	**23.9**	**32.1**	**–**	**–**
2012 Year	**56.4**	**7.1**	**51.7**	**6.0**	**12.7**	**86.6**	**39.5**	**63.4**	**68.3**	**20.4**	**23.6**	**32.4**	**–**	**–**
2013 Year	**59.5**	**6.3**	**48.0**	**5.0**	**10.4**	**90.8**	**38.6**	**60.0**	**71.8**	**24.7**	**17.4**	**32.4**	**9.8**	**.7**
2014 Year	**60.7**	**6.4**	**48.0**	**5.2**	**9.5**	**91.7**	**37.1**	**61.5**	**72.0**	**25.8**	**18.3**	**34.0**	**10.2**	**1.7**
2015 Year	**54.3**	**6.3**	**55.5**	**6.8**	**10.8**	**92.3**	**35.6**	**59.5**	**71.9**	**25.7**	**21.7**	**32.2**	**10.2**	**3.6**
2016 Year	**52.9**	**5.6**	**54.9**	**8.2**	**11.6**	**92.3**	**38.1**	**59.2**	**71.6**	**25.1**	**22.1**	**34.5**	**11.2**	**3.8**
2017 Year	**53.2**	**6.1**	**50.6**	**6.6**	**10.1**	**92.3**	**43.0**	**60.2**	**73.2**	**25.7**	**21.8**	**34.6**	**11.4**	**6.9**
2018 Year	**53.7**	**6.4**	**54.6**	**9.0**	**11.9**	**92.5**	**41.8**	**60.2**	**76.0**	**25.2**	**23.6**	**34.6**	**10.8**	**5.3**
2019 Year	**47.5**	**5.3**	**57.0**	**8.3**	**13.2**	**93.4**	**41.1**	**59.5**	**68.9**	**24.4**	**21.2**	**34.4**	**10.4**	**5.5**
2020 Year	**40.5**	**5.0**	**56.8**	**8.3**	**13.3**	**92.4**	**40.7**	**58.9**	**68.4**	**24.3**	**20.6**	**35.3**	**10.5**	**5.2**
2021 Year	**49.2**	**5.4**	**54.8**	**8.3**	**11.4**	**92.8**	**35.9**	**61.8**	**69.5**	**24.4**	**20.5**	**34.4**	**10.2**	**6.2**
2022 January	57.5	7.2	55.2	7.9	13.7	99.4	40.6	58.9	75.1	16.8	11.3	37.6	9.5	5.5
February	52.3	5.4	52.0	6.2	10.8	96.5	39.6	61.1	70.3	21.2	15.9	41.6	8.9	6.6
March	41.0	3.7	46.1	5.0	7.4	89.0	40.9	56.9	65.7	24.5	23.1	42.7	9.1	5.8
April	38.5	3.7	43.7	6.6	8.5	80.5	34.7	53.3	67.1	28.6	30.1	46.6	7.3	6.1
May	42.1	4.6	49.3	9.4	13.7	89.3	39.2	54.5	67.4	31.0	33.5	41.1	10.9	6.4
June	52.6	5.0	61.1	13.7	19.5	96.4	45.1	60.3	67.0	33.3	34.9	33.9	14.8	7.1
July	59.7	4.6	70.7	16.8	27.6	97.8	41.3	62.6	67.1	31.3	26.2	28.7	15.9	6.9
August	59.3	5.0	72.5	15.1	21.7	97.8	35.5	61.6	67.9	28.5	25.3	24.0	16.4	6.6
September	47.4	5.2	64.0	10.5	15.5	93.5	29.5	58.3	68.6	26.6	26.7	27.4	13.2	6.1
October	38.7	4.8	52.6	7.2	12.4	83.7	24.1	53.5	65.3	22.9	26.4	31.6	8.4	6.8
November	40.9	4.9	51.5	8.1	12.7	91.0	31.0	56.1	72.6	16.6	14.1	40.8	9.2	6.7
December	51.5	7.6	56.5	9.4	13.2	98.1	34.2	59.3	74.1	12.6	9.0	36.8	9.6	6.5
Average	**48.5**	**5.2**	**56.3**	**9.7**	**14.7**	**92.7**	**36.3**	**58.0**	**69.0**	**24.4**	**23.1**	**36.0**	**11.1**	**6.5**
2023 January	44.3	3.6	56.6	5.9	8.7	100.7	37.4	60.1	78.4	14.6	7.7	37.1	9.2	5.6
February	37.1	4.0	56.3	5.4	8.8	95.6	34.7	57.9	72.6	18.4	11.0	43.9	9.6	5.2
March	35.9	3.6	52.6	7.0	10.4	89.2	33.8	52.9	69.4	21.6	14.0	41.4	9.2	5.9
April	30.3	3.9	47.3	9.5	12.4	83.2	30.3	46.1	69.6	26.7	27.9	41.5	8.8	5.7
May	32.4	3.7	52.1	10.8	14.6	87.3	46.0	54.5	68.5	29.3	27.5	29.8	11.0	5.2
June	44.2	4.9	62.6	13.9	20.2	95.3	33.7	55.3	65.7	30.9	34.6	26.3	13.8	5.2
July	58.2	6.8	72.7	20.4	30.0	99.1	35.6	58.1	65.2	31.2	35.0	25.9	15.8	5.5
August	57.9	6.7	72.9	19.6	29.0	97.9	35.4	57.9	67.1	29.1	28.4	26.4	15.6	5.7
September	46.1	6.2	64.8	12.0	20.6	95.1	28.5	51.7	69.8	25.8	27.7	27.0	13.3	5.6
October	38.4	4.4	52.3	11.3	15.5	86.2	30.3	43.8	70.7	22.2	26.2	33.6	8.7	6.3
November	39.4	3.4	53.6	8.9	13.1	90.3	31.4	50.8	72.8	16.6	15.7	35.3	8.3	6.1
December	41.7	3.2	58.8	6.3	9.4	96.7	32.4	51.0	70.5	13.7	9.9	35.0	8.1	5.7
Average	**42.2**	**4.5**	**58.6**	**10.9**	**16.1**	**93.1**	**34.1**	**53.3**	**70.0**	**23.3**	**22.2**	**33.5**	**11.0**	**5.7**
2024 January	56.5	4.4	62.5	10.6	15.4	97.1	35.7	56.3	66.5	13.7	7.3	31.6	9.5	5.3

[a] Capacity factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (net generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[b] Usage factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (gross generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[c] Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

[d] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[e] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[f] Natural gas, plus a small amount of supplemental gaseous fuels. Capacity factors for natural gas internal combustion engine, energy storage, fuel cell, and other plants are not displayed.

[g] See Table 8.1 for nuclear capacity factors for 1957–2007.

[h] Wood and wood-derived fuels, municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[i] Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

[j] Onshore wind plants, and, beginning in 2017, offshore wind plants.

– =No data reported.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Monthly factors are based on a time-adjusted total net summer capacity of generators in operation for the entire month. Annual factors are based on a time-weighted average of the monthly time-adjusted capacity. • For plants that use multiple energy sources or technologies, capacity is assigned to the reported combination of predominant energy source and technology. • See EIA's *Electric Power Annual,* "Technical notes," for further information. • See "Capacity factor" in Glossary. • 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. • 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 2008.

Sources: U.S. Energy Information Administration (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."

Table 7.8c Capacity Factors and Usage Factors at Electric Generators: Commercial Sector

(Percent)

	Capacity Factors[a]												Usage Factors[b]	
			Natural Gas[f]							Solar				
	Coal[c,d]	Petroleum[c,e]	Combined Cycle	Gas Turbine	Steam Turbine	Nuclear Electric Power	Conventional Hydroelectric Power	Biomass[c,g]	Geothermal	Photovoltaic[h]	Thermal	Wind[i]	Hydroelectric Pumped Storage	Battery Storage
2008 Year	**36.5**	**3.6**	**52.2**	**43.9**	**36.8**	**–**	**31.6**	**56.2**	**–**	**9.9**	**–**	**–**	**–**	**–**
2009 Year	**28.1**	**3.6**	**53.6**	**43.1**	**33.6**	**–**	**38.0**	**57.3**	**–**	**4.8**	**–**	**2.0**	**–**	**–**
2010 Year	**34.5**	**3.2**	**54.6**	**53.8**	**32.2**	**–**	**42.7**	**55.7**	**–**	**11.1**	**–**	**17.6**	**–**	**–**
2011 Year	**32.1**	**2.3**	**50.9**	**58.8**	**33.4**	**–**	**17.0**	**60.1**	**–**	**18.7**	**–**	**24.2**	**–**	**–**
2012 Year	**31.8**	**1.9**	**54.5**	**52.2**	**26.7**	**–**	**17.0**	**60.0**	**–**	**19.5**	**–**	**22.4**	**–**	**–**
2013 Year	**31.7**	**1.9**	**52.8**	**51.9**	**33.7**	**–**	**28.2**	**60.3**	**–**	**20.6**	**–**	**22.4**	**–**	**–**
2014 Year	**30.2**	**2.4**	**48.6**	**55.1**	**31.5**	**–**	**20.5**	**57.4**	**–**	**19.9**	**–**	**25.5**	**–**	**–**
2015 Year	**35.0**	**2.6**	**51.7**	**53.2**	**28.6**	**–**	**18.6**	**56.0**	**–**	**18.7**	**–**	**24.4**	**–**	**–**
2016 Year	**29.4**	**1.5**	**53.3**	**49.7**	**32.1**	**–**	**33.3**	**52.5**	**–**	**20.5**	**–**	**26.3**	**–**	**4.8**
2017 Year	**29.8**	**1.3**	**53.4**	**54.0**	**29.5**	**–**	**36.5**	**52.2**	**–**	**19.5**	**–**	**26.8**	**–**	**5.4**
2018 Year	**31.4**	**.7**	**51.5**	**56.2**	**32.0**	**–**	**34.7**	**50.1**	**–**	**18.7**	**–**	**27.5**	**–**	**5.2**
2019 Year	**30.2**	**.7**	**51.0**	**52.6**	**35.1**	**–**	**28.7**	**52.3**	**102.1**	**18.2**	**–**	**27.8**	**–**	**1.0**
2020 Year	**27.4**	**.4**	**43.3**	**50.1**	**32.2**	**–**	**32.8**	**52.0**	**103.5**	**17.4**	**–**	**28.3**	**–**	**4.4**
2021 Year	**30.8**	**.4**	**40.7**	**54.2**	**25.5**	**–**	**34.1**	**49.3**	**84.6**	**17.0**	**–**	**28.3**	**–**	**(s)**
2022 January	21.3	1.1	41.8	56.8	29.7	–	38.2	59.4	–	11.4	–	33.8	–	.7
February	20.6	.7	42.2	51.1	25.2	–	37.5	59.8	–	14.8	–	36.6	–	.9
March	18.9	.6	41.9	48.4	26.1	–	38.4	57.3	–	17.1	–	35.8	–	1.0
April	17.9	.5	40.0	44.9	22.3	–	33.5	62.5	–	21.0	–	38.4	–	1.1
May	17.8	.5	44.5	47.6	18.9	–	40.3	62.5	–	21.5	–	30.2	–	1.1
June	36.7	.8	50.0	55.2	22.9	–	43.2	63.2	–	23.2	–	25.3	–	1.3
July	36.4	.6	53.7	68.8	23.6	–	40.1	62.2	–	21.9	–	17.6	–	2.1
August	32.4	.5	52.7	72.6	24.6	–	34.2	62.1	–	21.0	–	14.1	–	1.6
September	35.6	.5	50.5	59.5	23.2	–	28.7	59.5	–	19.1	–	19.1	–	1.1
October	35.6	.4	40.1	45.7	21.2	–	23.6	59.6	–	15.7	–	24.1	–	.9
November	44.1	.7	38.6	52.2	25.4	–	28.3	61.5	–	12.5	–	35.0	–	.9
December	40.0	.9	39.3	58.0	30.7	–	30.8	59.8	–	8.9	–	28.4	–	.7
Average	**29.7**	**.6**	**44.6**	**55.1**	**24.5**	–	**34.7**	**60.8**	**–**	**17.4**	–	**28.1**	–	**1.1**
2023 January	38.9	.7	41.3	57.7	24.6	–	35.8	57.3	–	10.7	–	31.2	–	.4
February	39.7	.7	44.5	57.0	26.3	–	33.2	54.0	–	13.0	–	37.3	–	.4
March	29.9	.8	44.0	53.9	22.3	–	30.1	51.3	–	16.9	–	36.1	–	.3
April	36.9	.7	40.5	48.2	24.6	–	27.4	51.7	–	18.7	–	33.4	–	.3
May	34.0	.5	40.4	50.6	20.8	–	48.8	56.4	–	21.3	–	26.0	–	.5
June	17.7	.7	52.5	58.8	22.4	–	32.9	60.1	–	21.4	–	19.7	–	.9
July	31.6	.8	55.4	61.9	26.6	–	30.8	60.3	–	22.4	–	13.3	–	1.3
August	30.8	.7	57.1	62.5	24.7	–	31.7	58.2	–	21.4	–	14.7	–	.9
September	34.4	.6	55.8	61.2	23.3	–	23.4	55.7	–	18.8	–	15.3	–	.8
October	35.9	.5	46.8	52.7	20.0	–	22.4	57.4	–	15.8	–	19.0	–	.2
November	39.6	.6	44.6	59.8	22.7	–	27.4	59.9	–	15.1	–	23.1	–	.2
December	36.5	.6	47.2	61.2	24.6	–	29.1	60.3	–	11.4	–	20.8	–	.2
Average	**33.8**	**.7**	**47.5**	**57.1**	**23.6**	–	**31.1**	**56.9**	**–**	**17.1**	–	**24.1**	–	**.5**
2024 January	39.0	.6	49.2	63.5	27.3	–	33.0	59.2	–	11.0	–	20.3	–	.3

[a] Capacity factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (net generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[b] Usage factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (gross generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[c] Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

[d] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[e] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[f] Natural gas, plus a small amount of supplemental gaseous fuels. Capacity factors for natural gas internal combustion engine, energy storage, fuel cell, and other plants are not displayed.

[g] Wood and wood-derived fuels, municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[h] Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

[i] Onshore wind plants, and, beginning in 2017, offshore wind plants.

– =No data reported. (s)=Less than 0.5 percent.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Monthly factors are based on a time-adjusted total net summer capacity of generators in operation for the entire month. Annual factors are based on a time-weighted average of the monthly time-adjusted capacity. • For plants that use multiple energy sources or technologies, capacity is assigned to the reported combination of predominant energy source and technology. • See EIA's *Electric Power Annual,* "Technical notes," for further information. • See "Capacity factor" in Glossary. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," 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/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 2008.

Sources: U.S. Energy Information Administration (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."

Table 7.8d Capacity Factors and Usage Factors at Electric Generators: Industrial Sector

(Percent)

	Capacity Factors[a]												Usage Factors[b]	
			Natural Gas[f]							Solar				
	Coal[c,d]	Petroleum[c,e]	Combined Cycle	Gas Turbine	Steam Turbine	Nuclear Electric Power	Conventional Hydroelectric Power	Biomass[c,g]	Geothermal	Photovoltaic[h]	Thermal	Wind[i]	Hydroelectric Pumped Storage	Battery Storage
2008 Year	**51.8**	**32.6**	**55.2**	**53.1**	**45.2**	**–**	**54.9**	**63.1**	**–**	**–**	**–**	**–**	**–**	**–**
2009 Year	**46.6**	**33.4**	**52.9**	**54.3**	**46.9**	**–**	**61.6**	**61.7**	**–**	**–**	**–**	**–**	**–**	**–**
2010 Year	**54.3**	**33.9**	**62.4**	**69.6**	**54.3**	**–**	**55.9**	**62.2**	**–**	**19.3**	**–**	**–**	**–**	**–**
2011 Year	**50.6**	**29.5**	**61.1**	**69.7**	**56.8**	**–**	**61.0**	**60.2**	**–**	**30.3**	**–**	**11.6**	**–**	**–**
2012 Year	**48.8**	**38.2**	**64.5**	**71.0**	**57.0**	**–**	**43.4**	**60.9**	**–**	**25.2**	**–**	**25.6**	**–**	**–**
2013 Year	**49.8**	**30.0**	**70.7**	**75.1**	**50.2**	**–**	**61.1**	**60.7**	**–**	**25.6**	**–**	**25.6**	**–**	**–**
2014 Year	**49.9**	**27.5**	**67.5**	**71.0**	**48.8**	**–**	**52.4**	**60.9**	**–**	**24.3**	**–**	**26.4**	**–**	**–**
2015 Year	**48.2**	**28.1**	**66.1**	**72.7**	**41.2**	**–**	**57.6**	**62.2**	**–**	**20.6**	**–**	**25.1**	**–**	**–**
2016 Year	**46.3**	**25.2**	**69.7**	**73.0**	**40.3**	**–**	**51.4**	**61.7**	**–**	**16.7**	**–**	**25.3**	**–**	**–**
2017 Year	**46.7**	**24.4**	**68.9**	**74.9**	**37.7**	**–**	**55.9**	**62.7**	**–**	**14.8**	**–**	**27.0**	**–**	**.9**
2018 Year	**45.6**	**26.2**	**71.8**	**75.3**	**40.8**	**–**	**62.8**	**63.6**	**–**	**12.1**	**–**	**25.8**	**–**	**.8**
2019 Year	**41.6**	**26.3**	**73.4**	**75.9**	**44.2**	**–**	**55.0**	**62.2**	**–**	**17.2**	**–**	**25.3**	**–**	**15.3**
2020 Year	**41.9**	**23.2**	**67.0**	**74.5**	**44.0**	**–**	**53.2**	**61.2**	**–**	**16.3**	**–**	**39.7**	**–**	**2.4**
2021 Year	**42.0**	**19.6**	**63.8**	**74.1**	**45.1**	**–**	**49.9**	**62.1**	**–**	**16.3**	**–**	**23.2**	**–**	**(s)**
2022 January	42.5	26.9	72.7	74.0	45.7	–	49.3	63.0	–	12.8	–	29.6	–	2.9
February	42.5	30.4	66.5	74.3	39.2	–	59.0	63.2	–	16.8	–	36.4	–	2.8
March	42.4	21.8	65.2	68.5	41.4	–	71.2	60.0	–	19.7	–	34.7	–	2.5
April	38.6	26.0	61.9	65.4	43.8	–	68.1	58.7	–	22.8	–	33.8	–	3.1
May	44.0	28.3	62.6	70.2	41.3	–	54.4	57.7	–	25.5	–	27.9	–	3.0
June	45.2	26.6	64.2	77.1	43.2	–	42.1	59.6	–	27.1	–	20.3	–	2.5
July	44.8	25.2	68.2	81.8	43.8	–	33.9	60.4	–	26.0	–	17.3	–	2.3
August	44.4	26.4	69.0	82.4	44.2	–	39.1	58.8	–	24.0	–	12.3	–	2.3
September	40.6	25.3	64.3	75.5	39.7	–	40.2	56.2	–	21.4	–	15.3	–	2.4
October	38.4	25.5	67.6	68.0	38.3	–	33.1	52.7	–	19.0	–	26.8	–	2.4
November	38.3	28.7	72.5	70.4	41.9	–	41.1	58.4	–	14.3	–	33.3	–	2.4
December	41.8	24.7	69.1	70.5	37.4	–	58.9	59.0	–	9.9	–	27.9	–	2.4
Average	**42.0**	**26.3**	**67.0**	**73.2**	**41.7**	**–**	**49.1**	**59.0**	**–**	**19.9**	**–**	**26.2**	**–**	**2.6**
2023 January	39.3	21.8	66.2	74.2	43.9	–	58.2	61.0	–	13.0	–	26.0	–	–
February	38.6	22.5	68.2	75.6	44.9	–	54.9	60.3	–	16.3	–	34.5	–	–
March	34.6	26.1	63.8	74.1	45.9	–	54.9	56.1	–	19.7	–	31.7	–	–
April	35.4	21.3	52.5	65.5	42.9	–	47.0	53.5	–	23.6	–	31.9	–	–
May	35.7	19.3	57.4	71.0	43.2	–	51.2	57.7	–	26.3	–	23.8	–	–
June	39.6	21.2	66.9	77.6	48.4	–	42.1	56.4	–	27.5	–	19.8	–	–
July	39.8	22.5	68.6	75.8	50.5	–	47.3	54.4	–	28.0	–	16.9	–	–
August	37.7	22.5	69.4	78.3	50.1	–	47.9	57.0	–	26.2	–	19.6	–	–
September	37.2	20.6	68.7	77.8	51.4	–	43.6	53.0	–	23.2	–	19.5	–	–
October	35.5	16.7	64.4	71.4	46.0	–	48.6	51.3	–	20.1	–	24.4	–	–
November	35.3	18.3	67.7	76.5	49.4	–	47.7	59.4	–	15.1	–	28.5	–	–
December	36.9	19.5	70.6	79.8	52.1	–	51.3	60.7	–	12.1	–	27.2	–	–
Average	**37.1**	**21.0**	**65.4**	**74.8**	**47.4**	**–**	**49.6**	**56.7**	**–**	**20.9**	**–**	**25.2**	**–**	**–**
2024 January	37.4	24.3	71.3	82.0	52.7	–	58.7	60.3	–	12.6	–	25.8	–	–

[a] Capacity factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (net generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[b] Usage factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (gross generation) to the maximum possible output over that same time period (using time-adjusted capacity).

[c] Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

[d] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[e] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

[f] Natural gas, plus a small amount of supplemental gaseous fuels. Capacity factors for natural gas internal combustion engine, energy storage, fuel cell, and other plants are not displayed.

[g] Wood and wood-derived fuels, municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[h] Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

[i] Onshore wind plants, and, beginning in 2017, offshore wind plants.

– =No data reported. (s)=Less than 0.5 percent.

Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Monthly factors are based on a time-adjusted total net summer capacity of generators in operation for the entire month. Annual factors are based on a time-weighted average of the monthly time-adjusted capacity. • For plants that use multiple energy sources or technologies, capacity is assigned to the reported combination of predominant energy source and technology. • See EIA's *Electric Power Annual,* "Technical notes," for further information. • See "Capacity factor" in Glossary. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," 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/#electricity (Excel and CSV files) for all available annual and monthly data beginning in 2008.

Sources: U.S. Energy Information Administration (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."

Note 1. Coverage of Electricity Statistics. Data in Section 7 cover the following:

Through 1984, data for electric utilities also include institutions (such as universities) and military facilities that generated electricity primarily for their own use; beginning in 1985, data for electric utilities exclude institutions and military facilities. Beginning in 1989, data for the commercial sector include institutions and military facilities.

The generation, consumption, and stocks data in Section 7 are for utility-scale facilities—those with a combined generation nameplate capacity of 1 megawatt or more. Data exclude small-scale facilities—those with a combined generator nameplate capacity of less than 1 megawatt. For data on small-scale solar photovoltaic (PV) generation in the residential, commercial, and industrial sectors, see Table 10.6.

Note 2. Classification of Power Plants into Energy-Use Sectors. The U.S. Energy Information Administration (EIA) classifies power plants (both electricity-only and combined-heat-and-power plants) into energy-use sectors based on the North American Industry Classification System (NAICS), which replaced the Standard Industrial Classification (SIC) system in 1997. Plants with a NAICS code of 22 are assigned to the Electric Power Sector. Those with NAICS codes beginning with 11 (agriculture, forestry, fishing, and hunting); 21 (mining, including oil and gas extraction); 23 (construction); 31–33 (manufacturing); 2212 (natural gas distribution); and 22131 (water supply and irrigation systems) are assigned to the Industrial Sector. Those with all other codes are assigned to the Commercial Sector. Form EIA-860, "Annual Electric Generator Report," asks respondents to indicate the primary purpose of the facility by assigning a NAICS code from the list at http://www.eia.gov/survey/form/eia_860/instructions.pdf.

Note 3. Electricity Forecast Values. Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). STIFS is driven primarily by data and assumptions about key macroeconomic variables, energy prices, and weather. The electricity forecast relies on additional variables such as alternative fuel prices (natural gas and oil) and power generation by sources other than fossil fuels, including nuclear, renewables, and hydroelectric power. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the electricity industry.

The STIFS model results are published monthly in EIA's Short-Term Energy Outlook, which is accessible on the Web at http://www.eia.gov/forecasts/steo/.

Note 4. Experimental Estimates of Electric Vehicle Use. These are experimental estimates of on-road light-duty electric vehicle (EV) electricity consumption to operate and move the vehicle. These estimates are based on models and are subject to model error. The electricity consumed by light-duty EVs is not identified as a separate class of service by electric utilities. Instead, the electricity consumption by light-duty EVs is accounted for based on the location of where the vehicle is charged. This results in electric utilities reporting light-duty EV consumption as part of the Residential, Commercial, and Industrial Sales to Ultimate Customers. Estimates are for light-duty Battery Electric Vehicles and Plug-in Hybrid Electric Vehicles that weigh less than or equal to 8,500 pounds. Estimates exclude plug-in hybrid motor gasoline consumption, on-road medium- and heavy-duty EVs, and off-road EVs such as golf carts and forklifts. For more information, see the detailed estimation methodology at https://www.eia.gov/electricity/monthly/pdf/technotes-appendix-d.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 2011–2015: National Energy Board of Canada; California Independent System Operator; and EIA estimates for Texas transfers.

2016 forward: EIA, Form EIA-111, "Quarterly Electricity Imports and Exports Report"; and for forecast values, EIA Short-Term Integrated Forecasting System (STIFS).

T&D Losses and Unaccounted for

1949 forward: Calculated as the sum of total net generation and imports minus end use and exports.

End Use

1949 forward: Table 7.6.

Table 7.2b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.2c Sources

Industrial Sector, Hydroelectric Power, 1949–1988

1949–September 1977: Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FPC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.

October 1977–1978: Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FERC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.

1979: FERC, Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and U.S. Energy Information Administration (EIA) estimates for all other plants.

1980–1988: Estimated by EIA as the average generation over the 6-year period of 1974–1979.

All Data, 1989 Forward

1989–1997: EIA, Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.3b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.4b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.6 Sources

Sales to Ultimate Customers, 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*) March 2024, Table 5.1.

Sales to Ultimate Customers, Commercial

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM, March 2024, Table 5.1.

Sales to Ultimate Customers, Transportation

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM March 2024, 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."

2001–2022: EIA, *Electric Power Annual* 2023, October 2023, Table 2.2.

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 2021, the 2020 annual share is used.

Electric Vehicle Use

2018 forward: EIA, EPM, March 2024, Table D1.

Table 7.7b Sources

Net Summer Capacity, Nuclear Power

1949 forward: Table 8.1.

All Other Data

1949–1984: U.S. Energy Information Administration (EIA) estimates.

1985–1988: EIA, Form EIA-860, "Annual Electric Generator Report."

1989–1997: EIA, Form EIA-860, "Annual Electric Generator Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

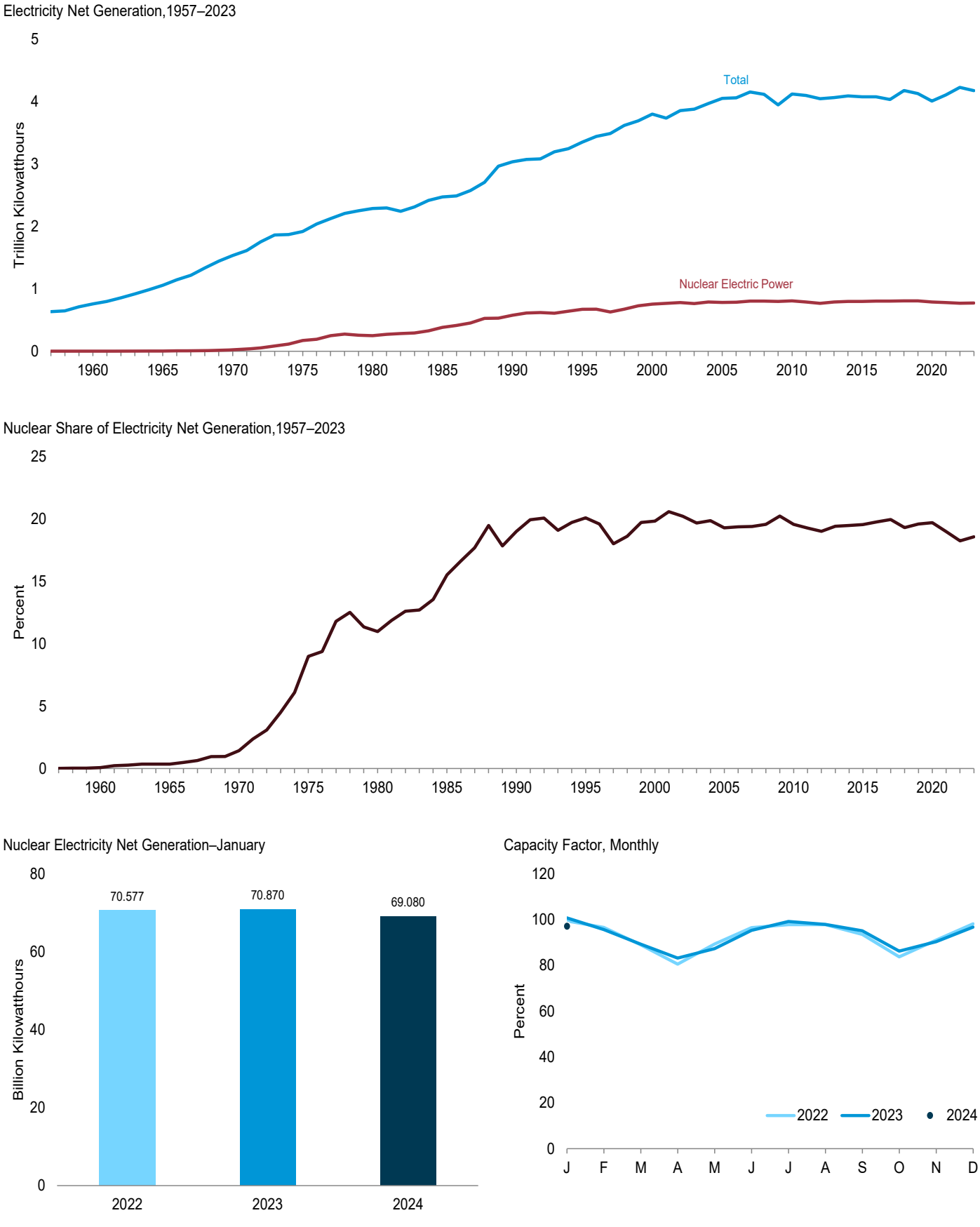
1998–2000: EIA, Form EIA-860A, "Annual Electric Generator Report–Utility," and Form EIA-860B, "Annual Electric Generator Report–Nonutility."

2001–2007: EIA, Form EIA-860, "Annual Electric Generator Report."

2008 forward: EIA, Form EIA-860, "Annual Electric Generator Report," and Form EIA-860M, “Monthly Update to the Annual Electric Generator Report.”

8. Nuclear Energy

Figure 8.1 Nuclear Energy Overview



Web Page: http://www.eia.gov/totalenergy/data/monthly/#nuclear.
Sources: Tables 7.2a and 8.1.

Table 8.1 Nuclear Energy Overview

	Total Operable Units[a,b]	Net Summer Capacity of Operable Units[b,c]	Nuclear Electricity Net Generation	Nuclear Share of Electricity Net Generation	Capacity Factor[d]
	Number	Million Kilowatts	Million Kilowatthours	Percent	
1957 Total	**1**	**0.055**	**10**	**(s)**	**NA**
1960 Total	**3**	**.411**	**518**	**.1**	**NA**
1965 Total	**13**	**.793**	**3,657**	**.3**	**NA**
1970 Total	**20**	**7.004**	**21,804**	**1.4**	**NA**
1975 Total	**57**	**37.267**	**172,505**	**9.0**	**55.9**
1980 Total	**71**	**51.810**	**251,116**	**11.0**	**56.3**
1985 Total	**96**	**79.397**	**383,691**	**15.5**	**58.0**
1990 Total	**112**	**99.624**	**576,862**	**19.0**	**66.0**
1995 Total	**109**	**99.515**	**673,402**	**20.1**	**77.4**
2000 Total	**104**	**97.860**	**753,893**	**19.8**	**88.1**
2005 Total	**104**	**99.988**	**781,986**	**19.3**	**89.3**
2010 Total	**104**	**101.167**	**806,968**	**19.6**	**91.1**
2011 Total	**104**	**[c] 101.419**	**790,204**	**19.3**	**89.1**
2012 Total	**104**	**101.885**	**769,331**	**19.0**	**86.1**
2013 Total	**100**	**99.240**	**789,016**	**19.4**	**90.8**
2014 Total	**99**	**98.569**	**797,166**	**19.5**	**91.7**
2015 Total	**99**	**98.672**	**797,178**	**19.5**	**92.3**
2016 Total	**99**	**99.565**	**805,694**	**19.8**	**92.3**
2017 Total	**99**	**99.629**	**804,950**	**19.9**	**92.3**
2018 Total	**98**	**99.433**	**807,084**	**19.3**	**92.5**
2019 Total	**96**	**98.119**	**809,409**	**19.6**	**93.5**
2020 Total	**94**	**96.501**	**789,879**	**19.7**	**92.5**
2021 Total	**93**	**95.546**	**779,645**	**19.0**	**92.8**
2022 January	93	95.406	70,577	18.9	99.4
February	93	95.406	61,852	19.1	96.5
March	93	95.406	63,154	19.5	89.0
April	93	95.406	55,290	18.2	80.5
May	93	95.427	63,382	18.5	89.3
June	92	94.659	65,715	17.3	96.4
July	92	94.659	68,857	16.3	97.8
August	92	94.659	68,897	16.7	97.8
September	92	94.659	63,733	18.1	93.5
October	92	94.659	58,945	18.8	83.7
November	92	94.659	62,041	19.3	91.0
December	92	94.659	69,094	19.2	98.1
Total	**92**	**94.659**	**771,537**	**18.2**	**92.7**
2023 January	92	[E] 94.632	70,870	20.4	[E] 100.7
February	92	[E] 94.632	60,807	19.7	[E] 95.6
March	92	[E] 94.632	62,820	19.0	[E] 89.2
April	92	[E] 94.632	56,662	18.9	[E] 83.2
May	92	[E] 94.632	61,473	18.8	[E] 87.3
June	92	[E] 94.632	64,965	18.2	[E] 95.3
July	92	[E] 95.746	69,888	16.4	[E] 99.1
August	93	[E] 95.746	69,744	16.4	[E] 97.9
September	93	[E] 95.746	65,560	18.3	[E] 95.1
October	93	[E] 95.746	61,403	18.6	[E] 86.2
November	93	[E] 95.746	62,258	19.3	[E] 90.3
December	93	[E] 95.746	68,898	19.9	[E] 96.7
Total	**93**	**[E] 95.746**	**775,347**	**18.6**	**[E] 93.1**
2024 January	93	[E] 95.723	69,080	18.2	[E] 97.1

[a] Total of nuclear generating units holding full-power licenses, or equivalent permission to operate, at end of period. See Note 1, "Operable Nuclear Reactors," at end of section.

[b] At end of period.

[c] For the definition of "Net Summer Capacity," see Note 2, "Nuclear Capacity," at end of section. Beginning in 2011, monthly capacity values are estimated in two steps: 1) uprates and derates reported on Form EIA-860M are added to specific months; and 2) the difference between the resulting year-end capacity (from data reported on Form EIA-860M) and final capacity (reported on Form EIA-860) is allocated to the month of January.

[d] Beginning in 2008, capacity factor data are calculated using a new methodology. For an explanation of the method of calculating the capacity factor, see Note 2, "Nuclear Capacity," at end of section.

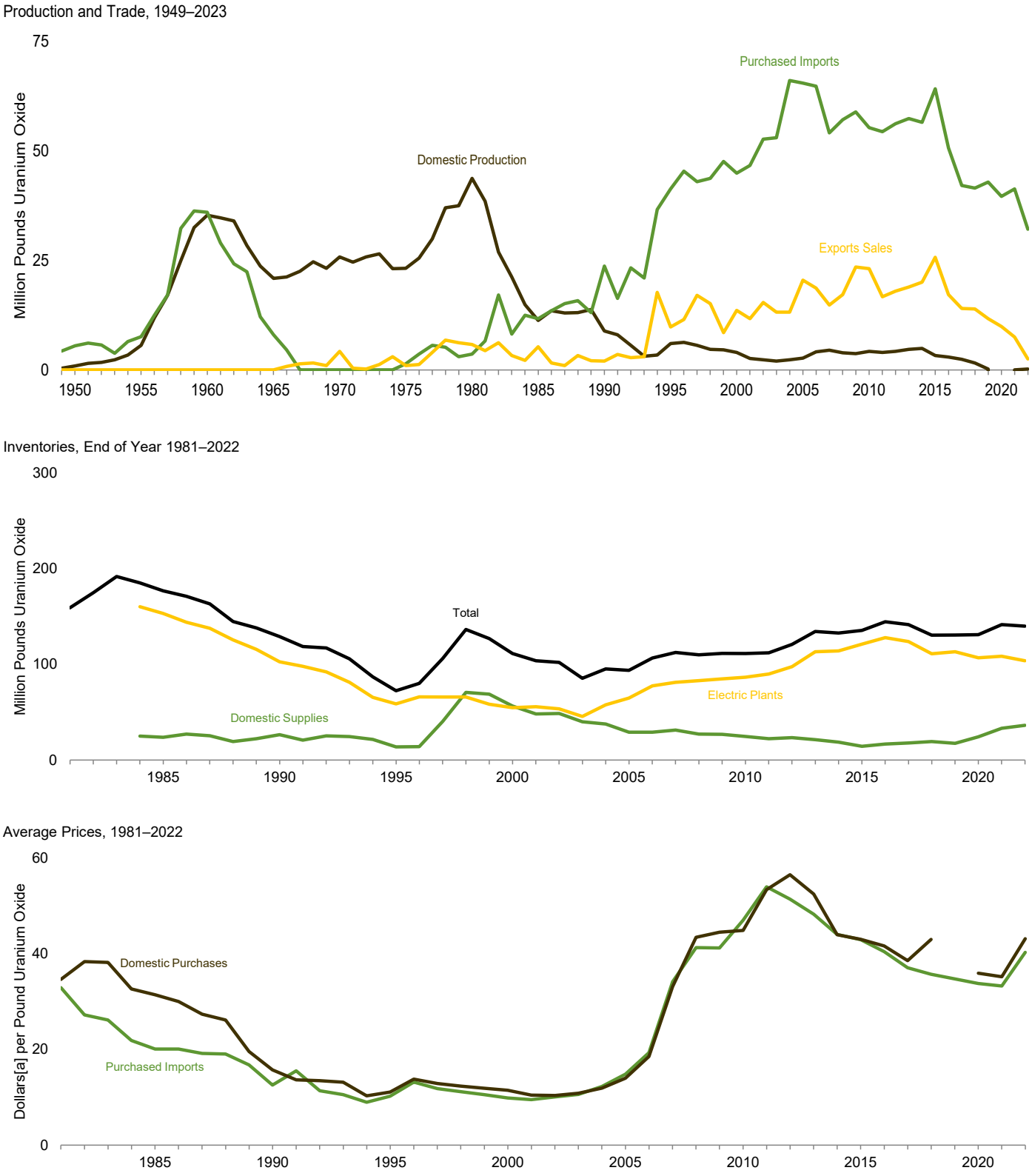
E=Estimate. NA=Not available. (s)=Less than 0.05%.

Notes: • For a discussion of nuclear reactor unit coverage, see Note 1, "Operable Nuclear Reactors," at end of section. • Nuclear electricity net generation totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#nuclear (Excel and CSV files) for all available annual data beginning in 1957 and monthly data beginning in 1973.

Sources: See end of section.

Figure 8.2 Uranium Overview



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

Web Page: http://www.eia.gov/totalenergy/data/monthly/#nuclear.
Source: Table 8.2.

Table 8.2 Uranium Overview

	Domestic Concentrate Production[a]	Purchased Imports[b]	Export[b] Sales	Electric Plant Purchases From Domestic Suppliers	Loaded Into U.S. Nuclear Reactors[c]	Inventories			Average Price	
						Domestic Suppliers	Electric Plants	Total	Purchased Imports	Domestic Purchases
	Million Pounds Uranium Oxide								Dollars[d] per Pound Uranium Oxide	
1950	0.92	5.5	0.0	NA	NA	NA	NA	NA	NA	NA
1955	5.56	7.6	.0	NA	NA	NA	NA	NA	NA	NA
1960	35.28	36.0	.0	NA	NA	NA	NA	NA	NA	NA
1965	20.88	8.0	.0	NA	NA	NA	NA	NA	NA	NA
1970	25.81	.0	4.2	NA	NA	NA	NA	NA	--	NA
1975	23.20	1.4	1.0	NA	NA	NA	NA	NA	NA	NA
1980	43.70	3.6	5.8	NA	NA	NA	NA	NA	NA	NA
1981	38.47	6.6	4.4	32.6	NA	NA	NA	159.2	32.90	34.65
1982	26.87	17.1	6.2	27.1	NA	NA	NA	174.8	27.23	38.37
1983	21.16	8.2	3.3	24.2	NA	NA	NA	191.8	26.16	38.21
1984	14.88	12.5	2.2	22.5	NA	25.0	160.2	185.2	21.86	32.65
1985	11.31	11.7	5.3	21.7	NA	23.7	153.2	176.9	20.08	31.43
1986	13.51	13.5	1.6	18.9	NA	27.0	144.1	171.1	20.07	30.01
1987	12.99	15.1	1.0	20.8	NA	25.4	137.8	163.2	19.14	27.37
1988	13.13	15.8	3.3	17.6	NA	19.3	125.5	144.8	19.03	26.15
1989	13.84	13.1	2.1	18.4	NA	22.2	115.8	138.1	16.75	19.56
1990	8.89	23.7	2.0	20.5	NA	26.4	102.7	129.1	12.55	15.70
1991	7.95	16.3	3.5	26.8	34.6	20.7	98.0	118.7	15.55	13.66
1992	5.65	23.3	2.8	23.4	43.0	25.2	92.1	117.3	11.34	13.45
1993	3.06	21.0	3.0	15.5	45.1	24.5	81.2	105.7	10.53	13.14
1994	3.35	36.6	17.7	22.7	40.4	21.5	65.4	86.9	8.95	10.30
1995	6.04	41.3	9.8	22.3	51.1	13.7	58.7	72.5	10.20	11.11
1996	6.32	45.4	11.5	23.7	46.2	13.9	66.1	80.0	13.15	13.81
1997	5.64	43.0	17.0	19.4	48.2	40.4	65.9	106.2	11.81	12.87
1998	4.70	43.7	15.1	21.6	38.2	70.7	65.8	136.5	11.19	12.31
1999	4.61	47.6	8.5	21.4	58.8	68.8	58.3	127.1	10.55	11.88
2000	3.98	44.9	13.6	24.3	51.5	56.5	54.8	111.3	9.84	11.45
2001	2.64	46.7	11.7	27.5	52.7	48.1	55.6	103.8	9.51	10.45
2002	[e,E]2.34	52.7	15.4	22.7	57.2	48.7	53.5	102.1	10.05	10.35
2003	[e,E]2.00	53.0	13.2	21.7	62.3	39.9	45.6	85.5	10.59	10.84
2004	2.28	66.1	13.2	28.2	50.1	37.5	57.7	95.2	12.25	11.91
2005	2.69	65.5	20.5	27.3	58.3	29.1	64.7	93.8	14.83	13.98
2006	4.11	64.8	18.7	27.9	51.7	29.1	77.5	106.6	19.31	18.54
2007	4.53	54.1	14.8	18.5	45.5	31.2	81.2	112.4	34.18	33.13
2008	3.90	57.1	17.2	20.4	51.3	27.0	83.0	110.0	41.30	43.43
2009	3.71	58.9	23.5	17.6	49.4	26.8	84.8	111.5	41.23	44.53
2010	4.23	55.3	23.1	16.2	44.3	24.7	86.5	111.3	47.01	44.88
2011	3.99	54.4	16.7	19.8	50.9	22.3	89.8	112.1	54.00	53.41
2012	4.15	56.2	18.0	21.5	49.5	23.3	97.6	120.9	51.44	56.51
2013	4.66	57.4	18.9	23.3	42.6	21.3	113.1	134.4	48.27	52.51
2014	4.89	56.5	20.0	20.5	50.5	18.7	114.0	132.7	44.03	43.99
2015	3.34	64.2	25.7	19.6	47.4	14.3	121.1	135.5	42.95	43.03
2016	2.92	50.7	17.2	18.8	41.7	16.7	128.0	144.6	40.45	41.64
2017	2.44	42.1	14.0	14.0	45.5	17.8	123.9	141.7	37.09	38.57
2018	1.65	41.5	13.9	11.1	50.4	19.3	111.2	130.5	35.73	42.98
2019	.17	42.9	11.7	W	43.2	17.5	113.1	130.7	34.77	W
2020	W	39.6	9.9	10.5	48.6	24.2	106.9	131.0	33.79	35.92
2021	.02	41.3	7.5	8.2	44.4	33.2	108.5	141.7	33.26	35.18
2022	.20	32.1	2.5	4.4	[P]44.4	[P]36.2	[P]103.8	[P]140.0	40.31	43.15

[a] See "Uranium Concentrate" in Glossary.

[b] Import quantities through 1970 are reported for fiscal years. Prior to 1968, the Atomic Energy Commission was the sole purchaser of all imported uranium oxide. Trade data prior to 1982 were for transactions conducted by uranium suppliers only. For 1982 forward, transactions by uranium buyers (consumers) have been included. Buyer imports and exports prior to 1982 are believed to be small.

[c] Does not include any fuel rods removed from reactors and later reloaded.

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

[e] Value has been rounded to avoid disclosure of individual company data.

P=Preliminary. E=Estimate. NA=Not available. W=Value withheld to avoid disclosure of individual company data. -- =Not applicable.

Note: See "Uranium Oxide" in Glossary.

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

Sources: • **1949–1966:** U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry,* Report No. GJO-100, annual reports. • **1967–2002:** U.S. Energy Information Administration (EIA), *Uranium Industry Annual,* annual reports. • **2003–2020:** EIA, "Domestic Uranium Production Report," annual reports; and EIA, "Uranium Marketing Annual Report," annual reports. • **2021 forward:** EIA, "2022 Domestic Uranium Production Report" (May 2023), Table 3; and EIA, "2022 Uranium Marketing Annual Report" (June 2023), Tables 5, 18, 19, 21, and 22.

Note 1. Operable Nuclear Reactors. A reactor is defined as operable when it possesses a full-power license from the Nuclear Regulatory Commission or its predecessor, the Atomic Energy Commission, or equivalent permission to operate, at the end of the year or month shown. The definition includes units retaining full-power licenses during long, non-routine shutdowns that for a time rendered them unable to generate electricity.

Note 2. Nuclear Capacity. Nuclear generating units may have more than one type of net capacity rating, including the following:

(a) Net Summer Capacity—The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand. Auxiliary power of a typical nuclear power plant is about 5% of gross generation.

(b) Net Design Capacity or Net Design Electrical Rating (DER)—The nominal net electrical output of a unit, specified by the utility and used for plant design.

Through 2007, the monthly capacity factors are calculated as the monthly nuclear electricity net generation divided by the maximum possible nuclear electricity net generation for that month. The maximum possible nuclear electricity net generation is the number of hours in the month (assuming 24-hour days, with no adjustment for changes to or from Daylight Savings Time) multiplied by the net summer capacity of operable nuclear generating units at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are calculated as the annual nuclear electricity net generation divided by the annual maximum possible nuclear electricity net generation (the sum of the monthly values for maximum possible nuclear electricity net generation). For the methodology used to calculate capacity factors beginning in 2008, see U.S. Energy Information Administration, *Electric Power Annual*, Appendix technical notes on "Capacity Factors and Usage Factors."

Table 8.1 Sources

Total Operable Units and Net Summer Capacity of Operable Units

1957–1982: Compiled from various sources, primarily U.S. Department of Energy, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones."

1983 forward: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report," and predecessor forms; Form EIA-860M, "Monthly Update to the Annual Electric Generator Report"; and monthly updates as appropriate. See https://www.eia.gov/nuclear/generation/index.html for a list of operable units.

Nuclear Electricity Net Generation and Nuclear Share of Electricity Net Generation

1957 forward: Table 7.2a.

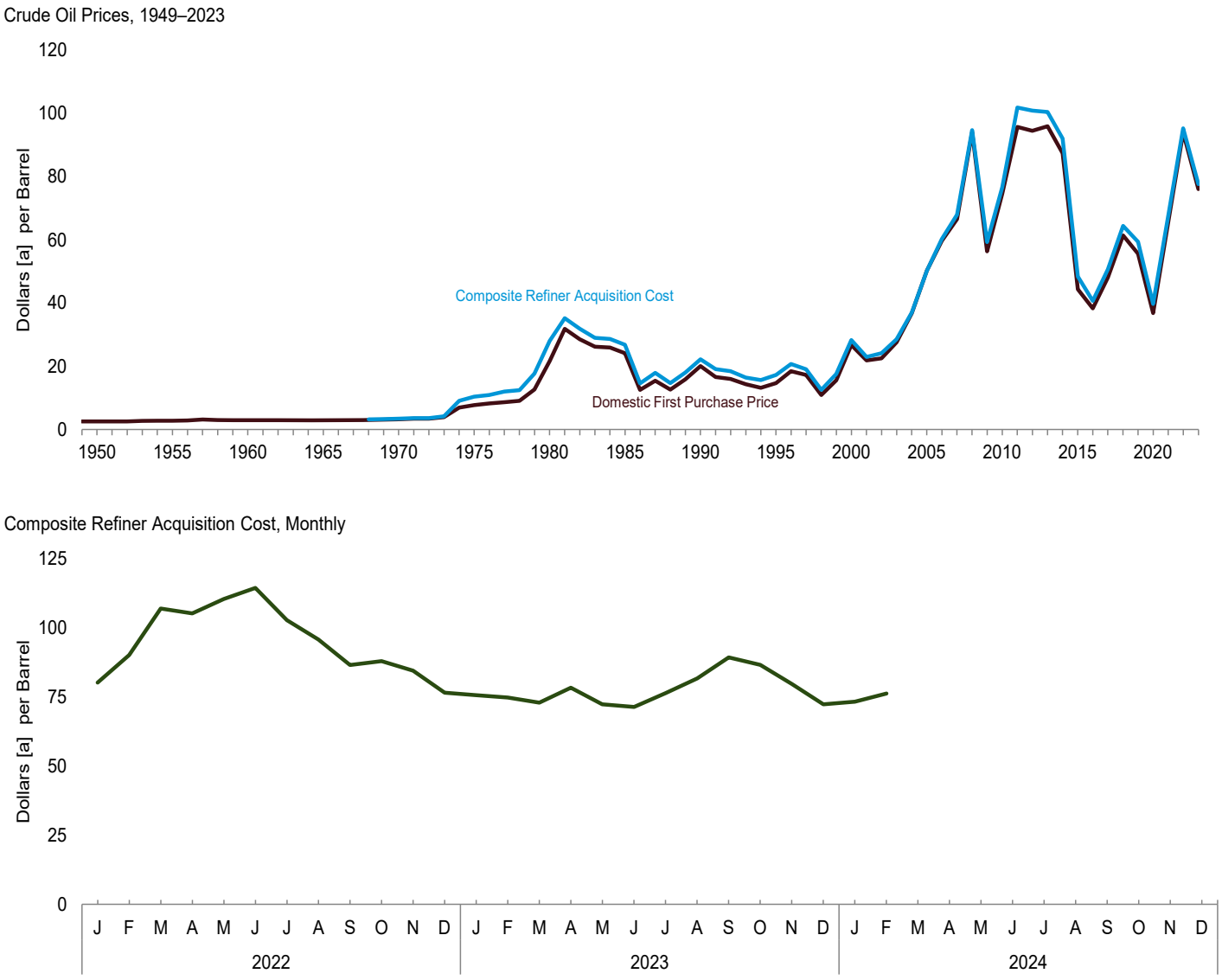
Capacity Factor

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

2008 forward: Table 7.8a.

9. Energy Prices

Figure 9.1 Petroleum Prices



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

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Sources: Tables 9.1, 9.5, and 9.7.

"Refiner Prices to End Users" has not been updated due to the delay of Petroleum Marketing Monthly.

Table 9.1 Crude Oil Price Summary

(Dollars[a] per Barrel)

	Domestic First Purchase Price[c]	F.O.B. Cost of Imports[d]	Landed Cost of Imports[e]	Refiner Acquisition Cost[b]		
				Domestic	Imported	Composite
1950 Average	**2.51**	**NA**	**NA**	**NA**	**NA**	**NA**
1955 Average	**2.77**	**NA**	**NA**	**NA**	**NA**	**NA**
1960 Average	**2.88**	**NA**	**NA**	**NA**	**NA**	**NA**
1965 Average	**2.86**	**NA**	**NA**	**NA**	**NA**	**NA**
1970 Average	**3.18**	**NA**	**NA**	**E 3.46**	**E 2.96**	**E 3.40**
1975 Average	**7.67**	**11.18**	**12.70**	**8.39**	**13.93**	**10.38**
1980 Average	**21.59**	**32.37**	**33.67**	**24.23**	**33.89**	**28.07**
1985 Average	**24.09**	**25.84**	**26.67**	**26.66**	**26.99**	**26.75**
1990 Average	**20.03**	**20.37**	**21.13**	**22.59**	**21.76**	**22.22**
1995 Average	**14.62**	**15.69**	**16.78**	**17.33**	**17.14**	**17.23**
2000 Average	**26.72**	**26.27**	**27.53**	**29.11**	**27.70**	**28.26**
2005 Average	**50.28**	**47.60**	**49.29**	**52.94**	**48.86**	**50.24**
2010 Average	**74.71**	**74.19**	**76.50**	**78.01**	**75.86**	**76.69**
2011 Average	**95.73**	**101.66**	**102.92**	**100.71**	**102.63**	**101.87**
2012 Average	**94.52**	**99.78**	**101.00**	**100.72**	**101.09**	**100.93**
2013 Average	**95.99**	**96.56**	**96.99**	**102.91**	**98.11**	**100.49**
2014 Average	**87.39**	**85.65**	**88.16**	**94.05**	**89.56**	**92.02**
2015 Average	**44.39**	**41.91**	**45.38**	**49.94**	**46.38**	**48.39**
2016 Average	**38.29**	**36.37**	**38.56**	**42.41**	**38.75**	**40.66**
2017 Average	**48.05**	**45.58**	**48.50**	**52.05**	**49.12**	**50.68**
2018 Average	**61.40**	**56.31**	**58.89**	**67.05**	**60.95**	**64.38**
2019 Average	**55.59**	**54.27**	**56.60**	**60.31**	**57.94**	**59.38**
2020 Average	**36.86**	**33.66**	**36.42**	**41.23**	**37.41**	**39.75**
2021 Average	**65.84**	**62.04**	**65.05**	**69.07**	**65.85**	**67.83**
2022 January	80.33	72.91	76.36	82.52	76.92	80.26
February	89.41	86.22	87.71	91.85	87.73	90.21
March	107.07	99.71	101.61	108.62	104.39	106.98
April	103.34	98.86	101.52	106.74	102.70	105.22
May	108.29	103.80	105.62	111.45	108.71	110.43
June	113.77	106.95	109.42	115.90	112.06	114.44
July	100.84	92.18	96.10	104.82	99.67	102.82
August	93.76	83.06	88.55	98.11	92.21	95.80
September	84.62	76.17	82.01	88.51	83.30	86.57
October	86.61	75.10	78.87	90.25	84.26	88.02
November	84.43	68.85	75.02	87.92	79.31	84.57
December	76.45	64.87	69.23	80.20	70.89	76.56
Average	**93.97**	**85.98**	**89.62**	**97.45**	**91.83**	**95.29**
2023 January	75.71	62.81	67.22	79.18	70.23	75.63
February	74.32	60.58	65.40	78.33	69.52	74.80
March	72.09	62.79	66.32	75.82	68.45	72.96
April	77.22	68.95	71.15	80.51	74.83	78.38
May	70.14	63.60	68.56	74.18	69.51	72.35
June	68.58	63.69	69.14	72.52	69.63	71.43
July	74.05	69.71	73.52	77.41	74.83	76.41
August	79.78	75.82	78.56	82.22	81.02	81.76
September	87.96	79.77	83.10	90.76	87.17	89.33
October	84.65	76.04	79.90	88.68	83.30	86.63
November	77.45	R 69.33	R 73.38	82.10	76.39	79.69
December	71.00	R 59.56	R 65.28	R 75.31	R 68.09	R 72.34
Average	**76.10**	**R 67.67**	**R 71.72**	**79.70**	**R 74.43**	**R 77.63**
2024 January	R 72.26	R 60.93	R 64.13	R 75.94	R 69.38	R 73.31
February	NA	NA	NA	E 78.89	E 72.03	E 76.30

[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] See Note 1, "Crude Oil Refinery Acquisition Costs," at end of section.
[c] See Note 2, "Crude Oil Domestic First Purchase Prices," at end of section.
[d] See Note 3, "Crude Oil F.O.B. Costs," at end of section.
[e] See Note 4, "Crude Oil Landed Costs," at end of section.
R=Revised. NA=Not available. E=Estimate.

Notes: • Domestic first purchase prices and refinery acquisition costs for the current two months are preliminary. F.O.B. and landed costs for the current three months are preliminary. • Through 1980, F.O.B. and landed costs reflect the period of reporting; beginning in 1981, they reflect the period of loading. • Annual averages are the averages of the monthly prices, weighted by volume. • Geographic coverage is the 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and all U.S. Territories and Possessions.

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

Sources: See end of section.

Table 9.2 F.O.B. Costs of Crude Oil Imports From Selected Countries

(Dollars[a] per Barrel)

	Selected Countries							Persian Gulf Nations[b]	Total OPEC[c]	Total Non-OPEC[c]
	Angola	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average[d]	W	W	–	7.81	3.25	–	5.39	3.68	5.43	4.80
1975 Average	10.97	–	11.44	11.82	10.87	–	11.04	10.88	11.34	10.62
1980 Average	33.45	W	31.06	35.93	28.17	34.36	24.81	28.92	32.21	32.85
1985 Average	26.30	–	25.33	28.04	22.04	27.64	23.64	23.31	25.67	25.96
1990 Average	20.23	20.75	19.26	22.46	20.36	23.43	19.55	18.54	20.40	20.32
1995 Average	16.58	16.73	15.64	17.40	W	16.94	13.86	W	15.36	16.02
2000 Average	27.90	29.04	25.39	28.70	24.62	27.21	24.45	24.72	25.56	26.77
2005 Average	52.48	51.89	43.00	55.95	47.96	54.48	46.39	47.21	49.60	45.79
2010 Average	78.18	72.56	72.46	80.83	76.44	W	70.30	75.65	75.23	73.24
2011 Average	111.82	100.21	100.90	115.35	107.08	–	97.23	106.47	105.34	98.49
2012 Average	111.23	106.43	101.84	114.51	106.65	–	100.15	105.45	104.39	95.71
2013 Average	107.71	101.24	98.40	110.06	101.16	W	97.52	100.62	100.57	93.67
2014 Average	W	80.75	86.55	W	95.60	–	84.51	94.03	89.76	82.95
2015 Average	W	47.52	44.90	W	47.53	–	40.73	46.95	43.25	41.19
2016 Average	42.68	35.28	36.22	46.20	39.30	W	34.71	38.76	38.51	34.81
2017 Average	W	48.34	46.66	54.77	51.30	W	45.60	50.16	49.55	43.30
2018 Average	74.44	62.51	62.75	71.41	68.23	71.65	61.25	66.55	65.61	51.41
2019 Average	66.97	60.61	56.72	67.21	63.48	65.20	48.57	61.43	62.11	52.36
2020 Average	W	36.03	36.00	W	35.35	43.39	–	36.06	38.34	33.22
2021 Average	75.02	66.15	64.42	73.83	68.43	W	–	66.72	69.18	60.93
2022 January	–	W	75.35	W	93.17	–	–	88.59	88.47	70.67
February	W	93.28	86.36	W	W	–	–	96.33	98.86	84.37
March	W	W	100.84	W	W	–	–	106.35	111.95	98.36
April	W	105.21	99.50	W	W	–	–	104.95	109.49	97.13
May	W	108.83	104.49	W	W	–	–	W	115.18	102.14
June	W	W	109.97	W	W	–	–	102.09	113.76	105.86
July	W	100.17	94.65	W	W	–	–	95.97	103.06	90.27
August	W	W	86.09	W	W	–	–	W	102.01	79.67
September	W	W	80.31	W	W	–	–	W	91.38	73.26
October	–	W	79.36	W	W	–	–	W	90.66	72.59
November	–	W	78.10	W	W	–	–	W	86.10	66.81
December	–	76.45	68.84	W	W	–	–	W	84.75	61.61
Average	W	93.57	89.32	W	95.58	–	–	92.34	99.69	83.86
2023 January	–	W	67.10	W	W	–	–	W	81.57	60.48
February	–	W	66.16	W	W	–	–	75.45	78.39	59.29
March	W	W	62.28	W	W	–	–	W	85.82	60.25
April	W	W	68.75	W	W	–	–	78.68	81.50	66.52
May	–	R–	64.26	W	W	–	–	W	77.42	62.00
June	W	W	64.72	W	W	–	W	W	78.44	61.45
July	W	W	70.57	W	W	–	W	W	80.45	68.28
August	W	W	76.73	W	W	–	W	W	88.21	74.81
September	W	–	83.26	W	W	–	W	W	89.30	78.62
October	–	W	82.27	W	W	–	W	W	84.87	75.35
November	W	W	72.97	W	W	–	W	W	R83.60	67.17
December	–	–	R67.97	W	RW	–	–	RW	R78.36	R57.88
Average	W	W	R**70.23**	W	W	–	–	R**79.62**	R**82.25**	R**65.96**
2024 January	–	–	69.97	W	–	–	–	–	W	60.49

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

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

[c] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary for exact years of each country's membership. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; Angola is included in "Total OPEC" 2007 forward; Gabon is included in "Total OPEC" 1974–1995 and July 2016 forward; Ecuador is included in "Total OPEC" 1973–1992 and 2008 forward; Indonesia is included in "Total OPEC" 1973–2008 and 2016.

[d] Based on October, November, and December data only.

R=Revised. – =No data reported. W=Value withheld to avoid disclosure of individual company data.

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

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

Sources: See end of section.

Table 9.3 Landed Costs of Crude Oil Imports From Selected Countries

(Dollars[a] per Barrel)

	Selected Countries								Persian Gulf Nations[b]	Total OPEC[c]	Total Non-OPEC[c]
	Angola	Canada	Colombia	Mexico	Nigeria	Saudi Arabia	United Kingdom	Venezuela			
1973 Average[d]	W	5.33	W	–	9.08	5.37	–	5.99	5.91	6.85	5.64
1975 Average	11.81	12.84	–	12.61	12.70	12.50	–	12.36	12.64	12.70	12.70
1980 Average	34.76	30.11	W	31.77	37.15	29.80	35.68	25.92	30.59	33.56	33.99
1985 Average	27.39	25.71	–	25.63	28.96	24.72	28.36	24.43	25.50	26.86	26.53
1990 Average	21.51	20.48	22.34	19.64	23.33	21.82	22.65	20.31	20.55	21.23	20.98
1995 Average	17.66	16.65	17.45	16.19	18.25	16.84	17.91	14.81	16.78	16.61	16.95
2000 Average	29.57	26.69	29.68	26.03	30.04	26.58	29.26	26.05	26.77	27.29	27.80
2005 Average	54.31	44.73	53.42	43.47	57.55	50.31	55.28	47.87	49.68	51.36	47.31
2010 Average	80.61	72.80	74.25	72.86	83.14	79.29	80.29	72.43	78.60	78.28	74.68
2011 Average	114.05	89.92	102.57	101.21	116.43	108.83	118.45	100.14	108.01	107.84	98.64
2012 Average	114.95	84.24	107.07	102.45	116.88	108.15	W	101.58	107.74	107.56	95.05
2013 Average	110.81	84.41	103.00	99.06	112.87	102.60	111.23	99.34	102.53	102.98	91.99
2014 Average	99.25	81.30	88.29	87.48	102.16	94.91	W	86.88	95.30	93.10	84.67
2015 Average	51.73	41.99	49.53	45.51	54.70	49.78	W	42.87	49.43	47.44	44.09
2016 Average	44.65	36.27	38.86	36.64	48.11	42.14	W	35.50	41.20	40.54	37.09
2017 Average	54.17	44.93	50.60	47.73	56.48	52.56	56.11	47.02	51.42	51.26	46.67
2018 Average	73.42	48.34	66.75	63.48	71.93	69.40	73.28	62.46	67.55	67.22	54.27
2019 Average	68.58	51.10	62.83	57.96	68.78	64.86	66.65	52.36	63.27	63.41	54.65
2020 Average	41.03	33.81	41.04	37.18	46.24	35.84	44.51	–	37.98	39.28	35.95
2021 Average	75.50	61.30	69.25	65.48	73.90	72.69	74.71	–	71.39	71.90	63.87
2022 January	–	70.59	80.05	76.61	W	99.72	–	–	91.69	90.76	73.48
February	W	83.74	88.88	87.58	W	98.89	–	–	95.19	97.10	86.08
March	W	98.64	102.26	101.01	W	107.60	W	–	107.26	110.00	100.34
April	W	98.21	105.22	101.10	W	109.85	W	–	107.88	109.80	99.76
May	W	102.21	109.15	105.75	W	109.86	W	–	108.01	111.88	104.18
June	W	106.00	113.95	111.36	W	104.51	W	–	105.87	110.42	109.22
July	W	92.01	102.16	96.88	W	96.55	W	–	96.23	100.78	95.27
August	W	82.09	93.50	88.76	W	93.83	W	–	92.18	98.00	86.80
September	W	74.65	90.55	82.61	W	88.98	W	–	86.85	90.30	79.86
October	–	74.03	88.05	81.63	W	84.41	W	–	83.27	88.60	76.95
November	–	68.22	84.35	81.36	W	84.85	W	–	81.95	86.48	73.31
December	–	61.24	78.09	71.93	94.36	81.96	88.83	–	79.36	85.37	66.64
Average	**112.44**	**84.39**	**95.19**	**91.18**	**108.45**	**97.51**	**105.28**	**–**	**95.41**	**98.71**	**87.89**
2023 January	–	60.07	74.96	69.16	90.66	81.36	W	W	76.16	79.79	64.48
February	W	59.79	74.04	68.25	88.51	83.08	–	W	77.46	77.91	63.14
March	W	61.72	70.27	66.03	W	83.45	W	W	77.48	78.84	64.32
April	W	67.10	74.63	71.17	W	80.52	W	63.32	78.48	78.09	69.71
May	W	65.42	71.70	66.38	W	79.74	76.76	W	76.13	74.85	67.19
June	W	65.76	71.73	66.81	W	81.42	–	59.14	77.62	76.90	67.60
July	W	68.43	74.85	71.71	W	91.43	W	69.75	85.61	83.79	71.35
August	W	75.27	82.64	77.38	W	91.92	92.43	76.98	85.89	86.11	77.30
September	W	80.16	87.43	84.07	W	W	W	W	88.73	90.47	82.19
October	–	76.24	86.20	83.08	–	W	–	80.00	83.79	84.58	79.33
November	W	67.85	77.49	R 75.76	W	R 83.61	87.60	–	R 80.88	R 82.61	R 71.96
December	–	R 58.49	R 76.35	R 69.12	W	W	W	W	W	R 78.62	R 64.00
Average	**86.06**	**R 67.09**	**R 76.70**	**R 72.41**	**R 88.59**	**R 84.18**	**84.43**	**R 67.63**	**R 80.35**	**R 80.63**	**70.20**
2024 January	W	59.81	76.28	70.34	W	–	–	W	W	72.35	63.64

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

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

[c] See "Organization of the Petroleum Exporting Countries (OPEC)" in Glossary for exact years of each country's membership. On this table, "Total OPEC" for all years includes Algeria, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela; Angola is included in "Total OPEC" 2007 forward; Gabon is included in "Total OPEC" 1974–1995 and July 2016 forward; Ecuador is included in "Total OPEC" 1973–1992 and 2008 forward; Indonesia is included in "Total OPEC" 1973–2008 and 2016.

[d] Based on October, November, and December data only.

R=Revised. – =No data reported. W=Value withheld to avoid disclosure of individual company data.

Notes: • See "Landed Costs" in Glossary, and Note 4, "Crude Oil Landed Costs," at end of section. • Values for the current two months are preliminary. • Through 1980, prices reflect the period of reporting; beginning in 1981, prices reflect the period of loading. • Annual averages are averages of the monthly prices, including prices not published, weighted by volume. • Cargoes that are purchased on a "netback" basis, or under similar contractual arrangements whereby the actual purchase price is not established at the time the crude oil is acquired for importation into the United States, are not included in the published data until the actual prices have been determined and reported. • U.S. geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **October 1973–September 1977:** Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report." • **October 1977–December 1977:** U.S. Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report." • **1978–2007:** EIA, *Petroleum Marketing Annual 2008*, Table 22. • **2008 forward:** EIA, *Petroleum Marketing Monthly*, March 2024, Table 22, and EIA, Petroleum Data Tables.

Table 9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices

(Dollars[a] per Gallon, Including Taxes)

	Platt's / Bureau of Labor Statistics Data				U.S. Energy Information Administration Data			
	Motor Gasoline by Grade				Regular Motor Gasoline by Area Type			
	Leaded Regular	Unleaded Regular	Unleaded Premium[b]	All Grades[c]	Conventional Gasoline Areas[d]	Reformulated Gasoline Areas[e]	All Areas	On-Highway Diesel Fuel
1950 Average	**0.268**	**NA**	**NA**	**NA**	--	--	--	--
1955 Average	**.291**	**NA**	**NA**	**NA**	--	--	--	--
1960 Average	**.311**	**NA**	**NA**	**NA**	--	--	--	--
1965 Average	**.312**	**NA**	**NA**	**NA**	--	--	--	--
1970 Average	**.357**	**NA**	**NA**	**NA**	--	--	--	--
1975 Average	**.567**	**NA**	**NA**	**NA**	--	--	--	--
1980 Average	**1.191**	**1.245**	**NA**	**1.221**	--	--	--	--
1985 Average	**1.115**	**1.202**	**1.340**	**1.196**	--	--	--	--
1990 Average	**1.149**	**1.164**	**1.349**	**1.217**	**NA**	**NA**	**NA**	**NA**
1995 Average	**--**	**1.147**	**1.336**	**1.205**	**1.103**	**1.163**	**1.111**	**1.109**
2000 Average	**--**	**1.510**	**1.693**	**1.563**	**1.462**	**1.543**	**1.484**	**1.491**
2005 Average	**--**	**2.295**	**2.491**	**2.338**	**2.240**	**2.335**	**2.270**	**2.402**
2010 Average	**--**	**2.788**	**3.047**	**2.836**	**2.742**	**2.864**	**2.782**	**2.992**
2011 Average	**--**	**3.527**	**3.792**	**3.577**	**3.476**	**3.616**	**3.521**	**3.840**
2012 Average	**--**	**3.644**	**3.922**	**3.695**	**3.552**	**3.757**	**3.618**	**3.968**
2013 Average	**--**	**3.526**	**3.843**	**3.584**	**3.443**	**3.635**	**3.505**	**3.922**
2014 Average	**--**	**3.367**	**3.713**	**3.425**	**3.299**	**3.481**	**3.358**	**3.825**
2015 Average	**--**	**2.448**	**2.866**	**2.510**	**2.334**	**2.629**	**2.429**	**2.707**
2016 Average	**--**	**2.142**	**2.610**	**2.204**	**2.070**	**2.296**	**2.143**	**2.304**
2017 Average	**--**	**2.408**	**2.911**	**2.469**	**2.333**	**2.586**	**2.415**	**2.650**
2018 Average	**--**	**2.735**	**3.270**	**2.794**	**2.631**	**2.904**	**2.719**	**3.178**
2019 Average	**--**	**2.636**	**3.212**	**2.698**	**2.501**	**2.827**	**2.604**	**3.056**
2020 Average	**--**	**2.174**	**2.791**	**2.242**	**2.074**	**2.370**	**2.168**	**2.551**
2021 Average	**--**	**3.051**	**3.692**	**3.133**	**2.908**	**3.224**	**3.008**	**3.287**
2022 January	--	3.413	4.102	3.500	3.187	3.595	3.315	3.724
February	--	3.592	4.244	3.675	3.400	3.773	3.517	4.032
March	--	4.312	5.015	4.401	4.078	4.535	4.222	5.105
April	--	4.271	5.037	4.369	3.960	4.435	4.109	5.120
May	--	4.604	5.318	4.695	4.272	4.818	4.444	5.571
June	--	5.058	5.774	5.149	4.764	5.291	4.929	5.754
July	--	4.667	5.459	4.768	4.413	4.879	4.559	5.486
August	--	4.101	4.916	4.205	3.822	4.307	3.975	5.013
September	--	3.881	4.732	3.990	3.563	3.998	3.700	4.993
October	--	4.016	4.914	4.130	3.637	4.197	3.815	5.211
November	--	3.853	4.679	3.958	3.530	4.021	3.685	5.255
December	--	3.356	4.167	3.459	3.084	3.486	3.210	4.714
Average	**--**	**4.094**	**4.863**	**4.192**	**3.803**	**4.274**	**3.951**	**4.989**
2023 January	--	3.452	4.192	3.555	3.254	3.523	3.339	4.576
February	--	3.514	4.287	3.622	3.304	3.573	3.389	4.413
March	--	3.551	4.339	3.660	3.316	3.655	3.422	4.211
April	--	3.735	4.485	3.839	3.493	3.843	3.603	4.099
May	--	3.685	4.468	3.794	3.432	3.824	3.555	3.915
June	--	3.712	4.497	3.821	3.446	3.844	3.571	3.802
July	--	3.732	4.526	3.842	3.477	3.860	3.597	3.882
August	--	3.955	4.740	4.064	3.727	4.086	3.840	4.370
September	--	3.988	4.844	4.107	3.690	4.155	3.836	4.563
October	--	3.782	4.701	3.910	3.439	3.991	3.613	4.507
November	--	3.500	4.385	3.623	3.172	3.634	3.318	4.254
December	--	3.289	4.162	3.411	3.014	3.393	3.134	3.972
Average	**--**	**3.658**	**4.469**	**3.771**	**3.397**	**3.783**	**3.519**	**4.214**
2024 January	--	3.221	4.053	3.353	2.957	3.331	3.075	3.854
February	--	3.359	4.162	3.486	3.102	3.446	3.212	4.044
March	--	3.581	4.379	3.707	3.318	3.657	3.426	4.022

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

[b] The 1981 average (available in Web file) is based on September through December data only.

[c] Also includes grades of motor gasoline not shown separately.

[d] Any area that does not require the sale of reformulated gasoline.

[e] "Reformulated Gasoline Areas" are ozone nonattainment areas designated by the U.S. Environmental Protection Agency that require the use of reformulated gasoline (RFG). Areas are reclassified each time a shift in or out of an RFG program occurs due to federal or state regulations.

NA=Not available. -- =Not applicable.

Notes: • See Note 5, "Motor Gasoline Prices," at end of section. • See "Motor Gasoline Grades," "Motor Gasoline, Conventional," "Motor Gasoline, Oxygenated," and "Motor Gasoline, Reformulated" in Glossary. • Geographic coverage: for columns 1–4, current coverage is 85 urban areas; for columns 5–7, coverage is the 50 states and the District of Columbia; for column 8, coverage is the 48 contiguous states and the District of Columbia.

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

Sources: • **Motor Gasoline by Grade, Monthly Data: October 1973 forward**—U.S. Department of Labor, Bureau of Labor Statistics (BLS), *U.S. City Average Gasoline Prices.* • **Motor Gasoline by Grade, Annual Data: 1949–1973**—*Platt's Oil Price Handbook and Oilmanac, 1974,* 51st Edition. **1974 forward**—calculated by the U.S. Energy Information Administration (EIA) as simple averages of the BLS monthly data. • **Regular Motor Gasoline by Area Type:** EIA, calculated as simple averages of weighted weekly estimates from "Weekly U.S. Retail Gasoline Prices, Regular Grade." • **On-Highway Diesel Fuel:** EIA, calculated as simple averages of weighted weekly estimates from "Weekly Retail On-Highway Diesel Prices."

Table 9.5 Refiner Prices of Residual Fuel Oil

(Dollars[a] per Gallon, Excluding Taxes)

	Residual Fuel Oil Sulfur Content Less Than or Equal to 1%		Residual Fuel Oil Sulfur Content Greater Than 1%		Average	
	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users	Sales for Resale	Sales to End Users
1978 Average	**0.293**	**0.314**	**0.245**	**0.275**	**0.263**	**0.298**
1980 Average	**.608**	**.675**	**.479**	**.523**	**.528**	**.607**
1985 Average	**.610**	**.644**	**.560**	**.582**	**.577**	**.610**
1990 Average	**.472**	**.505**	**.372**	**.400**	**.413**	**.444**
1995 Average	**.383**	**.436**	**.338**	**.377**	**.363**	**.392**
2000 Average	**.627**	**.708**	**.512**	**.566**	**.566**	**.602**
2005 Average	**1.115**	**1.168**	**.842**	**.974**	**.971**	**1.048**
2006 Average	**1.202**	**1.342**	**1.085**	**1.173**	**1.136**	**1.218**
2007 Average	**1.406**	**1.436**	**1.314**	**1.350**	**1.350**	**1.374**
2008 Average	**1.918**	**2.144**	**1.843**	**1.889**	**1.866**	**1.964**
2009 Average	**1.337**	**1.413**	**1.344**	**1.306**	**1.342**	**1.341**
2010 Average	**1.756**	**1.920**	**1.679**	**1.619**	**1.697**	**1.713**
2011 Average	**2.389**	**2.736**	**2.316**	**2.257**	**2.336**	**2.401**
2012 Average	**2.548**	**3.025**	**2.429**	**2.433**	**2.457**	**2.592**
2013 Average	**2.363**	**2.883**	**2.249**	**2.353**	**2.278**	**2.482**
2014 Average	**2.153**	**2.694**	**1.996**	**2.221**	**2.044**	**2.325**
2015 Average	**.971**	**1.529**	**.999**	**1.227**	**.996**	**1.285**
2016 Average	**.736**	**1.138**	**.746**	**.897**	**.745**	**.945**
2017 Average	**1.112**	**W**	**1.117**	**1.237**	**1.116**	**1.287**
2018 Average	**1.397**	**W**	**1.466**	**1.587**	**1.463**	**1.662**
2019 Average	**1.649**	**W**	**1.391**	**1.510**	**1.428**	**1.584**
2020 January	1.788	W	1.526	1.634	1.675	1.939
February	1.673	W	1.336	1.557	1.540	1.735
March	1.188	W	.993	1.146	1.121	1.371
April	.796	W	.639	.942	.733	.976
May	.792	W	NA	.727	.775	.817
June	1.018	W	1.013	.894	1.017	.949
July	1.153	W	1.089	.981	1.137	1.071
August	1.189	W	1.068	1.026	1.135	1.224
September	1.098	W	1.000	1.035	1.066	1.200
October	1.078	W	.996	1.071	1.041	1.151
November	1.164	W	1.098	1.068	1.145	1.145
December	1.351	W	1.266	1.193	1.320	1.290
Average	**1.186**	**W**	**1.066**	**1.090**	**1.143**	**1.246**
2021 January	1.491	W	1.352	1.344	1.432	1.462
February	1.583	W	1.429	1.469	1.518	1.617
March	1.780	W	1.558	1.590	1.683	1.766
April	1.780	W	1.534	1.556	1.686	1.756
May	1.828	W	1.628	1.552	1.736	1.760
June	1.909	W	1.650	1.608	1.783	1.867
July	1.852	W	1.766	1.721	1.818	1.969
August	1.842	W	1.674	1.666	1.776	1.901
September	1.913	W	1.768	1.748	1.845	1.950
October	2.124	W	1.964	1.876	2.069	2.091
November	2.065	W	1.834	1.827	1.927	2.141
December	1.940	2.282	1.766	1.726	1.861	2.090
Average	**1.849**	**W**	**1.669**	**1.650**	**1.770**	**1.864**
2022 January	2.210	2.342	1.966	1.871	2.085	2.160
February	2.415	NA	2.085	2.106	2.274	2.432
March	2.932	NA	2.423	2.478	2.689	2.867

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

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

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and commercial consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007*, Table 17. • **2008 forward:** EIA, *Petroleum Marketing Monthly*, July 2022, Table 16.

This table has not been updated due to the data are not available in Petroleum Marketing Monthly.

Table 9.6 Refiner Prices of Petroleum Products for Resale

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.434**	**0.537**	**0.386**	**0.404**	**0.369**	**0.365**	**0.237**
1980 Average	**.941**	**1.128**	**.868**	**.864**	**.803**	**.801**	**.415**
1985 Average	**.835**	**1.130**	**.794**	**.874**	**.776**	**.772**	**.398**
1990 Average	**.786**	**1.063**	**.773**	**.839**	**.697**	**.694**	**.386**
1995 Average	**.626**	**.975**	**.539**	**.580**	**.511**	**.538**	**.344**
2000 Average	**.963**	**1.330**	**.880**	**.969**	**.886**	**.898**	**.595**
2005 Average	**1.670**	**2.076**	**1.723**	**1.757**	**1.623**	**1.737**	**.933**
2006 Average	**1.969**	**2.490**	**1.961**	**2.007**	**1.834**	**2.012**	**1.031**
2007 Average	**2.182**	**2.758**	**2.171**	**2.249**	**2.072**	**2.203**	**1.194**
2008 Average	**2.586**	**3.342**	**3.020**	**2.851**	**2.745**	**2.994**	**1.437**
2009 Average	**1.767**	**2.480**	**1.719**	**1.844**	**1.657**	**1.713**	**.921**
2010 Average	**2.165**	**2.874**	**2.185**	**2.299**	**2.147**	**2.214**	**1.212**
2011 Average	**2.867**	**3.739**	**3.014**	**3.065**	**2.907**	**3.034**	**1.467**
2012 Average	**2.929**	**3.919**	**3.080**	**3.163**	**3.031**	**3.109**	**1.033**
2013 Average	**2.812**	**3.869**	**2.953**	**3.084**	**2.966**	**3.028**	**1.048**
2014 Average	**2.618**	**3.687**	**2.763**	**2.882**	**2.741**	**2.812**	**1.165**
2015 Average	**1.726**	**2.764**	**1.592**	**1.735**	**1.565**	**1.667**	**.555**
2016 Average	**1.454**	**2.404**	**1.295**	**1.383**	**1.239**	**1.378**	**.523**
2017 Average	**1.689**	**2.682**	**1.603**	**1.730**	**1.600**	**1.691**	**.800**
2018 Average	**1.980**	**3.006**	**2.073**	**2.160**	**2.002**	**2.130**	**.877**
2019 Average	**1.858**	**2.842**	**1.929**	**2.017**	**1.895**	**1.958**	**.622**
2020 January	1.743	2.752	1.891	2.008	1.863	1.858	.557
February	1.669	2.698	1.613	1.802	1.627	1.671	.530
March	1.127	2.279	1.189	1.115	1.238	1.278	.410
April	.645	1.590	.703	.837	.872	.908	.378
May	1.049	1.869	.690	.848	.795	.878	.454
June	1.311	2.134	1.002	1.099	1.002	1.135	.514
July	1.380	2.253	1.144	1.172	1.152	1.254	.507
August	1.389	2.219	1.162	1.250	1.179	1.275	.536
September	1.354	2.246	1.076	1.215	1.091	1.195	.516
October	1.312	2.217	1.107	1.293	1.089	1.215	.597
November	1.287	2.123	1.180	1.322	1.156	1.315	.630
December	1.394	2.289	1.353	1.585	1.341	1.475	.725
Average	**1.330**	**2.233**	**1.295**	**1.310**	**1.246**	**1.286**	**.535**
2021 January	1.575	2.482	1.456	1.688	1.481	1.580	.922
February	1.784	2.659	1.599	1.939	1.667	1.806	1.032
March	2.011	2.978	1.720	1.854	1.726	1.956	.985
April	2.055	3.018	1.688	1.816	1.700	1.911	.849
May	2.181	3.107	1.790	1.800	1.806	2.072	.824
June	2.252	3.190	1.871	1.907	1.927	2.147	.950
July	2.337	3.337	1.946	1.940	1.931	2.182	1.075
August	2.302	3.299	1.922	1.899	1.885	2.146	1.110
September	2.310	3.248	2.008	2.109	2.041	2.240	1.280
October	2.494	3.367	2.281	2.434	2.356	2.504	1.460
November	2.484	3.410	2.283	2.405	2.267	2.454	1.329
December	2.304	3.154	2.145	2.272	2.111	2.273	1.140
Average	**2.193**	**3.133**	**1.914**	**2.069**	**1.876**	**2.116**	**1.087**
2022 January	2.423	3.373	2.422	2.655	2.438	2.550	1.249
February	2.639	3.684	2.655	2.916	2.742	2.830	1.376
March	3.232	4.088	3.285	3.612	3.479	3.582	1.483

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

[b] See Note 5, "Motor Gasoline Prices," at end of section.

Notes: • Sales for resale are those made to purchasers other than ultimate consumers. Sales to end users are shown in Table 9.7; they are sales made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. • Values for the current month are preliminary. • Through 1982, prices are U.S. Energy Information Administration (EIA) estimates. See Note 6, "Historical Petroleum Prices," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007,* Table 4. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* July 2022, Table 4.

This table has not been updated due to the data are not available in Petroleum Marketing Monthly.

Table 9.7 Refiner Prices of Petroleum Products to End Users

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.484**	**0.516**	**0.387**	**0.421**	**0.400**	**0.377**	**0.335**
1980 Average	**1.035**	**1.084**	**.868**	**.902**	**.788**	**.818**	**.482**
1985 Average	**.912**	**1.201**	**.796**	**1.030**	**.849**	**.789**	**.717**
1990 Average	**.883**	**1.120**	**.766**	**.923**	**.734**	**.725**	**.745**
1995 Average	**.765**	**1.005**	**.540**	**.589**	**.562**	**.560**	**.492**
2000 Average	**1.106**	**1.306**	**.899**	**1.123**	**.927**	**.935**	**.603**
2005 Average	**1.829**	**2.231**	**1.735**	**1.957**	**1.705**	**1.786**	**1.089**
2006 Average	**2.128**	**2.682**	**1.998**	**2.244**	**1.982**	**2.096**	**1.358**
2007 Average	**2.345**	**2.849**	**2.165**	**2.263**	**2.241**	**2.267**	**1.489**
2008 Average	**2.775**	**3.273**	**3.052**	**3.283**	**2.986**	**3.150**	**1.892**
2009 Average	**1.888**	**2.442**	**1.704**	**2.675**	**1.962**	**1.834**	**1.220**
2010 Average	**2.301**	**3.028**	**2.201**	**3.063**	**2.462**	**2.314**	**1.481**
2011 Average	**3.050**	**3.803**	**3.054**	**3.616**	**3.193**	**3.117**	**1.709**
2012 Average	**3.154**	**3.971**	**3.104**	**3.843**	**3.358**	**3.202**	**1.139**
2013 Average	**3.049**	**3.932**	**2.979**	**3.842**	**3.335**	**3.122**	**1.028**
2014 Average	**2.855**	**3.986**	**2.772**	**W**	**3.329**	**2.923**	**1.097**
2015 Average	**2.003**	**W**	**1.629**	**W**	**2.016**	**1.819**	**.481**
2016 Average	**1.730**	**W**	**1.319**	**W**	**1.716**	**1.511**	**.498**
2017 Average	**1.976**	**W**	**1.629**	**W**	**2.010**	**1.811**	**.772**
2018 Average	**2.303**	**W**	**2.119**	**3.113**	**2.380**	**2.256**	**.925**
2019 Average	**2.245**	**W**	**1.970**	**W**	**2.269**	**2.114**	**.603**
2020 January	2.150	W	1.958	W	2.328	2.002	.502
February	2.060	W	1.667	W	2.113	1.835	.469
March	1.862	W	1.257	W	1.813	1.486	.378
April	1.490	W	.740	W	1.220	1.137	.368
May	1.598	W	.728	W	1.162	1.130	.421
June	1.768	W	1.046	3.321	1.338	1.354	.515
July	1.806	2.761	1.175	3.059	1.394	1.431	.518
August	1.814	2.805	1.188	3.163	1.464	1.456	.541
September	1.804	2.613	1.110	W	1.411	1.386	.508
October	1.773	2.495	1.134	W	1.360	1.400	.548
November	1.736	2.485	1.216	W	1.760	1.482	.577
December	1.828	2.674	1.395	W	2.004	1.624	.697
Average	**1.829**	**2.685**	**1.293**	**W**	**1.660**	**1.486**	**.502**
2021 January	1.986	2.829	1.485	W	2.103	1.713	.908
February	2.201	3.148	1.642	W	2.173	1.933	.972
March	2.442	3.364	1.763	W	2.323	2.111	.964
April	2.493	3.363	1.724	W	2.185	2.090	.851
May	2.683	3.447	1.822	W	2.291	2.177	.833
June	3.000	3.492	1.906	W	2.341	2.228	.966
July	3.105	W	1.981	2.860	2.505	2.282	1.096
August	3.146	W	1.965	W	2.395	2.266	1.122
September	3.143	W	2.032	2.817	2.387	2.323	1.296
October	3.201	3.783	2.303	3.425	2.678	2.561	1.459
November	3.318	3.778	2.309	3.799	2.651	2.542	1.292
December	3.283	W	2.168	3.279	2.760	2.374	1.098
Average	**2.569**	**3.469**	**1.954**	**W**	**2.413**	**2.203**	**1.088**
2022 January	3.145	3.689	2.451	3.822	3.169	2.648	1.225
February	3.313	W	2.653	4.042	3.269	2.900	1.365
March	3.991	4.581	3.326	4.689	3.924	3.689	1.442

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

[b] See Note 5, "Motor Gasoline Prices," at end of section.

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.

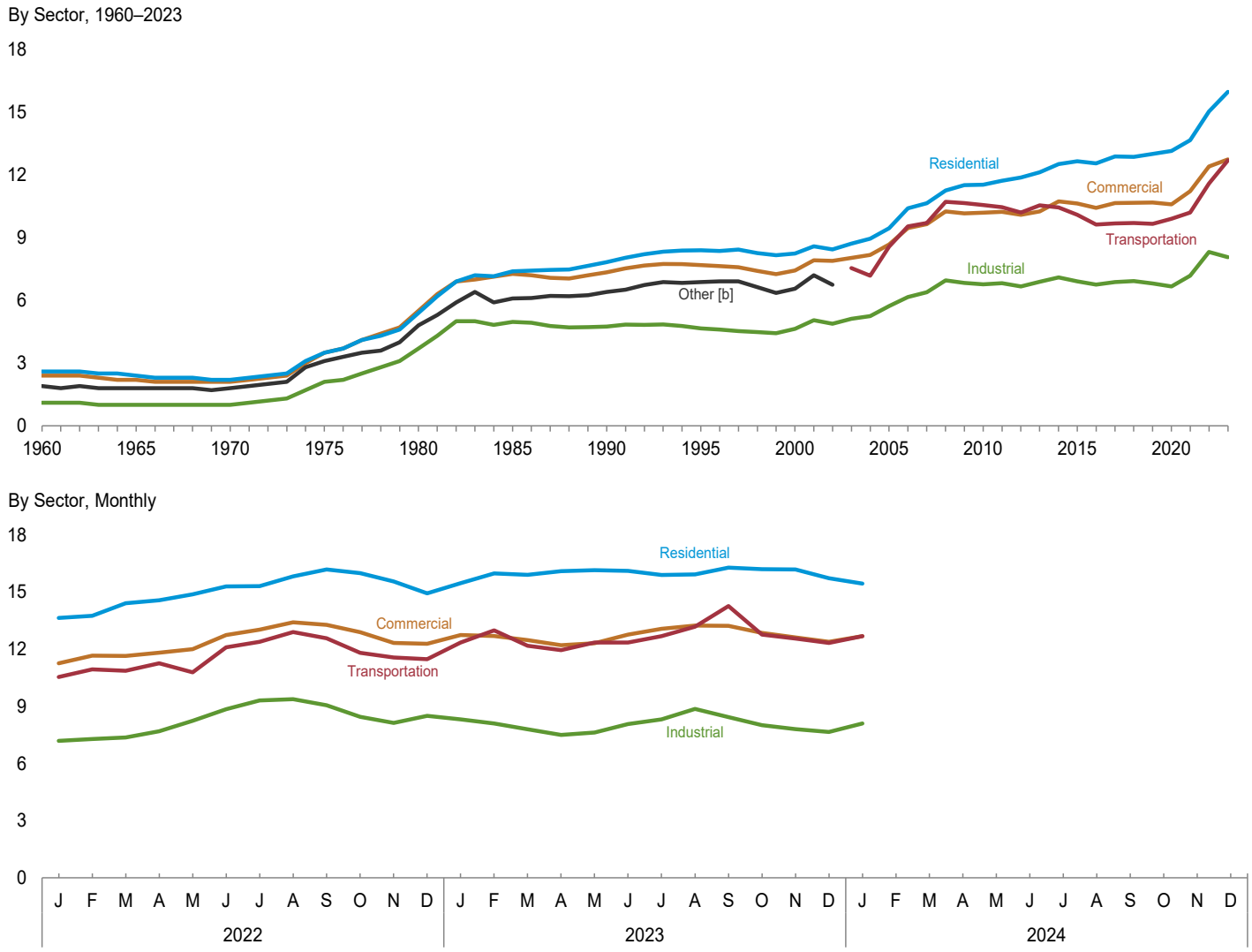
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1978 and monthly data beginning in 1982.

Sources: • **1978–2007:** EIA, *Petroleum Marketing Annual 2007,* Table 2. • **2008 forward:** EIA, *Petroleum Marketing Monthly,* July 2022, Table 2.

This table has not been updated due to the data are not available in Petroleum Marketing Monthly.

Figure 9.2 Average Prices of Electricity to Ultimate Customers

(Cents [a] per Kilowatthour)



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] Public street and highway lighting, interdepartmental sales, other sales to public authorities, agricultural and irrigation, and transportation including railroads and railways.

Note: Includes taxes.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.8.

Table 9.8 Average Prices of Electricity to Ultimate Customers

(Cents[a] per Kilowatthour, Including Taxes)

	Residential	Commercial[b]	Industrial[c]	Transportation[d]	Other[e]	Total
1960 Average	**2.60**	**2.40**	**1.10**	**NA**	**1.90**	**1.80**
1965 Average	**2.40**	**2.20**	**1.00**	**NA**	**1.80**	**1.70**
1970 Average	**2.20**	**2.10**	**1.00**	**NA**	**1.80**	**1.70**
1975 Average	**3.50**	**3.50**	**2.10**	**NA**	**3.10**	**2.90**
1980 Average	**5.40**	**5.50**	**3.70**	**NA**	**4.80**	**4.70**
1985 Average	**7.39**	**7.27**	**4.97**	**NA**	**6.09**	**6.44**
1990 Average	**7.83**	**7.34**	**4.74**	**NA**	**6.40**	**6.57**
1995 Average	**8.40**	**7.69**	**4.66**	**NA**	**6.88**	**6.89**
2000 Average	**8.24**	**7.43**	**4.64**	**NA**	**6.56**	**6.81**
2005 Average	**9.45**	**8.67**	**5.73**	**8.57**	**– –**	**8.14**
2010 Average	**11.54**	**10.19**	**6.77**	**10.56**	**– –**	**9.83**
2011 Average	**11.72**	**10.24**	**6.82**	**10.46**	**– –**	**9.90**
2012 Average	**11.88**	**10.09**	**6.67**	**10.21**	**– –**	**9.84**
2013 Average	**12.13**	**10.26**	**6.89**	**10.55**	**– –**	**10.07**
2014 Average	**12.52**	**10.74**	**7.10**	**10.45**	**– –**	**10.44**
2015 Average	**12.65**	**10.64**	**6.91**	**10.09**	**– –**	**10.41**
2016 Average	**12.55**	**10.43**	**6.76**	**9.63**	**– –**	**10.27**
2017 Average	**12.89**	**10.66**	**6.88**	**9.68**	**– –**	**10.48**
2018 Average	**12.87**	**10.67**	**6.92**	**9.70**	**– –**	**10.53**
2019 Average	**13.01**	**10.68**	**6.81**	**9.66**	**– –**	**10.54**
2020 Average	**13.15**	**10.59**	**6.67**	**9.90**	**– –**	**10.59**
2021 Average	**13.66**	**11.22**	**7.18**	**10.20**	**– –**	**11.10**
2022 January	13.64	11.26	7.19	10.54	– –	11.24
February	13.76	11.66	7.28	10.95	– –	11.42
March	14.41	11.65	7.37	10.87	– –	11.48
April	14.57	11.82	7.70	11.26	– –	11.56
May	14.89	12.00	8.25	10.79	– –	11.98
June	15.30	12.75	8.85	12.10	– –	12.75
July	15.31	13.02	9.31	12.39	– –	13.12
August	15.82	13.41	9.38	12.90	– –	13.44
September	16.19	13.28	9.06	12.57	– –	13.31
October	15.99	12.89	8.45	11.81	– –	12.66
November	15.55	12.33	8.14	11.56	– –	12.30
December	14.94	12.28	8.50	11.48	– –	12.40
Average	**15.04**	**12.41**	**8.32**	**11.59**	– –	**12.36**
2023 January	15.47	12.75	8.32	12.36	– –	12.78
February	15.98	12.70	8.10	12.99	– –	12.76
March	15.91	12.48	7.79	12.18	– –	12.43
April	16.10	12.21	7.50	11.96	– –	12.18
May	16.15	12.32	7.62	12.36	– –	12.25
June	16.11	12.77	8.08	12.36	– –	12.75
July	15.89	13.07	8.32	12.69	– –	13.10
August	15.93	13.24	8.87	13.18	– –	13.30
September	16.29	13.23	8.44	14.27	– –	13.19
October	16.20	12.86	8.01	12.77	– –	12.59
November	16.19	12.62	7.81	12.56	– –	12.50
December	15.73	12.39	7.66	12.33	– –	12.41
Average	**15.98**	**12.74**	**8.06**	**12.70**	– –	**12.72**
2024 January	15.45	12.68	8.10	12.68	– –	12.73

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

[b] Commercial sector. For 1960–2002, prices exclude public street and highway lighting, interdepartmental sales, and other sales to public authorities.

[c] Industrial sector. For 1960–2002, prices exclude agriculture and irrigation.

[d] Prices for public railroads and railway systems only.

[e] Public street and highway lighting, interdepartmental sales, other sales to public authorities, agriculture and irrigation, and transportation including railroads and railways.

NA=Not available. – –=Not applicable.

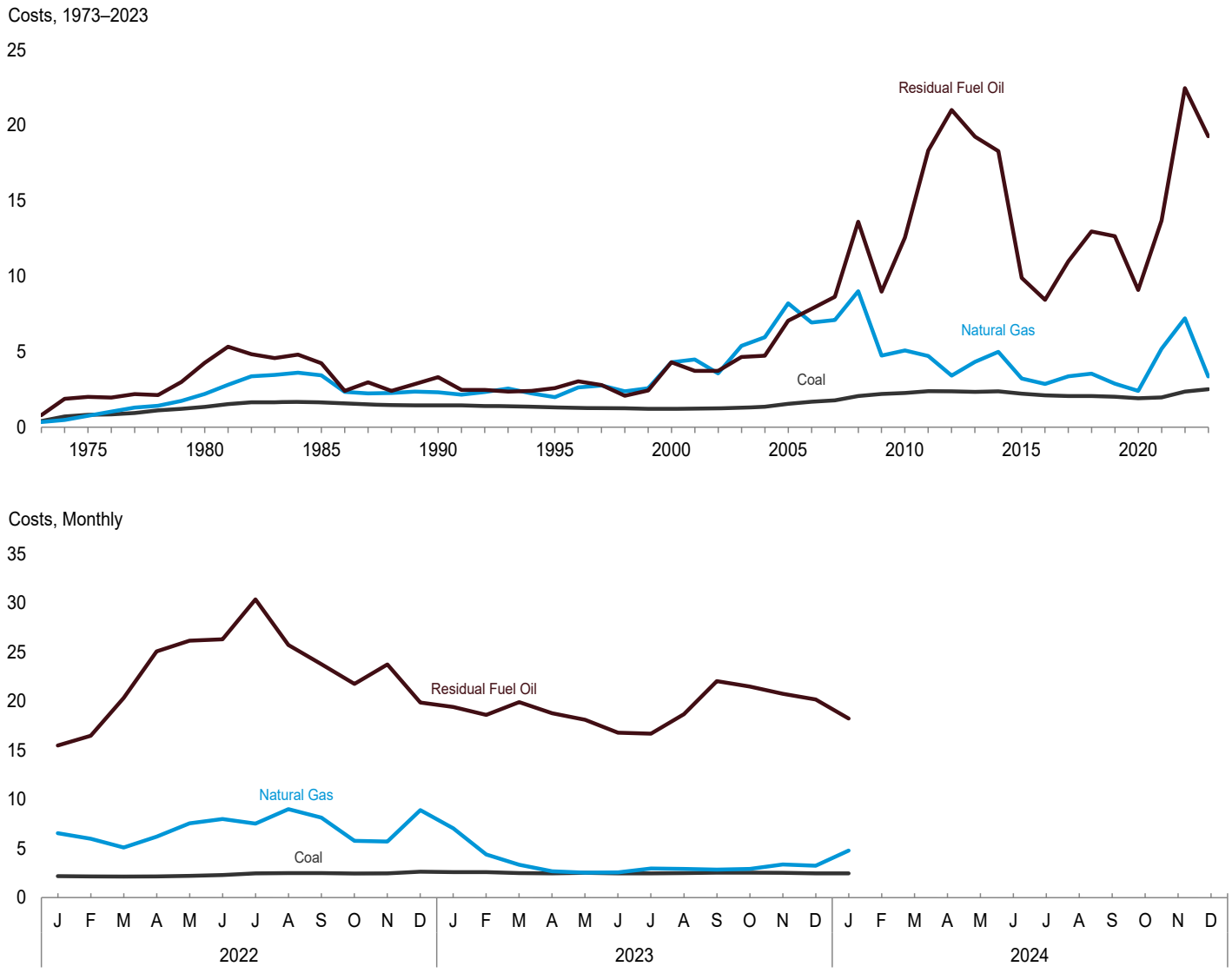
Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of energy service provider billing and accounting procedures. That lack of correspondence could result in uncharacteristic increases or decreases in the monthly prices. • Prices include state and local taxes, energy or demand charges, customer service charges, environmental surcharges, franchise fees, fuel adjustments, and other miscellaneous charges applied to end-use customers during normal billing operations. Prices do not include deferred charges, credits, or other adjustments, such as fuel or revenue from purchased power, from previous reporting periods. • Through 1979, data are for Classes A and B privately owned electric utilities only. (Class A utilities are those with operating revenues of $2.5 million or more; Class B utilities are those with operating revenues between $1 million and $2.5 million.) For 1980–1982, data are for selected Class A utilities whose electric operating revenues were $100 million or more during the previous year. For 1983, data are for a selected sample of electric utilities. Beginning in 1984, data are for a census of electric utilities. Beginning in 1996, data also include energy service providers selling to retail customers. • See Note 7, "Electricity Prices to Ultimate Customers," at end of section for plant coverage, and for information on preliminary and final values. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1976.

Sources: • **1960–September 1977:** Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **October 1977–February 1980:** Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **March 1980–1982:** FERC, Form FERC-5, "Electric Utility Company Monthly Statement." • **1983:** U.S. Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement." • **1984–2010:** EIA, Form EIA-861, "Annual Electric Power Industry Report." • **2011 forward:** EIA, *Electric Power Monthly*, February 2024, Table 5.3.

Figure 9.3 Cost of Fossil-Fuel Receipts at Electric Generating Plants

(Dollars [a] per Million Btu, Including Taxes)



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

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.9.

Table 9.9 Cost of Fossil-Fuel Receipts at Electric Generating Plants

(Dollars[a] per Million Btu, Including Taxes)

	Coal	Petroleum				Natural Gas[e]	All Fossil Fuels[f]
		Residual Fuel Oil[b]	Distillate Fuel Oil[c]	Petroleum Coke	Total[d]		
1973 Average	**0.41**	**0.79**	**NA**	**NA**	**0.80**	**0.34**	**0.48**
1975 Average	**.81**	**2.01**	**NA**	**NA**	**2.02**	**.75**	**1.04**
1980 Average	**1.35**	**4.27**	**NA**	**NA**	**4.35**	**2.20**	**1.93**
1985 Average	**1.65**	**4.24**	**NA**	**NA**	**4.32**	**3.44**	**2.09**
1990 Average	**1.45**	**3.32**	**5.38**	**.80**	**3.35**	**2.32**	**1.69**
1995 Average	**1.32**	**2.59**	**3.99**	**.65**	**2.57**	**1.98**	**1.45**
2000 Average	**1.25**	**3.73**	**5.34**	**.78**	**3.34**	**3.56**	**1.86**
2005 Average[g]	**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**
2014 Average	**2.37**	**18.30**	**21.88**	**1.98**	**11.60**	**5.00**	**3.31**
2015 Average	**2.22**	**9.89**	**14.06**	**1.84**	**6.74**	**3.23**	**2.65**
2016 Average	**2.11**	**8.45**	**10.90**	**1.65**	**5.24**	**2.87**	**2.47**
2017 Average	**2.06**	**11.00**	**13.22**	**2.13**	**7.10**	**3.37**	**2.65**
2018 Average	**2.06**	**12.97**	**16.16**	**2.54**	**9.68**	**3.55**	**2.83**
2019 Average	**2.02**	**12.66**	**15.19**	**1.91**	**9.07**	**2.89**	**2.50**
2020 Average	**1.92**	**9.09**	**10.73**	**1.70**	**5.98**	**2.40**	**2.22**
2021 Average	**1.98**	**13.70**	**15.89**	**3.16**	**10.08**	**5.20**	**3.82**
2022 January	2.20	15.49	20.10	4.32	13.85	6.56	4.74
February	2.17	16.49	20.79	4.24	14.29	6.00	4.32
March	2.15	20.33	25.68	4.84	14.61	5.10	3.75
April	2.18	25.06	28.32	4.80	16.05	6.21	4.40
May	2.23	26.15	30.12	4.97	16.38	7.57	5.25
June	2.32	26.30	33.02	4.50	20.01	8.01	5.86
July	2.47	30.36	27.38	4.65	19.30	7.53	5.78
August	2.51	25.72	26.90	5.02	16.86	9.00	6.54
September	2.51	23.76	25.57	2.32	17.20	8.15	5.81
October	2.46	21.76	27.81	3.37	17.08	5.80	4.37
November	2.48	23.74	29.28	3.84	16.75	5.71	4.38
December	2.65	19.86	23.17	4.19	16.72	8.92	6.38
Average	**2.36**	**22.48**	**25.64**	**4.35**	**16.53**	**7.21**	**5.22**
2023 January	2.60	19.41	24.14	4.54	17.17	7.07	5.19
February	2.60	18.61	22.91	4.80	15.76	4.39	3.71
March	2.51	19.92	21.39	4.66	14.13	3.35	3.05
April	2.48	18.77	20.78	4.70	13.42	2.69	2.69
May	2.52	18.11	19.90	3.14	15.49	2.54	2.61
June	2.47	16.78	19.08	3.48	14.81	2.58	2.60
July	2.49	16.70	19.61	3.62	14.02	2.97	2.86
August	2.50	18.68	22.78	3.39	15.71	2.92	2.82
September	2.54	22.05	23.92	3.76	16.85	2.86	2.82
October	2.54	21.49	23.96	3.84	17.51	2.93	2.86
November	2.52	20.77	21.53	3.60	16.21	3.38	3.11
December	2.49	20.18	18.19	3.39	14.52	3.27	3.06
Average	**2.52**	**19.28**	**21.64**	**4.05**	**15.49**	**3.36**	**3.11**
2024 January	2.49	18.22	19.73	2.65	17.56	4.80	4.02

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

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

[c] For 1973–2001, electric utility data are for light oil (fuel oil nos. 1 and 2).

[d] For all years, includes residual fuel oil and distillate fuel oil. For 1990 forward, also includes petroleum coke. For 1973–2012, also includes jet fuel, kerosene, and waste oil. For 1983–2012, also includes other petroleum, such as propane and refined motor oil.

[e] Natural gas, plus a small amount of supplemental gaseous fuels. For 1973–2000, data also include a small amount of blast furnace gas and other gases derived from fossil fuels.

[f] Weighted average of costs shown under "Coal," "Petroleum," and "Natural Gas."

[g] Through 2001, data are for electric utilities only. Beginning in 2002, data also include independent power producers, and electric generating plants in the commercial and industrial sectors.

NA=Not available.

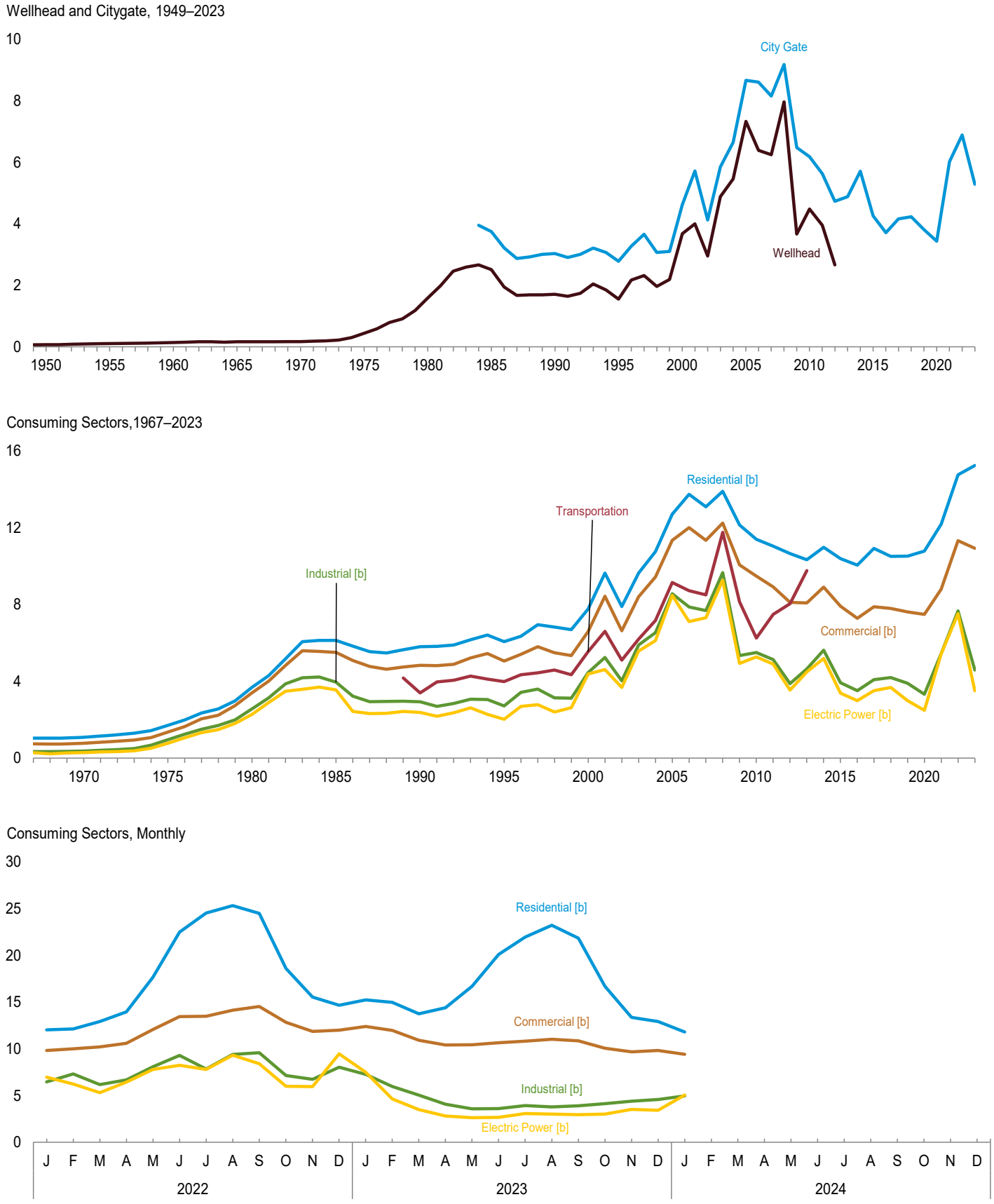
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated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

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

Sources: See end of section.

Figure 9.4 Natural Gas Prices

(Dollars [a] per Thousand Cubic Feet)



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

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.10.

Table 9.10 Natural Gas Prices

(Dollars[a] per Thousand Cubic Feet)

	Wellhead Price[f]	City-gate Price[g]	Consuming Sectors[b]								
			Residential		Commercial[c]		Industrial[d]		Transportation	Electric Power[e]	
			Price[h]	Percentage of Sector[i]	Price[h]	Percentage of Sector[i]	Price[h]	Percentage of Sector[i]	Vehicle Fuel[j] Price[h]	Price[h]	Percentage of Sector[i,k]
1950 Average	**0.07**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1955 Average	**.10**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1960 Average	**.14**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1965 Average	**.16**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
1970 Average	**.17**	**NA**	**1.09**	**NA**	**.77**	**NA**	**.37**	**NA**	**NA**	**.29**	**NA**
1975 Average	**.44**	**NA**	**1.71**	**NA**	**1.35**	**NA**	**.96**	**NA**	**NA**	**.77**	**96.1**
1980 Average	**1.59**	**NA**	**3.68**	**NA**	**3.39**	**NA**	**2.56**	**NA**	**NA**	**2.27**	**96.9**
1985 Average	**2.51**	**3.75**	**6.12**	**NA**	**5.50**	**NA**	**3.95**	**68.8**	**NA**	**3.55**	**94.0**
1990 Average	**1.71**	**3.03**	**5.80**	**99.2**	**4.83**	**86.6**	**2.93**	**35.2**	**3.39**	**2.38**	**76.8**
1995 Average	**1.55**	**2.78**	**6.06**	**99.0**	**5.05**	**76.7**	**2.71**	**24.5**	**3.98**	**2.02**	**71.4**
2000 Average	**3.68**	**4.62**	**7.76**	**92.6**	**6.59**	**63.9**	**4.45**	**19.8**	**5.54**	**4.38**	**50.5**
2005 Average	**7.33**	**8.67**	**12.70**	**98.1**	**11.34**	**82.1**	**8.56**	**24.0**	**9.14**	**8.47**	**91.3**
2010 Average	**4.48**	**6.18**	**11.39**	**97.4**	**9.47**	**77.5**	**5.49**	**18.0**	**6.25**	**5.27**	**100.8**
2011 Average	**3.95**	**5.63**	**11.03**	**96.3**	**8.91**	**67.3**	**5.13**	**16.3**	**7.48**	**4.89**	**101.2**
2012 Average	**[E]2.66**	**4.73**	**10.65**	**95.8**	**8.10**	**65.2**	**3.88**	**16.2**	**8.04**	**3.54**	**95.5**
2013 Average	**NA**	**4.88**	**10.32**	**95.7**	**8.08**	**65.8**	**4.64**	**16.6**	**9.76**	**4.49**	**94.9**
2014 Average	**NA**	**5.71**	**10.97**	**95.5**	**8.90**	**65.8**	**5.62**	**15.9**	**NA**	**5.19**	**94.6**
2015 Average	**NA**	**4.26**	**10.38**	**95.6**	**7.91**	**65.7**	**3.93**	**14.8**	**NA**	**3.38**	**94.6**
2016 Average	**NA**	**3.71**	**10.05**	**95.8**	**7.28**	**64.8**	**3.51**	**14.9**	**NA**	**2.99**	**95.6**
2017 Average	**NA**	**4.16**	**10.91**	**95.9**	**7.88**	**65.4**	**4.08**	**14.8**	**NA**	**3.51**	**95.4**
2018 Average	**NA**	**4.23**	**10.50**	**96.0**	**7.79**	**65.8**	**4.19**	**14.5**	**NA**	**3.68**	**95.4**
2019 Average	**NA**	**3.81**	**10.51**	**96.2**	**7.61**	**65.5**	**3.90**	**13.0**	**NA**	**2.99**	**96.5**
2020 Average	**NA**	**3.43**	**10.78**	**96.3**	**7.48**	**64.6**	**3.32**	**13.2**	**NA**	**2.49**	**96.2**
2021 Average	**NA**	**6.02**	**12.18**	**96.6**	**8.79**	**65.1**	**5.44**	**13.4**	**NA**	**5.43**	**96.1**
2022 January	NA	5.48	12.04	96.9	9.82	71.4	6.47	13.3	NA	6.96	96.2
February	NA	5.77	12.14	96.7	10.02	69.9	7.32	13.8	NA	6.23	95.2
March	NA	5.55	12.94	96.5	10.21	68.4	6.18	14.1	NA	5.31	95.7
April	NA	6.53	13.97	96.2	10.60	65.4	6.68	13.9	NA	6.44	96.5
May	NA	8.51	17.67	96.0	12.07	60.7	8.08	13.4	NA	7.80	97.0
June	NA	9.77	22.50	96.2	13.45	57.5	9.30	13.3	NA	8.24	96.2
July	NA	8.72	24.55	96.6	13.50	55.7	7.85	13.3	NA	7.80	96.2
August	NA	10.31	25.34	96.8	14.14	55.0	9.40	13.0	NA	9.32	96.0
September	NA	9.69	24.50	96.8	14.54	55.6	9.58	12.9	NA	8.41	96.0
October	NA	6.79	18.61	96.9	12.84	60.1	7.16	13.1	NA	5.99	96.1
November	NA	6.72	15.55	97.2	11.87	66.6	6.74	13.3	NA	5.95	95.4
December	NA	8.12	14.68	97.1	11.99	70.2	8.04	13.5	NA	9.46	96.1
Average	**NA**	**6.89**	**14.75**	**96.7**	**11.32**	**65.8**	**7.66**	**13.4**	**NA**	**7.51**	**96.1**
2023 January	NA	7.15	15.25	96.8	12.41	70.2	7.27	13.6	NA	7.50	90.1
February	NA	6.55	14.98	96.9	11.97	69.6	5.98	13.7	NA	4.64	89.4
March	NA	5.28	13.76	96.9	10.93	68.7	5.05	13.3	NA	3.51	88.5
April	NA	4.33	14.40	96.5	10.41	65.1	4.08	12.9	NA	2.81	87.9
May	NA	4.17	16.70	96.2	10.44	60.7	3.59	13.0	NA	2.63	88.2
June	NA	4.67	20.11	96.6	10.65	57.5	3.60	12.4	NA	2.67	86.8
July	NA	5.04	21.98	96.8	10.83	55.4	3.93	12.5	NA	3.07	85.6
August	NA	4.79	23.23	96.6	11.02	54.9	3.78	13.2	NA	3.02	86.2
September	NA	5.03	21.86	96.7	10.86	55.9	3.90	12.4	NA	2.95	87.8
October	NA	4.16	16.71	97.3	10.07	61.2	4.14	13.0	NA	3.02	88.1
November	NA	4.36	13.37	97.1	9.68	66.1	4.40	13.8	NA	3.52	88.6
December	NA	4.39	12.94	97.2	9.83	68.7	4.58	13.7	NA	3.42	90.5
Average	**NA**	**5.29**	**15.23**	**96.9**	**10.92**	**[R]65.3**	**4.59**	**13.1**	**NA**	**3.50**	**87.9**
2024 January	NA	4.76	11.82	96.7	9.43	70.9	4.96	14.1	NA	5.07	88.4

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

[b] See Note 8, "Natural Gas Prices," at end of section.

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

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

[e] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 2001, data are for electric utilities only; beginning in 2002, data also include independent power producers.

[f] See "Natural Gas Wellhead Price" in Glossary.

[g] See "Citygate" in Glossary.

[h] Includes taxes.

[i] The percentage of the sector's consumption in Table 4.3 for which price data are available. For details on how the percentages are derived, see Table 9.10 sources at end of section.

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

[k] Percentages exceed 100% when reported natural gas receipts are greater than reported natural gas consumption—this can occur when combined-heat-and-power plants report fuel receipts related to non-electric generating activities.

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

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

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

Sources: See end of section.

Note 1. Crude Oil Refinery Acquisition Costs. Beginning with January 1981, refiner acquisition costs of crude oil are from data collected on U.S. Energy Information Administration (EIA) Form EIA-14, "Refiners' Monthly Cost Report." Those costs were previously published from data collected on Economic Regulatory Administration (ERA) Form ERA-49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report." Form ERA-49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for Form EIA-14 in accordance with conventions used for Form ERA-49. The respondents for the two forms are also essentially the same. However, due to possible different interpretations of the filing requirements and a different method for handling prior period adjustments, care must be taken when comparing the data collected on the two forms.

The refiner acquisition cost of crude oil is the average price paid by refiners for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. Domestic crude oil is that oil produced in the United States or from the outer continental shelf as defined in 43 USC Section 1331. Imported crude oil is either that oil reported on Form ERA-51, "Transfer Pricing Report," or any crude oil that is not domestic oil. The composite cost is the weighted average of domestic and imported crude oil costs.

Crude oil costs and volumes reported on Form ERA-49 excluded unfinished oils but included the Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on Federal Energy Administration (FEA) Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report," included unfinished oils but excluded SPR. Imported averages derived from Form ERA-49 exclude oil purchased for SPR, whereas the composite averages derived from Form ERA-49 include SPR. None of the prices derived from Form EIA-14 include either unfinished oils or SPR.

Note 2. Crude Oil Domestic First Purchase Prices. The average domestic first purchase price represents the average price at which all domestic crude oil is purchased. Crude oil domestic first purchase prices were derived as follows: for 1949–1973, weighted average domestic first purchase values as reported by state agencies and calculated by the Bureau of Mines; for 1974 and 1975, weighted averages of a sample survey of major first purchasers' purchases; for 1976 forward, weighted averages of all first purchasers' purchases. The data series was previously called "Actual Domestic Wellhead Price."

Note 3. Crude Oil F.O.B. Costs. F.O.B. literally means "Free on Board." It denotes a transaction whereby the seller makes the product available with an agreement on a given port at a given price; it is the responsibility of the buyer to arrange for the transportation and insurance.

Note 4. Crude Oil Landed Costs. The landed cost of imported crude oil from selected countries does not represent the total cost of all imported crude. Prior to April 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude oil from countries that export only small amounts to the United States were also excluded. Beginning in April 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

Note 5. Motor Gasoline Prices. Several different series of motor gasoline prices are published in this section. U.S. city average retail prices of motor gasoline by grade are calculated monthly by the Bureau of Labor Statistics during the development of the Consumer Price Index (CPI). These prices include all federal, state, and local taxes paid at the time of sale. Prior to 1977, prices were collected in 56 urban areas. From 1978 forward, prices are collected from a new sample of service stations in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-serve).

Regular motor gasoline prices by area type are determined by EIA in a weekly survey of retail motor gasoline outlets (Form EIA-878, "Motor Gasoline Price Survey"). Prices include all federal, state, and local taxes paid at the time of sale. A representative sample of outlets by geographic area and size is randomly selected from a sampling frame of approximately 115,000 retail motor gasoline outlets. Monthly and annual prices are simple averages of weighted

weekly estimates from "Weekly U.S. Retail Gasoline Prices, Regular Grade." For more information on the survey methodology, see EIA, *Weekly Petroleum Status Report*, Appendix B, "Weekly Petroleum Price Surveys" section.

Refiner prices of finished motor gasoline for resale and to end users are determined by EIA in a monthly survey of refiners and gas plant operators (Form EIA-782A). The prices do not include any federal, state, or local taxes paid at the time of sale. Estimates of prices prior to January 1983 are based on Form FEA-P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices," and also exclude all federal, state, or local taxes paid at the time of sale. Sales for resale are those made to purchasers who are other-than-ultimate consumers. Sales to end users are sales made directly to the consumer of the product, including bulk consumers (such as agriculture, industry, and utilities) and residential and commercial consumers.

Note 6. Historical Petroleum Prices. Starting in January 1983, Form EIA-782, "Monthly Petroleum Product Sales Report," replaced 10 previous surveys. Every attempt was made to continue the most important price series. However, prices published through December 1982 and those published since January 1983 do not necessarily form continuous data series due to changes in survey forms, definitions, instructions, populations, samples, processing systems, and statistical procedures. To provide historical data, continuous series were generated for annual data 1978–1982 and for monthly data 1981 and 1982 by estimating the prices that would have been published had Form EIA-782 survey and system been in operation at that time. This form of estimation was performed after detailed adjustment was made for product and sales type matching and for discontinuity due to other factors. An important difference between the previous and present prices is the distinction between wholesale and resale and between retail and end user. The resale category continues to include sales among resellers. However, sales to bulk consumers, such as utility, industrial, and commercial accounts previously included in the wholesale category, are now counted as made to end users. The end-user category continues to include retail sales through company-owned and operated outlets but also includes sales to the bulk consumers such as agriculture, industry, and electric utilities. Additional information may be found in "Estimated Historic Time Series for the EIA-782," a feature article by Paula Weir, printed in the December 1983 [3] *Petroleum Marketing Monthly*, published by EIA.

Note 7. Electricity Prices to Ultimate Customers. Average annual prices of electricity to ultimate customers 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 prices of electricity to ultimate customers have the following plant coverage: Through 1985, monthly data are derived from selected privately owned electric utilities and, therefore, are not national averages. Beginning in 1986, monthly data are based on a sample of publicly and privately owned electric utilities. Beginning in 1996, monthly data also include energy service providers selling to retail customers.

Preliminary monthly data are from Form EIA-861M (formerly Form EIA-826), "Monthly Electric Power Industry Report," which is a monthly collection of data from approximately 450 of the largest publicly and privately owned electric utilities as well as a census of energy service providers with retail sales in deregulated states; a model is then applied to the collected data to estimate for the entire universe of U.S. electric utilities. Preliminary annual data are the sum of the monthly revenues divided by the sum of the monthly sales. When final annual data become available each year from Form EIA-861, "Annual Electric Power Industry Report," their ratios to the preliminary Form EIA-861M values are used to derive adjusted final monthly values.

Note 8. Natural Gas Prices. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all federal, state, and local taxes, surcharges, and/or adjustments billed to consumers are to be included. However, sales and other taxes itemized on more than 3,000 consumers' bills are sometimes excluded by the reporting utilities. Delivered-to-consumers prices for 1987 forward represent natural gas delivered and sold to residential, commercial, industrial, vehicle fuel, and electric power consumers. They do not include the price of natural

gas delivered on behalf of third parties to residential, commercial, industrial, and vehicle fuel customers except for certain states in the residential and commercial sectors for 2002 forward. Volumes of natural gas delivered on behalf of third parties are included in the consumption data shown in Table 4.3. Additional information is available in EIA, *Natural Gas Monthly*, Appendix C.

Table 9.1 Sources

Domestic First Purchase Price

1949–1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Minerals Yearbook, "Crude Petroleum and Petroleum Products" chapter.

1977: Federal Energy Administration, based on Form FEA-P124, "Domestic Crude Oil Purchaser's Monthly Report."

1978–2009: U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly,* April 2024, Table 1, and EIA, Petroleum Data Tables.

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*, April 2024, Table 1, and EIA, Petroleum Data Tables.

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*, April 2024, Table 1, and EIA, Petroleum Data Tables.

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*, April 2024, Table 21, and EIA, Petroleum Data Tables

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*, August issues.

1990–2000: EIA, *Electric Power Monthly*, April 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*, March 2024, Table 4.1; and Form EIA-923, "Power Plant Operations Report."

Table 9.10 Sources

All Prices Except Vehicle Fuel and Electric Power

1949–2015: U.S. Energy Information Administration (EIA), *Natural Gas Annual* (NGA), annual reports and unpublished revisions.

2016 forward: EIA, *Natural Gas Monthly* (NGM), March 2024, Table 3.

Vehicle Fuel Price

1989–2013: EIA, NGA, annual reports.

Electric Power Sector Price

1967–1972: EIA, NGA, annual reports.

1973–1998: EIA, NGA 2000, Table 96.

1999–2002: EIA, NGM, November 2004, Table 4.

2003–2007: Federal Energy Regulatory Commission, Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA, Form EIA-423 "Monthly Cost and Quality of Fuels for Electric Plants Report."

2008 forward: Form EIA-923, "Power Plant Operations Report."

Percentage of Residential Sector

1989–2013: EIA, Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." Calculated as the total amount of natural gas delivered to residential consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to residential consumers.

2014 forward: EIA, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers."

Percentage of Commercial Sector

1987–2015: EIA, NGA, annual reports. Calculated as the total amount of natural gas delivered to commercial consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to commercial consumers.

2016 forward: EIA, NGM, March 2024, Table 3.

Percentage of Industrial Sector

1982–2015: EIA, NGA, annual reports. Calculated as the total amount of natural gas delivered to industrial consumers minus the amount delivered for the account of others, and then divided by the total amount delivered to industrial consumers.

2016 forward: EIA, NGM, March 2024, Table 3.

Percentage of Electric Power Sector

1973–2001: Calculated by EIA as the quantity of natural gas receipts by electric utilities reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants" (and predecessor forms) divided by the quantity of natural gas consumed by the electric power sector (for 1973 –1988, see *Monthly Energy Review* (*MER*), Table 7.3b; for 1989–2001, see MER, Table 7.4b).

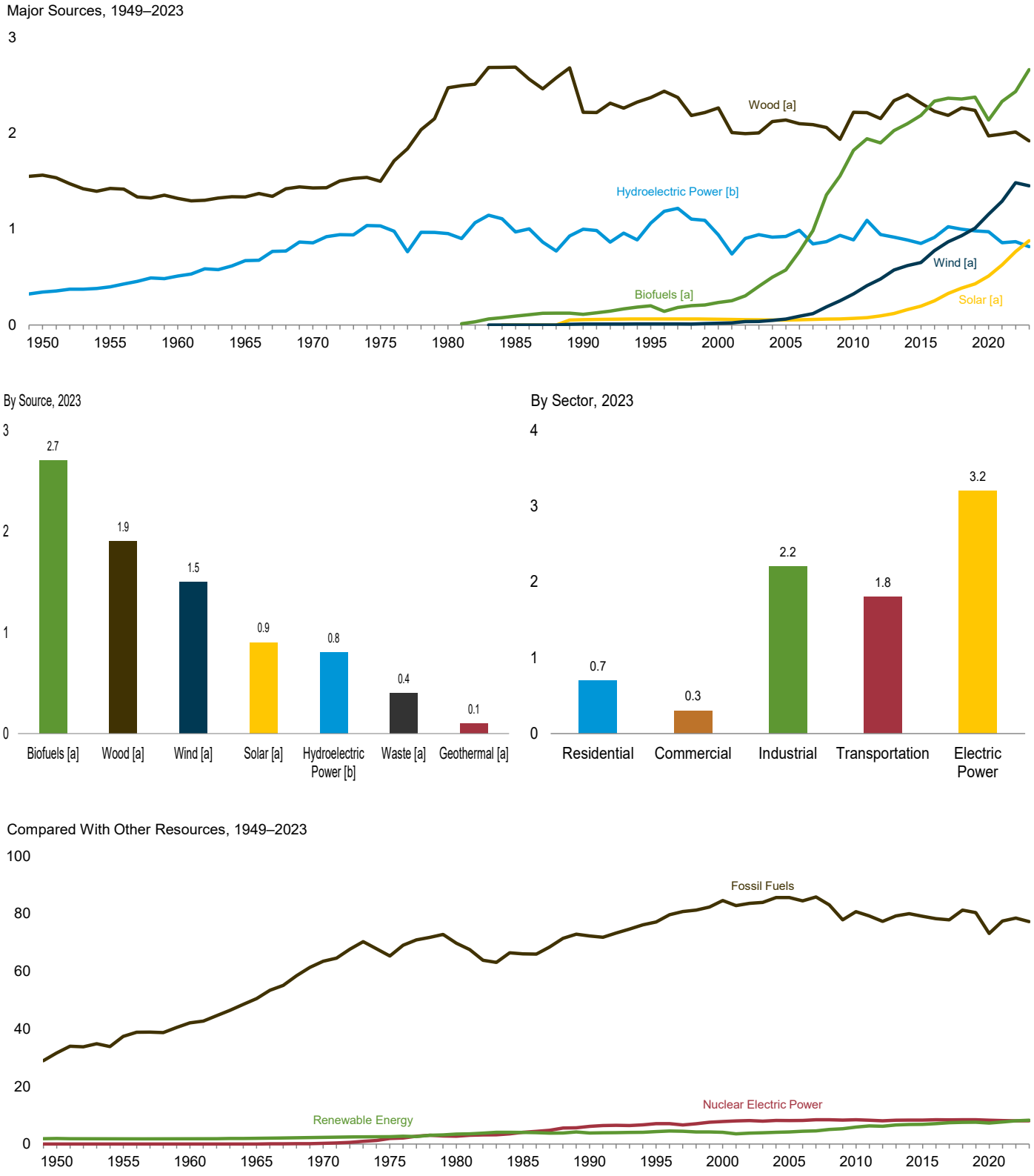
2002–2007: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report,"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

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

10. Renewable Energy

Figure 10.1 Renewable Energy Consumption

(Quadrillion Btu)



[a] See Table 10.1 for definition.
[b] Conventional hydroelectric power.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#renewable.
Sources: Tables 1.3 and 10.1–10.2c.

Table 10.1 Renewable Energy Production and Consumption by Source

(Trillion Btu)

	Production[a]				Consumption								
	Biomass			Total Renewable Energy[e]	Hydroelectric Power[f]	Geothermal[g]	Solar[h]	Wind[i]	Biomass				Total Renewable Energy
	Wood[b]	Biofuels[c]	Total[d]						Wood[j]	Waste[k]	Biofuels[l]	Total	
1950 Total	1,562	NA	1,562	1,907	344	NA	NA	NA	1,562	NA	NA	1,562	1,907
1955 Total	1,424	NA	1,424	1,821	397	NA	NA	NA	1,424	NA	NA	1,424	1,821
1960 Total	1,320	NA	1,320	1,830	510	(s)	NA	NA	1,320	NA	NA	1,320	1,830
1965 Total	1,335	NA	1,335	2,008	672	1	NA	NA	1,335	NA	NA	1,335	2,008
1970 Total	1,429	NA	1,431	2,289	856	2	NA	NA	1,429	2	NA	1,431	2,289
1975 Total	1,497	NA	1,499	2,544	1,034	11	NA	NA	1,497	2	NA	1,499	2,544
1980 Total	2,474	NA	2,475	3,445	953	17	NA	NA	2,474	2	NA	2,475	3,445
1985 Total	2,687	93	3,016	4,018	970	32	(s)	(s)	2,687	236	93	3,016	4,018
1990 Total	2,216	111	2,735	3,863	999	63	56	10	2,216	408	111	2,735	3,863
1995 Total	2,370	198	3,099	4,295	1,061	60	64	11	2,370	531	200	3,101	4,297
2000 Total	2,262	233	3,006	4,093	940	69	59	19	2,262	511	236	3,008	4,096
2005 Total	2,137	561	3,101	4,220	922	84	52	61	2,137	403	574	3,114	4,233
2010 Total	2,217	1,868	4,553	5,943	888	111	68	323	2,217	468	1,821	4,506	5,896
2011 Total	2,213	2,037	4,712	6,404	1,090	116	76	410	2,213	462	1,941	4,616	6,308
2012 Total	2,151	1,936	4,554	6,187	943	117	94	480	2,151	467	1,899	4,517	6,150
2013 Total	2,338	2,000	4,835	6,561	916	117	120	573	2,338	496	2,026	4,861	6,587
2014 Total	2,401	2,135	5,052	6,836	885	118	161	620	2,401	516	2,099	5,016	6,799
2015 Total	2,312	2,201	5,031	6,846	850	118	196	651	2,312	518	2,185	5,015	6,829
2016 Total	2,299	2,329	5,132	7,188	914	117	251	774	2,227	503	2,333	5,063	7,120
2017 Total	2,264	2,407	5,166	7,505	1,025	118	329	868	2,185	495	2,364	5,045	7,383
2018 Total	2,356	2,471	5,314	7,744	998	118	384	930	2,262	487	2,355	5,105	7,535
2019 Total	2,341	2,432	5,215	7,753	982	116	430	1,010	2,237	442	2,376	5,056	7,594
2020 Total	2,076	2,194	4,710	7,465	973	118	511	1,153	1,970	440	2,136	4,545	7,301
2021 Total	2,109	2,374	4,914	7,807	858	118	627	1,290	1,989	430	2,331	4,751	7,644
2022 January	184	214	435	698	83	10	42	128	175	37	193	404	666
February	171	190	394	652	73	9	47	128	159	33	177	370	628
March	181	212	430	733	83	10	63	147	169	37	207	412	715
April	173	198	406	712	68	10	71	158	164	34	195	393	700
May	182	214	430	743	80	10	79	144	170	35	208	412	725
June	182	214	430	726	89	10	83	115	168	33	213	414	710
July	185	218	436	713	84	10	83	101	175	34	206	415	692
August	184	211	429	672	72	10	77	84	174	34	213	421	664
September	177	193	402	633	58	10	70	93	162	32	192	387	618
October	174	217	425	659	49	10	63	112	163	34	216	413	647
November	174	219	427	686	61	10	47	141	164	34	209	407	665
December	183	211	429	680	70	10	40	132	169	35	205	409	661
Total	2,150	2,511	5,073	8,307	869	118	765	1,482	2,012	412	2,433	4,857	8,091
2023 January	182	220	437	702	76	11	44	134	174	36	210	420	685
February	162	198	393	660	64	9	R 50	144	154	32	190	376	644
March	180	222	436	735	69	10	67	152	165	34	220	420	R 718
April	160	212	404	700	60	10	79	147	152	32	207	391	687
May	175	229	438	741	94	10	90	109	164	34	234	432	735
June	168	230	430	692	66	10	92	94	156	32	232	420	682
July	172	232	437	712	72	10	98	95	162	33	223	418	693
August	177	230	440	712	72	10	93	97	163	33	235	431	703
September	166	227	425	669	56	10	82	96	153	32	224	408	652
October	166	231	430	701	62	10	74	124	154	33	233	420	690
November	168	229	430	R 685	62	10	56	126	159	32	219	410	R 665
December	R 177	248	R 461	R 719	66	10	51	131	162	36	235	432	690
Total	R 2,053	2,708	R 5,160	R 8,426	818	120	878	1,451	1,918	398	2,662	4,978	8,245
2024 January	172	225	432	686	72	10	53	119	161	34	212	407	662

[a] For hydroelectric power, geothermal, solar, wind, and biomass waste, production equals consumption.

[b] Wood and wood-derived fuels. Through 2015, wood production equals consumption. Beginning in 2016, wood production equals consumption plus densified biomass exports.

[c] Total biomass inputs to the production of fuel ethanol and biodiesel. Beginning in 2011, also includes production of renewable diesel fuel. Beginning in 2014, also includes production of other biofuels.

[d] Includes biomass waste.

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

[f] Conventional hydroelectricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[g] Geothermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6), and geothermal heat pump and direct use energy.

[h] Solar photovoltaic (PV) and solar thermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6), and solar thermal direct use energy.

[i] Wind electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[j] Wood and wood-derived fuels.

[k] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[l] Fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels consumption; plus losses and co-products from the production of fuel ethanol and biodiesel.

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

Notes: • Production data are estimates. Consumption data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. • See Note, "Renewable Energy Production and Consumption," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Production:** Tables 10.2a–10.4c and U.S. Energy Information Administration, Form EIA-63C, "Densified Biomass Fuel Report." • **Consumption:** Tables 10.2a–10.2c.

Table 10.2a Renewable Energy Consumption: Residential and Commercial Sectors

(Trillion Btu)

	Residential Sector				Commercial Sector[a]								
			Biomass						Biomass				
	Geo-thermal[b]	Solar[c]	Wood[d]	Total	Hydro-electric Power[e]	Geo-thermal[f]	Solar[g]	Wind[h]	Wood[d]	Waste[i]	Fuel Ethanol[j,k]	Total	Total
1950 Total	**NA**	**NA**	**1,006**	**1,006**	**NA**	**NA**	**NA**	**NA**	**19**	**NA**	**NA**	**19**	**19**
1955 Total	**NA**	**NA**	**775**	**775**	**NA**	**NA**	**NA**	**NA**	**15**	**NA**	**NA**	**15**	**15**
1960 Total	**NA**	**NA**	**627**	**627**	**NA**	**NA**	**NA**	**NA**	**12**	**NA**	**NA**	**12**	**12**
1965 Total	**NA**	**NA**	**468**	**468**	**NA**	**NA**	**NA**	**NA**	**9**	**NA**	**NA**	**9**	**9**
1970 Total	**NA**	**NA**	**401**	**401**	**NA**	**NA**	**NA**	**NA**	**8**	**NA**	**NA**	**8**	**8**
1975 Total	**NA**	**NA**	**425**	**425**	**NA**	**NA**	**NA**	**NA**	**8**	**NA**	**NA**	**8**	**8**
1980 Total	**NA**	**NA**	**850**	**850**	**NA**	**NA**	**NA**	**NA**	**21**	**NA**	**NA**	**21**	**21**
1985 Total	**NA**	**NA**	**1,010**	**1,010**	**NA**	**NA**	**NA**	**NA**	**24**	**NA**	**(s)**	**24**	**24**
1990 Total	**6**	**55**	**580**	**640**	**(s)**	**3**	**(s)**	**–**	**66**	**28**	**(s)**	**94**	**97**
1995 Total	**7**	**63**	**520**	**589**	**(s)**	**5**	**(s)**	**–**	**72**	**40**	**(s)**	**113**	**118**
2000 Total	**9**	**57**	**420**	**486**	**(s)**	**8**	**(s)**	**–**	**71**	**47**	**(s)**	**119**	**127**
2005 Total	**16**	**49**	**430**	**495**	**(s)**	**14**	**1**	**–**	**70**	**34**	**1**	**105**	**120**
2010 Total	**37**	**59**	**541**	**636**	**(s)**	**19**	**4**	**(s)**	**72**	**36**	**3**	**111**	**134**
2011 Total	**40**	**62**	**524**	**626**	**(s)**	**20**	**7**	**(s)**	**69**	**43**	**3**	**115**	**141**
2012 Total	**40**	**66**	**438**	**544**	**(s)**	**20**	**11**	**(s)**	**61**	**45**	**3**	**108**	**139**
2013 Total	**40**	**72**	**572**	**683**	**(s)**	**20**	**15**	**(s)**	**70**	**47**	**3**	**120**	**155**
2014 Total	**40**	**79**	**579**	**697**	**(s)**	**20**	**19**	**(s)**	**76**	**47**	**4**	**127**	**166**
2015 Total	**40**	**87**	**513**	**639**	**(s)**	**20**	**21**	**(s)**	**79**	**47**	**[k] 26**	**152**	**193**
2016 Total	**40**	**100**	**445**	**584**	**1**	**20**	**23**	**(s)**	**84**	**48**	**26**	**158**	**201**
2017 Total	**40**	**113**	**430**	**582**	**1**	**20**	**28**	**(s)**	**84**	**48**	**25**	**156**	**205**
2018 Total	**40**	**123**	**525**	**688**	**1**	**20**	**35**	**1**	**84**	**47**	**25**	**156**	**213**
2019 Total	**40**	**136**	**546**	**721**	**1**	**21**	**40**	**1**	**84**	**39**	**26**	**149**	**211**
2020 Total	**40**	**151**	**345**	**536**	**1**	**21**	**46**	**1**	**83**	**38**	**26**	**147**	**215**
2021 Total	**40**	**169**	**344**	**553**	**1**	**21**	**54**	**1**	**83**	**39**	**27**	**149**	**225**
2022 January	3	11	36	50	(s)	2	4	(s)	7	6	2	16	21
February	3	12	32	47	(s)	2	4	(s)	6	6	2	15	20
March	3	17	36	56	(s)	2	5	(s)	7	6	3	16	23
April	3	18	35	56	(s)	2	6	(s)	7	6	3	15	23
May	3	20	36	60	(s)	2	6	(s)	7	6	3	16	24
June	3	20	35	58	(s)	2	6	(s)	7	6	3	16	24
July	3	21	36	60	(s)	2	7	(s)	7	7	3	16	25
August	3	20	36	59	(s)	2	6	(s)	7	6	3	16	25
September	3	18	35	56	(s)	2	6	(s)	7	6	3	15	23
October	3	17	36	56	(s)	2	5	(s)	7	6	3	16	23
November	3	13	35	51	(s)	2	4	(s)	7	6	3	16	21
December	3	12	36	52	(s)	2	4	(s)	7	6	3	16	21
Total	**40**	**200**	**422**	**662**	**1**	**20**	**63**	**1**	**83**	**75**	**32**	**190**	**274**
2023 January	3	13	38	54	(s)	2	4	(s)	7	6	3	16	21
February	3	14	35	51	(s)	2	4	(s)	6	5	2	14	20
March	3	19	38	[R] 60	NM	2	6	(s)	7	6	3	15	23
April	3	21	37	62	NM	2	6	(s)	7	6	3	15	23
May	3	24	38	66	NM	2	7	(s)	7	6	3	15	24
June	3	24	37	64	NM	2	7	(s)	7	6	3	15	24
July	3	25	38	66	NM	2	7	(s)	7	6	3	16	25
August	3	24	38	66	NM	2	7	(s)	7	6	3	16	25
September	3	21	37	61	NM	2	6	(s)	7	6	3	15	23
October	3	20	38	61	NM	2	5	(s)	7	6	3	16	23
November	3	16	37	56	(s)	2	4	(s)	7	6	3	15	21
December	3	15	38	56	NM	2	4	(s)	7	6	3	16	22
Total	**40**	**235**	**450**	**725**	**1**	**20**	**69**	**1**	**82**	**71**	**32**	**185**	**275**
2024 January	3	15	34	52	(s)	2	4	(s)	7	6	2	16	22

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

[b] Geothermal heat pump and direct use energy.

[c] Small-scale solar photovoltaic (PV) electricity generation in the residential sector (converted to Btu by multiplying by the heat content of electricity in Table A6) and small-scale solar thermal energy in the residential, commercial, and industrial sectors. See Table 10.5.

[d] Wood and wood-derived fuels.

[e] Conventional hydroelectricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[f] Geothermal heat pump and direct use energy. Beginning in December 2018, also includes geothermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[g] Solar photovoltaic (PV) electricity net generation in the commercial sector (converted to Btu by multiplying by the heat content of electricity in Table A6), both utility-scale and small-scale. See Table 10.5.

[h] Wind electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

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

[j] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the commercial sector.

[k] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

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

Notes: • Residential sector data are estimates. Commercial sector data are estimates, except for hydroelectric power, wind, and biomass waste. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 10.2b Renewable Energy Consumption: Industrial Sector

(Trillion Btu)

	Industrial Sector[a]									
					Biomass					
	Hydro-electric Power[b]	Geo-thermal[c]	Solar[d]	Wind[e]	Wood[f]	Waste[g]	Fuel Ethanol[h,i]	Losses and Co-products[j]	Total	Total
1950 Total	17	NA	NA	NA	532	NA	NA	NA	532	549
1955 Total	11	NA	NA	NA	631	NA	NA	NA	631	642
1960 Total	12	NA	NA	NA	680	NA	NA	NA	680	692
1965 Total	11	NA	NA	NA	855	NA	NA	NA	855	866
1970 Total	11	NA	NA	NA	1,019	NA	NA	NA	1,019	1,030
1975 Total	11	NA	NA	NA	1,063	NA	NA	NA	1,063	1,074
1980 Total	11	NA	NA	NA	1,600	NA	NA	NA	1,600	1,611
1985 Total	11	NA	NA	NA	1,645	230	1	42	1,918	1,928
1990 Total	10	2	(s)	–	1,442	192	1	49	1,684	1,696
1995 Total	18	3	(s)	–	1,652	195	2	86	1,934	1,955
2000 Total	14	4	(s)	–	1,636	145	1	99	1,881	1,900
2005 Total	11	4	(s)	–	1,452	148	7	227	1,834	1,849
2010 Total	6	4	1	–	1,409	168	17	727	2,320	2,331
2011 Total	6	4	1	(s)	1,438	165	17	756	2,375	2,387
2012 Total	8	4	2	(s)	1,462	159	17	711	2,349	2,363
2013 Total	12	4	3	(s)	1,489	187	18	714	2,407	2,427
2014 Total	4	4	4	(s)	1,495	190	14	766	2,466	2,478
2015 Total	5	4	5	(s)	1,476	190	[i] 18	791	2,474	2,489
2016 Total	4	4	7	(s)	1,474	174	18	821	2,487	2,503
2017 Total	5	4	8	(s)	1,442	168	18	847	2,475	2,493
2018 Total	4	4	9	(s)	1,432	165	19	855	2,471	2,489
2019 Total	4	4	11	(s)	1,407	156	19	835	2,416	2,435
2020 Total	3	4	12	2	1,356	160	19	735	2,270	2,292
2021 Total	3	4	14	(s)	1,366	161	19	789	2,336	2,357
2022 January	(s)	(s)	1	(s)	114	14	2	71	201	202
February	(s)	(s)	1	(s)	103	13	1	62	180	182
March	(s)	(s)	1	(s)	110	15	2	70	196	198
April	(s)	(s)	1	(s)	109	14	2	64	188	190
May	(s)	(s)	2	(s)	112	14	2	69	196	199
June	(s)	(s)	2	(s)	110	12	2	69	193	195
July	(s)	(s)	2	(s)	114	12	2	70	198	200
August	(s)	(s)	2	(s)	112	13	2	68	194	196
September	(s)	(s)	1	(s)	105	12	2	60	178	180
October	(s)	(s)	1	(s)	105	14	2	70	190	192
November	(s)	(s)	1	(s)	107	14	2	70	192	193
December	(s)	(s)	1	(s)	109	14	2	66	191	193
Total	3	4	15	(s)	1,308	161	20	808	2,297	2,320
2023 January	(s)	(s)	1	(s)	112	14	2	69	197	199
February	(s)	(s)	1	(s)	100	13	1	62	176	178
March	(s)	(s)	1	(s)	106	14	2	68	190	192
April	(s)	(s)	2	(s)	97	13	2	65	177	179
May	(s)	(s)	2	(s)	105	14	2	69	189	191
June	(s)	(s)	2	(s)	98	12	2	69	181	183
July	(s)	(s)	2	(s)	101	12	2	71	186	188
August	(s)	(s)	2	(s)	102	12	2	69	185	187
September	(s)	(s)	1	(s)	96	12	2	67	177	179
October	(s)	(s)	1	(s)	99	14	2	70	185	187
November	(s)	(s)	1	(s)	104	13	2	70	188	190
December	(s)	(s)	1	(s)	105	14	2	74	195	196
Total	3	4	16	(s)	1,224	160	20	821	2,225	2,249
2024 January	(s)	(s)	1	(s)	105	14	2	68	188	190

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

[b] Conventional hydroelectricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[c] Geothermal heat pump and direct use energy.

[d] Solar photovoltaic (PV) electricity net generation in the industrial sector (converted to Btu by multiplying by the heat content of electricity in Table A6), both utility-scale and small-scale. See Table 10.5.

[e] Wind electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[f] Wood and wood-derived fuels.

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

[h] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the industrial sector.

[i] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

[j] Losses and co-products from the production of fuel ethanol and biodiesel. Does not include natural gas, electricity, and other non-biomass energy used in the production of fuel ethanol and biodiesel—these are included in the industrial sector consumption statistics for the appropriate energy source.

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

Notes: • Industrial sector data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. • 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: Transportation and Electric Power Sectors

(Trillion Btu)

	Transportation Sector					Electric Power Sector[a]							
	Biomass									Biomass			
	Fuel Ethanol[b,c]	Bio-diesel[d]	Renewable Diesel Fuel[e]	Other Biofuels[f]	Total	Hydro-electric Power[g]	Geo-thermal[h]	Solar[i]	Wind[j]	Wood[k]	Waste[l]	Total	Total
1950 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**327**	**NA**	**NA**	**NA**	**5**	**NA**	**5**	**333**
1955 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**385**	**NA**	**NA**	**NA**	**3**	**NA**	**3**	**389**
1960 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**498**	**(s)**	**NA**	**NA**	**2**	**NA**	**2**	**499**
1965 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**661**	**1**	**NA**	**NA**	**3**	**NA**	**3**	**665**
1970 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**845**	**2**	**NA**	**NA**	**1**	**2**	**4**	**851**
1975 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**1,024**	**11**	**NA**	**NA**	**(s)**	**2**	**2**	**1,037**
1980 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**942**	**17**	**NA**	**NA**	**3**	**2**	**4**	**964**
1985 Total	**50**	**NA**	**NA**	**NA**	**50**	**959**	**32**	**(s)**	**(s)**	**8**	**7**	**14**	**1,006**
1990 Total	**60**	**NA**	**NA**	**NA**	**60**	**989**	**53**	**1**	**10**	**129**	**188**	**317**	**1,369**
1995 Total	**112**	**NA**	**NA**	**NA**	**112**	**1,042**	**46**	**2**	**11**	**125**	**296**	**422**	**1,522**
2000 Total	**135**	**NA**	**NA**	**NA**	**135**	**926**	**48**	**2**	**19**	**134**	**318**	**453**	**1,447**
2005 Total	**327**	**12**	**NA**	**NA**	**339**	**911**	**50**	**2**	**61**	**185**	**221**	**406**	**1,430**
2010 Total	**1,041**	**33**	**NA**	**NA**	**1,075**	**882**	**52**	**4**	**323**	**196**	**264**	**459**	**1,720**
2011 Total	**1,045**	**113**	**8**	**NA**	**1,166**	**1,083**	**52**	**6**	**410**	**182**	**255**	**437**	**1,988**
2012 Total	**1,045**	**115**	**10**	**NA**	**1,169**	**934**	**53**	**14**	**480**	**190**	**262**	**453**	**1,935**
2013 Total	**1,072**	**182**	**39**	**NA**	**1,292**	**904**	**54**	**30**	**572**	**207**	**262**	**470**	**2,030**
2014 Total	**1,093**	**181**	**38**	**2**	**1,314**	**880**	**54**	**59**	**619**	**251**	**279**	**530**	**2,143**
2015 Total	**[c] 1,110**	**191**	**48**	**2**	**1,351**	**845**	**54**	**83**	**650**	**244**	**281**	**525**	**2,158**
2016 Total	**1,143**	**266**	**57**	**2**	**1,469**	**909**	**54**	**121**	**774**	**224**	**281**	**505**	**2,363**
2017 Total	**1,156**	**253**	**62**	**3**	**1,474**	**1,019**	**54**	**180**	**867**	**229**	**280**	**510**	**2,630**
2018 Total	**1,152**	**243**	**57**	**3**	**1,456**	**993**	**54**	**216**	**929**	**221**	**275**	**496**	**2,689**
2019 Total	**1,162**	**231**	**99**	**4**	**1,497**	**978**	**51**	**243**	**1,009**	**201**	**248**	**448**	**2,729**
2020 Total	**1,004**	**239**	**107**	**4**	**1,355**	**969**	**53**	**302**	**1,150**	**185**	**242**	**428**	**2,902**
2021 Total	**1,110**	**218**	**158**	**10**	**1,496**	**854**	**53**	**391**	**1,289**	**197**	**229**	**426**	**3,014**
2022 January	R 86	14	16	1	118	82	5	27	128	18	16	34	275
February	81	15	14	1	R 111	72	4	31	128	17	15	32	267
March	96	18	18	1	133	83	4	40	147	16	16	32	306
April	R 89	19	17	2	R 127	68	4	45	157	14	14	28	303
May	97	17	18	2	R 134	79	5	51	144	15	14	29	308
June	R 96	19	22	2	R 139	88	4	54	115	17	15	31	294
July	94	18	18	2	132	84	5	53	101	19	15	34	276
August	R 99	18	21	3	141	72	5	49	84	19	15	33	243
September	90	17	19	2	R 128	58	5	45	93	16	14	30	231
October	98	19	22	3	142	49	4	40	112	14	14	29	234
November	R 94	20	18	2	135	61	5	28	140	15	14	30	264
December	R 92	17	22	3	R 134	69	5	23	132	17	15	32	261
Total	**R 1,111**	**212**	**225**	**25**	**R 1,573**	**865**	**55**	**487**	**1,481**	**198**	**176**	**374**	**3,263**
2023 January	R 91	18	25	3	R 137	76	5	27	134	16	15	31	273
February	R 82	17	24	2	R 124	63	4	31	144	13	14	27	270
March	R 96	20	28	3	R 148	69	5	41	152	14	14	29	295
April	R 90	18	28	2	R 138	59	5	50	147	11	13	24	285
May	R 97	23	38	3	R 161	93	5	57	109	14	14	28	293
June	R 97	23	35	3	R 158	66	4	60	94	15	13	28	252
July	95	21	29	3	R 148	72	4	64	95	16	14	30	266
August	101	22	37	2	162	72	5	60	97	16	14	30	264
September	R 91	23	34	4	R 152	56	5	53	96	13	14	27	236
October	100	22	33	4	158	61	5	48	124	10	13	23	262
November	94	21	26	3	145	61	5	35	126	12	13	24	252
December	94	20	38	4	R 156	66	5	31	131	12	15	27	260
Total	**R 1,128**	**247**	**375**	**37**	**R 1,788**	**814**	**56**	**558**	**1,450**	**162**	**167**	**329**	**3,207**
2024 January	86	20	31	3	140	72	5	33	119	15	14	29	258

[a] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[b] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10 and E85, consumed by the transportation sector.

[c] There is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors. Beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

[d] "Biodiesel" is primarily fatty acid methyl esters (FAME). See "Biodiesel" in Glossary. Although there is use of biodiesel in other sectors, all consumption is assigned to the transportation sector.

[e] "Renewable diesel fuel," which is commonly called "non-ester renewable diesel" and "green diesel," is chemically similar to petroleum diesel fuel. Although there is use of renewable diesel fuel in other sectors, all consumption is assigned to the transportation sector.

[f] Renewable heating oil, renewable jet fuel (sustainable aviation fuel), renewable naphtha and gasoline, biobutanol, and other biofuels and biointermediates. Although there is use of these biofuels in other sectors, all consumption is assigned to the transportation sector.

[g] Conventional hydroelectricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[h] Geothermal electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[i] Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector (converted to Btu by multiplying by the heat content of electricity in Table A6). See Table 10.5.

[j] Wind electricity net generation (converted to Btu by multiplying by the heat content of electricity in Table A6).

[k] Wood and wood-derived fuels.

[l] 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: • Transportation sector data are estimates, except for biodiesel beginning in 2012, and renewable diesel fuel and other biofuels beginning in 2021. • 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 10.3 Fuel Ethanol Overview

	Feedstock[b]	Losses and Co-products[c]	Denaturant[d]	Production[a]			Trade[a] Net Imports[e]	Stocks[a,f]	Stock Change[a,g]	Consumption[a]			*Consumption Minus Denaturant*[h]
	TBtu	TBtu	Mbbl	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu	*TBtu*
1981 Total	**13**	**6**	**40**	**1,978**	**83**	**7**	**NA**	**NA**	**NA**	**1,978**	**83**	**7**	***7***
1985 Total	**93**	**42**	**294**	**14,693**	**617**	**52**	**NA**	**NA**	**NA**	**14,693**	**617**	**52**	***51***
1990 Total	**111**	**49**	**356**	**17,802**	**748**	**63**	**NA**	**NA**	**NA**	**17,802**	**748**	**63**	***62***
1995 Total	**198**	**86**	**647**	**32,325**	**1,358**	**115**	**387**	**2,186**	**-207**	**32,919**	**1,383**	**117**	***114***
2000 Total	**233**	**99**	**773**	**38,627**	**1,622**	**138**	**116**	**3,400**	**-624**	**39,367**	**1,653**	**140**	***137***
2005 Total	**550**	**227**	**1,859**	**92,961**	**3,904**	**331**	**3,234**	**5,563**	**-439**	**96,634**	**4,059**	**344**	***335***
2010 Total	**1,823**	**726**	**6,506**	**316,617**	**13,298**	**1,128**	**-9,115**	**17,941**	**1,347**	**306,155**	**12,858**	**1,091**	***1,061***
2011 Total	**1,904**	**754**	**6,649**	**331,646**	**13,929**	**1,181**	**-24,365**	**18,238**	**297**	**306,984**	**12,893**	**1,093**	***1,065***
2012 Total	**1,801**	**709**	**6,264**	**314,714**	**13,218**	**1,120**	**-5,891**	**20,350**	**2,112**	**306,711**	**12,882**	**1,092**	***1,064***
2013 Total	**1,809**	**711**	**6,181**	**316,493**	**13,293**	**1,127**	**-5,761**	**16,424**	**-3,926**	**314,658**	**13,216**	**1,120**	***1,092***
2014 Total	**1,947**	**764**	**6,476**	**340,781**	**14,313**	**1,213**	**-18,371**	**18,739**	**2,315**	**320,095**	**13,444**	**1,139**	***1,111***
2015 Total	**2,013**	**788**	**6,636**	**352,553**	**14,807**	**1,254**	**-17,632**	**21,596**	**2,857**	**332,064**	**13,947**	**1,181**	***1,153***
2016 Total	**2,092**	**818**	**6,920**	**366,981**	**15,413**	**1,306**	**-27,002**	**19,758**	**-1,838**	**341,817**	**14,356**	**1,216**	***1,187***
2017 Total	**2,164**	**844**	**6,657**	**379,435**	**15,936**	**1,349**	**-31,268**	**23,043**	**3,285**	**344,882**	**14,485**	**1,226**	***1,199***
2018 Total	**2,187**	**852**	**5,819**	**383,127**	**16,091**	**1,361**	**-39,410**	**23,418**	**375**	**343,342**	**14,420**	**1,220**	***1,197***
2019 Total	**2,140**	**832**	**6,089**	**375,678**	**15,778**	**1,336**	**-30,276**	**22,352**	**-1,066**	**346,468**	**14,552**	**1,232**	***1,206***
2020 Total	**1,886**	**732**	**5,892**	**331,928**	**13,941**	**1,181**	**-27,692**	**24,663**	**2,311**	**301,925**	**12,681**	**1,074**	***1,050***
2021 Total	**2,030**	**786**	**6,094**	**357,517**	**15,016**	**1,271**	**-28,135**	**22,036**	**-2,627**	**332,010**	**13,944**	**1,180**	***1,155***
2022 January	183	71	600	32,191	1,352	114	-2,311	25,874	3,838	26,042	1,094	93	*90*
February	161	62	488	28,304	1,189	101	-3,420	26,521	647	24,237	1,018	86	*84*
March	179	70	520	31,581	1,326	112	-2,694	26,700	179	28,708	1,206	102	*100*
April	165	64	435	28,956	1,216	103	-4,628	24,284	-2,416	26,744	1,123	95	*93*
May	178	69	467	31,256	1,313	111	-3,064	23,426	-858	29,049	1,220	103	*101*
June	178	69	485	31,288	1,314	111	-2,360	23,384	-41	28,969	1,217	103	*101*
July	179	69	470	31,498	1,323	112	-2,615	24,197	813	28,070	1,179	100	*98*
August	174	67	460	30,520	1,282	108	-1,469	23,509	-688	29,740	1,249	106	*104*
September	154	60	400	27,072	1,137	96	-2,144	21,540	-1,969	26,896	1,130	96	*94*
October	179	69	493	31,440	1,321	112	-1,843	21,708	168	29,430	1,236	105	*103*
November	179	69	539	31,580	1,326	112	-1,414	23,575	1,867	28,299	1,189	101	*98*
December	171	66	512	30,046	1,262	107	-1,668	24,245	670	27,708	1,164	98	*96*
Total	**2,079**	**805**	**5,869**	**365,731**	**15,361**	**1,299**	**-29,631**	**24,245**	**2,209**	**333,891**	**14,023**	**1,186**	***1,163***
2023 January	177	69	541	31,189	1,310	111	-2,812	25,383	[i] 957	27,421	1,152	97	*95*
February	160	62	477	28,089	1,180	100	-2,483	26,299	917	24,690	1,037	88	*86*
March	175	68	514	30,753	1,292	109	-3,158	24,951	-1,349	28,944	1,216	103	*101*
April	166	64	500	29,236	1,228	104	-3,000	24,085	-865	27,102	1,138	96	*94*
May	176	68	515	31,016	1,303	110	-2,704	23,110	-975	29,287	1,230	104	*102*
June	177	69	519	31,146	1,308	111	-2,675	22,299	-812	29,283	1,230	104	*102*
July	182	70	527	32,024	1,345	114	-2,664	23,101	802	28,558	1,199	101	*99*
August	177	68	531	31,137	1,308	111	-2,193	21,815	-1,285	30,229	1,270	107	*105*
September	172	67	496	30,290	1,272	108	-2,516	22,174	359	27,416	1,151	97	*95*
October	181	70	538	31,870	1,339	113	-2,796	21,309	-866	29,940	1,257	106	*104*
November	180	70	534	31,609	1,328	112	-2,768	21,885	576	28,265	1,187	100	*98*
December	191	74	545	33,534	1,408	119	-3,713	23,589	1,705	28,116	1,181	100	*98*
Total	**2,112**	**818**	**6,236**	**371,895**	**15,620**	**1,322**	**-33,481**	**23,589**	[i] **-837**	**339,251**	**14,249**	**1,206**	***1,180***
2024 January	174	68	503	30,672	1,288	109	-3,580	24,806	1,216	25,876	1,087	92	*90*

[a] Includes denaturant.

[b] Total corn and other biomass inputs to the production of undenatured ethanol used for fuel ethanol.

[c] 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.

[d] The amount of denaturant in fuel ethanol produced.

[e] Through 2009, data are for fuel ethanol imports only; data for fuel ethanol exports are not available. Beginning in 2010, data are for fuel ethanol imports minus fuel ethanol (including industrial alcohol) exports.

[f] Stocks are at end of period.

[g] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[h] Consumption of fuel ethanol minus denaturant. Data for fuel ethanol minus denaturant are used to develop data for "Renewable Energy/Biomass" in Tables 10.1–10.2b, as well as in Sections 1 and 2.

[i] Derived from the preliminary 2022 stocks value (24,426 thousand barrels), not the final 2022 value (24,245 thousand barrels) that is shown under "Stocks."

NA=Not available.

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

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

Sources: See end of section.

Table 10.4a Biodiesel Overview

	Feedstock[b]	Losses and Co-products[c]	Production[a]			Trade[a]			Stocks[a,e]	Stock Change[a,f]	Consumption[a,g]		
						Imports	Exports	Net Imports[d]					
	TBtu	TBtu	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu
2001 Total	**1**	**(s)**	**204**	**9**	**1**	**81**	**41**	**40**	**NA**	**NA**	**244**	**10**	**1**
2005 Total	**12**	**(s)**	**2,162**	**91**	**12**	**214**	**213**	**1**	**NA**	**NA**	**2,163**	**91**	**12**
2010 Total	**44**	**1**	**8,177**	**343**	**44**	**564**	**2,588**	**-2,024**	**672**	**-39**	**6,192**	**260**	**33**
2011 Total	**125**	**2**	**23,035**	**967**	**123**	**890**	**1,799**	**-908**	**2,005**	**[h] 1,028**	**21,099**	**886**	**113**
2012 Total	**128**	**2**	**23,588**	**991**	**126**	**853**	**3,056**	**-2,203**	**1,984**	**-20**	**21,406**	**899**	**115**
2013 Total	**176**	**2**	**32,368**	**1,359**	**173**	**8,152**	**4,675**	**3,477**	**3,810**	**1,825**	**34,020**	**1,429**	**182**
2014 Total	**165**	**2**	**30,452**	**1,279**	**163**	**4,578**	**1,974**	**2,604**	**3,131**	**-679**	**33,735**	**1,417**	**181**
2015 Total	**163**	**2**	**30,080**	**1,263**	**161**	**8,399**	**2,091**	**6,308**	**3,943**	**813**	**35,575**	**1,494**	**191**
2016 Total	**203**	**3**	**37,327**	**1,568**	**200**	**16,879**	**2,098**	**14,781**	**6,398**	**2,454**	**49,653**	**2,085**	**266**
2017 Total	**206**	**3**	**37,993**	**1,596**	**204**	**9,374**	**2,228**	**7,146**	**4,268**	**-2,130**	**47,269**	**1,985**	**253**
2018 Total	**240**	**3**	**44,222**	**1,857**	**237**	**3,969**	**2,470**	**1,499**	**4,662**	**394**	**45,326**	**1,904**	**243**
2019 Total	**223**	**3**	**41,060**	**1,725**	**220**	**4,078**	**2,730**	**1,348**	**3,907**	**-756**	**43,163**	**1,813**	**231**
2020 Total	**235**	**3**	**43,207**	**1,815**	**232**	**4,684**	**3,458**	**1,226**	**3,665**	**-241**	**44,675**	**1,876**	**239**
2021 Total	**221**	**3**	**40,686**	**1,709**	**218**	**5,005**	**4,452**	**553**	**4,187**	**522**	**40,717**	**1,710**	**218**
2022 January	16	(s)	2,857	120	15	388	209	179	4,544	356	2,680	113	14
February	15	(s)	2,707	114	15	121	124	-3	4,457	-86	2,790	117	15
March	17	(s)	3,161	133	17	636	171	465	4,692	234	3,391	142	18
April	16	(s)	3,018	127	16	672	632	40	4,212	-479	3,537	149	19
May	18	(s)	3,242	136	17	315	699	-384	3,839	-373	3,230	136	17
June	18	(s)	3,265	137	17	346	589	-243	3,404	-435	3,458	145	19
July	19	(s)	3,490	147	19	284	625	-341	3,240	-164	3,313	139	18
August	19	(s)	3,519	148	19	371	831	-460	2,894	-347	3,405	143	18
September	18	(s)	3,350	141	18	405	641	-236	2,826	-67	3,182	134	17
October	19	(s)	3,464	145	19	658	468	190	2,903	77	3,577	150	19
November	18	(s)	3,384	142	18	903	221	682	3,232	329	3,737	157	20
December	17	(s)	3,164	133	17	851	462	389	3,608	376	3,178	133	17
Total	**210**	**3**	**38,620**	**1,622**	**207**	**5,950**	**5,671**	**279**	**3,608**	**-580**	**39,478**	**1,658**	**212**
2023 January	18	(s)	3,242	136	17	930	92	838	4,297	[i] 698	3,383	142	18
February	15	(s)	2,840	119	15	952	132	820	4,861	564	3,096	130	17
March	18	(s)	3,325	140	18	916	261	655	5,055	194	3,787	159	20
April	17	(s)	3,164	133	17	1,000	1,044	-44	4,847	-209	3,328	140	18
May	20	(s)	3,722	156	20	832	757	75	4,413	-433	4,230	178	23
June	20	(s)	3,636	153	19	1,016	839	177	3,978	-435	4,249	178	23
July	20	(s)	3,612	152	19	725	691	34	3,719	-259	3,905	164	21
August	19	(s)	3,458	145	19	991	553	438	3,589	-130	4,027	169	22
September	19	(s)	3,438	144	18	1,280	410	870	3,576	-13	4,321	181	23
October	19	(s)	3,495	147	19	1,017	451	566	3,514	-61	4,122	173	22
November	18	(s)	3,231	136	17	1,239	361	878	3,675	160	3,948	166	21
December	18	(s)	3,286	138	18	1,031	391	640	3,827	153	3,773	158	20
Total	**220**	**3**	**40,447**	**1,699**	**217**	**11,929**	**5,980**	**5,949**	**3,827**	**[i] 228**	**46,168**	**1,939**	**247**
2024 January	16	(s)	3,028	127	16	1,179	122	1,057	4,205	378	3,707	156	20

[a] Data are for "biodiesel," which is primarily fatty acid methyl esters (FAME). See "Biodiesel" in Glossary.

[b] Total vegetable oil and other biomass inputs to the production of biodiesel. See "Biodiesel Feedstock" entry in the "Thermal Conversion Factor Source Documentation" at the end of Appendix A.

[c] 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.

[d] Net imports equal imports minus exports.

[e] Stocks are at end of period. Includes biodiesel stocks at (or in) refineries, pipelines, and bulk terminals. Beginning in 2011, also includes stocks at biodiesel production plants.

[f] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[g] In 2009, because of incomplete data coverage and differing data sources, a "Balancing Item" amount of 733 thousand barrels (653 thousand barrels in January 2009; 80 thousand barrels in February 2009) is used to balance biodiesel supply and disposition.

[h] Derived from the final 2010 stocks value for bulk terminals and biodiesel production plants (977 thousand barrels), not the final 2010 value for bulk terminals only (672 thousand barrels) that is shown under "Stocks."

[i] Derived from the preliminary 2022 stocks value (3,599 thousand barrels), not the final 2022 value (3,608 thousand barrels) that is shown under "Stocks."

NA=Not available. (s)=Less 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 EIA surveys are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 2001.

Sources: See end of section.

Table 10.4b Renewable Diesel Fuel Overview

	Feedstock[c]	Losses and Co-products[d]	Production[a,e]			Trade[a,b] Imports	Stocks[a,f]	Stock Change[a,g]	Consumption[a,h]		
	TBtu	TBtu	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu
2011 Total	**NA**	**NA**	**1,477**	**62**	**8**	**–**	**7**	**7**	**1,470**	**62**	**8**
2012 Total	**NA**	**NA**	**1,248**	**52**	**7**	**605**	**94**	**87**	**1,766**	**74**	**10**
2013 Total	**NA**	**NA**	**2,697**	**113**	**15**	**4,921**	**691**	**597**	**7,021**	**295**	**39**
2014 Total	**NA**	**NA**	**3,789**	**159**	**21**	**2,873**	**350**	**-341**	**7,003**	**294**	**38**
2015 Total	**NA**	**NA**	**4,211**	**177**	**23**	**4,874**	**634**	**284**	**8,801**	**370**	**48**
2016 Total	**NA**	**NA**	**5,750**	**241**	**32**	**5,304**	**1,315**	**681**	**10,373**	**436**	**57**
2017 Total	**NA**	**NA**	**6,151**	**258**	**34**	**4,509**	**753**	**-562**	**11,222**	**471**	**62**
2018 Total	**NA**	**NA**	**7,273**	**305**	**40**	**4,124**	**1,727**	**974**	**10,423**	**438**	**57**
2019 Total	**NA**	**NA**	**11,715**	**492**	**64**	**6,143**	**1,491**	**-236**	**18,094**	**760**	**99**
2020 Total	**NA**	**NA**	**12,702**	**533**	**70**	**6,658**	**1,287**	**-204**	**19,564**	**822**	**107**
2021 Total	**NA**	**NA**	**[e] 20,503**	**[e] 861**	**[e] 113**	**9,340**	**2,353**	**1,066**	**28,777**	**1,209**	**158**
2022 January	NA	NA	2,632	111	14	632	2,710	357	2,907	122	16
February	NA	NA	2,300	97	13	359	2,748	38	2,620	110	14
March	NA	NA	2,596	109	14	555	2,705	-43	3,194	134	18
April	NA	NA	2,837	119	16	392	2,872	167	3,062	129	17
May	NA	NA	3,008	126	17	649	3,273	401	3,256	137	18
June	NA	NA	2,948	124	16	536	2,742	-532	4,016	169	22
July	NA	NA	3,086	130	17	593	3,148	407	3,272	137	18
August	NA	NA	2,832	119	16	421	2,554	-594	3,847	162	21
September	NA	NA	3,289	138	18	304	2,698	144	3,450	145	19
October	NA	NA	3,079	129	17	451	2,235	-463	3,993	168	22
November	NA	NA	3,465	146	19	692	3,087	852	3,305	139	18
December	NA	NA	3,619	152	20	670	3,405	318	3,971	167	22
Total	**NA**	**NA**	**35,692**	**1,499**	**196**	**6,254**	**3,405**	**1,053**	**40,893**	**1,718**	**225**
2023 January	NA	NA	3,994	168	22	633	3,557	152	4,475	188	25
February	NA	NA	3,752	158	21	546	3,565	8	4,290	180	24
March	NA	NA	4,740	199	26	786	3,919	354	5,173	217	28
April	NA	NA	4,789	201	26	420	4,034	115	5,093	214	28
May	NA	NA	5,377	226	30	1,149	3,638	-397	6,923	291	38
June	NA	NA	5,482	230	30	681	3,421	-217	6,379	268	35
July	NA	NA	5,086	214	28	783	4,038	618	5,251	221	29
August	NA	NA	5,798	244	32	1,003	4,039	1	6,800	286	37
September	NA	NA	5,968	251	33	405	4,221	181	6,192	260	34
October	NA	NA	5,018	211	28	351	3,668	-553	5,921	249	33
November	NA	NA	5,321	223	29	813	4,985	1,317	4,817	202	26
December	NA	NA	6,420	270	35	1,052	5,478	493	6,979	293	38
Total	**NA**	**NA**	**61,744**	**2,593**	**339**	**8,622**	**5,478**	**2,072**	**68,294**	**2,868**	**375**
2024 January	NA	NA	5,649	237	31	855	6,379	902	5,603	235	31

[a] Data are for "renewable diesel fuel," which is commonly called "non-ester renewable diesel" and "green diesel," and which is chemically similar to petroleum diesel fuel.

[b] Data are for imports only; data for exports are not available.

[c] Total vegetable oil and other biomass inputs to the production of renewable diesel fuel.

[d] Losses and co-products from the production of renewable diesel fuel. Does not include natural gas, electricity, and other non-biomass energy used in the production of renewable diesel fuel—these are included in the industrial sector consumption statistics for the appropriate energy source.

[e] Through 2020, production data are from U.S. Environmental Protection Agency. Beginning in 2021, production data are from EIA. See sources at end of section.

[f] Stocks are at end of period. Includes renewable diesel fuel stocks at refineries and bulk terminals. Beginning in 2021, also includes renewable diesel fuel stocks at renewable fuel production plants.

[g] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[h] Consumption, which is calculated as production plus imports minus stock change, also includes amounts of exports that cannot currently be differentiated from consumption.

NA=Not available. – =No data reported.

Notes: • Mbbl = thousand barrels. MMgal = million U.S. gallons. TBtu = trillion Btu. • Renewable diesel fuel data in thousand barrels are converted to million gallons by multiplying by 0.042, and are converted to Btu by multiplying by 5.494 million Btu per barrel (the approximate heat content of renewable diesel fuel–see Table A1). • Through 2010, data are not available, or there is incomplete data coverage. Beginning in 2011, data not from 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 2011.

Sources: See end of section.

Table 10.4c Other Biofuels Overview

	Feedstock[c]	Losses and Co-products[d]	Production[a,e]			Trade[a,b] Imports	Stocks[a,f]	Stock Change[a,g]	Consumption[a,h]		
	TBtu	TBtu	Mbbl	MMgal	TBtu	Mbbl	Mbbl	Mbbl	Mbbl	MMgal	TBtu
2014 Total	**NA**	**NA**	**290**	**12**	**2**	**–**	**7**	**2**	**288**	**12**	**2**
2015 Total	**NA**	**NA**	**393**	**17**	**2**	**–**	**4**	**-3**	**396**	**17**	**2**
2016 Total	**NA**	**NA**	**503**	**21**	**3**	**–**	**43**	**39**	**464**	**20**	**2**
2017 Total	**NA**	**NA**	**570**	**24**	**3**	**–**	**28**	**-15**	**585**	**25**	**3**
2018 Total	**NA**	**NA**	**611**	**26**	**3**	**–**	**54**	**26**	**585**	**25**	**3**
2019 Total	**NA**	**NA**	**791**	**33**	**4**	**–**	**50**	**-4**	**795**	**33**	**4**
2020 Total	**NA**	**NA**	**761**	**32**	**4**	**–**	**27**	**-23**	**784**	**33**	**4**
2021 Total[i]	**NA**	**NA**	[e] **1,914**	[e] **80**	[e] **10**	**27**	**83**	**56**	**1,885**	**79**	**10**
2022 January	NA	NA	308	13	2	–	211	129	179	8	1
February	NA	NA	306	13	2	–	290	79	227	10	1
March	NA	NA	279	12	1	–	292	2	277	12	1
April	NA	NA	327	14	2	50	258	-34	411	17	2
May	NA	NA	335	14	2	–	217	-41	377	16	2
June	NA	NA	365	15	2	–	191	-26	391	16	2
July	NA	NA	437	18	2	–	190	-1	438	18	2
August	NA	NA	447	19	2	12	179	-11	470	20	3
September	NA	NA	448	19	2	–	176	-3	450	19	2
October	NA	NA	478	20	3	–	178	1	477	20	3
November	NA	NA	504	21	3	–	244	66	437	18	2
December	NA	NA	607	26	3	52	282	38	621	26	3
Total	**NA**	**NA**	**4,841**	**203**	**26**	**114**	**282**	**200**	**4,756**	**200**	**25**
2023 January	NA	NA	562	24	3	–	229	-54	616	26	3
February	NA	NA	504	21	3	–	359	130	375	16	2
March	NA	NA	570	24	3	–	343	-15	585	25	3
April	NA	NA	444	19	2	–	331	-12	456	19	2
May	NA	NA	565	24	3	–	304	-27	592	25	3
June	NA	NA	616	26	3	5	370	66	555	23	3
July	NA	NA	478	20	3	52	285	-85	615	26	3
August	NA	NA	521	22	3	7	406	121	406	17	2
September	NA	NA	601	25	3	–	265	-141	742	31	4
October	NA	NA	714	30	4	–	325	60	654	27	4
November	NA	NA	592	25	3	–	301	-25	616	26	3
December	NA	NA	721	30	4	48	305	4	765	32	4
Total	**NA**	**NA**	**6,888**	**289**	**37**	**112**	**305**	**22**	**6,978**	**293**	**37**
2024 January	NA	NA	597	25	3	–	259	-45	642	27	3

[a] Data are for renewable heating oil, renewable jet fuel (sustainable aviation fuel), renewable naphtha and gasoline, biobutanol, and other biofuels and biointermediates.

[b] Data are for imports only; data for exports are not available.

[c] Total vegetable oil and other biomass inputs to the production of other biofuels.

[d] Losses and co-products from the production of other biofuels. Does not include natural gas, electricity, and other non-biomass energy used in the production of other biofuels—these are included in the industrial sector consumption statistics for the appropriate energy source.

[e] Through 2020, production data are from U.S. Environmental Protection Agency. Beginning in 2021, production data are from EIA. See sources at end of section.

[f] Stocks are at end of period. Includes other biofuels stocks at refineries and bulk terminals. Beginning in 2021, also includes other biofuels stocks at renewable fuel production plants.

[g] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[h] Consumption, which is calculated as production plus imports minus stock change, also includes amounts of exports that cannot currently be differentiated from consumption.

[i] There is a discontinuity in the time series between 2020 and 2021. Beginning in 2021, there is expanded coverage of other biofuels due to the incorporation of data from EIA, Form EIA-819, "Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene."

NA=Not available. – =No data reported.

Notes: • Mbbl = thousand barrels. MMgal = million U.S. gallons. TBtu = trillion Btu. • Other biofuels 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 other biofuels–see Table A1). • Through 2013, data are not available, or there is incomplete data coverage. Beginning in 2014, data not from 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 2014.

Sources: See end of section.

Table 10.5 Solar Energy Consumption

(Trillion Btu)

	Small-Scale[a] Solar Energy[b]						Utility-Scale[c] Solar Energy[b]				
		Electricity[d]					Electricity[e]				
	Heat[f]	Residential Sector	Commercial Sector	Industrial Sector	Total	Total[g]	Commercial Sector[h]	Industrial Sector[i]	Electric Power Sector[j]	Total	Total[k]
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**(s)**	**(s)**	**(s)**
1990 Total	**55**	**(s)**	**(s)**	**(s)**	**(s)**	**55**	**–**	**–**	**1**	**1**	**56**
1995 Total	**63**	**(s)**	**(s)**	**(s)**	**(s)**	**63**	**–**	**–**	**2**	**2**	**64**
2000 Total	**57**	**(s)**	**(s)**	**(s)**	**(s)**	**58**	**–**	**–**	**2**	**2**	**59**
2005 Total	**49**	**(s)**	**1**	**(s)**	**1**	**50**	**–**	**–**	**2**	**2**	**52**
2010 Total	**56**	**3**	**4**	**1**	**8**	**64**	**(s)**	**(s)**	**4**	**4**	**68**
2011 Total	**58**	**5**	**6**	**1**	**12**	**70**	**(s)**	**(s)**	**6**	**6**	**76**
2012 Total	**59**	**7**	**10**	**2**	**20**	**79**	**1**	**(s)**	**14**	**15**	**94**
2013 Total	**61**	**11**	**14**	**3**	**28**	**89**	**1**	**(s)**	**30**	**31**	**120**
2014 Total	**62**	**17**	**18**	**4**	**38**	**101**	**1**	**(s)**	**59**	**60**	**161**
2015 Total	**63**	**24**	**19**	**5**	**48**	**111**	**1**	**(s)**	**83**	**85**	**196**
2016 Total	**64**	**36**	**21**	**7**	**64**	**128**	**2**	**(s)**	**121**	**123**	**251**
2017 Total	**65**	**48**	**26**	**8**	**82**	**147**	**2**	**(s)**	**180**	**182**	**329**
2018 Total	**65**	**58**	**33**	**9**	**101**	**166**	**2**	**(s)**	**216**	**218**	**384**
2019 Total	**65**	**71**	**38**	**10**	**119**	**184**	**2**	**(s)**	**243**	**245**	**430**
2020 Total	**65**	**86**	**44**	**12**	**142**	**207**	**2**	**(s)**	**302**	**304**	**511**
2021 Total	**66**	**103**	**52**	**13**	**168**	**234**	**2**	**(s)**	**391**	**393**	**627**
2022 January	4	7	3	1	12	15	(s)	(s)	27	27	42
February	4	8	4	1	13	17	(s)	(s)	31	31	47
March	5	11	5	1	17	23	(s)	(s)	40	40	63
April	6	12	6	1	19	25	(s)	(s)	45	46	71
May	7	14	6	1	21	28	(s)	(s)	51	52	79
June	7	14	6	1	21	28	(s)	(s)	54	55	83
July	7	14	6	1	22	29	(s)	(s)	53	54	83
August	7	14	6	1	21	28	(s)	(s)	49	49	77
September	6	12	5	1	19	25	(s)	(s)	45	45	70
October	5	11	5	1	17	22	(s)	(s)	40	41	63
November	4	9	4	1	14	18	(s)	(s)	28	29	47
December	4	8	3	1	13	R17	(s)	(s)	23	23	40
Total	**65**	**135**	**60**	**14**	**209**	**274**	**2**	**1**	**487**	**491**	**765**
2023 January	4	9	4	1	14	17	(s)	(s)	27	27	44
February	4	10	4	1	15	19	(s)	(s)	31	32	R50
March	5	14	6	1	20	26	(s)	(s)	41	41	67
April	6	15	6	1	23	29	(s)	(s)	50	50	79
May	7	17	7	2	26	32	(s)	(s)	57	58	90
June	7	17	7	2	25	32	(s)	(s)	60	60	92
July	7	18	7	2	26	33	(s)	(s)	64	64	98
August	7	18	7	2	26	32	(s)	(s)	60	61	93
September	6	15	6	1	23	28	(s)	(s)	53	53	82
October	5	14	5	1	21	26	(s)	(s)	48	48	74
November	4	12	4	1	17	21	(s)	(s)	35	35	56
December	4	11	4	1	15	19	(s)	(s)	31	31	51
Total	**65**	**170**	**66**	**15**	**251**	**316**	**2**	**1**	**558**	**561**	**878**
2024 January	4	11	4	1	16	20	(s)	(s)	33	33	53

[a] Data are estimates for small-scale facilities (combined generator nameplate capacity less than 1 megawatt).

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Data are for utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] Solar photovoltaic (PV) electricity generation at small-scale facilities connected to the electric power grid (converted to Btu by multiplying by the heat content of electricity in Table A6).

[e] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (converted to Btu by multiplying by the heat content of electricity in Table A6).

[f] Solar thermal direct use energy in the residential, commercial, and industrial sectors for all end uses, such as pool heating, hot water heating, and space heating.

[g] Data are the sum of "Small-Scale Solar Energy Heat" and "Small-Scale Solar Energy Electricity."

[h] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[i] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[j] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[k] Data are the sum of "Small-Scale Solar Energy Total" and "Utility-Scale Solar Energy Total."

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

Notes: • Small-scale solar energy data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: See end of section.

Table 10.6 Solar Electricity Net Generation

(Million Kilowatthours)

	Small-Scale[a] Solar Generation[b]				Utility-Scale[c] Solar Generation[b]				
	Residential Sector	Commercial Sector	Industrial Sector	Total	Commercial Sector[d]	Industrial Sector[e]	Electric Power Sector[f]	Total	Total
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**11**	**11**	**11**
1990 Total	**12**	**16**	**4**	**32**	**–**	**–**	**367**	**367**	**399**
1995 Total	**20**	**28**	**6**	**54**	**–**	**–**	**497**	**497**	**551**
2000 Total	**39**	**53**	**12**	**104**	**–**	**–**	**493**	**493**	**598**
2005 Total	**121**	**166**	**37**	**324**	**–**	**–**	**550**	**550**	**875**
2010 Total	**899**	**1,130**	**250**	**2,280**	**5**	**2**	**1,206**	**1,212**	**3,492**
2011 Total	**1,358**	**1,845**	**409**	**3,612**	**84**	**7**	**1,727**	**1,818**	**5,429**
2012 Total	**2,058**	**3,061**	**678**	**5,797**	**148**	**14**	**4,164**	**4,327**	**10,123**
2013 Total	**3,217**	**4,106**	**909**	**8,232**	**294**	**17**	**8,724**	**9,036**	**17,268**
2014 Total	**4,947**	**5,146**	**1,139**	**11,233**	**371**	**16**	**17,304**	**17,691**	**28,924**
2015 Total	**6,999**	**5,689**	**1,451**	**14,139**	**416**	**21**	**24,456**	**24,893**	**39,032**
2016 Total	**10,595**	**6,158**	**2,060**	**18,812**	**529**	**27**	**35,497**	**36,054**	**54,866**
2017 Total	**13,942**	**7,685**	**2,364**	**23,990**	**521**	**42**	**52,724**	**53,287**	**77,277**
2018 Total	**17,105**	**9,798**	**2,636**	**29,539**	**525**	**47**	**63,253**	**63,825**	**93,365**
2019 Total	**20,914**	**11,002**	**3,041**	**34,957**	**587**	**85**	**71,265**	**71,937**	**106,894**
2020 Total	**25,179**	**12,859**	**3,484**	**41,522**	**586**	**101**	**88,511**	**89,199**	**130,721**
2021 Total	**30,182**	**15,124**	**3,858**	**49,164**	**598**	**137**	**114,523**	**115,258**	**164,422**
2022 January	2,135	1,012	230	3,376	36	13	7,773	7,822	11,198
February	2,357	1,116	244	3,717	42	15	8,969	9,027	12,744
March	3,252	1,521	348	5,121	56	21	11,618	11,695	16,816
April	3,632	1,662	377	5,671	66	24	13,312	13,402	19,073
May	4,007	1,816	413	6,236	71	28	15,022	15,121	21,357
June	3,997	1,819	413	6,229	74	32	15,946	16,053	22,282
July	4,118	1,894	426	6,438	72	31	15,663	15,766	22,204
August	3,982	1,801	411	6,194	69	30	14,403	14,503	20,697
September	3,569	1,608	368	5,544	61	26	13,199	13,287	18,831
October	3,306	1,383	333	5,022	52	24	11,866	11,942	16,964
November	2,693	1,086	256	4,035	40	18	8,345	8,403	12,438
December	2,462	1,007	229	3,698	29	13	6,735	6,777	10,475
Total	**39,510**	**17,724**	**4,048**	**61,282**	**669**	**276**	**142,852**	**143,797**	**205,079**
2023 January	2,641	1,105	246	3,992	35	17	7,930	7,982	11,974
February	2,908	1,231	261	4,401	39	19	9,193	9,251	13,652
March	3,972	1,658	374	6,003	56	26	12,063	12,144	18,148
April	4,517	1,838	412	6,768	60	30	14,666	14,755	21,523
May	5,107	2,002	451	7,560	70	34	16,822	16,927	24,487
June	4,984	1,995	451	7,429	68	34	17,528	17,631	25,060
July	5,209	2,073	465	7,747	74	37	18,769	18,880	26,626
August	5,134	1,976	446	7,556	71	34	17,711	17,816	25,372
September	4,458	1,764	401	6,623	60	29	15,473	15,563	22,185
October	4,203	1,526	364	6,094	52	26	14,003	14,082	20,175
November	3,469	1,202	287	4,958	59	19	10,192	10,271	15,229
December	3,133	1,101	256	4,489	46	21	9,133	9,200	13,689
Total	**49,734**	**19,470**	**4,414**	**73,619**	**690**	**326**	**163,485**	**164,502**	**238,120**
2024 January	3,308	1,206	268	4,782	44	21	9,586	9,651	14,434

[a] Data are estimates for solar photovoltaic (PV) electricity generation at small-scale facilities (combined generator nameplate capacity less than 1 megawatt) connected to the electric power grid.

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[e] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

[f] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

NA=Not available. – =No data reported.

Notes: • Small-scale solar generation data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: • **Small-Scale Solar Generation: 1989–2013**—Calculated as small-scale solar energy consumption (see Table 10.5) divided by the heat content of electricity (see Table A6). **2014 forward**—U.S. Energy Information Administration (EIA), *Electric Power Monthly*, monthly reports, Tables 1.1, 1.2.C, 1.2.D, and 1.2.E. • **Utility-Scale Solar Generation: 1984–1988**—EIA, Form EIA-759, "Monthly Power Plant Report." **1989–1997:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." **1998–2000:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." **2001–2003:** EIA, Form EIA-906, "Power Plant Report." **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report." • **Total:** Calculated as small-scale solar generation plus utility-scale solar generation.

Note. Renewable Energy Production and Consumption. In Tables 1.1, 1.3, and 10.1, renewable energy consumption consists of: conventional hydroelectricity net generation (converted to Btu by multiplying by the electricity heat content factor in Table A6); geothermal electricity net generation (converted to Btu by multiplying by the electricity heat content factor 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 electricity heat content factor in Table A6), and solar thermal direct use energy; wind electricity net generation (converted to Btu by multiplying by the electricity heat content factor in Table A6); wood and wood-derived fuels consumption; biomass waste (municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass) consumption; fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels 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 wood and biofuels; plus wood production (which is the sum of wood consumption and densified biomass exports); plus biofuels production (which comprises fuel ethanol feedstock, biodiesel feedstock, renewable diesel fuel production, and other biofuels production).

Table 10.2a Sources

Residential Sector, Geothermal

1989–2011: Annual estimates by the U.S. Energy Information Administration (EIA) based on data from Oregon Institute of Technology, Geo-Heat Center.

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

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Residential Sector, Solar

1989 forward: Residential sector solar consumption is the sum of the values for "Small-Scale Solar Energy Consumption: Heat" (which includes solar thermal direct use energy in the residential, commercial, and industrial sectors) from Table 10.5 and "Small-Scale Solar Energy Consumption: Electricity, Residential Sector" from Table 10.5.

Residential Sector, Wood

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

1980–2008: Annual estimates are based on EIA, Form EIA-457, "Residential Energy Consumption Survey"; and National Oceanic and Atmospheric Administration regional heating degree-day data.

2009 forward: Annual estimates based on EIA, Form EIA-457, “Residential Energy Consumption Survey”; and residential wood consumption growth rates from EIA's *Annual Energy Outlook* data system.

(For 1973 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Residential Sector, Total Renewable Energy

1949–1988: Residential sector total renewable energy consumption is equal to residential sector wood consumption.

1989 forward: Residential sector total renewable energy consumption is the sum of the residential sector consumption values for geothermal, solar, and wood.

Commercial Sector, Hydroelectric Power

1989 forward: Commercial sector conventional hydroelectricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms, are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Commercial Sector, Geothermal Heat Pump and Direct Use Energy
1989–2011: Annual estimates by EIA based on data from Oregon Institute of Technology, Geo-Heat Center.

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

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Commercial Sector, Geothermal Electricity Net Generation
December 2018 forward: Commercial sector geothermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Commercial Sector, Geothermal Total
1989–November 2018: Commercial sector geothermal total consumption is equal to commercial sector heat pump and direct use energy.

December 2018 forward: Commercial sector geothermal total consumption is the sum of the commercial sector values for geothermal heat pump and direct use energy, and geothermal electricity net generation.

Commercial Sector, Solar
1989 forward: Commercial sector solar consumption is the sum of the values for "Small-Scale Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5.

Commercial Sector, Wind
2009 forward: Commercial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the electricity heat content factor in Table A6.

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

1980–1983: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption 1980 –1983*, Table ES1.

1984: Annual estimate assumed by EIA to be equal to that of 1983.

1985–1988: Annual estimates interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual commercial sector combined-heat-and-power (CHP) wood consumption data are from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms. Annual estimates for commercial sector non-CHP wood consumption are based on EIA, Form EIA-871, "Commercial Buildings Energy Consumption Survey" (for 2014–2016, the annual estimates are based on commercial sector biomass consumption growth rates from EIA's *Annual Energy Outlook* data system; for 2017 forward, annual estimates are assumed by EIA to be equal to that of 2016). For 1989 forward, monthly estimates for commercial sector non-CHP wood consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Commercial sector total wood consumption is the sum of commercial sector CHP and non-CHP wood consumption.

Commercial Sector, Biomass Waste
1989 forward: Table 7.4c.

Commercial Sector, Fuel Ethanol (Minus Denaturant)
1981 forward: The commercial sector share of motor gasoline consumption is equal to commercial sector motor gasoline consumption from Table 3.7a divided by motor gasoline product supplied from Table 3.5. Commercial sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the commercial sector share of motor gasoline consumption. Note that there is a discontinuity in this time

series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Commercial Sector, Total Biomass

1949–1980: Commercial sector total biomass consumption is equal to commercial sector wood consumption.

1981–1988: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood and fuel ethanol (minus denaturant).

1989 forward: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood, waste, and fuel ethanol (minus denaturant).

Commercial Sector, Total Renewable Energy

1949–1988: Commercial sector total renewable energy consumption is equal to commercial sector total biomass consumption.

1989–2007: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, and total biomass.

2008: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, and total biomass.

2009 forward: Commercial sector total renewable energy is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, wind, and total biomass.

Table 10.2b Sources

Industrial Sector, Hydroelectric Power

1949 forward: Industrial sector conventional hydroelectricity net generation data from Table 7.2c are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Industrial Sector, Geothermal

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on data from Oregon Institute of Technology, Geo-Heat Center.

2010 forward: Annual estimates assumed by EIA to be equal to that of 2009.

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Industrial Sector, Solar

1989 forward: Industrial sector solar consumption is the sum of the values for "Small-Scale Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.6.

Industrial Sector, Wind

2011 forward: Industrial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the electricity heat content factor 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 2019 forward, the annual estimates are assumed by EIA to be equal to that of 2018). For 1989 forward, monthly estimates for industrial sector non-CHP wood consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Industrial sector total wood consumption is the sum of industrial sector CHP and non-CHP wood consumption.

Industrial Sector, Biomass Waste

1981: Annual estimate is calculated as total waste consumption (from EIA, *Estimates of U.S. Biofuels Consumption 199*0, Table 8) minus electric power sector waste consumption (from MER Table 10.2c).

1982 and 1983: Annual estimates are calculated as total waste consumption (based on *Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1984: Annual estimate is calculated as total waste consumption (from EIA*, Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1985 and 1986: Annual estimates interpolated by EIA.

1987: Annual estimate is calculated as total waste consumption (from EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 8) minus electric power sector waste consumption (from MER, Table 10.2c).

1988: Annual estimate interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual industrial sector combined-heat-and-power (CHP) consumption data are from Table 7.4c. Annual estimates for industrial sector non-CHP waste consumption are based on information presented in Government Advisory Associates, *Resource Recovery Yearbook* and *Methane Recovery Yearbook,* and information provided by the U.S. Environmental Protection Agency, Landfill Methane Outreach Program (for 2014 forward, the annual estimates are assumed by EIA to be equal to that of 2013). For 1989 forward, monthly estimates for industrial sector non-CHP waste consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Industrial sector total waste consumption is the sum of industrial sector CHP and non-CHP waste consumption.

Industrial Sector, Fuel Ethanol (Minus Denaturant)

1981 forward: The industrial sector share of motor gasoline consumption is equal to industrial sector motor gasoline consumption from Table 3.7b divided by motor gasoline product supplied from Table 3.5. Industrial sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the industrial sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Industrial Sector, Biomass Losses and Co-products

1981 forward: Calculated as fuel ethanol losses and co-products from Table 10.3 plus biodiesel losses and co-products from Table 10.4a.

Industrial Sector, Total Biomass

1949–1980: Industrial sector total biomass consumption is equal to industrial sector wood consumption.

1981 forward: Industrial sector total biomass consumption is the sum of the industrial sector consumption values for wood, waste, fuel ethanol (minus denaturant), and biomass losses and co-products.

Industrial Sector, Total Renewable Energy

1949–1988: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power and total biomass.

1989–2009: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, and total biomass.

2010: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, solar, and total biomass.

2011 forward: Industrial sector total renewable energy consumption is the sum of the industrial sector consumption values for conventional hydroelectric power, geothermal, solar, wind, and total biomass.

Table 10.2c Sources

Transportation Sector, Fuel Ethanol (Minus Denaturant)

1981 forward: The transportation sector share of motor gasoline consumption is equal to transportation sector motor gasoline consumption from Table 3.7c divided by motor gasoline product supplied from Table 3.5. Transportation sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Transportation Sector, Biodiesel

2001 forward: Transportation sector biodiesel consumption is assumed to equal total biodiesel consumption from Table 10.4a.

Transportation Sector, Renewable Diesel Fuel

2011 forward: Transportation sector renewable diesel fuel consumption is assumed to equal total renewable diesel fuel consumption from Table 10.4b.

Transportation Sector, Other Biofuels

2014 forward: Transportation sector other biofuels consumption is assumed to equal total other biofuels consumption from Table 10.4c.

Transportation Sector, Total Renewable Energy

1981–2000: Transportation sector total renewable energy consumption is equal to transportation sector fuel ethanol (minus denaturant) consumption.

2001–2010: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant) and biodiesel.

2011–2013: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant), biodiesel, and renewable diesel fuel.

2014 forward: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels.

Electric Power Sector, Hydroelectric Power
1949 forward: Electric power sector conventional hydroelectricity net generation data from Table 7.2b are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electric Power Sector, Geothermal
1960 forward: Electric power sector geothermal electricity net generation data from Table 7.2b are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electric Power Sector, Solar
1984 forward: Electric power sector solar electricity net generation data from Table 7.2b are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electric Power Sector, Wind
1983 forward: Electric power sector wind electricity net generation data from Table 7.2b are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Electric Power Sector, Wood
1949 forward: Table 7.4b.

Electric Power Sector, Biomass Waste
1970 forward: Table 7.4b.

Electric Power Sector, Total Biomass
1949–1969: Electric power sector total biomass consumption is equal to electric power sector wood consumption.

1970 forward: Electric power sector total biomass consumption is the sum of the electric power sector consumption values for wood and biomass waste.

Electric Power Sector, Total Renewable Energy
1949–1959: Electric power sector total renewable energy consumption is the sum of the electric power sector consumption values for hydroelectric power and total biomass.

1960–1982: Electric power sector total renewable energy consumption is the sum of the electric power sector consumption values for hydroelectric power, geothermal, and total biomass.

1983: Electric power sector total renewable energy consumption is the sum of the electric power sector consumption values for hydroelectric power, geothermal, wind, and total biomass.

1984 forward: Electric power sector total renewable energy consumption is the sum of the electric power sector consumption values for hydroelectric power, geothermal, solar, wind, and total biomass.

Table 10.3 Sources

Feedstock
1981 forward: Calculated as fuel ethanol production (in thousand barrels) minus denaturant, and then multiplied by the fuel ethanol feedstock factor—see Table A3.

Losses and Co-products
1981 forward: Calculated as fuel ethanol feedstock plus denaturant minus fuel ethanol production.

Denaturant
1981–2008: Data in thousand barrels for petroleum denaturant in fuel ethanol produced are estimated as 2% of fuel ethanol production; these data are converted to Btu by multiplying by 4.661 million Btu per barrel (the estimated quantity-weighted factor of natural gasoline and conventional motor gasoline used as denaturant).

2009–2020: U.S. Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA), annual reports, Table 1. Data in thousand barrels for net production of natural gasoline at "renewable fuels and oxygenate plants" are multiplied by

-1; these data are converted to Btu by multiplying by 4.638 million Btu per barrel (the approximate heat content of natural gasoline). Data in thousand barrels for net production of conventional motor gasoline and motor gasoline blending components at "renewable fuels and oxygenate plants" are multiplied by -1; these data are converted to Btu by multiplying by 5.222 million Btu per barrel (the approximate heat content of motor gasoline blending components). Total denaturant is the sum of the values for natural gasoline, conventional motor gasoline, and motor gasoline blending components.

2021 and 2022: EIA, PSA, annual reports, Table 1. Data in thousand barrels for net production of natural gasoline at biofuels plants are multiplied by -1; these data are converted to Btu by multiplying by 4.638 million Btu per barrel (the approximate heat content of natural gasoline). Data in thousand barrels for net production of conventional motor gasoline and motor gasoline blending components at biofuels plants are multiplied by -1; these data are converted to Btu by multiplying by 5.222 million Btu per barrel (the approximate heat content of motor gasoline blending components). Total denaturant is the sum of the values for natural gasoline, conventional motor gasoline, and motor gasoline blending components.

2023 and 2024: EIA, *Petroleum Supply Monthly* (PSM), monthly reports, Table 1. Data in thousand barrels for net production of natural gasoline at biofuels plants are multiplied by -1; these data are converted to Btu by multiplying by 4.638 million Btu per barrel (the approximate heat content of natural gasoline). Data in thousand barrels for net production of conventional motor gasoline and motor gasoline blending components at biofuels plants are multiplied by -1; these data are converted to Btu by multiplying by 5.222 million Btu per barrel (the approximate heat content of motor gasoline blending components). Total denaturant is the sum of the values for natural gasoline, conventional motor gasoline, and motor gasoline blending components.

Production

1981–1992: Fuel ethanol production is assumed to equal fuel ethanol consumption—see sources for "Consumption."

1993–2004: Calculated as fuel ethanol consumption plus fuel ethanol stock change minus fuel ethanol net imports. These data differ slightly from the original production data from EIA, Form EIA-819, "Monthly Oxygenate Report," and predecessor form, which were not reconciled and updated to be consistent with the final balance.

2005–2008: EIA, Form EIA-819, "Monthly Oxygenate Report."

2009–2020: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at "renewable fuels and oxygenate plants."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for net production of fuel ethanol at biofuels plants.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for net production of fuel ethanol at biofuels plants.

Trade, Stocks, and Stock Change

1992–2022: EIA, PSA, annual reports, Table 1.

2023 and 2024: 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).

2009–2022: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2023 and 2024: 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 10.4a Sources

Biodiesel Feedstock

2001 forward: Calculated as biodiesel production in thousand barrels multiplied by 5.433 million Btu per barrel (the biodiesel feedstock factor—see "Biodiesel Feedstock" entry in the "Thermal Conversion Factor Source Documentation" at the end of Appendix A).

Biodiesel Losses and Co-products

2001 forward: Calculated as biodiesel feedstock minus biodiesel production.

Biodiesel Production

2001–2005: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program records. Annual data are derived from quarterly data. Monthly data are estimated by dividing the annual data by the number of days in the year and then multiplying by the number of days in the month.

2006: U.S. Department of Commerce, U.S. Census Bureau, "M311K—Fats and Oils: Production, Consumption, and Stocks," data for soybean oil consumed in methyl esters (biodiesel). In addition, the U.S. Energy Information Administration (EIA) estimates that 14.4 million gallons of yellow grease were consumed in methyl esters (biodiesel).

2007: U.S. Department of Commerce, U.S. Census Bureau, "M311K—Fats and Oils: Production, Consumption, and Stocks," data for all fats and oils consumed in methyl esters (biodiesel).

2008: EIA, *Monthly Biodiesel Production Report*, December 2009 (release date October 2010), Table 11. Monthly data for 2008 are estimated based on U.S. Department of Commerce, U.S. Census Bureau, M311K data, multiplied by the EIA 2008 annual value's share of the M311K 2008 annual value.

2009 and 2010: EIA, *Monthly Biodiesel Production Report*, monthly reports, Table 1.

2011–2020: EIA, *Petroleum Supply Annual* (PSA), annual reports, Table 1, data for “renewable fuels except fuel ethanol.”

2021 and 2022: EIA, PSA, annual reports, Table 1, data for biodiesel.

2023 and 2024: EIA, *Petroleum Supply Monthly* (PSM), monthly reports, Table 1, data for biodiesel.

Biodiesel Trade

2001–2011: For imports, U.S. Department of Agriculture, data for the following Harmonized Tariff Schedule codes: 3824.90.40.20, "Fatty Esters Animal/Vegetable Mixture" (data through June 2010); and 3824.90.40.30, "Biodiesel/Mixes" (data for July 2010–2011). For exports, U.S. Department of Agriculture, data for the following Schedule B codes: 3824.90.40.00, "Fatty Substances Animal/Vegetable/Mixture" (data through 2010); and 3824.90.40.30, "Biodiesel <70%" (data for 2011). (The data above are converted from pounds to gallons by dividing by 7.4.) Although these categories include products other than biodiesel (such as biodiesel coprocessed with petroleum feedstocks; and products destined for soaps, cosmetics, and other items), biodiesel is the largest component. In the absence of other reliable data for biodiesel trade, EIA sees these data as good substitutes.

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

2019–2020: EIA, PSA, annual reports, Tables 25 and 31, data for biodiesel.

2021 and 2022: EIA, PSA, annual reports, Table 1, data for biodiesel.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for biodiesel.

Biodiesel Stocks and Stock Change

2009–2018: EIA, Form EIA-22M, "Monthly Biodiesel Production Survey," data for biodiesel; and Form EIA-810, "Monthly Refinery Report," Form EIA-812, "Monthly Product Pipeline Report," and Form EIA-815, "Monthly Bulk Terminal and Blender Report," data for "biomass-based diesel fuel."

2019–September 2020: EIA, Form EIA-22M, "Monthly Biodiesel Production Survey," Form EIA-810, "Monthly Refinery Report," and Form EIA-815, "Monthly Bulk Terminal and Blender Report," data for biodiesel.

October 2020–December 2020: EIA, Form EIA-810, "Monthly Refinery Report," Form EIA-815, "Monthly Bulk Terminal and Blender Report," and Form EIA-819, "Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene," data for biodiesel.

2021 and 2022: EIA, PSA, annual reports, Table 1, data for biodiesel.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for biodiesel.

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.

Table 10.4b Sources

Renewable Diesel Fuel Production

2011–2020: U.S. Environmental Protection Agency, "RINs Generated Transactions—Generation Summary Report," updated on September 10, 2021. Data are for volumes (in gallons); for "domestic" producer type; for fuel "non-ester renewable diesel."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for renewable diesel fuel.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for renewable diesel fuel.

Renewable Diesel Fuel Trade (Imports)

2012–2020: EIA, PSA, annual reports, Table 25, data for "other renewable diesel fuel."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for renewable diesel fuel.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for renewable diesel fuel.

Renewable Diesel Fuel Stocks and Stock Change

2011–2020: EIA, Form EIA-810, "Monthly Refinery Report," and Form EIA-815, "Monthly Bulk Terminal and Blender Report," data for "other renewable diesel fuel."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for renewable diesel fuel.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for renewable diesel fuel.

Renewable Diesel Fuel Consumption

2011 forward: Calculated as renewable diesel fuel production plus renewable diesel fuel imports minus renewable diesel fuel stock change.

Table 10.4c Sources

Other Biofuels Production

2011–2020: U.S. Environmental Protection Agency, "RINs Generated Transactions—Generation Summary Report," updated on September 10, 2021. Data are for volumes (in gallons); for "domestic" producer type; for fuels "renewable heating oil," "renewable jet fuel," "naphtha," "LPG," "butanol," "cellulosic diesel," and "cellulosic renewable gasoline blendstock."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for other biofuels.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for other biofuels.

Other Biofuels Trade (Imports)

2012–2020: EIA, PSA, annual reports, Table 25, data for "other renewable fuels."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for other biofuels.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for other biofuels.

Other Biofuels Stocks and Stock Change

2011–2020: EIA, Form EIA-810, "Monthly Refinery Report," and Form EIA-815, "Monthly Bulk Terminal and Blender Report," data for "other renewable fuels."

2021 and 2022: EIA, PSA, annual reports, Table 1, data for other biofuels.

2023 and 2024: EIA, PSM, monthly reports, Table 1, data for other biofuels.

Other Biofuels Consumption

2014 forward: Calculated as other biofuels production plus other biofuels imports minus other biofuels stock change.

Table 10.5 Sources

Small-Scale Solar Energy Consumption: Heat

Annual Data

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on EIA, Form EIA-63A, "Annual Solar Thermal Collector/Reflector Shipments Report." Solar energy consumption by solar thermal non-electric applications (mainly in the residential sector, but with some in the commercial and industrial sectors) is based on assumptions about the stock of equipment in place and other factors.

2010 forward: Annual estimates based on commercial sector solar thermal growth rates from EIA's *Annual Energy Outlook* (AEO) data system.

Monthly Data

1989–2013: Monthly estimates for each year are obtained by allocating a given year's annual value to the months in that year. Each month's allocator is the average of that month's "Small-Scale Solar Energy Consumption: Electricity, Total" values in 2014 and 2015. The allocators, when rounded, are as follows: January—5%; February—6%; March—8%; April—9%; May—10%; June—10%; July—10%; August—10%; September—9%; October—9%; November—7%; and December—7%.

2014 forward: Once all 12 months of "Small-Scale Solar Energy Consumption: Electricity, Total" data are available for a given year, they are used as allocators and applied to the annual estimate in order to derive monthly estimates for that year. Initial monthly estimates for the current year use the previous year's allocators.

Small-Scale Solar Energy Consumption: Electricity, Residential Sector

Beginning in 2014, monthly and annual data for residential sector small-scale solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.E. Those data are converted to consumption data in Btu by multiplying by the electricity heat content factor in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates are calculated based on small-scale solar electricity consumption in all sectors. Consumption is estimated using information on shipments of solar panels from EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," and assumptions about the stock of equipment in place and other factors. The growth rates are applied to more recent data to create historical annual estimates.

2004–2008: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates.

2009–2013: Annual growth rates based on residential sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates.

Monthly Data

1989–2013: See "Small-Scale Solar Energy Consumption: Heat, Monthly Data."

Small-Scale Solar Energy Consumption: Electricity, Commercial Sector

Beginning in 2014, monthly and annual data for commercial sector small-scale solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.C. Those data are converted to consumption data in Btu by multiplying by the electricity heat content factor in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Small-Scale Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates.

Monthly Data

1989–2013: See "Small-Scale Solar Energy Consumption: Heat, Monthly Data."

Small-Scale Solar Energy Consumption: Electricity, Industrial Sector

Beginning in 2014, monthly and annual data for industrial sector small-scale solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.D. Those data are converted to consumption data in Btu by multiplying by the electricity heat content factor in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Small-Scale Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates.

Monthly Data

1989–2013: See "Small-Scale Solar Energy Consumption: Heat, Monthly Data."

Small-Scale Solar Energy Consumption: Electricity, Total
1989 forward: Small-scale solar energy consumption for total electricity is the sum of the small-scale solar energy consumption (for electricity) values for the residential, commercial, and industrial sectors.

Small-Scale Solar Energy Consumption: Total
1989 forward: Small-scale solar energy consumption total is the sum of small-scale solar energy consumption values for heat and total electricity.

Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector
2008 forward: Commercial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector
2010 forward: Industrial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the electricity heat content factor in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Electric Power Sector
1984 forward: Electric power sector solar photovoltaic and solar thermal electricity net generation data from Table 7.2b are converted to Btu by multiplying the electricity heat content factor in Table A6.

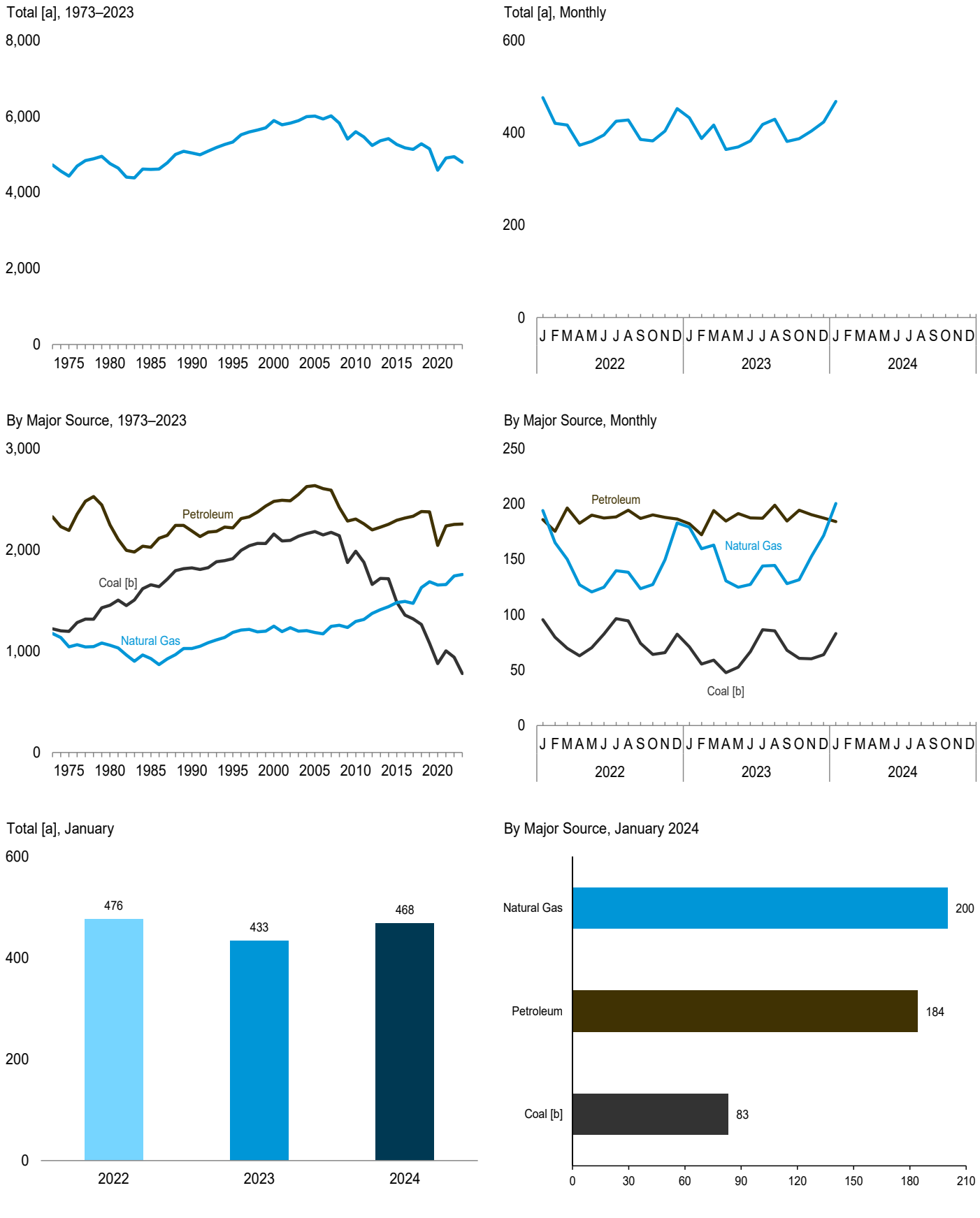
Utility-Scale Solar Energy Consumption: Electricity, Total
1984 forward: Utility-scale solar energy consumption for total electricity is the sum of the utility-scale solar energy consumption (for electricity) values for the commercial, industrial, and electric power sectors.

Solar Energy Consumption: Total
1984 forward: Total solar energy consumption is the sum of the values for total small-scale solar energy consumption and total utility-scale solar energy consumption.

11. Environment

Figure 11.1 Carbon Dioxide Emissions From Energy Consumption by Source

(Million Metric Tons of Carbon Dioxide)



[a] Excludes emissions from biomass energy consumption.
[b] Includes coal coke net imports.

Web Page: http://www.eia.gov/totalenergy/data/monthly/#environment.
Source: Table 11.1.

Table 11.1 Carbon Dioxide Emissions From Energy Consumption by Source

(Million Metric Tons of Carbon Dioxide[a])

			Petroleum											
	Coal[b]	Natural Gas[c]	Aviation Gasoline	Distillate Fuel Oil[d]	HGL[e]	Jet Fuel	Kero-sene	Lubri-cants	Motor Gasoline[f]	Petroleum Coke	Residual Fuel Oil	Other[g]	Total	Total[h,i]
1973 Total	**1,221**	**1,175**	**6**	**485**	**80**	**154**	**33**	**13**	**911**	**55**	**486**	**102**	**2,325**	**4,721**
1975 Total	**1,195**	**1,043**	**5**	**447**	**73**	**146**	**24**	**11**	**911**	**52**	**424**	**97**	**2,190**	**4,428**
1980 Total	**1,454**	**1,058**	**4**	**451**	**78**	**156**	**24**	**13**	**901**	**50**	**433**	**134**	**2,244**	**4,756**
1985 Total	**1,655**	**927**	**3**	**450**	**82**	**178**	**17**	**12**	**933**	**56**	**207**	**86**	**2,024**	**4,605**
1990 Total	**1,820**	**1,026**	**3**	**475**	**75**	**223**	**6**	**13**	**988**	**72**	**212**	**119**	**2,186**	**5,038**
1995 Total	**1,912**	**1,185**	**3**	**504**	**90**	**222**	**8**	**13**	**1,042**	**78**	**147**	**111**	**2,216**	**5,324**
2000 Total	**2,155**	**1,246**	**3**	**592**	**106**	**259**	**10**	**14**	**1,141**	**85**	**157**	**111**	**2,477**	**5,889**
2005 Total	**2,180**	**1,182**	**2**	**653**	**92**	**251**	**11**	**12**	**1,205**	**110**	**159**	**140**	**2,633**	**6,007**
2010 Total	**1,986**	**1,292**	**2**	**591**	**84**	**214**	**3**	**11**	**1,107**	**81**	**92**	**119**	**2,304**	**5,594**
2011 Total	**1,876**	**1,312**	**2**	**600**	**79**	**213**	**2**	**10**	**1,074**	**78**	**79**	**118**	**2,255**	**5,455**
2012 Total	**1,658**	**1,372**	**2**	**577**	**76**	**210**	**1**	**9**	**1,066**	**78**	**64**	**114**	**2,195**	**5,236**
2013 Total	**1,718**	**1,408**	**2**	**581**	**85**	**214**	**1**	**10**	**1,077**	**77**	**55**	**120**	**2,221**	**5,359**
2014 Total	**1,713**	**1,438**	**2**	**614**	**86**	**220**	**1**	**10**	**1,085**	**77**	**44**	**112**	**2,252**	**5,414**
2015 Total	**1,482**	**1,479**	**1**	**606**	**86**	**231**	**1**	**11**	**1,114**	**77**	**45**	**116**	**2,290**	**5,262**
2016 Total	**1,355**	**1,490**	**1**	**583**	**83**	**242**	**1**	**11**	**1,134**	**77**	**56**	**124**	**2,312**	**5,169**
2017 Total	**1,318**	**1,471**	**1**	**591**	**86**	**251**	**1**	**10**	**1,131**	**71**	**59**	**130**	**2,332**	**5,132**
2018 Total	**1,263**	**1,627**	**2**	**626**	**98**	**255**	**1**	**10**	**1,131**	**73**	**55**	**127**	**2,377**	**5,278**
2019 Total	**1,078**	**1,685**	**2**	**621**	**107**	**261**	**1**	**9**	**1,128**	**67**	**47**	**131**	**2,374**	**5,147**
2020 Total	**876**	**1,653**	**1**	**572**	**105**	**161**	**1**	**8**	**977**	**58**	**36**	**123**	**2,044**	**4,584**
2021 Total	**1,003**	**1,656**	**1**	**611**	**111**	**205**	**1**	**9**	**1,067**	**60**	**54**	**116**	**2,235**	**R 4,906**
2022 January	96	194	(s)	54	12	18	(s)	1	83	5	4	9	186	476
February	80	165	(s)	52	10	16	(s)	1	80	4	4	8	175	421
March	70	150	(s)	55	9	19	(s)	1	93	5	5	9	196	417
April	63	127	(s)	50	7	19	(s)	1	88	4	4	9	182	373
May	70	121	(s)	51	6	20	(s)	1	94	4	5	10	190	R 381
June	83	125	(s)	51	6	21	(s)	1	90	4	5	9	187	395
July	96	140	(s)	49	7	20	(s)	(s)	91	7	5	10	188	425
August	94	138	(s)	51	6	21	(s)	1	93	5	5	10	194	428
September	74	124	(s)	52	R 7	19	(s)	1	88	5	7	9	187	R 385
October	64	127	(s)	54	R 8	20	(s)	1	90	4	4	9	190	382
November	66	149	(s)	51	9	19	(s)	1	88	6	5	9	188	404
December	82	183	(s)	50	10	20	(s)	1	88	4	4	9	186	452
Total	**939**	**1,742**	**2**	**619**	**R 97**	**233**	**1**	**9**	**1,065**	**57**	**57**	**111**	**R 2,250**	**R 4,939**
2023 January	71	179	(s)	R 51	10	19	(s)	1	85	2	4	9	R 182	R 433
February	56	159	(s)	R 47	9	17	(s)	1	81	4	5	8	R 172	R 388
March	59	163	(s)	54	9	20	(s)	(s)	92	6	4	9	R 194	R 417
April	48	131	(s)	R 49	7	20	(s)	1	90	6	2	9	R 184	R 363
May	53	125	(s)	R 51	7	21	(s)	1	93	4	3	10	R 191	R 369
June	67	127	(s)	50	7	21	(s)	1	92	3	4	9	R 187	R 382
July	R 86	144	(s)	48	7	22	(s)	1	93	3	4	10	187	R 418
August	R 85	144	(s)	R 54	6	22	(s)	1	95	6	5	10	199	R 429
September	68	128	(s)	R 49	6	21	(s)	1	88	7	3	9	R 184	R 381
October	61	132	(s)	R 53	8	21	(s)	1	93	5	4	9	R 194	R 387
November	R 60	153	(s)	51	10	20	(s)	(s)	88	8	5	9	R 190	R 404
December	64	171	(s)	R 47	10	21	(s)	(s)	91	3	5	9	R 187	R 423
Total	**R 778**	**1,756**	**1**	**R 605**	**R 96**	**247**	**2**	**7**	**1,081**	**56**	**47**	**111**	**R 2,253**	**R 4,794**
2024 January	83	200	(s)	51	12	20	(s)	1	85	4	4	9	184	468

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Includes coal coke net imports.
[c] Natural gas, excluding supplemental gaseous fuels.
[d] Distillate fuel oil, excluding biodiesel.
[e] Hydrocarbon gas liquids.
[f] Finished motor gasoline, excluding fuel ethanol.
[g] Aviation gasoline blending components, crude oil, motor gasoline blending components, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.
[h] Includes electric power sector use of geothermal energy and non-biomass waste. See Table 11.6.
[i] Excludes emissions from biomass energy consumption. See Table 11.7.

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

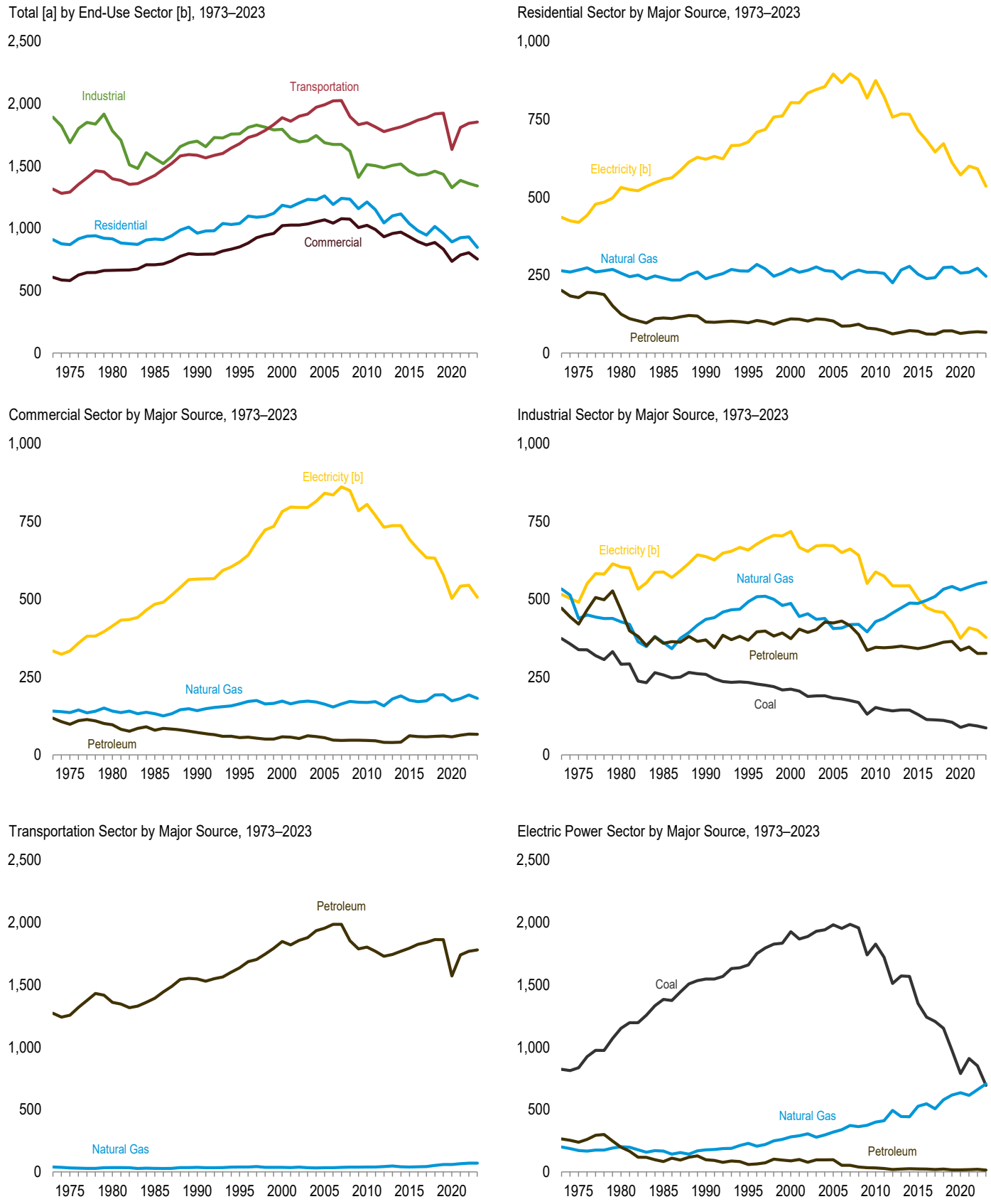
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Figure 11.2 Carbon Dioxide Emissions From Energy Consumption by Sector

(Million Metric Tons of Carbon Dioxide)



[a] Excludes emissions from biomass energy consumption.
[b] Emissions from energy consumption in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#environment.
Sources: Tables 11.2–11.6.

Table 11.2 Carbon Dioxide Emissions From Energy Consumption: Residential Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum				Electricity[e]	Total[f]
			Distillate Fuel Oil[c]	HGL[d]	Kerosene	Total		
1973 Total	**9**	**264**	**148**	**36**	**17**	**201**	**435**	**908**
1975 Total	**6**	**266**	**134**	**32**	**12**	**178**	**419**	**869**
1980 Total	**3**	**256**	**97**	**20**	**8**	**125**	**531**	**915**
1985 Total	**4**	**240**	**81**	**20**	**12**	**112**	**557**	**913**
1990 Total	**3**	**238**	**72**	**22**	**5**	**99**	**622**	**962**
1995 Total	**2**	**263**	**67**	**25**	**5**	**97**	**677**	**1,039**
2000 Total	**1**	**271**	**68**	**35**	**7**	**109**	**804**	**1,185**
2005 Total	**1**	**262**	**64**	**32**	**6**	**102**	**895**	**1,260**
2010 Total	**NA**	**259**	**42**	**33**	**2**	**77**	**874**	**1,210**
2011 Total	**NA**	**255**	**39**	**31**	**1**	**71**	**823**	**1,149**
2012 Total	**NA**	**225**	**36**	**25**	**1**	**61**	**757**	**1,043**
2013 Total	**NA**	**266**	**36**	**29**	**1**	**66**	**767**	**1,100**
2014 Total	**NA**	**278**	**40**	**31**	**1**	**71**	**766**	**1,115**
2015 Total	**NA**	**253**	**41**	**28**	**1**	**70**	**714**	**1,037**
2016 Total	**NA**	**238**	**32**	**27**	**1**	**60**	**683**	**981**
2017 Total	**NA**	**241**	**32**	**27**	**1**	**60**	**645**	**946**
2018 Total	**NA**	**274**	**38**	**32**	**1**	**70**	**672**	**R1,016**
2019 Total	**NA**	**276**	**35**	**35**	**1**	**71**	**611**	**958**
2020 Total	**NA**	**256**	**30**	**31**	**1**	**62**	**571**	**890**
2021 Total	**NA**	**259**	**35**	**30**	**1**	**66**	**R600**	**R925**
2022 January	NA	53	5	5	(s)	R11	R59	123
February	NA	43	6	4	(s)	10	R48	102
March	NA	32	4	3	(s)	R8	39	79
April	NA	21	3	R3	(s)	5	34	60
May	NA	11	2	R2	(s)	4	41	56
June	NA	7	2	1	(s)	3	55	65
July	NA	6	1	1	(s)	2	71	79
August	NA	6	1	1	(s)	2	68	R75
September	NA	6	2	1	(s)	3	50	59
October	NA	13	3	2	(s)	5	37	55
November	NA	28	3	3	(s)	6	39	73
December	NA	46	4	5	(s)	9	R53	108
Total	**NA**	**272**	**36**	**R32**	**1**	**R68**	**R591**	**931**
2023 January	NA	44	5	R5	(s)	10	R48	102
February	NA	37	R5	4	(s)	10	38	85
March	NA	35	4	4	(s)	8	38	80
April	NA	18	3	2	(s)	5	31	R54
May	NA	11	2	2	(s)	4	R34	49
June	NA	7	2	1	(s)	3	47	57
July	NA	6	1	1	(s)	2	67	76
August	NA	6	1	1	(s)	2	R66	74
September	NA	6	2	1	(s)	3	R49	59
October	NA	12	3	2	(s)	5	37	54
November	NA	27	3	3	(s)	6	R37	71
December	NA	36	4	4	(s)	8	44	88
Total	**NA**	**246**	**35**	**R30**	**1**	**66**	**R535**	**R847**
2024 January	NA	50	5	5	(s)	10	59	119

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Tables 7.6 and 11.6.
[f] Excludes emissions from biomass energy consumption. See Table 11.7.
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 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 11.3 Carbon Dioxide Emissions From Energy Consumption: Commercial Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum							Electricity[f]	Total[g]
			Distillate Fuel Oil[c]	HGL[d]	Kerosene	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Total		
1973 Total	**15**	**140**	**48**	**9**	**5**	**6**	**NA**	**50**	**118**	**334**	**607**
1975 Total	**14**	**136**	**43**	**8**	**4**	**6**	**NA**	**37**	**98**	**334**	**582**
1980 Total	**11**	**141**	**38**	**6**	**3**	**8**	**NA**	**42**	**97**	**414**	**662**
1985 Total	**13**	**132**	**47**	**6**	**2**	**7**	**NA**	**17**	**79**	**484**	**708**
1990 Total	**12**	**142**	**40**	**6**	**1**	**8**	**0**	**17**	**72**	**564**	**790**
1995 Total	**11**	**164**	**35**	**7**	**2**	**1**	**(s)**	**11**	**56**	**619**	**850**
2000 Total	**9**	**172**	**37**	**9**	**2**	**3**	**(s)**	**7**	**58**	**781**	**1,021**
2005 Total	**9**	**163**	**33**	**8**	**2**	**3**	**(s)**	**9**	**55**	**840**	**1,067**
2010 Total	**7**	**168**	**29**	**9**	**(s)**	**3**	**(s)**	**5**	**46**	**804**	**1,025**
2011 Total	**6**	**171**	**29**	**9**	**(s)**	**3**	**(s)**	**4**	**45**	**768**	**990**
2012 Total	**4**	**157**	**26**	**9**	**(s)**	**3**	**(s)**	**2**	**40**	**731**	**932**
2013 Total	**4**	**179**	**25**	**10**	**(s)**	**3**	**(s)**	**2**	**40**	**736**	**958**
2014 Total	**4**	**189**	**26**	**10**	**(s)**	**4**	**(s)**	**1**	**41**	**736**	**970**
2015 Total	**3**	**175**	**27**	**9**	**(s)**	**25**	**(s)**	**(s)**	**61**	**692**	**932**
2016 Total	**2**	**171**	**24**	**9**	**(s)**	**25**	**(s)**	**(s)**	**59**	**661**	**893**
2017 Total	**2**	**173**	**24**	**10**	**(s)**	**24**	**(s)**	**(s)**	**58**	**633**	**866**
2018 Total	**2**	**193**	**24**	**11**	**(s)**	**24**	**(s)**	**(s)**	**59**	**632**	**R886**
2019 Total	**2**	**193**	**24**	**11**	**(s)**	**24**	**(s)**	**(s)**	**60**	**578**	**832**
2020 Total	**1**	**173**	**20**	**13**	**(s)**	**24**	**(s)**	**(s)**	**58**	**502**	**735**
2021 Total	**1**	**180**	**24**	**14**	**(s)**	**25**	**(s)**	**(s)**	**63**	**R542**	**R787**
2022 January	(s)	30	3	2	(s)	2	(s)	(s)	8	48	86
February	(s)	25	4	R1	(s)	2	(s)	(s)	8	40	73
March	(s)	21	3	1	(s)	3	(s)	(s)	7	38	66
April	(s)	15	2	1	(s)	2	(s)	(s)	5	36	R56
May	(s)	10	2	1	(s)	3	(s)	(s)	5	42	57
June	(s)	8	1	1	(s)	2	(s)	(s)	4	49	R61
July	(s)	8	1	1	(s)	2	(s)	(s)	4	58	70
August	(s)	8	1	1	(s)	3	0	(s)	4	57	69
September	(s)	8	1	1	(s)	2	(s)	(s)	4	48	R60
October	(s)	12	2	1	(s)	2	0	(s)	5	42	59
November	(s)	19	2	1	(s)	2	(s)	(s)	6	40	R65
December	(s)	27	3	2	(s)	2	(s)	(s)	7	46	R80
Total	**1**	**192**	**25**	**R13**	**(s)**	**29**	**(s)**	**(s)**	**R67**	**R545**	**R805**
2023 January	(s)	26	3	2	(s)	2	(s)	(s)	R7	41	74
February	(s)	23	4	R1	(s)	2	(s)	(s)	R7	34	65
March	(s)	22	3	R1	(s)	3	(s)	(s)	7	R37	67
April	(s)	14	2	1	(s)	2	0	(s)	5	33	52
May	(s)	10	2	1	(s)	3	0	(s)	5	38	53
June	(s)	8	1	1	(s)	2	0	(s)	4	45	58
July	(s)	8	1	1	(s)	3	0	(s)	4	56	68
August	(s)	8	1	1	(s)	3	0	(s)	4	R55	R67
September	(s)	8	1	1	(s)	2	0	(s)	4	46	R58
October	(s)	12	2	1	(s)	3	0	(s)	5	R41	59
November	(s)	19	2	1	(s)	2	0	(s)	6	39	64
December	(s)	23	3	R1	(s)	2	(s)	(s)	7	40	70
Total	**1**	**181**	**24**	**R12**	**(s)**	**29**	**(s)**	**(s)**	**R66**	**R506**	**R754**
2024 January	(s)	29	3	2	(s)	2	(s)	(s)	7	47	84

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Tables 7.6 and 11.6.
[g] Excludes emissions from biomass energy consumption. See Table 11.7.
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 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 11.4 Carbon Dioxide Emissions From Energy Consumption: Industrial Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Coal Coke Net Imports	Natural Gas[b]	Petroleum									Electricity[g]	Total[h]
				Distillate Fuel Oil[c]	HGL[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total		
1973 Total	**373**	**-1**	**533**	**107**	**31**	**11**	**7**	**18**	**54**	**139**	**102**	**471**	**515**	**1,891**
1975 Total	**338**	**2**	**437**	**98**	**30**	**9**	**6**	**16**	**52**	**113**	**97**	**420**	**490**	**1,687**
1980 Total	**291**	**-4**	**427**	**97**	**52**	**13**	**7**	**11**	**50**	**101**	**134**	**465**	**604**	**1,782**
1985 Total	**257**	**-2**	**361**	**82**	**54**	**3**	**6**	**16**	**55**	**56**	**86**	**358**	**587**	**1,561**
1990 Total	**258**	**1**	**435**	**85**	**45**	**1**	**7**	**13**	**69**	**31**	**119**	**369**	**636**	**1,699**
1995 Total	**232**	**7**	**492**	**83**	**57**	**1**	**7**	**14**	**69**	**25**	**111**	**368**	**658**	**1,757**
2000 Total	**211**	**7**	**486**	**89**	**61**	**1**	**7**	**11**	**75**	**18**	**111**	**373**	**717**	**1,795**
2005 Total	**182**	**5**	**405**	**94**	**49**	**3**	**6**	**25**	**86**	**21**	**140**	**423**	**671**	**1,687**
2010 Total	**152**	**-1**	**428**	**85**	**42**	**1**	**5**	**17**	**67**	**9**	**119**	**345**	**587**	**1,512**
2011 Total	**146**	**1**	**438**	**91**	**39**	**(s)**	**5**	**17**	**64**	**10**	**118**	**344**	**574**	**1,503**
2012 Total	**142**	**(s)**	**455**	**94**	**42**	**(s)**	**4**	**17**	**69**	**5**	**114**	**346**	**543**	**1,486**
2013 Total	**145**	**-2**	**472**	**94**	**46**	**(s)**	**5**	**17**	**64**	**4**	**120**	**349**	**542**	**1,505**
2014 Total	**144**	**-2**	**487**	**101**	**45**	**(s)**	**5**	**14**	**65**	**3**	**112**	**345**	**543**	**1,516**
2015 Total	**129**	**-2**	**486**	**87**	**48**	**(s)**	**5**	**17**	**66**	**2**	**116**	**342**	**502**	**1,457**
2016 Total	**113**	**-2**	**496**	**86**	**46**	**(s)**	**5**	**17**	**65**	**4**	**124**	**347**	**472**	**1,426**
2017 Total	**112**	**-3**	**509**	**89**	**48**	**(s)**	**5**	**17**	**61**	**4**	**130**	**354**	**461**	**1,432**
2018 Total	**111**	**-3**	**532**	**93**	**54**	**(s)**	**5**	**18**	**62**	**3**	**127**	**362**	R **458**	**1,459**
2019 Total	**105**	**-2**	**540**	**89**	**60**	**(s)**	**4**	**18**	**60**	**3**	**131**	**364**	**425**	**1,432**
2020 Total	**88**	**-1**	**530**	**79**	**60**	**(s)**	**4**	**18**	**49**	**2**	**123**	**336**	**374**	**1,326**
2021 Total	**97**	**-6**	**539**	**88**	**67**	**(s)**	**4**	**17**	**51**	**3**	**116**	**347**	**408**	**1,385**
2022 January	8	-1	52	9	5	(s)	(s)	1	4	(s)	9	28	36	123
February	8	(s)	46	8	4	(s)	(s)	1	3	(s)	8	25	30	108
March	8	-1	48	9	4	(s)	(s)	2	4	(s)	9	29	29	114
April	8	-1	45	7	4	(s)	(s)	1	4	(s)	9	26	28	107
May	8	-1	44	6	4	(s)	(s)	2	3	(s)	10	25	32	109
June	8	(s)	43	7	R 5	(s)	(s)	2	3	(s)	9	27	36	112
July	8	-1	44	5	5	(s)	(s)	2	6	(s)	10	28	39	118
August	8	(s)	44	7	R 5	(s)	(s)	2	5	(s)	10	28	39	119
September	7	-1	43	8	5	(s)	(s)	1	4	(s)	9	29	33	112
October	8	(s)	45	9	4	(s)	(s)	2	3	(s)	9	27	32	111
November	8	(s)	47	8	4	(s)	(s)	1	5	(s)	9	28	31	113
December	8	-1	49	5	4	(s)	(s)	2	3	(s)	9	23	33	112
Total	**93**	**-6**	**549**	**89**	R **52**	**(s)**	**4**	**18**	**48**	**3**	**111**	**325**	R **400**	**1,360**
2023 January	8	(s)	49	8	4	(s)	(s)	1	2	(s)	9	25	29	111
February	7	(s)	45	6	3	(s)	(s)	1	3	(s)	8	23	26	101
March	8	(s)	49	9	3	(s)	(s)	2	5	(s)	9	29	29	R 113
April	7	(s)	46	7	4	(s)	(s)	2	5	(s)	9	28	26	R 106
May	7	(s)	45	7	4	(s)	(s)	2	4	(s)	10	28	30	109
June	7	(s)	43	7	5	(s)	(s)	2	3	(s)	9	26	34	110
July	7	(s)	44	5	5	(s)	(s)	2	2	(s)	10	24	39	113
August	7	(s)	45	9	5	(s)	(s)	2	5	(s)	10	31	39	R 121
September	7	(s)	44	7	5	(s)	(s)	1	6	(s)	9	29	33	R 112
October	8	(s)	46	8	5	(s)	(s)	2	4	(s)	9	29	32	114
November	7	(s)	48	8	5	(s)	(s)	1	8	(s)	9	R 31	31	117
December	7	R -1	51	5	5	(s)	(s)	2	3	(s)	9	23	30	111
Total	R **87**	R **-4**	**554**	R **87**	**53**	**(s)**	**3**	**18**	**51**	**3**	**111**	R **326**	R **377**	R **1,340**
2024 January	7	(s)	51	8	5	(s)	(s)	1	4	(s)	9	27	34	118

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

[b] Natural gas, excluding supplemental gaseous fuels.

[c] Distillate fuel oil, excluding biodiesel.

[d] Hydrocarbon gas liquids.

[e] Finished motor gasoline, excluding fuel ethanol.

[f] Aviation gasoline blending components, crude oil, motor gasoline blending components, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.

[g] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Tables 7.6 and 11.6.

[h] Excludes emissions from biomass energy consumption. See Table 11.7.

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

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 11.5 Carbon Dioxide Emissions From Energy Consumption: Transportation Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum								Electricity[f]	Total[g]
			Aviation Gasoline	Distillate Fuel Oil[c]	HGL[d]	Jet Fuel	Lubricants	Motor Gasoline[e]	Residual Fuel Oil	Total		
1973 Total	(s)	39	6	164	3	152	6	887	55	1,272	2	1,314
1975 Total	(s)	32	5	157	3	144	6	889	53	1,257	2	1,291
1980 Total	(h)	34	4	207	1	155	6	882	105	1,361	2	1,397
1985 Total	(h)	28	3	234	2	178	6	910	59	1,393	3	1,423
1990 Total	(h)	36	3	271	1	223	7	967	76	1,548	3	1,587
1995 Total	(h)	38	3	310	1	222	6	1,026	68	1,637	3	1,679
2000 Total	(h)	36	3	386	1	259	7	1,128	67	1,848	4	1,888
2005 Total	(h)	33	2	453	2	251	6	1,177	63	1,954	5	1,992
2010 Total	(h)	38	2	429	(s)	214	6	1,086	67	1,804	5	1,847
2011 Total	(h)	39	2	436	(s)	213	5	1,054	58	1,769	4	1,813
2012 Total	(h)	41	2	417	(s)	210	5	1,047	50	1,730	4	1,776
2013 Total	(h)	47	2	421	(s)	214	5	1,057	44	1,744	4	1,795
2014 Total	(h)	40	2	441	(s)	220	6	1,067	34	1,769	4	1,814
2015 Total	(h)	39	1	447	1	231	6	1,073	35	1,794	4	1,837
2016 Total	(h)	40	1	437	1	242	6	1,092	47	1,825	4	1,869
2017 Total	(h)	42	1	442	1	251	5	1,090	50	1,841	4	1,887
2018 Total	(h)	51	2	466	1	255	5	1,090	45	1,864	4	1,918
2019 Total	(h)	59	2	468	1	261	5	1,086	40	1,862	3	1,924
2020 Total	(h)	59	1	439	1	161	4	935	29	1,572	3	1,633
2021 Total	(h)	65	1	459	1	205	4	1,025	46	1,741	3	1,809
2022 January	(h)	8	(s)	35	(s)	18	(s)	79	3	136	(s)	144
February	(h)	7	(s)	33	(s)	16	(s)	77	4	131	(s)	138
March	(h)	6	(s)	38	(s)	19	R1	88	5	152	(s)	158
April	(h)	5	(s)	38	(s)	19	(s)	84	3	145	(s)	150
May	(h)	5	(s)	40	(s)	20	(s)	90	4	154	(s)	159
June	(h)	5	(s)	41	(s)	21	(s)	86	4	152	(s)	157
July	(h)	6	(s)	41	(s)	20	(s)	87	4	152	(s)	158
August	(h)	6	(s)	42	(s)	21	(s)	89	5	158	(s)	164
September	(h)	5	(s)	40	(s)	19	(s)	84	6	149	(s)	154
October	(h)	5	(s)	41	(s)	20	(s)	86	3	151	(s)	156
November	(h)	6	(s)	38	(s)	19	(s)	84	4	146	(s)	152
December	(h)	7	(s)	36	(s)	20	(s)	84	3	144	(s)	152
Total	(h)	70	2	464	1	233	5	1,018	47	1,770	3	R1,843
2023 January	(h)	7	(s)	R34	(s)	19	(s)	81	3	R138	(s)	146
February	(h)	6	(s)	32	(s)	17	(s)	77	4	131	(s)	R137
March	(h)	6	(s)	38	(s)	20	(s)	88	3	150	(s)	R156
April	(h)	5	(s)	38	(s)	20	(s)	86	2	R145	(s)	151
May	(h)	5	(s)	40	(s)	21	(s)	89	3	154	(s)	159
June	(h)	5	(s)	40	(s)	21	(s)	88	3	153	(s)	158
July	(h)	6	(s)	R40	(s)	22	(s)	89	3	R155	(s)	R161
August	(h)	6	(s)	43	(s)	22	(s)	91	4	R160	(s)	R166
September	(h)	5	(s)	39	(s)	21	(s)	84	2	R146	(s)	152
October	(h)	5	(s)	R40	(s)	21	(s)	89	3	155	(s)	160
November	(h)	6	(s)	R37	(s)	20	(s)	84	4	146	(s)	152
December	(h)	7	(s)	R35	(s)	21	(s)	87	4	148	(s)	155
Total	(h)	70	1	R455	1	247	R4	1,033	39	R1,781	3	R1,853
2024 January	(h)	8	(s)	34	(s)	20	(s)	81	3	138	(s)	146

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

[b] Natural gas, excluding supplemental gaseous fuels.

[c] Distillate fuel oil, excluding biodiesel.

[d] Hydrocarbon gas liquids.

[e] Finished motor gasoline, excluding fuel ethanol.

[f] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity sales to ultimate customers. See Tables 7.6 and 11.6.

[g] Excludes emissions from biomass energy consumption. See Table 11.7.

[h] Beginning in 1978, the small amounts of coal consumed for transportation are reported as industrial sector consumption.

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

Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 11.6 Carbon Dioxide Emissions From Energy Consumption: Electric Power Sector

(Million Metric Tons of Carbon Dioxide[a])

	Coal	Natural Gas[b]	Petroleum				Geo-thermal	Non-Biomass Waste[d]	Total[e]
			Distillate Fuel Oil[c]	Petroleum Coke	Residual Fuel Oil	Total			
1973 Total	**823**	**199**	**20**	**2**	**242**	**264**	**NA**	**NA**	**1,286**
1975 Total	**836**	**172**	**17**	**(s)**	**221**	**237**	**NA**	**NA**	**1,245**
1980 Total	**1,153**	**200**	**12**	**1**	**185**	**198**	**NA**	**NA**	**1,551**
1985 Total	**1,383**	**166**	**6**	**1**	**75**	**82**	**NA**	**NA**	**1,631**
1990 Total	**1,547**	**175**	**7**	**3**	**87**	**98**	**(s)**	**6**	**1,826**
1995 Total	**1,660**	**228**	**8**	**8**	**43**	**59**	**(s)**	**10**	**1,957**
2000 Total	**1,926**	**281**	**13**	**10**	**65**	**89**	**(s)**	**10**	**2,306**
2005 Total	**1,983**	**319**	**9**	**24**	**66**	**98**	**(s)**	**11**	**2,411**
2010 Total	**1,828**	**400**	**6**	**14**	**12**	**31**	**(s)**	**11**	**2,270**
2011 Total	**1,723**	**409**	**5**	**14**	**7**	**26**	**(s)**	**11**	**2,170**
2012 Total	**1,512**	**493**	**4**	**9**	**6**	**18**	**(s)**	**11**	**2,035**
2013 Total	**1,571**	**444**	**4**	**13**	**6**	**22**	**(s)**	**11**	**2,049**
2014 Total	**1,568**	**443**	**6**	**12**	**7**	**25**	**(s)**	**11**	**2,048**
2015 Total	**1,351**	**525**	**5**	**11**	**7**	**24**	**(s)**	**11**	**1,912**
2016 Total	**1,242**	**545**	**4**	**12**	**5**	**21**	**(s)**	**11**	**1,820**
2017 Total	**1,207**	**506**	**4**	**10**	**5**	**19**	**(s)**	**11**	**1,743**
2018 Total	**1,153**	**578**	**6**	**10**	**6**	**22**	**(s)**	**11**	**R 1,765**
2019 Total	**974**	**617**	**4**	**8**	**4**	**16**	**(s)**	**11**	**1,618**
2020 Total	**788**	**635**	**3**	**9**	**4**	**16**	**(s)**	**11**	**1,450**
2021 Total	**910**	**613**	**4**	**9**	**4**	**18**	**(s)**	**R 12**	**R 1,552**
2022 January	88	52	1	1	1	3	(s)	1	143
February	72	44	(s)	1	(s)	2	(s)	1	118
March	62	42	(s)	1	(s)	1	(s)	1	R 106
April	56	40	(s)	1	(s)	1	(s)	1	98
May	63	50	(s)	1	(s)	1	(s)	1	116
June	75	62	(s)	1	(s)	1	(s)	1	140
July	89	77	(s)	1	(s)	1	(s)	1	168
August	87	75	(s)	1	(s)	1	(s)	1	165
September	67	61	(s)	1	(s)	2	(s)	1	131
October	57	52	(s)	1	(s)	2	(s)	1	R 110
November	58	49	(s)	1	(s)	1	(s)	1	110
December	75	54	2	1	1	3	(s)	1	R 133
Total	**851**	**659**	**6**	**9**	**6**	**21**	**(s)**	**R 7**	**R 1,538**
2023 January	64	53	(s)	(s)	(s)	1	(s)	1	R 118
February	48	47	(s)	(s)	1	1	(s)	1	98
March	R 51	51	(s)	(s)	(s)	1	(s)	1	104
April	41	47	(s)	(s)	(s)	1	(s)	1	90
May	46	54	(s)	(s)	(s)	1	(s)	1	102
June	60	64	(s)	(s)	(s)	1	(s)	1	126
July	80	80	(s)	1	(s)	1	(s)	1	R 162
August	79	80	(s)	1	(s)	1	(s)	1	161
September	R 61	65	(s)	1	(s)	1	(s)	1	R 128
October	53	55	(s)	(s)	(s)	1	(s)	1	R 110
November	53	53	(s)	(s)	(s)	1	(s)	1	R 107
December	R 57	55	(s)	(s)	(s)	1	(s)	1	R 114
Total	**R 694**	**705**	**4**	**5**	**5**	**14**	**(s)**	**R 7**	**R 1,420**
2024 January	76	62	1	(s)	1	2	(s)	1	140

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

[b] Natural gas, excluding supplemental gaseous fuels.

[c] Distillate fuel oil, excluding biodiesel.

[d] Municipal solid waste from non-biogenic sources, and tire-derived fuels. Through 1994, also includes blast furnace gas, and other manufactured and waste gases derived from fossil fuels.

[e] Excludes emissions from biomass energy consumption. See Table 11.7.

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 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Data exclude emissions from biomass energy consumption. See Table 11.7 and Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 11.7 Carbon Dioxide Emissions From Biomass Energy Consumption

(Million Metric Tons of Carbon Dioxide[a])

	By Source					By Sector					
	Wood[b]	Biomass Waste[c]	Fuel Ethanol[d]	Bio-diesel	Total	Resi-dential	Com-mercial[e]	Indus-trial[f]	Trans-portation	Electric Power[g]	Total
1973 Total	**143**	**(s)**	**NA**	**NA**	**143**	**33**	**1**	**109**	**NA**	**(s)**	**143**
1975 Total	**140**	**(s)**	**NA**	**NA**	**141**	**40**	**1**	**100**	**NA**	**(s)**	**141**
1980 Total	**232**	**(s)**	**NA**	**NA**	**232**	**80**	**2**	**150**	**NA**	**(s)**	**232**
1985 Total	**252**	**14**	**3**	**NA**	**270**	**95**	**2**	**168**	**3**	**1**	**270**
1990 Total	**208**	**24**	**4**	**NA**	**237**	**54**	**8**	**147**	**4**	**23**	**237**
1995 Total	**222**	**30**	**8**	**NA**	**260**	**49**	**9**	**166**	**8**	**28**	**260**
2000 Total	**212**	**27**	**9**	**NA**	**248**	**39**	**9**	**161**	**9**	**29**	**248**
2005 Total	**200**	**37**	**23**	**1**	**261**	**40**	**10**	**150**	**23**	**37**	**261**
2010 Total	**208**	**42**	**73**	**2**	**325**	**51**	**10**	**149**	**74**	**42**	**325**
2011 Total	**208**	**42**	**73**	**8**	**331**	**49**	**11**	**151**	**80**	**40**	**331**
2012 Total	**202**	**42**	**73**	**8**	**325**	**41**	**10**	**153**	**80**	**42**	**325**
2013 Total	**219**	**45**	**75**	**13**	**353**	**54**	**11**	**158**	**87**	**43**	**353**
2014 Total	**225**	**47**	**76**	**13**	**361**	**54**	**12**	**158**	**88**	**49**	**361**
2015 Total	**217**	**47**	**79**	**14**	**357**	**48**	**13**	**157**	**90**	**48**	**357**
2016 Total	**209**	**46**	**81**	**20**	**355**	**42**	**14**	**155**	**98**	**47**	**355**
2017 Total	**205**	**45**	**82**	**19**	**351**	**40**	**14**	**152**	**98**	**47**	**351**
2018 Total	**212**	**44**	**82**	**18**	**356**	**49**	**14**	**151**	**97**	**46**	**356**
2019 Total	**210**	**40**	**83**	**17**	**350**	**51**	**13**	**147**	**97**	**41**	**350**
2020 Total	**185**	**40**	**72**	**18**	**314**	**32**	**13**	**143**	**86**	**39**	**314**
2021 Total	**187**	**39**	**79**	**16**	**321**	**32**	**13**	**144**	**92**	**39**	**321**
2022 January	16	3	6	1	27	3	1	12	7	3	27
February	15	3	6	1	25	3	1	11	7	3	25
March	16	3	7	1	27	3	1	12	8	3	27
April	15	3	6	1	26	3	1	12	7	3	26
May	16	3	7	1	27	3	1	12	8	3	27
June	16	3	7	1	27	3	1	12	8	3	27
July	16	3	7	1	28	3	1	12	8	3	28
August	16	3	7	1	28	3	1	12	8	3	28
September	15	3	6	1	26	3	1	11	7	3	26
October	15	3	7	1	27	3	1	11	8	3	27
November	15	3	7	1	27	3	1	11	8	3	27
December	16	3	7	1	27	3	1	12	8	3	27
Total	**189**	**37**	**80**	**16**	**321**	**40**	**17**	**139**	**92**	**35**	**321**
2023 January	16	3	7	1	27	4	1	12	8	3	27
February	14	3	6	1	24	3	1	11	7	3	24
March	16	3	7	1	27	4	1	11	8	3	27
April	14	3	6	1	25	3	1	10	7	2	25
May	15	3	7	2	27	4	1	11	8	3	27
June	15	3	7	2	26	3	1	10	8	3	26
July	15	3	7	2	27	4	1	11	8	3	27
August	15	3	7	2	27	4	1	11	8	3	27
September	14	3	7	2	25	3	1	10	8	2	25
October	14	3	7	2	26	4	1	11	8	2	26
November	15	3	7	2	26	3	1	11	8	2	26
December	15	3	7	1	27	4	1	11	8	2	27
Total	**180**	**36**	**81**	**18**	**315**	**42**	**16**	**131**	**95**	**30**	**315**
2024 January	15	3	6	1	26	3	1	11	7	3	26

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

[b] Wood and wood-derived fuels.

[c] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.

[d] Fuel ethanol minus denaturant.

[e] Commercial sector, including commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[f] Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

[g] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

NA=Not available. (s)=Less than 0.5 million metric tons.

Notes: • Carbon dioxide emissions from biomass energy consumption are excluded from the energy-related carbon dioxide emissions reported in Tables 11.1–11.6. See Note 2, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section. • Data are estimates. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon Dioxide and Other Greenhouse Gases," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Note 1. Emissions of Carbon Dioxide and Other Greenhouse Gases. Greenhouse gases are those gases—such as water vapor, carbon dioxide (CO2), methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride—that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

The vast majority of U.S. CO2 emissions come from fossil fuel combustion, with smaller amounts from the non-combustion use of fossil fuels, as well as from electricity generation using geothermal energy and non-biomass waste. Other sources of CO2 emissions include industrial processes, such as cement and limestone production. Data in the U.S. Energy Information Administration's (EIA) *Monthly Energy Review* (MER) Tables 11.1–11.6 are estimates for U.S. CO2 emissions from energy consumption, plus the non-combustion use of fossil fuels (excluded are estimates for CO2 emissions from biomass energy consumption, which appear in MER Table 11.7).

For annual U.S. estimates of CO2 emissions from all sources, as well as emissions for other greenhouse gases, see the U.S. Environmental Protection Agency's *Inventory of U.S. Greenhouse Gas Emissions and Sinks* reports at https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020.

Note 2. Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion. Carbon dioxide (CO2) emissions from the combustion of biomass to produce energy are excluded from the energy-related CO2 emissions reported in MER Tables 11.1–11.6, but appear in MER Table 11.7. According to current international convention (see the Intergovernmental Panel on Climate Change's "2006 IPCC Guidelines for National Greenhouse Gas Inventories"), carbon released through biomass combustion is excluded from reported energy-related emissions. The release of carbon from biomass combustion is assumed to be balanced by the uptake of carbon when the feedstock is grown, resulting in zero net emissions over some period of time. (This is not to say that biomass energy is carbon-neutral. Energy inputs are required in order to grow, fertilize, and harvest the feedstock and to produce and process the biomass into fuels.)

However, analysts have debated whether increased use of biomass energy may result in a decline in terrestrial carbon stocks, leading to a net positive release of carbon rather than the zero net release assumed by its exclusion from reported energy-related emissions. For example, the clearing of forests for biofuel crops could result in an initial release of carbon that is not fully recaptured in subsequent use of the land for agriculture.

To reflect the potential net emissions, the international convention for greenhouse gas inventories is to report biomass emissions in the category "agriculture, forestry, and other land use," usually based on estimates of net changes in carbon stocks over time.

This indirect accounting of CO2 emissions from biomass can potentially lead to confusion in accounting for and understanding the flow of CO2 emissions within energy and non-energy systems. In recognition of this issue, reporting of CO2 emissions from biomass combustion alongside other energy-related CO2 emissions offers an alternative accounting treatment. It is important, however, to avoid misinterpreting emissions from fossil energy and biomass energy sources as necessarily additive. Instead, the combined total of direct CO2 emissions from biomass and energy-related CO2 emissions implicitly assumes that none of the carbon emitted was previously or subsequently reabsorbed in terrestrial sinks or that other emissions sources offset any such sequestration.

Section 11 Methodology and Sources

To estimate carbon dioxide emissions from energy consumption for the *Monthly Energy Review* (MER), Tables 11.1–11.7, the U.S. Energy Information Administration (EIA) uses the following methodology and sources:

Step 1. Determine Fuel Consumption

Coal—Coal sectoral (residential, commercial, coke plants, other industrial, transportation, electric power) consumption data in thousand short tons are from MER Table 6.2. Coal sectoral consumption data are converted to trillion Btu by multiplying by the coal heat content factors in MER Table A5.

Coal Coke Net Imports—Coal coke net imports data in trillion Btu are derived from coal coke imports and exports data in MER Tables 1.4a and 1.4b.

Natural Gas (excluding supplemental gaseous fuels)—Natural gas sectoral consumption data in trillion Btu are from MER Tables 2.2–2.6.

Petroleum—Total and sectoral consumption (product supplied) data in thousand barrels per day for asphalt and road oil, aviation gasoline, distillate fuel oil, hydrocarbon gas liquids (HGL), jet fuel, kerosene, lubricants, motor gasoline, petroleum coke, and residual fuel oil are from MER Tables 3.5 and 3.7a–3.7c. For the component products of HGL (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline [through 2021]) and "other petroleum" (aviation gasoline blending components, crude oil, motor gasoline blending components, naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, special naphthas, still gas, unfinished oils [through 2021], waxes, and miscellaneous petroleum products), consumption (product supplied) data in thousand barrels per day are from EIA's *Petroleum Supply Annual* (PSA), *Petroleum Supply Monthly* (PSM), and earlier publications (see sources for MER Table 3.5). Petroleum consumption data by product are converted to trillion Btu by multiplying by the petroleum heat content factors in MER Tables A1 and A3.

Biomass—Sectoral consumption data in trillion Btu for wood, biomass waste, fuel ethanol (minus denaturant), and biodiesel are from MER Tables 10.2a–10.2c.

Step 2. Remove Biofuels From Petroleum

Distillate Fuel Oil—Beginning in 2009, the distillate fuel oil data (for total and transportation sector) in Step 1 include biodiesel and renewable diesel fuel, which are non-fossil renewable fuels.

2009–2011: To remove the biodiesel portion from distillate fuel oil, data for biodiesel consumption (calculated using data from EIA, EIA-22M, “Monthly Biodiesel Production Survey”) and biomass-based diesel fuel data (from EIA-810, “Monthly Refinery Report,” EIA-812, “Monthly Product Pipeline Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the biodiesel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values. To remove the renewable diesel fuel portion from distillate fuel oil, data for refinery and blender net inputs (from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the renewable diesel fuel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values.

2012–2020: To remove the biodiesel portion from distillate fuel oil, data for biodiesel consumption (from MER Table 10.4) is subtracted from the distillate fuel oil consumption values. To remove the renewable diesel fuel portion from distillate fuel oil, data for refinery and blender net inputs (from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the renewable diesel fuel heat content factor in MER Table A1, and then subtracted from the distillate fuel oil consumption values.

2021 forward: To remove the biodiesel and renewable diesel fuel portions from distillate fuel oil, data for refinery and blender net inputs (from EIA-810, “Monthly Refinery Report,” and EIA-815, “Monthly Bulk Terminal and Blender Report”) are converted to trillion Btu by multiplying by the biodiesel and renewable diesel fuel heat content factors in MER Table A1, and then subtracted from the distillate fuel oil consumption values.

Motor Gasoline—Beginning in 1993, the motor gasoline data (for total, commercial sector, industrial sector, and transportation sector) in Step 1 include fuel ethanol, a non-fossil renewable fuel. To remove the fuel ethanol portion from motor gasoline, data in trillion Btu for fuel ethanol consumption (from MER Tables 10.2a, 10.2b, and 10.3) are subtracted from the motor gasoline consumption values. (Note that about 2% of fuel ethanol is fossil-based petroleum denaturant, to make the fuel ethanol undrinkable. For 1993–2008, petroleum denaturant is double counted in the PSA product supplied statistics, in both the original product category—e.g., natural gasoline—and also in the finished motor gasoline category; for this time period for MER Section 11, petroleum denaturant is removed along with the fuel ethanol from motor gasoline, but left in the original product. Beginning in 2009, petroleum denaturant is counted only in the PSA/PSM product supplied statistics for motor gasoline; for this time period for MER Section 11, petroleum denaturant is left in motor gasoline.)

Step 3. Remove Carbon Sequestered by Non-Combustion Use

The following fuels have industrial non-combustion uses as chemical feedstocks and other products: coal, natural gas, asphalt and road oil, distillate fuel oil, hydrocarbon gas liquids (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline), lubricants (which have industrial and transportation non-combustion uses), naphthas, other oils, petroleum coke, residual fuel oil, special naphthas, still gas, waxes, and miscellaneous petroleum products. See Tables 1.12a and 1.12b for estimates of fossil fuel non-combustion uses.

In the non-combustion use of these fuels, some of the carbon is stored (sequestered) in the final product, and EIA subtracts this from the fuel consumption values in Steps 1 and 2. EIA calculates the amount of carbon sequestered as the product of the non-combustion use of fossil fuels shown in MER Table 1.12b and the following carbon sequestration factors. The factors range from 0.00 to 1.00. A factor of 0.00 indicates that the fuel does not sequester any carbon (all is emitted), while a factor of 1.00 indicates that the fuel sequesters all of the carbon (none is emitted). EIA uses the following carbon sequestration factors: coal—0.75; natural gas used to produce hydrogen—0.00; natural gas used for other manufacturing—0.44; asphalt and road oil—1.00; distillate fuel oil—0.50; hydrocarbon gas liquids—0.80; lubricants—0.50; naphthas used for petrochemical feedstock—0.75; other oils used for petrochemical feedstock—0.50; petroleum coke used for aluminum production—0.00; petroleum coke used for other manufacturing—0.50; residual fuel oil—0.50; special naphthas—0.00; still gas—0.80; waxes—1.00; and miscellaneous petroleum products—1.00.

Step 4. Determine Carbon Dioxide Emissions From Energy Consumption

EIA calculates carbon dioxide (CO2) emissions data in million metric tons as the product of the consumption values in trillion Btu from Steps 1 and 2 (minus the carbon sequestered by non-combustion use in Step 3) and the annual CO2 emissions factors at https://www.eia.gov/environment/emissions/xls/CO2_coeffs_detailed.xls.

Except for plant condensate and unfractionated stream (which are EIA estimates), the CO2 emissions factors for fossil fuels are from the U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, Tables A-22, A-34, and A-230. EIA converts metric tons of carbon to metric tons of CO2 using the approximate molar mass (44/12)—see https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021.

Coal—EIA calculates coal CO2 emissions 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—EIA calculates coal coke net imports CO2 emissions for the industrial sector.

Natural Gas—EIA calculates natural gas CO2 emissions for each sector (residential, commercial, industrial, transportation, electric power). Total natural gas emissions are the sum of the sectoral natural gas emissions.

Petroleum—EIA calculates CO2 emissions for each petroleum product and sector. Total petroleum emissions are the sum of the product emissions. Total HGL emissions are the sum of the emissions for the component products (ethane/ethylene, propane/propylene, normal butane/butylene, isobutane/isobutylene, and natural gasoline). EIA estimates residential, commercial, and transportation sector HGL emissions as the product of the HGL consumption values in trillion Btu from MER Tables 3.8a and 3.8c and the propane emissions factor. EIA estimates industrial sector HGL emissions as total HGL emissions minus emissions by the other sectors.

Geothermal and Non-Biomass Waste—EIA estimates annual CO2 emissions data for geothermal and non-biomass waste on Form EIA-923, "Power Plant Operations Report" (and predecessor forms). EIA estimates monthly data 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—EIA calculates wood, biomass waste, and biofuel CO2 emissions for each sector. Total emissions for each biomass fuel are the sum of the sectoral emissions. EIA uses the following CO2 emissions factors, in million metric tons CO2 per quadrillion Btu: wood—93.80; biomass waste—90.70; fuel ethanol—68.44; and biodiesel—73.84. For 1973–1988, EIA estimates the biomass portion of waste in MER Tables 10.2a–10.2c as 67%; for 1989–2000, the annual biomass portion of waste ranges from 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 https://www.eia.gov/totalenergy/data/monthly/pdf/historical/msw.pdf.

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Appendix A

British Thermal Unit Conversion Factors

British Thermal Unit Conversion Factors

The thermal conversion factors presented in the following tables can be used to estimate the heat content in British thermal units (Btu) of a given amount of energy measured in physical units, such as barrels or cubic feet. For example, 10 barrels of asphalt has a heat content of approximately 66.36 million Btu (10 barrels x 6.636 million Btu per barrel = 66.36 million Btu).

The heat content rates (i.e., thermal conversion factors) provided in this section represent the gross (or higher or upper) energy content of the fuels. Gross heat content rates are applied in all Btu calculations for the *Monthly Energy Review* and are commonly used in energy calculations in the United States; net (or lower) heat content rates are typically used in European energy calculations. The difference between the two rates is the amount of energy that is consumed to vaporize water that is created during the combustion process. Generally, the difference ranges from 2% to 10%, depending on the specific fuel and its hydrogen content. Some fuels, such as unseasoned wood, can be more than 40% different in their gross and net heat content rates. See "Heat Content" and "British Thermal Unit (Btu)" in the Glossary for more information.

In general, the annual thermal conversion factors presented in Tables A2 through A6 are computed from final annual data or from the best available data and labeled "preliminary." Often, the current year's factors are labeled "estimate," and are set equal to the previous year's values until data become available to calculate the factors. The source of each factor is described in the section entitled "Thermal Conversion Factor Source Documentation," which follows Table A6 in this appendix.

Table A1. Approximate Heat Content of Petroleum and Biofuels

(Million Btu per Barrel, Except as Noted)

Commodity	Heat Content	Commodity	Heat Content
Asphalt and Road Oil	6.636	Motor Gasoline (Finished)–see Tables A2 and A3	
Aviation Gasoline (Finished)	5.048	Motor Gasoline Blending Components (MGBC)	
Aviation Gasoline Blending Components	5.048	Through 2006	5.253
Crude Oil–see Table A2		Beginning in 2007	5.222
Distillate Fuel Oil–see Table A3 for averages		Oxygenates (excluding Fuel Ethanol)	4.247
15 ppm sulfur and under	5.770	Petrochemical Feedstocks	
Greater than 15 ppm to 500 ppm sulfur	5.817	Naphtha Less Than 401°F	5.248
Greater than 500 ppm sulfur	5.825	Other Oils Equal to or Greater Than 401°F	5.825
Hydrocarbon Gas Liquids		Petroleum Coke–see Table A3 for averages	
Natural Gas Liquids		Total, through 2003	6.024
Ethane	2.783	Catalyst, beginning in 2004	[a] 6.287
Propane	3.841	Marketable, beginning in 2004	5.719
Normal Butane	4.353	Residual Fuel Oil	6.287
Isobutane	4.183	Special Naphthas	5.248
Natural Gasoline (Pentanes Plus)	4.638	Still Gas	
Refinery Olefins		Through 2015	[b] 6.000
Ethylene	2.436	Beginning in 2016	[a] 6.287
Propylene	3.835	Unfinished Oils	5.825
Butylene	4.377	Waxes	5.537
Isobutylene	4.355	Miscellaneous Products	5.796
Hydrogen	[c] 6.287	Other Hydrocarbons	5.825
Jet Fuel, Kerosene Type	5.670	Biofuels, Fuel Ethanol–see Table A3	
Jet Fuel, Naphtha Type	5.355	Biofuels, Biodiesel	5.359
Kerosene	5.670	Biofuels, Renewable Diesel Fuel	5.494
Lubricants	6.065	Biofuels, Other	5.359

[a] Per residual fuel oil equivalent barrel (6.287 million Btu per barrel).

[b] Per fuel oil equivalent barrel (6.000 million Btu per barrel).

[c] Hydrogen has a gross heat content of 323.6 Btu per standard cubic foot (at 60 degrees Fahrenheit and 1 atmosphere), and 6.287 million Btu per residual fuel oil equivalent barrel. For hydrogen, barrels can be converted to standard cubic feet by multiplying by 19,426 standard cubic feet per barrel of residual fuel oil equivalent.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A2. Approximate Heat Content of Petroleum Production, Imports, and Exports

(Million Btu per Barrel)

	Production		Imports				Exports			
				Petroleum Products				Petroleum Products		
	Crude Oil[a]	Natural Gas Plant Liquids[b]	Crude Oil[a]	Motor Gasoline[c]	Total Products[d]	Total[d]	Crude Oil[a]	Motor Gasoline[e]	Total Products[d]	Total[d]
1950	5.800	4.470	5.943	5.253	6.263	6.080	5.800	5.253	5.751	5.766
1955	5.800	4.346	5.924	5.253	6.234	6.040	5.800	5.253	5.765	5.768
1960	5.800	4.253	5.911	5.253	6.161	6.021	5.800	5.253	5.835	5.834
1965	5.800	4.197	5.872	5.253	6.123	5.997	5.800	5.253	5.742	5.743
1970	5.800	4.090	5.822	5.253	6.088	5.985	5.800	5.253	5.811	5.810
1975	5.800	3.923	5.821	5.253	5.935	5.858	5.800	5.253	5.747	5.748
1980	5.800	[b] 3.864	5.812	5.253	5.748	5.796	5.800	5.253	5.841	5.820
1981	5.800	3.860	5.818	5.253	5.659	5.775	5.800	5.253	5.837	5.821
1982	5.800	3.798	5.826	5.253	5.664	5.775	5.800	5.253	5.829	5.820
1983	5.800	3.755	5.825	5.253	5.677	5.774	5.800	5.253	5.800	5.800
1984	5.800	3.745	5.823	5.253	5.613	5.745	5.800	5.253	5.867	5.850
1985	5.800	3.752	5.832	5.253	5.572	5.736	5.800	5.253	5.819	5.814
1986	5.800	3.733	5.903	5.253	5.624	5.808	5.800	5.253	5.839	5.832
1987	5.800	3.742	5.901	5.253	5.599	5.820	5.800	5.253	5.860	5.858
1988	5.800	3.751	5.900	5.253	5.618	5.820	5.800	5.253	5.842	5.840
1989	5.800	3.764	5.906	5.253	5.641	5.833	5.800	5.253	5.869	5.857
1990	5.800	3.758	5.934	5.253	5.614	5.849	5.800	5.253	5.838	5.833
1991	5.800	3.740	5.948	5.253	5.636	5.873	5.800	5.253	5.827	5.823
1992	5.800	3.739	5.953	5.253	5.623	5.877	5.800	5.253	5.774	5.777
1993	5.800	3.735	5.954	5.253	5.539	5.866	5.800	5.253	5.681	5.693
1994	5.800	3.728	5.950	5.253	5.416	5.835	5.800	5.253	5.693	5.704
1995	5.800	3.728	5.938	5.253	5.345	5.830	5.800	5.253	5.692	5.703
1996	5.800	3.703	5.947	5.253	5.373	5.828	5.800	5.253	5.663	5.678
1997	5.800	3.686	5.954	5.253	5.333	5.836	5.800	5.253	5.663	5.678
1998	5.800	3.694	5.953	5.253	5.314	5.833	5.800	5.253	5.505	5.539
1999	5.800	3.663	5.942	5.253	5.291	5.815	5.800	5.253	5.530	5.564
2000	5.800	3.648	5.959	5.253	5.309	5.823	5.800	5.253	5.529	5.542
2001	5.800	3.652	5.976	5.253	5.330	5.838	5.800	5.253	5.637	5.641
2002	5.800	3.646	5.971	5.253	5.362	5.845	5.800	5.253	5.517	5.519
2003	5.800	3.659	5.970	5.253	5.381	5.845	5.800	5.253	5.628	5.630
2004	5.800	3.636	5.981	5.253	5.429	5.853	5.800	5.253	5.532	5.539
2005	5.800	3.638	5.977	5.253	5.436	5.835	5.800	5.253	5.504	5.513
2006	5.800	3.622	5.980	5.253	5.431	5.836	5.800	[e] 5.219	5.415	5.423
2007	5.800	3.609	5.985	5.222	5.483	5.857	5.800	5.188	5.465	5.471
2008	5.800	3.614	5.990	5.222	5.459	5.861	5.800	5.215	5.587	5.591
2009	5.800	3.598	5.988	5.222	5.509	5.878	5.800	5.221	5.674	5.677
2010	5.800	3.573	5.989	5.222	5.545	5.892	5.800	5.214	5.601	5.604
2011	5.800	3.573	6.008	5.222	5.538	5.905	5.800	5.216	5.526	5.530
2012	5.800	3.588	6.165	5.222	5.501	6.035	5.800	5.217	5.520	5.526
2013	5.800	3.629	6.010	5.222	5.497	5.899	5.800	5.216	5.470	5.482
2014	5.800	3.640	6.035	5.222	5.518	5.929	5.800	5.218	5.369	5.406
2015	5.717	3.669	6.065	5.222	5.504	5.941	5.682	5.218	5.279	5.319
2016	5.722	3.632	6.053	5.222	5.491	5.929	5.724	5.218	5.184	5.245
2017	5.723	3.612	6.050	5.222	5.489	5.930	5.738	[e] 5.222	5.151	5.258
2018	5.706	3.591	6.063	5.222	[d] 5.491	[d] 5.938	5.721	5.222	[d] 5.088	[d] 5.259
2019	5.698	3.607	6.061	5.222	5.464	5.908	5.708	5.222	5.022	5.263
2020	5.691	3.593	6.066	5.222	5.513	5.927	5.709	5.222	4.924	5.220
2021	5.690	3.585	6.067	5.222	5.508	5.905	5.725	5.222	4.861	5.161
2022	5.684	3.575	6.085	5.222	5.519	5.928	5.721	5.222	4.866	5.187
2023	[P] 5.689	[P] 3.574	[P] 6.092	[P] 5.222	[P] 5.472	[P] 5.944	[P] 5.730	[P] 5.222	[P] 4.806	[P] 5.175
2024	[E] 5.689	[E] 3.574	[E] 6.092	[E] 5.222	[E] 5.472	[E] 5.944	[E] 5.730	[E] 5.222	[E] 4.806	[E] 5.175

[a] Includes lease condensate.

[b] Natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[c] Excludes fuel ethanol, methyl tertiary butyl ether (MTBE), and other oxygenates blended into motor gasoline.

[d] Through 2017, the imports and exports factors are developed using old hydrocarbon gas liquids heat content values shown in Table A1 of the September 2019 *Monthly Energy Review* (MER). Beginning in 2018, the factors are developed using heat content values shown in Table A1 of the current MER.

[e] For 2006–2016, includes MTBE blended into motor gasoline; excludes MTBE in other years. For all years, excludes fuel ethanol and other non-MTBE oxygenates blended into motor gasoline.

P=Preliminary. E=Estimate.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A3. Approximate Heat Content of Petroleum Consumption and Fuel Ethanol

(Million Btu per Barrel)

	Total Petroleum[a] Consumption by Sector						Distillate Fuel Oil Consumption[f]	Hydrocarbon Gas Liquids Consumption[g]	Motor Gasoline (Finished) Consumption[h]	Petroleum Coke Consumption[i]	Fuel Ethanol[j]	*Fuel Ethanol Feedstock Factor*[k]
	Residential	Commercial[b]	Industrial[b]	Transportation[b,c]	Electric Power[d,e]	Total[b,c]						
1950	5.473	5.817	5.927	5.461	6.254	5.642	5.825	3.810	5.253	6.024	NA	*NA*
1955	5.470	5.781	5.847	5.407	6.254	5.581	5.825	3.810	5.253	6.024	NA	*NA*
1960	5.418	5.781	5.772	5.387	6.267	5.542	5.825	3.810	5.253	6.024	NA	*NA*
1965	5.365	5.761	5.695	5.386	6.267	5.517	5.825	[g] 3.810	5.253	6.024	NA	*NA*
1970	5.262	5.709	5.579	5.393	6.252	5.499	5.825	3.731	5.253	6.024	NA	*NA*
1975	5.255	5.649	5.490	5.392	6.250	5.489	5.825	3.671	5.253	6.024	NA	*NA*
1980	5.322	5.752	5.340	5.441	6.254	5.472	5.825	3.669	5.253	6.024	3.564	*6.586*
1981	5.284	5.693	5.268	5.433	6.258	5.440	5.825	3.632	5.253	6.024	3.564	*6.562*
1982	5.267	5.699	5.211	5.423	6.258	5.406	5.825	3.588	5.253	6.024	3.564	*6.539*
1983	5.141	5.592	5.214	5.416	6.255	5.396	5.825	3.535	5.253	6.024	3.564	*6.515*
1984	5.308	5.658	5.167	5.418	6.251	5.385	5.825	3.580	5.253	6.024	3.564	*6.492*
1985	5.264	5.598	5.159	5.423	6.247	5.377	5.825	3.584	5.253	6.024	3.564	*6.469*
1986	5.269	5.632	5.237	5.426	6.257	5.410	5.825	3.631	5.253	6.024	3.564	*6.446*
1987	5.241	5.594	5.203	5.429	6.249	5.395	5.825	3.663	5.253	6.024	3.564	*6.423*
1988	5.259	5.598	5.196	5.433	6.250	5.402	5.825	3.643	5.253	6.024	3.564	*6.400*
1989	5.195	5.549	5.190	5.438	[d] 6.240	5.403	5.825	3.679	5.253	6.024	3.564	*6.377*
1990	5.146	5.554	5.219	5.442	6.244	5.403	5.825	3.630	5.253	6.024	3.564	*6.355*
1991	5.096	5.529	5.130	5.441	6.246	5.375	5.825	3.626	5.253	6.024	3.564	*6.332*
1992	5.126	5.514	5.133	5.443	6.238	5.369	5.825	3.643	5.253	6.024	3.564	*6.309*
1993	5.103	[b] 5.505	[b] 5.140	[b] 5.413	6.230	[b] 5.354	5.825	3.628	[h] 5.217	6.024	3.564	*6.287*
1994	5.097	5.513	5.115	5.413	6.213	5.344	[f] 5.820	3.657	5.214	6.024	3.564	*6.264*
1995	5.062	5.476	5.084	5.409	6.187	5.326	5.820	3.641	5.204	6.024	3.564	*6.242*
1996	4.997	5.431	5.076	5.416	6.194	5.323	5.820	3.629	5.211	6.024	3.564	*6.220*
1997	4.988	5.389	5.083	5.410	6.198	5.322	5.820	3.627	5.205	6.024	3.564	*6.198*
1998	4.974	5.363	5.101	5.406	6.210	5.335	5.819	3.619	5.203	6.024	3.564	*6.176*
1999	4.902	5.289	5.052	5.406	6.204	5.313	5.819	3.628	5.202	6.024	3.564	*6.167*
2000	4.908	5.313	5.015	5.415	6.188	5.311	5.819	3.610	5.201	6.024	3.564	*6.159*
2001	4.936	5.323	5.104	5.405	6.199	5.331	5.819	3.604	5.201	6.024	3.564	*6.151*
2002	4.885	5.291	5.053	5.404	6.172	5.309	5.819	3.588	5.199	6.024	3.564	*6.143*
2003	4.920	5.313	5.108	5.400	6.182	5.326	5.819	3.610	5.197	6.024	3.564	*6.106*
2004	4.952	5.324	5.106	5.407	6.134	5.330	5.818	3.591	5.196	[i] 5.982	3.564	*6.069*
2005	4.915	5.360	5.143	5.408	6.126	5.342	5.818	3.589	5.192	5.982	3.564	*6.032*
2006	4.886	5.296	5.120	5.405	6.038	5.323	5.803	3.551	5.185	5.987	3.564	*5.995*
2007	4.833	5.270	5.079	5.376	6.064	5.293	5.784	3.544	5.142	5.996	3.564	*5.959*
2008	4.772	5.156	5.103	5.342	6.013	5.268	5.780	3.549	5.106	5.992	3.564	*5.922*
2009	4.664	5.217	4.959	[c] 5.320	5.987	[c] 5.218	5.781	3.487	5.090	6.017	3.564	*5.901*
2010	4.664	5.195	4.920	5.316	5.956	5.204	5.778	3.489	5.067	6.059	3.562	*5.880*
2011	4.657	5.176	4.887	5.315	5.900	5.193	5.776	3.423	5.063	6.077	3.561	*5.859*
2012	4.714	5.126	4.843	5.306	5.925	5.176	5.774	3.440	5.062	6.084	3.560	*5.838*
2013	4.648	5.053	4.801	5.302	5.892	5.157	5.774	3.468	5.060	6.089	3.560	*5.831*
2014	4.664	5.016	4.804	5.300	5.906	5.161	5.773	3.439	5.059	6.100	3.559	*5.825*
2015	4.721	5.050	4.767	5.302	5.915	5.154	5.773	3.461	5.057	6.085	3.558	*5.818*
2016	4.631	5.022	4.799	5.303	5.885	5.161	5.773	3.424	5.055	6.104	3.558	*5.811*
2017	4.623	5.006	4.769	5.305	5.893	5.153	5.772	3.400	5.053	6.132	3.556	*5.804*
2018	4.620	4.971	4.664	5.309	5.896	5.122	5.772	3.381	5.054	6.122	3.553	*5.797*
2019	4.540	4.962	4.646	5.307	5.900	5.111	5.771	3.401	5.052	6.132	3.555	*5.790*
2020	4.536	4.889	4.534	5.301	5.883	5.054	5.770	3.349	5.052	6.130	3.557	*5.784*
2021	4.611	4.909	4.524	5.306	5.883	5.067	5.770	3.369	5.050	6.135	3.555	*5.777*
2022	[R] 4.596	[R] 4.942	[R] 4.441	5.314	5.902	5.058	5.770	3.229	5.049	6.164	3.553	*5.777*
2023	[RE] 4.621	[RE] 4.954	[RE] 4.399	[RE] 5.309	[RP] 5.945	[RP] 5.043	[RP] 5.771	[P] 3.220	[P] 5.049	[P] 6.151	[P] 3.554	*5.777*
2024	[RE] 4.621	[RE] 4.954	[RE] 4.399	[RE] 5.309	[RE] 5.945	[RE] 5.043	[RE] 5.771	[E] 3.220	[E] 5.049	[E] 6.151	[E] 3.554	*5.777*

[a] Petroleum products supplied, including natural gas plant liquids and crude oil burned directly as fuel. Quantity-weighted averages of the petroleum products included in each category are calculated by using heat content values for individual products shown in Tables A1 and A3.

[b] Beginning in 1993, includes fuel ethanol blended into motor gasoline.

[c] Beginning in 2009, includes biodiesel and renewable diesel fuel blended into distillate fuel oil.

[d] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[e] Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

[f] There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a quantity-weighted factor. Quantity-weighted averages of the sulfur-content categories of distillate fuel oil are calculated by using heat content values shown in Table A1. Excludes biodiesel and renewable diesel fuel blended into distillate fuel oil.

[g] Quantity-weighted averages of the major components of hydrocarbon gas liquids are calculated by using heat content values shown in Table A1. The factor for 1967 is used as the estimated factor for 1949–1966.

[h] Through 1992, excludes oxygenates. Beginning in 1993, includes fuel ethanol blended into motor gasoline; and for 1993–2006, also includes methyl tertiary butyl ether (MTBE) and other oxygenates blended into motor gasoline.

[i] There is a discontinuity in this time series between 2003 and 2004; beginning in 2004, the single constant factor is replaced by a quantity-weighted factor. Quantity-weighted averages of the two categories of petroleum coke are calculated by using heat content values shown in Table A1.

[j] Includes denaturant (petroleum added to ethanol to make it undrinkable). Fuel ethanol factors are weighted average heat contents for undenatured ethanol (3.539 million Btu per barrel) and products used as denaturant (natural gasoline, finished motor gasoline, and motor gasoline blending components—see Tables A1 and A3 for factors). The factor for 2009 is used as the estimated factor for 1980–2008.

[k] Corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol), used as the factor to estimate total biomass inputs to the production of undenatured ethanol. Observed ethanol yields (gallons undenatured ethanol per bushel of corn) are 2.5 in 1980, 2.666 in 1998, 2.68 in 2002, 2.78 in 2008, and 2.82 in 2012; yields in other years are estimated. Corn is assumed to have a gross heat content of 0.392 million Btu per bushel. Undenatured ethanol is assumed to have a gross heat content of 3.539 million Btu per barrel.

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

Note: The heat content values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A4. Approximate Heat Content of Natural Gas

(Btu per Cubic Foot)

	Production		Consumption[a]				
	Marketed	Dry	End-Use Sectors[b]	Electric Power Sector[c]	Total	Imports	Exports
1950	1,119	1,035	1,035	1,035	1,035	– –	1,035
1955	1,120	1,035	1,035	1,035	1,035	1,035	1,035
1960	1,107	1,035	1,035	1,035	1,035	1,035	1,035
1965	1,101	1,032	1,032	1,032	1,032	1,032	1,032
1970	1,102	1,031	1,031	1,031	1,031	1,031	1,031
1975	1,095	1,021	1,020	1,026	1,021	1,026	1,014
1980	1,098	1,026	1,024	1,035	1,026	1,022	1,013
1981	1,103	1,027	1,025	1,035	1,027	1,014	1,011
1982	1,107	1,028	1,026	1,036	1,028	1,018	1,011
1983	1,115	1,031	1,031	1,030	1,031	1,024	1,010
1984	1,109	1,031	1,030	1,035	1,031	1,005	1,010
1985	1,112	1,032	1,031	1,038	1,032	1,002	1,011
1986	1,110	1,030	1,029	1,034	1,030	997	1,008
1987	1,112	1,031	1,031	1,032	1,031	999	1,011
1988	1,109	1,029	1,029	1,028	1,029	1,002	1,018
1989	1,107	1,031	1,032	[c] 1,028	1,031	1,004	1,019
1990	1,105	1,029	1,029	1,027	1,029	1,012	1,018
1991	1,108	1,030	1,031	1,025	1,030	1,014	1,022
1992	1,110	1,030	1,031	1,025	1,030	1,011	1,018
1993	1,106	1,027	1,027	1,025	1,027	1,020	1,016
1994	1,105	1,028	1,029	1,025	1,028	1,022	1,011
1995	1,106	1,026	1,027	1,021	1,026	1,021	1,011
1996	1,109	1,026	1,027	1,020	1,026	1,022	1,011
1997	1,107	1,026	1,027	1,020	1,026	1,023	1,011
1998	1,109	1,031	1,033	1,024	1,031	1,023	1,011
1999	1,107	1,027	1,028	1,022	1,027	1,022	1,006
2000	1,107	1,025	1,026	1,021	1,025	1,023	1,006
2001	1,105	1,028	1,029	1,026	1,028	1,023	1,010
2002	1,103	1,024	1,025	1,020	1,024	1,022	1,008
2003	1,103	1,028	1,029	1,025	1,028	1,025	1,009
2004	1,104	1,026	1,026	1,027	1,026	1,025	1,009
2005	1,104	1,028	1,028	1,028	1,028	1,025	1,009
2006	1,103	1,028	1,028	1,028	1,028	1,025	1,009
2007	1,102	1,027	1,027	1,027	1,027	1,025	1,009
2008	1,100	1,027	1,027	1,027	1,027	1,025	1,009
2009	1,101	1,025	1,025	1,025	1,025	1,025	1,009
2010	1,098	1,023	1,023	1,022	1,023	1,025	1,009
2011	1,142	1,022	1,022	1,021	1,022	1,025	1,009
2012	1,091	1,024	1,025	1,022	1,024	1,025	1,009
2013	1,101	1,027	1,028	1,025	1,027	1,025	1,009
2014	1,116	1,032	1,033	1,029	1,032	1,025	1,009
2015	1,124	1,037	1,038	1,035	1,037	1,025	1,009
2016	1,128	1,037	1,039	1,034	1,037	1,025	1,009
2017	1,129	1,036	1,037	1,034	1,036	1,025	1,009
2018	1,134	1,036	1,038	1,033	1,036	1,025	1,009
2019	1,140	1,038	1,040	1,034	1,038	1,025	1,009
2020	[R] 1,145	1,037	1,039	1,034	1,037	1,025	1,009
2021	1,146	1,037	1,039	1,034	1,037	1,025	1,009
2022	1,149	1,036	1,038	1,033	1,036	1,025	1,009
2023	[E] 1,149	[P] 1,036	[P] 1,038	[P] 1,033	[P] 1,036	[E] 1,025	[E] 1,009
2024	[E] 1,149	[E] 1,036	[E] 1,038	[E] 1,033	[E] 1,036	[E] 1,025	[E] 1,009

[a] Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels.

[b] Residential, commercial, industrial, and transportation sectors.

[c] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

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

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A5. Approximate Heat Content of Coal and Coal Coke

(Million Btu per Short Ton)

	Coal									Coal Coke
			Consumption							
	Production[a]	Waste Coal Supplied[b]	Residential and Commercial Sectors[c]	Industrial Sector: Coke Plants	Industrial Sector: Other[d]	Electric Power Sector[e,f]	Total	Imports	Exports	Imports and Exports
1950	25.090	NA	24.461	26.798	24.820	23.937	24.989	25.020	26.788	24.800
1955	25.201	NA	24.373	26.794	24.821	24.056	24.982	25.000	26.907	24.800
1960	24.906	NA	24.226	26.791	24.609	23.927	24.713	25.003	26.939	24.800
1965	24.775	NA	24.028	26.787	24.385	23.780	24.537	25.000	26.973	24.800
1970	23.842	NA	23.203	26.784	22.983	22.573	23.440	25.000	26.982	24.800
1975	22.897	NA	22.261	26.782	22.436	21.642	22.506	25.000	26.562	24.800
1980	22.415	NA	22.543	26.790	22.690	21.295	21.947	25.000	26.384	24.800
1981	22.308	NA	22.474	26.794	22.585	21.085	21.713	25.000	26.160	24.800
1982	22.239	NA	22.695	26.797	22.712	21.194	21.674	25.000	26.223	24.800
1983	22.052	NA	22.775	26.798	22.691	21.133	21.576	25.000	26.291	24.800
1984	22.010	NA	22.844	26.799	22.543	21.101	21.573	25.000	26.402	24.800
1985	21.870	NA	22.646	26.798	22.020	20.959	21.366	25.000	26.307	24.800
1986	21.913	NA	22.947	26.798	22.198	21.084	21.462	25.000	26.292	24.800
1987	21.922	NA	23.404	26.799	22.381	21.136	21.517	25.000	26.291	24.800
1988	21.823	NA	23.571	26.799	22.360	20.900	21.328	25.000	26.299	24.800
1989	21.765	[b] 10.391	23.650	26.800	22.347	[e] 20.898	21.307	25.000	26.160	24.800
1990	21.822	9.303	23.137	26.799	22.457	20.779	21.197	25.000	26.202	24.800
1991	21.681	10.758	23.114	26.799	22.460	20.730	21.120	25.000	26.188	24.800
1992	21.682	10.396	23.105	26.799	22.250	20.709	21.068	25.000	26.161	24.800
1993	21.418	10.638	22.994	26.800	22.123	20.677	21.010	25.000	26.335	24.800
1994	21.394	11.097	23.112	26.800	22.068	20.589	20.929	25.000	26.329	24.800
1995	21.326	11.722	23.118	26.800	21.950	20.543	20.880	25.000	26.180	24.800
1996	21.322	12.147	23.011	26.800	22.105	20.547	20.870	25.000	26.174	24.800
1997	21.296	12.158	22.494	26.800	22.172	20.518	20.830	25.000	26.251	24.800
1998	21.418	12.639	21.620	27.426	23.164	20.516	20.881	25.000	26.800	24.800
1999	21.070	12.552	23.880	27.426	22.489	20.490	20.818	25.000	26.081	24.800
2000	21.072	12.360	25.020	27.426	22.433	20.511	20.828	25.000	26.117	24.800
2001	[a] 20.772	12.169	24.909	27.426	22.622	20.337	20.671	25.000	25.998	24.800
2002	20.673	12.165	22.962	27.426	22.562	20.238	20.541	25.000	26.062	24.800
2003	20.499	12.360	22.242	27.425	22.468	20.082	20.387	25.000	25.972	24.800
2004	20.424	12.266	22.324	27.426	22.473	19.980	20.290	25.000	26.108	24.800
2005	20.348	12.093	22.342	26.279	22.178	19.988	20.246	25.000	25.494	24.800
2006	20.310	12.080	22.066	26.271	22.050	19.931	20.181	25.000	25.453	24.800
2007	20.340	12.090	22.069	26.329	22.371	19.909	20.168	25.000	25.466	24.800
2008	20.208	12.121	[c] 23.035	26.281	22.304	19.713	19.979	25.000	25.399	24.800
2009	19.963	12.076	22.852	26.334	21.823	19.521	19.741	25.000	25.633	24.800
2010	20.173	11.960	22.611	26.295	21.846	19.623	19.870	25.000	25.713	24.800
2011	20.142	11.604	22.099	26.299	21.568	19.341	19.600	25.000	25.645	24.800
2012	20.215	11.539	21.300	28.636	21.449	19.211	19.544	23.128	24.551	24.800
2013	20.182	11.103	21.233	28.705	21.600	19.174	19.513	22.379	24.605	24.800
2014	20.146	11.474	21.307	28.458	21.525	19.290	19.611	22.187	25.032	24.800
2015	19.880	11.527	20.699	28.526	21.258	19.146	19.482	22.633	25.048	24.800
2016	19.977	11.496	20.078	28.608	21.055	19.153	19.459	22.327	25.655	24.800
2017	20.025	11.438	19.467	28.673	20.802	18.981	19.303	21.489	24.628	24.800
2018	20.160	11.419	19.269	28.608	20.739	18.915	19.258	20.415	24.294	24.800
2019	20.053	11.513	19.084	28.629	20.721	18.903	19.292	20.558	24.584	24.800
2020	19.845	11.268	18.297	28.717	20.425	18.882	19.260	20.347	24.969	24.800
2021	19.933	11.268	18.399	28.666	20.578	18.941	19.331	20.295	24.216	24.800
2022	20.100	11.268	18.083	28.669	20.388	18.792	19.180	21.447	24.346	24.800
2023	RP 20.191	P 11.268	RP 17.375	RP 28.859	RP 20.487	RP 18.704	RP 19.174	RP 21.929	RP 24.102	P 24.800
2024	RE 20.191	E 11.268	RE 17.375	RE 28.859	RE 20.487	RE 18.704	RE 19.174	RE 21.929	RE 24.102	E 24.800

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

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

[c] Through 2007, used as the thermal conversion factor for coal consumption by the residential and commercial sectors. Beginning in 2008, used as the thermal conversion factor for coal consumption by the commercial sector only.

[d] Includes transportation. Excludes coal synfuel plants.

[e] Electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for electric utilities only; beginning in 1989, data are for electric utilities and independent power producers.

[f] Electric power sector factors are for anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and, beginning in 1998, coal synfuel.

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

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A6. Approximate Heat Rates for Electricity, and Heat Content of Electricity

(Btu per Kilowatthour)

	Approximate Heat Rates[a] for Electricity Net Generation					Thermal Conversion Factor for Noncombustible Renewable Energy[i,k]	Heat Content[j] of Electricity[k]
	Fossil Fuels[b]						
	Coal[c]	Petroleum[d]	Natural Gas[e]	Total Fossil Fuels[f,g]	Nuclear[h]		
1950	NA	NA	NA	14,030	– –	3,412	3,412
1955	NA	NA	NA	11,699	– –	3,412	3,412
1960	NA	NA	NA	10,760	11,629	3,412	3,412
1965	NA	NA	NA	10,453	11,804	3,412	3,412
1970	NA	NA	NA	10,494	10,977	3,412	3,412
1975	NA	NA	NA	10,406	11,013	3,412	3,412
1980	NA	NA	NA	10,388	10,908	3,412	3,412
1981	NA	NA	NA	10,453	11,030	3,412	3,412
1982	NA	NA	NA	10,454	11,073	3,412	3,412
1983	NA	NA	NA	10,520	10,905	3,412	3,412
1984	NA	NA	NA	10,440	10,843	3,412	3,412
1985	NA	NA	NA	10,447	10,622	3,412	3,412
1986	NA	NA	NA	10,446	10,579	3,412	3,412
1987	NA	NA	NA	10,419	10,442	3,412	3,412
1988	NA	NA	NA	10,324	10,602	3,412	3,412
1989	NA	NA	NA	10,432	10,583	3,412	3,412
1990	NA	NA	NA	10,402	10,582	3,412	3,412
1991	NA	NA	NA	10,436	10,484	3,412	3,412
1992	NA	NA	NA	10,342	10,471	3,412	3,412
1993	NA	NA	NA	10,309	10,504	3,412	3,412
1994	NA	NA	NA	10,316	10,452	3,412	3,412
1995	NA	NA	NA	10,312	10,507	3,412	3,412
1996	NA	NA	NA	10,340	10,503	3,412	3,412
1997	NA	NA	NA	10,213	10,494	3,412	3,412
1998	NA	NA	NA	10,197	10,491	3,412	3,412
1999	NA	NA	NA	10,226	10,450	3,412	3,412
2000	NA	NA	NA	10,201	10,429	3,412	3,412
2001	10,378	10,742	10,051	[b] 10,333	10,443	3,412	3,412
2002	10,314	10,641	9,533	10,173	10,442	3,412	3,412
2003	10,297	10,610	9,207	10,125	10,422	3,412	3,412
2004	10,331	10,571	8,647	10,016	10,428	3,412	3,412
2005	10,373	10,631	8,551	9,999	10,436	3,412	3,412
2006	10,351	10,809	8,471	9,919	10,435	3,412	3,412
2007	10,375	10,794	8,403	9,884	10,489	3,412	3,412
2008	10,378	11,015	8,305	9,854	10,452	3,412	3,412
2009	10,414	10,923	8,160	9,760	10,459	3,412	3,412
2010	10,415	10,984	8,185	9,756	10,452	3,412	3,412
2011	10,444	10,829	8,152	9,716	10,464	3,412	3,412
2012	10,498	10,991	8,039	9,516	10,479	3,412	3,412
2013	10,459	10,713	7,948	9,541	10,449	3,412	3,412
2014	10,428	10,814	7,907	9,509	10,459	3,412	3,412
2015	10,495	10,687	7,869	9,314	10,458	3,412	3,412
2016	10,493	10,811	7,863	9,228	10,459	3,412	3,412
2017	10,465	10,834	7,803	9,208	10,459	3,412	3,412
2018	10,481	11,095	7,811	9,098	10,455	3,412	3,412
2019	10,551	11,205	7,725	8,899	10,442	3,412	3,412
2020	10,655	11,259	7,725	8,767	10,446	3,412	3,412
2021	10,583	11,224	7,689	8,844	10,429	3,412	3,412
2022	10,689	11,166	7,740	8,813	10,448	3,412	3,412
2023	[E] 10,689	[E] 11,166	[E] 7,740	[E] 8,813	[E] 10,448	3,412	3,412
2024	[E] 10,689	[E] 11,166	[E] 7,740	[E] 8,813	[E] 10,448	3,412	3,412

[a] The values in columns 1–5 of this table are for net heat rates. See "Heat Rate" in Glossary.

[b] Through 2000, heat rates are for fossil-fueled steam-electric plants at electric utilities. Beginning in 2001, heat rates are for all fossil-fueled plants at electric utilities and electricity-only independent power producers.

[c] Includes anthracite, bituminous coal, subbituminous coal, lignite, and, beginning in 2002, waste coal and coal synfuel.

[d] Includes distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

[e] Includes natural gas and supplemental gaseous fuels.

[f] Includes coal, petroleum, natural gas, and, beginning in 2001, other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

[g] Through 2000, used as the thermal conversion factor for wood and waste electricity net generation at electric utilities; beginning in 2001, Btu data for wood and waste at electric utilities are available from surveys.

[h] Used as the thermal conversion factor for nuclear electricity net generation.

[i] Technology-based geothermal heat rates are no longer used in Btu calculations in this report. For technology-based geothermal heat rates for 1960–2010, see the *Annual Energy Review 2010*, Table A6.

[j] See "Heat Content" in Glossary.

[k] The value of 3,412 Btu per kilowatthour, which is the heat content of electricity, is a constant. It is used as the thermal conversion factor for electricity net generation from noncombustible renewable energy (hydro, geothermal, solar thermal, photovoltaic, and wind), electricity sales to ultimate customers, and electricity imports and exports.

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

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

Approximate Heat Content of Petroleum and Natural Gas Liquids

Asphalt. The U.S. Energy Information Administration (EIA) adopted the thermal conversion factor of 6.636 million British thermal units (Btu) per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Aviation Gasoline Blending Components. Assumed by EIA to be 5.048 million Btu per barrel or equal to the thermal conversion factor for **Aviation Gasoline (Finished)**.

Aviation Gasoline (Finished). EIA adopted the thermal conversion factor of 5.048 million Btu per barrel as adopted by the Bureau of Mines from the Texas Eastern Transmission Corporation publication *Competition and Growth in American Energy Markets 1947–1985*, a 1968 release of historical and projected statistics.

Butylene. EIA estimated the thermal conversion factor to be 4.377 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Crude Oil Exports. • 1949–2014: Assumed by EIA to be 5.800 million Btu per barrel or equal to the thermal conversion factor for crude oil produced in the United States. See **Crude Oil Production**. • 2015 forward: Calculated annually by EIA based on conversion of American Petroleum Institute (API) gravity ranges of crude oil exports as reported in trade data from the U.S. Census Bureau. Specific gravity (SG) = 141.5 / (131.5 + API gravity). The higher heating value (HHV) in million Btu per barrel = SG * (7.801796 - 1.3213 * SG^2).

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

Crude Oil Production. • 1949–2014: EIA adopted the thermal conversion factor of 5.800 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950." • 2015 forward: Calculated annually by EIA based on conversion of American Petroleum Institute (API) gravity ranges of crude oil production as reported on Form EIA-914, "Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report." Specific gravity (SG) = 141.5 / (131.5 + API gravity). The higher heating value (HHV) in million Btu per barrel = SG * (7.801796 - 1.3213 * SG^2).

Distillate Fuel Oil Consumption. • 1949–1993: EIA adopted the Bureau of Mines thermal conversion factor of 5.825 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950." • 1994 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for **Distillate Fuel Oil, 15 ppm Sulfur and Under** (5.770 million Btu per barrel), **Distillate Fuel Oil, Greater Than 15 ppm to 500 ppm Sulfur** (5.817 million Btu per barrel), and **Distillate Fuel Oil, Greater Than 500 ppm Sulfur** (5.825 million Btu per barrel).

Distillate Fuel Oil, 15 ppm Sulfur and Under. EIA adopted the thermal conversion factor of 5.770 million Btu per barrel (137,380 Btu per gallon) for U.S. conventional diesel from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model" (GREET), version GREET1_2023, December 2023.

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 Technologies Model" (GREET), version GREET1_2023, December 2023.

Distillate Fuel Oil, Greater Than 500 ppm Sulfur. EIA adopted the Bureau of Mines thermal conversion factor of 5.825 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

Ethane. EIA estimated the thermal conversion factor to be 2.783 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Ethylene. EIA adopted the thermal conversion factor of 2.436 million Btu per barrel (0.058 million Btu per gallon) as published in the Federal Register EPA; 40 CFR part 98; e-CRF; Table C1; April 5, 2019. The ethylene higher heating value is determined at 41 degrees Fahrenheit at saturation pressure.

Hydrocarbon Gas Liquids. • 1949–1966: EIA used the 1967 factor. • 1967 forward: Calculated annually by EIA as the average of the thermal conversion factors for all hydrocarbon gas liquids consumed (see Table A1) weighted by the quantities consumed. The component products of hydrocarbon gas liquids are ethane, propane, normal butane, isobutane, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). For 1967–1980, quantities consumed are from EIA, Energy Data Reports, "Petroleum Statement, Annual." For 1981 forward, quantities consumed are from EIA, *Petroleum Supply Annual.*

Hydrogen. EIA estimated a thermal conversion factor of 323.6 Btu per standard cubic foot (at 60 degrees Fahrenheit and 1 atmosphere), based on data published by the National Research Council and National Academy of Engineering, in Appendix H of *The Hydrogen Economy: Opportunities, Costs, Barriers, and R&D Needs*, 2004. EIA also assumed a thermal conversion factor of 6.287 million Btu per residual fuel oil equivalent barrel or equal to the thermal conversion factor for **Residual Fuel Oil**.

Isobutane. EIA estimated the thermal conversion factor to be 4.183 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Isobutylene. EIA estimated the thermal conversion factor to be 4.355 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

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

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

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

Lubricants. EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Miscellaneous Products. EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Motor Gasoline Blending Components. • 1949–2006: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel for "Gasoline, Motor Fuel" as published by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Markets 1947-1985,* a 1968 release of historical and projected statistics. • 2007 forward: EIA adopted the thermal conversion factor of 5.222 million Btu per barrel (124,340 Btu per gallon) for gasoline blendstock from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model" (GREET), version GREET1_2023, December 2023.

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 Technologies Model" (GREET), version GREET1_2023, December 2023.

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 Technologies Model" (GREET), version GREET1_2023, December 2023—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 Technologies Model" (GREET), version GREET1_2023, December 2023.

Natural Gas Plant Liquids Production. Calculated annually by EIA as the average of the thermal conversion factors for each natural gas plant liquid produced weighted by the quantities produced.

Natural Gasoline. EIA estimated the thermal conversion factor to be 4.638 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute. EIA assumes a natural gasoline ratio of 29% isopentane, 29% neopentane, 20% normal pentane, 13% normal hexane, 4% cyclohexane, 3% benzene, and 2% toluene in these calculations.

Normal Butane. EIA estimated the thermal conversion factor to be 4.353 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Other Hydrocarbons. Assumed by EIA to be 5.825 million Btu per barrel or equal to the thermal conversion factor for **Unfinished Oils**.

Oxygenates (Excluding Fuel Ethanol). EIA adopted the thermal conversion factor of 4.247 million Btu per barrel (101,130 Btu per gallon) for methyl tertiary butyl ether (MTBE) from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model" (GREET), version GREET1_2023, December 2023.

Petrochemical Feedstocks, Naphtha Less Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.248 million Btu per barrel or equal to the thermal conversion factor for **Special Naphthas**.

Petrochemical Feedstocks, Other Oils Equal to or Greater Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.825 million Btu per barrel or equal to the thermal conversion factor for **Distillate Fuel Oil**.

Petrochemical Feedstocks, Still Gas. Assumed by EIA to be equal to the thermal conversion factor for **Still Gas**.

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

Petroleum Coke, Marketable. EIA adopted the thermal conversion factor of 5.719 million Btu per barrel, calculated by dividing 28,595,925 Btu per short ton for petroleum coke (from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model" (GREET), version GREET1_2023, December 2023) by 5.0 barrels per short ton (as given in the Bureau of Mines Form 6-1300-M and successor EIA forms).

Petroleum Coke, Total. • 1949–2003: EIA adopted the thermal conversion factor of 6.024 million Btu per barrel as reported in Btu per short ton in the Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950." The Bureau of Mines calculated this factor by dividing 30.120 million Btu per short ton, as given in the referenced Bureau of Mines internal memorandum, by 5.0 barrels per short ton, as given in the Bureau of Mines Form 6-1300-M and successor EIA forms. • 2004 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for **Petroleum Coke, Catalyst** (6.287 million Btu per barrel) and **Petroleum Coke, Marketable** (5.719 million Btu per barrel).

Petroleum Consumption, Commercial Sector. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the commercial sector weighted by the estimated quantities consumed by the commercial sector. The quantities of petroleum products consumed by the commercial sector are estimated in the State Energy Data System—see documentation at http://www.eia.gov/state/seds/sep_use/notes/use_petrol.pdf.

Petroleum Consumption, Electric Power Sector. Calculated annually by EIA as the average of the thermal conversion factors for distillate fuel oil, petroleum coke, and residual fuel oil consumed by the electric power sector weighted by the quantities consumed by the electric power sector. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Petroleum Consumption, Industrial Sector. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the industrial sector weighted by the estimated quantities consumed by the industrial sector. The quantities of petroleum products consumed by the industrial sector are estimated in the State Energy Data System—see documentation at http://www.eia.gov/state/seds/sep_use/notes/use_petrol.pdf.

Petroleum Consumption, Residential Sector. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the residential sector weighted by the estimated quantities consumed by the residential sector. The quantities of petroleum products consumed by the residential sector are estimated in the State Energy Data System—see documentation at http://www.eia.gov/state/seds/sep_use/notes/use_petrol.pdf.

Petroleum Consumption, Total. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed weighted by the quantities consumed.

Petroleum Consumption, Transportation Sector. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed by the transportation sector weighted by the estimated quantities consumed by the transportation sector. The quantities of petroleum products consumed by the transportation sector are estimated in the State Energy Data System—see documentation at http://www.eia.gov/state/seds/sep_use/notes/use_petrol.pdf.

Petroleum Products Exports. Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product exported weighted by the quantities exported.

Petroleum Products Imports. Calculated annually by EIA as the average of the thermal conversion factors for each petroleum product imported weighted by the quantities imported.

Plant Condensate. • 1973–1983: Estimated to be 5.418 million Btu per barrel by EIA from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. EIA estimated the thermal conversion factor to be 3.841 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Propylene. EIA estimated the thermal conversion factor to be 3.835 million Btu per barrel, based on data for enthalpy of combustion from the National Institute of Standards and Technology, *NIST Chemistry WebBook, NIST Standard Reference Database Number 69,* 2018; and data for density of liquids at 60 degrees Fahrenheit and equilibrium pressure from the American Petroleum Institute.

Residual Fuel Oil. EIA adopted the thermal conversion factor of 6.287 million Btu per barrel as reported in the Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

Road Oil. EIA adopted the Bureau of Mines thermal conversion factor of 6.636 million Btu per barrel, which was assumed to be equal to that of **Asphalt** and was first published by the Bureau of Mines in the *Petroleum Statement, Annual, 1970*.

Special Naphthas. EIA adopted the Bureau of Mines thermal conversion factor of 5.248 million Btu per barrel, which was assumed to be equal to that of the total gasoline (aviation and motor) factor and was first published in the *Petroleum Statement, Annual, 1970*.

Still Gas. • 1949–2015: EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel, first published in the *Petroleum Statement, Annual, 1970*. • 2016 forward: Assumed by EIA to be 6.287 million Btu per barrel or equal to the thermal conversion factor for **Residual Fuel Oil.**

Total Petroleum Exports. Calculated annually by EIA as the average of the thermal conversion factors for crude oil and each petroleum product exported weighted by the quantities exported. See **Crude Oil Exports** and **Petroleum Products Exports**.

Total Petroleum Imports. Calculated annually by EIA as the average of the thermal conversion factors for each type of crude oil and petroleum product imported weighted by the quantities imported. See **Crude Oil Imports** and **Petroleum Products Imports**.

Unfinished Oils. EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel, the average of all natural gas or equal to that for **Distillate Fuel Oil** and first published it in EIA's *Annual Report to Congress, Volume 3, 1977*.

Unfractionated Stream. • 1979–1982: EIA assumed the thermal conversion factor to be 3.800 million Btu per barrel, the average of all natural gas plant liquids calculated on their contribution to total barrels produced.

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

Approximate Heat Content of Biofuels

Biodiesel. EIA estimated the thermal conversion factor for biodiesel to be 5.359 million Btu per barrel, or 17,253 Btu per pound.

Biodiesel Feedstock. EIA used soybean oil input to the production of biodiesel (million Btu soybean oil per barrel biodiesel) as the factor to estimate total biomass inputs to the production of biodiesel. EIA assumed that 7.65 pounds of soybean oil are needed to produce one gallon of biodiesel, and 5.433 million Btu of soybean oil are needed to produce one barrel of biodiesel. EIA also assumed that soybean oil has a gross heat content of 16,909 Btu per pound, or 5.483 million Btu per barrel.

Ethanol (Undenatured). EIA adopted the thermal conversion factor of 3.539 million Btu per barrel published in "Oxygenate Flexibility for Future Fuels," a paper presented by William J. Piel of the ARCO Chemical Company at the National Conference on Reformulated Gasolines and Clean Air Act Implementation, Washington, DC, October 1991.

Fuel Ethanol (Denatured). • 1981–2008: EIA used the 2009 factor. • 2009 forward: Calculated by EIA as the annual quantity-weighted average of the thermal conversion factors for undenatured ethanol (3.539 million Btu per barrel), natural gasoline used as denaturant (4.638 million Btu per barrel), and conventional motor gasoline and motor gasoline blending components used as denaturant (5.253 million Btu per barrel). The quantity of ethanol consumed is from EIA's *Petroleum Supply Annual* (PSA) and *Petroleum Supply Monthly* (PSM), Table 1, data for renewable fuels and oxygenate plant net production of fuel ethanol. The quantity of natural gasoline used as denaturant is from PSA/PSM, Table 1, data for renewable fuels and oxygenate plant net production of natural gasoline, multiplied by -1. The quantity of conventional motor gasoline and motor gasoline blending components used as denaturant is from PSA/PSM, Table 1, data for renewable fuels and oxygenate plant net production of conventional motor gasoline and motor gasoline blending components, multiplied by -1.

Fuel Ethanol Feedstock. EIA used corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol) as the annual factor to estimate total biomass inputs to the production of undenatured ethanol. EIA used the following observed ethanol yields (in gallons undenatured ethanol per bushel of corn) from U.S.

Department of Agriculture: 2.5 in 1980, 2.666 in 1998, 2.68 in 2002; and from University of Illinois at Chicago, Energy Resources Center, "2012 Corn Ethanol: Emerging Plant Energy and Environmental Technologies": 2.78 in 2008, and 2.82 in 2012. EIA estimated the ethanol yields in other years. EIA also assumed that corn has a gross heat content of 0.392 million Btu per bushel.

Other Biofuels. EIA assumed the thermal conversion factor to be 5.359 million Btu per barrel or equal to the thermal conversion factor for **Biodiesel.**

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 Technologies Model" (GREET), version GREET1_2023, December 2023.

Approximate Heat Content of Natural Gas

Natural Gas Consumption, Electric Power Sector. Calculated annually by EIA by dividing the heat content of natural gas consumed by the electric power sector by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Natural Gas Consumption, End-Use Sectors. Calculated annually by EIA by dividing the heat content of natural gas consumed by the end-use sectors (residential, commercial, industrial, and transportation) by the quantity consumed. The heat content of natural gas consumed by the end-use sectors is calculated as the total heat content of natural gas consumed minus the heat content of natural gas consumed by the electric power sector. The quantity of natural gas consumed by the end-use sectors is calculated as the total quantity of natural gas consumed minus the quantity of natural gas consumed by the electric power sector. Data are from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; and Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Natural Gas Consumption, Total. • 1949–1962: EIA adopted the thermal conversion factor of 1,035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*. • 1963–1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts*, an AGA annual publication. • 1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity consumed.

Natural Gas Exports. • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas exported by the quantity exported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

Natural Gas Imports. • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas imported by the quantity imported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

Natural Gas Production, Dry. Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed. See **Natural Gas Consumption, Total**.

Natural Gas Production, Marketed. Calculated annually by EIA by dividing the heat content of dry natural gas produced (see **Natural Gas Production, Dry**) and natural gas liquids produced (see **Natural Gas Liquids Production**) by the total quantity of marketed natural gas produced.

Approximate Heat Content of Coal and Coal Coke

Coal Coke Imports and Exports. EIA adopted the Bureau of Mines estimate of 24.800 million Btu per short ton.

Coal Consumption, Electric Power Sector. Calculated annually by EIA by dividing the heat content of coal consumed by the electric power sector by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Coal Consumption, Industrial Sector, Coke Plants. • 1949–2011: Calculated annually by EIA based on the reported volatility (low, medium, or high) of coal received by coke plants. (For 2011, EIA used the following volatility factors, in million Btu per short ton: low volatile—26.680; medium volatile—27.506; and high volatile—25.652.) Data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal received by coke plants by the quantity received. Through June 2014, data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Industrial Sector, Other. • 1949–2007: Calculated annually by EIA by dividing the heat content of coal received by manufacturing plants by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by manufacturing, gasification, and liquefaction plants by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Residential and Commercial Sectors. • 1949–1999: Calculated annually by EIA by dividing the heat content of coal received by the residential and commercial sectors by the quantity received. Data are from Form EIA-6, "Coal Distribution Report," and predecessor forms. • 2000–2007: Calculated annually by EIA by dividing the heat content of coal consumed by commercial combined-heat-and-power (CHP) plants by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by commercial and institutional users by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Total. Calculated annually by EIA by dividing the total heat content of coal consumed by all sectors by the total quantity consumed.

Coal Exports. • 1949–2011: Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. Data are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report EM 545," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. The average heat content of steam coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"), and Form EIA-923, "Power Plant Operations Report." Through June 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"). Data for export quantities are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report EM 545."

Coal Imports. • 1949–1963: Calculated annually by EIA by dividing the heat content of coal imported by the quantity imported. Data are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report IM 145," and predecessor forms. • 1964–2011: Assumed by EIA to be 25.000 million Btu per short ton. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal imported (received) by the quantity imported (received). Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); and Form EIA-923, "Power Plant Operations Report."

Coal Production. • 1949–2011: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users"; Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; Form EIA-923, "Power Plant Operations Report"; and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received and exported by the quantity received and exported. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); Form EIA-

923, “Power Plant Operations Report”; U.S. Department of Commerce, U.S. Census Bureau, “Monthly Report EM 545”; and predecessor forms.

Waste Coal Supplied. • 1989–2000: Calculated annually by EIA by dividing the heat content of waste coal consumed by the quantity consumed. Data are from Form EIA-860B, “Annual Electric Generator Report—Nonutility,” and predecessor form. • 2001 forward: Calculated by EIA by dividing the heat content of waste coal received (or consumed) by the quantity received (or consumed). Receipts data are from Form EIA-3, “Quarterly Survey of Industrial, Commercial, and Institutional Coal Users” (formerly called “Quarterly Survey of Non-Electric Sector Coal Data”), and predecessor forms. Consumption data are from Form EIA-923, “Power Plant Operations Report,” and predecessor forms.

Table A6 Sources

Approximate Heat Rates for 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.

Approximate Heat Rates for 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.

Approximate Heat Rates for 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.

Approximate Heat Rates for 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.

Approximate Heat Rates for 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.

Thermal Conversion Factor for 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 uses the heat content of electricity, 3,412 Btu per kilowatthour. See Appendix E for more information.

Heat Content of Electricity. The value of 3,412 Btu per kilowatthour, which is the heat content of electricity, is a constant. It is used as the thermal conversion factor for electricity net generation from noncombustible renewable energy (hydro, geothermal, solar thermal, photovoltaic, and wind), electricity sales to ultimate customers, and electricity imports and exports.

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Appendix B

Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

Metric Conversion Factors, Metric Prefixes, and Other Physical Conversion Factors

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

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

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

Table B1. Metric Conversion Factors

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

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

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

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

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

Table B2. Metric Prefixes

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

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

Table B3. Other Physical Conversion Factors

Energy Source	Original Unit		Equivalent in Final Units	
Petroleum	1 barrel (bbl)	=	42[a]	U.S. gallons (gal)
Coal	1 short ton	=	2,000[a]	pounds (lb)
	1 long ton	=	2,240[a]	pounds (lb)
	1 metric ton (t)	=	1,000[a]	kilograms (kg)
Wood	1 cord (cd)	=	1.25[b]	shorts tons
	1 cord (cd)	=	128[a]	cubic feet (ft^3)

[a] Exact conversion.
[b] Calculated by the U.S. Energy Information Administration.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#appendices.
Sources: U.S. Department of Commerce, National Institute of Standards and Technology, *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, NIST Handbook 44, 1994 Edition (Washington, DC, October 1993), pp. B-10, C-17, and C-21.

Appendix C

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

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

	Population			U.S. Gross Domestic Product			U.S. Gross Output[a]
	United States[b]	World	United States as Share of World	Billion Nominal Dollars[d]	Billion Chained (2017) Dollars[e]	Implicit Price Deflator[c] (2017 = 1.00000)	Billion Nominal Dollars[d]
	Million People		Percent				
1950	152.3	2,558.0	6.0	299.8	2,458.5	0.12195	577.8
1955	165.9	2,783.0	6.0	425.5	3,083.0	.13801	802.6
1960	180.7	3,043.7	5.9	542.4	3,500.3	.15495	1,006.0
1965	194.3	3,351.4	5.8	742.3	4,478.6	.16574	1,356.0
1970	205.1	3,714.3	5.5	1,073.3	5,316.4	.20189	1,903.0
1975	216.0	4,089.9	5.3	1,684.9	6,060.9	.27800	3,055.3
1980	227.2	4,446.0	5.1	2,857.3	7,257.3	.39371	5,462.0
1981	229.5	4,527.5	5.1	3,207.0	7,441.5	.43097	6,033.5
1982	231.7	4,610.3	5.0	3,343.8	7,307.3	.45759	6,175.0
1983	233.8	4,694.2	5.0	3,634.0	7,642.3	.47552	6,631.0
1984	235.8	4,775.9	4.9	4,037.6	8,195.3	.49267	7,313.8
1985	237.9	4,860.7	4.9	4,339.0	8,537.0	.50826	7,775.7
1986	240.1	4,947.8	4.9	4,579.6	8,832.6	.51849	8,031.0
1987	242.3	5,037.6	4.8	4,855.2	9,137.7	.53134	8,707.5
1988	244.5	5,128.4	4.8	5,236.4	9,519.4	.55008	9,434.2
1989	246.8	5,218.9	4.7	5,641.6	9,869.0	.57165	10,069.8
1990	249.6	5,311.1	4.7	5,963.1	10,055.1	.59305	10,624.6
1991	253.0	5,398.2	4.7	6,158.1	10,044.2	.61310	10,808.0
1992	256.5	5,484.9	4.7	6,520.3	10,398.0	.62707	11,381.0
1993	259.9	5,568.6	4.7	6,858.6	10,684.2	.64194	12,024.4
1994	263.1	5,650.4	4.7	7,287.2	11,114.6	.65564	12,826.8
1995	266.3	5,733.5	4.6	7,639.7	11,413.0	.66939	13,653.2
1996	269.4	5,815.6	4.6	8,073.1	11,843.6	.68164	14,463.4
1997	272.6	5,896.2	4.6	8,577.6	12,370.3	.69340	15,393.3
1998	275.9	5,975.5	4.6	9,062.8	12,924.9	.70119	16,216.8
1999	279.0	6,054.4	4.6	9,631.2	13,543.8	.71111	17,270.7
2000	282.2	6,133.0	4.6	10,251.0	14,096.0	.72722	18,625.2
2001	285.0	6,211.8	4.6	10,581.9	14,230.7	.74360	18,881.2
2002	287.6	6,290.9	4.6	10,929.1	14,472.7	.75515	19,170.8
2003	290.1	6,369.9	4.6	11,456.5	14,877.3	.77006	20,138.0
2004	292.8	6,449.1	4.5	12,217.2	15,449.8	.79077	21,688.9
2005	295.5	6,528.0	4.5	13,039.2	15,988.0	.81556	23,514.7
2006	298.4	6,608.5	4.5	13,815.6	16,433.1	.84071	24,924.7
2007	301.2	6,690.7	4.5	14,474.2	16,762.4	.86349	26,245.0
2008	304.1	6,774.9	4.5	14,769.9	16,781.5	.88013	27,023.5
2009	306.8	6,859.1	4.5	14,478.1	16,349.1	.88556	24,954.6
2010	309.3	6,942.1	4.5	15,049.0	16,789.8	.89632	26,475.7
2011	311.6	7,024.9	4.4	15,599.7	17,052.4	.91481	28,045.9
2012	313.8	7,108.2	4.4	16,254.0	17,442.8	.93185	29,222.8
2013	316.0	7,192.3	4.4	16,880.7	17,812.2	.94771	30,350.1
2014	318.3	7,276.1	4.4	17,608.1	18,261.7	.96421	31,756.4
2015	320.6	7,359.0	4.4	18,295.0	18,799.6	.97316	32,183.1
2016	322.9	7,441.7	4.3	18,804.9	19,141.7	.98241	32,855.1
2017	325.0	7,524.0	4.3	19,612.1	19,612.1	1.00000	34,468.1
2018	326.7	7,605.0	4.3	20,656.5	20,193.9	1.02291	36,504.5
2019	328.2	7,685.6	4.3	21,521.4	20,692.1	1.04008	37,676.5
2020	331.5	7,765.0	4.3	21,323.0	20,234.1	1.05381	36,681.0
2021	332.0	7,837.6	4.2	23,594.0	21,407.7	1.10213	41,665.3
2022	333.3	7,906.7	4.2	25,744.1	21,822.0	1.17973	46,083.3
2023	334.9	7,982.0	4.2	27,357.8	22,374.3	1.22273	R 47,837.2

[a] Gross output is the value of gross domestic product (GDP) plus the value of intermediate inputs used to produce GDP.

[b] Resident population of the 50 states and the District of Columbia estimated for July 1 of each year.

[c] The gross domestic product implicit price deflator is used to convert nominal dollars to chained (2017) dollars.

[d] See "Nominal Dollars" in Glossary.

[e] See "Chained Dollars" in Glossary.

R=Revised.

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, "Annual 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 2023). • **World Population: 1950 forward**—DOC, U.S. Census Bureau, International Database (August 2023). • **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 (February 2024), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1949–2016**—DOC, BEA, GDP by industry (Historical) data (Fall 2023). **1997 forward**—DOC, BEA, GDP by Industry data (March 2024).

Appendix D

Estimated Primary Energy Consumption in the United States, Selected Years, 1635-1945

Estimated Primary Energy Consumption in the United States, Selected Years, 1635-1945

Table D1. Estimated Primary Energy Consumption in the United States, Selected Years, 1635–1945 (Quadrillion Btu)

	Fossil Fuels				Renewable Energy				
					Conventional Hydroelectric Power	Biomass		Electricity Net Imports[b]	
	Coal	Natural Gas	Petroleum	Total		Wood [a]	Total		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	0.001	2.515	2.516	– –	6.991
1895	4.950	.147	.168	5.265	.003	2.306	2.309	– –	7.574
1900	6.841	.252	.229	7.322	.010	2.015	2.025	– –	9.347
1905	10.001	.372	.610	10.983	.017	1.843	1.860	– –	12.843
1910	12.714	.540	1.007	14.261	.029	1.765	1.794	– –	16.055
1915	13.294	.673	1.418	15.385	.045	1.688	1.733	0.002	17.120
1920	15.504	.813	2.676	18.993	.064	1.610	1.674	.003	20.670
1925	14.706	1.191	4.280	20.177	.087	1.533	1.620	.004	21.801
1930	13.639	1.932	5.897	21.468	.122	1.455	1.577	.005	23.050
1935	10.634	1.919	5.675	18.228	.146	1.397	1.543	.005	19.776
1940	12.535	2.665	7.760	22.960	.171	1.358	1.529	.007	24.496
1945	15.972	3.871	10.110	29.953	.289	[a]1.261	1.550	.009	31.512

[a] There is a discontinuity in the "Wood" time series between 1945 (in this table) and 1949 (in Table 10.1). Through 1945, data are for fuelwood only; beginning in 1949, data are for wood and wood-derived fuels.

[b] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

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

Notes: • For years not shown, data are not available. • See Tables 1.3 and 10.1 for continuation of these data series beginning in 1949. • See Note, "Geographic Coverage of Statistics for 1635–1945," at end of section.

Sources: • **Fossil Fuels:** *Energy in the American Economy, 1850–1975,* Table VII. • **Conventional Hydroelectric Power:** *Energy in the American Economy, 1850–1975,* Table I. Data are converted to Btu by multiplying by 3,412 Btu per kilowatthour. • **Wood: 1635–1845—**U.S. Department of Agriculture, Circular No. 641, *Fuel Wood Used in the United States 1630–1930,* February 1942. This source estimates fuelwood consumption in cords per decade, which were converted to Btu using the conversion factor of 20 million Btu per cord. The annual average value for each decade was assigned to the fifth year of the decade on the assumption that annual use was likely to increase during any given decade and the average annual value was more likely to reflect mid-decade yearly consumption than use at either the beginning or end of the decade. Values thus begin in 1635 and are plotted at 10-year intervals. **1850–1945—***Energy in the American Economy, 1850–1975,* Table VII. • **Electricity Net Imports:** *Energy in the American Economy, 1850–1975,* Tables I and VI. Electricity net imports are assumed to equal hydroelectric consumption minus hydroelectric production (data are converted to Btu by multiplying by 3,412 Btu per kilowatthour).

Note. Geographic Coverage of Statistics for 1635–1945.
Table D1 presents estimates of U.S. energy consumption by energy source for a period that begins a century and a half before the original 13 colonies formed a political union and continues through the decades during which the United States was still expanding territorially. The question thus arises, what exactly is meant by "U.S. consumption" of an energy source for those years when the United States did not formally exist or consisted of less territory than is now encompassed by the 50 states and the District of Columbia?

The documents used to assemble the estimates, and (as far as possible) the sources of those documents, were reviewed carefully for clues to geographic coverage. For most energy sources, the extent of coverage expanded more rapidly than the nation, defined as all the official states and the District of Columbia. Estimates or measurements of consumption of each energy source generally appear to follow settlement patterns. That is, they were made for areas of the continent that were settled enough to have economically significant consumption even though those areas were not to become states for years. The wood data series, for example, begins in 1635 and includes 12 of the original colonies (excepting Georgia), as well as Maine, Vermont, and the area that would become the District of Columbia. By the time the series reaches 1810, the rest of the continental states are all included, although the last of the 48 states to achieve statehood did not do so until 1912. Likewise, the coal data series begins in 1850 but includes consumption in areas, such as Utah and Washington (state), which were significant coal producing regions but had not yet attained statehood. (Note: No data were available on state-level historical coal consumption. The coal data shown in Table D1 through 1945 describe *apparent* consumption, i.e., production plus imports minus exports. The geographic coverage for coal was therefore based on a tally of coal-*producing* states listed in various historical issues of *Minerals Yearbook*. It is likely that coal was consumed in states where it was not mined in significant quantities.)

By energy source, the extent of coverage can be summarized as follows: • Coal—35 coal-producing states by 1885. • Natural Gas—All 48 contiguous states, the District of Columbia, and Alaska by 1885. • Petroleum—All 48 contiguous states, the District of Columbia, and Alaska by 1885. • Conventional Hydroelectric Power—Coverage for 1890 and 1895 is uncertain, but probably the 48 contiguous states and the District of Columbia. Coverage for 1900–1945 is the 48 contiguous states, and the District of Columbia. • Wood—All 48 contiguous states and the District of Columbia by 1810.

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Appendix E

Alternative Measures for the Energy Content of Noncombustible Renewables

Alternative Measures for the Energy Content of Noncombustible Renewables

Energy sources are measured in different physical units: liquid fuels in barrels or gallons, gases in cubic feet, coal in short tons, and electricity in kilowatthours. EIA converts each source into common British thermal units (Btu) to allow comparison among different types of energy and to calculate total energy concepts.

Noncombustible renewables (hydroelectric, geothermal, solar, and wind energy) are resources from which energy is extracted without burning or combusting fuel. When noncombustible renewables generate electricity, there is no fuel combustion and, therefore, no set Btu conversion factors for the energy sources.[1]

There are three broadly accepted ways to convert electricity generated from noncombustible renewables into Btu of primary energy—the captured energy, fossil fuel equivalency, and incident energy approaches. Each of these methods are described in detail below.

Captured Energy Approach

The captured energy approach converts primary energy consumption of noncombustible renewables from kilowatthours (kWh) to Btu using the constant conversion factor representing the heat content of electricity—3,412 Btu per kWh. Captured energy reflects the primary energy captured for economic use and does not include losses. In other words, it represents the net energy available for direct consumption after the transformation of a noncombustible renewable source of energy into electricity, where captured energy is the energy measured as the "output" of a generating unit, such as electricity from a wind turbine or solar plant.

The captured energy approach is often used to show the economically significant portion of the energy transformation associated with renewable energy sources. There is no market for the resource-specific energy apart from its immediate, site-specific energy conversion, and there is no substantive opportunity cost to its continued exploitation.[2] This approach is preferred by the *UN International Recommendations for Energy Statistics* (IRES) because the detailed data needed to estimate quantities of incident energy are not available now and are not likely to develop soon. This approach is also more closely tied to a physical market commodity, that is, electricity net generation, than the conceptual measure derived using the fossil fuel equivalency approach.

Fossil Fuel Equivalency Approach

The fossil fuel equivalency approach converts the consumption of noncombustible renewable electricity (in kWh) to Btu by applying a fossil fuel equivalency factor, based on the fossil-fuels heat rate (Table A6). The fossil-fuels heat rate is equal to the average thermal efficiency across fossil-fueled fired generating plants based on fuel consumption and net generation data reported to EIA. The fossil fuel equivalent consumption represents the energy consumed as if the electricity were generated by fossil fuels and is useful for analysis when considering the amount of primary fossil fuel energy displaced by renewable energy sources.

However, unlike the captured energy approach, the fossil fuel equivalency approach is not as directly tied to any real market or physical quantity. The fossil fuel equivalency approach measures neither primary energy consumption nor fossil fuels actually displaced. Additionally, its use becomes increasingly problematic as noncombustible renewables begin to displace other renewables instead of fossil fuels.

Incident Energy Approach

Incident energy is the mechanical, radiation, or thermal energy that is measurable as the "input" of the device. EIA defines "incident energy" for noncombustible renewables as the gross energy that first strikes an energy conversion device:

- For hydroelectric, the energy contained in the water passing through the penstock (a closed conduit for carrying water to the turbines)
- For geothermal, the energy contained in the hot fluid at the surface of the wellbore
- For wind, the energy contained in the wind that passes through the rotor disc
- For solar, the energy contained in the sunlight that strikes the panel or collector mirror

The incident energy approach converts noncombustible renewable electricity to Btu by accounting for the "losses" that result from an inability to convert 100% of incident energy to a useful form of energy. EIA has not published total primary energy consumption statistics based on this approach because it is difficult to obtain accurate estimates of input energy without creating undue burden on survey respondents and possible concern about the quality of the resulting data. Few renewable electricity power plants track cumulative input energy due to its lack of economic significance or other purpose. In addition, estimated energy efficiencies of renewable conversion technologies vary significantly across technologies, site-specific configurations, and environmental factors.[3]

EIA now using the captured energy approach

Starting with the September 2023 *Monthly Energy Review* (MER), EIA began converting electricity generation from noncombustible renewables into Btu using the captured energy approach rather than the fossil fuel equivalency approach in its main data tables (reflected in MER Sections 1, 2, and 10). The Btu values of hydroelectric, geothermal, solar, and wind energy consumption and, consequently, total primary energy consumption and total energy production are lower for all time periods because of the new conversion factor (the heat content of electricity from Table A6).

After a thorough review of the alternative approaches, EIA made the change for two primary reasons. First, adopting the captured energy approach promotes international comparability in energy statistics by adopting the standards provided in IRES. Second, as renewable energy continues to represent an increasingly larger portion of U.S. energy consumption over time, the fossil fuel equivalent values of generation from renewable sources become less relevant to our data users than the electrical energy provided by renewable sources.

Some analysts may still prefer to use the measures based on the fossil fuel equivalency approach, which was previously used by EIA. MER Tables E1–E4 present noncombustible renewable energy statistics using the fossil fuel equivalency approach.

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[1]Direct use of noncombustible renewables in the form of heat (e.g., solar thermal heating) is estimated separately and is measured in Btu.
[2]There is an initial opportunity cost when a facility is first built: water behind a dam might flood land that could have been used for other purposes, or a solar panel might shade an area that could have used the sunlight. But that is a "fixed" opportunity cost that does not change during the operation of the plant.
[3]Based on EIA research conducted in 2016, engineering estimates of conversion efficiencies for noncombustible renewables range from less than 20% for solar photovoltaics and geothermal to 90% for large-scale hydroelectricity plants. Those estimates are notional indications of the energy output as a percent of energy input at each technology based on typical equipment operating within the normal operating range for that technology.

Table E1. Primary Energy Overview, Fossil Fuel Equivalency Approach

(Quadrillion Btu)

	Production				Trade			Stock Change and Other[d]	Consumption			
	Fossil Fuels[a]	Nuclear Electric Power	Renewable Energy[b]	Total	Imports	Exports	Net Imports[c]		Fossil Fuels[e]	Nuclear Electric Power	Renewable Energy[b]	Total[f]
1950 Total	**32.553**	**0.000**	**2.978**	**35.531**	**1.913**	**1.465**	**0.448**	**-1.380**	**31.615**	**0.000**	**2.978**	**34.599**
1955 Total	**37.347**	**.000**	**2.784**	**40.131**	**2.790**	**2.286**	**.504**	**-.457**	**37.380**	**.000**	**2.784**	**40.178**
1960 Total	**39.855**	**.006**	**2.928**	**42.789**	**4.188**	**1.477**	**2.710**	**-.458**	**42.091**	**.006**	**2.928**	**45.041**
1965 Total	**47.205**	**.043**	**3.396**	**50.644**	**5.892**	**1.829**	**4.063**	**-.754**	**50.515**	**.043**	**3.396**	**53.953**
1970 Total	**59.152**	**.239**	**4.070**	**63.462**	**8.342**	**2.632**	**5.709**	**-1.354**	**63.501**	**.239**	**4.070**	**67.817**
1975 Total	**54.697**	**1.900**	**4.687**	**61.284**	**14.032**	**2.323**	**11.709**	**-1.062**	**65.323**	**1.900**	**4.687**	**71.931**
1980 Total	**58.979**	**2.739**	**5.428**	**67.147**	**15.796**	**3.695**	**12.101**	**-1.227**	**69.782**	**2.739**	**5.428**	**78.021**
1985 Total	**57.502**	**4.076**	**6.084**	**67.661**	**11.781**	**4.196**	**7.584**	**1.088**	**66.035**	**4.076**	**6.084**	**76.334**
1990 Total	**58.523**	**6.104**	**6.040**	**70.668**	**18.817**	**4.752**	**14.065**	**-.299**	**72.281**	**6.104**	**6.040**	**84.433**
1995 Total	**57.496**	**7.075**	**6.557**	**71.129**	**22.180**	**4.496**	**17.684**	**2.118**	**77.162**	**7.075**	**6.559**	**90.931**
2000 Total	**57.307**	**7.862**	**6.102**	**71.271**	**28.865**	**3.962**	**24.904**	**2.528**	**84.620**	**7.862**	**6.104**	**98.702**
2005 Total	**54.995**	**8.161**	**6.221**	**69.377**	**34.659**	**4.462**	**30.197**	**.527**	**85.623**	**8.161**	**6.233**	**100.101**
2010 Total	**58.159**	**8.434**	**8.312**	**74.906**	**29.866**	**8.176**	**21.690**	**.916**	**80.723**	**8.434**	**8.266**	**97.512**
2011 Total	**60.529**	**8.269**	**9.306**	**78.104**	**28.748**	**10.373**	**18.375**	**.389**	**79.263**	**8.269**	**9.210**	**96.868**
2012 Total	**62.298**	**8.062**	**8.890**	**79.249**	**27.068**	**11.267**	**15.801**	**-.670**	**77.304**	**8.062**	**8.853**	**94.380**
2013 Total	**64.180**	**8.244**	**9.438**	**81.862**	**24.623**	**11.788**	**12.835**	**2.433**	**79.224**	**8.244**	**9.464**	**97.130**
2014 Total	**69.619**	**8.338**	**9.798**	**87.754**	**23.241**	**12.270**	**10.971**	**-.428**	**80.017**	**8.338**	**9.761**	**98.297**
2015 Total	**70.186**	**8.337**	**9.766**	**88.289**	**23.794**	**12.902**	**10.892**	**-1.776**	**79.090**	**8.337**	**9.749**	**97.404**
2016 Total	**65.435**	**8.427**	**10.477**	**84.339**	**25.378**	**14.119**	**11.259**	**1.784**	**78.319**	**8.427**	**10.409**	**97.381**
2017 Total	**68.448**	**8.419**	**11.259**	**88.127**	**25.458**	**17.946**	**7.512**	**2.017**	**77.907**	**8.419**	**11.138**	**97.657**
2018 Total	**75.780**	**8.438**	**11.580**	**95.798**	**24.833**	**21.224**	**3.610**	**1.832**	**81.281**	**8.438**	**11.370**	**101.240**
2019 Total	**81.399**	**8.452**	**11.627**	**101.478**	**22.865**	**23.476**	**-.610**	**-.390**	**80.425**	**8.452**	**11.468**	**100.478**
2020 Total	**76.145**	**8.251**	**11.588**	**95.984**	**19.988**	**23.464**	**-3.476**	**.467**	**73.139**	**8.251**	**11.423**	**92.975**
2021 Total	**77.903**	**8.131**	**12.208**	**98.242**	**21.455**	**25.071**	**-3.616**	**3.138**	**77.454**	**8.131**	**12.045**	**97.764**
2022 January	6.736	.737	1.099	8.572	1.841	2.170	-.329	1.194	7.622	.737	1.067	9.437
February	6.098	.646	1.046	7.790	1.687	2.016	-.330	.929	6.715	.646	1.022	8.389
March	6.919	.660	1.195	8.774	1.848	2.305	-.457	.190	6.663	.660	1.177	8.507
April	6.637	.578	1.180	8.395	1.747	2.303	-.555	-.137	5.949	.578	1.168	7.703
May	6.917	.662	1.219	8.798	1.795	2.335	-.540	-.355	6.031	.662	1.201	7.903
June	6.730	.687	1.176	8.593	1.805	2.297	-.492	-.014	6.225	.687	1.160	8.087
July	6.995	.719	1.132	8.847	1.913	2.294	-.381	.056	6.673	.719	1.111	8.522
August	7.110	.720	1.039	8.870	1.826	2.331	-.505	.113	6.706	.720	1.031	8.478
September	6.987	.666	.981	8.634	1.705	2.266	-.561	-.339	6.089	.666	.966	7.735
October	7.188	.616	1.012	8.816	1.771	2.294	-.523	-.560	6.108	.616	1.000	7.733
November	6.935	.648	1.080	8.663	1.767	2.314	-.547	.079	6.478	.648	1.059	8.194
December	6.905	.722	1.064	8.691	1.802	2.407	-.605	.934	7.240	.722	1.045	9.020
Total	**82.157**	**8.061**	**13.224**	**103.442**	**21.507**	**27.332**	**-5.826**	**2.091**	**78.498**	**8.061**	**13.007**	**99.707**
2023 January	R7.175	.740	1.107	R9.022	1.854	R2.297	R-.444	R.268	R7.005	.740	1.090	R8.846
February	R6.482	.635	1.070	R8.187	1.745	R2.202	R-.457	R.252	R6.286	.635	1.053	R7.981
March	R7.302	.656	1.190	R9.148	1.793	R2.723	R-.930	R.342	R6.721	.656	1.174	R8.560
April	R6.988	.592	1.151	R8.731	1.754	R2.342	R-.588	R-.518	R5.888	.592	1.138	R7.624
May	R7.252	.642	1.202	R9.096	1.817	R2.419	R-.602	R-.680	R5.967	.642	1.196	R7.815
June	R7.068	.679	1.088	R8.835	1.826	R2.377	R-.551	R-.403	R6.119	.679	1.078	R7.881
July	R7.263	.730	1.128	R9.121	R1.806	R2.437	R-.632	R.013	R6.658	.730	1.109	R8.502
August	R7.412	.729	1.125	R9.265	1.927	R2.487	R-.560	R-.061	R6.794	.729	1.116	R8.644
September	R7.218	.685	1.037	R8.940	1.782	R2.433	R-.651	R-.511	R6.073	.685	1.020	R7.778
October	R7.431	.642	1.112	R9.184	1.711	R2.522	R-.811	R-.399	R6.230	.642	1.102	R7.974
November	7.283	.650	1.072	9.005	1.826	R2.462	R-.636	R-.136	R6.528	.650	1.052	R8.233
December	R7.426	.720	R1.112	R9.257	R1.859	R2.796	R-.938	R.400	R6.912	.720	1.083	R8.719
Total	**R86.298**	**8.101**	**R13.393**	**R107.792**	**R21.699**	**R29.498**	**R-7.799**	**R-1.434**	**R77.181**	**8.101**	**13.212**	**R98.559**
2024 January	7.070	.722	1.075	8.867	1.906	2.562	-.656	1.151	7.584	.722	1.051	9.362

[a] Coal, natural gas (dry), crude oil, and natural gas plant liquids.
[b] See Table E4 for notes on series components and estimation.
[c] Net imports equal imports minus exports.
[d] Includes petroleum stock change and adjustments; natural gas net storage withdrawals and balancing item; coal stock change, losses, and unaccounted for; fuel ethanol stock change; and biodiesel stock change and balancing item.
[e] Coal, coal coke net imports, natural gas, and petroleum.
[f] Also includes electricity net imports.
R=Revised.

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

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

Sources: • **Production:** Table E2. • **Trade:** Tables 1.4a and 1.4b. • **Stock Change and Other:** Calculated as consumption minus production and net imports. • **Consumption:** Table E3.

Table E2. Primary Energy Production by Source, Fossil Fuel Equivalency Approach

(Quadrillion Btu)

	Fossil Fuels					Nuclear Electric Power	Renewable Energy[a]						Total
	Coal[b]	Natural Gas (Dry)	Crude Oil[c]	NGPL[d]	Total		Hydro-electric Power[e]	Geo-thermal	Solar	Wind	Bio-mass	Total	
1950 Total	**14.060**	**6.233**	**11.447**	**0.813**	**32.553**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**35.531**
1955 Total	**12.370**	**9.345**	**14.410**	**1.223**	**37.347**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.131**
1960 Total	**10.817**	**12.656**	**14.935**	**1.447**	**39.855**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**42.789**
1965 Total	**13.055**	**15.775**	**16.521**	**1.853**	**47.205**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**50.644**
1970 Total	**14.607**	**21.666**	**20.401**	**2.478**	**59.152**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**63.462**
1975 Total	**14.989**	**19.640**	**17.729**	**2.338**	**54.697**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**61.284**
1980 Total	**18.598**	**19.908**	**18.249**	**2.225**	**58.979**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**67.147**
1985 Total	**19.325**	**16.980**	**18.992**	**2.204**	**57.502**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**67.661**
1990 Total	**22.488**	**18.326**	**15.571**	**2.138**	**58.523**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**70.668**
1995 Total	**22.130**	**19.082**	**13.887**	**2.398**	**57.496**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.099**	**6.557**	**71.129**
2000 Total	**22.735**	**19.662**	**12.358**	**2.551**	**57.307**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.006**	**6.102**	**71.271**
2005 Total	**23.185**	**18.556**	**10.974**	**2.280**	**54.995**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.101**	**6.221**	**69.377**
2010 Total	**22.038**	**21.806**	**11.610**	**2.705**	**58.159**	**8.434**	**2.539**	**.208**	**.090**	**.923**	**4.553**	**8.312**	**74.906**
2011 Total	**22.221**	**23.406**	**12.012**	**2.890**	**60.529**	**8.269**	**3.103**	**.212**	**.110**	**1.168**	**4.712**	**9.306**	**78.104**
2012 Total	**20.677**	**24.610**	**13.849**	**3.162**	**62.298**	**8.062**	**2.629**	**.212**	**.156**	**1.340**	**4.554**	**8.890**	**79.249**
2013 Total	**20.001**	**24.859**	**15.868**	**3.451**	**64.180**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.835**	**9.438**	**81.862**
2014 Total	**20.286**	**26.718**	**18.610**	**4.005**	**69.619**	**8.338**	**2.466**	**.214**	**.337**	**1.727**	**5.052**	**9.798**	**87.754**
2015 Total	**17.946**	**28.067**	**19.697**	**4.476**	**70.186**	**8.337**	**2.320**	**.212**	**.427**	**1.776**	**5.031**	**9.766**	**88.289**
2016 Total	**14.667**	**27.576**	**18.527**	**4.665**	**65.435**	**8.427**	**2.471**	**.210**	**.570**	**2.095**	**5.132**	**10.477**	**84.339**
2017 Total	**15.625**	**28.289**	**19.547**	**4.987**	**68.448**	**8.419**	**2.765**	**.210**	**.777**	**2.342**	**5.166**	**11.259**	**88.127**
2018 Total	**15.363**	**31.882**	**22.808**	**5.727**	**75.780**	**8.438**	**2.661**	**.209**	**.915**	**2.481**	**5.314**	**11.580**	**95.798**
2019 Total	**14.256**	**35.187**	**25.604**	**6.352**	**81.399**	**8.452**	**2.562**	**.201**	**1.016**	**2.633**	**5.215**	**11.627**	**101.478**
2020 Total	**10.703**	**35.062**	**23.575**	**6.805**	**76.145**	**8.251**	**2.501**	**.203**	**1.211**	**2.963**	**4.710**	**11.588**	**95.984**
2021 Total	**11.596**	**35.807**	**23.401**	**7.099**	**77.903**	**8.131**	**2.225**	**.205**	**1.520**	**3.345**	**4.914**	**12.208**	**98.242**
2022 January	1.012	3.090	2.023	.610	6.736	.737	.213	.018	.102	.330	.435	1.099	8.572
February	.970	2.784	1.792	.552	6.098	.646	.188	.016	.116	.332	.394	1.046	7.790
March	1.044	3.135	2.080	.660	6.919	.660	.215	.017	.154	.379	.430	1.195	8.774
April	.940	3.056	2.007	.635	6.637	.578	.177	.017	.174	.407	.406	1.180	8.395
May	1.006	3.183	2.068	.661	6.917	.662	.206	.017	.195	.371	.430	1.219	8.798
June	.986	3.087	2.012	.644	6.730	.687	.229	.016	.203	.298	.430	1.176	8.593
July	1.000	3.224	2.085	.686	6.995	.719	.217	.017	R.202	.260	.436	1.132	8.847
August	1.087	3.240	2.112	.672	7.110	.720	.186	.017	.189	.218	.429	1.039	8.870
September	1.044	3.181	2.102	.660	6.987	.666	.150	.017	.172	.241	.402	.981	8.634
October	1.040	3.284	2.181	.684	7.188	.616	.127	.017	.155	.289	.425	1.012	8.816
November	.988	3.178	2.110	.658	6.935	.648	.158	.018	.114	.363	.427	1.080	8.663
December	.926	3.219	2.139	.621	6.905	.722	.180	.018	.096	.341	.429	1.064	8.691
Total	**12.043**	**37.662**	**24.710**	**7.742**	**82.157**	**8.061**	**2.245**	**.205**	**1.872**	**3.827**	**5.073**	**13.224**	**103.442**
2023 January	R1.037	E3.273	E2.217	.648	R7.175	.740	.196	.019	.109	.346	.437	1.107	R9.022
February	R.931	E2.958	E1.996	.597	R6.482	.635	.165	.016	.124	.372	.393	1.070	R8.187
March	R1.057	E3.304	E2.252	.688	R7.302	.656	.178	.018	.165	.393	.436	1.190	R9.148
April	R.955	E3.190	E2.159	.683	R6.988	.592	.154	.017	.196	.380	.404	1.151	R8.731
May	R.981	E3.326	E2.239	.706	R7.252	.642	.242	.017	.222	.283	.438	1.202	R9.096
June	R.959	E3.209	E2.201	.700	R7.068	.679	.172	.016	.227	.243	.430	1.088	R8.835
July	R.949	E3.320	E2.280	.714	R7.263	.730	.187	.017	.242	.246	.437	1.128	R9.121
August	R1.030	E3.357	E2.300	.726	R7.412	.729	.186	.017	.230	.252	.440	1.125	R9.265
September	R.986	E3.247	E2.261	.724	R7.218	.685	.145	.017	.201	.249	.425	1.037	R8.940
October	R.998	E3.351	E2.331	.750	R7.431	.642	.159	.018	.183	.322	.430	1.112	R9.184
November	R.997	RE3.291	RE2.269	.725	7.283	.650	.160	.018	R.139	.326	.430	1.072	9.005
December	R.930	RE3.424	RE2.345	.728	R7.426	.720	.170	.018	.125	.338	R.461	R1.112	R9.257
Total	**R11.809**	**E39.251**	**E26.849**	**8.389**	**R86.298**	**8.101**	**2.114**	**.209**	**2.164**	**3.748**	**R5.160**	**R13.393**	**R107.792**
2024 January	.872	E3.317	E2.210	.671	7.070	.722	.187	.017	.131	.308	.432	1.075	8.867

[a] Most data are estimates. See Table E4 for notes on series components and estimation.

[b] Beginning in 1989, includes waste coal supplied. Beginning in 2001, also includes a small amount of refuse recovery. See Table 6.1.

[c] Includes lease condensate.

[d] Natural gas processing plant production of natural gas liquids (ethane, propane, normal butane, isobutane, and natural gasoline). Through 1980, also includes natural gas processing plant production of finished petroleum products (aviation gasoline, distillate fuel oil, jet fuel, kerosene, motor gasoline, special naphthas, and miscellaneous products).

[e] Conventional hydroelectric power.

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

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

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

Sources: • **Fossil Fuels** and **Nuclear Electric Power:** Table 1.2. • **Renewable Energy:** Table E4. • **Total:** Calculated as the sum of Fossil Fuels, Nuclear Electric Power, and Renewable Energy.

Table E3. Primary Energy Consumption by Source, Fossil Fuel Equivalency Approach

(Quadrillion Btu)

	Fossil Fuels[a]				Nuclear Electric Power	Renewable Energy[b]						Total[g]
	Coal	Natural Gas[c]	Petroleum[d]	Total[e]		Hydroelectric Power[f]	Geothermal	Solar	Wind	Biomass	Total	
1950 Total	**12.347**	**5.968**	**13.298**	**31.615**	**0.000**	**1.415**	**NA**	**NA**	**NA**	**1.562**	**2.978**	**34.599**
1955 Total	**11.167**	**8.998**	**17.225**	**37.380**	**.000**	**1.360**	**NA**	**NA**	**NA**	**1.424**	**2.784**	**40.178**
1960 Total	**9.838**	**12.385**	**19.874**	**42.091**	**.006**	**1.608**	**(s)**	**NA**	**NA**	**1.320**	**2.928**	**45.041**
1965 Total	**11.581**	**15.769**	**23.184**	**50.515**	**.043**	**2.059**	**.002**	**NA**	**NA**	**1.335**	**3.396**	**53.953**
1970 Total	**12.265**	**21.795**	**29.499**	**63.501**	**.239**	**2.634**	**.006**	**NA**	**NA**	**1.431**	**4.070**	**67.817**
1975 Total	**12.663**	**19.948**	**32.699**	**65.323**	**1.900**	**3.155**	**.034**	**NA**	**NA**	**1.499**	**4.687**	**71.931**
1980 Total	**15.423**	**20.235**	**34.159**	**69.782**	**2.739**	**2.900**	**.053**	**NA**	**NA**	**2.475**	**5.428**	**78.021**
1985 Total	**17.478**	**17.703**	**30.866**	**66.035**	**4.076**	**2.970**	**.097**	**(s)**	**(s)**	**3.016**	**6.084**	**76.334**
1990 Total	**19.173**	**19.603**	**33.500**	**72.281**	**6.104**	**3.046**	**.171**	**.059**	**.029**	**2.735**	**6.040**	**84.433**
1995 Total	**20.089**	**22.671**	**34.341**	**77.162**	**7.075**	**3.205**	**.152**	**.068**	**.033**	**3.101**	**6.559**	**90.931**
2000 Total	**22.580**	**23.824**	**38.152**	**84.620**	**7.862**	**2.811**	**.164**	**.063**	**.057**	**3.008**	**6.104**	**98.702**
2005 Total	**22.797**	**22.565**	**40.217**	**85.623**	**8.161**	**2.703**	**.181**	**.058**	**.178**	**3.114**	**6.233**	**100.101**
2010 Total	**20.834**	**24.575**	**35.321**	**80.723**	**8.434**	**2.539**	**.208**	**.090**	**.923**	**4.506**	**8.266**	**97.512**
2011 Total	**19.658**	**24.955**	**34.639**	**79.263**	**8.269**	**3.103**	**.212**	**.110**	**1.168**	**4.616**	**9.210**	**96.868**
2012 Total	**17.378**	**26.089**	**33.833**	**77.304**	**8.062**	**2.629**	**.212**	**.156**	**1.340**	**4.517**	**8.853**	**94.380**
2013 Total	**18.039**	**26.805**	**34.398**	**79.224**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.861**	**9.464**	**97.130**
2014 Total	**17.998**	**27.383**	**34.658**	**80.017**	**8.338**	**2.466**	**.214**	**.337**	**1.727**	**5.016**	**9.761**	**98.297**
2015 Total	**15.549**	**28.191**	**35.368**	**79.090**	**8.337**	**2.320**	**.212**	**.427**	**1.776**	**5.015**	**9.749**	**97.404**
2016 Total	**14.226**	**28.400**	**35.712**	**78.319**	**8.427**	**2.471**	**.210**	**.570**	**2.095**	**5.063**	**10.409**	**97.381**
2017 Total	**13.837**	**28.055**	**36.043**	**77.907**	**8.419**	**2.765**	**.210**	**.777**	**2.342**	**5.045**	**11.138**	**97.657**
2018 Total	**13.252**	**31.163**	**36.892**	**81.281**	**8.438**	**2.661**	**.209**	**.915**	**2.481**	**5.105**	**11.370**	**101.240**
2019 Total	**11.316**	**32.264**	**36.866**	**80.425**	**8.452**	**2.562**	**.201**	**1.016**	**2.633**	**5.056**	**11.468**	**100.478**
2020 Total	**9.181**	**31.640**	**32.331**	**73.139**	**8.251**	**2.501**	**.203**	**1.211**	**2.963**	**4.545**	**11.423**	**92.975**
2021 Total	**10.549**	**31.711**	**35.243**	**77.454**	**8.131**	**2.225**	**.205**	**1.520**	**3.345**	**4.751**	**12.045**	**97.764**
2022 January	1.008	3.704	2.915	7.622	.737	.213	.018	.102	.330	.404	1.067	9.437
February	.838	3.153	2.726	6.715	.646	.188	.016	.116	.332	.370	1.022	8.389
March	.733	2.872	3.063	6.663	.660	.215	.017	.154	.379	.412	1.177	8.507
April	.663	2.434	2.858	5.949	.578	.177	.017	.174	.407	.393	1.168	7.703
May	.745	2.313	2.982	6.031	.662	.206	.017	.195	.371	.412	1.201	7.903
June	.870	2.393	2.967	6.225	.687	.229	.016	.203	.298	.414	1.160	8.087
July	1.018	2.674	2.986	6.673	.719	.217	.017	R.202	.260	.415	1.111	8.522
August	.997	2.650	3.064	6.706	.720	.186	.017	.189	.218	.421	1.031	8.478
September	.783	2.368	2.943	6.089	.666	.150	.017	.172	.241	.387	.966	7.735
October	.673	2.439	2.999	6.108	.616	.127	.017	.155	.289	.413	1.000	7.733
November	.690	2.859	2.931	6.478	.648	.158	.018	.114	.363	.407	1.059	8.194
December	.871	3.490	2.884	7.240	.722	.180	.018	.096	.341	.409	1.045	9.020
Total	**9.888**	**33.347**	**35.319**	**78.498**	**8.061**	**2.245**	**.205**	**1.872**	**3.827**	**4.857**	**13.007**	**99.707**
2023 January	.749	3.417	R2.842	R7.005	.740	.196	.019	.109	.346	.420	1.090	R8.846
February	R.582	3.047	R2.658	R6.286	.635	.165	.016	.124	.372	.376	1.053	R7.981
March	R.618	3.114	R2.991	R6.721	.656	.178	.018	.165	.393	.420	1.174	R8.560
April	.499	2.503	R2.888	R5.888	.592	.154	.017	.196	.380	.391	1.138	R7.624
May	.552	2.392	R3.026	R5.967	.642	.242	.017	.222	.283	.432	1.196	R7.815
June	.703	2.441	R2.978	R6.119	.679	.172	.016	.227	.243	.420	1.078	R7.881
July	R.913	2.755	R2.993	R6.658	.730	.187	.017	.242	.246	.418	1.109	R8.502
August	.902	2.765	R3.130	R6.794	.729	.186	.017	.230	.252	.431	1.116	R8.644
September	.716	2.455	R2.906	R6.073	.685	.145	.017	.201	.249	.408	1.020	R7.778
October	.635	2.523	R3.074	R6.230	.642	.159	.018	.183	.322	.420	1.102	R7.974
November	.633	2.920	R2.978	R6.528	.650	.160	.018	R.139	.326	.410	1.052	R8.233
December	.676	3.277	R2.963	R6.912	.720	.170	.018	.125	.338	.432	1.083	R8.719
Total	**R8.178**	**33.608**	**R35.427**	**R77.181**	**8.101**	**2.114**	**.209**	**2.164**	**3.748**	**4.978**	**13.212**	**R98.559**
2024 January	.876	3.823	2.886	7.584	.722	.187	.017	.131	.308	.407	1.051	9.362

[a] Includes non-combustion use of fossil fuels.
[b] Most data are estimates. See Table E4 for notes on series components and estimation.
[c] Natural gas only; excludes supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[d] Petroleum products supplied; excludes biofuels. Biofuels are included in "Biomass."
[e] Includes coal coke net imports. See Tables 1.4c.
[f] Conventional hydroelectric power.
[g] Includes coal coke net imports and electricity net imports, which are not separately displayed. See Tables 1.4c.
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/#appendices (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.
Sources: • **Fossil Fuels** and **Nuclear Electric Power:** Table 1.3. • **Renewable Energy:** Table E4. • **Total:** Calculated as the sum of Fossil Fuels, Nuclear Electric Power, Renewable Energy, and Electricity Net Imports (see Table 1.4c).

Table E4. Renewable Energy Production and Consumption by Source, Fossil Fuel Equivalency Approach (Trillion Btu)

	Production[a]				Consumption								
	Biomass			Total Renewable Energy[e]	Noncombustible (Fossil Fuel Equivalent)				Biomass				Total Renewable Energy
	Wood[b]	Biofuels[c]	Total[d]		Hydroelectric Power[f]	Geothermal[g]	Solar[h]	Wind[i]	Wood[j]	Waste[k]	Biofuels[l]	Total	
1950 Total	**1,562**	**NA**	**1,562**	**2,978**	**1,415**	**NA**	**NA**	**NA**	**1,562**	**NA**	**NA**	**1,562**	**2,978**
1955 Total	**1,424**	**NA**	**1,424**	**2,784**	**1,360**	**NA**	**NA**	**NA**	**1,424**	**NA**	**NA**	**1,424**	**2,784**
1960 Total	**1,320**	**NA**	**1,320**	**2,928**	**1,608**	**(s)**	**NA**	**NA**	**1,320**	**NA**	**NA**	**1,320**	**2,928**
1965 Total	**1,335**	**NA**	**1,335**	**3,396**	**2,059**	**2**	**NA**	**NA**	**1,335**	**NA**	**NA**	**1,335**	**3,396**
1970 Total	**1,429**	**NA**	**1,431**	**4,070**	**2,634**	**6**	**NA**	**NA**	**1,429**	**2**	**NA**	**1,431**	**4,070**
1975 Total	**1,497**	**NA**	**1,499**	**4,687**	**3,155**	**34**	**NA**	**NA**	**1,497**	**2**	**NA**	**1,499**	**4,687**
1980 Total	**2,474**	**NA**	**2,475**	**5,428**	**2,900**	**53**	**NA**	**NA**	**2,474**	**2**	**NA**	**2,475**	**5,428**
1985 Total	**2,687**	**93**	**3,016**	**6,084**	**2,970**	**97**	**(s)**	**(s)**	**2,687**	**236**	**93**	**3,016**	**6,084**
1990 Total	**2,216**	**111**	**2,735**	**6,040**	**3,046**	**171**	**59**	**29**	**2,216**	**408**	**111**	**2,735**	**6,040**
1995 Total	**2,370**	**198**	**3,099**	**6,557**	**3,205**	**152**	**68**	**33**	**2,370**	**531**	**200**	**3,101**	**6,559**
2000 Total	**2,262**	**233**	**3,006**	**6,102**	**2,811**	**164**	**63**	**57**	**2,262**	**511**	**236**	**3,008**	**6,104**
2005 Total	**2,137**	**561**	**3,101**	**6,221**	**2,703**	**181**	**58**	**178**	**2,137**	**403**	**574**	**3,114**	**6,233**
2010 Total	**2,217**	**1,868**	**4,553**	**8,312**	**2,539**	**208**	**90**	**923**	**2,217**	**468**	**1,821**	**4,506**	**8,266**
2011 Total	**2,213**	**2,037**	**4,712**	**9,306**	**3,103**	**212**	**110**	**1,168**	**2,213**	**462**	**1,941**	**4,616**	**9,210**
2012 Total	**2,151**	**1,936**	**4,554**	**8,890**	**2,629**	**212**	**156**	**1,340**	**2,151**	**467**	**1,899**	**4,517**	**8,853**
2013 Total	**2,338**	**2,000**	**4,835**	**9,438**	**2,562**	**214**	**225**	**1,601**	**2,338**	**496**	**2,026**	**4,861**	**9,464**
2014 Total	**2,401**	**2,135**	**5,052**	**9,798**	**2,466**	**214**	**337**	**1,727**	**2,401**	**516**	**2,099**	**5,016**	**9,761**
2015 Total	**2,312**	**2,201**	**5,031**	**9,766**	**2,320**	**212**	**427**	**1,776**	**2,312**	**518**	**2,185**	**5,015**	**9,749**
2016 Total	**2,299**	**2,329**	**5,132**	**10,477**	**2,471**	**210**	**570**	**2,095**	**2,227**	**503**	**2,333**	**5,063**	**10,409**
2017 Total	**2,264**	**2,407**	**5,166**	**11,259**	**2,765**	**210**	**777**	**2,342**	**2,185**	**495**	**2,364**	**5,045**	**11,138**
2018 Total	**2,356**	**2,471**	**5,314**	**11,580**	**2,661**	**209**	**915**	**2,481**	**2,262**	**487**	**2,355**	**5,105**	**11,370**
2019 Total	**2,341**	**2,432**	**5,215**	**11,627**	**2,562**	**201**	**1,016**	**2,633**	**2,237**	**442**	**2,376**	**5,056**	**11,468**
2020 Total	**2,076**	**2,194**	**4,710**	**11,588**	**2,501**	**203**	**1,211**	**2,963**	**1,970**	**440**	**2,136**	**4,545**	**11,423**
2021 Total	**2,109**	**2,374**	**4,914**	**12,208**	**2,225**	**205**	**1,520**	**3,345**	**1,989**	**430**	**2,331**	**4,751**	**12,045**
2022 January	184	214	435	1,099	213	18	102	330	175	37	193	404	1,067
February	171	190	394	1,046	188	16	116	332	159	33	177	370	1,022
March	181	212	430	1,195	215	17	154	379	169	37	207	412	1,177
April	173	198	406	1,180	177	17	174	407	164	34	195	393	1,168
May	182	214	430	1,219	206	17	195	371	170	35	208	412	1,201
June	182	214	430	1,176	229	16	203	298	168	33	213	414	1,160
July	185	218	436	1,132	217	17	R202	260	175	34	206	415	1,111
August	184	211	429	1,039	186	17	189	218	174	34	213	421	1,031
September	177	193	402	981	150	17	172	241	162	32	192	387	966
October	174	217	425	1,012	127	17	155	289	163	34	216	413	1,000
November	174	219	427	1,080	158	18	114	363	164	34	209	407	1,059
December	183	211	429	1,064	180	18	96	341	169	35	205	409	1,045
Total	**2,150**	**2,511**	**5,073**	**13,224**	**2,245**	**205**	**1,872**	**3,827**	**2,012**	**412**	**2,433**	**4,857**	**13,007**
2023 January	182	220	437	1,107	196	19	109	346	174	36	210	420	1,090
February	162	198	393	1,070	165	16	124	372	154	32	190	376	1,053
March	180	222	436	1,190	178	18	165	393	165	34	220	420	1,174
April	160	212	404	1,151	154	17	196	380	152	32	207	391	1,138
May	175	229	438	1,202	242	17	222	283	164	34	234	432	1,196
June	168	230	430	1,088	172	16	227	243	156	32	232	420	1,078
July	172	232	437	1,128	187	17	242	246	162	33	223	418	1,109
August	177	230	440	1,125	186	17	230	252	163	33	235	431	1,116
September	166	227	425	1,037	145	17	201	249	153	32	224	408	1,020
October	166	231	430	1,112	159	18	183	322	154	33	233	420	1,102
November	168	229	430	1,072	160	18	R139	326	159	32	219	410	1,052
December	R177	248	R461	R1,112	170	18	125	338	162	36	235	432	1,083
Total	**R2,053**	**2,708**	**R5,160**	**R13,393**	**2,114**	**209**	**2,164**	**3,748**	**1,918**	**398**	**2,662**	**4,978**	**13,212**
2024 January	172	225	432	1,075	187	17	131	308	161	34	212	407	1,051

[a] For hydroelectric power, geothermal, solar, wind, and biomass waste, production equals consumption.

[b] Wood and wood-derived fuels. Through 2015, wood production equals consumption. Beginning in 2016, wood production equals consumption plus densified biomass exports.

[c] Total biomass inputs to the production of fuel ethanol and biodiesel. Beginning in 2011, also includes production of renewable diesel fuel. Beginning in 2014, also includes production of other biofuels.

[d] Includes biomass waste.

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

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

[g] Geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and geothermal heat pump and direct use energy.

[h] Solar photovoltaic (PV) and solar thermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and solar thermal direct use energy.

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

[j] Wood and wood-derived fuels.

[k] Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

[l] Fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels consumption; plus losses and co-products from the production of fuel ethanol and biodiesel.

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

Notes: • Production data are estimates. Consumption data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Biomass:** Table 10.1. • **Hydroelectric Power** and **Wind:** Calculated as electricity net generation (see Table 7.2a) multiplied by the total fossil fuels heat rate factors (see Table A6). • **Geothermal:** Calculated as geothermal electricity net generation (see Table 7.2a) multiplied by the total fossil fuels heat rate factors (see Table A6); plus geothermal heat pump and direct use energy in the residential, commercial, and industrial sectors (see Tables 10.2a and 10.2b) .• **Solar:** Calculated as solar electricity net generation (see Table 7.2a) multiplied by the total fossil fuels heat rate factors (see Table A6); plus solar thermal direct use energy (see Table 10.5). • **Total Production:** Calculated as the sum of biomass production and noncombustible consumption. • **Total Consumption:** Calculated as the sum of biomass consumption and noncombustible consumption.

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Appendix F
Electric Vehicle Charging Infrastructure

Table F1. Electric Vehicle Charging Infrastructure

(Number)

	Locations[a]							Ports						
	With Public Ports Only	With Private Ports Only	With Public and Private Ports	With Networked Ports Only[b]	With Non-Networked Ports Only[c]	With Networked and Non-Networked Ports	Total	DC[d] Fast-Charging Ports	Level 2 Charging Ports	Level 1 Charging Ports	Legacy Charging Ports	Total	DC[d] Fast-Charging Ports per Location[e]	Level 2 Charging Ports per Location[f]
2015 Year	**12,189**	**1,217**	**1,426**	**9,513**	**4,483**	**836**	**14,832**	**6,802**	**43,657**	**4,168**	**597**	**55,224**	**3.23**	**3.23**
2016 Year	**15,990**	**1,716**	**1,472**	**12,671**	**4,988**	**1,519**	**19,178**	**10,606**	**58,501**	**4,042**	**362**	**73,511**	**3.57**	**3.40**
2017 Year	**19,619**	**1,779**	**1,384**	**15,553**	**5,183**	**2,046**	**22,782**	**12,271**	**72,635**	**3,721**	**453**	**89,080**	**3.77**	**3.52**
2018 Year	**21,791**	**1,841**	**1,362**	**17,024**	**5,349**	**2,621**	**24,994**	**11,429**	**80,454**	**2,857**	**108**	**94,848**	**3.94**	**3.49**
2019 Year	**24,169**	**2,136**	**1,224**	**19,006**	**5,917**	**2,606**	**27,529**	**14,531**	**88,600**	**2,982**	**92**	**106,205**	**3.97**	**3.54**
2020 Year	**28,159**	**1,837**	**1,140**	**22,313**	**6,199**	**2,624**	**31,136**	**18,870**	**100,375**	**2,708**	**61**	**122,014**	**4.20**	**3.59**
2021 Year	**45,139**	**2,344**	**1,156**	**38,839**	**7,157**	**2,643**	**48,639**	**23,982**	**117,316**	**3,521**	**56**	**144,875**	**3.99**	**2.70**
2022 January	45,226	2,342	1,149	41,289	7,216	212	48,717	24,222	117,445	3,384	53	145,104	4.00	2.70
February	44,788	2,346	1,149	40,779	7,304	200	48,283	24,704	116,401	3,380	51	144,536	4.03	2.70
March	45,160	2,348	1,153	41,116	7,343	202	48,661	25,240	117,513	3,285	51	146,089	4.06	2.71
April	45,936	2,365	1,163	41,871	7,390	203	49,464	25,736	119,698	3,155	51	148,640	4.07	2.71
May	46,899	2,367	1,172	42,578	7,655	205	50,438	26,432	121,988	3,157	51	151,628	4.11	2.71
June	47,661	2,355	1,180	43,294	7,694	208	51,196	27,005	123,667	3,154	51	153,877	4.17	2.70
July	48,407	2,357	1,184	44,013	7,714	221	51,948	27,551	125,058	3,122	46	155,777	4.18	2.70
August	49,318	2,361	1,189	44,814	7,820	234	52,868	28,018	126,710	3,088	46	157,862	4.18	2.68
September	49,406	2,445	1,192	44,941	7,872	230	53,043	26,817	128,377	3,034	45	158,273	3.97	2.71
October	49,877	2,474	1,187	45,360	7,947	231	53,538	27,429	128,836	3,028	45	159,338	3.99	2.70
November	50,323	2,482	1,184	45,805	7,964	220	53,989	27,801	129,982	3,027	45	160,855	4.01	2.70
December	**51,306**	**2,533**	**1,176**	**46,823**	**7,980**	**212**	**55,015**	**29,023**	**131,850**	**3,135**	**45**	**164,053**	**4.09**	**2.69**
2023 January	51,563	2,498	1,163	47,154	7,870	200	55,224	29,446	130,507	3,095	39	163,087	4.08	2.66
February	52,401	2,452	924	47,760	7,824	193	55,777	29,959	130,328	3,043	36	163,366	4.08	2.64
March	53,204	2,475	923	48,499	7,920	183	56,602	30,964	131,919	3,040	35	165,958	4.13	2.63
April	53,790	2,518	912	49,103	7,939	178	57,220	31,455	133,090	3,033	34	167,612	4.11	2.63
May	54,440	2,519	913	49,746	7,951	175	57,872	32,075	134,703	3,040	33	169,851	4.11	2.64
June	55,133	2,530	903	50,432	7,973	161	58,566	33,081	134,945	3,022	30	171,078	4.15	2.61
July	55,633	2,525	899	50,942	7,957	158	59,057	33,809	135,520	3,134	29	172,492	4.16	2.61
August	56,094	2,516	891	51,487	7,904	110	59,501	34,340	136,449	3,129	29	173,947	4.17	2.61
September	55,951	2,513	891	51,344	7,902	109	59,355	34,967	130,206	3,129	29	168,331	4.17	2.51
October	56,798	2,513	894	52,193	7,903	109	60,205	35,641	131,955	3,137	29	170,762	4.18	2.50
November	57,623	2,601	897	53,048	7,967	106	61,121	36,969	134,075	3,139	29	174,212	4.23	2.51
December	**58,153**	**2,617**	**897**	**53,561**	**8,004**	**102**	**61,667**	**37,977**	**135,505**	**2,970**	**29**	**176,481**	**4.25**	**2.52**
2024 January	58,964	2,674	865	54,399	8,003	101	62,503	39,207	137,545	2,932	29	179,713	4.22	2.53
February	R 59,662	2,662	861	R 55,145	7,941	99	R 63,185	R 40,167	R 138,358	2,920	29	R 181,474	R 4.20	2.53
March	60,175	2,672	864	55,658	7,955	98	63,711	41,034	139,478	2,922	29	183,463	4.22	2.53

[a] Includes all of the electric vehicle charging ports located at a single location regardless of who is able to access the ports, what charging network they belong to, or the level of charging. Ports are determined to be at the same location based on latitude, longitude, and AFDC equipment ID number. Does not include data on charging infrastructure at single-family residential locations.

[b] Networked ports are connected to the internet, can communicate with their EV service provider, have a dedicated platform that allows users to find the chargers, and pay to charge. The service provider can manage who can access the port and the cost of charging. The charging infrastructure may also be able to communicate directly with drivers, other charging infrastructure, and utilities.

[c] Non-networked ports are not connected to the internet and provide only basic charging capabilities.

[d] Direct current.

[e] Calculated as the total number of DC fast charging ports divided by the total number of locations with DC fast charging ports (available in the microdata file). Includes only locations with DC fast charging ports.

[f] Calculated as the total number of Level 2 charging ports divided by the total number of locations with Level 2 charging ports (available in the microdata file). Includes only locations with Level 2 charging ports.

R=Revised.

Notes: • See "Appendix F Methodology and Sources" and end of section. • See "Electric Vehicle" in Glossary. • Data are at end of period. • 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 national and state annual and monthly data beginning in June 2015 and monthly microdata file.

Sources: See end of section.

Appendix F Methodology and Sources

Data Source

The U.S. Energy Information Administration (EIA) receives administrative electric vehicle (EV) charging infrastructure data from the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy Alternative Fuels Data Center (AFDC).[1] AFDC collects and publishes location-level charging infrastructure data that allows alternative fuel vehicle owners to find fueling and charging stations near them or along a route. AFDC receives daily updates from many of the networked providers.[2] Networked providers that do not provide daily updates provide regular updates. AFDC contacts non-networked[3] providers every two years to determine if the stations are still in service.[4] AFDC does not collect data on charging infrastructure at single-family residential locations.

Historical (June 2015 – December 2021)

The National Renewable Energy Laboratory (NREL), which manages the AFDC, provided the historical data to EIA. The data began in June 2015 and went through December 2021, however not all months were available. The table below shows the months of data EIA received. For the months that are blacked out, EIA did not receive any data.

2015	2016	2017	2018	2019	2020	2021
			January	January	January	January
	February	February	February	February	February	February
	March	March	March	March	March	March
	April	April	April	April	April	April
		May		May	May	
June	June	June	June	June	June	June
	July		July	July	July	July
August		August	August	August	August	August
September	September	September	September	September	September	September
		October	October	October	October	October
November	November	November	November	November		November
		December	December	December	December	December

Monthly updates (January 2022 – present)

Beginning in January 2022, EIA began pulling the data through the AFDC API[5] on the last business day of every month.

Data

EIA uses multiple variables from the AFDC database to develop the MER PDF, excel, CSV, microdata and monthly state data output files. AFDC variables of interest include:

- Location information – station name, ID, fuel type code, open date, access code, status code, facility type, EV renewable source, EV pricing
- Physical location information – latitude, longitude, street address, city, state, zip, intersection/directions
- Charing port information – EV network, EV connector types, EV DC fast num, EV level 1 EVSE num, EV level 2 EVSE num, EV other EVSE

Historical data series included variables with different names but with the same data. The charging port information was structured differently in historical datasets. Work was completed to convert the data in the historical datasets into the same format as the current datasets.

Data quality

The EV charging infrastructure data are administrative data and do not have the same level of statistical accuracy as data published from many of EIA's surveys.

Coverage

The data do not represent the entire population or a statistically representative subset of the population of EV charging infrastructure. Instead, the data represent the known to NREL EV charging infrastructure at the time of the data pull. NREL works with EV charging network providers to receive daily updates.[6] The accuracy and timeliness of the networked providers charging infrastructure will continue to improve as additional networked providers convert to providing daily updates to NREL. There are also non-networked public and private EV chargers, and it is harder to track when these ports become available for use or are decommissioned. These challenges result in less EV charging infrastructure reported than exists, but it is unknown how many additional EV charger locations and ports exist. It is likely that the networked EV charging infrastructure are more accurately represented than the non-networked charging infrastructure. It is also likely that that the public charging infrastructure is more accurately represented than the private charging infrastructure due to a lack of incentive for the owners of private charging infrastructure to make the existence of their ports known to the public.

Data Cleaning

EIA has not verified the accuracy of the administrative data and only conducted minimal cleaning of the data. The cleaning EIA did complete included:

- Fixing latitudes and longitudes if they equaled 0, 0 or 1, -1, to facility creation of location ID
- Normalizing the naming convention of several variables including the electric network providers and the facility type
- Removing charging infrastructure outside of the United States, that had not opened yet, and non-EV locations

Breaks in series

There was a break in series in the number of charging locations between December 2020 and January 2021 because of a definitional change to align with the international standard – Open Charge Point Interface (OCPI).[7]

Duplicate observations

It is likely that duplicate observations exist. Duplicate observations may be introduced multiple ways:

- Multiple people adding the same charging port
- Updates to the networked providers database creating the appearance of a new charging port
- Changes in the underlying data structure of the historical data series creating the appearance of new ports
- EIA's imputation of number of charging ports to the date the charging port opened, not the date it first appeared

Because EIA cannot verify if these are duplicates, the details of the possibly duplicated charging infrastructure remain in the database.

Creation of the location and port id

In most historical datasets, the AFDC data included an equipment ID variable that is helpful to identify EV charging locations. However, this variable was inadequate to track EV charging location overtime for a couple reasons:

1. Between February 2017 and January 2018, 10 monthly datasets are missing equipment IDs
2. Ports located at the same location could have different equipment IDs for various reasons:

a. Co-located public and private ports have different equipment IDs
b. Co-located networked and non-networked ports have different equipment IDs
c. Ports that either came online or were added to the AFDC database at different times have different equipment IDs
d. Changes in underlying systems could cause an already established port to receive a new equipment ID

For these reasons, EIA created a new ID variable called the "Location ID" using latitude and longitude pairings and equipment ID. It is common for a location ID to be associated with multiple latitudes and longitudes parings as well as multiple equipment IDs due to responses to these variables changing in the historical datasets.

To allow for variation across ports at a location, EIA created a "Port ID" variable using access group (public versus private access), network provider, port level (DC fast charger, Level 2, Level 1, or Legacy), and equipment ID. Every unique combination of the previously mentioned variables received a different Port ID.

Imputation

EIA imputes all missing and incomplete data. Historical datasets had missing subsets of data, so EIA had to fill in the missing data. The missing subsets varied from large (all private charging ports) to small (ports missing for one month and then reappearing during the next month). EIA filled in the missing month with the port count data from the following month.

EIA also imputed data in months that we did not receive any data from NREL. EIA imputed the data using data from the first month following the missing month if the location open date was during the missing month or prior. We did not extend the life of any ports if the last month they appeared in was the month prior to the missing month. We assumed the last month in service was the last month the port appeared, not during the missing month.

In addition, we imputed to remove errors that only appear in one month. For each historical month, EIA compared the previous and following months. If those months were equal but the middle month was different, then EIA updated the middle month to match the other months. New EV ports require a long time lag to install, so it is unlikely that the number of ports would change for a single month then return to their original number.

It is common for EV infrastructure to be added to the AFDC website months or years after the location came online. Because of this, EIA also backfilled EV charging port data to cover all months since the port was available, not only when it appeared in the AFDC database. The MER conducts this backfill imputation twice per year, in the May and October MERs, to correspond with the release of data in the State Energy Data System (SEDS).[8]

Available data

In addition to the monthly and annual national data, monthly state level data and a microdata file are also available at http://www.eia.gov/totalenergy/data/monthly/#appendices.

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1. Alternative Fuels Data Center: https://afdc.energy.gov/stations/#/find/nearest
2. Networked ports are connected to the internet, can communicate with their EV service provider, have a dedicated platform that allows users to find the chargers and pay to charge. The service provider can manage who can access the station and the cost of charging. The charging infrastructure may also be able to communicate directly with drivers, other charging infrastructure, and utilities.
3. Non-networked ports are not connected to the internet and provide only basic charging capabilities.
4 . Details on the EV charging infrastructure data received by AFDC: https://afdc.energy.gov/stations/#/find/nearest?show_about=true
5. AFDC API details: https://developer.nrel.gov/docs/transportation/alt-fuel-stations-v1/all/
6. For more details of the networked providers NREL is currently receiving daily updates from see: https://afdc.energy.gov/stations/#/find/nearest?show_about=true
7. For more details on the OCIP see https://afdc.energy.gov/stations/#/find/nearest?show_about=true
8. For more information on SEDS see https://www.eia.gov/state/seds/

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Glossary

Alcohol: The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a **hydrocarbon** plus a hydroxyl group; CH(3)-(CH(2))n-OH (e.g., **methanol**, **ethanol**, and tertiary butyl alcohol). See **Fuel ethanol**.

Alternative fuel: Alternative fuels, for transportation applications, include the following: **methanol**; denatured **ethanol**, and other **alcohols**; fuel mixtures containing 85 percent or more by volume of methanol, denatured ethanol, and other alcohols with **motor gasoline** or other fuels; **natural gas**; **liquefied petroleum gas** (**propane**); **hydrogen**; **coal**-derived liquid fuels; fuels (other than alcohol) derived from biological materials (**biofuels** such as soy **diesel fuel**); **electricity** (including electricity from **solar energy**); and "... any other fuel the Secretary determines, by rule, is substantially not **petroleum** and would yield substantial energy security benefits and substantial environmental benefits." The term "alternative fuel" does not include alcohol or other blended portions of primarily petroleum-based fuels used as **oxygenates** or extenders, i.e., **MTBE**, ETBE, other ethers, and the 10-percent ethanol portion of **gasohol**.

Alternative-fuel vehicle (AFV): A vehicle designed to operate on an **alternative fuel** (e.g., compressed **natural gas**, **methane** blend, or **electricity**). The vehicle could be either a dedicated vehicle designed to operate exclusively on alternative fuel or a nondedicated vehicle designed to operate on alternative fuel and/or a traditional fuel.

Anthracite: The highest rank of **coal**; used primarily for residential and commercial space heating. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite generally is less than 15 percent. The heat content of anthracite ranges from 22 to 28 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of anthracite coal consumed in the United States averages 25 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). ***Note:*** Since the 1980's, anthracite refuse or mine waste has been used for steam-electric power generation. This fuel typically has a heat content of 15 million Btu per ton or less.

Anthropogenic: Made or generated by a human or caused by human activity. The term is used in the context of global **climate change** to refer to gaseous emissions that are the result of human activities, as well as other potentially climate- altering activities, such as deforestation.

Asphalt: A dark brown-to-black cement-like material obtained by **petroleum** processing and containing bitumens as the predominant component; used primarily for road construction. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. ***Note:*** The conversion factor for asphalt is 5.5 barrels per short ton.

ASTM: The American Society for Testing and Materials.

Aviation gasoline blending components: **Naphthas** that will be used for blending or compounding into finished aviation gasoline (e.g., straight run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes **oxygenates** (**alcohols**, **ethers**), **butane**, and **natural gasoline**. Oxygenates are reported as **other hydrocarbons**, **hydrogen**, and oxygenates. See **Aviation gasoline**, **finished**.

Aviation gasoline, finished: A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. ***Note:*** Data on blending components are not counted in data on finished aviation gasoline.

Barrel (petroleum): A unit of volume equal to 42 U.S. Gallons.

Base gas: The quantity of **natural gas** needed to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas usually is not withdrawn and remains in the reservoir. All natural gas native to a depleted reservoir is included in the base gas volume.

Battery electric vehicle (BEV): An all-electric vehicle that receives power by plugging into an electric power source and storing the power in a battery pack. BEVs do not use any petroleum-based or other liquid- or gas-based fuel during operation and do not produce tailpipe emissions.

Biodiesel: Renewable fuel consisting of mono alkyl esters (long chain fatty acids) that are produced through the conversion of animal fats, vegetable oils, and recycled grease feedstocks (transesterification). Biodiesel is typically blended with **petroleum**-based **diesel fuel** in concentrations of 2% to 20% biodiesel, or B2 to B20.

Biofuels: Liquid fuels and blending components produced from **biomass** (plant) feedstocks, used primarily for transportation. See **Biodiesel**, **Fuel ethanol**, **Other biofuels**, and **Renewable diesel fuel**.

Biogas: A mixture of methane and other gases produced by decomposing matter in an oxygen-free (anaerobic) environment with the assistance of microbes. Biogas is typically produced at landfills and anaerobic digesters.

Biogenic: Produced by biological processes of living organisms. ***Note:*** EIA uses the term "biogenic" to refer only to organic nonfossil material of biological origin.

Biomass: Organic nonfossil material of biological origin constituting a renewable energy source. See **Biodiesel**, **Biofuels**, **Biomass waste**, **Densified biomass**, **Fuel ethanol**, **Other biofuels**, **Renewable diesel fuel**, 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 **Biodiesel** and **Renewable diesel fuel**.

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**, **fuel ethanol**, **other biofuels**, and **renewable diesel fuel**. ***Note:*** EIA "biomass waste" data also include energy crops grown specifically for energy production, which would not normally constitute waste.

Bituminous coal: A dense **coal**, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make **coke**. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content usually is less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of bituminous coal consumed in the United States averages 24 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Black liquor: A byproduct of the paper production process, alkaline spent liquor that can be used as a source of energy. Alkaline spent liquor is removed from the digesters in the process of chemically pulping wood. After evaporation, the residual "black" liquor is burned as a fuel in a recovery furnace that permits the recovery of certain basic chemicals.

British thermal unit (Btu): The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit). See **Heat content**.

Btu: See **British thermal unit**.

Btu conversion factor: A factor for converting **energy** data between one unit of measurement and **British thermal units (Btu)**. Btu conversion factors are generally used to convert energy data from physical units of measure (such as **barrels**, **cubic feet**, or **short tons**) into the energy-equivalent measure of Btu. (See http://www.eia.gov/totalenergy/data/monthly/#appendices for further information on Btu conversion factors.)

Butane (C_4H_{10}): A straight-chain or branch-chain **hydrocarbon** extracted from **natural gas** or **refinery gas** streams, which is gaseous at standard temperature and pressure. It includes **isobutane** and **normal butane** and is designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial butane.

Butylene (C_4H_8): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Butylene is used in the production of gasoline and various petrochemical products. See **Olefinic hydrocarbons (olefins)**.

Capacity factor: The ratio of the electrical energy produced by a generating unit for a given period of time to the electrical energy that could have been produced at continuous full-power operation during the same period.

Carbon dioxide (CO_2): A colorless, odorless, non-poisonous gas that is a normal part of Earth's atmosphere. Carbon dioxide is a product of **fossil-fuel** combustion as well as other processes. It is considered a **greenhouse gas** as it traps heat (infrared energy) radiated by the Earth into the atmosphere and thereby contributes to the potential for **global warming**. The **global warming potential** (GWP) of other greenhouse gases is measured in relation to that of carbon dioxide, which by international scientific convention is assigned a value of one (1).

Chained dollars: A measure used to express **real prices**. Real prices are those that have been adjusted to remove the effect of changes in the purchasing power of the dollar; they usually reflect buying power relative to a reference year. Prior to 1996, real prices were expressed in constant dollars, a measure based on the weights of goods and services in a single year, usually a recent year. In 1996, the U.S. Department of Commerce introduced the chained-dollar measure. The new measure is based on the average weights of goods and services in successive pairs of years. It is "chained" because the second year in each pair, with its weights, becomes the first year of the next pair. The advantage of using the chained- dollar measure is that it is more closely related to any given period and is therefore subject to less distortion over time.

CIF: See **Cost**, **insurance**, **freight**.

Citygate: A point or measuring station at which a distribution gas utility receives gas from a **natural gas** pipeline company or transmission system.

Climate change: A term used to refer to all forms of climatic inconsistency, but especially to significant change from one prevailing climatic condition to another. In some cases, "climate change" has been used synonymously with the term "**global warming**"; scientists, however, tend to use the term in a wider sense inclusive of natural changes in climate, including climatic cooling.

Coal: A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time. See **Anthracite**, **Bituminous coal**, **Lignite**, **Subbituminous coal**, **Waste coal**, and **Coal synfuel**.

Coal coke: A solid carbonaceous residue derived from low-ash, low-sulfur **bituminous coal** from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace. Coke from coal is grey, hard, and porous and has a heating value of 24.8 million Btu per ton.

Coal stocks: Coal quantities that are held in storage for future use and disposition. ***Note:*** When coal data are collected for a particular reporting period (month, quarter, or year), coal stocks are commonly measured as of the last day of the period.

Coal synfuel: Coal-based solid fuel that has been processed by a **coal synfuel plant**; and coal-based fuels such as briquettes, pellets, or extrusions, which are formed from fresh or recycled coal and binding materials.

Coal synfuel plant: A plant engaged in the chemical transformation of **coal** into **coal synfuel**.

Coke: See **Coal coke** and **Petroleum coke**.

Coking coal: Bituminous coal suitable for making coke. See **Coal coke**.

Combined cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

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 fuel ethanol: Fuel ethanol produced by fermenting cornstarch. Fuel ethanol is typically blended with motor gasoline as an oxygenate or octane enhancer in concentrations of 10% ethanol, but it can be blended up to a 15% concentration in some markets for vehicle models manufactured to use E15. In higher concentrations of 51%–83% fuel ethanol, it is used in alternative or flex-fuel vehicles.

Conventional hydroelectric power: Hydroelectric power generated from flowing water that is not created by **hydroelectric pumped storage**.

Conventional motor gasoline: See **Motor gasoline conventional**.

Conversion factor: A factor for converting data between one unit of measurement and another (such as between **short tons** and **British thermal units**, or between **barrels** and gallons).
(See http://www.eia.gov/totalenergy/data/monthly/#appendices. See **Btu conversion factor** and **Thermal conversion factor**.

Cost, insurance, freight (CIF): A sales transaction in which the seller pays for the transportation and insurance of the goods to the port of destination specified by the buyer.

Crude oil: A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include: (1) small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casing head) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included; (2) small amounts of nonhydrocarbons produced with the oil, such as sulfur and various metals; and (3) drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Crude oil f.o.b. price: The crude oil price actually charged at the oil-producing country's port of loading. Includes deductions for any rebates and discounts or additions of premiums, where applicable. It is the actual price paid with no adjustment for credit terms.

Crude oil (including lease condensate): A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Where identifiable, liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded.

Crude oil landed cost: The price of crude oil at the port of discharge, including charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. The cost does not include charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage).

Crude oil refinery input: The total crude oil put into processing units at refineries.

Crude oil stocks: Stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude oil used directly: Crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Crude oil well: A well completed for the production of crude oil from one or more oil zones or reservoirs. Wells producing both crude oil and natural gas are classified as oil wells.

Cubic foot (natural gas): The amount of **natural gas** contained at standard temperature and pressure (60 degrees Fahrenheit and 14.73 pounds standard per square inch) in a cube whose edges are one foot long.

Degree Day Normals: Simple arithmetic averages of monthly or annual degree days over a long period of time (usually the 30-year period 1961–1990). The averages may be simple degree day normals or population-weighted degree day normals.

Degree Days, Cooling (CDD): A measure of how warm a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the base temperature (65 degrees) from the average of the day's high and low temperatures, with negative values set equal to zero. Each day's cooling degree days are summed to create a cooling degree day measure for a specified reference period. Cooling degree days are used in energy analysis as an indicator of air conditioning energy requirements or use.

Degree Days, Heating (HDD): A measure of how cold a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the average of the day's high and low temperatures from the base temperature (65 degrees), with negative values set equal to zero. Each day's heating degree days are summed to create a heating degree day measure for a specified reference period. Heating degree days are used in energy analysis as an indicator of space heating energy requirements or use.

Degree Days, Population-weighted: Heating or cooling degree days weighted by the population of the area in which the degree days are recorded. To compute state population-weighted degree days, each state is divided into from one to nine climatically homogeneous divisions, which are assigned weights based on the ratio of the population of the division to the total population of the state. Degree day readings for each division are multiplied by the corresponding population weight for each division and those products are then summed to arrive at the state population-weighted degree day figure. To compute national population-weighted degree days, the nation is divided into nine Census regions, each comprising from three to eight states, which are assigned weights based on the ratio of the population of the region to the total population of the nation. Degree day readings for each region are multiplied by the corresponding population weight for each region and those products are then summed to arrive at the national population-weighted degree day figure.

Denaturant: Petroleum, typically **natural gasoline** or **conventional motor gasoline**, added to **fuel ethanol** to make it unfit for human consumption. Fuel ethanol is denatured, usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent denaturant. See **Fuel ethanol** and **Fuel ethanol minus denaturant**.

Densified biomass fuel: Raw biomass, primarily wood, that has been condensed into a homogenously sized, energy-dense product, such as wood pellets, intended for use as fuel. It is mainly used for residential and commercial space heating and electricity generation.

Design electrical rating, net: The nominal net electrical output of a nuclear unit as specified by the electric utility for the purpose of plant design.

Development well: A well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Diesel fuel: A fuel composed of **distillate fuel oils** obtained in petroleum refining operation or blends of such distillate fuel oils with **residual fuel oil** used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline.

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

Direct-use energy: Energy, usually in the form of heat, used by an onsite application.

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 **combined-heat-and-power (CHP) plant, electricity-only plant, electric utility,** and **independent power producer**. The electric power sector consumes **primary energy** to generate electricity and heat (forms of secondary energy). Electricity is sold to the four **end-use sectors** (residential, commercial, industrial, and transportation), stored for future use, and exported to other countries.

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**.

Electric vehicle (EV): A general term for any on-road licensed vehicle that can plug into an electric power source and uses electric power to move. EVs plug into a source of electricity and store power in a battery pack for all or part of their power needs. Includes **Battery electric vehicles (BEVs)** and **Plug-in hybrid vehicles (PHEVs).** Can also be referred to as Plug-in Electric Vehicles (PEV).

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 sales to ultimate customers: Electricity sales that are consumed by the customer and not available for resale. Includes electric sales to end users by third-party owners of behind-the-meter PV solar systems.

End-use energy consumption: End-use sector (residential, commercial, industrial, and transportation) consumption of primary energy plus electricity sales to ultimate customers. The energy associated with electrical system energy losses is not included.

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-consuming sectors: The **residential, commercial, industrial, transportation,** and **electric power** sectors of the economy.

Energy consumption: The use of energy as a source of heat or power or as an input in the manufacturing process.

Energy service provider: An energy entity that provides service to a retail or end-use customer.

Energy-use-sectors: A group of major energy-consuming components of U.S. society developed to measure and analyze energy use. The sectors most commonly referred to in EIA are: **residential**, **commercial**, **industrial**, **transportation**, and **electric power**.

Ethane (C_2H_6): A straight-chain saturated (paraffinic) **hydrocarbon** extracted predominantly from the natural gas stream, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -127 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Ethanol (C_2H_5OH): A clear, colorless, flammable **alcohol**. Ethanol is typically produced biologically from **biomass** feedstocks such as agricultural crops and cellulosic residues from agricultural crops or wood. Ethanol can also be produced chemically from **ethylene**. See **Biomass**, **Fuel ethanol**, and **Fuel ethanol minus denaturant**.

Ether: A generic term applied to a group of organic chemical compounds composed of carbon, **hydrogen**, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., **methyl tertiary butyl ether**).

Ethylene (C_2H_4): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Ethylene is used as a petrochemical feedstock for many chemical applications and the production of consumer goods. See **Olefinic hydrocarbons (olefins)**.

Exploratory well: A well drilled to find and produce oil or gas in an area previously considered an unproductive area, to find a new reservoir in a known field (i.e., one previously found to be producing oil or gas in another reservoir), or to extend the limit of a known oil or gas reservoir.

Exports: Shipments of goods from within the 50 states and the District of Columbia to U.S. possessions and territories or to foreign countries.

Federal Energy Administration (FEA): A predecessor of the U.S. Energy Information Administration.

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification.

FERC is an independent regulatory agency within the U.S. Department of Energy and is the successor to the Federal Power Commission.

Federal Power Commission (FPC): The predecessor agency of the Federal Energy Regulatory Commission. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and natural gas industries. It was abolished on September 30, 1977, when the U.S. Department of Energy was created. Its functions were divided between the U.S. Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

First purchase price: The price for domestic crude oil reported by the company that owns the crude oil the first time it is removed from the lease boundary.

Flared natural gas: Natural gas burned in flares on the base site or at gas processing plants.

F.O.B. (free on board): A sales transaction in which the seller makes the product available for pick up at a specified port or terminal at a specified price and the buyer pays for the subsequent transportation and insurance.

Footage drilled: Total footage for wells in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore, which is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

Former U.S.S.R.: See **Union of Soviet Socialist Republics (U.S.S.R.)**.

Fossil fuel: An energy source formed in the Earth's crust from decayed organic material, such as **petroleum**, **coal**, and **natural gas**.

Fossil fueled steam electric power plant: An electricity generation plant in which the prime mover is a turbine rotated by high-pressure steam produced in a boiler by heat from burning fossil fuels.

Fuel cell electric vehicle (FCEV): An electric vehicle that generates on-board electricity with a fuel cell powered by hydrogen rather than relying on electricity from a high capacity battery.

Fuel ethanol: Ethyl alcohol for fuel use that is produced by the fermentation of sugars. Fuel ethanol is denatured with petroleum products (for example, natural gasoline) to render it unfit for human consumption.

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 turbine plant: A plant in which the prime mover is a gas turbine. A gas turbine consists typically of an axial-flow air compressor and one or more combustion chambers where liquid or gaseous fuel is burned and the hot gases are passed to the turbine and where the hot gases expand drive the generator and are then used to run the compressor.

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.

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.

Internal combustion engine (ICE): Generates mechanical power by burning a liquid, such as gasoline, diesel, or biofuels, or a gaseous fuel, such as compressed natural gas.

Internal combustion plant: A plant in which the prime mover is an **internal combustion engine**. An **internal combustion engine** has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel or gas-fired engines are the principal types used in electric plants. The plant is usually operated during periods of high demand for electricity.

Isobutane (C_4H_{10}): A branch-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 11 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Isobutylene (C_4H_8): A branch-chain olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Isobutylene is used in the production of gasoline and various petrochemical products. See **Olefinic hydrocarbons (olefins)**.

Isopentane (C_5H_{12}): A saturated branched-chain **hydrocarbon** obtained by fractionation of **natural gasoline** or isomerization of normal pentane.

Jet fuel: A refined **petroleum** product used in jet aircraft engines. See **Jet fuel**, **Kerosene-type**, and **Jet fuel**, **Naphtha-type**.

Jet fuel, kerosene-type: A **kerosene**-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbo jet and turbo prop aircraft engines.

Jet fuel, naphtha-type: A fuel in the heavy **naphtha** boiling range having an average gravity of 52.8 degrees API, 20% to 90% distillation temperatures of 290 degrees to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4). It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds.

Kerosene: A light **petroleum** distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. See **Jet fuel, kerosene-type**.

Kilowatt: A unit of electrical power equal to 1,000 **watts**.

Kilowatthour (kWh): A measure of electricity defined as a unit of work or energy, measured as 1 **kilowatt** (1,000 watts) of power expended for 1 hour. One kilowatthour is equivalent to 3,412 Btu. See **Watthour**.

Landed costs: The dollar-per-barrel price of crude oil at the port of discharge. Included are the charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. Not included are charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage charges).

Lease and plant fuel: **Natural gas** used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and used as fuel in natural gas processing plants.

Lease condensate: Light liquid **hydrocarbons** recovered from lease separators or field facilities at associated and non-associated **natural gas** wells. Mostly pentanes and heavier hydrocarbons. Normally enters the **crude oil** stream after production.

Lignite: The lowest rank of coal, often referred to as brown **coal**, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent. The heat content of lignite ranges from 9 to 17 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Liquefied natural gas (LNG): **Natural gas** (primarily methane) that has been liquefied by reducing its temperature to -260 degrees Fahrenheit at atmospheric pressure.

Liquefied petroleum gases (LPG): A group of **hydrocarbon** gases, primarily **propane**, **normal butane**, and **isobutane**, derived from crude oil refining or **natural gas** processing. These gases may be marketed individually or mixed. They can be liquefied through pressurization (without requiring cryogenic refrigeration) for convenience of transportation or storage. Excludes **ethane** and **olefins**. ***Note:*** In some EIA publications, LPG includes ethane and marketed refinery olefin streams, in accordance with definitions used prior to January 2014.

Liquefied refinery gases (LRG): **Hydrocarbon gas liquids** produced in refineries from processing of **crude oil** and **unfinished oils**. They are retained in the liquid state through pressurization and/or refrigeration. The reported categories include **ethane**, **propane**, **normal butane**, **isobutane**, and refinery **olefins** (**ethylene**, **propylene**, **butylene**, and **isobutylene**).

Low power testing: The period of time between a nuclear generating unit's initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during that period is 5 percent of the unit's design thermal rating.

Lubricants: Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Excluded are byproducts of lubricating oil refining, such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. Included are all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Lubricant categories are paraffinic and naphthenic.

Marketed production (natural gas): See **Natural gas marketed production**.

Methane (CH_4): A colorless, flammable, odorless **hydrocarbon** gas which is the major component of **natural gas**. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas. See **Greenhouse gases**.

Methanol (CH_3OH): A light, volatile alcohol eligible for gasoline blending. See **Motor gasoline blending** and **Oxygenates**.

Methyl tertiary butyl ether (MTBE**) ((**$(CH_3)_3COCH_3$**):** An **ether** intended for gasoline blending. See **Motor gasoline blending** and **Oxygenates**.

Miscellaneous petroleum products: All finished petroleum products not classified elsewhere—for example, petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils.

Motor gasoline blending components: Naphtha (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into finished motor gasoline. These components include reformulated gasoline blendstock (RBOB) but exclude oxygenates (alcohols, ethers), butane, and natural gasoline. ***Note:*** Oxygenates are reported as individual components and are included in the total for other hydrocarbons, hydrogens, and oxygenates.

Motor gasoline, conventional: **Finished motor gasoline** not included in the **oxygenated** or **reformulated** motor gasoline categories. ***Note:*** This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock. Conventional motor gasoline can be leaded or unleaded; regular, midgrade, or premium. See **Motor gasoline grades**.

Motor gasoline (finished): A complex mixture of relatively volatile **hydrocarbons** with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. Motor gasoline includes conventional gasoline; all types of oxygenated gasoline, including **gasohol**; and reformulated gasoline, but excludes aviation gasoline. ***Note:*** Volumetric data on blending components, such as **oxygenates**, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline. See **Motor gasoline**, **conventional**; **Motor gasoline**, **oxygenated**; and **Motor gasoline**, **reformulated**.

Motor gasoline grades: The classification of gasoline by octane ratings. Each type of gasoline (conventional, oxygenated, and reformulated) is classified by three grades: regular, midgrade, and premium. ***Note:*** Gasoline sales are reported by grade in accordance with their classification at the time of sale. In general, automotive octane requirements are lower at high altitudes. Therefore, in some areas of the United States, such as the Rocky Mountain States, the octane ratings for the gasoline grades may be 2 or more octane points lower.

> ***Regular Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than **88**. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Midgrade Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to **88** and less than or equal to 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Premium Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.

Motor gasoline, oxygenated: Finished motor gasoline, other than reformulated gasoline, having an oxygen content of 2.7 percent or higher by weight and required by the U.S. Environmental Protection Agency (EPA) to be sold in areas designated by EPA as carbon monoxide (CO) nonattainment areas. ***Note:*** Oxygenated gasoline excludes oxygenated fuels program reformulated gasoline (OPRG) and reformulated gasoline blendstock for oxygenate blending (RBOB). Data on gasohol that has at least 2.7 percent oxygen, by weight, and is intended for sale inside CO nonattainment areas are included in data on oxygenated gasoline. Other data on gasohol are included in data on conventional gasoline.

Motor gasoline, reformulated: Finished motor gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. ***Note:*** This category includes oxygenated fuels program reformulated gasoline (OPRG) but excludes reformulated gasoline blendstock for oxygenate blending (RBOB).

Motor gasoline retail prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers-about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service).

Motor gasoline (total): For stock level data, a sum including finished motor gasoline stocks plus stocks of motor gasoline blending components but excluding stocks of oxygenates.

MTBE: See **Methyl tertiary butyl ether**.

NAICS (North American Industry Classification System): A coding system developed jointly by the United States, Canada, and Mexico to classify businesses and industries according to the type of economic activity in which they are

engaged. NAICS replaces the Standard Industrial Classification (SIC) codes. For additional information on NAICS, go to http://www.census.gov/eos/www/naics/.

Naphtha: A generic term applied to a refined or partially refined **petroleum** fraction with an approximate boiling range between 122 degrees and 400 degrees Fahrenheit.

Natural Gas: A gaseous mixture of **hydrocarbon** compounds, primarily **methane**, used as a fuel for **electricity generation** and in a variety of ways in buildings, and as raw material input and fuel for industrial processes.

Natural gas, dry: **Natural gas** which remains after: (1) the liquefiable **hydrocarbon** portion has been removed from the gas stream (i.e., gas after lease, field, and/or plant separation); and (2) any volumes of **nonhydrocarbon gases** have been removed where they occur in sufficient quantity to render the gas unmarketable. ***Note:*** Dry natural gas is also known as consumer-grade natural gas. The parameters for measurement are cubic feet at 60 degrees Fahrenheit and 14.73 pounds per square inch absolute.

Natural gas (dry) production: The process of producing consumer-grade **natural gas**. Natural gas withdrawn from reservoirs is reduced by volumes used at the production (lease) site and by processing losses. Volumes used at the production site include (1) the volume returned to reservoirs in cycling, **repressuring** of oil reservoirs, and conservation operations; and (2) **vented natural gas** and **flared natural gas**. Processing losses include (1) **nonhydrocarbon gases** (e.g., water vapor, carbon dioxide, helium, hydrogen sulfide, and nitrogen) removed from the gas stream; and (2) gas converted to liquid form, such as **lease condensate** and **natural gas plant liquids**. Volumes of dry gas withdrawn from gas storage reservoirs are not considered part of production. Dry natural gas production equals **natural gas marketed production** less **natural gas plant liquids** production.

Natural gas liquids (NGL): A group of **hydrocarbons** including **ethane**, **propane**, **normal butane**, **isobutane**, and **natural gasoline**. Generally include **natural gas plant liquids** and all **liquefied refinery gases** except **olefins**. See **Paraffinic hydrocarbons**.

Natural gas marketed production: Gross withdrawals of **natural gas** from production reservoirs, less gas used for reservoir **repressuring**; **nonhydrocarbon gases** removed in treating and processing operations; and quantities of **vented natural gas** and **flared natural gas**.

Natural gas plant liquids (NGPL): Those **hydrocarbons** in **natural gas** that are separated as liquids at natural gas processing, fractionating, and cycling plants. Products obtained include **ethane**, **liquefied petroleum gases** (**propane**, **normal butane** and **isobutane**), and **natural gasoline**. Component products may be fractionated or mixed. **Lease condensate** and **plant condensate** are excluded. ***Note:*** Some EIA publications categorize NGPL production as field production, in accordance with definitions used prior to January 2014.

Natural gas wellhead price: The **wellhead price** of **natural gas** is calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing states and the U.S. Minerals Management Service. The price includes all costs prior to shipment from the lease, including gathering and compression costs, in addition to state production, severance, and similar charges.

Natural gasoline: A commodity product commonly traded in **natural gas liquids** (NGL) markets that comprises liquid **hydrocarbons** (mostly pentanes and hexanes) and generally remains liquid at ambient temperatures and atmospheric pressure. Natural gasoline is equivalent to **pentanes plus**.

Net summer capacity: The maximum output, commonly expressed in **kilowatts** (kW) or megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

Neutral zone: A 6,200 square-mile area shared equally between Kuwait and Saudi Arabia under a 1992 agreement. The Neutral zone contains an estimated 5 billion barrels of oil and 8 trillion cubic feet of natural gas.

Nominal dollars: A measure used to express **nominal price**.

Nominal price: The price paid for a product or service at the time of the transaction. Nominal prices are those that have not been adjusted to remove the effect of changes in the purchasing power of the dollar; they reflect buying power in the year in which the transaction occurred.

Non-biomass waste: Material of non-biological origin that is a byproduct or a discarded product. "Non-biomass waste" includes municipal solid waste from non-biogenic sources, such as plastics, and tire-derived fuels.

Non-combustion use: **Fossil fuels** (**coal, natural gas,** and **petroleum products**) that are not burned to release energy and instead used directly as construction materials, chemical feedstocks, lubricants, solvents, waxes, and other products. Sometimes used synonymously with "nonfuel use (of energy)."

Nonhydrocarbon gases: Typical nonhydrocarbon gases that may be present in reservoir **natural gas** are **carbon dioxide**, helium, hydrogen sulfide, and nitrogen.

Nonrenewable fuels: Fuels that cannot be easily made or "renewed," such as **crude oil**, **natural gas**, and **coal**.

Normal butane (C_4H_{10}): A straight-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 31 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Nuclear electric power (nuclear power): Electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.

Nuclear electric power plant: A single-unit or multiunit facility in which heat produced in one or more reactors by the fissioning of nuclear fuel is used to drive one or more steam turbines.

Nuclear reactor: An apparatus in which a nuclear fission chain reaction can be initiated, controlled, and sustained at a specific rate. A reactor includes fuel (fissionable material), moderating material to control the rate of fission, a heavy-walled pressure vessel to house reactor components, shielding to protect personnel, a system to conduct heat away from the reactor, and instrumentation for monitoring and controlling the reactor's systems.

OECD: See **Organization for Economic Cooperation and Development**.

Offshore: That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water.

Oil: See **Crude oil**.

Oil from algae: Oil processed from unicellular and multicellular algae harvested specifically to produce biofuel.

Olefinic hydrocarbons (olefins): Unsaturated **hydrocarbon** compounds with the general formula CnH2n containing at least one carbon-to-carbon double-bond. Olefins are produced at crude oil refineries and petrochemical plants and are not naturally occurring constituents of oil and natural gas. Sometimes referred to as alkenes or unsaturated hydrocarbons. Excludes aromatics.

Olefins: See **Olefinic hydrocarbons (olefins)**.

OPEC: See **Organization of the Petroleum Exporting Countries**.

Operable unit (nuclear): In the United States, a nuclear generating unit that has completed low-power testing and been issued a full-power operating license by the Nuclear Regulatory Commission, or equivalent permission to operate.

Organization for Economic Cooperation and Development (OECD): An international organization helping governments tackle the economic, social and governance challenges of a globalized economy. Its membership comprises about 30 member countries. With active relationships with some 70 other countries, non-governmental organizations (NGOs) and civil society, it has a global reach. For details about the organization, see http://www.oecd.org.

Organization of the Petroleum Exporting Countries (OPEC): An intergovernmental organization whose stated objective is to "coordinate and unify the petroleum policies of member countries." It was created at the Baghdad Conference on September 10–14, 1960. Current and former members (with years of membership) include Algeria

(1969 forward), Angola (2007 forward), Congo-Brazzaville (2018 forward), Ecuador (1973–1992 and 2007–2019), Equatorial Guinea (2017 forward), Gabon (1974–1994 and 2016 forward), Indonesia (1962–2008 and 2016), Iran (1960 forward), Iraq (1960 forward), Kuwait (1960 forward), Libya (1962 forward), Nigeria (1971 forward), Qatar (1961–2018), Saudi Arabia (1960 forward), United Arab Emirates (1967 forward), and Venezuela (1960 forward).

Other biofuels: Fuels and fuel blending components, except **biodiesel**, **renewable diesel fuel**, and **fuel ethanol**, produced from renewable biomass.

Other energy losses: Energy losses throughout the energy system as they are consumed, usually in the form of heat, that are not separately identified by U.S. Energy Information Administration. Examples include heat lost in the process of burning motor gasoline to move vehicles or in electricity used to power a lightbulb.

Other fuel alcohol: Alcohols intended for fuel use that are not elsewhere specified.

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 or PADD: 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.

Petroleum Administration for Defense District (PADD): The 50 U.S. states and the District of Columbia are divided into five districts, with PADD 1 further split into three subdistricts. PADDs 6 and 7 encompass U.S. territories. The PADDs include the states and territories listed below:

PADD 1 (East Coast).
PADD 1A (New England): Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
PADD 1B (Central Atlantic): Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.
PADD 1C (Lower Atlantic): Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.
PADD 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.
PADD 3 (Gulf Coast): Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas.
PADD 4 (Rocky Mountain): Colorado, Idaho, Montana, Utah, and Wyoming.
PADD 5 (West Coast): Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington.
PADD 6: U.S. Virgin Islands and Puerto Rico.
PADD 7: Guam, American Samoa and the Northern Mariana Islands Territory.

Paraffinic hydrocarbons: Saturated **hydrocarbon** compounds with the general formula C_nH_{2n+2} containing only single bonds. Sometimes referred to as alkanes or **natural gas liquids**.

Pentanes plus: A mixture of liquid **hydrocarbons**, mostly pentanes and heavier, extracted from **natural gas** in a gas processing plant. Pentanes plus is equivalent to **natural gasoline**.

Petrochemical feedstocks: Chemical feedstocks derived from refined or partially refined **petroleum** fractions, principally for use in the manufacturing of chemicals, synthetic rubber, and a variety of plastics.

Petroleum: A broadly defined class of liquid hydrocarbon mixtures. Included are crude oil, lease condensate, unfinished oils, refined products obtained from the processing of crude oil, and natural gas plant liquids. ***Note:*** Volumes of finished petroleum products include nonhydrocarbon compounds, such as additives and detergents, after they have been blended into the products.

Petroleum coke: A residue high in carbon content and low in **hydrogen** that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton. See **Petroleum coke**, **Catalyst** and **Petroleum coke, marketable**.

Petroleum coke, catalyst: The carbonaceous residue that is deposited on the catalyst used in many catalytic operations (e.g., catalytic cracking). Carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon producing heat and **carbon dioxide** (**CO2**). The carbonaceous residue is not recoverable as a product. See **Petroleum coke**.

Petroleum coke, marketable: Those grades of coke produced in delayed or fluid cokers that may be recovered as relatively pure carbon. Marketable petroleum coke may be sold as is or further purified by calcining. See **Petroleum coke**.

Petroleum consumption: See **Products supplied (petroleum)**.

Petroleum imports: Imports of petroleum into the 50 states and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. territories and possessions. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones.

Petroleum products: Products obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, hydrocarbon gas liquids, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Petroleum stocks, primary: For individual products, quantities that are held at refineries, in pipelines, and at bulk terminals that have a capacity of 50,000 barrels or more, or that are in transit thereto. Stocks held by product retailers and resellers, as well as tertiary stocks held at the point of consumption, are excluded. Stocks of individual products held at gas processing plants are excluded from individual product estimates but are included in other oils estimates and total.

Pipeline fuel: Gas consumed in the operation of pipelines, primarily in compressors.

Plant condensate: Liquid **hydrocarbons** recovered at inlet separators or scrubbers in **natural gas** processing plants at atmospheric pressure and ambient temperatures. Mostly pentanes and heavier hydrocarbons.

Plug-in hybrid electric vehicle (PHEV): A vehicle that can both (1) plug into an electric power source and store power in a battery pack and (2) use petroleum-based or other liquid- or gas-based fuel to power an internal combustion engine (ICE).

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**. EIA includes the following in U.S. primary energy consumption: coal; coal coke net imports; **petroleum consumption** (equal to **petroleum products supplied**, excluding **biofuels**); **dry natural gas**—excluding **supplemental gaseous fuels**; **nuclear electricity net generation** (converted to **Btu** using the average annual **heat rate** of nuclear plants); **conventional hydroelectricity** net generation (converted to Btu using the heat content of electricity); **geothermal** electricity net generation (converted to Btu using the heat content of electricity), geothermal heat pump energy, and geothermal direct-use thermal energy; **solar thermal** and **photovoltaic** electricity net generation (converted to Btu using the heat content of electricity), and solar thermal direct-use energy; **wind** electricity net generation (converted to Btu using the heat content of electricity); **wood and wood-derived fuels**; **biomass waste**; biofuels (**fuel ethanol**, **biodiesel**, **renewable diesel**, and **other biofuels**); losses and co-products from the production of biofuels; electricity net imports (converted to Btu using the electricity heat content of 3,412 Btu per kilowatthour). Primary energy consumption includes all **non-combustion use of fossil fuels**. Primary energy consumption also includes **other energy losses** throughout the energy system. See **Total energy consumption**. Energy sources produced from other energy sources—e.g. coal coke from coal—are included in primary energy consumption only if their energy content has not already been included as part of the original energy source. As a result, U.S. primary energy consumption does include net imports of coal coke, but it does not include the coal coke produced from domestic coal.

Primary energy production: Production of **primary energy**. The U.S. Energy Information Administration includes the following in U.S. primary energy production: **coal** production, **waste coal** supplied, and coal refuse recovery; **crude oil** and **lease condensate** production; **natural gas plant liquids** production; **dry natural gas**—excluding **supplemental gaseous fuels**—production; **nuclear electricity net generation** (converted to **Btu** using the nuclear plants **heat rate**); **conventional hydroelectricity** net generation (converted to Btu using the heat content of electricity); **geothermal** electricity net generation (converted to Btu using the heat content of electricity), and geothermal heat pump energy and geothermal direct-use energy; **solar thermal** and **photovoltaic** electricity net generation (converted to Btu using the heat content of electricity), and solar thermal direct-use energy; **wind** electricity net generation (converted to Btu using the heat content of electricity); **wood and wood-derived fuels** production; **biomass waste** consumption; and **fuel ethanol** and **biodiesel** feedstock; and **renewable diesel fuel** and **other biofuels** production.

Prime mover: The engine, turbine, water wheel, or similar machine that drives an electric generator; or, for reporting purposes, a device that converts energy to electricity directly.

Product supplied (petroleum): Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas-processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus imports, plus unaccounted-for crude oil (plus net receipts when calculated on a PAD District basis) minus stock change, minus crude oil losses, minus refinery inputs, and minus exports.

Propane (C_3H_8): A straight-chain saturated (paraffinic) **hydrocarbon** extracted from **natural gas** or **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -44 degrees Fahrenheit. It includes all products designated in ASTM Specification D1835 and Gas Processors Association specifications for commercial (HD-5) propane. See **Paraffinic hydrocarbons**.

Propylene (C_3H_6): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Propylene is an important petrochemical feedstock. See **Olefinic hydrocarbons (olefins)**.

Real dollars: These are dollars that have been adjusted for inflation.

Real price: A price that has been adjusted to remove the effect of changes in the purchasing power of the dollar. Real prices, which are expressed in constant dollars, usually reflect buying power relative to a base year.

Refiner acquisition cost of crude oil: The cost of crude oil to the refiner, including transportation and fees. The composite cost is the weighted average of domestic and imported crude oil costs.

Refinery and blender net inputs: Raw materials, **unfinished oils**, and blending components processed at refineries, or blended at refineries or petroleum storage terminals to produce finished **petroleum products**. Included are gross inputs of **crude oil**, **natural gas liquids**, other **hydrocarbon** raw materials, **hydrogen**, **oxygenates** (excluding **fuel ethanol**), and renewable fuels (including fuel ethanol). Also included are net inputs of unfinished oils, **motor gasoline blending components**, and **aviation gasoline blending components**. Net inputs are calculated as gross inputs minus gross production. Negative net inputs indicate gross inputs are less than gross production. Examples of negative net inputs include reformulated gasoline blendstock for oxygenate blending (RBOB) produced at refineries for shipment to blending terminals, and unfinished oils produced and added to inventory in advance of scheduled maintenance of a refinery crude oil distillation unit.

Refinery and blender net production: Liquefied refinery gases, and finished **petroleum products** produced at a **refinery** or petroleum storage terminal blending facility. Net production equals gross production minus gross inputs. Negative net production indicates gross production is less than gross inputs for a finished petroleum product. Examples of negative net production include reclassification of one finished product to another finished product, or reclassification of a finished product to **unfinished oils** or blending components.

Refinery gas: **Still gas** consumed as refinery fuel.

Refinery (petroleum): An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Refuse mine: A surface site where **coal** is recovered from previously mined coal. It may also be known as a silt bank, culm bank, refuse bank, slurry dam, or dredge operation.

Refuse recovery: The recapture of **coal** from a **refuse mine** or the coal recaptured by that process. The resulting product has been cleaned to reduce the concentration of noncombustible materials.

Renewable diesel fuel: Renewable fuel consisting of hydrocarbon molecules, produced through the hydrotreating of animal fats, vegetable oils, and recycled grease feedstocks. It is considered a drop-in replacement to **petroleum**-based **diesel fuel** (for example, it can be used in diesel engines without modification). Renewable diesel fuel reported on the EIA-819 is produced at dedicated biorefineries or co-processed at petroleum refineries

Renewable energy: Energy obtained from sources that are essentially inexhaustible (unlike, for example, the **fossil fuels**, of which there is a finite supply). Renewable sources of energy include **conventional hydroelectric powe**r, **biomass**, **geothermal**, **solar**, and **wind**.

Renewable fuels except fuel ethanol: See **Biodiesel**, **Other biofuels**, and **Renewable diesel fuel**.

Repressuring: The injection of a pressurized fluid (such as air, gas, or water) into oil and gas reservoir formations to effect greater ultimate recovery.

Residential sector: An energy-consuming sector that consists of living quarters for private households. Common uses of energy associated with this sector include space heating, water heating, air conditioning, and lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters. See **End-use sectors** and **Energy-use sectors**.

Residual fuel oil: A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the **distillate fuel oils** and lighter **hydrocarbons** are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government service and inshore power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.

Road oil: Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

Rotary rig: A machine used for drilling wells that employs a rotating tube attached to a bit for boring holes through rock.

Short ton (coal): A unit of weight equal to 2,000 pounds.

SIC (Standard Industrial Classification): A set of codes developed by the U.S. Office of Management and Budget which categorizes industries into groups with similar economic activities. Replaced by **NAICS (North American Industry Classification System)**.

Small-scale: Generators at a site that has a total generating nameplate capacity of less than 1 megawatt (MW).

Solar energy: See **Solar photovoltaic (PV) energy** and **Solar thermal energy**.

Solar photovoltaic (PV) energy: **Energy**, radiated by the sun that is converted into direct-current electricity by solar photovoltaic cells. Examples of solar PV technologies include solar panels on residential and commercial rooftops (generally small-scale solar PV energy) and mirrors or dishes that concentrate solar rays onto solar PV panels (concentrating PV or CPV). Utility-scale solar PV electric generation typically relies on installations of solar PV panels on or near the ground (solar farms).

Solar thermal direct-use energy: Heat from the sun used by an onsite application, such as a solar thermal water heating system.

Solar thermal energy: Energy, radiated by the sun that is converted into electricity or heat by means of solar concentrating collectors. Examples of solar thermal energy technologies include pool heaters, dark water bladders, or

thermal panels (generally small-scale solar thermal energy). Utility-scale solar thermal electric generation typically relies on a large array of mirrors to heat fluids and turn a turbine, which generates electricity.

Special naphthas: All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Station use: Energy that is used to operate an **electric power plant**. It includes energy consumed for plant lighting, power, and auxiliary facilities, regardless of whether the energy is produced at the plant or comes from another source.

Steam coal: All nonmetallurgical coal.

Steam-electric power plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Still gas: Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are **methane** and **ethane**. May contain **hydrogen** and small/trace amounts of other gases. Still gas is typically consumed as refinery fuel or used as petrochemical feedstock. Still gas burned for refinery fuel may differ in composition from marketed still gas sold to other users. See **Refinery gas**.

Stocks: See **Coal stocks**, **Crude oil stocks**, or **Petroleum stocks, primary**.

Strategic Petroleum Reserve (SPR): Petroleum stocks maintained by the federal Government for use during periods of major supply interruption.

Subbituminous coal: A **coal** whose properties range from those of **lignite** to those of **bituminous coal** and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Supplemental gaseous fuels: Synthetic **natural gas**, **propane**-air, coke oven gas, **still gas** (**refinery gas**), **biomass** gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Synthetic natural gas (SNG): (Also referred to as substitute natural gas) A manufactured product, chemically similar in most respects to **natural gas**, resulting from the conversion or reforming of **hydrocarbons** that may easily be substituted for or interchanged with pipeline-quality natural gas.

Thermal conversion factor: A factor for converting data between physical units of measure (such as **barrels**, **cubic feet**, or **short tons**) and thermal units of measure (such as **British thermal units**, calories, or joules); or for converting data between different thermal units of measure. See **Btu conversion factor**.

Total energy consumption: **Primary energy consumption** in the **end-use sectors**, plus **electricity sales to ultimate customers** and **electrical system energy losses**. Also includes **other energy losses** throughout the energy system.

Transportation sector: An energy-consuming sector that consists of all vehicles whose primary purpose is transporting people and/or goods from one physical location to another. Included are automobiles; trucks; buses; motorcycles; trains, subways, and other rail vehicles; aircraft; and ships, barges, and other waterborne vehicles. Vehicles whose primary purpose is not transportation (e.g., construction cranes and bulldozers, farming vehicles, and warehouse tractors and forklifts) are classified in the sector of their primary use. See **End-use sectors** and **Energy-use sectors**.

Underground storage: The storage of **natural gas** in underground reservoirs at a different location from which it was produced.

Unfinished oils: All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of **crude oil** and include **naphthas** and lighter oils, **kerosene** and light gas oils, heavy gas oils, and residuum.

Unfractionated streams: Mixtures of unsegregated **natural gas liquids** components, excluding those in **plant condensate**. This product is extracted from **natural gas**.

Union of Soviet Socialist Republics (U.S.S.R.): A political entity that consisted of 15 constituent republics: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The U.S.S.R. ceased to exist as of December 31, 1991.

United States: The 50 states and the District of Columbia. ***Note:*** The United States has varying degrees of jurisdiction over a number of territories and other political entities outside the 50 states and the District of Columbia, including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Johnston Atoll, Midway Islands, Wake Island, and the Northern Mariana Islands. EIA data programs may include data from some or all of these areas in U.S. totals. For these programs, data products will contain notes explaining the extent of geographic coverage included under the term "United States."

Uranium: A heavy, naturally radioactive, metallic element (atomic number 92). Its two principally occurring isotopes are uranium-235 and uranium-238. Uranium-235 is indispensable to the nuclear industry because it is the only isotope existing in nature, to any appreciable extent, that is fissionable by thermal neutrons. Uranium238 is also important because it absorbs neutrons to produce a radioactive isotope that subsequently decays to the isotope plutonium-239, which also is fissionable by thermal neutrons.

Uranium concentrate: A yellow or brown powder obtained by the milling of uranium ore, processing of in situ leach mining solutions, or as a byproduct of phosphoric acid production. See **Uranium oxide**.

Uranium ore: Rock containing uranium mineralization in concentrations that can be mined economically, typically one to four pounds of uranium oxide (U3O8) per ton or 0.05 percent to 0.2 percent U3O8.

Uranium oxide (U3O8): **Uranium concentrate** or **yellowcake**.

Useful thermal output: The thermal energy made available in a combined-heat-and-power system for use in any industrial or commercial process, heating or cooling application, or delivered to other end users, i.e., total thermal energy made available for processes and applications other than electrical generation.

U.S.S.R.: See **Union of Soviet Socialist Republics (U.S.S.R.)**.

Utility-scale: Generators at a site that has a total generating nameplate capacity of 1 megawatt (MW) or more.

Vented natural gas: **Natural gas** released into the air on the production site or at processing plants.

Vessel bunkering: Includes sales for the fueling of commercial or private boats, such as pleasure craft, fishing boats, tugboats, and ocean-going vessels, including vessels operated by oil companies. Excluded are volumes sold to the U.S. Armed Forces.

Waste: See **Biomass waste** and **Non-biomass waste**.

Waste coal: Usable material that is a byproduct of previous **coal** processing operations. Waste coal is usually composed of mixed coal, soil, and rock (mine waste). Most waste coal is burned as-is in unconventional fluidized-bed combustors. For some uses, waste coal may be partially cleaned by removing some extraneous noncombustible constituents. Examples of waste coal include fine coal, coal obtained from a refuse bank or slurry dam, anthracite culm, bituminous gob, and lignite waste.

Watt (W): The unit of electrical power equal to one ampere under a pressure of one volt. A watt is equal to 1/746 horsepower.

Watthour (Wh): The electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour.

Wax: A solid or semi-solid material consisting of a mixture of **hydrocarbons** obtained or derived from **petroleum** fractions, or through a Fischer-Tropsch type process, in which the straight-chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point (ASTM D 938) between 100 and 200 degrees Fahrenheit and a maximum oil content (ASTM D 3235) of 50 weight percent.

Wellhead price: The value of **crude oil** or **natural gas** at the mouth of the well.

Wind energy: Kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.

Wood and wood-derived fuels: Wood and products derived from wood that are used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal, paper pellets, railroad ties, utility poles, **black liquor**, red liquor, sludge wood, spent sulfite liquor, **densified biomass** (including wood pellets), and other wood- based solids and liquids.

Working gas: The quantity of **natural gas** in the reservoir that is in addition to the cushion or **base gas**. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any season. Volumes of working gas are reported in thousand cubic feet at standard temperature and pressure.