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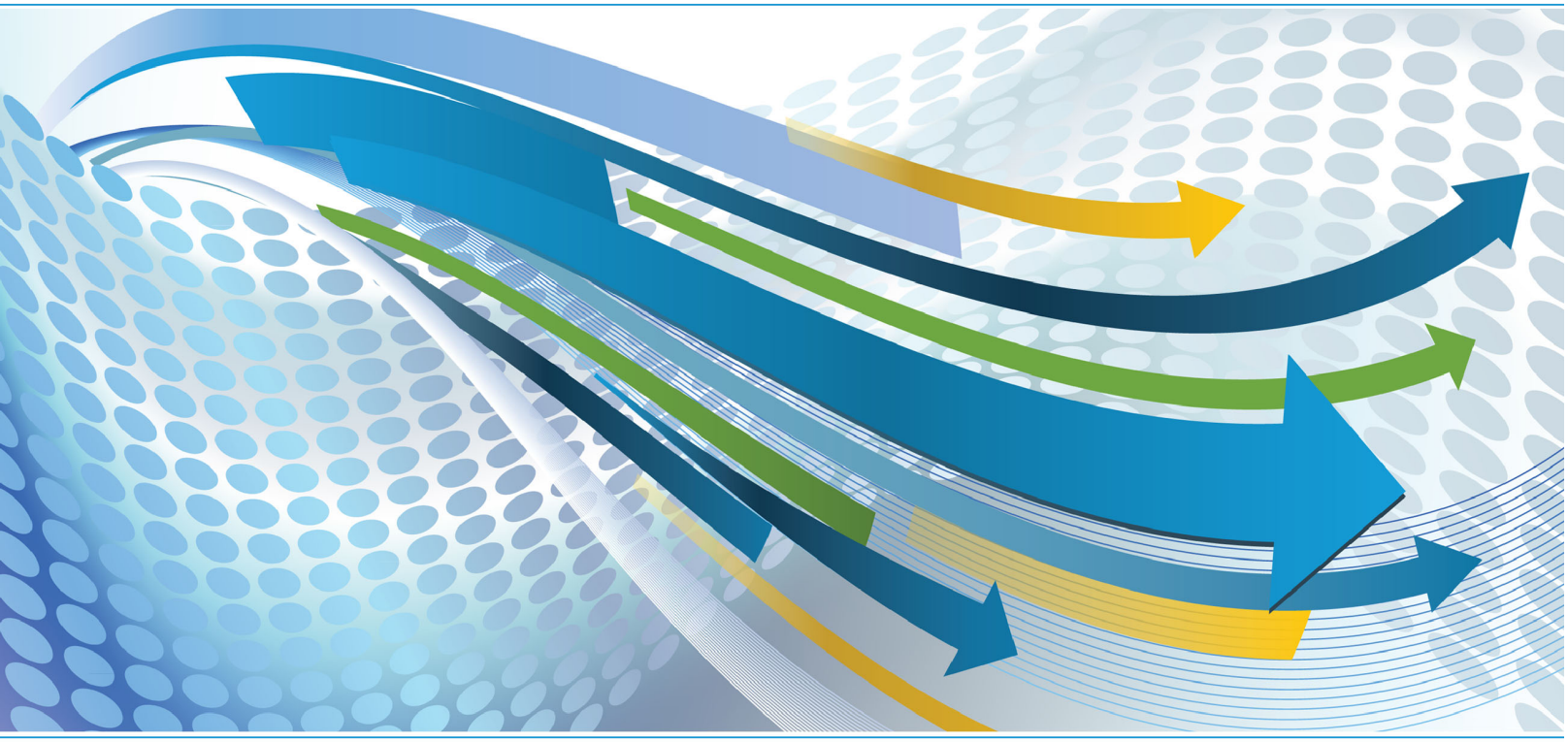
April 2022

Monthly Energy Review



Independent Statistics & Analysis
U.S. Energy Information Administration

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Monthly Energy Review

The *Monthly Energy Review* (MER) is the U.S. Energy Information Administration's (EIA) primary report of recent and historical energy statistics. Included are statistics on total energy production, consumption, stocks, trade, and energy prices; overviews of petroleum, natural gas, coal, electricity, nuclear energy, 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…"*

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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.

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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 26, 2022

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Monthly Energy Review

April 2022

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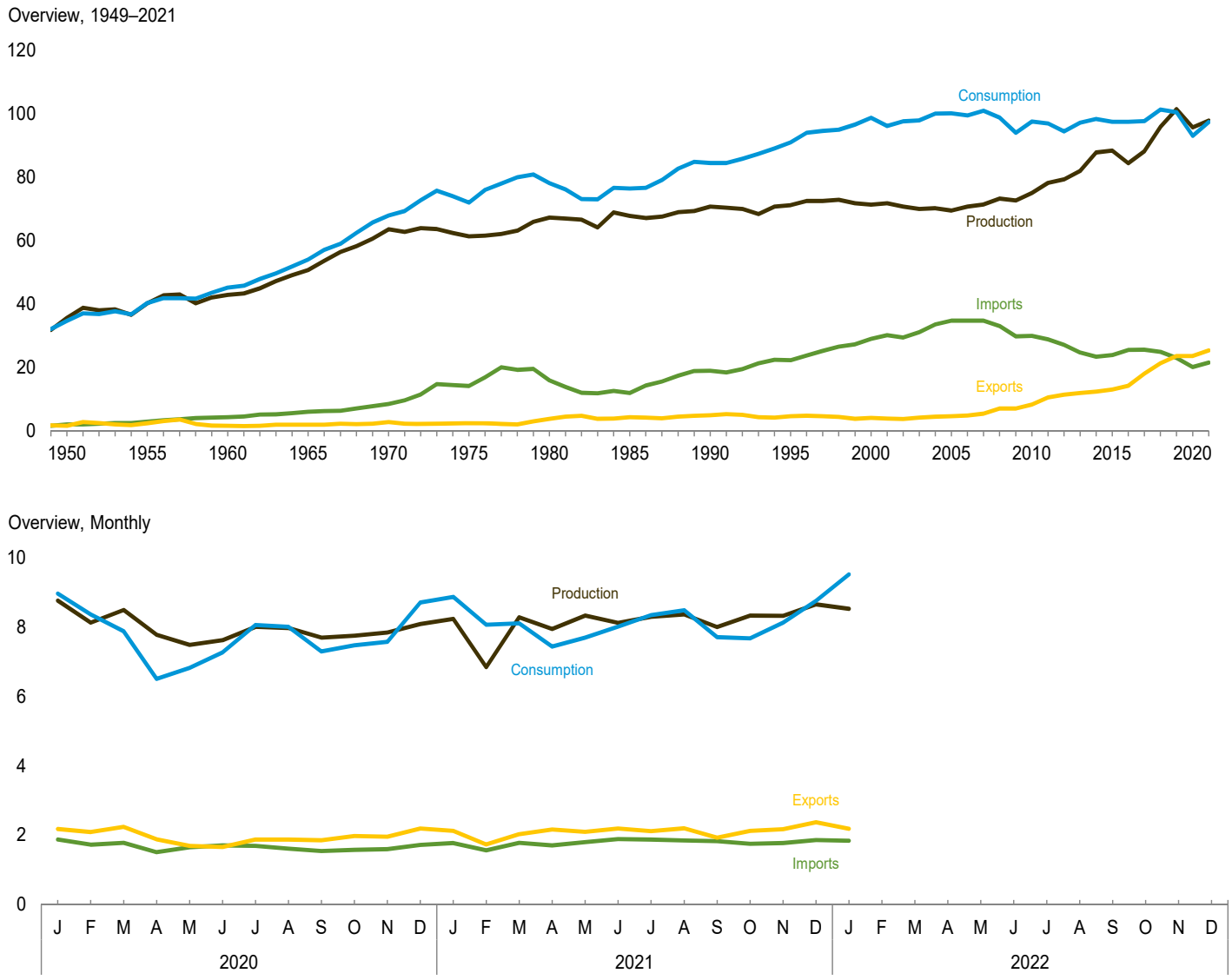
Figure 1.1 Primary Energy Overview

(Quadrillion Btu)



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

Table 1.1 Primary Energy Overview

(Quadrillion Btu)

	Production				Trade			Stock Change and Other[d]	Consumption			
	Fossil Fuels[a]	Nuclear Electric Power	Renewable Energy[b]	Total	Imports	Exports	Net Imports[c]		Fossil Fuels[e]	Nuclear Electric Power	Renewable Energy[b]	Total[f]
1950 Total	**32.553**	**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**	**6.234**	**100.102**
2006 Total	**55.877**	**8.215**	**6.587**	**70.678**	**34.649**	**4.727**	**29.921**	**-1.207**	**84.477**	**8.215**	**6.637**	**99.392**
2007 Total	**56.369**	**8.459**	**6.511**	**71.338**	**34.679**	**5.338**	**29.341**	**.215**	**85.805**	**8.459**	**6.523**	**100.894**
2008 Total	**57.527**	**8.426**	**7.192**	**73.146**	**32.970**	**6.949**	**26.021**	**-.412**	**83.041**	**8.426**	**7.175**	**98.754**
2009 Total	**56.612**	**8.355**	**7.626**	**72.593**	**29.690**	**6.920**	**22.770**	**-1.420**	**77.862**	**8.355**	**7.609**	**93.943**
2010 Total	**58.159**	**8.434**	**8.315**	**74.909**	**29.866**	**8.176**	**21.690**	**.916**	**80.723**	**8.434**	**8.268**	**97.514**
2011 Total	**60.529**	**8.269**	**9.310**	**78.108**	**28.748**	**10.373**	**18.375**	**.389**	**79.263**	**8.269**	**9.214**	**96.872**
2012 Total	**62.296**	**8.062**	**8.896**	**79.254**	**27.068**	**11.267**	**15.801**	**-.669**	**77.304**	**8.062**	**8.860**	**94.387**
2013 Total	**64.184**	**8.244**	**9.438**	**81.866**	**24.623**	**11.788**	**12.835**	**2.429**	**79.224**	**8.244**	**9.464**	**97.130**
2014 Total	**69.622**	**8.338**	**9.798**	**87.757**	**23.241**	**12.270**	**10.971**	**-.431**	**80.017**	**8.338**	**9.762**	**98.297**
2015 Total	**70.190**	**8.337**	**9.768**	**88.295**	**23.794**	**12.902**	**10.892**	**-1.780**	**79.090**	**8.337**	**9.752**	**97.407**
2016 Total	**65.430**	**8.427**	**10.480**	**84.337**	**25.378**	**14.119**	**11.259**	**1.788**	**78.319**	**8.427**	**10.411**	**97.384**
2017 Total	**68.447**	**8.419**	**11.263**	**88.129**	**25.458**	**17.946**	**7.512**	**2.019**	**77.907**	**8.419**	**11.142**	**97.660**
2018 Total	**75.758**	**8.438**	**11.584**	**95.780**	**24.833**	**21.224**	**3.610**	**1.845**	**81.271**	**8.438**	**11.374**	**101.235**
2019 Total	**81.354**	**8.452**	**11.632**	**101.437**	**22.865**	**23.476**	**-.610**	**-.357**	**80.413**	**8.452**	**11.473**	**100.471**
2020 January	7.011	.775	.982	8.768	1.871	2.175	-.304	.507	7.226	.775	.960	8.971
February	6.454	.689	.986	8.129	1.727	2.089	-.362	.598	6.699	.689	.968	8.365
March	6.833	.669	.996	8.497	1.782	2.236	-.454	-.162	6.236	.669	.964	7.881
April	6.241	.618	.923	7.783	1.507	1.880	-.372	-.897	4.968	.618	.916	6.513
May	5.794	.672	1.022	7.488	1.651	1.694	-.042	-.618	5.120	.672	1.023	6.827
June	5.885	.702	1.039	7.627	1.705	1.659	.046	-.398	5.521	.702	1.038	7.274
July	6.293	.725	.995	8.013	1.692	1.874	-.182	.235	6.336	.725	.986	8.066
August	6.298	.721	.955	7.973	1.613	1.877	-.264	.302	6.327	.721	.944	8.012
September	6.129	.687	.885	7.700	1.545	1.853	-.308	-.093	5.725	.687	.874	7.299
October	6.196	.620	.939	7.755	1.578	1.975	-.397	.116	5.922	.620	.919	7.474
November	6.221	.645	.981	7.847	1.596	1.957	-.361	.094	5.961	.645	.963	7.580
December	6.378	.730	.985	8.093	1.720	2.194	-.475	1.092	6.998	.730	.969	8.711
Total	**75.734**	**8.251**	**11.687**	**95.672**	**19.988**	**23.463**	**-3.475**	**.777**	**73.039**	**8.251**	**11.523**	**92.974**
2021 January	R 6.488	.749	1.006	R 8.243	1.770	R 2.122	R -.352	R .981	R 7.132	.749	.977	R 8.872
February	R 5.308	.658	.882	R 6.848	1.565	R 1.730	R -.165	R 1.391	R 6.532	.658	.875	R 8.074
March	R 6.527	.665	1.097	R 8.289	1.780	R 2.028	R -.247	R .066	R 6.342	.665	1.087	R 8.108
April	R 6.312	.596	1.041	R 7.950	1.702	R 2.165	R -.463	R -.043	R 5.805	.596	1.031	R 7.444
May	R 6.573	.662	1.101	R 8.336	1.800	R 2.100	R -.300	R -.334	R 5.934	.662	1.093	R 7.702
June	R 6.397	.690	1.036	R 8.123	1.888	R 2.191	R -.303	R .196	R 6.286	.690	1.025	R 8.016
July	R 6.593	.719	.991	R 8.303	1.876	R 2.119	R -.243	R .285	R 6.632	.719	.979	R 8.345
August	R 6.632	.726	1.008	R 8.366	1.845	R 2.196	R -.351	R .475	R 6.751	.726	1.002	R 8.490
September	R 6.361	.674	.970	R 8.004	1.828	R 1.927	R -.099	R -.196	R 6.066	.674	.961	R 7.710
October	R 6.726	.595	1.011	R 8.332	1.749	R 2.125	R -.376	R -.274	R 6.075	.595	1.002	R 7.681
November	R 6.631	.655	1.044	R 8.330	1.773	R 2.174	R -.401	R .202	R 6.450	.655	1.021	R 8.130
December	R 6.789	.739	R 1.133	R 8.661	1.859	R 2.372	R -.514	R .613	R 6.906	.739	1.106	R 8.760
Total	**R 77.336**	**8.129**	**R 12.320**	**R 97.784**	**21.434**	**R 25.249**	**R -3.815**	**R 3.363**	**R 76.912**	**8.129**	**12.157**	**R 97.332**
2022 January	6.660	.737	1.130	8.527	1.838	2.185	-.347	1.343	7.676	.737	1.093	9.523

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

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

[c] Net imports equal imports minus exports.

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

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

[f] Also includes electricity net imports.

R=Revised.

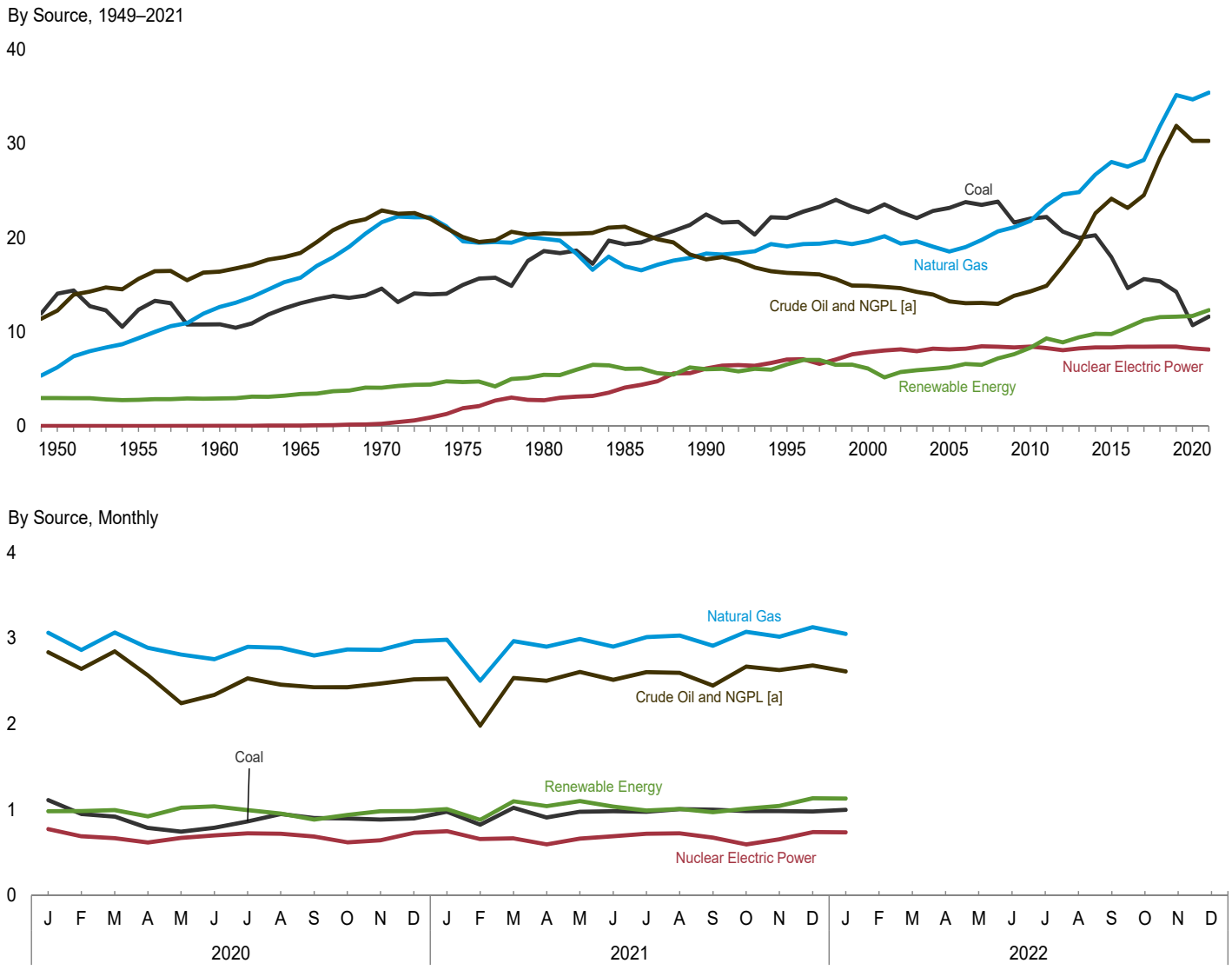
Notes: • See "Primary Energy," "Primary Energy Production," and "Primary Energy Consumption," in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

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

Figure 1.2 Primary Energy Production

(Quadrillion Btu)



[a] National gas plant liquids.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.2.

Table 1.2 Primary Energy Production by Source

(Quadrillion Btu)

	Fossil Fuels					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**	**.064**	**.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**
2006 Total	**23.790**	**19.022**	**10.767**	**2.299**	**55.877**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.212**	**6.587**	**70.678**
2007 Total	**23.493**	**19.786**	**10.741**	**2.349**	**56.369**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.472**	**6.511**	**71.338**
2008 Total	**23.851**	**20.703**	**10.613**	**2.359**	**57.527**	**8.426**	**2.511**	**.192**	**.075**	**.546**	**3.868**	**7.192**	**73.146**
2009 Total	**21.624**	**21.139**	**11.340**	**2.508**	**56.612**	**8.355**	**2.669**	**.200**	**.079**	**.721**	**3.957**	**7.626**	**72.593**
2010 Total	**22.038**	**21.806**	**11.610**	**2.705**	**58.159**	**8.434**	**2.539**	**.208**	**.093**	**.923**	**4.553**	**8.315**	**74.909**
2011 Total	**22.221**	**23.406**	**12.012**	**2.890**	**60.529**	**8.269**	**3.103**	**.212**	**.114**	**1.168**	**4.712**	**9.310**	**78.108**
2012 Total	**20.677**	**24.610**	**13.847**	**3.162**	**62.296**	**8.062**	**2.629**	**.212**	**.162**	**1.340**	**4.554**	**8.896**	**79.254**
2013 Total	**20.001**	**24.859**	**15.872**	**3.451**	**64.184**	**8.244**	**2.562**	**.214**	**.225**	**1.601**	**4.835**	**9.438**	**81.866**
2014 Total	**20.286**	**26.718**	**18.613**	**4.005**	**69.622**	**8.338**	**2.467**	**.214**	**.337**	**1.728**	**5.052**	**9.798**	**87.757**
2015 Total	**17.946**	**28.067**	**19.701**	**4.476**	**70.190**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**5.031**	**9.768**	**88.295**
2016 Total	**14.667**	**27.576**	**18.522**	**4.665**	**65.430**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.132**	**10.480**	**84.337**
2017 Total	**15.625**	**28.289**	**19.546**	**4.987**	**68.447**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.166**	**11.263**	**88.129**
2018 Total	**15.363**	**31.882**	**22.786**	**5.727**	**75.758**	**8.438**	**2.663**	**.209**	**.915**	**2.482**	**5.314**	**11.584**	**95.780**
2019 Total	**14.256**	**35.187**	**25.559**	**6.352**	**81.354**	**8.452**	**2.564**	**.201**	**1.017**	**2.635**	**5.215**	**11.632**	**101.437**
2020 January	1.112	3.064	2.256	.580	7.011	.775	.215	.015	.063	.247	.442	.982	8.768
February	.949	2.863	2.117	.526	6.454	.689	.227	.016	.076	.255	.412	.986	8.129
March	.921	3.066	2.261	.585	6.833	.669	.209	.018	.091	.257	.420	.996	8.497
April	.787	2.889	2.034	.532	6.241	.618	.203	.017	.109	.261	.333	.923	7.783
May	.744	2.808	1.713	.529	5.794	.672	.263	.017	.129	.249	.364	1.022	7.488
June	.791	2.756	1.779	.560	5.885	.702	.246	.016	.129	.265	.383	1.039	7.627
July	.864	2.898	1.933	.598	6.293	.725	.235	.017	.139	.201	.404	.995	8.013
August	.950	2.889	1.863	.596	6.298	.721	.204	.017	.125	.202	.407	.955	7.973
September	.903	2.798	1.856	.572	6.129	.687	.164	.017	.106	.203	.395	.885	7.700
October	.899	2.870	1.837	.590	6.196	.620	.165	.017	.096	.253	.408	.939	7.755
November	.886	2.863	1.899	.574	6.221	.645	.183	.017	.078	.291	.411	.981	7.847
December	.897	2.963	1.955	.563	6.378	.730	.189	.018	.070	.281	.427	.985	8.093
Total	**10.703**	**34.724**	**23.501**	**6.805**	**75.734**	**8.251**	**2.503**	**.203**	**1.212**	**2.965**	**4.805**	**11.687**	**95.672**
2021 January	R .977	E 2.983	E 1.951	.576	R 6.488	.749	.226	.017	.078	.267	.417	1.006	R 8.243
February	R .824	E 2.504	E 1.557	.423	R 5.308	.658	.190	.016	.086	.236	.355	.882	R 6.848
March	R 1.023	E 2.967	E 1.969	.568	R 6.527	.665	.189	.016	.123	.350	.418	1.097	R 8.289
April	R .909	E 2.901	E 1.917	.585	R 6.312	.596	.168	.017	.141	.317	.397	1.041	R 7.950
May	R .977	E 2.990	E 2.000	.607	R 6.573	.662	.200	.017	.159	.294	.430	1.101	R 8.336
June	R .981	E 2.900	E 1.927	.589	R 6.397	.690	.211	.018	.156	.233	.418	1.036	R 8.123
July	R .976	E 3.012	E 1.999	.606	R 6.593	.719	.194	.018	.157	.189	.433	.991	R 8.303
August	R 1.006	E 3.030	E 1.977	.619	R 6.632	.726	.184	.017	.154	.235	.418	1.008	R 8.366
September	R 1.000	E 2.912	E 1.853	.596	R 6.361	.674	.158	.017	.142	.252	.402	.970	R 8.004
October	R .986	E 3.073	E 2.033	.635	R 6.726	.595	.158	.017	.120	.285	.431	1.011	R 8.332
November	R .984	RE 3.018	RE 2.009	.620	R 6.631	.655	.179	.017	.102	.316	.429	1.044	R 8.330
December	R .979	RE 3.128	RE 2.044	.637	R 6.789	.739	.225	.018	.085	.357	R .448	R 1.133	R 8.661
Total	**R 11.621**	**RE 35.418**	**RE 23.236**	**7.061**	**R 77.336**	**8.129**	**2.283**	**.206**	**1.501**	**3.332**	**R 4.998**	**R 12.320**	**R 97.784**
2022 January	.997	E 3.051	E 2.006	.605	6.660	.737	.237	.019	.103	.335	.436	1.130	8.527

[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.

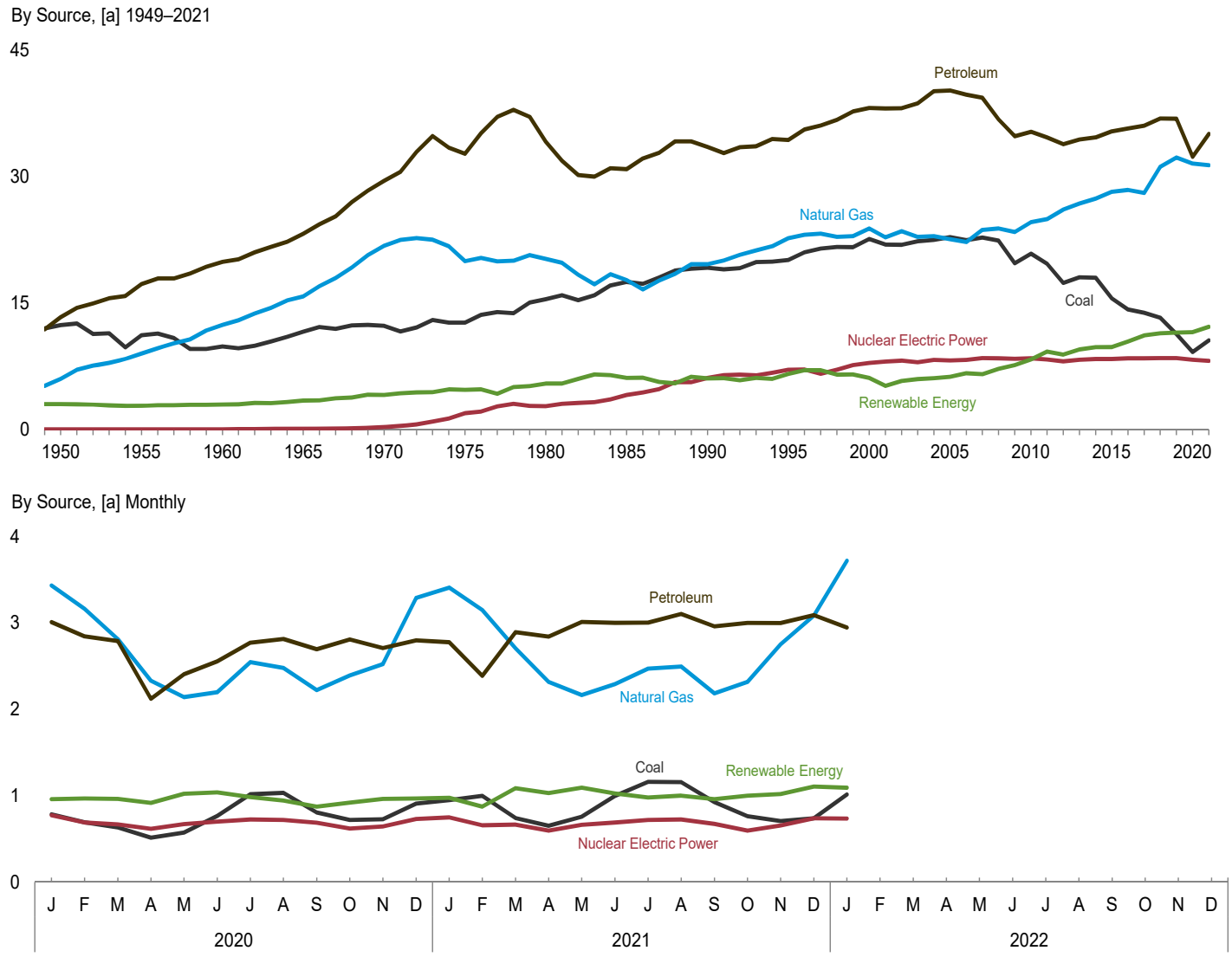
Notes: • See "Primary Energy Production" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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]	Petro-leum[d]	Total[e]	Nuclear Electric Power	Hydro-electric Power[f]	Geo-thermal	Solar	Wind	Bio-mass	Total	Total[g]
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**	**.064**	**.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**	**6.234**	**100.102**
2006 Total	**22.447**	**22.239**	**39.731**	**84.477**	**8.215**	**2.869**	**.181**	**.061**	**.264**	**3.262**	**6.637**	**99.392**
2007 Total	**22.749**	**23.663**	**39.368**	**85.805**	**8.459**	**2.446**	**.186**	**.066**	**.341**	**3.485**	**6.523**	**100.894**
2008 Total	**22.387**	**23.843**	**36.769**	**83.041**	**8.426**	**2.511**	**.192**	**.075**	**.546**	**3.851**	**7.175**	**98.754**
2009 Total	**19.691**	**23.416**	**34.779**	**77.862**	**8.355**	**2.669**	**.200**	**.079**	**.721**	**3.940**	**7.609**	**93.943**
2010 Total	**20.834**	**24.575**	**35.321**	**80.723**	**8.434**	**2.539**	**.208**	**.093**	**.923**	**4.506**	**8.268**	**97.514**
2011 Total	**19.658**	**24.955**	**34.639**	**79.263**	**8.269**	**3.103**	**.212**	**.114**	**1.168**	**4.616**	**9.214**	**96.872**
2012 Total	**17.378**	**26.089**	**33.833**	**77.304**	**8.062**	**2.629**	**.212**	**.162**	**1.340**	**4.517**	**8.860**	**94.387**
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**	**2.467**	**.214**	**.337**	**1.728**	**5.016**	**9.762**	**98.297**
2015 Total	**15.549**	**28.191**	**35.368**	**79.090**	**8.337**	**2.321**	**.212**	**.427**	**1.777**	**5.015**	**9.752**	**97.407**
2016 Total	**14.226**	**28.400**	**35.712**	**78.319**	**8.427**	**2.472**	**.210**	**.570**	**2.096**	**5.063**	**10.411**	**97.384**
2017 Total	**13.837**	**28.055**	**36.043**	**77.907**	**8.419**	**2.767**	**.210**	**.777**	**2.343**	**5.045**	**11.142**	**97.660**
2018 Total	**13.252**	**31.153**	**36.892**	**81.271**	**8.438**	**2.663**	**.209**	**.915**	**2.482**	**5.105**	**11.374**	**101.235**
2019 Total	**11.316**	**32.252**	**36.866**	**80.413**	**8.452**	**2.564**	**.201**	**1.017**	**2.635**	**5.056**	**11.473**	**100.471**
2020 January	.785	3.434	3.009	7.226	.775	.215	.015	.063	.247	.419	.960	8.971
February	.694	3.163	2.844	6.699	.689	.227	.016	.076	.255	.394	.968	8.365
March	.633	2.813	2.791	6.236	.669	.209	.018	.091	.257	.389	.964	7.881
April	.515	2.331	2.123	4.968	.618	.203	.017	.109	.261	.325	.916	6.513
May	.574	2.141	2.406	5.120	.672	.263	.017	.129	.249	.365	1.023	6.827
June	.767	2.199	2.556	5.521	.702	.246	.016	.129	.265	.382	1.038	7.274
July	1.018	2.547	2.771	6.336	.725	.235	.017	.139	.201	.395	.986	8.066
August	1.033	2.480	2.815	6.327	.721	.204	.017	.125	.202	.395	.944	8.012
September	.806	2.223	2.697	5.725	.687	.164	.017	.106	.203	.384	.874	7.299
October	.720	2.393	2.810	5.922	.620	.165	.017	.096	.253	.388	.919	7.474
November	.729	2.524	2.710	5.961	.645	.183	.017	.078	.291	.393	.963	7.580
December	.909	3.291	2.799	6.998	.730	.189	.018	.070	.281	.411	.969	8.711
Total	**9.181**	**31.540**	**32.331**	**73.039**	**8.251**	**2.503**	**.203**	**1.212**	**2.965**	**4.640**	**11.523**	**92.974**
2021 January	R .950	3.409	2.777	R 7.132	.749	.226	.017	.078	.267	.388	.977	R 8.872
February	R .998	3.149	2.387	R 6.532	.658	.190	.016	.086	.236	.347	.875	R 8.074
March	R .742	2.707	2.894	R 6.342	.665	.189	.016	.123	.350	.408	1.087	R 8.108
April	R .651	2.316	2.842	R 5.805	.596	.168	.017	.141	.317	.387	1.031	R 7.444
May	R .759	2.166	3.013	R 5.934	.662	.200	.017	.159	.294	.422	1.093	R 7.702
June	R .998	2.293	3.001	R 6.286	.690	.211	.018	.156	.233	.407	1.025	R 8.016
July	R 1.161	2.471	3.003	R 6.632	.719	.194	.018	.157	.189	.421	.979	R 8.345
August	R 1.158	2.495	3.103	R 6.751	.726	.184	.017	.154	.235	.412	1.002	R 8.490
September	R .926	2.184	2.961	R 6.066	.674	.158	.017	.142	.252	.393	.961	R 7.710
October	R .762	2.316	3.001	R 6.075	.595	.158	.017	.120	.285	.422	1.002	R 7.681
November	R .705	R 2.752	2.998	R 6.450	.655	.179	.017	.102	.316	.406	1.021	R 8.130
December	R .738	3.085	3.091	R 6.906	.739	.225	.018	.085	.357	.422	1.106	R 8.760
Total	R **10.547**	**31.343**	**35.071**	R **76.912**	**8.129**	**2.283**	**.206**	**1.501**	**3.332**	**4.835**	**12.157**	R **97.332**
2022 January	1.015	3.719	2.948	7.676	.737	.237	.019	.103	.335	.400	1.093	9.523

[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 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.

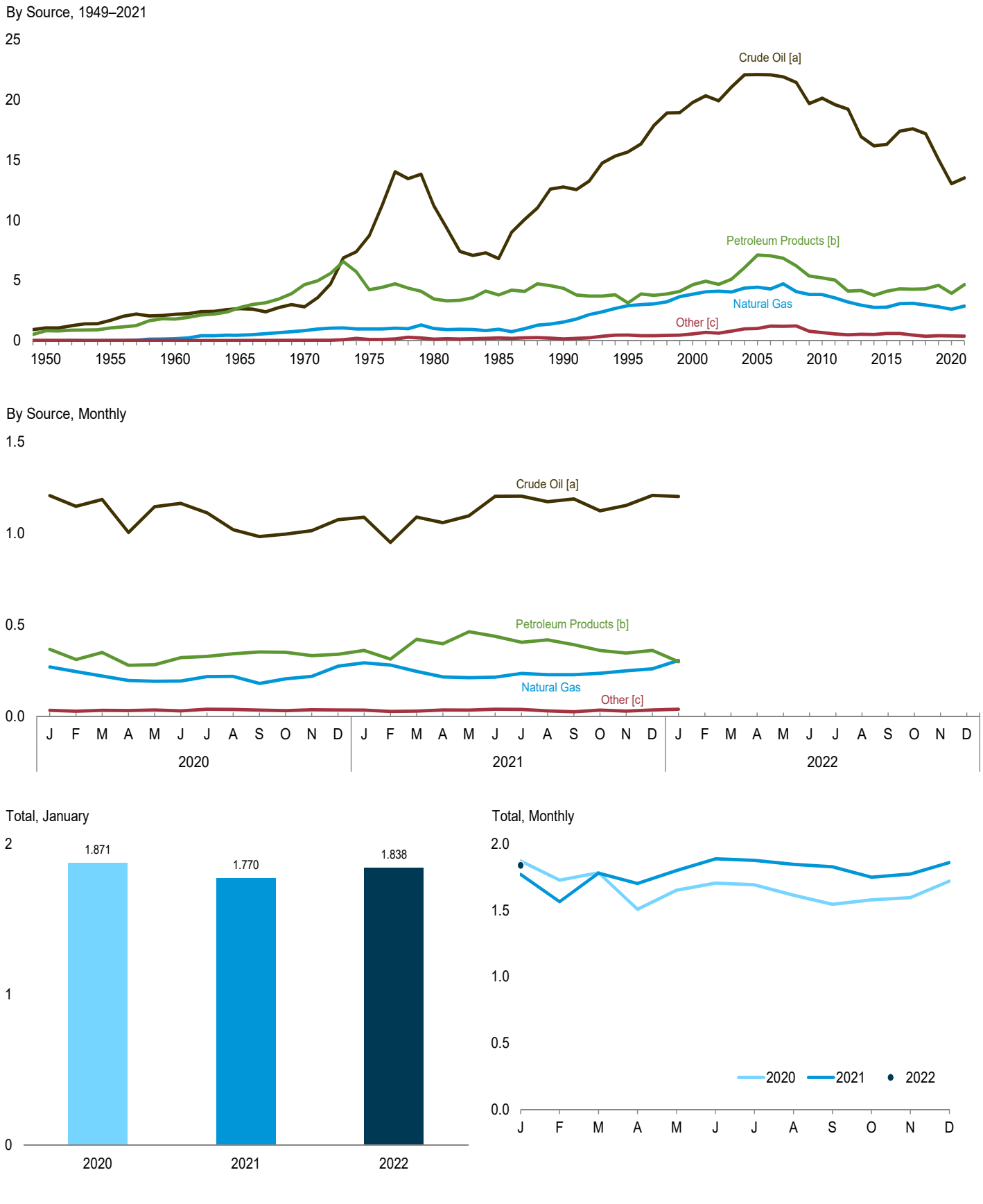
Notes: • See "Primary Energy Consumption" in Glossary. • See Table D1 for estimated energy consumption for 1635–1945. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#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**
2006 Total	**.906**	**.101**	**4.291**	**22.085**	**7.054**	**29.139**	**.066**	**.146**	**34.649**
2007 Total	**.909**	**.061**	**4.723**	**21.914**	**6.842**	**28.756**	**.055**	**.175**	**34.679**
2008 Total	**.855**	**.089**	**4.084**	**21.448**	**6.214**	**27.662**	**.085**	**.195**	**32.970**
2009 Total	**.566**	**.009**	**3.845**	**19.699**	**5.367**	**25.066**	**.027**	**.178**	**29.690**
2010 Total	**.484**	**.030**	**3.834**	**20.140**	**5.219**	**25.359**	**.004**	**.154**	**29.866**
2011 Total	**.327**	**.035**	**3.555**	**19.595**	**5.038**	**24.633**	**.019**	**.178**	**28.748**
2012 Total	**.212**	**.028**	**3.216**	**19.239**	**4.122**	**23.361**	**.049**	**.202**	**27.068**
2013 Total	**.199**	**.003**	**2.955**	**16.957**	**4.169**	**21.126**	**.102**	**.236**	**24.623**
2014 Total	**.252**	**.002**	**2.763**	**16.178**	**3.773**	**19.951**	**.046**	**.227**	**23.241**
2015 Total	**.256**	**.003**	**2.786**	**16.299**	**4.111**	**20.410**	**.079**	**.259**	**23.794**
2016 Total	**.220**	**.006**	**3.082**	**17.392**	**4.309**	**21.700**	**.123**	**.248**	**25.378**
2017 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 January	.011	(s)	.269	1.206	.365	1.570	.006	.016	1.871
February	.007	(s)	.244	1.147	.309	1.456	.005	.015	1.727
March	.009	(s)	.219	1.184	.348	1.532	.005	.017	1.782
April	.007	(s)	.195	1.004	.278	1.282	.007	.016	1.507
May	.011	.001	.191	1.145	.281	1.426	.005	.018	1.651
June	.005	(s)	.192	1.163	.320	1.483	.007	.018	1.705
July	.011	(s)	.216	1.111	.327	1.438	.005	.023	1.692
August	.006	(s)	.217	1.019	.341	1.359	.007	.023	1.613
September	.010	.001	.179	.982	.351	1.333	.006	.016	1.545
October	.005	.002	.204	.995	.349	1.344	.007	.016	1.578
November	.013	(s)	.217	1.014	.331	1.344	.007	.014	1.596
December	.009	(s)	.273	1.074	.338	1.413	.008	.018	1.720
Total	**.105**	**.004**	**2.615**	**13.044**	**3.937**	**16.980**	**.074**	**.210**	**19.988**
2021 January	.011	(s)	.291	1.087	.359	1.446	.005	.017	1.770
February	.006	(s)	.279	.949	.312	1.261	.005	.014	1.565
March	.005	(s)	.245	1.088	.420	1.508	.007	.016	1.780
April	.010	(s)	.214	1.058	.396	1.455	.008	.015	1.702
May	.010	(s)	.210	1.095	.462	1.557	.006	.016	1.800
June	.010	(s)	.213	1.201	.436	1.637	.009	.018	1.888
July	.011	(s)	.233	1.202	.404	1.606	.006	.019	1.876
August	.007	(s)	.226	1.172	.417	1.589	.006	.016	1.845
September	.004	(s)	.226	1.187	.391	1.578	.007	.013	1.828
October	.011	(s)	.234	1.122	.359	1.482	.008	.014	1.749
November	.009	(s)	.248	1.152	.345	1.497	.008	.010	1.773
December	.014	.001	.259	1.207	.359	1.566	.006	.014	1.859
Total	R **.109**	**.003**	**2.878**	**13.520**	**4.660**	**18.180**	**.082**	**.181**	**21.434**
2022 January	.010	(s)	.304	1.200	.297	1.496	.006	.021	1.838

[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.

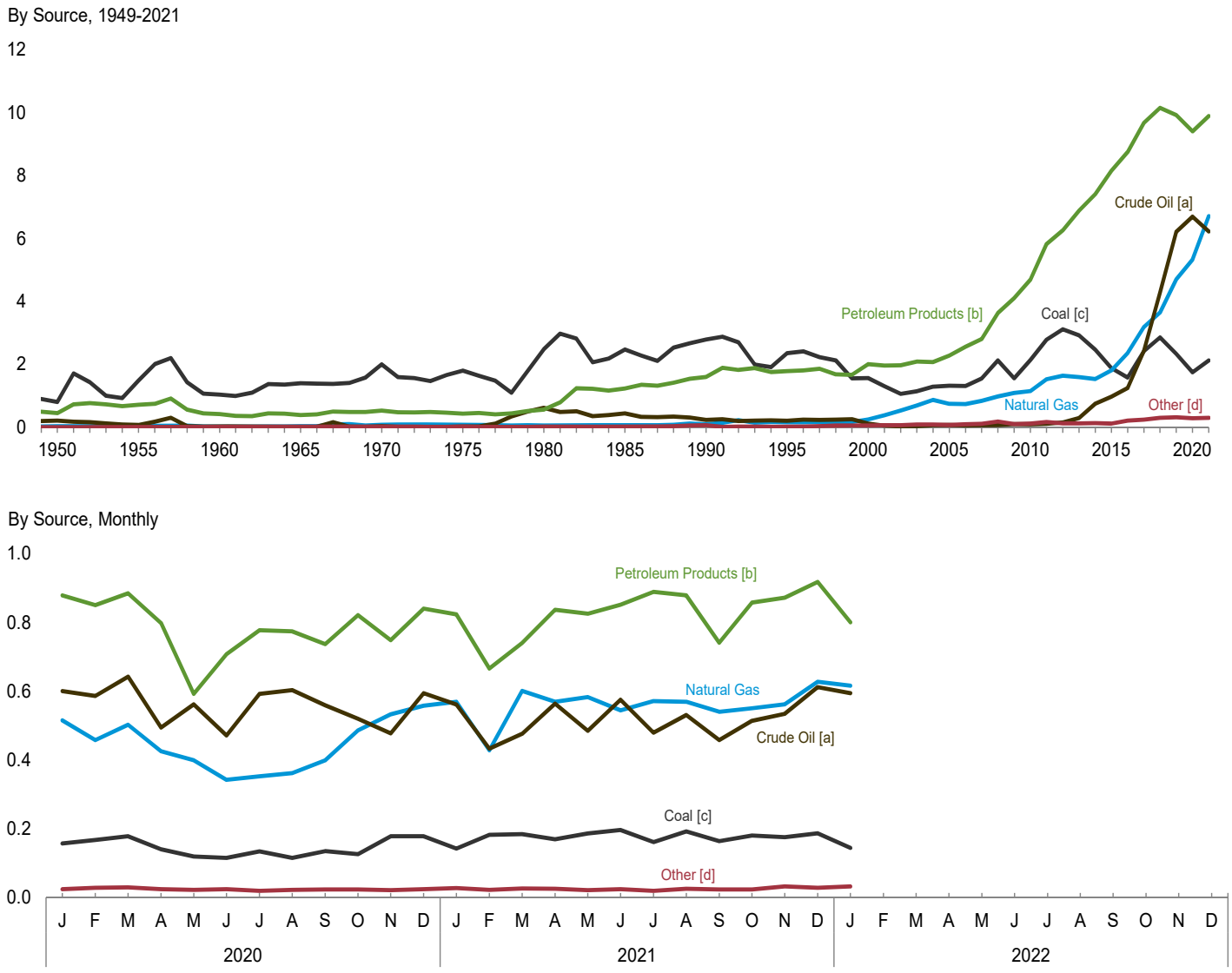
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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**
2006 Total	**1.264**	**.040**	**.730**	**.052**	**2.554**	**2.606**	**(s)**	**.083**	**4.727**
2007 Total	**1.507**	**.036**	**.830**	**.058**	**2.803**	**2.861**	**.036**	**.069**	**5.338**
2008 Total	**2.071**	**.049**	**.972**	**.061**	**3.626**	**3.686**	**.089**	**.083**	**6.949**
2009 Total	**1.515**	**.032**	**1.082**	**.093**	**4.101**	**4.194**	**.035**	**.062**	**6.920**
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 January	.156	.002	.515	.600	.879	1.479	.019	.005	2.175
February	.165	.002	.458	.586	.850	1.436	.022	.006	2.089
March	.177	.001	.502	.642	.885	1.527	.025	.004	2.236
April	.139	.001	.425	.494	.798	1.291	.019	.005	1.880
May	.118	.001	.399	.562	.592	1.154	.017	.005	1.694
June	.114	(s)	.342	.471	.708	1.179	.019	.004	1.659
July	.133	.001	.352	.592	.777	1.368	.015	.004	1.874
August	.113	.001	.362	.603	.774	1.377	.019	.003	1.877
September	.134	.001	.399	.559	.737	1.296	.019	.003	1.853
October	.123	.003	.486	.520	.821	1.341	.020	.003	1.975
November	.176	.002	.533	.477	.748	1.225	.018	.003	1.957
December	.177	.001	.558	.594	.840	1.434	.021	.003	2.194
Total	**1.725**	**.017**	**5.331**	**6.699**	**9.410**	**16.108**	**.234**	**.048**	**23.463**
2021 January	R .139	.003	.569	.561	.823	1.385	.023	.003	R 2.122
February	R .179	.003	.428	.433	.666	1.099	.018	.004	R 1.730
March	R .184	(s)	.601	.476	.740	1.216	.024	.003	R 2.028
April	R .165	.004	.569	.564	.837	1.401	.021	.004	R 2.165
May	R .182	.004	.583	.485	.825	1.310	.017	.003	R 2.100
June	R .190	.006	.544	.575	.852	1.427	.021	.003	R 2.191
July	R .158	.003	.571	.479	.889	1.368	.015	.004	R 2.119
August	R .187	.005	.569	.531	.879	1.411	.021	.004	R 2.196
September	R .158	.006	.540	.458	.741	1.199	.019	.004	R 1.927
October	R .176	.004	.550	.514	.858	1.372	.018	.004	R 2.125
November	R .170	.005	.562	.534	.872	1.406	.025	.006	R 2.174
December	R .179	.008	.627	.612	.918	1.530	R .023	.005	R 2.372
Total	**R 2.067**	**.052**	**6.713**	**6.223**	**9.900**	**16.124**	**R .247**	**.047**	**R 25.249**
2022 January	.139	.006	.616	.594	.800	1.393	.026	.005	2.185

[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.

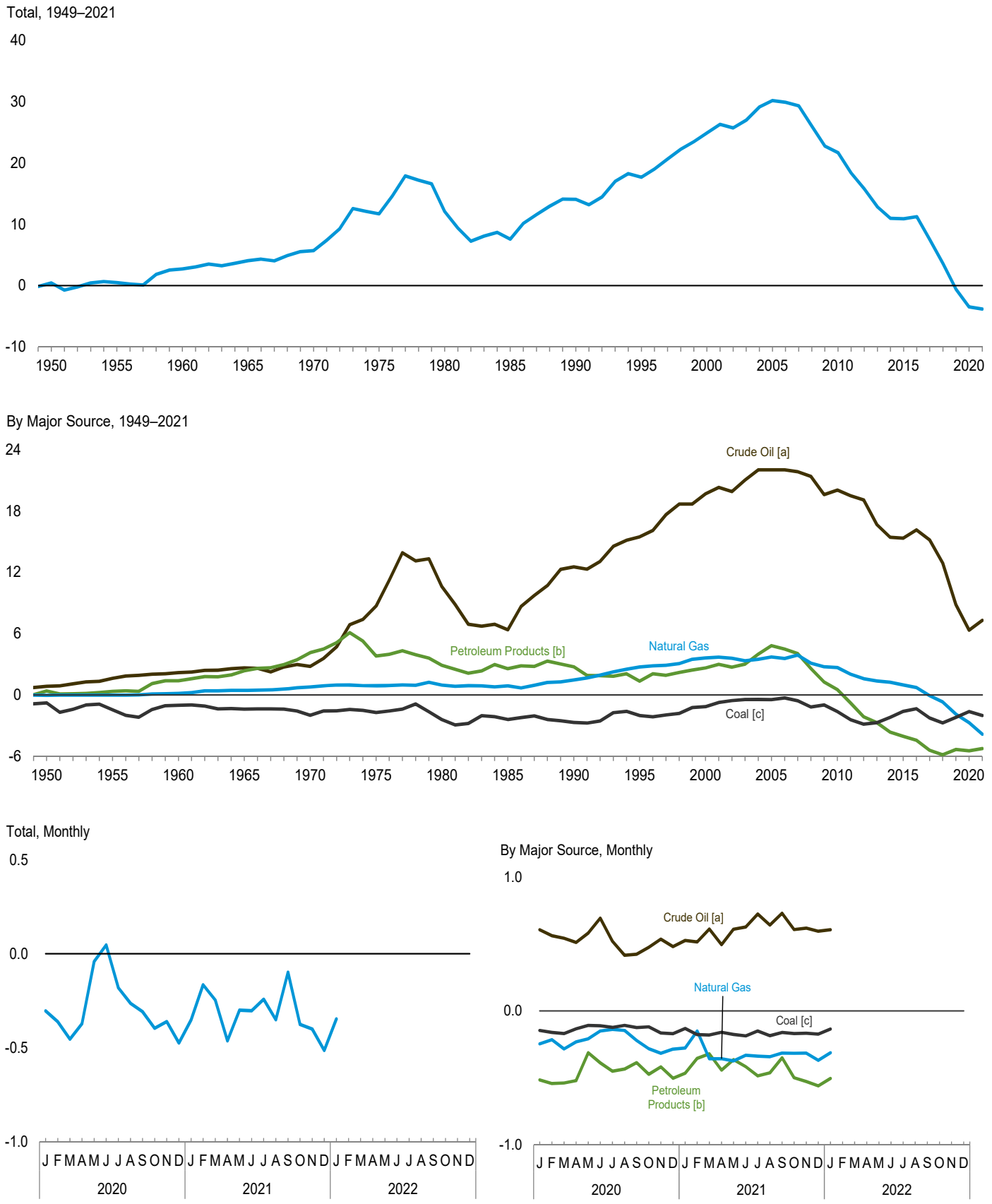
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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**
2006 Total	**-.358**	**.061**	**3.560**	**22.032**	**4.501**	**26.533**	**.062**	**.063**	**29.921**
2007 Total	**-.598**	**.025**	**3.893**	**21.855**	**4.040**	**25.895**	**.019**	**.107**	**29.341**
2008 Total	**-1.215**	**.041**	**3.112**	**21.388**	**2.588**	**23.976**	**-.004**	**.112**	**26.021**
2009 Total	**-.949**	**-.024**	**2.763**	**19.606**	**1.266**	**20.872**	**-.009**	**.116**	**22.770**
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 January	-.145	-.001	-.246	.606	-.514	.092	-.014	.011	-.304
February	-.158	-.002	-.214	.561	-.541	.020	-.017	.010	-.362
March	-.167	-.001	-.283	.542	-.538	.005	-.020	.013	-.454
April	-.131	-.001	-.230	.511	-.520	-.009	-.012	.011	-.372
May	-.107	(s)	-.208	.582	-.311	.271	-.011	.013	-.042
June	-.110	(s)	-.149	.693	-.388	.304	-.013	.013	.046
July	-.123	(s)	-.137	.519	-.450	.069	-.011	.019	-.182
August	-.107	-.001	-.146	.415	-.433	-.018	-.013	.020	-.264
September	-.124	-.001	-.220	.423	-.386	.037	-.013	.013	-.308
October	-.118	-.001	-.282	.475	-.472	.003	-.013	.013	-.397
November	-.163	-.002	-.316	.536	-.417	.119	-.011	.012	-.361
December	-.169	-.001	-.285	.480	-.502	-.021	-.013	.015	-.475
Total	**-1.620**	**-.013**	**-2.716**	**6.345**	**-5.473**	**.872**	**-.159**	**.161**	**-3.475**
2021 January	R -.128	-.003	-.277	.526	-.465	.061	-.018	.014	R -.352
February	R -.173	-.003	-.149	.516	-.354	.162	-.013	.010	R -.165
March	R -.179	(s)	-.356	.611	-.320	.292	-.017	.013	R -.247
April	R -.155	-.004	-.356	.495	-.441	.054	-.013	.011	R -.463
May	R -.171	-.004	-.373	.610	-.363	.247	-.011	.013	R -.300
June	R -.180	-.006	-.331	.626	-.416	.210	-.012	.015	R -.303
July	R -.146	-.003	-.338	.723	-.485	.238	-.009	.015	R -.243
August	R -.179	-.005	-.342	.641	-.462	.178	-.015	.012	R -.351
September	R -.154	-.006	-.315	.729	-.350	.379	-.013	.009	R -.099
October	R -.165	-.004	-.316	.608	-.498	.109	-.011	.010	R -.376
November	R -.161	-.005	-.314	.618	-.527	.091	-.017	.004	R -.401
December	R -.165	-.007	-.368	.595	-.559	.035	R -.018	.008	R -.514
Total	R **-1.958**	**-.049**	**-3.835**	**7.297**	**-5.241**	**2.056**	R **-.164**	**.134**	R **-3.815**
2022 January	-.128	-.006	-.312	.606	-.503	.103	-.020	.016	-.347

[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.

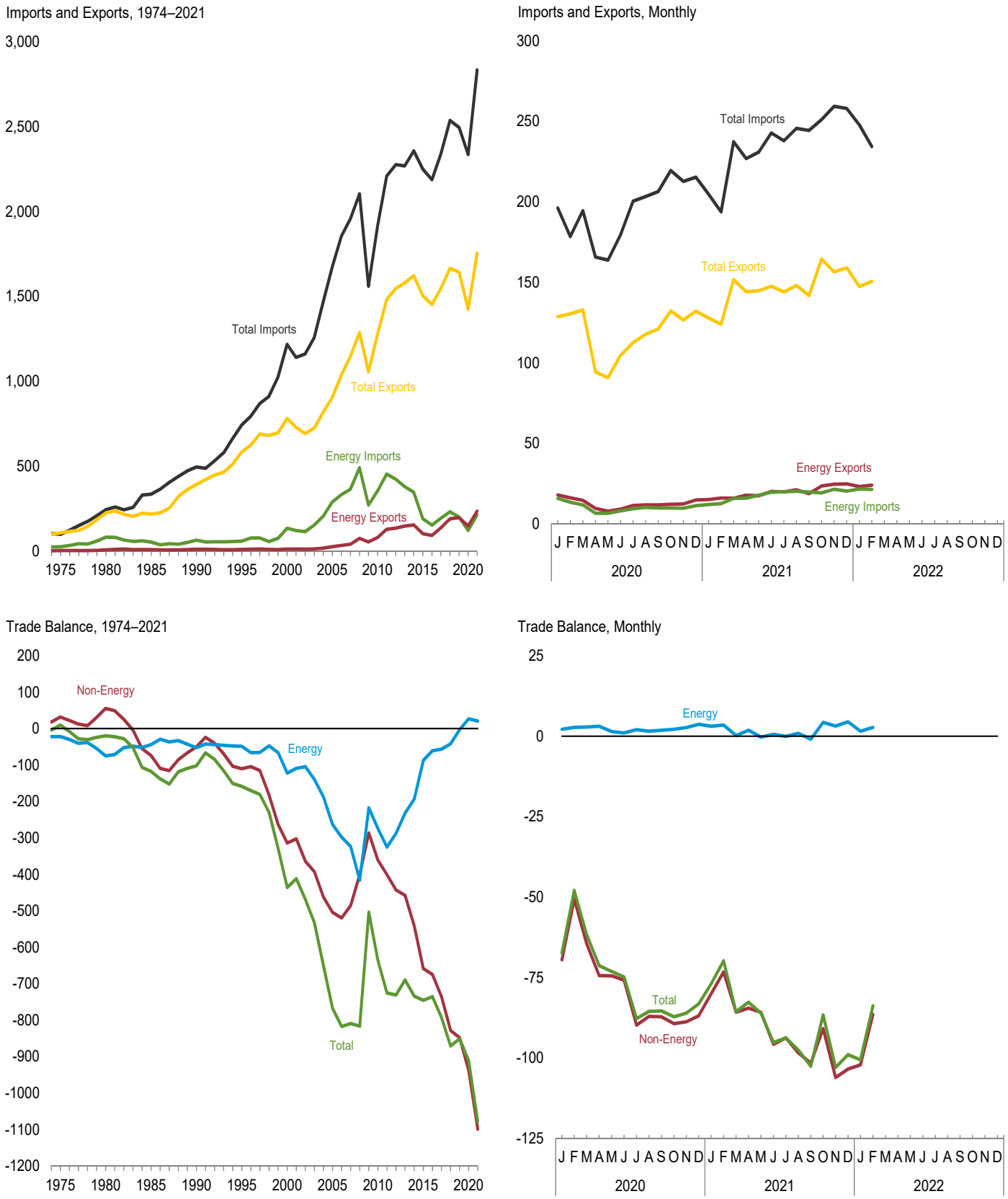
Notes: • See "Primary Energy" in Glossary. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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	**8,569**	**102,663**	**-94,094**	**11,541**	**115,748**	**-104,207**	**-364,056**	**693,103**	**1,161,366**	**-468,263**
2005 Total	**19,155**	**250,068**	**-230,913**	**26,488**	**289,723**	**-263,235**	**-504,242**	**905,978**	**1,673,455**	**-767,477**
2006 Total	**28,171**	**299,714**	**-271,543**	**34,711**	**332,500**	**-297,789**	**-519,515**	**1,036,635**	**1,853,938**	**-817,304**
2007 Total	**33,293**	**327,620**	**-294,327**	**41,725**	**364,987**	**-323,262**	**-485,501**	**1,148,199**	**1,956,962**	**-808,763**
2008 Total	**61,695**	**449,847**	**-388,152**	**76,075**	**491,885**	**-415,810**	**-400,389**	**1,287,442**	**2,103,641**	**-816,199**
2009 Total	**44,509**	**251,833**	**-207,324**	**54,536**	**271,739**	**-217,203**	**-286,379**	**1,056,043**	**1,559,625**	**-503,582**
2010 Total	**64,753**	**333,472**	**-268,719**	**80,625**	**354,982**	**-274,357**	**-361,005**	**1,278,495**	**1,913,857**	**-635,362**
2011 Total	[b]**102,180**	[b]**431,866**	[b]**-329,686**	**128,989**	**453,839**	**-324,850**	**-400,597**	**1,482,508**	**2,207,954**	**-725,447**
2012 Total	**111,949**	**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	**156,320**	**189,039**	**-32,719**	**197,705**	**200,828**	**-3,123**	**-847,794**	**1,642,820**	**2,493,738**	**-850,917**
2020 January	14,055	14,862	-807	17,972	15,869	2,103	-69,478	128,767	196,142	-67,375
February	12,801	12,645	156	16,148	13,413	2,735	-50,668	130,553	178,487	-47,933
March	11,285	11,128	157	14,626	11,789	2,837	-64,478	132,921	194,562	-61,641
April	6,730	5,996	734	9,598	6,501	3,097	-74,351	94,471	165,725	-71,254
May	5,277	5,902	-625	7,900	6,490	1,410	-74,460	90,738	163,789	-73,050
June	6,677	7,565	-888	9,120	8,122	998	-75,807	104,669	179,478	-74,809
July	8,672	8,633	39	11,366	9,338	2,028	-89,767	112,711	200,450	-87,739
August	9,025	9,442	-417	11,780	10,249	1,531	-87,040	117,833	203,342	-85,509
September	8,821	9,149	-328	11,718	9,877	1,841	-87,183	121,115	206,457	-85,342
October	8,452	9,062	-610	12,078	9,931	2,147	-89,311	132,348	219,513	-87,164
November	8,061	8,751	-690	12,382	9,734	2,648	-88,708	126,614	212,675	-86,060
December	10,212	9,959	253	14,923	11,255	3,668	-86,847	132,194	215,373	-83,179
Total	**110,068**	**113,092**	**-3,024**	**149,612**	**122,568**	**27,044**	**-938,100**	**1,424,935**	**2,335,991**	**-911,056**
2021 January	10,253	10,941	-688	15,148	12,051	3,097	-80,055	127,860	204,818	-76,958
February	8,965	10,696	-1,731	16,061	12,611	3,450	-73,253	124,010	193,813	-69,803
March	10,317	14,638	-4,321	15,977	15,835	142	-85,758	151,723	237,339	-85,616
April	12,471	15,069	-2,598	17,790	15,960	1,830	-84,502	144,178	226,850	-82,672
May	12,091	16,774	-4,683	17,483	17,784	-301	-85,769	144,841	230,911	-86,070
June	14,574	18,494	-3,920	20,128	19,576	552	-95,704	147,636	242,788	-95,152
July	13,826	18,458	-4,632	19,905	19,968	-63	-93,731	144,103	237,897	-93,794
August	14,625	18,819	-4,194	21,142	20,259	883	-98,412	148,176	245,705	-97,529
September	12,102	18,476	-6,374	18,801	19,745	-944	-101,578	141,863	244,385	-102,522
October	15,221	17,974	-2,753	23,512	19,254	4,258	-90,834	164,540	251,116	-86,576
November	16,165	19,746	-3,581	24,642	21,507	3,135	-106,038	156,512	259,415	-102,903
December	16,566	18,259	-1,693	24,836	20,384	4,452	-103,423	159,063	258,034	-98,971
Total	**157,176**	**198,344**	**-41,168**	**235,424**	**214,934**	**20,490**	**-1,099,056**	**1,754,504**	**2,833,070**	**-1,078,566**
2022 January	15,560	18,515	-2,955	23,206	21,665	1,541	[R]-102,102	[R]147,431	[R]247,992	[R]-100,561
February	15,982	19,107	-3,125	24,071	21,359	2,712	-86,460	150,682	234,430	-83,748
2-Month Total	**31,543**	**37,622**	**-6,080**	**47,277**	**43,023**	**4,253**	**-188,562**	**298,113**	**482,422**	**-184,309**
2021 2-Month Total	**19,218**	**21,637**	**-2,419**	**31,208**	**24,662**	**6,547**	**-153,308**	**251,870**	**398,630**	**-146,760**
2020 2-Month Total	**26,856**	**27,507**	**-651**	**34,120**	**29,282**	**4,838**	**-120,146**	**259,320**	**374,628**	**-115,308**

[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.

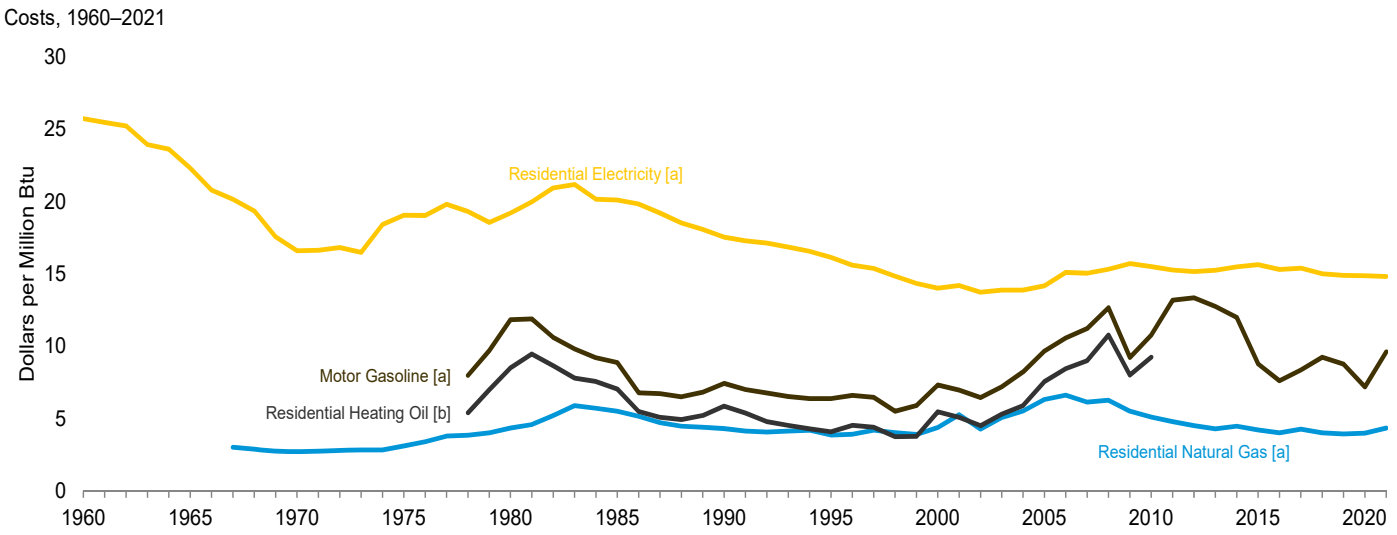
R=Revised.

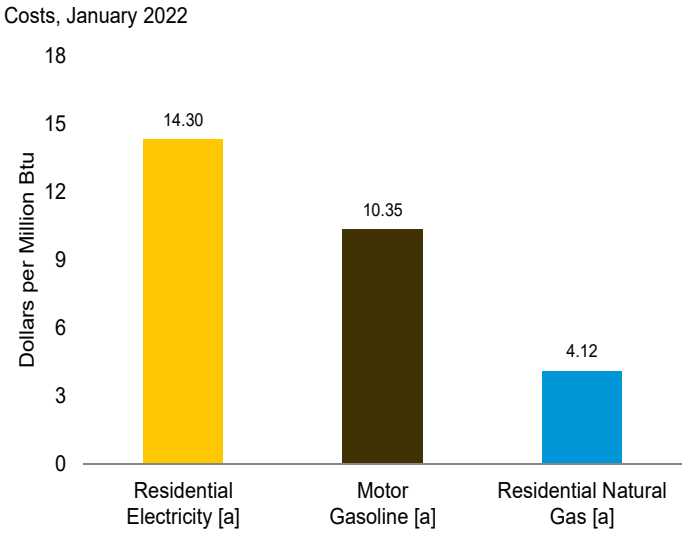
Notes: • Monthly data are not adjusted for seasonal variations. • See Note 1, "Merchandise Trade Value," at end of section. • Totals may not equal sum of components due to independent rounding. • The U.S. import statistics reflect both government and nongovernment imports of merchandise from foreign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

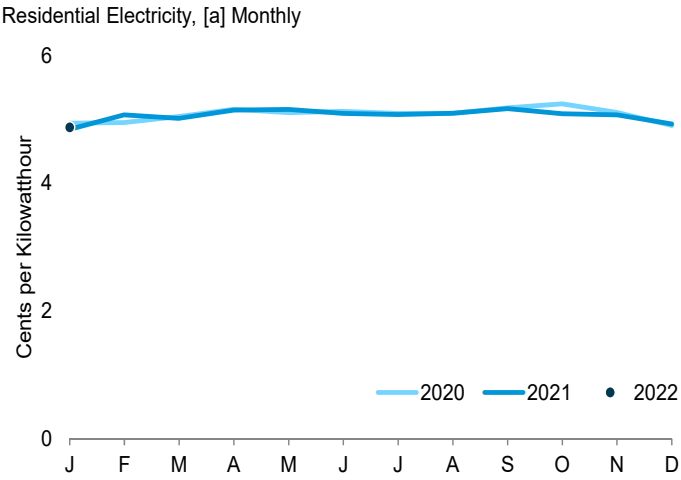
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#summary (Excel and CSV files) for all available annual and monthly data beginning in 1974.

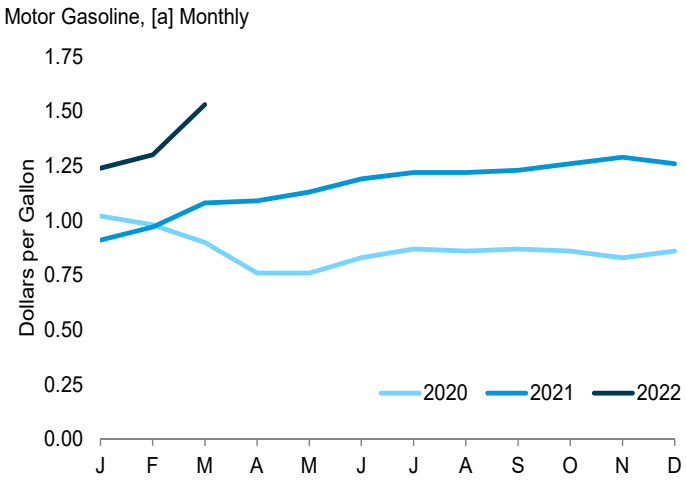
Sources: See end of section.

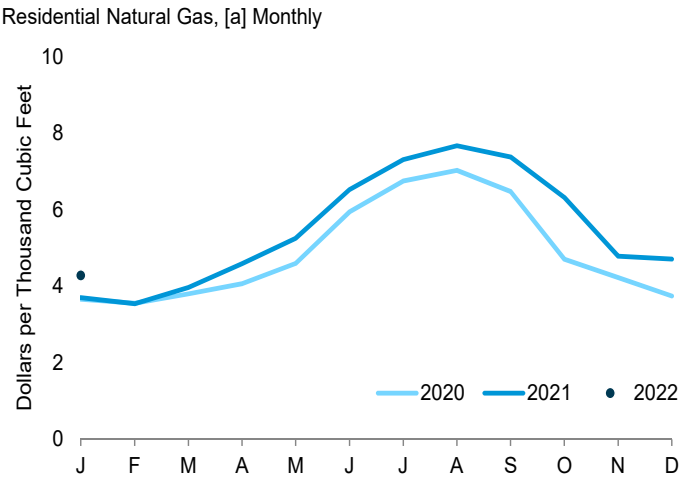
Figure 1.6 Cost of Fuels to End Users In Real (1982-1984) Dollars











[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**
1981 Average	**90.9**	**1.488**	**11.90**	**1.314**	**9.47**	**4.72**	**4.60**	**6.8**	**19.99**
1986 Average	**109.6**	**0.849**	**6.79**	**0.763**	**5.50**	**5.32**	**5.17**	**6.77**	**19.84**
1991 Average	**136.2**	**0.878**	**7.02**	**0.748**	**5.39**	**4.27**	**4.14**	**5.90**	**17.30**
1996 Average	**156.9**	**0.821**	**6.62**	**0.630**	**4.54**	**4.04**	**3.94**	**5.33**	**15.62**
2001 Average	**177.1**	**0.864**	**6.98**	**0.706**	**5.09**	**5.44**	**5.28**	**4.84**	**14.20**
2002 Average	**179.9**	**0.801**	**6.47**	**0.628**	**4.52**	**4.39**	**4.28**	**4.69**	**13.75**
2003 Average	**184.0**	**0.890**	**7.19**	**0.736**	**5.31**	**5.23**	**5.09**	**4.74**	**13.89**
2004 Average	**188.9**	**1.018**	**8.23**	**0.819**	**5.91**	**5.69**	**5.55**	**4.74**	**13.89**
2005 Average	**195.3**	**1.197**	**9.68**	**1.051**	**7.58**	**6.50**	**6.33**	**4.84**	**14.18**
2006 Average	**201.6**	**1.307**	**10.59**	**1.173**	**8.46**	**6.81**	**6.63**	**5.16**	**15.12**
2007 Average	**207.3**	**1.374**	**11.22**	**1.250**	**9.01**	**6.31**	**6.14**	**5.14**	**15.05**
2008 Average	**215.303**	**1.541**	**12.67**	**1.495**	**10.78**	**6.45**	**6.28**	**5.23**	**15.33**
2009 Average	**214.537**	**1.119**	**9.23**	**1.112**	**8.02**	**5.66**	**5.52**	**5.37**	**15.72**
2010 Average	**218.056**	**1.301**	**10.78**	**1.283**	**9.25**	**5.22**	**5.11**	**5.29**	**15.51**
2011 Average	**224.939**	**1.590**	**13.19**	**NA**	**NA**	**4.90**	**4.80**	**5.21**	**15.27**
2012 Average	**229.594**	**1.609**	**13.35**	**NA**	**NA**	**4.64**	**4.53**	**5.17**	**15.17**
2013 Average	**232.957**	**1.538**	**12.77**	**NA**	**NA**	**4.43**	**4.31**	**5.21**	**15.26**
2014 Average	**236.736**	**1.447**	**12.01**	**NA**	**NA**	**4.63**	**4.49**	**5.29**	**15.50**
2015 Average	**237.017**	**1.059**	**8.80**	**NA**	**NA**	**4.38**	**4.22**	**5.34**	**15.64**
2016 Average	**240.007**	**0.918**	**7.63**	**NA**	**NA**	**4.19**	**4.03**	**5.23**	**15.33**
2017 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 January	257.971	1.020	8.48	NA	NA	3.66	3.52	4.95	14.50
February	258.678	0.978	8.13	NA	NA	3.55	3.42	4.96	14.53
March	258.115	0.904	7.52	NA	NA	3.80	3.65	5.05	14.81
April	256.389	0.759	6.31	NA	NA	4.06	3.91	5.16	15.13
May	256.394	0.759	6.31	NA	NA	4.60	4.43	5.11	14.97
June	257.797	0.830	6.90	NA	NA	5.95	5.72	5.13	15.03
July	259.101	0.866	7.20	NA	NA	6.75	6.50	5.10	14.94
August	259.918	0.864	7.18	NA	NA	7.03	6.77	5.10	14.95
September	260.280	0.868	7.22	NA	NA	6.47	6.23	5.18	15.19
October	260.388	0.856	7.11	NA	NA	4.71	4.53	5.25	15.38
November	260.229	0.830	6.90	NA	NA	4.22	4.06	5.11	14.99
December	260.474	0.858	7.13	NA	NA	3.74	3.60	4.91	14.38
Average	**258.811**	**0.866**	**7.20**	**NA**	**NA**	**4.17**	**4.01**	**5.08**	**14.89**
2021 January	261.582	0.914	7.60	NA	NA	3.70	3.56	4.85	14.22
February	263.014	0.973	8.09	NA	NA	3.54	3.41	5.08	14.88
March	264.877	1.078	8.97	NA	NA	3.97	3.82	5.02	14.72
April	267.054	1.089	9.05	NA	NA	4.59	4.41	5.15	15.10
May	269.195	1.130	9.40	NA	NA	5.25	5.05	5.16	15.12
June	271.696	1.194	9.93	NA	NA	6.53	6.28	5.10	14.94
July	273.003	1.218	10.13	NA	NA	7.30	7.03	5.08	14.89
August	273.567	1.225	10.19	NA	NA	7.67	7.38	5.10	14.95
September	274.310	1.225	10.19	NA	NA	7.38	R 7.10	5.17	15.16
October	276.589	1.257	10.46	NA	NA	R 6.32	6.09	5.09	14.93
November	277.948	1.287	10.70	NA	NA	R 4.79	R 4.61	5.08	14.88
December	278.802	1.257	10.46	NA	NA	4.71	4.53	4.93	14.45
Average	**270.970**	**1.156**	**9.62**	**NA**	**NA**	**4.52**	**4.35**	**5.06**	**14.84**
2022 January	281.148	1.245	10.35	NA	NA	R 4.28	R 4.12	R 4.88	R 14.30
February	283.716	1.295	10.77	NA	NA	NA	NA	NA	NA
March	287.504	1.531	12.73	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.

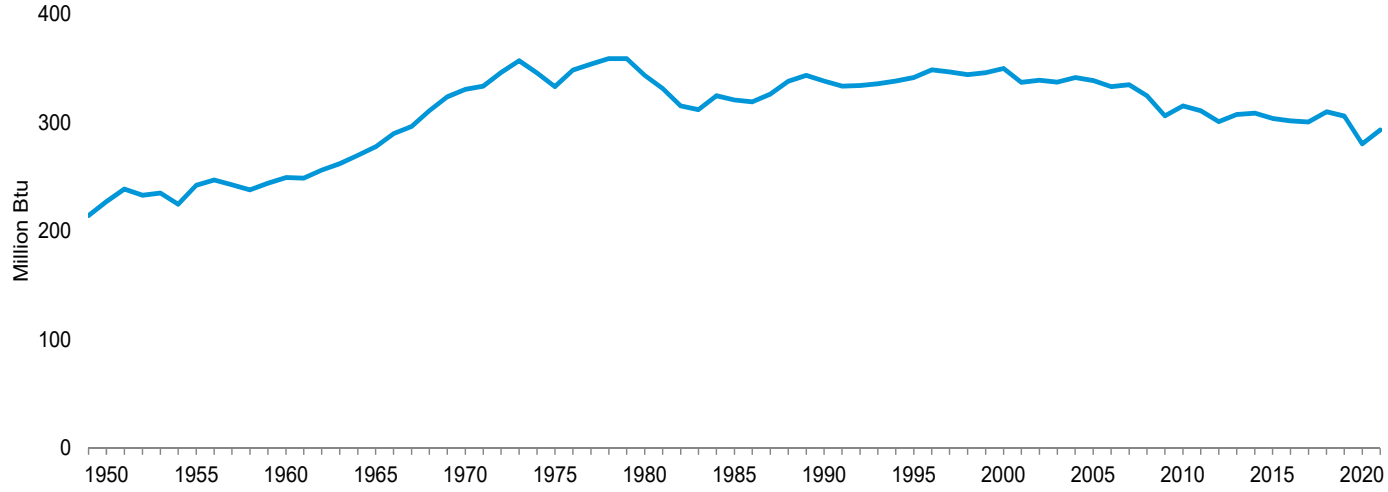
Notes: • See "Real Dollars" in Glossary. • Fuel costs are calculated by using the Urban Consumer Price Index (CPI) developed by the Bureau of Labor Statistics. • Annual averages may not equal average of months due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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.

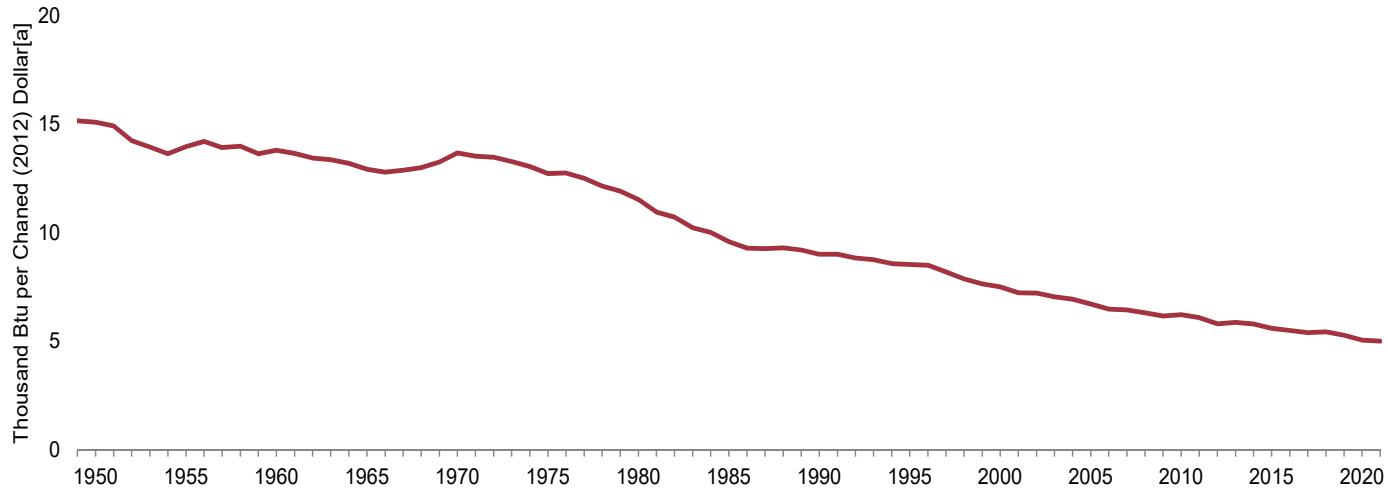
Sources: • **Fuel Prices:** Tables 9.4 (All Grades), 9.8, and 9.10, adjusted by the CPI; and *Monthy Energy Review,* September 2012, Table 9.8c. • **Consumer Price Index, All Urban Consumers:** U.S. Department of Labor, Bureau of Labor Statistics, series ID CUUR0000SA0. • **Conversion Factors:** Tables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

Figure 1.7 Primary Energy Consumption and Energy Expenditures Indicators

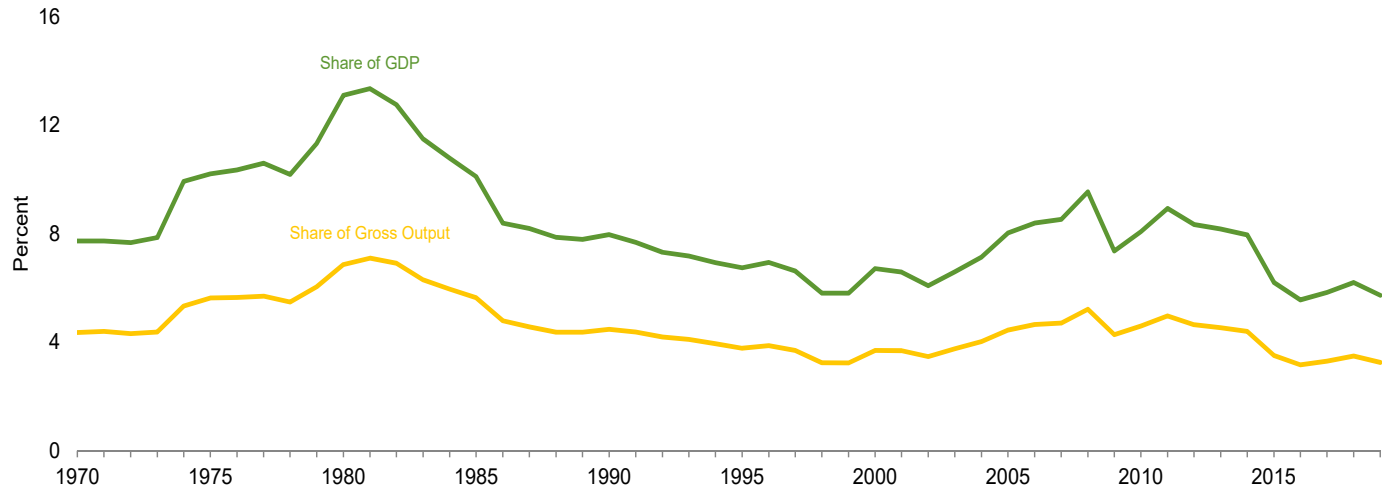
Energy Consumption per Capita, 1949–2021



Primary Energy Consumption per Real Dollar [a] of Gross Domestic Product, 1949–2021



Energy Expenditures as Share of Gross Domestic Product and Gross Output,[b] 1970–2019



[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 (2012) Dollar[d]	Million Nominal Dollars[g]	Nominal Dollars[g]	Percent	Percent	Million Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide	Metric Tons Carbon Dioxide per Million Chained (2012) Dollars[d]
1950	34.599	227	15.10	NA	NA	NA	NA	2,382	15.6	1,040
1955	40.178	242	13.98	NA	NA	NA	NA	2,685	16.2	934
1960	45.041	249	13.81	NA	NA	NA	NA	2,914	16.1	893
1965	53.953	278	12.93	NA	NA	NA	NA	3,462	17.8	829
1970	67.817	331	13.69	82,875	404	7.7	4.4	4,261	20.8	860
1975	71.931	333	12.73	171,854	796	10.2	5.6	4,428	20.5	784
1980	78.021	343	11.54	374,350	1,647	13.1	6.9	4,756	20.9	703
1981	76.057	331	10.97	427,901	1,865	13.3	7.1	4,637	20.2	669
1982	73.046	315	10.73	426,482	1,841	12.8	6.9	4,404	19.0	647
1983	72.915	312	10.24	417,622	1,786	11.5	6.3	4,384	18.8	616
1984	76.571	325	10.03	435,313	1,846	10.8	6.0	4,613	19.6	604
1985	76.334	321	9.59	438,343	1,842	10.1	5.6	4,605	19.4	579
1986	76.599	319	9.31	384,091	1,599	8.4	4.8	4,616	19.2	561
1987	79.008	326	9.28	397,627	1,641	8.2	4.6	4,776	19.7	561
1988	82.659	338	9.32	411,568	1,683	7.9	4.4	4,998	20.4	563
1989	84.740	343	9.21	439,051	1,779	7.8	4.4	5,085	20.6	553
1990	84.433	338	9.01	474,652	1,901	8.0	4.5	5,038	20.2	538
1991	84.380	334	9.01	472,440	1,867	7.7	4.4	4,993	19.7	533
1992	85.725	334	8.85	476,845	1,859	7.3	4.2	5,094	19.9	526
1993	87.266	336	8.76	492,275	1,894	7.2	4.1	5,186	20.0	521
1994	88.983	338	8.59	504,856	1,919	6.9	3.9	5,263	20.0	508
1995	90.931	341	8.55	514,624	1,933	6.7	3.8	5,324	20.0	501
1996	93.935	349	8.51	560,293	2,080	6.9	3.9	5,518	20.5	500
1997	94.507	347	8.20	567,962	2,083	6.6	3.7	5,589	20.5	485
1998	94.920	344	7.88	526,283	1,908	5.8	3.2	5,637	20.4	468
1999	96.545	346	7.65	558,627	2,002	5.8	3.2	5,700	20.4	452
2000	98.702	350	7.51	687,711	2,437	6.7	3.7	5,889	20.9	448
2001	96.064	337	7.24	696,242	2,443	6.6	3.7	5,778	20.3	436
2002	97.535	339	7.23	663,964	2,308	6.1	3.5	5,820	20.2	431
2003	97.835	337	7.06	755,070	2,603	6.6	3.7	5,886	20.3	425
2004	100.002	342	6.94	871,210	2,975	7.1	4.0	5,994	20.5	416
2005	100.102	339	6.72	1,045,730	3,539	8.0	4.4	6,007	20.3	403
2006	99.392	333	6.49	1,158,821	3,884	8.4	4.6	5,929	19.9	387
2007	100.894	335	6.46	1,233,869	4,096	8.5	4.7	6,016	20.0	385
2008	98.754	325	6.31	1,408,759	4,633	9.5	5.2	5,823	19.1	372
2009	93.943	306	6.17	1,066,293	3,476	7.4	4.3	5,404	17.6	355
2010	97.514	315	6.23	1,214,085	3,925	8.1	4.6	5,594	18.1	357
2011	96.872	311	6.10	1,392,316	4,469	8.9	5.0	5,455	17.5	343
2012	94.387	301	5.81	1,354,981	4,318	8.3	4.6	5,236	16.7	322
2013	97.130	307	5.87	1,376,234	4,355	8.2	4.5	5,359	17.0	324
2014	98.297	309	5.81	1,395,254	4,383	7.9	4.4	5,414	17.0	320
2015	97.407	304	5.60	1,128,234	3,519	6.2	3.5	5,262	16.4	303
2016	97.384	302	5.51	1,038,672	3,216	5.6	3.2	R 5,170	16.0	292
2017	97.660	301	5.40	1,136,211	3,496	5.8	3.3	5,131	15.8	284
2018	101.235	310	5.44	1,271,633	3,893	6.2	3.5	5,277	16.2	284
2019	100.471	306	5.28	1,223,852	3,729	5.7	3.3	R 5,146	15.7	270
2020	92.974	280	5.06	NA	NA	NA	NA	R 4,577	13.8	249
2021	R 97.332	293	5.01	NA	NA	NA	NA	R 4,872	14.7	251

[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.

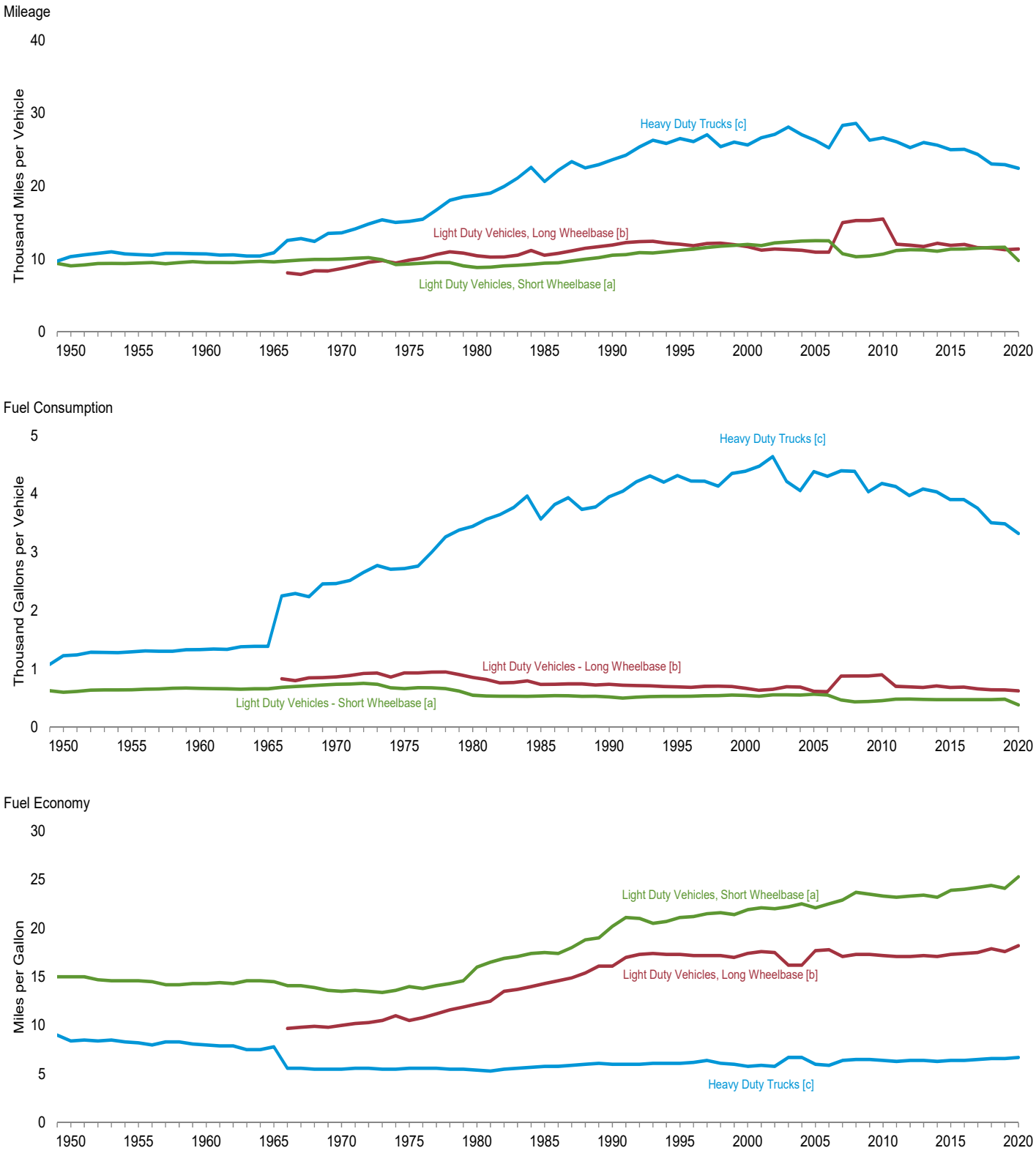
R=Revised. NA=Not available.

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 (2012) dollars (see Table C1). • **Expenditures:** U.S. Energy Information Administration, "State Energy Price and Expenditure Estimates, 1970 Through 2018" (June 2020), 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 (2012) dollars (see Table C1).

Figure 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949-2020



[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	9,780	386	25.3	11,355	625	18.2	22,415	3,324	6.7	10,523	577	18.2

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

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

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

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

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

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

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

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

Table 1.9 Heating Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	**6,794**	R **6,326**	R **7,029**	R **7,457**	R **3,490**	R **3,548**	**2,277**	R **6,342**	R **3,909**	R **5,364**
1955 Total	R **6,874**	R **6,234**	R **6,488**	R **6,914**	R **3,483**	R **3,515**	R **2,295**	R **6,706**	R **4,328**	R **5,245**
1960 Total	**6,828**	**6,391**	R **6,909**	R **7,186**	R **3,760**	R **4,136**	**2,767**	R **6,282**	R **3,801**	R **5,402**
1965 Total	R **7,030**	R **6,395**	R **6,589**	R **6,934**	R **3,354**	R **3,502**	**2,237**	R **6,088**	R **3,818**	R **5,145**
1970 Total	R **7,023**	R **6,390**	**6,721**	R **7,092**	R **3,433**	R **3,824**	R **2,561**	R **6,120**	R **3,733**	R **5,217**
1975 Total	R **6,548**	R **5,895**	R **6,408**	R **6,881**	R **2,948**	R **3,439**	R **2,313**	R **6,261**	**4,117**	R **4,903**
1980 Total	**7,071**	R **6,480**	R **6,976**	R **6,837**	R **3,357**	R **3,966**	R **2,495**	R **5,556**	R **3,534**	R **5,077**
1985 Total	R **6,751**	R **5,972**	**6,668**	R **7,264**	R **2,890**	R **3,662**	R **2,536**	R **6,060**	**3,935**	R **4,888**
1990 Total	R **5,988**	R **5,254**	**5,780**	R **6,138**	R **2,299**	R **2,943**	**1,968**	R **5,392**	R **3,598**	R **4,179**
1995 Total	R **6,688**	R **6,094**	R **6,741**	**6,911**	R **2,980**	R **3,650**	R **2,149**	R **5,102**	R **3,279**	R **4,641**
2000 Total	R **6,626**	**5,999**	R **6,316**	R **6,502**	R **2,898**	R **3,552**	R **2,154**	R **4,972**	R **3,463**	R **4,493**
2005 Total	R **6,646**	R **5,951**	R **6,223**	R **6,214**	R **2,769**	R **3,381**	R **1,986**	**4,896**	R **3,380**	**4,348**
2006 Total	R **5,886**	R **5,213**	R **5,706**	R **5,822**	R **2,470**	R **3,212**	**1,802**	R **4,916**	R **3,558**	**4,040**
2007 Total	R **6,539**	R **5,757**	R **6,075**	R **6,385**	R **2,519**	R **3,188**	**2,105**	R **4,941**	R **3,507**	**4,268**
2008 Total	R **6,436**	R **5,784**	R **6,679**	R **7,120**	R **2,704**	R **3,601**	R **2,126**	**5,233**	R **3,567**	**4,494**
2009 Total	R **6,645**	R **5,924**	R **6,513**	R **6,842**	R **2,806**	R **3,538**	R **2,154**	R **5,140**	R **3,539**	R **4,480**
2010 Total	R **5,935**	R **5,555**	R **6,187**	R **6,566**	R **3,161**	R **3,949**	R **2,450**	R **5,085**	R **3,625**	**4,463**
2011 Total	R **6,115**	R **5,485**	R **6,174**	R **6,566**	R **2,561**	R **3,344**	R **2,115**	R **5,327**	R **3,821**	R **4,314**
2012 Total	R **5,564**	R **4,973**	R **5,357**	R **5,517**	R **2,302**	**2,876**	R **1,651**	R **4,583**	R **3,414**	R **3,773**
2013 Total	R **6,427**	R **5,842**	R **6,622**	R **7,136**	R **2,732**	R **3,649**	**2,326**	R **5,285**	R **3,365**	R **4,472**
2014 Total	R **6,677**	R **6,206**	R **7,196**	R **7,305**	R **2,957**	R **3,933**	R **2,423**	R **4,758**	R **2,775**	R **4,560**
2015 Total	**6,521**	**5,777**	R **6,166**	R **6,090**	R **2,493**	R **3,221**	**2,087**	R **4,616**	R **2,899**	R **4,096**
2016 Total	**5,929**	**5,353**	**5,701**	R **5,788**	R **2,461**	R **3,093**	**1,752**	R **4,640**	R **3,030**	R **3,889**
2017 Total	R **6,037**	**5,333**	**5,684**	R **6,000**	R **2,237**	R **2,834**	**1,582**	R **4,593**	R **3,186**	R **3,840**
2018 Total	R **6,325**	**5,784**	R **6,434**	R **6,971**	R **2,634**	R **3,477**	**2,252**	R **4,830**	R **3,168**	R **4,293**
2019 Total	**6,538**	**5,753**	**6,428**	**7,078**	**2,390**	**3,180**	**2,145**	**5,333**	**3,545**	**4,320**
2020 January	1,032	956	1,051	1,224	482	635	430	854	563	741
February	924	840	1,001	1,070	397	554	402	767	447	654
March	779	670	733	745	232	293	139	602	526	485
April	655	566	566	532	178	248	89	415	309	360
May	289	250	256	246	74	86	13	186	148	157
June	28	18	22	21	2	3	0	74	71	26
July	1	0	1	6	0	0	0	14	19	5
August	9	4	13	18	0	0	0	9	16	7
September	103	81	111	143	17	20	7	104	31	58
October	399	337	464	556	96	154	83	327	133	248
November	616	547	599	663	227	345	175	567	412	423
December	987	944	1,035	1,097	556	726	477	888	542	752
Total	**5,822**	**5,214**	**5,854**	**6,322**	**2,260**	**3,063**	**1,815**	**4,807**	**3,215**	**3,916**
2021 January	R 1,125	1,068	R 1,147	1,180	R 579	736	515	R 879	R 549	R 805
February	R 1,053	1,016	1,249	1,375	484	715	580	R 784	R 493	794
March	840	736	690	673	R 284	R 338	200	645	R 521	R 508
April	R 520	441	R 449	479	R 153	229	R 102	R 405	R 285	R 308
May	R 246	217	244	225	56	82	18	222	R 173	151
June	R 14	10	14	14	1	1	0	35	29	12
July	R 13	4	7	8	0	0	0	5	10	5
August	3	2	5	R 11	0	0	0	23	14	6
September	69	R 51	57	68	10	19	1	R 82	R 52	40
October	R 281	R 207	R 227	R 295	70	102	32	R 345	R 245	180
November	R 730	708	782	R 738	R 378	R 518	258	493	R 325	510
December	R 915	R 810	880	994	R 351	411	R 206	R 798	R 634	R 617
Total	R **5,808**	R **5,270**	**5,752**	R **6,061**	R **2,366**	R **3,151**	**1,913**	**4,716**	R **3,331**	R **3,937**
2022 January	1,304	1,245	1,394	1,441	645	845	580	885	538	914

[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 1.10 Cooling Degree Days by Census Division

	New England[a]	Middle Atlantic[b]	East North Central[c]	West North Central[d]	South Atlantic[e]	East South Central[f]	West South Central[g]	Mountain[h]	Pacific[i]	United States
1950 Total	R **296**	**401**	**505**	R **646**	R **1,429**	**1,420**	R **2,281**	R **681**	R **626**	R **872**
1955 Total	R **531**	**761**	**922**	R **1,138**	R **1,647**	R **1,673**	R **2,506**	R **779**	R **562**	R **1,145**
1960 Total	**318**	R **486**	**626**	R **870**	R **1,599**	R **1,531**	R **2,366**	R **973**	R **799**	R **1,003**
1965 Total	**310**	**498**	R **617**	R **831**	R **1,626**	R **1,551**	R **2,460**	R **779**	R **581**	R **981**
1970 Total	**423**	**615**	R **746**	R **979**	R **1,760**	**1,571**	**2,282**	R **970**	R **729**	R **1,081**
1975 Total	**422**	R **583**	R **720**	**937**	R **1,805**	**1,440**	R **2,161**	**903**	R **598**	R **1,051**
1980 Total	R **439**	R **679**	**769**	**1,158**	R **1,925**	R **1,753**	**2,651**	**1,071**	R **655**	R **1,216**
1985 Total	**324**	**509**	R **601**	**780**	R **1,885**	R **1,521**	**2,519**	**1,095**	R **762**	R **1,122**
1990 Total	**429**	R **561**	**602**	R **912**	R **2,061**	R **1,562**	**2,526**	R **1,211**	R **835**	**1,200**
1995 Total	**471**	R **703**	**877**	R **927**	R **2,034**	**1,613**	**2,398**	**1,213**	R **793**	**1,261**
2000 Total	R **278**	**458**	R **630**	**983**	R **1,928**	R **1,673**	R **2,773**	R **1,479**	**772**	**1,232**
2005 Total	**598**	**892**	**944**	**1,063**	R **2,102**	R **1,675**	R **2,646**	**1,372**	**777**	R **1,389**
2006 Total	R **484**	**693**	R **733**	R **1,033**	R **2,056**	R **1,647**	**2,786**	R **1,465**	R **920**	**1,360**
2007 Total	R **445**	R **693**	**881**	**1,102**	R **2,222**	**1,892**	R **2,477**	R **1,562**	**828**	**1,392**
2008 Total	**462**	R **666**	**683**	**818**	R **1,998**	**1,537**	R **2,500**	**1,385**	R **917**	R **1,283**
2009 Total	R **349**	R **523**	**534**	**698**	R **2,032**	**1,479**	R **2,588**	R **1,392**	**894**	**1,241**
2010 Total	R **634**	**908**	R **963**	R **1,095**	R **2,274**	R **1,975**	R **2,756**	R **1,356**	**674**	**1,456**
2011 Total	R **553**	R **835**	R **858**	**1,074**	R **2,263**	**1,727**	**3,112**	R **1,447**	R **734**	R **1,469**
2012 Total	R **563**	**815**	**974**	**1,221**	R **2,166**	R **1,761**	R **2,914**	R **1,567**	R **918**	R **1,493**
2013 Total	**540**	R **681**	R **689**	R **891**	R **2,005**	R **1,440**	R **2,535**	R **1,456**	R **891**	R **1,304**
2014 Total	R **419**	**596**	**610**	R **812**	R **2,005**	**1,493**	**2,474**	R **1,423**	R **1,070**	R **1,295**
2015 Total	**555**	**804**	**729**	R **941**	R **2,401**	**1,718**	R **2,740**	R **1,469**	R **1,069**	R **1,484**
2016 Total	**626**	R **887**	**958**	R **1,072**	R **2,409**	**1,957**	**2,882**	R **1,485**	R **930**	R **1,553**
2017 Total	**450**	**661**	**709**	R **910**	R **2,250**	**1,585**	**2,718**	R **1,534**	R **1,055**	R **1,422**
2018 Total	**667**	**885**	**972**	R **1,133**	R **2,414**	R **1,929**	**2,856**	R **1,558**	R **1,005**	R **1,579**
2019 Total	**535**	**783**	**831**	**951**	**2,508**	**1,886**	**2,758**	**1,383**	**843**	**1,495**
2020 January	0	0	0	0	47	13	29	0	9	15
February	0	0	0	0	46	4	13	2	8	12
March	0	0	2	6	102	56	132	8	8	42
April	0	0	0	1	109	20	106	43	19	42
May	3	11	32	37	166	106	279	158	66	105
June	99	145	187	256	342	296	457	262	111	246
July	292	363	335	343	501	463	603	412	213	397
August	215	261	218	246	454	389	578	439	295	356
September	34	59	55	72	272	210	326	226	214	180
October	0	4	2	3	184	66	133	101	101	82
November	0	0	0	0	93	13	71	15	15	32
December	0	0	0	0	21	1	8	0	10	7
Total	**644**	**844**	**831**	**964**	**2,338**	**1,636**	**2,735**	**1,665**	**1,071**	**1,518**
2021 January	0	0	0	0	30	5	15	0	10	10
February	0	0	0	0	50	1	4	3	7	12
March	0	0	2	8	R 71	34	70	7	8	28
April	0	0	0	3	R 80	18	85	R 58	24	36
May	8	18	35	43	R 188	110	228	125	52	101
June	R 135	R 163	R 215	266	R 348	R 307	455	R 345	174	273
July	R 158	R 249	237	301	436	398	R 514	R 414	291	345
August	R 237	285	285	R 299	R 454	R 411	555	R 330	R 248	R 356
September	R 59	R 94	105	146	280	R 207	R 402	219	R 156	199
October	6	24	R 29	22	177	99	209	R 43	27	84
November	0	0	0	0	R 41	2	32	23	23	18
December	0	0	1	1	67	25	R 75	0	8	26
Total	R **604**	R **833**	R **909**	R **1,089**	R **2,222**	**1,620**	R **2,645**	R **1,567**	R **1,027**	R **1,487**
2022 January	0	0	0	0	28	3	10	1	9	9

[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 1.11a Non-Combustion Use of Fossil Fuels in Physical Units

	Coal	Natural Gas	Petroleum							
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petro-chemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total
	Thousand Short Tons	Billion Cubic Feet	Thousand Barrels per Day							
1973 Total	**3,523**	**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**
1996 Total	**884**	**896**	**484**	**1,413**	**151**	**592**	**60**	**39**	**70**	**2,809**
1997 Total	**842**	**909**	**505**	**1,447**	**160**	**686**	**58**	**38**	**72**	**2,966**
1998 Total	**656**	**938**	**521**	**1,441**	**168**	**690**	**84**	**56**	**83**	**3,043**
1999 Total	**654**	**906**	**547**	**1,578**	**169**	**651**	**92**	**76**	**77**	**3,190**
2000 Total	**937**	**836**	**512**	**1,474**	**151**	**628**	**100**	**53**	**85**	**3,003**
2005 Total	**929**	**761**	**546**	**1,369**	**141**	**729**	**106**	**33**	**75**	**2,997**
2006 Total	**562**	**573**	**521**	**1,424**	**137**	**726**	**111**	**37**	**86**	**3,041**
2007 Total	**556**	**587**	**494**	**1,444**	**142**	**664**	**108**	**41**	**82**	**2,974**
2008 Total	**541**	**597**	**417**	**1,279**	**131**	**574**	**103**	**44**	**85**	**2,634**
2009 Total	**375**	**513**	**360**	**1,401**	**118**	**507**	**95**	**24**	**85**	**2,591**
2010 Total	**719**	**654**	**362**	**R 1,598**	**131**	**539**	**42**	**14**	**89**	**R 2,775**
2011 Total	**730**	**680**	**355**	**R 1,641**	**125**	**520**	**40**	**12**	**91**	**R 2,782**
2012 Total	**707**	**706**	**340**	**R 1,748**	**114**	**444**	**43**	**8**	**88**	**R 2,786**
2013 Total	**732**	**721**	**323**	**R 1,871**	**121**	**448**	**40**	**52**	**93**	**R 2,949**
2014 Total	**562**	**725**	**327**	**R 1,781**	**126**	**410**	**20**	**55**	**97**	**R 2,818**
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**	**2,965**
2017 Total	**463**	**746**	**351**	**R 2,022**	**121**	**394**	**19**	**52**	**103**	**R 3,061**
2018 Total	**531**	**1,118**	**327**	**R 2,308**	**117**	**393**	**22**	**48**	**103**	**R 3,318**
2019 Total	**520**	**1,114**	**348**	**R 2,342**	**113**	**349**	**21**	**50**	**94**	**R 3,317**
2020 January	42	R 99	190	R 2,409	126	381	17	46	101	R 3,269
February	42	92	190	R 2,333	109	307	17	53	98	R 3,108
March	41	R 90	209	R 2,484	80	339	16	48	95	R 3,272
April	35	79	300	R 2,113	85	327	12	56	87	R 2,979
May	31	79	364	R 2,401	83	312	14	37	81	R 3,291
June	35	R 76	508	R 2,449	102	305	14	47	83	R 3,507
July	30	R 80	488	R 2,584	112	320	17	42	93	R 3,656
August	31	82	480	R 2,474	95	333	25	41	82	R 3,530
September	31	83	421	R 2,417	105	316	22	40	84	R 3,405
October	33	R 89	402	R 2,564	111	322	15	52	84	R 3,551
November	34	R 92	321	R 2,824	104	325	22	41	83	R 3,720
December	35	101	234	R 2,773	114	359	16	39	86	R 3,622
Total	**418**	**R 1,041**	**343**	**R 2,487**	**102**	**329**	**17**	**45**	**88**	**R 3,411**
2021 January	43	R 103	239	R 2,771	110	321	17	44	87	R 3,588
February	39	R 88	201	R 1,763	113	260	9	29	75	R 2,450
March	44	91	268	R 2,339	96	301	15	38	83	R 3,140
April	43	R 88	351	R 2,446	112	345	16	51	89	R 3,410
May	44	R 85	383	R 2,842	106	375	22	51	90	R 3,868
June	43	81	504	R 2,872	98	367	25	39	95	R 3,998
July	43	84	476	R 2,647	110	357	14	42	97	R 3,743
August	43	R 85	491	R 2,839	95	352	24	39	92	R 3,934
September	41	80	469	R 2,778	95	353	18	46	96	R 3,855
October	R 43	R 87	448	R 2,501	103	294	16	46	86	R 3,493
November	R 42	94	366	R 2,688	108	317	19	39	96	3,633
December	R 42	100	239	R 3,030	95	358	23	42	104	R 3,890
Total	**R 509**	**R 1,066**	**370**	**R 2,633**	**104**	**334**	**18**	**42**	**91**	**R 3,591**
2022 January	43	107	244	2,839	115	295	18	40	96	3,646

[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 1.11b Heat Content of Non-Combustion Use of Fossil Fuels

(Quadrillion Btu)

	Coal	Natural Gas	Petroleum								Total	Percent of Total Energy Consumption
			Asphalt and Road Oil	Hydrocarbon Gas Liquids[a]	Lubricants	Petrochemical Feedstocks[b]	Petroleum Coke	Special Naphthas	Other[c]	Total		
1973 Total	**0.113**	**0.916**	**1.264**	**0.872**	**0.359**	**0.726**	**0.093**	**0.169**	**0.185**	**3.668**	**4.696**	**6.2**
1975 Total	**.099**	**.777**	**1.014**	**.822**	**.304**	**.652**	**.090**	**.144**	**.256**	**3.283**	**4.159**	**5.8**
1980 Total	**.084**	**.777**	**.962**	**1.128**	**.354**	**1.426**	**.086**	**.193**	**.303**	**4.451**	**5.312**	**6.8**
1985 Total	**.049**	**.662**	**1.029**	**1.194**	**.322**	**.817**	**.096**	**.159**	**.201**	**3.818**	**4.529**	**5.9**
1990 Total	**.024**	**.695**	**1.170**	**1.345**	**.362**	**1.123**	**.119**	**.107**	**.179**	**4.406**	**5.125**	**6.1**
1995 Total	**.029**	**.892**	**1.178**	**1.716**	**.346**	**1.214**	**.120**	**.071**	**.145**	**4.790**	**5.711**	**6.3**
1996 Total	**.028**	**.921**	**1.176**	**1.779**	**.335**	**1.209**	**.126**	**.075**	**.146**	**4.846**	**5.795**	**6.2**
1997 Total	**.027**	**.933**	**1.224**	**1.821**	**.354**	**1.400**	**.121**	**.072**	**.150**	**5.142**	**6.102**	**6.5**
1998 Total	**.021**	**.969**	**1.263**	**1.819**	**.371**	**1.403**	**.176**	**.107**	**.174**	**5.312**	**6.302**	**6.6**
1999 Total	**.021**	**.932**	**1.324**	**1.989**	**.375**	**1.329**	**.192**	**.145**	**.161**	**5.516**	**6.469**	**6.7**
2000 Total	**.030**	**.856**	**1.240**	**1.831**	**.334**	**1.272**	**.209**	**.102**	**.178**	**5.167**	**6.054**	**6.2**
2005 Total	**.030**	**.782**	**1.323**	**1.701**	**.312**	**1.474**	**.221**	**.063**	**.157**	**5.250**	**6.062**	**6.1**
2006 Total	**.018**	**.589**	**1.261**	**1.754**	**.303**	**1.477**	**.232**	**.070**	**.180**	**5.278**	**5.885**	**5.9**
2007 Total	**.018**	**.603**	**1.197**	**1.768**	**.313**	**1.351**	**.225**	**.078**	**.173**	**5.106**	**5.726**	**5.7**
2008 Total	**.017**	**.613**	**1.012**	**1.564**	**.291**	**1.172**	**.216**	**.085**	**.180**	**4.520**	**5.150**	**5.2**
2009 Total	**.012**	**.526**	**.873**	**1.676**	**.262**	**1.031**	**.199**	**.046**	**.179**	**4.265**	**4.804**	**5.1**
2010 Total	**.023**	**.669**	**.878**	**R 1.933**	**.291**	**1.096**	**.087**	**.026**	**.188**	**R 4.498**	**R 5.189**	**5.3**
2011 Total	**.023**	**.695**	**.859**	**R 1.949**	**.276**	**1.057**	**.083**	**.023**	**.193**	**R 4.439**	**R 5.158**	**5.3**
2012 Total	**.023**	**.724**	**.827**	**R 2.111**	**.254**	**.901**	**.090**	**.015**	**.187**	**R 4.384**	**R 5.130**	**5.4**
2013 Total	**.023**	**.741**	**.783**	**R 2.271**	**.268**	**.901**	**.083**	**.100**	**.197**	**R 4.603**	**R 5.368**	**5.5**
2014 Total	**.018**	**.749**	**.793**	**R 2.126**	**.280**	**.827**	**.043**	**.106**	**.205**	**R 4.380**	**R 5.147**	**5.2**
2015 Total	**.017**	**.730**	**.832**	**2.316**	**.305**	**.760**	**.043**	**.099**	**.208**	**4.563**	**5.310**	**5.5**
2016 Total	**.014**	**.755**	**.853**	**R 2.329**	**.289**	**.754**	**.043**	**.094**	**.212**	**4.574**	**R 5.343**	**5.5**
2017 Total	**.015**	**.774**	**.849**	**R 2.392**	**.267**	**.797**	**.040**	**.100**	**.217**	**R 4.662**	**R 5.450**	**5.6**
2018 Total	**.017**	**1.160**	**.793**	**R 2.707**	**.259**	**.794**	**.046**	**.092**	**.218**	**R 4.908**	**R 6.086**	**6.0**
2019 Total	**.017**	**1.159**	**.844**	**R 2.745**	**.250**	**.704**	**.044**	**.096**	**.198**	**R 4.881**	**R 6.056**	**R 6.0**
2020 January	.001	R .103	.039	.233	.024	.066	.003	.008	.018	.390	R .494	5.5
February	.001	R .096	.037	.208	.019	.050	.003	.008	.016	R .340	.437	5.2
March	.001	.093	.043	R .244	.015	.058	.003	.008	.017	R .388	.483	6.1
April	.001	.082	.060	.194	.015	.055	.002	.009	.015	.350	R .434	R 6.7
May	.001	.082	.075	R .234	.016	.054	.003	.006	.014	R .402	.485	7.1
June	.001	R .079	.101	R .231	.019	.051	.002	.007	.014	R .425	R .505	R 6.9
July	.001	R .083	.100	R .251	.021	.055	.003	.007	.017	R .454	R .537	6.7
August	.001	.085	.099	R .246	.018	.057	.004	.007	.015	R .445	R .531	R 6.6
September	.001	.086	.084	R .236	.019	.053	.004	.006	.015	R .417	R .504	6.9
October	.001	.092	.083	R .257	.021	.055	.003	.008	.015	R .442	R .536	7.2
November	.001	.095	.064	.271	.019	.054	.004	.006	.014	R .432	.529	7.0
December	.001	.105	.048	R .276	.021	.062	.003	.006	.015	R .432	R .539	6.2
Total	**.013**	**R 1.082**	**.832**	**R 2.881**	**.227**	**.669**	**.036**	**.087**	**.186**	**R 4.918**	**R 6.014**	**6.5**
2021 January	.001	R .107	.049	.275	.021	.055	.003	.007	.016	R .426	R .534	6.0
February	.001	.091	.037	R .157	.019	.041	.001	.004	.012	R .272	R .365	4.5
March	.001	.095	.055	.234	.018	.052	.003	.006	.015	.383	.479	5.9
April	.001	.091	.070	.231	.020	.057	.003	.008	.015	.404	.497	6.7
May	.001	.088	.079	R .282	.020	.065	.004	.008	.016	R .474	R .563	7.3
June	.001	.084	.100	R .279	.018	.061	.004	.006	.016	R .485	R .570	7.1
July	.001	.087	.098	R .262	.021	.061	.002	.007	.017	R .468	R .557	6.7
August	.001	.088	.101	R .286	.018	.061	.004	.006	.017	R .493	R .583	6.9
September	.001	.083	.093	R .268	.017	.059	.003	.007	.017	R .465	R .549	R 7.1
October	.001	.090	.092	R .245	.019	.051	.003	.007	.015	R .433	.525	6.8
November	.001	.098	.073	.256	.020	.053	.003	.006	.017	.427	.526	6.5
December	.001	R .104	.049	R .296	.018	.062	.004	.007	.019	.454	.559	6.4
Total	**R .016**	**R 1.107**	**.897**	**R 3.071**	**.229**	**.677**	**.038**	**.081**	**.192**	**R 5.184**	**R 6.308**	**6.5**
2022 January	.001	.111	.050	.277	.022	.051	.003	.006	.017	.427	.539	5.7

[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 1.11b, coal tar values in Table 1.11a are multiplied by 32.0067 million Btu/short ton, which is the product of 4.95 barrels/short ton (the density of coal tar) and 6.466 million Btu/barrel (the approximate heat content of coal tar).

Natural Gas

EIA assumes that all non-combustion use of natural gas takes place in the industrial sector. 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 1.11b, natural gas values in Table 1.11a 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 1.11b, asphalt and road oil values in Table 1.11a are multiplied by 6.636 million Btu/ barrel (the approximate heat content of asphalt and road oil) and the number of days in the period.

Distillate 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 1.11b, distillate fuel oil values in Table 1.11a 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 1.11b, 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 1.11b, lubricants values in Table 1.11a 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 1.11b, naphtha petrochemical feedstock values in 1.11a 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 1.11b, other oils petrochemical feedstock values in 1.11a 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 1.11b, still gas for petrochemical feedstock values in 1.11a 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 1.11b, petroleum coke values in 1.11a are multiplied by 5.719 million Btu/barrel (the approximate heat content of marketable petroleum coke) and the number of days in the period.

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 1.11b, residual fuel oil values in Table 1.11a are multiplied by 6.287 million Btu/barrel (the approximate heat content of residual fuel oil) and the number of days in the period. Residual fuel oil is included in "other" petroleum products.

Special Naphthas

EIA assumes all special naphthas consumption is for non- combustion use. For Table 1.11b, special naphthas values in Table 1.11a are multiplied by 5.248 million Btu/barrel (the approximate heat content of special naphthas) and the number of days in the period.

Waxes

EIA assumes all waxes consumption is for non-combustion use. For Table 1.11b, waxes values in Table 1.11a are multiplied by 5.537 million Btu/barrel (the approximate heat content of waxes) and the number of days in the period. 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 1.11b, miscellaneous petroleum products values in Table 1.11a are multiplied by 5.796 million Btu/barrel (the approximate heat content of miscellaneous petroleum products) and the number of days in the period. 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 “renewable fuels except fuel ethanol“ refinery and blender net inputs and products supplied from U.S. Energy Information Administration (EIA),

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

Total Petroleum

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

Biomass—Fuel Ethanol (Minus Denaturant)

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

Biomass—Biodiesel

2001 forward: Biodiesel exports data are from Table 10.4a, 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.

1993–2017: "U.S. International Trade in Goods and Services," Annual Revisions.

2018–2020: "U.S. International Trade in Goods and Services," 2020 Annual Revisions.

2021 forward: "U.S. International Trade in Goods and Services," FT-900, monthly.

Petroleum Imports

1974–1987: "U.S. Merchandise Trade," FT-900, December issues, 1975–1988.

1988 and 1989: "Report on U.S. Merchandise Trade," Final Revisions.

1990–1993: "U.S. Merchandise Trade," Final Report.

1994–2017: "U.S. International Trade in Goods and Services," Annual Revisions.

2018–2020: "U.S. International Trade in Goods and Services," 2020 Annual Revisions.

2021 forward: "U.S. International Trade in Goods and Services," FT-900, monthly.

Energy Exports and Imports

1974–1987: U.S. merchandise trade press releases and database printouts for adjustments.

1988: January–July, monthly FT-900 supplement, 1989 issues. August–December, monthly FT-900, 1989 issues.

1989: Monthly FT-900, 1990 issues.

1990–1992: "U.S. Merchandise Trade," Final Report. 1993–2009: "U.S. International Trade in Goods and Services," Annual Revisions.

1993–2017: "U.S. International Trade in Goods and Services," Annual Revisions.

2018–2020: "U.S. International Trade in Goods and Services," 2020 Annual Revisions.

2021 forward: "U.S. International Trade in Goods and Services," FT-900, monthly.

Petroleum Balance

1974 forward: The petroleum balance is calculated by the U.S. Energy Information Administration (EIA) as petroleum imports minus petroleum exports.

Energy Balance

1974 forward: The energy balance is calculated by EIA as energy imports minus energy exports.

Non-Energy Balance

1974 forward: The non-energy balance is calculated by EIA as the total merchandise balance minus the energy balance.

Total Merchandise

1974–1987: U.S. merchandise trade press releases and database printouts for adjustments.

1988: "Report on U.S. Merchandise Trade, 1988 Final Revisions," August 18, 1989.

1989: "Report on U.S. Merchandise Trade, 1989 Revisions," July 10, 1990.

1990: "U.S. Merchandise Trade, 1990 Final Report," May 10, 1991, and "U.S. Merchandise Trade, December 1992,"

February 18, 1993, page 3.

1991: "U.S. Merchandise Trade, 1992 Final Report," May 12, 1993.

1992–2017: "U.S. International Trade in Goods and Services," Annual Revisions.

2018–2020: "U.S. International Trade in Goods and Services," 2020 Annual Revisions.

2021 forward: "U.S. International Trade in Goods and Services," FT-900, monthly.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.

1992–2017: "U.S. International Trade in Goods and Services," Annual Revisions.

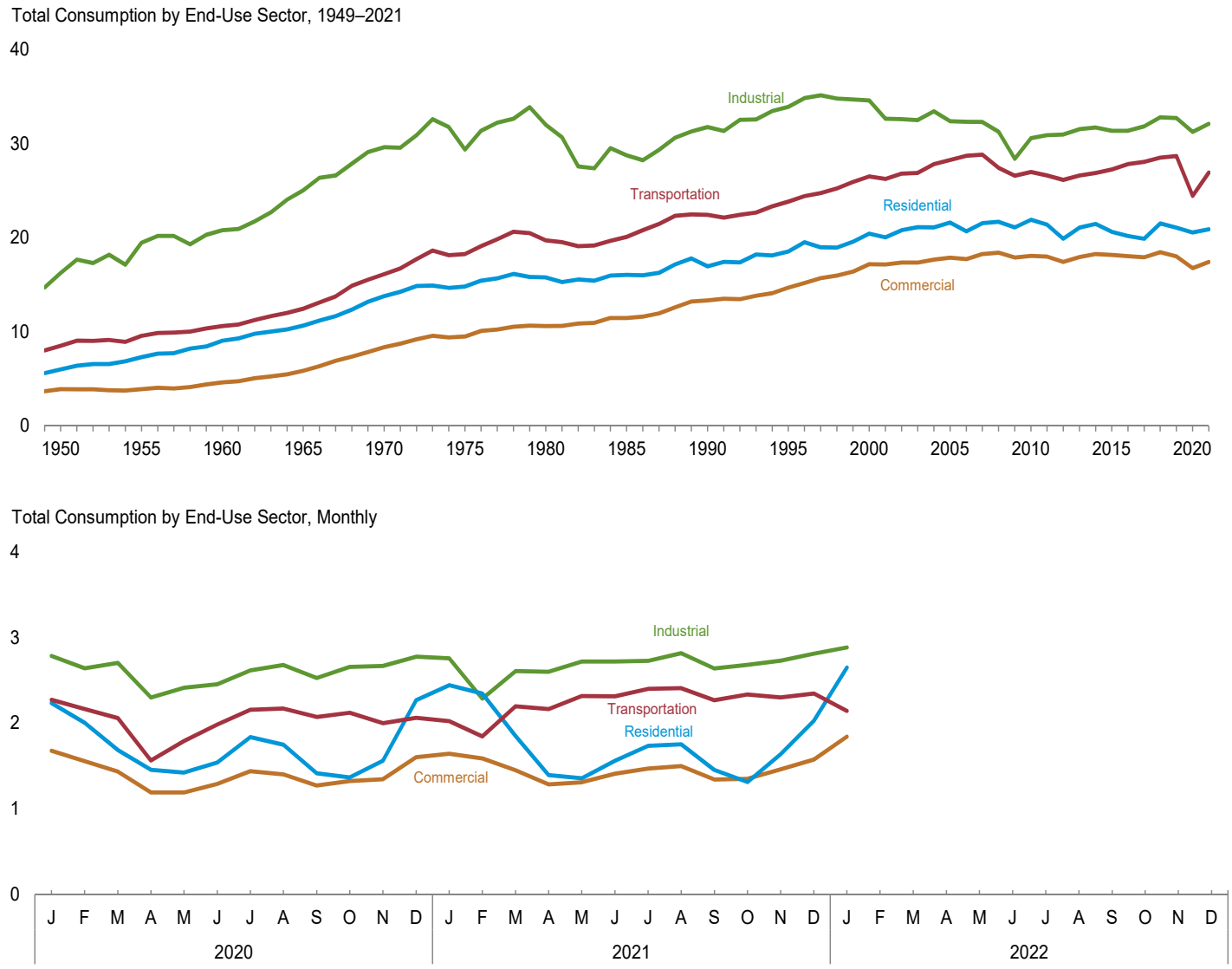
2018–2020: "U.S. International Trade in Goods and Services," 2020 Annual Revisions.

2021 forward: "U.S. International Trade in Goods and Services," FT-900, monthly.

2. Energy Consumption By Sector

Figure 2.1 Energy Consumption by Sector

(Quadrillion Btu)



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

Table 2.1 Energy Consumption by Sector

(Trillion Btu)

	End-Use Sectors								Electric Power Sector[c,d]		
	Residential		Commercial[a]		Industrial[b]		Transportation			Balancing Item[g]	Primary Total[h]
	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]	Total[f]	Primary[e]		
1950 Total	**4,830**	**5,989**	**2,834**	**3,893**	**13,872**	**16,224**	**8,383**	**8,492**	**4,679**	**(s)**	**34,599**
1955 Total	**5,608**	**7,278**	**2,561**	**3,895**	**16,073**	**19,455**	**9,474**	**9,550**	**6,461**	**(s)**	**40,178**
1960 Total	**6,651**	**9,040**	**2,723**	**4,610**	**16,949**	**20,795**	**10,560**	**10,596**	**8,158**	**(s)**	**45,041**
1965 Total	**7,280**	**10,640**	**3,177**	**5,846**	**20,085**	**25,035**	**12,399**	**12,432**	**11,012**	**(s)**	**53,953**
1970 Total	**8,323**	**13,766**	**4,237**	**8,346**	**22,941**	**29,605**	**16,062**	**16,098**	**16,253**	**(s)**	**67,817**
1975 Total	**7,990**	**14,814**	**4,059**	**9,493**	**21,400**	**29,379**	**18,211**	**18,245**	**20,270**	**1**	**71,931**
1980 Total	**7,440**	**15,754**	**4,105**	**10,578**	**22,549**	**31,993**	**19,659**	**19,697**	**24,269**	**-1**	**78,021**
1985 Total	**7,149**	**16,042**	**3,732**	**11,451**	**19,384**	**28,757**	**20,042**	**20,088**	**26,032**	**-4**	**76,334**
1990 Total	**6,553**	**16,941**	**3,894**	**13,317**	**21,121**	**31,750**	**22,366**	**22,419**	[d] **30,495**	**6**	**84,433**
1995 Total	**6,935**	**18,517**	**4,101**	**14,690**	**22,658**	**33,910**	**23,757**	**23,812**	**33,479**	**2**	**90,931**
2000 Total	**7,156**	**20,422**	**4,278**	**17,176**	**22,749**	**34,589**	**26,456**	**26,515**	**38,062**	**1**	**98,702**
2005 Total	**6,901**	**21,613**	**4,053**	**17,854**	**21,343**	**32,374**	**28,179**	**28,261**	**39,626**	**(s)**	**100,102**
2006 Total	**6,155**	**20,671**	**3,748**	**17,708**	**21,455**	**32,317**	**28,618**	**28,697**	**39,417**	**(s)**	**99,392**
2007 Total	**6,589**	**21,520**	**3,923**	**18,253**	**21,284**	**32,306**	**28,727**	**28,815**	**40,371**	**-1**	**100,894**
2008 Total	**6,889**	**21,668**	**4,101**	**18,403**	**20,455**	**31,261**	**27,339**	**27,421**	**39,969**	**1**	**98,754**
2009 Total	**6,637**	**21,082**	**4,057**	**17,888**	**18,670**	**28,380**	**26,510**	**26,592**	**38,069**	**(s)**	**93,943**
2010 Total	**6,641**	**21,895**	**4,024**	**18,060**	R **20,330**	R **30,577**	R **26,894**	R **26,975**	**39,619**	**7**	**97,514**
2011 Total	**6,473**	**21,382**	**4,067**	**17,983**	R **20,509**	R **30,896**	R **26,523**	R **26,603**	**39,293**	**8**	**96,872**
2012 Total	**5,684**	**19,870**	**3,728**	**17,424**	R **20,785**	R **30,958**	R **26,057**	R **26,132**	**38,131**	**2**	**94,387**
2013 Total	**6,689**	**21,052**	**4,162**	**17,930**	R **21,384**	R **31,531**	R **26,540**	R **26,618**	**38,357**	**-1**	**97,130**
2014 Total	**7,006**	**21,446**	**4,390**	**18,265**	R **21,466**	R **31,702**	R **26,800**	R **26,880**	**38,629**	**6**	**98,297**
2015 Total	**6,465**	**20,618**	**4,441**	**18,157**	**21,431**	**31,375**	**27,179**	**27,256**	**37,890**	**1**	**97,407**
2016 Total	**6,030**	**20,179**	**4,321**	**18,030**	R **21,572**	R **31,366**	R **27,738**	R **27,813**	**37,727**	**-4**	**97,384**
2017 Total	**6,098**	**19,887**	**4,368**	**17,900**	R **21,976**	R **31,821**	R **27,976**	R **28,051**	**37,241**	**(s)**	**97,660**
2018 Total	**6,982**	**21,510**	**4,776**	**18,440**	R **22,890**	R **32,785**	R **28,432**	R **28,507**	**38,163**	**-7**	**101,235**
2019 Total	**7,089**	**21,073**	**4,800**	**18,013**	R **22,973**	R **32,706**	R **28,599**	R **28,673**	**37,003**	**6**	**100,471**
2020 January	R 1,043	R 2,236	R 627	R 1,680	R 2,012	R 2,785	2,268	2,274	3,025	-4	8,971
February	R 934	R 2,006	R 573	R 1,557	R 1,887	R 2,641	2,160	2,166	2,816	-6	8,365
March	R 706	R 1,688	R 455	R 1,436	R 1,940	R 2,703	R 2,054	2,060	2,732	-6	7,881
April	R 538	R 1,457	R 335	R 1,194	R 1,616	R 2,300	1,563	1,567	2,467	-5	6,513
May	R 384	R 1,426	R 263	R 1,193	R 1,684	2,416	1,789	1,794	2,709	-2	6,827
June	R 252	R 1,541	R 220	R 1,294	R 1,686	2,454	R 1,980	1,985	3,134	1	7,274
July	R 226	R 1,839	R 214	R 1,441	1,799	2,617	2,154	R 2,159	3,664	9	8,066
August	R 214	R 1,749	R 215	R 1,403	1,845	2,679	2,167	2,172	3,562	8	8,012
September	R 241	R 1,418	R 233	R 1,274	1,784	2,529	2,070	2,075	2,968	3	7,299
October	R 379	R 1,369	R 307	R 1,325	R 1,885	R 2,658	R 2,118	R 2,123	2,785	-1	7,474
November	R 599	R 1,564	R 398	R 1,346	R 1,904	R 2,670	1,997	2,002	2,683	-2	7,580
December	R 1,009	R 2,268	R 580	R 1,603	R 2,005	R 2,776	2,058	2,064	3,058	1	8,711
Total	R **6,526**	R **20,553**	R **4,419**	R **16,749**	R **22,049**	R **31,234**	R **24,379**	R **24,442**	**35,605**	**-4**	**92,974**
2021 January	R 1,108	R 2,445	R 628	R 1,644	R 1,987	R 2,758	2,021	R 2,026	R 3,130	R -1	R 8,872
February	R 1,096	R 2,346	R 626	R 1,591	R 1,567	R 2,287	1,843	1,848	R 2,940	R 2	R 8,074
March	R 763	R 1,852	R 481	R 1,452	R 1,884	R 2,610	2,193	2,198	R 2,791	-5	R 8,108
April	R 496	R 1,395	R 351	R 1,288	R 1,849	R 2,600	2,162	2,167	R 2,591	R -5	R 7,444
May	R 356	R 1,357	R 283	R 1,313	R 1,904	R 2,720	2,311	2,316	R 2,852	-3	R 7,702
June	R 248	1,564	R 235	R 1,413	R 1,876	R 2,721	2,310	2,315	R 3,344	R 4	R 8,016
July	R 225	1,737	R 232	R 1,472	R 1,858	R 2,728	2,394	2,400	R 3,628	R 7	R 8,345
August	R 215	1,755	R 228	R 1,500	R 1,942	R 2,818	2,404	2,410	R 3,694	R 7	R 8,490
September	R 233	R 1,456	R 241	R 1,343	1,852	R 2,639	R 2,263	R 2,268	R 3,118	R 3	R 7,710
October	R 330	R 1,314	R 297	R 1,353	R 1,890	R 2,681	R 2,331	R 2,336	R 2,835	R -2	R 7,681
November	R 648	R 1,640	R 449	R 1,463	R 1,930	R 2,730	2,296	2,301	R 2,812	R -4	R 8,130
December	R 867	R 2,028	R 530	R 1,576	2,009	R 2,812	2,343	2,348	R 3,014	R -4	R 8,760
Total	R **6,585**	R **20,884**	R **4,580**	R **17,410**	R **22,549**	R **32,106**	R **26,871**	R **26,933**	R **36,748**	R **-2**	R **97,332**
2022 January	1,227	2,651	706	1,843	2,040	2,884	2,140	2,145	3,409	(s)	9,523

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

[b] Industrial sector, including industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

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

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

[e] See "Primary Energy Consumption" in Glossary.

[f] Total energy consumption in the end-use sectors consists of primary energy consumption, electricity retail sales, and electrical system energy losses. See Note 1, "Electrical System Energy Losses," at end of section.

[g] A balancing item. The sum of primary consumption in the five energy-use sectors equals the sum of total consumption in the four end-use sectors. However, total energy consumption does not equal the sum of the sectoral components due to the use of sector-specific conversion factors for coal and natural gas.

[h] Primary energy consumption total. See Table 1.3.

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

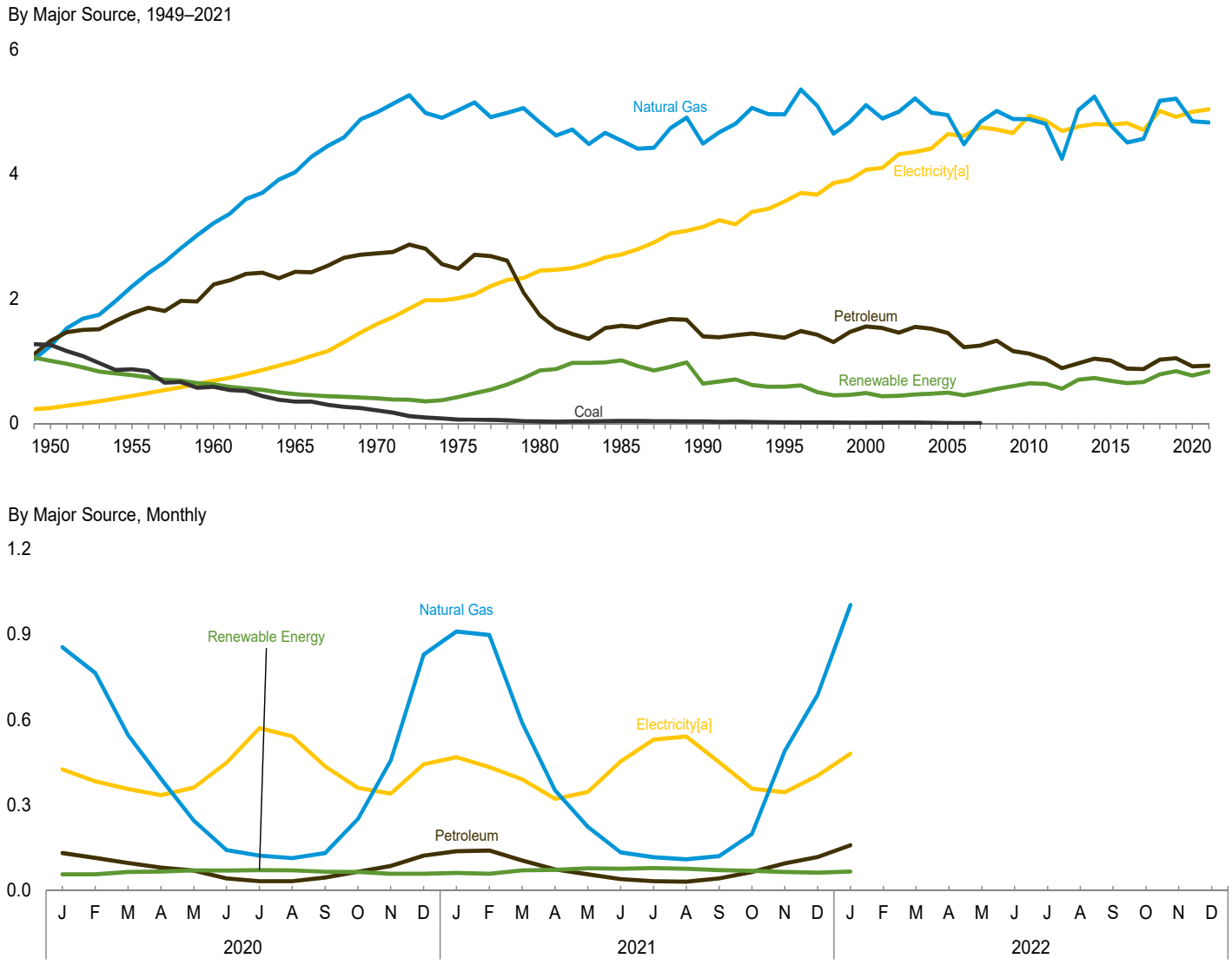
Notes: • Data are estimates, except for the electric power sector. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • 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. • **Balancing Item:** Calculated as primary energy total consumption minus the sum of total energy consumption in the four end-use sectors. • **Primary Total:** Table 1.3.

Figure 2.2 Residential Sector Energy Consumption

(Quadrillion Btu)



[a] Electricity retail sales.

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

Source: Table 2.2.

Table 2.2 Residential Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]											
	Fossil Fuels				Renewable Energy[b]							
	Coal	Natural Gas[c]	Petro-leum	Total	Geo-thermal	Solar[d]	Bio-mass	Total	Total Primary	Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
1950 Total	**1,261**	**1,240**	**1,322**	**3,824**	**NA**	**NA**	**1,006**	**1,006**	**4,830**	**246**	**913**	**5,989**
1955 Total	**867**	**2,198**	**1,767**	**4,833**	**NA**	**NA**	**775**	**775**	**5,608**	**438**	**1,232**	**7,278**
1960 Total	**585**	**3,212**	**2,228**	**6,025**	**NA**	**NA**	**627**	**627**	**6,651**	**687**	**1,701**	**9,040**
1965 Total	**352**	**4,028**	**2,432**	**6,812**	**NA**	**NA**	**468**	**468**	**7,280**	**993**	**2,367**	**10,640**
1970 Total	**209**	**4,987**	**2,726**	**7,922**	**NA**	**NA**	**401**	**401**	**8,323**	**1,591**	**3,852**	**13,766**
1975 Total	**63**	**5,023**	**2,479**	**7,565**	**NA**	**NA**	**425**	**425**	**7,990**	**2,007**	**4,817**	**14,814**
1980 Total	**31**	**4,825**	**1,734**	**6,590**	**NA**	**NA**	**850**	**850**	**7,440**	**2,448**	**5,866**	**15,754**
1985 Total	**39**	**4,534**	**1,566**	**6,139**	**NA**	**NA**	**1,010**	**1,010**	**7,149**	**2,709**	**6,184**	**16,042**
1990 Total	**31**	**4,487**	**1,395**	**5,912**	**6**	**55**	**580**	**640**	**6,553**	**3,153**	**7,235**	**16,941**
1995 Total	**17**	**4,954**	**1,374**	**6,345**	**7**	**63**	**520**	**589**	**6,935**	**3,557**	**8,026**	**18,517**
2000 Total	**11**	**5,105**	**1,554**	**6,670**	**9**	**58**	**420**	**486**	**7,156**	**4,069**	**9,197**	**20,422**
2005 Total	**8**	**4,946**	**1,450**	**6,405**	**16**	**50**	**430**	**496**	**6,901**	**4,638**	**10,074**	**21,613**
2006 Total	**6**	**4,476**	**1,222**	**5,704**	**18**	**53**	**380**	**451**	**6,155**	**4,611**	**9,905**	**20,671**
2007 Total	**8**	**4,835**	**1,249**	**6,092**	**22**	**55**	**420**	**497**	**6,589**	**4,750**	**10,180**	**21,520**
2008 Total	**NA**	**5,010**	**1,325**	**6,335**	**26**	**58**	**470**	**555**	**6,889**	**4,711**	**10,068**	**21,668**
2009 Total	**NA**	**4,883**	**1,158**	**6,041**	**33**	**60**	**504**	**597**	**6,637**	**4,657**	**9,788**	**21,082**
2010 Total	**NA**	**4,878**	**1,120**	**5,999**	**37**	**65**	**541**	**642**	**6,641**	**4,933**	**10,321**	**21,895**
2011 Total	**NA**	**4,805**	**1,034**	**5,838**	**40**	**71**	**524**	**635**	**6,473**	**4,855**	**10,054**	**21,382**
2012 Total	**NA**	**4,242**	**886**	**5,128**	**40**	**79**	**438**	**557**	**5,684**	**4,690**	**9,496**	**19,870**
2013 Total	**NA**	**5,023**	**963**	**5,986**	**40**	**91**	**572**	**703**	**6,689**	**4,759**	**9,604**	**21,052**
2014 Total	**NA**	**5,242**	**1,036**	**6,279**	**40**	**109**	**579**	**728**	**7,006**	**4,801**	**9,638**	**21,446**
2015 Total	**NA**	**4,777**	**1,007**	**5,784**	**40**	**128**	**513**	**681**	**6,465**	**4,791**	**9,362**	**20,618**
2016 Total	**NA**	**4,506**	**878**	**5,384**	**40**	**162**	**445**	**646**	**6,030**	**4,815**	**9,334**	**20,179**
2017 Total	**NA**	**4,563**	**871**	**5,435**	**40**	**193**	**430**	**663**	**6,098**	**4,704**	**9,085**	**19,887**
2018 Total	**NA**	**5,174**	**1,022**	**6,197**	**40**	**221**	**525**	**785**	**6,982**	**5,013**	**9,515**	**21,510**
2019 Total	**NA**	**5,208**	**1,045**	**6,253**	**40**	**251**	**546**	**837**	**7,089**	**4,914**	**9,070**	**21,073**
2020 January	NA	855	R 131	R 987	3	16	37	56	R 1,043	425	768	R 2,236
February	NA	764	R 114	R 878	3	18	35	56	R 934	383	689	R 2,006
March	NA	546	R 96	R 642	3	23	37	64	R 706	356	627	R 1,688
April	NA	392	R 80	R 472	3	26	36	66	R 538	334	586	R 1,457
May	NA	245	R 69	R 314	3	30	37	70	R 384	361	681	R 1,426
June	NA	141	R 42	R 183	3	30	36	69	R 252	449	839	R 1,541
July	NA	122	R 32	R 155	3	30	37	71	R 226	570	1,043	R 1,839
August	NA	113	R 32	R 145	3	29	37	70	R 214	542	993	R 1,749
September	NA	131	R 45	R 177	3	26	36	65	R 241	436	740	R 1,418
October	NA	251	R 65	R 316	3	23	37	64	R 379	360	630	R 1,369
November	NA	456	R 85	R 541	3	19	36	58	R 599	340	625	R 1,564
December	NA	829	R 122	R 952	3	17	37	58	R 1,009	443	816	R 2,268
Total	**NA**	**4,846**	R **914**	R **5,760**	**40**	**286**	**441**	**767**	R **6,526**	**4,997**	**9,029**	R **20,553**
2021 January	NA	910	R 137	R 1,047	3	18	39	61	R 1,108	468	R 870	R 2,445
February	NA	898	R 140	R 1,038	3	19	36	58	R 1,096	433	R 817	R 2,346
March	NA	589	R 105	R 693	3	27	39	70	R 763	390	698	R 1,852
April	NA	351	R 73	R 424	3	31	38	72	R 496	321	R 577	R 1,395
May	NA	223	R 56	R 279	3	34	39	77	R 356	346	R 655	R 1,357
June	NA	133	R 39	R 172	3	35	38	76	R 248	453	R 863	1,564
July	NA	116	R 32	R 148	3	35	39	78	R 225	530	R 982	1,737
August	NA	109	R 30	R 139	3	33	39	76	R 215	541	R 999	1,755
September	NA	120	R 42	R 162	3	29	38	71	R 233	450	R 774	R 1,456
October	NA	198	R 64	R 262	3	26	39	68	R 330	357	R 627	R 1,314
November	NA	490	R 94	R 584	3	22	38	64	R 648	345	R 648	R 1,640
December	NA	688	R 117	R 805	3	19	39	62	R 867	403	R 758	R 2,028
Total	**NA**	R **4,825**	R **928**	R **5,752**	**40**	**329**	**464**	**832**	R **6,585**	**5,038**	R **9,262**	R **20,884**
2022 January	NA	1,003	158	1,161	3	22	41	66	1,227	480	944	2,651

[a] See "Primary Energy Consumption" in Glossary.

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

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

[d] Distributed (small-scale) solar photovoltaic (PV) electricity generation in the residential sector and distributed solar thermal energy in the residential, commercial, and industrial sectors. See Tables 10.2a and 10.5.

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

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

R=Revised. NA=Not available.

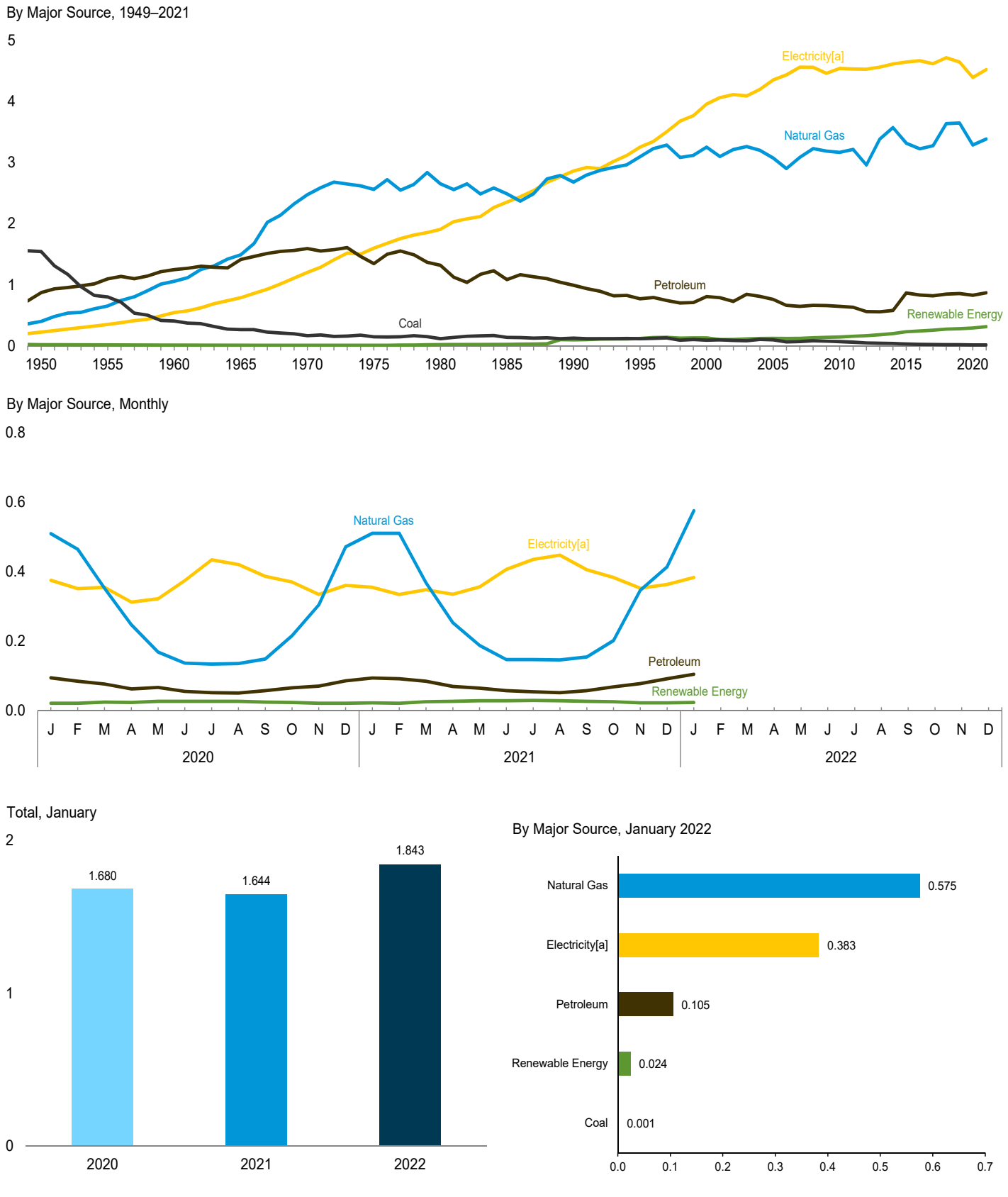
Notes: • Data are estimates, except for electricity retail sales. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states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

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

Source: Table 2.3.

Table 2.3 Commercial Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]													
	Fossil Fuels				Renewable Energy[b]									
	Coal	Natural Gas[c]	Petroleum[d]	Total	Hydroelectric Power[e]	Geothermal	Solar[f]	Wind	Biomass	Total	Total Primary	Electricity Retail Sales[g]	Electrical System Energy Losses[h]	Total
1950 Total	**1,542**	**401**	**872**	**2,815**	**NA**	**NA**	**NA**	**NA**	**19**	**19**	**2,834**	**225**	**834**	**3,893**
1955 Total	**801**	**651**	**1,095**	**2,547**	**NA**	**NA**	**NA**	**NA**	**15**	**15**	**2,561**	**350**	**984**	**3,895**
1960 Total	**407**	**1,056**	**1,248**	**2,711**	**NA**	**NA**	**NA**	**NA**	**12**	**12**	**2,723**	**543**	**1,344**	**4,610**
1965 Total	**265**	**1,490**	**1,413**	**3,168**	**NA**	**NA**	**NA**	**NA**	**9**	**9**	**3,177**	**789**	**1,880**	**5,846**
1970 Total	**165**	**2,473**	**1,592**	**4,229**	**NA**	**NA**	**NA**	**NA**	**8**	**8**	**4,237**	**1,201**	**2,908**	**8,346**
1975 Total	**147**	**2,558**	**1,346**	**4,051**	**NA**	**NA**	**NA**	**NA**	**8**	**8**	**4,059**	**1,598**	**3,835**	**9,493**
1980 Total	**115**	**2,651**	**1,318**	**4,084**	**NA**	**NA**	**NA**	**NA**	**21**	**21**	**4,105**	**1,906**	**4,567**	**10,578**
1985 Total	**137**	**2,488**	**1,083**	**3,708**	**NA**	**NA**	**NA**	**NA**	**24**	**24**	**3,732**	**2,351**	**5,368**	**11,451**
1990 Total	**124**	**2,680**	**991**	**3,795**	**1**	**3**	**(s)**	**–**	**94**	**98**	**3,894**	**2,860**	**6,564**	**13,317**
1995 Total	**117**	**3,096**	**769**	**3,982**	**1**	**5**	**(s)**	**–**	**113**	**119**	**4,101**	**3,252**	**7,337**	**14,690**
2000 Total	**92**	**3,252**	**807**	**4,150**	**1**	**8**	**1**	**–**	**119**	**128**	**4,278**	**3,956**	**8,942**	**17,176**
2005 Total	**97**	**3,073**	**761**	**3,931**	**1**	**14**	**2**	**–**	**105**	**122**	**4,053**	**4,351**	**9,451**	**17,854**
2006 Total	**65**	**2,902**	**661**	**3,627**	**1**	**14**	**3**	**–**	**103**	**120**	**3,748**	**4,435**	**9,525**	**17,708**
2007 Total	**70**	**3,085**	**646**	**3,801**	**1**	**14**	**4**	**–**	**103**	**122**	**3,923**	**4,560**	**9,771**	**18,253**
2008 Total	**81**	**3,228**	**660**	**3,970**	**1**	**15**	**6**	**–**	**109**	**131**	**4,101**	**4,559**	**9,743**	**18,403**
2009 Total	**73**	**3,187**	**659**	**3,919**	**1**	**17**	**9**	**(s)**	**112**	**138**	**4,057**	**4,459**	**9,373**	**17,888**
2010 Total	**70**	**3,165**	**647**	**3,881**	**1**	**19**	**13**	**(s)**	**111**	**143**	**4,024**	**4,539**	**9,497**	**18,060**
2011 Total	**62**	**3,216**	**632**	**3,910**	**(s)**	**20**	**22**	**(s)**	**115**	**157**	**4,067**	**4,531**	**9,385**	**17,983**
2012 Total	**44**	**2,960**	**560**	**3,563**	**(s)**	**20**	**36**	**1**	**108**	**165**	**3,728**	**4,528**	**9,168**	**17,424**
2013 Total	**41**	**3,380**	**558**	**3,979**	**(s)**	**20**	**42**	**1**	**120**	**182**	**4,162**	**4,562**	**9,206**	**17,930**
2014 Total	**40**	**3,572**	**578**	**4,190**	**(s)**	**20**	**52**	**1**	**127**	**200**	**4,390**	**4,614**	**9,261**	**18,265**
2015 Total	**31**	**3,316**	**864**	**4,211**	**(s)**	**20**	**57**	**1**	**152**	**230**	**4,441**	**4,643**	**9,073**	**18,157**
2016 Total	**24**	**3,224**	**832**	**4,079**	**2**	**20**	**62**	**1**	**158**	**242**	**4,321**	**4,665**	**9,044**	**18,030**
2017 Total	**21**	**3,273**	**820**	**4,113**	**2**	**20**	**76**	**1**	**156**	**255**	**4,368**	**4,616**	**8,916**	**17,900**
2018 Total	**19**	**3,638**	**845**	**4,502**	**2**	**20**	**94**	**2**	**156**	**274**	**4,776**	**4,715**	**8,949**	**18,440**
2019 Total	**17**	**3,647**	**857**	**4,521**	**2**	**24**	**103**	**2**	**149**	**279**	**4,800**	**4,643**	**8,570**	**18,013**
2020 January	2	509	R 95	R 605	(s)	2	7	(s)	13	22	R 627	375	678	R 1,680
February	2	464	R 85	R 551	(s)	2	8	(s)	12	22	R 573	351	633	R 1,557
March	2	352	R 77	R 430	(s)	2	10	(s)	12	25	R 455	355	626	R 1,436
April	1	247	R 63	R 311	(s)	2	11	(s)	11	24	R 335	312	548	R 1,194
May	1	169	R 67	R 236	(s)	2	12	(s)	12	27	R 263	322	608	R 1,193
June	1	137	R 56	R 194	(s)	2	12	(s)	12	27	R 220	374	699	R 1,294
July	1	134	R 52	R 187	(s)	2	12	(s)	13	27	R 214	434	793	R 1,441
August	1	136	R 51	R 188	(s)	2	12	(s)	13	27	R 215	420	769	R 1,403
September	1	149	R 58	R 208	(s)	2	11	(s)	12	25	R 233	386	655	R 1,274
October	1	216	R 66	R 283	(s)	2	9	(s)	12	24	R 307	370	648	R 1,325
November	1	304	R 71	R 377	(s)	2	7	(s)	12	22	R 398	334	614	R 1,346
December	2	471	R 86	R 558	(s)	2	7	(s)	12	22	R 580	360	663	R 1,603
Total	**15**	**3,286**	**R 827**	**R 4,127**	**2**	**24**	**118**	**1**	**147**	**292**	**R 4,419**	**4,393**	**7,937**	**R 16,749**
2021 January	2	510	R 94	R 605	(s)	2	8	(s)	12	23	R 628	355	660	R 1,644
February	2	510	R 92	R 604	(s)	2	8	(s)	11	22	R 626	334	R 631	R 1,591
March	1	368	R 85	R 454	NM	2	12	(s)	12	26	R 481	348	623	R 1,452
April	1	253	R 70	R 324	(s)	2	13	(s)	12	27	R 351	335	R 602	R 1,288
May	1	188	R 65	R 254	NM	2	14	(s)	12	29	R 283	356	R 674	R 1,313
June	1	147	R 58	R 206	NM	2	14	(s)	12	29	R 235	406	R 772	R 1,413
July	1	147	R 55	R 202	NM	2	15	(s)	13	30	R 232	435	R 805	R 1,472
August	1	146	R 52	R 199	NM	2	14	(s)	13	29	R 228	447	R 825	R 1,500
September	1	155	R 58	R 214	(s)	2	13	(s)	12	27	R 241	405	R 697	R 1,343
October	1	202	R 69	R 272	NM	2	11	(s)	12	26	R 297	383	R 673	R 1,353
November	R 1	R 346	R 78	R 425	NM	2	9	(s)	12	23	R 449	352	662	R 1,463
December	1	414	R 92	R 507	(s)	2	8	(s)	13	23	R 530	363	R 683	R 1,576
Total	**15**	**R 3,384**	**R 869**	**R 4,267**	**2**	**24**	**138**	**1**	**147**	**313**	**R 4,580**	**4,520**	**R 8,310**	**R 17,410**
2022 January	1	575	105	682	(s)	2	9	(s)	13	24	706	383	754	1,843

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

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

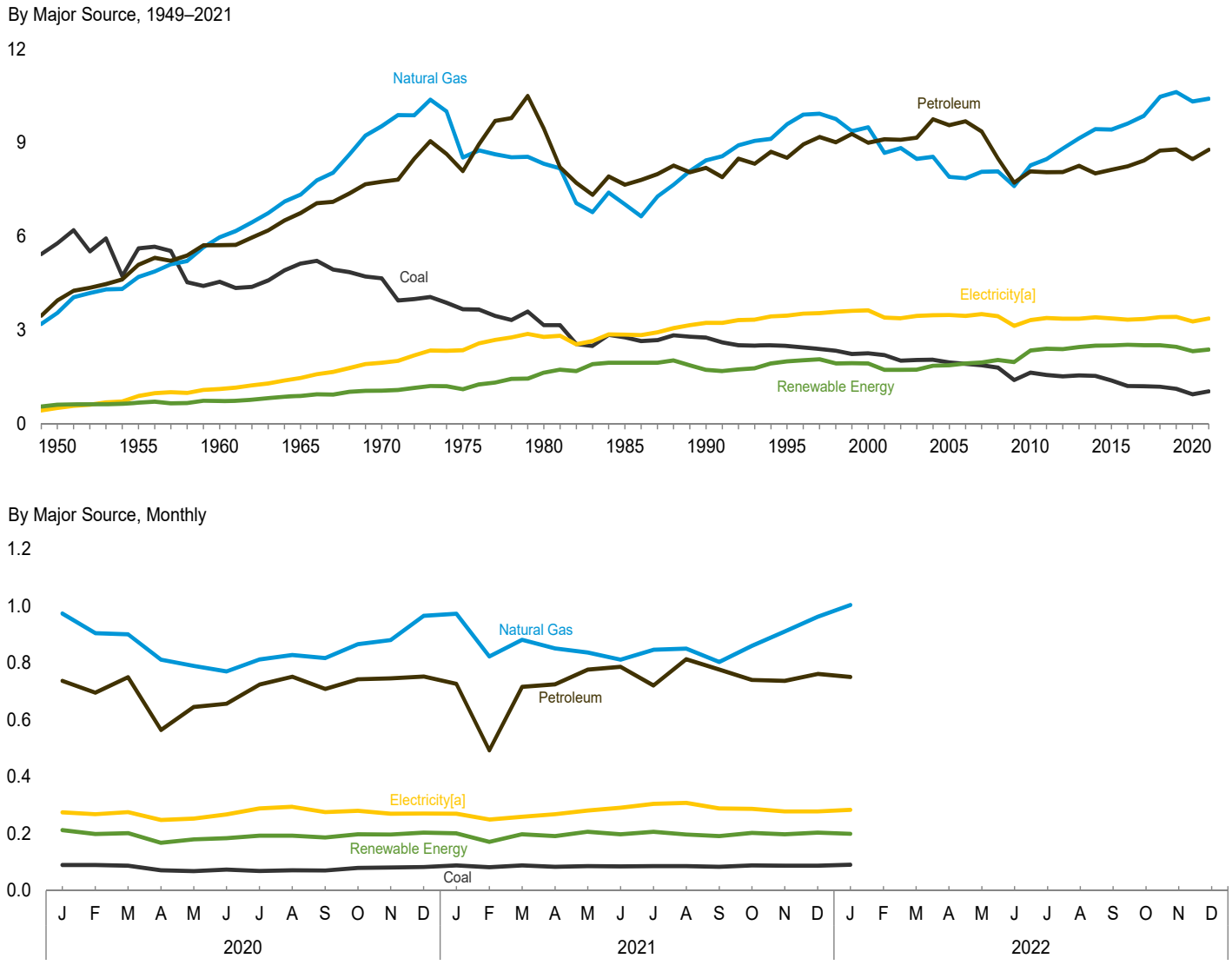
Notes: • Data are estimates, except for coal totals beginning in 2008; hydroelectric power; solar; wind; and electricity retail sales beginning in 1979. • The commercial sector includes commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power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

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

Source: Table 2.4.

Table 2.4 Industrial Sector Energy Consumption

(Trillion Btu)

	Primary Consumption[a]													
	Fossil Fuels[b]				Renewable Energy[c]									
	Coal	Natural Gas[d]	Petroleum[e]	Total[f]	Hydroelectric Power[g]	Geothermal	Solar[h]	Wind	Biomass	Total	Total Primary	Electricity Retail Sales[i]	Electrical System Energy Losses[j]	Total[f]
1950 Total	**5,781**	**3,546**	**3,943**	**13,271**	**69**	**NA**	**NA**	**NA**	**532**	**602**	**13,872**	**500**	**1,852**	**16,224**
1955 Total	**5,620**	**4,701**	**5,093**	**15,404**	**38**	**NA**	**NA**	**NA**	**631**	**669**	**16,073**	**887**	**2,495**	**19,455**
1960 Total	**4,543**	**5,973**	**5,720**	**16,231**	**39**	**NA**	**NA**	**NA**	**680**	**719**	**16,949**	**1,107**	**2,739**	**20,795**
1965 Total	**5,127**	**7,339**	**6,750**	**19,197**	**33**	**NA**	**NA**	**NA**	**855**	**888**	**20,085**	**1,463**	**3,487**	**25,035**
1970 Total	**4,656**	**9,536**	**7,754**	**21,888**	**34**	**NA**	**NA**	**NA**	**1,019**	**1,053**	**22,941**	**1,948**	**4,716**	**29,605**
1975 Total	**3,667**	**8,532**	**8,092**	**20,304**	**32**	**NA**	**NA**	**NA**	**1,063**	**1,096**	**21,400**	**2,346**	**5,632**	**29,379**
1980 Total	**3,155**	**8,333**	**9,463**	**20,916**	**33**	**NA**	**NA**	**NA**	**1,600**	**1,633**	**22,549**	**2,781**	**6,664**	**31,993**
1985 Total	**2,760**	**7,032**	**7,655**	**17,433**	**33**	**NA**	**NA**	**NA**	**1,918**	**1,951**	**19,384**	**2,855**	**6,518**	**28,757**
1990 Total	**2,756**	**8,443**	**8,200**	**19,403**	**31**	**2**	**(s)**	**–**	**1,684**	**1,717**	**21,121**	**3,226**	**7,404**	**31,750**
1995 Total	**2,488**	**9,592**	**8,525**	**20,666**	**55**	**3**	**(s)**	**–**	**1,934**	**1,992**	**22,658**	**3,455**	**7,796**	**33,910**
2000 Total	**2,256**	**9,500**	**8,999**	**20,821**	**42**	**4**	**(s)**	**–**	**1,881**	**1,928**	**22,749**	**3,631**	**8,208**	**34,589**
2005 Total	**1,954**	**7,907**	**9,567**	**19,472**	**32**	**4**	**(s)**	**–**	**1,834**	**1,871**	**21,343**	**3,477**	**7,554**	**32,374**
2006 Total	**1,914**	**7,861**	**9,693**	**19,529**	**29**	**4**	**1**	**–**	**1,892**	**1,926**	**21,455**	**3,451**	**7,411**	**32,317**
2007 Total	**1,865**	**8,074**	**9,363**	**19,326**	**16**	**5**	**1**	**–**	**1,937**	**1,958**	**21,284**	**3,507**	**7,515**	**32,306**
2008 Total	**1,793**	**8,083**	**8,502**	**18,420**	**17**	**5**	**1**	**–**	**2,012**	**2,035**	**20,455**	**3,444**	**7,362**	**31,261**
2009 Total	**1,392**	**7,609**	**7,720**	**16,698**	**18**	**4**	**2**	**–**	**1,948**	**1,973**	**18,670**	**3,130**	**6,580**	**28,380**
2010 Total	**1,631**	**8,278**	**R 8,083**	**R 17,986**	**16**	**4**	**3**	**–**	**2,320**	**2,344**	**R 20,330**	**3,314**	**6,934**	**R 30,577**
2011 Total	**1,561**	**8,481**	**R 8,055**	**R 18,107**	**17**	**4**	**5**	**(s)**	**2,375**	**2,401**	**R 20,509**	**3,382**	**7,005**	**R 30,896**
2012 Total	**1,513**	**8,819**	**R 8,066**	**R 18,401**	**22**	**4**	**8**	**(s)**	**2,349**	**2,383**	**R 20,785**	**3,363**	**6,810**	**R 30,958**
2013 Total	**1,546**	**9,140**	**R 8,261**	**R 18,931**	**33**	**4**	**9**	**(s)**	**2,407**	**2,454**	**R 21,384**	**3,362**	**6,785**	**R 31,531**
2014 Total	**1,530**	**9,441**	**R 8,022**	**R 18,972**	**12**	**4**	**11**	**1**	**2,466**	**2,494**	**R 21,466**	**3,404**	**6,832**	**R 31,702**
2015 Total	**1,380**	**9,426**	**R 8,137**	**18,925**	**13**	**4**	**14**	**(s)**	**2,474**	**2,506**	**21,431**	**3,366**	**6,578**	**31,375**
2016 Total	**1,205**	**9,617**	**R 8,246**	**R 19,049**	**12**	**4**	**19**	**1**	**2,487**	**2,523**	**R 21,572**	**3,333**	**6,461**	**R 31,366**
2017 Total	**1,195**	**9,864**	**R 8,431**	**R 19,461**	**13**	**4**	**22**	**1**	**2,475**	**2,515**	**R 21,976**	**3,358**	**6,487**	**R 31,821**
2018 Total	**1,180**	**10,474**	**R 8,751**	**R 20,378**	**10**	**4**	**24**	**1**	**2,471**	**2,511**	**R 22,890**	**3,414**	**6,481**	**R 32,785**
2019 Total	**1,117**	**10,630**	**R 8,788**	**R 20,515**	**9**	**4**	**28**	**1**	**2,416**	**2,459**	**R 22,973**	**3,420**	**6,312**	**R 32,706**
2020 January	90	974	R 737	R 1,799	1	(s)	2	(s)	210	213	R 2,012	275	498	R 2,785
February	90	905	R 696	R 1,689	1	(s)	2	(s)	196	199	R 1,887	269	485	R 2,641
March	88	901	R 750	R 1,738	1	(s)	3	(s)	198	202	R 1,940	276	487	R 2,703
April	72	812	R 565	R 1,448	1	(s)	3	(s)	164	168	R 1,616	248	436	R 2,300
May	68	790	R 646	R 1,504	1	(s)	3	(s)	176	180	R 1,684	253	479	2,416
June	74	771	657	1,501	1	(s)	3	1	180	184	R 1,686	268	501	2,454
July	69	813	724	1,606	1	(s)	3	1	188	193	1,799	289	529	2,617
August	72	828	752	1,652	1	(s)	3	(s)	189	193	1,845	295	539	2,679
September	71	818	R 709	1,597	(s)	(s)	3	1	183	187	1,784	276	469	2,529
October	80	866	R 743	R 1,688	(s)	(s)	3	1	193	198	R 1,885	281	492	R 2,658
November	81	881	R 746	R 1,707	1	(s)	2	1	193	197	R 1,904	270	496	R 2,670
December	83	966	R 753	R 1,801	1	(s)	2	1	200	204	R 2,005	271	500	R 2,776
Total	**938**	**10,324**	**R 8,480**	**R 19,729**	**9**	**4**	**31**	**5**	**2,269**	**2,319**	**R 22,049**	**3,272**	**5,913**	**R 31,234**
2021 January	89	973	R 727	R 1,785	1	(s)	2	1	197	201	R 1,987	270	R 502	R 2,758
February	82	823	R 493	R 1,396	1	(s)	2	1	168	171	R 1,567	250	470	R 2,287
March	89	882	R 716	R 1,687	1	(s)	3	1	193	198	R 1,884	260	R 466	R 2,610
April	84	852	R 725	R 1,657	1	(s)	3	1	187	192	R 1,849	269	482	R 2,600
May	86	837	777	R 1,697	1	(s)	4	1	202	207	R 1,904	282	533	R 2,720
June	85	812	787	R 1,678	1	(s)	4	1	193	198	R 1,876	291	R 554	R 2,721
July	86	R 847	721	R 1,651	1	(s)	4	(s)	202	207	R 1,858	305	R 565	R 2,728
August	86	R 851	814	R 1,746	1	(s)	4	1	192	197	R 1,942	308	R 568	R 2,818
September	R 84	R 804	777	1,660	1	(s)	3	(s)	188	192	1,852	289	R 498	R 2,639
October	89	861	R 741	R 1,688	1	(s)	3	1	198	203	R 1,890	287	R 504	R 2,681
November	R 88	R 911	R 737	R 1,731	1	(s)	2	1	194	198	R 1,930	278	R 523	R 2,730
December	R 88	963	R 762	1,806	1	(s)	2	1	199	204	2,009	278	R 524	R 2,812
Total	**R 1,036**	**R 10,415**	**R 8,777**	**R 20,180**	**8**	**4**	**35**	**9**	**2,313**	**2,369**	**R 22,549**	**3,367**	**R 6,190**	**R 32,106**
2022 January	91	1,004	751	1,840	1	(s)	2	(s)	197	200	2,040	284	559	2,884

[a] See "Primary Energy Consumption" in Glossary.
[b] Includes non-combustion use of fossil fuels.
[c] See Table 10.2b for notes on series components and estimation.
[d] Natural gas only; excludes the estimated portion of supplemental gaseous fuels. See Note 3, "Supplemental Gaseous Fuels," at end of Section 4.
[e] Does not include biofuels that have been blended with petroleum—biofuels are included in "Biomass."
[f] Includes coal coke net imports, which are not separately displayed. See Tables 1.4a and 1.4b.
[g] Conventional hydroelectric power.
[h] Solar photovoltaic (PV) electricity net generation in the industrial sector, both utility-scale and distributed (small-scale). See Tables 10.2b and 10.5.
[i] Electricity retail sales to ultimate customers reported by electric utilities and, beginning in 1996, other energy service providers.
[j] Total losses are calculated as the primary energy consumed by the electric power sector minus the energy content of electricity retail sales. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Note 1, "Electrical System Energy Losses," at end of section.

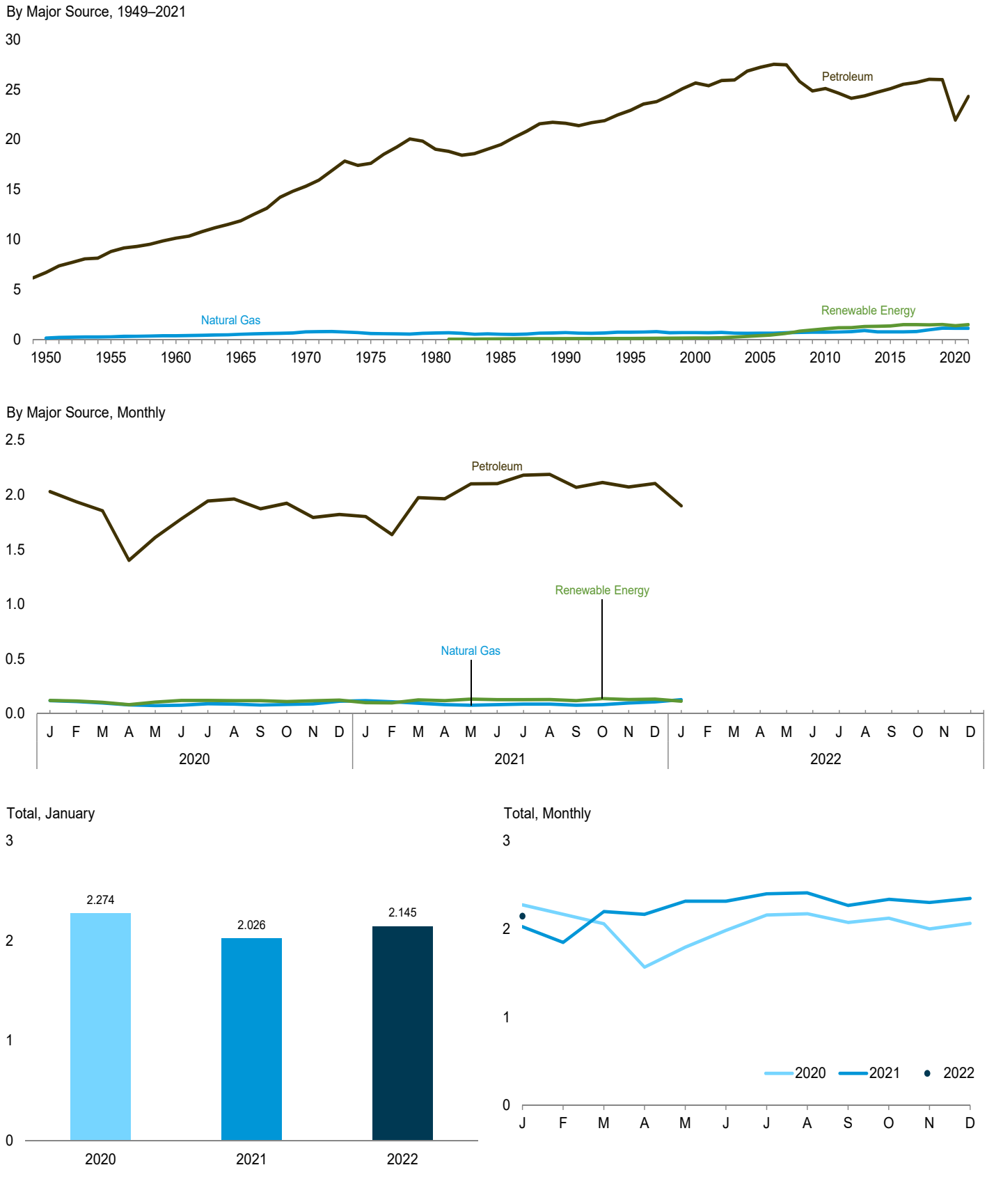
R=Revised. NA=Not available. – =No data reported. (s)=Less than 0.5 trillion Btu.

Notes: • Data are estimates, except for coal totals; hydroelectric power in 1949–1978 and 1989 forward; solar; wind; and electricity retail sales. • The industrial sector includes industrial combined-heat-and-power (CHP) and industrial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7. • See Note 2, "Oher 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)

	Primary Consumption[a]						Electricity Retail Sales[e]	Electrical System Energy Losses[f]	Total
	Fossil Fuels				Renewable Energy[b]	Total Primary			
	Coal	Natural Gas[c]	Petroleum[d]	Total	Biomass				
1950 Total	**1,564**	**130**	**6,690**	**8,383**	**NA**	**8,383**	**23**	**86**	**8,492**
1955 Total	**421**	**254**	**8,799**	**9,474**	**NA**	**9,474**	**20**	**56**	**9,550**
1960 Total	**75**	**359**	**10,125**	**10,560**	**NA**	**10,560**	**10**	**26**	**10,596**
1965 Total	**16**	**517**	**11,866**	**12,399**	**NA**	**12,399**	**10**	**24**	**12,432**
1970 Total	**7**	**745**	**15,311**	**16,062**	**NA**	**16,062**	**11**	**26**	**16,098**
1975 Total	**1**	**595**	**17,615**	**18,211**	**NA**	**18,211**	**10**	**24**	**18,245**
1980 Total	**(g)**	**650**	**19,009**	**19,659**	**NA**	**19,659**	**11**	**27**	**19,697**
1985 Total	**(g)**	**519**	**19,472**	**19,992**	**50**	**20,042**	**14**	**32**	**20,088**
1990 Total	**(g)**	**679**	**21,626**	**22,305**	**60**	**22,366**	**16**	**37**	**22,419**
1995 Total	**(g)**	**724**	**22,920**	**23,644**	**112**	**23,757**	**17**	**38**	**23,812**
2000 Total	**(g)**	**672**	**25,649**	**26,321**	**135**	**26,456**	**18**	**42**	**26,515**
2005 Total	**(g)**	**624**	**27,217**	**27,840**	**339**	**28,179**	**26**	**56**	**28,261**
2006 Total	**(g)**	**625**	**27,518**	**28,143**	**475**	**28,618**	**25**	**54**	**28,697**
2007 Total	**(g)**	**663**	**27,462**	**28,126**	**602**	**28,727**	**28**	**60**	**28,815**
2008 Total	**(g)**	**692**	**25,823**	**26,515**	**825**	**27,339**	**26**	**56**	**27,421**
2009 Total	**(g)**	**715**	**24,860**	**25,575**	**935**	**26,510**	**27**	**56**	**26,592**
2010 Total	**(g)**	**719**	**R 25,100**	**R 25,819**	**1,075**	**R 26,894**	**26**	**55**	**R 26,975**
2011 Total	**(g)**	**734**	**R 24,623**	**R 25,357**	**1,166**	**R 26,523**	**26**	**54**	**R 26,603**
2012 Total	**(g)**	**780**	**R 24,108**	**R 24,888**	**1,169**	**R 26,057**	**25**	**51**	**R 26,132**
2013 Total	**(g)**	**887**	**R 24,360**	**R 25,247**	**1,292**	**R 26,540**	**26**	**53**	**R 26,618**
2014 Total	**(g)**	**760**	**R 24,726**	**R 25,486**	**1,314**	**R 26,800**	**26**	**53**	**R 26,880**
2015 Total	**(g)**	**745**	**25,083**	**25,828**	**1,351**	**27,179**	**26**	**51**	**27,256**
2016 Total	**(g)**	**757**	**R 25,512**	**R 26,269**	**1,469**	**R 27,738**	**26**	**50**	**R 27,813**
2017 Total	**(g)**	**799**	**R 25,704**	**R 26,502**	**1,474**	**R 27,976**	**26**	**50**	**R 28,051**
2018 Total	**(g)**	**962**	**R 26,014**	**R 26,976**	**1,456**	**R 28,432**	**26**	**50**	**R 28,507**
2019 Total	**(g)**	**1,114**	**R 25,988**	**R 27,102**	**1,497**	**R 28,599**	**26**	**48**	**R 28,673**
2020 January	(g)	119	2,029	2,148	120	2,268	2	4	2,274
February	(g)	110	1,936	R 2,045	115	2,160	2	4	2,166
March	(g)	97	1,854	1,951	103	R 2,054	2	4	2,060
April	(g)	80	1,401	R 1,481	81	1,563	2	3	1,567
May	(g)	74	1,610	1,685	105	1,789	2	3	1,794
June	(g)	77	1,782	1,859	121	R 1,980	2	3	1,985
July	(g)	90	1,944	2,033	121	2,154	2	3	R 2,159
August	(g)	86	1,962	2,049	119	2,167	2	3	2,172
September	(g)	78	R 1,872	1,951	119	2,070	2	3	2,075
October	(g)	84	R 1,923	2,007	111	R 2,118	2	3	R 2,123
November	(g)	88	1,793	R 1,880	117	1,997	2	3	2,002
December	(g)	114	1,820	1,934	124	2,058	2	4	2,064
Total	**(g)**	**1,097**	**R 21,926**	**R 23,024**	**1,355**	**R 24,379**	**22**	**40**	**R 24,442**
2021 January	(g)	118	1,802	1,920	101	2,021	2	4	R 2,026
February	(g)	109	1,636	1,745	98	1,843	2	4	1,848
March	(g)	95	1,973	2,067	125	2,193	2	3	2,198
April	(g)	81	1,963	2,044	118	2,162	2	3	2,167
May	(g)	77	R 2,101	2,178	133	2,311	2	3	2,316
June	(g)	81	2,102	2,183	127	2,310	2	3	2,315
July	(g)	87	2,180	2,266	128	2,394	2	4	2,400
August	(g)	87	2,187	2,275	129	2,404	2	4	2,410
September	(g)	77	2,068	2,145	119	R 2,263	2	3	R 2,268
October	(g)	82	R 2,112	2,194	138	R 2,331	2	3	R 2,336
November	(g)	96	2,071	2,167	129	2,296	2	3	2,301
December	(g)	107	2,104	2,211	132	2,343	2	3	2,348
Total	**(g)**	**1,095**	**R 24,299**	**R 25,395**	**1,477**	**R 26,871**	**22**	**40**	**R 26,933**
2022 January	(g)	128	1,899	2,027	113	2,140	2	4	2,145

[a] See "Primary Energy Consumption" in Glossary.

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

[c] Natural gas only; does not include supplemental gaseous fuels—see Note 3, "Supplemental Gaseous Fuels," at end of Section 4. Data are for natural gas consumed in the operation of pipelines (primarily in compressors) and small amounts consumed as vehicle fuel—see Table 4.3.

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

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

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

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

R=Revised. NA=Not available.

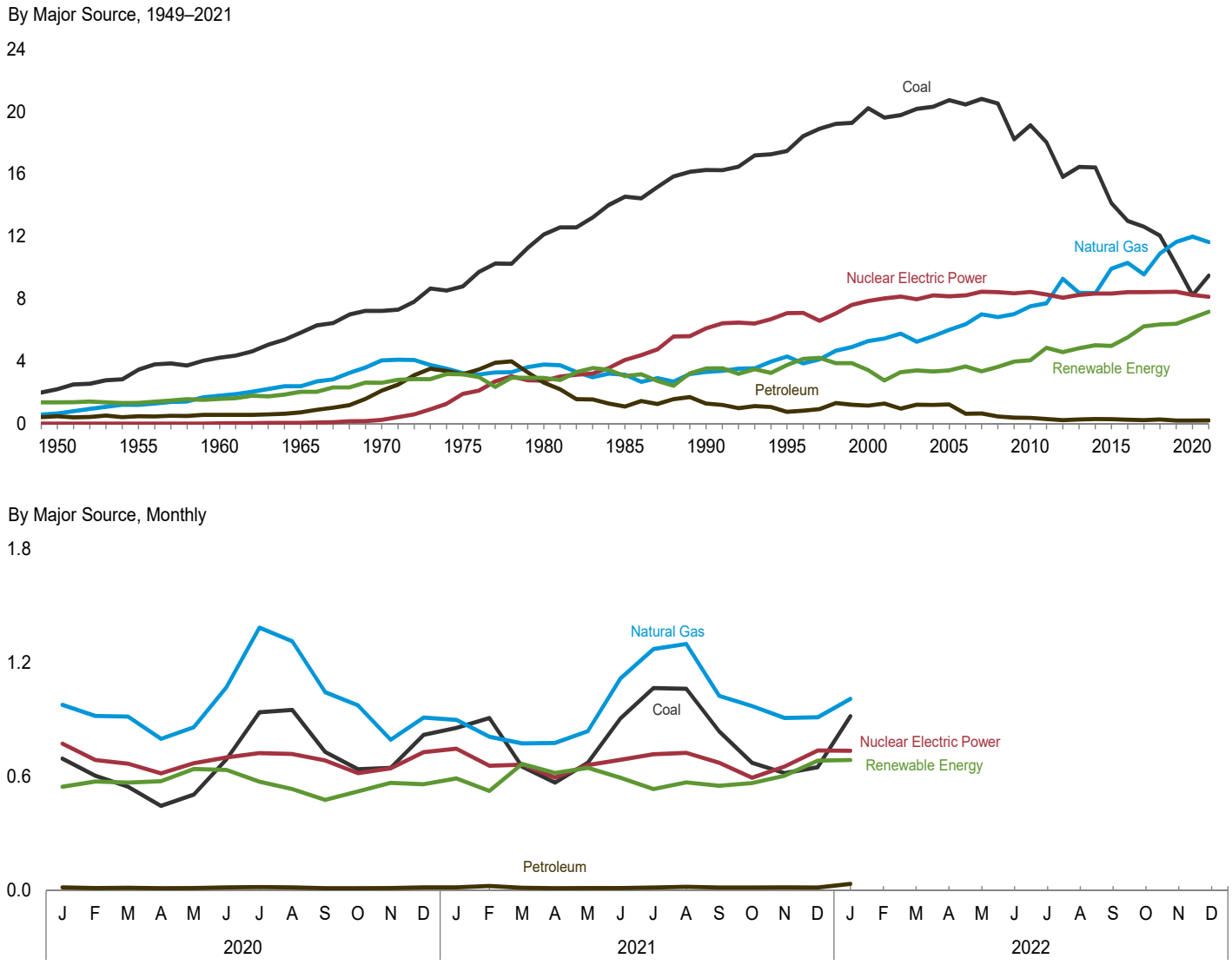
Notes: • Data are estimates, except for coal totals through 1977; and electricity retail sales beginning in 1979. • See Note 2, "Oher Energy Losses," at end of section. • See Note 3, "Energy Consumption Data and Surveys," at end of section. • Totals may not equal sum of components due to independent 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				Nuclear Electric Power	Renewable Energy[b]						Electricity Net Imports[f]	Total Primary
	Coal	Natural Gas[c]	Petroleum	Total		Hydroelectric Power[d]	Geothermal	Solar[e]	Wind	Biomass	Total		
1950 Total	**2,199**	**651**	**472**	**3,322**	**0**	**1,346**	**NA**	**NA**	**NA**	**5**	**1,351**	**6**	**4,679**
1955 Total	**3,458**	**1,194**	**471**	**5,123**	**0**	**1,322**	**NA**	**NA**	**NA**	**3**	**1,325**	**14**	**6,461**
1960 Total	**4,228**	**1,785**	**553**	**6,565**	**6**	**1,569**	**(s)**	**NA**	**NA**	**2**	**1,571**	**15**	**8,158**
1965 Total	**5,821**	**2,395**	**722**	**8,938**	**43**	**2,026**	**2**	**NA**	**NA**	**3**	**2,031**	**(s)**	**11,012**
1970 Total	**7,227**	**4,054**	**2,117**	**13,399**	**239**	**2,600**	**6**	**NA**	**NA**	**4**	**2,609**	**7**	**16,253**
1975 Total	**8,786**	**3,240**	**3,166**	**15,191**	**1,900**	**3,122**	**34**	**NA**	**NA**	**2**	**3,158**	**21**	**20,270**
1980 Total	**12,123**	**3,778**	**2,634**	**18,534**	**2,739**	**2,867**	**53**	**NA**	**NA**	**4**	**2,925**	**71**	**24,269**
1985 Total	**14,542**	**3,135**	**1,090**	**18,767**	**4,076**	**2,937**	**97**	**(s)**	**(s)**	**14**	**3,049**	**140**	**26,032**
1990 Total	**16,261**	**3,309**	**1,289**	**20,859**	**6,104**	**3,014**	**161**	**4**	**29**	**317**	**3,524**	**8**	**[g]30,495**
1995 Total	**17,466**	**4,302**	**755**	**22,523**	**7,075**	**3,149**	**138**	**5**	**33**	**422**	**3,747**	**134**	**33,479**
2000 Total	**20,220**	**5,293**	**1,144**	**26,658**	**7,862**	**2,768**	**144**	**5**	**57**	**453**	**3,427**	**115**	**38,062**
2005 Total	**20,737**	**6,015**	**1,222**	**27,974**	**8,161**	**2,670**	**147**	**6**	**178**	**406**	**3,406**	**85**	**39,626**
2006 Total	**20,462**	**6,375**	**637**	**27,474**	**8,215**	**2,839**	**145**	**5**	**264**	**412**	**3,665**	**63**	**39,417**
2007 Total	**20,808**	**7,005**	**648**	**28,461**	**8,459**	**2,430**	**145**	**6**	**341**	**423**	**3,345**	**107**	**40,371**
2008 Total	**20,513**	**6,829**	**459**	**27,801**	**8,426**	**2,494**	**146**	**9**	**546**	**435**	**3,630**	**112**	**39,969**
2009 Total	**18,225**	**7,022**	**382**	**25,630**	**8,355**	**2,650**	**146**	**9**	**721**	**441**	**3,967**	**116**	**38,069**
2010 Total	**19,133**	**7,528**	**370**	**27,031**	**8,434**	**2,521**	**148**	**12**	**923**	**459**	**4,064**	**89**	**39,619**
2011 Total	**18,035**	**7,712**	**295**	**26,042**	**8,269**	**3,085**	**149**	**17**	**1,167**	**437**	**4,855**	**127**	**39,293**
2012 Total	**15,821**	**9,287**	**214**	**25,322**	**8,062**	**2,606**	**148**	**40**	**1,339**	**453**	**4,586**	**161**	**38,131**
2013 Total	**16,451**	**8,376**	**255**	**25,082**	**8,244**	**2,529**	**151**	**83**	**1,600**	**470**	**4,833**	**197**	**38,357**
2014 Total	**16,427**	**8,362**	**295**	**25,085**	**8,338**	**2,454**	**151**	**165**	**1,726**	**530**	**5,026**	**182**	**38,629**
2015 Total	**14,138**	**9,926**	**276**	**24,341**	**8,337**	**2,308**	**148**	**228**	**1,776**	**525**	**4,985**	**227**	**37,890**
2016 Total	**12,996**	**10,301**	**244**	**23,542**	**8,427**	**2,459**	**146**	**328**	**2,094**	**505**	**5,531**	**227**	**37,727**
2017 Total	**12,622**	**9,555**	**218**	**22,395**	**8,419**	**2,752**	**147**	**486**	**2,341**	**510**	**6,235**	**192**	**37,241**
2018 Total	**12,053**	**10,912**	**260**	**23,225**	**8,438**	**2,651**	**145**	**576**	**2,480**	**496**	**6,348**	**152**	**38,163**
2019 Total	**10,181**	**11,647**	**189**	**22,017**	**8,452**	**2,553**	**134**	**635**	**2,632**	**448**	**6,402**	**133**	**37,003**
2020 January	696	979	17	1,691	775	214	10	39	246	39	548	11	3,025
February	606	921	14	1,541	689	226	10	48	255	37	576	10	2,816
March	548	918	15	1,481	669	208	12	55	257	37	570	13	2,732
April	447	801	13	1,261	618	202	12	69	261	33	577	11	2,467
May	506	862	14	1,383	672	262	12	84	249	34	641	13	2,709
June	692	1,073	18	1,782	702	245	11	84	264	33	637	13	3,134
July	941	1,387	19	2,346	725	234	11	92	200	36	574	19	3,664
August	953	1,315	18	2,286	721	204	11	81	201	38	536	20	3,562
September	731	1,047	13	1,790	687	163	11	67	203	34	478	13	2,968
October	640	977	13	1,629	620	164	11	62	252	34	523	13	2,785
November	648	796	14	1,458	645	183	12	50	290	35	569	12	2,683
December	822	913	18	1,752	730	188	12	44	280	37	561	15	3,058
Total	**8,229**	**11,989**	**184**	**20,403**	**8,251**	**2,492**	**135**	**777**	**2,958**	**428**	**6,789**	**161**	**35,605**
2021 January	[R] 858	900	17	[R] 1,776	749	225	12	50	266	38	591	14	[R] 3,130
February	[R] 910	812	25	[R] 1,747	658	189	11	56	235	35	526	10	[R] 2,940
March	[R] 654	776	15	[R] 1,445	665	188	11	81	350	38	668	13	[R] 2,791
April	[R] 570	779	12	[R] 1,362	596	168	11	94	317	32	621	11	[R] 2,591
May	[R] 674	841	14	[R] 1,529	662	199	12	107	294	36	647	13	[R] 2,852
June	[R] 909	1,120	14	[R] 2,043	690	210	12	103	233	37	595	15	[R] 3,344
July	[R] 1,068	1,274	16	[R] 2,358	719	193	12	104	188	38	536	15	[R] 3,628
August	[R] 1,065	1,301	20	[R] 2,385	726	183	12	103	234	39	571	12	[R] 3,694
September	[R] 840	1,027	16	[R] 1,883	674	157	12	97	251	36	552	9	[R] 3,118
October	[R] 674	973	16	[R] 1,663	595	157	11	81	284	35	567	10	[R] 2,835
November	[R] 619	910	17	[R] 1,547	655	179	11	69	315	33	606	4	[R] 2,812
December	[R] 651	914	16	[R] 1,582	739	224	12	55	356	38	685	8	[R] 3,014
Total	**[R] 9,494**	**11,629**	**197**	**[R] 21,320**	**8,129**	**2,272**	**138**	**999**	**3,322**	**435**	**7,166**	**134**	**[R] 36,748**
2022 January	920	1,011	36	1,967	737	236	13	70	335	36	689	16	3,409

[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	21.7	32.1	18.8	10.3	7.1	19.0	10.8	47.1	7.7	29.0	22.4	1,143.2
2009	6.6	874.3	18.6	31.1	18.6	10.8	7.9	16.5	10.2	44.2	4.3	29.9	21.8	1,094.8
2010	6.8	889.9	21.2	31.7	18.8	10.4	7.3	15.7	10.1	43.3	5.7	30.2	21.8	1,112.7
2011	8.3	890.3	20.3	33.1	18.5	10.5	7.3	13.9	10.1	43.0	6.7	30.6	21.4	1,114.1
2012	6.7	828.5	20.1	30.3	16.3	10.0	6.7	15.1	8.9	40.8	5.6	29.7	20.5	1,039.3
2013	7.3	749.5	18.9	28.9	16.4	10.5	6.2	15.3	8.7	41.9	5.3	29.9	20.4	959.3
2014	6.3	730.6	18.5	29.4	17.0	9.5	6.2	15.6	8.3	43.0	5.2	31.4	20.6	941.5
2015	6.2	734.5	17.9	30.1	16.3	9.0	6.8	16.2	8.4	44.0	6.0	30.7	19.8	945.8
2016	6.2	709.2	18.1	28.9	15.8	8.7	6.4	15.6	8.5	43.9	6.0	30.3	19.5	917.2
2017	6.3	707.9	19.2	28.8	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

[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	196.1	17.7	1,143.2
2009	20.3	131.7	.3	166.4	505.7	3.2	48.3	723.9	10.1	191.3	17.7	1,094.8
2010	20.0	130.1	.4	157.8	535.8	2.5	51.3	747.7	3.0	193.7	18.2	1,112.7
2011	18.5	124.7	.9	166.5	533.6	2.0	52.7	755.8	2.7	193.2	19.1	1,114.1
2012	15.9	116.2	.4	148.6	493.5	1.7	50.1	694.4	3.1	187.2	22.5	1,039.3
2013	14.3	122.5	.7	140.0	424.0	1.9	46.6	613.2	2.8	184.7	21.8	959.3
2014	13.5	125.6	.3	133.5	414.3	1.8	44.9	594.8	3.6	182.1	21.9	941.5
2015	12.6	122.2	.3	134.4	418.9	1.8	46.8	602.2	3.7	184.3	20.9	945.8
2016	10.2	115.4	.3	129.7	403.9	1.7	46.5	582.2	3.6	184.5	21.4	917.2
2017	9.1	115.1	.3	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	173.8	20.3	849.0

[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 retail sales (see Tables 7.6 and A6). Most of these losses occur at steam-electric power plants (conventional and nuclear) in the conversion of heat energy into mechanical energy to turn electric generators. The loss is a thermodynamically necessary feature of the steam-electric cycle. Part of the energy input-to-output losses is a result of imputing fossil energy equivalent inputs for hydroelectric, geothermal, solar thermal, photovoltaic, and wind energy sources. In addition to conversion losses, other losses include power plant use of electricity, transmission and distribution of electricity from power plants to end-use consumers (also called "line losses"), and unaccounted-for electricity. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity sales. Overall, about two thirds of total energy input is lost in conversion. Currently, of electricity generated, approximately 5% is lost in plant use and 7% is lost in transmission and distribution.

Note 2. 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 Retail Sales
1949 forward: Residential sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

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

Total Energy Consumption
1949 forward: Residential sector total energy consumption is the sum of the residential sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.3 Sources

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

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

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

Petroleum
1949–1992: Table 3.8a.

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

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

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

Renewable Energy
1949 forward: Table 10.2a.

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

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

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

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

Table 2.4 Sources

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

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

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

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

Petroleum
1949–1992: Table 3.8b.

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

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

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

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

Renewable Energy
1949 forward: Table 10.2b.

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

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

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

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

Table 2.5 Sources

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

Natural Gas

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

Petroleum

1949–1992: Table 3.8c.

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

2009–2011: Transportation sector fuel ethanol (minus denaturant) consumption is equal to total fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption (see 1993–2008 sources above). Transportation sector petroleum (excluding biofuels) consumption is equal to: transportation sector petroleum (including biofuels) consumption from Table 3.8c; minus transportation sector fuel ethanol (minus denaturant) consumption; minus biodiesel consumption, calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and biomass-based diesel fuel data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1); minus 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 "renewable fuels except fuel ethanol" refinery and blender net inputs and products supplied from U.S. Energy Information Administration (EIA), *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 Retail Sales
1949 forward: Transportation sector electricity retail sales from Table 7.6 are converted to Btu by multiplying by the electricity heat content factor in Table A6.

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

Total Energy Consumption
1949 forward: Transportation sector total energy consumption is the sum of the transportation sector consumption values for total primary energy, electricity retail sales, and electrical system energy losses.

Table 2.6 Sources

Coal
1949 forward: Electric power sector coal consumption data from Table 6.2 are converted to Btu by multiplying by the electric power sector coal consumption heat content factors in Table A5.

Natural Gas
1949–1979: Electric power sector natural gas (including supplemental gaseous fuels) consumption data from Table 4.3 are converted to Btu by multiplying by the natural gas electric power sector consumption heat content factors in Table A4.

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

Petroleum
1949 forward: Table 3.8c.

Fossil Fuels Total
1949 forward: Electric power sector total fossil fuels consumption is the sum of the electric power sector consumption values for coal, natural gas, and petroleum.

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

Renewable Energy
1949 forward: Table 10.2c.

Electricity Net Imports

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

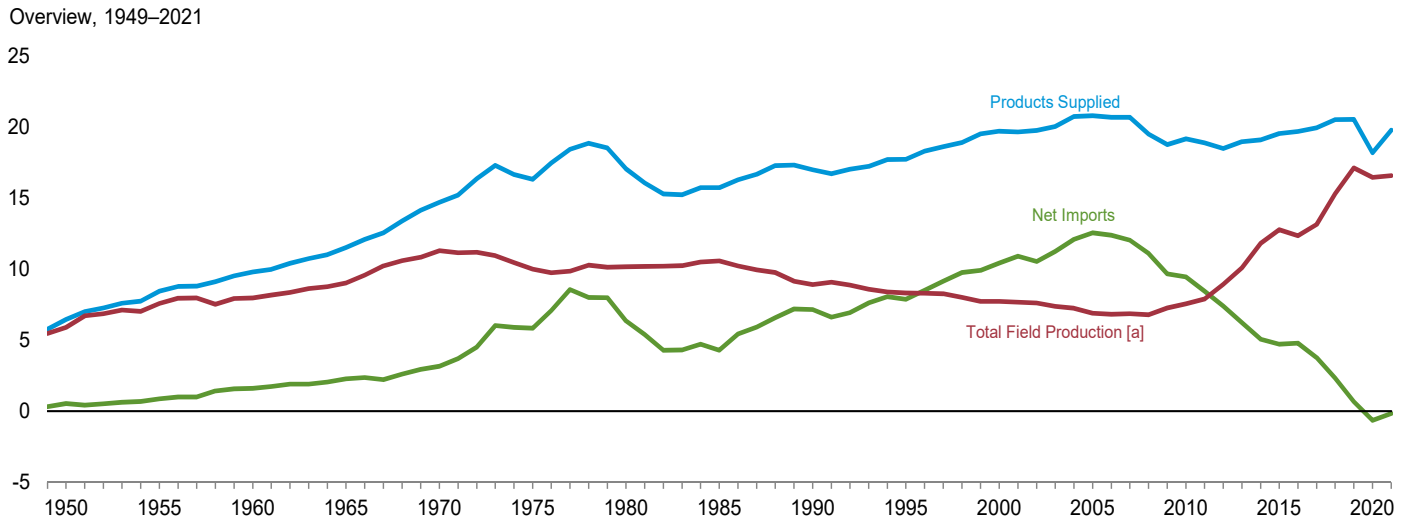
Total Primary Energy Consumption

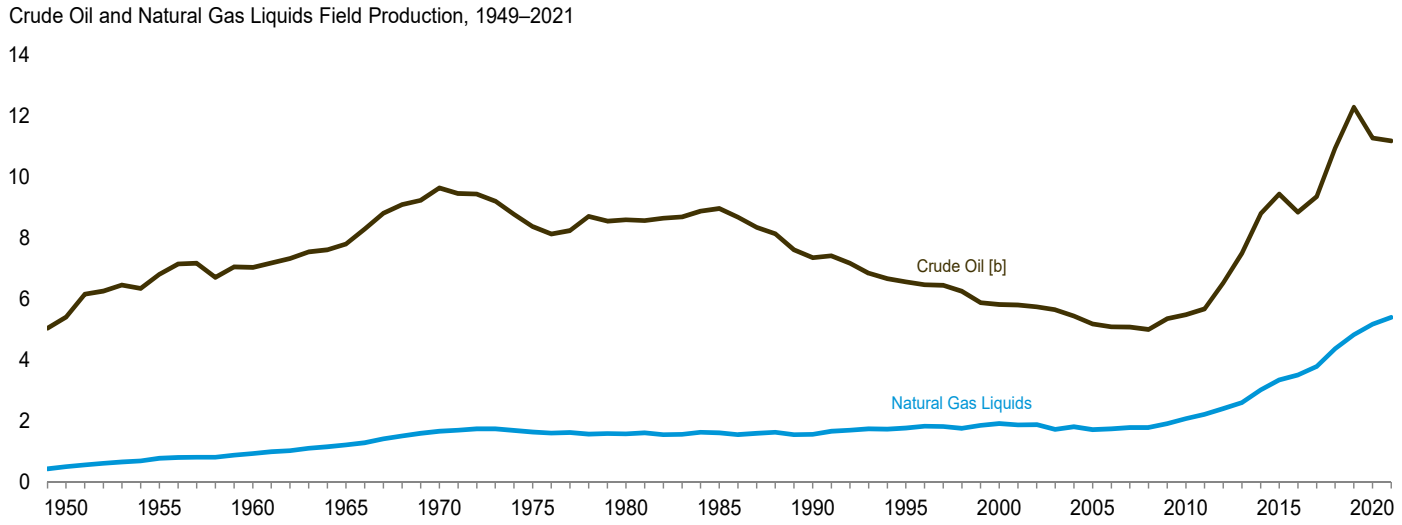
1949 forward: Electric power sector total primary energy consumption is the sum of the electric power sector consumption values for fossil fuels, nuclear electric power, and renewable energy, plus electricity net imports.

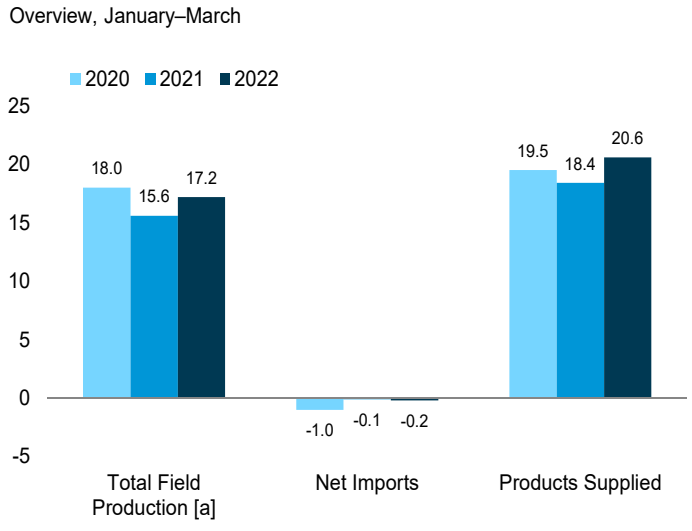
3. Petroleum

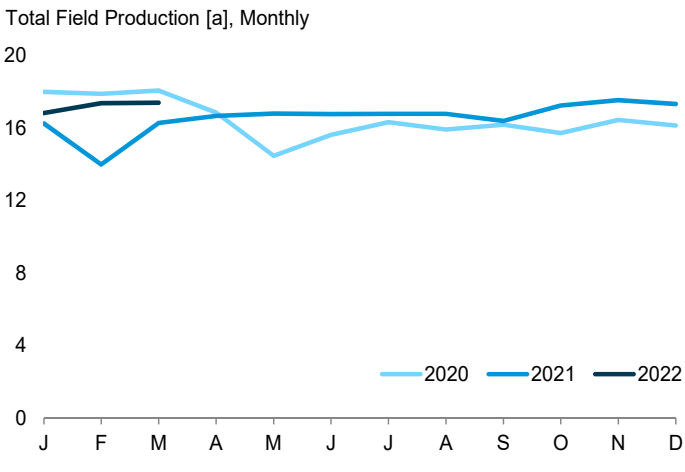
Figure 3.1 Petroleum Overview

(Million Barrels Per Day)









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

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

Table 3.1 Petroleum Overview

(Thousand Barrels per Day)

	Field Production[a]					Renewable Fuels and Oxygenates[e]	Processing Gain[f]	Trade			Stock Change[i]	Adjustments[c,j]	Petroleum Products Supplied
	Crude Oil[b,c]			Natural Gas Liquids	Total[c]			Imports[g]	Exports	Net Imports[h]			
	48 States[d]	Alaska	Total										
1950 Average	**5,407**	**0**	**5,407**	**499**	**5,906**	**NA**	**2**	**850**	**305**	**545**	**-56**	**-51**	**6,458**
1955 Average	**6,807**	**0**	**6,807**	**771**	**7,578**	**NA**	**34**	**1,248**	**368**	**880**	**(s)**	**-37**	**8,455**
1960 Average	**7,034**	**2**	**7,035**	**929**	**7,965**	**NA**	**146**	**1,815**	**202**	**1,613**	**-83**	**-8**	**9,797**
1965 Average	**7,774**	**30**	**7,804**	**1,210**	**9,014**	**NA**	**220**	**2,468**	**187**	**2,281**	**-8**	**-10**	**11,512**
1970 Average	**9,408**	**229**	**9,637**	**1,660**	**11,297**	**NA**	**359**	**3,419**	**259**	**3,161**	**103**	**-16**	**14,697**
1975 Average	**8,183**	**191**	**8,375**	**1,633**	**10,007**	**NA**	**460**	**6,056**	**209**	**5,846**	**32**	**41**	**16,322**
1980 Average	**6,980**	**1,617**	**8,597**	**1,573**	**10,170**	**NA**	**597**	**6,909**	**544**	**6,365**	**140**	**64**	**17,056**
1985 Average	**7,146**	**1,825**	**8,971**	**1,609**	**10,581**	**NA**	**557**	**5,067**	**781**	**4,286**	**-103**	**200**	**15,726**
1990 Average	**5,582**	**1,773**	**7,355**	**1,559**	**8,914**	**NA**	**683**	**8,018**	**857**	**7,161**	**107**	**338**	**16,988**
1995 Average	**5,076**	**1,484**	**6,560**	**1,762**	**8,322**	**NA**	**774**	**8,835**	**949**	**7,886**	**-246**	**496**	**17,725**
2000 Average	**4,851**	**970**	**5,822**	**1,911**	**7,733**	**NA**	**948**	**11,459**	**1,040**	**10,419**	**-69**	**532**	**19,701**
2005 Average	**4,320**	**864**	**5,184**	**1,717**	**6,901**	**NA**	**989**	**13,714**	**1,165**	**12,549**	**[k] 146**	**509**	**20,802**
2006 Average	**4,345**	**741**	**5,086**	**1,739**	**6,825**	**NA**	**994**	**13,707**	**1,317**	**12,390**	**59**	**537**	**20,687**
2007 Average	**4,352**	**722**	**5,074**	**1,783**	**6,857**	**NA**	**996**	**13,468**	**1,433**	**12,036**	**-152**	**640**	**20,680**
2008 Average	**4,317**	**683**	**5,000**	**1,784**	**6,783**	**NA**	**993**	**12,915**	**1,802**	**11,114**	**195**	**803**	**19,498**
2009 Average	**4,711**	**645**	**5,357**	**1,910**	**7,267**	**746**	**979**	**11,691**	**2,024**	**9,667**	**107**	**221**	**18,771**
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	**5,997**	**526**	**6,523**	**2,408**	**8,931**	**964**	**1,059**	**10,598**	**3,205**	**7,393**	**151**	**286**	**18,482**
2013 Average	**6,983**	**515**	**7,498**	**2,606**	**10,103**	**1,002**	**1,087**	**9,859**	**3,621**	**6,237**	**-138**	**398**	**18,967**
2014 Average	**8,296**	**496**	**8,792**	**3,015**	**11,807**	**1,055**	**1,081**	**9,241**	**4,176**	**5,065**	**267**	**361**	**19,100**
2015 Average	**8,958**	**483**	**9,441**	**3,342**	**12,783**	**1,095**	**1,062**	**9,449**	**4,738**	**4,711**	**431**	**312**	**19,532**
2016 Average	**8,354**	**490**	**8,844**	**3,509**	**12,354**	**1,158**	**1,118**	**10,055**	**5,261**	**4,795**	**125**	**392**	**19,692**
2017 Average	**8,862**	**495**	**9,357**	**3,783**	**13,140**	**1,198**	**1,111**	**10,144**	**6,376**	**3,768**	**-364**	**371**	**19,952**
2018 Average	**10,462**	**479**	**10,941**	**4,369**	**15,310**	**1,234**	**1,138**	**9,943**	**7,601**	**2,341**	**44**	**532**	**20,512**
2019 Average	**11,824**	**466**	**12,289**	**4,825**	**17,114**	**1,125**	**1,069**	**9,141**	**8,471**	**670**	**28**	**593**	**20,543**
2020 January	12,302	482	12,785	5,206	17,991	1,161	1,128	8,580	9,228	-649	581	883	19,933
February	12,349	477	12,826	5,052	17,878	1,144	941	8,482	9,589	-1,108	-592	685	20,132
March	12,347	470	12,816	5,253	18,069	1,049	974	8,361	9,522	-1,162	1,420	952	18,463
April	11,449	463	11,911	4,934	16,846	671	774	7,241	8,353	-1,112	2,658	29	14,549
May	9,307	404	9,711	4,745	14,457	787	808	7,762	7,112	650	1,263	639	16,078
June	10,059	361	10,420	5,195	15,614	969	871	8,368	7,608	760	1,105	470	17,578
July	10,512	444	10,956	5,368	16,324	1,033	929	7,846	8,485	-639	-116	618	18,381
August	10,114	444	10,558	5,351	15,909	1,025	924	7,450	8,550	-1,100	-807	993	18,558
September	10,426	442	10,868	5,308	16,176	1,036	948	7,558	8,315	-756	-658	353	18,415
October	9,954	459	10,413	5,297	15,711	1,058	924	7,376	8,389	-1,013	-1,306	628	18,614
November	10,657	464	11,121	5,321	16,442	1,099	934	7,616	7,913	-297	64	628	18,743
December	10,621	463	11,084	5,058	16,142	1,074	915	7,738	8,924	-1,186	-1,464	393	18,802
Average	**10,835**	**448**	**11,283**	**5,175**	**16,458**	**1,009**	**923**	**7,863**	**8,498**	**-635**	**176**	**608**	**18,186**
2021 January	[E] 10,598	[E] 458	[E] 11,056	5,188	[E] 16,244	1,064	891	7,915	8,729	-814	-460	749	18,595
February	[E] 9,316	[E] 457	[E] 9,773	4,215	[E] 13,988	938	765	7,648	7,661	-13	-1,272	494	17,444
March	[E] 10,706	[E] 453	[E] 11,160	5,116	[E] 16,275	1,085	864	8,288	7,679	609	225	596	19,204
April	[E] 10,784	[E] 446	[E] 11,230	5,443	[E] 16,673	1,077	949	8,267	9,110	-843	-557	1,046	19,459
May	[E] 10,890	[E] 443	[E] 11,334	5,461	[E] 16,795	1,157	1,024	8,569	8,270	299	-49	770	20,094
June	[E] 10,848	[E] 440	[E] 11,288	5,474	[E] 16,763	1,161	922	9,298	9,262	37	-949	706	20,537
July	[E] 10,950	[E] 380	[E] 11,330	5,455	[E] 16,785	1,164	960	8,796	8,647	149	-84	752	19,894
August	[E] 10,798	[E] 409	[E] 11,206	5,568	[E] 16,774	1,089	1,009	8,712	8,897	-184	-891	931	20,511
September	[E] 10,422	[E] 430	[E] 10,851	5,540	[E] 16,391	1,066	937	8,931	7,807	1,124	-136	569	20,224
October	[E] 11,089	[E] 437	[E] 11,526	5,713	[E] 17,240	1,205	1,013	8,122	8,660	-538	-15	956	19,892
November	[RE] 11,323	[E] 446	[RE] 11,769	5,768	[RE] 17,537	1,256	1,013	8,472	9,182	-710	-928	[R] 571	20,595
December	[RE] 11,136	[E] 451	[RE] 11,587	5,733	[RE] 17,319	1,263	1,083	8,556	9,618	-1,062	-1,376	[R] 786	20,764
Average	[RE] **10,749**	[E] **437**	[RE] **11,186**	**5,397**	[RE] **16,584**	**1,128**	**954**	**8,468**	**8,632**	**-164**	**-534**	[R] **746**	**19,782**
2022 January	[RE] 10,921	[RE] 450	[RE] 11,371	[R] 5,446	[RE] 16,817	[R] 1,207	[R] 984	[R] 8,159	[R] 8,763	[R] -605	[R] -463	[R] 865	[R] 19,731
February	[E] 11,148	[E] 452	[E] 11,600	[E] 5,763	[E] 17,363	[E] 1,190	[E] 959	[E] 8,436	[E] 7,716	[E] 720	[E] -1,188	[E] 218	[E] 21,638
March	[E] 11,226	[E] 441	[E] 11,668	[E] 5,733	[E] 17,400	[E] 1,222	[E] 996	[E] 8,491	[E] 9,159	[E] -668	[E] -669	[E] 830	[E] 20,448
3-Month Average	[E] **11,097**	[E] **447**	[E] **11,544**	[E] **5,643**	[E] **17,188**	[E] **1,207**	[E] **981**	[E] **8,359**	[E] **8,574**	[E] **-215**	[E] **-759**	[E] **651**	[E] **20,571**
2021 3-Month Average	[E] **10,237**	[E] **456**	[E] **10,693**	**4,860**	[E] **15,553**	**1,032**	**842**	**7,961**	**8,035**	**-74**	**-477**	**617**	**18,447**
2020 3-Month Average	**12,332**	**476**	**12,809**	**5,173**	**17,981**	**1,117**	**1,016**	**8,474**	**9,444**	**-970**	**493**	**843**	**19,496**

[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] Renewable fuels and oxygenate 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, renewable fuels, other hydrocarbons, motor gasoline blending components, finished motor gasoline, and distillate fuel oil. See EIA's *Petroleum Supply Monthly,* Appendix B, "PSM Explanatory Notes," for further information.

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

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

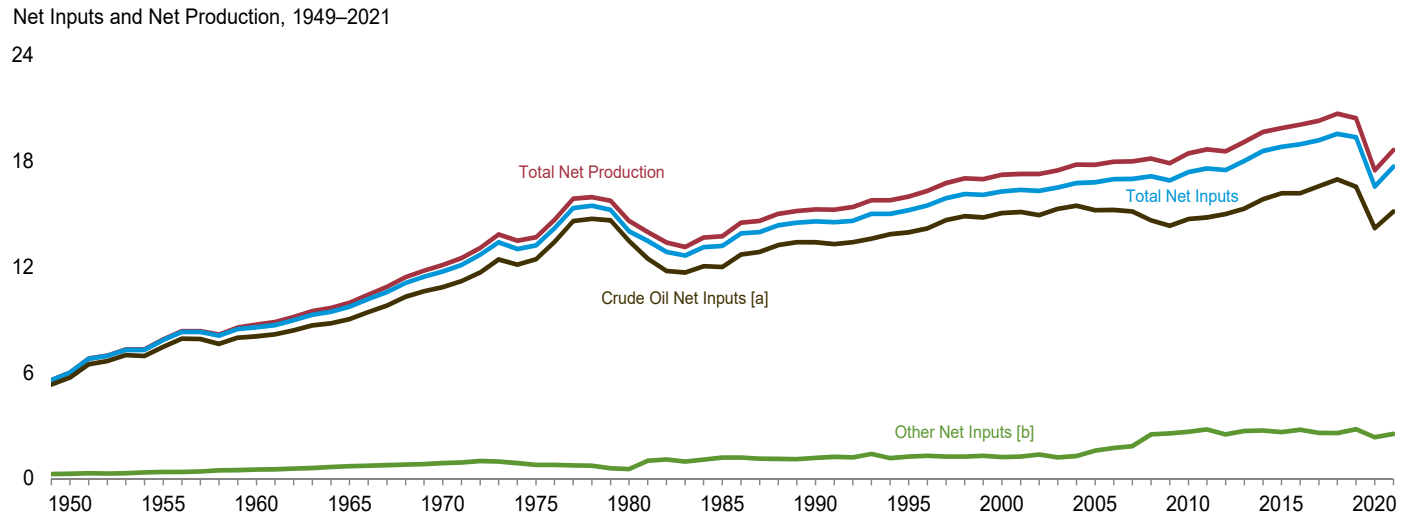
Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

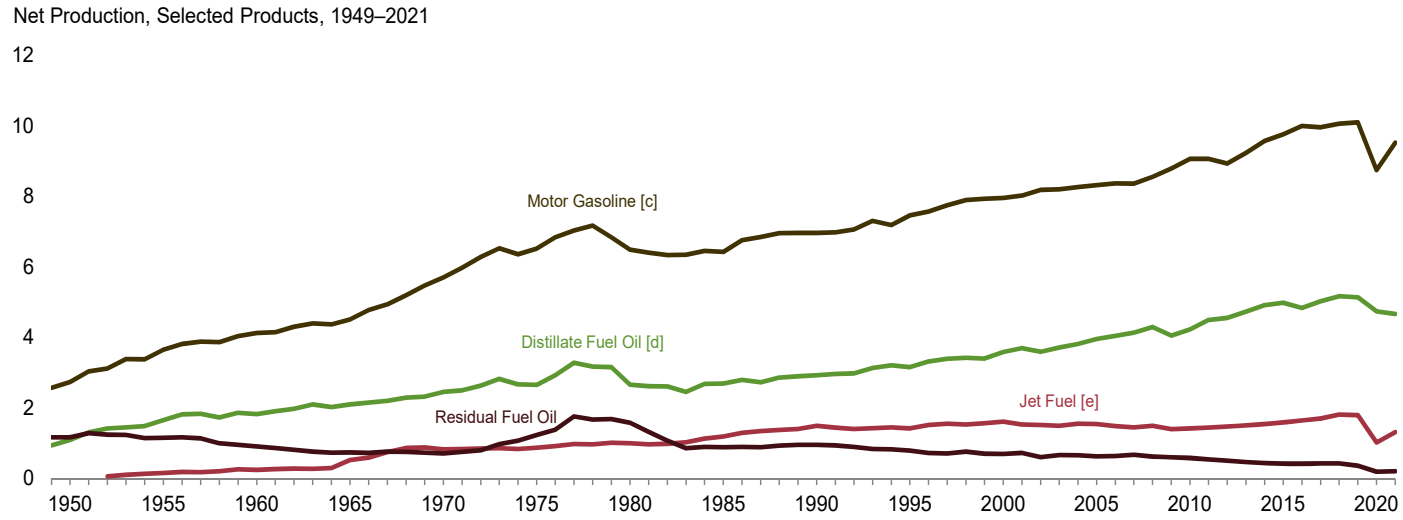
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

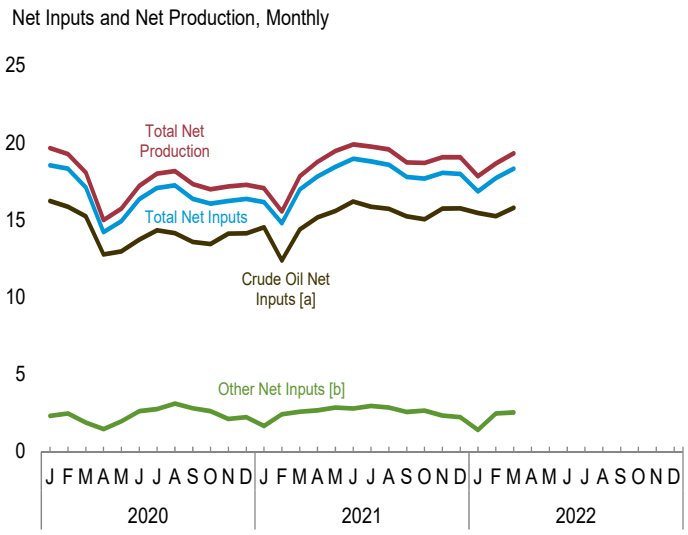
Sources: See end of section.

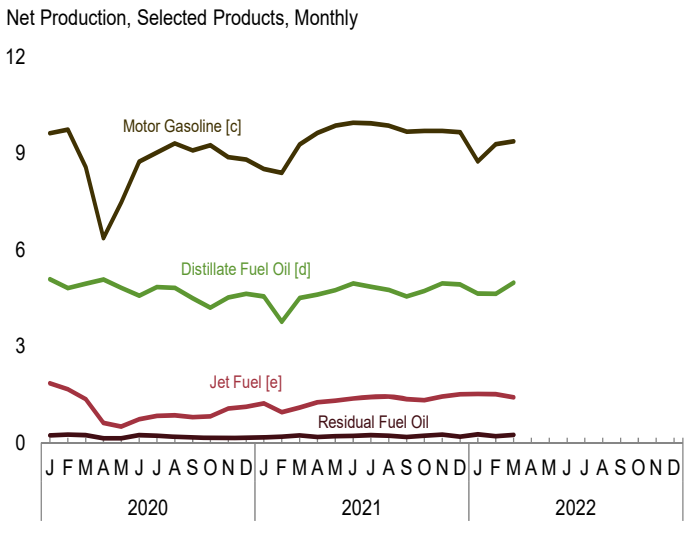
Figure 3.2 Refinery and Blender Net Inputs and Net Production

(Million Barrels per Day)









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

Table 3.2 Refinery and Blender Net Inputs and Net Production

(Thousand Barrels per Day)

	Refinery and Blender Net Inputs[a]				Refinery and Blender Net Production[b]									
						Hydrocarbon Gas Liquids								
						Propane/Propylene								
	Crude Oil[c]	Natural Gas Liquids[d]	Other Liquids[e]	Total	Distillate Fuel Oil[f]	Propane	Propylene	Total[g]	Total[h]	Jet Fuel[i]	Motor Gasoline[j]	Residual Fuel Oil	Other Products[k]	Total
1950 Average	**5,739**	**259**	**19**	**6,018**	**1,093**	**NA**	**NA**	**NA**	**80**	**(i)**	**2,735**	**1,165**	**947**	**6,019**
1955 Average	**7,480**	**345**	**32**	**7,857**	**1,651**	**NA**	**NA**	**NA**	**119**	**155**	**3,648**	**1,152**	**1,166**	**7,891**
1960 Average	**8,067**	**455**	**61**	**8,583**	**1,823**	**NA**	**NA**	**NA**	**212**	**241**	**4,126**	**908**	**1,420**	**8,729**
1965 Average	**9,043**	**618**	**88**	**9,750**	**2,096**	**NA**	**NA**	**NA**	**293**	**523**	**4,507**	**736**	**1,814**	**9,970**
1970 Average	**10,870**	**763**	**121**	**11,754**	**2,454**	**E 184**	**E 55**	**239**	**345**	**827**	**5,699**	**706**	**2,082**	**12,113**
1975 Average	**12,442**	**710**	**72**	**13,225**	**2,653**	**E 179**	**E 60**	**238**	**311**	**871**	**6,518**	**1,235**	**2,097**	**13,685**
1980 Average	**13,481**	**462**	**81**	**14,025**	**2,661**	**E 202**	**E 72**	**273**	**330**	**999**	**6,492**	**1,580**	**2,559**	**14,622**
1985 Average	**12,002**	**509**	**681**	**13,192**	**2,686**	**E 223**	**E 72**	**295**	**391**	**1,189**	**6,419**	**882**	**2,183**	**13,750**
1990 Average	**13,409**	**467**	**713**	**14,589**	**2,925**	**299**	**105**	**404**	**499**	**1,488**	**6,959**	**950**	**2,452**	**15,272**
1995 Average	**13,973**	**471**	**775**	**15,220**	**3,155**	**352**	**151**	**503**	**654**	**1,416**	**7,459**	**788**	**2,522**	**15,994**
2000 Average	**15,067**	**380**	**849**	**16,295**	**3,580**	**366**	**217**	**583**	**705**	**1,606**	**7,951**	**696**	**2,705**	**17,243**
2005 Average	**15,220**	**441**	**1,149**	**16,811**	**3,954**	**311**	**229**	**540**	**573**	**1,546**	**8,318**	**628**	**2,782**	**17,800**
2006 Average	**15,242**	**501**	**1,238**	**16,981**	**4,040**	**302**	**241**	**543**	**627**	**1,481**	**8,364**	**635**	**2,827**	**17,975**
2007 Average	**15,156**	**505**	**1,337**	**16,999**	**4,133**	**330**	**232**	**562**	**655**	**1,448**	**8,358**	**673**	**2,728**	**17,994**
2008 Average	**14,648**	**485**	**2,019**	**17,153**	**4,294**	**312**	**207**	**519**	**630**	**1,493**	**8,548**	**620**	**2,561**	**18,146**
2009 Average	**14,336**	**485**	**2,082**	**16,904**	**4,048**	**291**	**246**	**537**	**623**	**1,396**	**8,786**	**598**	**2,431**	**17,882**
2010 Average	**14,724**	**442**	**2,219**	**17,385**	**4,223**	**282**	**278**	**560**	**659**	**1,418**	**9,059**	**585**	**2,509**	**18,452**
2011 Average	**14,806**	**490**	**2,300**	**17,596**	**4,492**	**270**	**282**	**552**	**619**	**1,449**	**9,058**	**537**	**2,518**	**18,673**
2012 Average	**14,999**	**509**	**1,997**	**17,505**	**4,550**	**276**	**277**	**553**	**630**	**1,471**	**8,926**	**501**	**2,487**	**18,564**
2013 Average	**15,312**	**496**	**2,211**	**18,019**	**4,733**	**284**	**281**	**564**	**623**	**1,499**	**9,234**	**467**	**2,550**	**19,106**
2014 Average	**15,848**	**511**	**2,214**	**18,574**	**4,916**	**306**	**281**	**587**	**653**	**1,541**	**9,570**	**435**	**2,537**	**19,654**
2015 Average	**16,188**	**517**	**2,119**	**18,824**	**4,983**	**283**	**276**	**559**	**615**	**1,590**	**9,754**	**417**	**2,527**	**19,886**
2016 Average	**16,187**	**536**	**2,238**	**18,961**	**4,834**	**307**	**280**	**587**	**632**	**1,650**	**9,995**	**418**	**2,550**	**20,079**
2017 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 January	16,229	698	1,612	18,538	5,087	297	269	566	388	1,854	9,626	226	2,486	19,666
February	15,865	640	1,816	18,321	4,813	281	234	514	381	1,666	9,742	251	2,409	19,263
March	15,230	499	1,375	17,105	4,953	278	245	524	621	1,359	8,576	241	2,329	18,079
April	12,772	317	1,128	14,218	5,079	230	264	494	683	619	6,365	139	2,107	14,991
May	12,968	336	1,619	14,923	4,818	234	258	492	671	505	7,476	143	2,117	15,731
June	13,734	402	2,207	16,344	4,580	249	256	504	710	733	8,748	238	2,205	17,215
July	14,334	456	2,288	17,077	4,843	265	258	522	732	836	9,026	219	2,350	18,006
August	14,152	422	2,675	17,249	4,823	274	252	527	712	851	9,312	193	2,282	18,172
September	13,573	536	2,263	16,372	4,494	260	270	530	555	800	9,090	167	2,214	17,320
October	13,445	587	2,034	16,065	4,204	258	280	538	410	821	9,252	148	2,154	16,989
November	14,124	637	1,476	16,237	4,522	275	285	560	333	1,062	8,883	153	2,218	17,172
December	14,140	571	1,645	16,356	4,633	266	292	558	347	1,125	8,809	146	2,211	17,271
Average	**14,212**	**508**	**1,846**	**16,566**	**4,738**	**264**	**264**	**528**	**546**	**1,018**	**8,742**	**188**	**2,257**	**17,489**
2021 January	14,525	588	1,058	16,170	4,554	259	296	555	367	1,226	8,520	169	2,226	17,062
February	12,374	479	1,935	14,787	3,766	219	245	464	343	949	8,396	188	1,910	15,552
March	14,383	514	2,069	16,966	4,506	271	268	538	594	1,101	9,283	227	2,118	17,830
April	15,160	451	2,207	17,818	4,607	280	299	579	779	1,263	9,636	181	2,302	18,767
May	15,595	430	2,419	18,444	4,746	301	324	625	900	1,308	9,867	206	2,442	19,468
June	16,190	414	2,368	18,971	4,954	301	306	608	881	1,383	9,949	216	2,510	19,894
July	15,852	432	2,513	18,796	4,854	289	298	587	850	1,423	9,933	234	2,462	19,756
August	15,719	433	2,418	18,571	4,751	288	296	584	805	1,435	9,865	219	2,504	19,579
September	15,228	539	2,023	17,789	4,550	260	279	539	607	1,356	9,674	184	2,356	18,726
October	15,045	683	1,961	17,689	4,722	277	269	545	483	1,321	9,697	223	2,257	18,702
November	15,734	763	1,558	18,055	4,954	287	301	588	385	1,435	9,703	251	2,338	19,067
December	15,758	796	1,425	17,979	4,922	294	305	599	388	1,512	9,658	192	2,389	19,062
Average	**15,148**	**544**	**1,996**	**17,688**	**4,663**	**278**	**291**	**568**	**617**	**1,312**	**9,522**	**208**	**2,321**	**18,642**
2022 January	R 15,451	R 704	R 700	R 16,855	R 4,644	R 268	R 279	R 547	R 379	R 1,517	R 8,756	R 263	R 2,280	R 17,839
February	E 15,252	F 571	RE 1,887	RF 17,710	E 4,632	NA	NA	RE 567	F 443	E 1,511	E 9,289	E 202	RE 2,592	RE 18,669
March	E 15,791	F 529	E 2,000	F 18,320	E 4,980	NA	NA	E 496	F 655	E 1,416	E 9,375	E 246	E 2,644	E 19,316
3-Month Average	**E 15,506**	**E 602**	**E 1,517**	**E 17,625**	**E 4,756**	**NA**	**NA**	**E 536**	**E 494**	**E 1,480**	**E 9,135**	**E 238**	**E 2,503**	**E 18,606**
2021 3-Month Average	**13,807**	**529**	**1,679**	**16,014**	**4,292**	**251**	**270**	**521**	**438**	**1,097**	**8,744**	**195**	**2,090**	**16,857**
2020 3-Month Average	**15,773**	**612**	**1,596**	**17,981**	**4,954**	**285**	**250**	**535**	**465**	**1,626**	**9,305**	**239**	**2,408**	**18,997**

[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 renewable fuels (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.

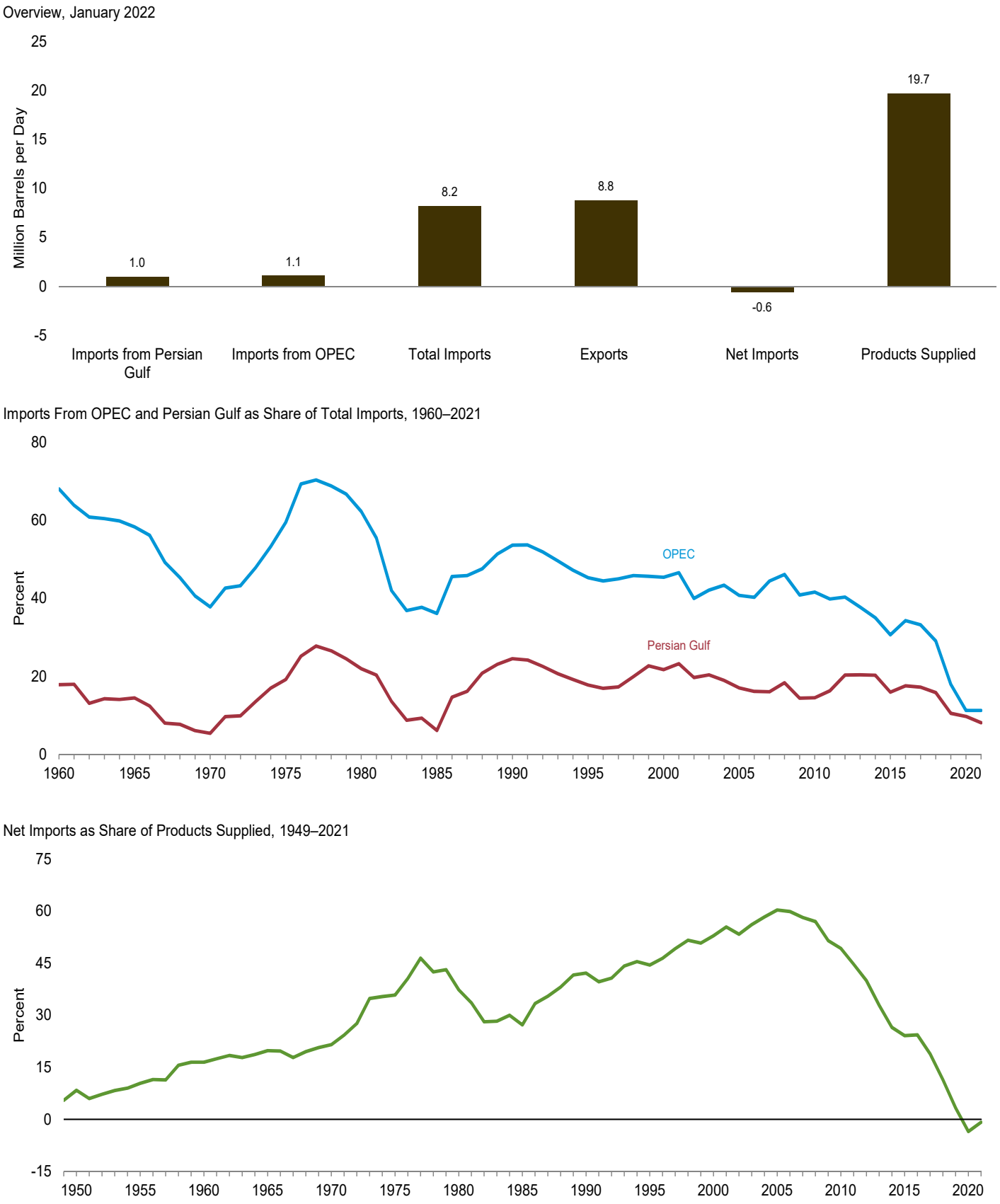
R=Revised. E=Estimate. F=Forecast. NA=Not available.

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

	Imports From Persian Gulf[a]	Imports From OPEC[b]	Imports	Exports	Net Imports	Products Supplied	As Share of Products Supplied: Imports From Persian Gulf[a]	As Share of Products Supplied: Imports From OPEC[b]	As Share of Products Supplied: Imports	As Share of Products Supplied: Net Imports	As Share of Total Imports: Imports From Persian Gulf[a]	As Share of Total Imports: Imports From OPEC[b]
	Thousand Barrels per Day						Percent					
1950 Average	**NA**	**NA**	**850**	**305**	**545**	**6,458**	**NA**	**NA**	**13.2**	**8.4**	**NA**	**NA**
1955 Average	**NA**	**NA**	**1,248**	**368**	**880**	**8,455**	**NA**	**NA**	**14.8**	**10.4**	**NA**	**NA**
1960 Average	**326**	**1,233**	**1,815**	**202**	**1,613**	**9,797**	**3.3**	**12.6**	**18.5**	**16.5**	**17.9**	**68.0**
1965 Average	**359**	**1,439**	**2,468**	**187**	**2,281**	**11,512**	**3.1**	**12.5**	**21.4**	**19.8**	**14.5**	**58.3**
1970 Average	**184**	**1,294**	**3,419**	**259**	**3,161**	**14,697**	**1.3**	**8.8**	**23.3**	**21.5**	**5.4**	**37.8**
1975 Average	**1,165**	**3,601**	**6,056**	**209**	**5,846**	**16,322**	**7.1**	**22.1**	**37.1**	**35.8**	**19.2**	**59.5**
1980 Average	**1,519**	**4,300**	**6,909**	**544**	**6,365**	**17,056**	**8.9**	**25.2**	**40.5**	**37.3**	**22.0**	**62.2**
1985 Average	**311**	**1,830**	**5,067**	**781**	**4,286**	**15,726**	**2.0**	**11.6**	**32.2**	**27.3**	**6.1**	**36.1**
1990 Average	**1,966**	**4,296**	**8,018**	**857**	**7,161**	**16,988**	**11.6**	**25.3**	**47.2**	**42.2**	**24.5**	**53.6**
1995 Average	**1,573**	**4,002**	**8,835**	**949**	**7,886**	**17,725**	**8.9**	**22.6**	**49.8**	**44.5**	**17.8**	**45.3**
2000 Average	**2,488**	**5,203**	**11,459**	**1,040**	**10,419**	**19,701**	**12.6**	**26.4**	**58.2**	**52.9**	**21.7**	**45.4**
2005 Average	**2,334**	**5,587**	**13,714**	**1,165**	**12,549**	**20,802**	**11.2**	**26.9**	**65.9**	**60.3**	**17.0**	**40.7**
2006 Average	**2,211**	**5,517**	**13,707**	**1,317**	**12,390**	**20,687**	**10.7**	**26.7**	**66.3**	**59.9**	**16.1**	**40.2**
2007 Average	**2,163**	**5,980**	**13,468**	**1,433**	**12,036**	**20,680**	**10.5**	**28.9**	**65.1**	**58.2**	**16.1**	**44.4**
2008 Average	**2,370**	**5,954**	**12,915**	**1,802**	**11,114**	**19,498**	**12.2**	**30.5**	**66.2**	**57.0**	**18.4**	**46.1**
2009 Average	**1,689**	**4,776**	**11,691**	**2,024**	**9,667**	**18,771**	**9.0**	**25.4**	**62.3**	**51.5**	**14.4**	**40.9**
2010 Average	**1,711**	**4,906**	**11,793**	**2,353**	**9,441**	**19,178**	**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 January	773	926	8,580	9,228	-649	19,933	3.9	4.6	43.0	-3.3	9.0	10.8
February	812	982	8,482	9,589	-1,108	20,132	4.0	4.9	42.1	-5.5	9.6	11.6
March	772	831	8,361	9,522	-1,162	18,463	4.2	4.5	45.3	-6.3	9.2	9.9
April	609	673	7,241	8,353	-1,112	14,549	4.2	4.6	49.8	-7.6	8.4	9.3
May	1,429	1,532	7,762	7,112	650	16,078	8.9	9.5	48.3	4.0	18.4	19.7
June	1,465	1,617	8,368	7,608	760	17,578	8.3	9.2	47.6	4.3	17.5	19.3
July	968	1,014	7,846	8,485	-639	18,381	5.3	5.5	42.7	-3.5	12.3	12.9
August	484	607	7,450	8,550	-1,100	18,558	2.6	3.3	40.1	-5.9	6.5	8.1
September	511	667	7,558	8,315	-756	18,415	2.8	3.6	41.0	-4.1	6.8	8.8
October	573	686	7,376	8,389	-1,013	18,614	3.1	3.7	39.6	-5.4	7.8	9.3
November	456	632	7,616	7,913	-297	18,743	2.4	3.4	40.6	-1.6	6.0	8.3
December	339	467	7,738	8,924	-1,186	18,802	1.8	2.5	41.2	-6.3	4.4	6.0
Average	**766**	**886**	**7,863**	**8,498**	**-635**	**18,186**	**4.2**	**4.9**	**43.2**	**-3.5**	**9.7**	**11.3**
2021 January	380	603	7,915	8,729	-814	18,595	2.0	3.2	42.6	-4.4	4.8	7.6
February	465	724	7,648	7,661	-13	17,444	2.7	4.1	43.8	-0.1	6.1	9.5
March	566	796	8,288	7,679	609	19,204	2.9	4.1	43.2	3.2	6.8	9.6
April	636	942	8,267	9,110	-843	19,459	3.3	4.8	42.5	-4.3	7.7	11.4
May	635	916	8,569	8,270	299	20,094	3.2	4.6	42.6	1.5	7.4	10.7
June	843	1,175	9,298	9,262	37	20,537	4.1	5.7	45.3	0.2	9.1	12.6
July	840	1,160	8,796	8,647	149	19,894	4.2	5.8	44.2	0.7	9.5	13.2
August	751	1,082	8,712	8,897	-184	20,511	3.7	5.3	42.5	-0.9	8.6	12.4
September	740	987	8,931	7,807	1,124	20,224	3.7	4.9	44.2	5.6	8.3	11.1
October	720	975	8,122	8,660	-538	19,892	3.6	4.9	40.8	-2.7	8.9	12.0
November	808	1,046	8,472	9,182	-710	20,595	3.9	5.1	41.1	-3.4	9.5	12.3
December	860	1,062	8,556	9,618	-1,062	20,764	4.1	5.1	41.2	-5.1	10.0	12.4
Average	**688**	**957**	**8,468**	**8,632**	**-164**	**19,782**	**3.5**	**4.8**	**42.8**	**-0.8**	**8.1**	**11.3**
2022 January	R 986	R 1,096	R 8,159	R 8,763	R -605	R 19,731	R 5.0	R 5.6	R 41.3	R -3.1	R 12.1	R 13.4
February	NA	NA	E 8,436	E 7,716	E 720	E 21,638	NA	NA	E 39.0	E 3.3	NA	NA
March	NA	NA	E 8,491	E 9,159	E -668	E 20,448	NA	NA	E 41.5	E -3.3	NA	NA
3-Month Average	**NA**	**NA**	**E 8,359**	**E 8,574**	**E -215**	**E 20,571**	**NA**	**NA**	**E 40.6**	**E -1.0**	**NA**	**NA**
2021 3-Month Average	**471**	**707**	**7,961**	**8,035**	**-74**	**18,447**	**2.6**	**3.8**	**43.2**	**-0.4**	**5.9**	**8.9**
2020 3-Month Average	**785**	**911**	**8,474**	**9,444**	**-970**	**19,496**	**4.0**	**4.7**	**43.5**	**-5.0**	**9.3**	**10.8**

[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.

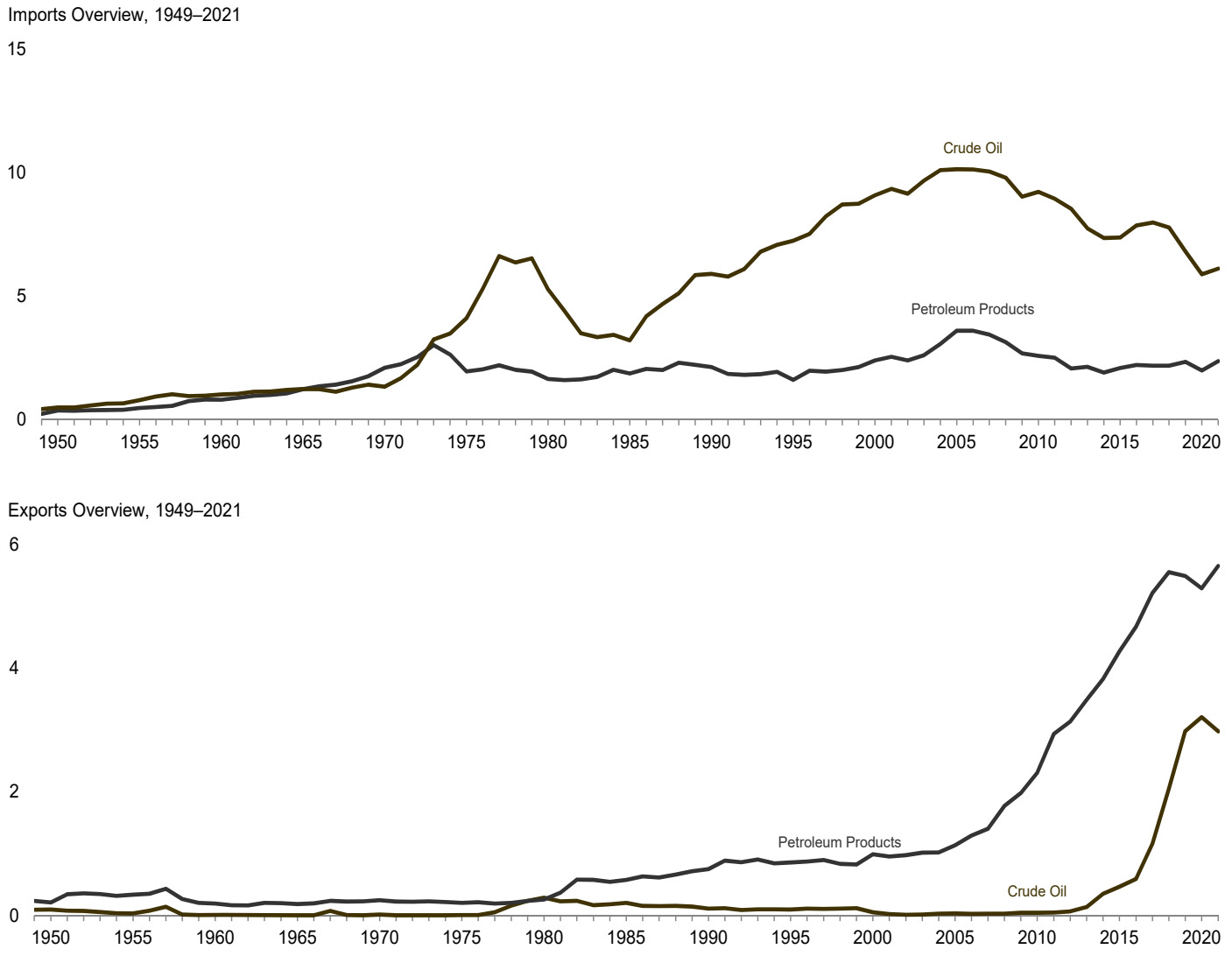
Notes: • For the feature article "Measuring Dependence on Imported Oil," published in the August 1995 *Monthly Energy Review,* see http://www.eia.gov/totalenergy/data/monthly/pdf/historical/imported_oil.pdf. • Beginning in October 1977, data include Strategic Petroleum Reserve imports. See Table 3.3b. • 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.

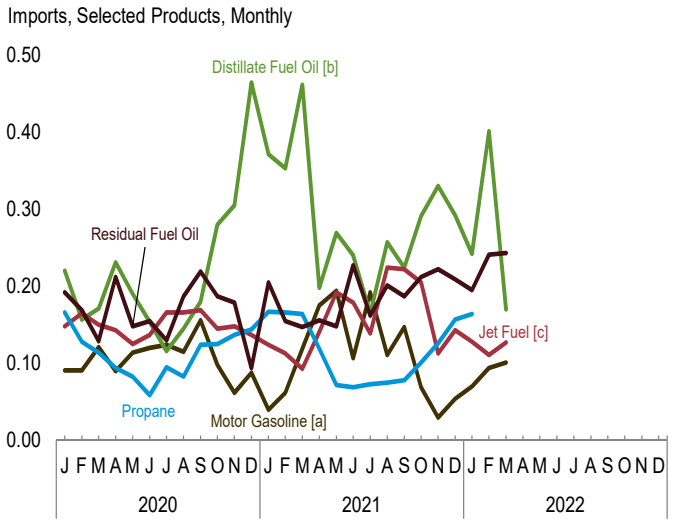
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#petroleum (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

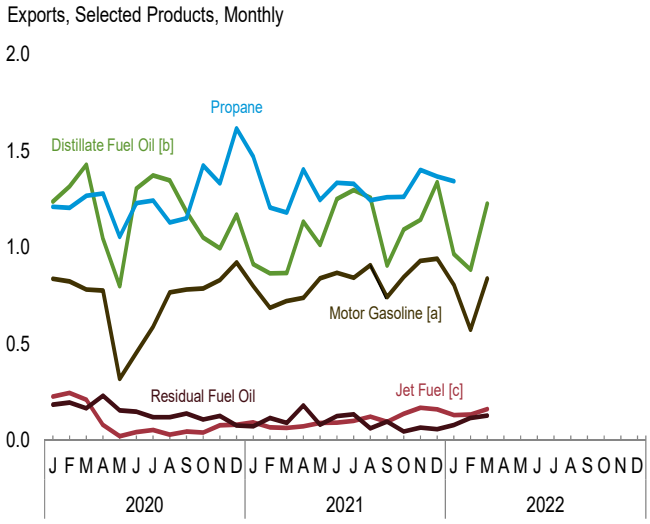
Sources: • **1949–1975:** Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual,* annual reports. • **1976–1980:** U.S. Energy Information Administration (EIA), Energy Data Reports, *Petroleum Statement, Annual,* annual reports. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2021 and 2022:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Figure 3.3b Petroleum Trade: Imports and Exports by Type

(Million Barrels per Day)







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

Table 3.3b Petroleum Trade: Imports by Type

(Thousand Barrels per Day)

	Crude Oil[a]		Distillate Fuel Oil	Hydrocarbon Gas Liquids				Jet Fuel[e]	Motor Gasoline[f]	Residual Fuel Oil	Other[g]	Total
				Propane/Propylene								
	SPR[b]	Total		Propane	Propylene	Total[c]	Total[d]					
1950 Average	– –	487	7	NA	NA	–	–	([e])	(s)	329	27	850
1955 Average	– –	782	12	NA	NA	–	–	([e])	13	417	24	1,248
1960 Average	– –	1,015	35	NA	NA	NA	4	34	27	637	62	1,815
1965 Average	– –	1,238	36	NA	NA	NA	21	81	28	946	119	2,468
1970 Average	– –	1,324	147	NA	NA	26	58	144	67	1,528	150	3,419
1975 Average	– –	4,105	155	NA	NA	60	185	133	184	1,223	70	6,056
1980 Average	44	5,263	142	NA	NA	84	226	80	140	939	120	6,909
1985 Average	118	3,201	200	NA	NA	67	235	39	381	510	501	5,067
1990 Average	27	5,894	278	NA	NA	115	197	108	342	504	695	8,018
1995 Average	–	7,230	193	95	6	102	192	106	265	187	662	8,835
2000 Average	8	9,071	295	154	7	161	256	162	427	352	897	11,459
2005 Average	52	10,126	329	219	14	233	374	190	603	530	1,562	13,714
2006 Average	8	10,118	365	201	26	228	360	186	475	350	1,854	13,707
2007 Average	7	10,031	304	162	20	182	276	217	413	372	1,856	13,468
2008 Average	19	9,783	213	162	23	185	275	103	302	349	1,891	12,915
2009 Average	56	9,013	225	126	21	147	194	81	223	331	1,623	11,691
2010 Average	–	9,213	228	93	29	121	179	98	134	366	1,574	11,793
2011 Average	–	8,935	179	82	28	110	183	69	105	328	1,637	11,436
2012 Average	–	8,527	126	85	31	116	170	55	44	256	1,421	10,598
2013 Average	–	7,730	155	103	24	127	182	84	45	225	1,438	9,859
2014 Average	–	7,344	195	89	19	108	143	94	49	173	1,242	9,241
2015 Average	–	7,363	200	104	19	124	156	132	71	192	1,335	9,449
2016 Average	–	7,850	147	120	22	142	180	147	59	205	1,468	10,055
2017 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 January	–	6,411	220	166	13	179	221	148	91	192	1,298	8,580
February	–	6,519	157	128	13	140	169	165	91	169	1,211	8,482
March	–	6,296	171	114	15	129	162	150	121	129	1,330	8,361
April	–	5,520	231	94	14	108	130	143	90	212	916	7,241
May	–	6,087	190	83	14	97	120	125	114	148	979	7,762
June	–	6,393	154	59	12	72	109	137	120	155	1,299	8,368
July	–	5,906	116	95	14	109	140	166	124	130	1,263	7,846
August	–	5,417	145	83	13	95	130	166	115	187	1,289	7,450
September	–	5,398	180	124	13	137	172	169	156	219	1,266	7,558
October	–	5,293	280	125	14	139	166	145	98	187	1,207	7,376
November	–	5,570	305	137	12	149	185	148	62	179	1,166	7,616
December	–	5,713	464	144	13	157	208	137	88	94	1,035	7,738
Average	–	5,875	218	113	13	126	160	150	106	166	1,188	7,863
2021 January	–	5,783	371	167	16	183	235	124	40	205	1,157	7,915
February	–	5,589	353	166	16	182	242	113	62	155	1,135	7,648
March	–	5,787	461	164	16	180	223	93	119	147	1,458	8,288
April	–	5,819	198	119	14	133	169	141	175	156	1,610	8,267
May	–	5,828	269	72	14	86	125	192	194	148	1,815	8,569
June	–	6,602	240	69	14	83	133	179	107	227	1,810	9,298
July	–	6,395	165	73	14	87	130	139	192	162	1,613	8,796
August	–	6,237	257	75	12	87	132	224	111	201	1,551	8,712
September	–	6,526	224	78	13	91	137	222	147	187	1,489	8,931
October	–	5,971	291	101	11	112	160	205	69	212	1,215	8,122
November	–	6,334	330	126	17	143	183	113	30	222	1,261	8,472
December	–	6,422	292	157	14	171	211	143	54	209	1,225	8,556
Average	–	6,110	287	114	14	128	173	158	109	186	1,446	8,468
2022 January	–	[R] 6,383	[R] 242	[R] 164	[R] 13	[R] 178	[R] 220	[R] 128	[R] 70	[R] 195	[R] 921	[R] 8,159
February	–	[E] 6,183	[E] 401	NA	NA	[E] 167	NA	[E] 111	[E] 94	[E] 241	NA	[E] 8,436
March	–	[E] 6,356	[E] 170	NA	NA	[E] 137	NA	[E] 127	[E] 101	[E] 243	NA	[E] 8,491
3-Month Average	–	[E] **6,312**	[E] **267**	**NA**	**NA**	[E] **161**	**NA**	[E] **122**	[E] **88**	[E] **226**	**NA**	[E] **8,359**
2021 3-Month Average	–	5,724	396	166	16	182	233	110	74	170	1,254	7,961
2020 3-Month Average	–	6,406	183	136	14	150	185	154	101	163	1,281	8,474

[a] Includes lease condensate.

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

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

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

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

[f] Finished motor gasoline. Through 1955, also includes naphtha-type jet fuel. Through 1963, also includes aviation gasoline and special naphthas. Through 1980, also includes motor gasoline blending components.

[g] Asphalt and road oil, aviation gasoline blending components, kerosene, lubricants, petrochemical feedstocks, petroleum coke, unfinished oils, waxes, 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 1993, also includes fuel ethanol. Beginning in 2005, also includes naphtha-type jet fuel. Beginning in 2009, also includes renewable fuels (excluding fuel ethanol) and other hydrocarbons. For 2011–2018, also includes oxygenates (excluding fuel ethanol).

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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2021 and 2022:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system and *Monthly Energy Review* data system calculations.

Table 3.3c Petroleum Trade: Imports From OPEC Countries

(Thousand Barrels per Day)

	Algeria[a]	Angola[b]	Iraq	Kuwait[c]	Libya[d]	Nigeria[e]	Saudi Arabia[c]	United Arab Emirates	Vene-zuela	Other[f]	Total OPEC
1960 Average	([a])	([b])	**22**	**182**	([d])	([e])	**84**	**NA**	**911**	**34**	**1,233**
1965 Average	([a])	([b])	**16**	**74**	**42**	([e])	**158**	**14**	**994**	**142**	**1,439**
1970 Average	**8**	([b])	**–**	**48**	**47**	([e])	**30**	**63**	**989**	**109**	**1,294**
1975 Average	**282**	([b])	**2**	**16**	**232**	**762**	**715**	**117**	**702**	**773**	**3,601**
1980 Average	**488**	([b])	**28**	**27**	**554**	**857**	**1,261**	**172**	**481**	**432**	**4,300**
1985 Average	**187**	([b])	**46**	**21**	**4**	**293**	**168**	**45**	**605**	**461**	**1,830**
1990 Average	**280**	([b])	**518**	**86**	**–**	**800**	**1,339**	**17**	**1,025**	**231**	**4,296**
1995 Average	**234**	([b])	**–**	**218**	**–**	**627**	**1,344**	**10**	**1,480**	**88**	**4,002**
2000 Average	**225**	([b])	**620**	**272**	**–**	**896**	**1,572**	**15**	**1,546**	**57**	**5,203**
2005 Average	**478**	([b])	**531**	**243**	**56**	**1,166**	**1,537**	**18**	**1,529**	**28**	**5,587**
2006 Average	**657**	([b])	**553**	**185**	**87**	**1,114**	**1,463**	**9**	**1,419**	**29**	**5,517**
2007 Average	**670**	**508**	**484**	**181**	**117**	**1,134**	**1,485**	**10**	**1,361**	**29**	**5,980**
2008 Average	**548**	**513**	**627**	**210**	**103**	**988**	**1,529**	**4**	**1,189**	**243**	**5,954**
2009 Average	**493**	**460**	**450**	**182**	**79**	**809**	**1,004**	**40**	**1,063**	**195**	**4,776**
2010 Average	**510**	**393**	**415**	**197**	**70**	**1,023**	**1,096**	**2**	**988**	**212**	**4,906**
2011 Average	**358**	**346**	**459**	**191**	**15**	**818**	**1,195**	**10**	**951**	**212**	**4,555**
2012 Average	**242**	**233**	**476**	**305**	**61**	**441**	**1,365**	**3**	**960**	**186**	**4,271**
2013 Average	**115**	**216**	**341**	**328**	**59**	**281**	**1,329**	**3**	**806**	**243**	**3,720**
2014 Average	**110**	**154**	**369**	**311**	**6**	**92**	**1,166**	**13**	**789**	**224**	**3,237**
2015 Average	**108**	**136**	**229**	**204**	**7**	**81**	**1,059**	**4**	**827**	**239**	**2,894**
2016 Average	**182**	**168**	**424**	**210**	**16**	**235**	**1,106**	**14**	**796**	**295**	**3,446**
2017 Average	**189**	**135**	**604**	**145**	**65**	**334**	**955**	**34**	**674**	**231**	**3,366**
2018 Average	**176**	**94**	**521**	**79**	**56**	**189**	**901**	**58**	**586**	**227**	**2,888**
2019 Average	**78**	**38**	**341**	**45**	**63**	**193**	**530**	**27**	**92**	**231**	**1,639**
2020 January	17	10	299	46	67	64	407	7	–	8	926
February	33	33	262	46	36	76	489	6	–	(s)	982
March	12	–	290	23	–	54	445	4	–	3	831
April	1	30	140	–	–	57	429	13	–	3	673
May	1	50	242	–	–	69	1,158	2	–	9	1,532
June	7	66	146	34	–	103	1,221	39	–	2	1,617
July	4	7	136	84	–	34	718	29	–	–	1,014
August	11	12	193	–	(s)	114	273	3	–	–	607
September	14	32	83	35	(s)	91	366	14	–	32	667
October	3	72	121	34	–	30	280	80	–	67	686
November	19	49	111	34	–	119	286	13	–	2	632
December	61	12	89	–	–	93	190	20	–	2	467
Average	**15**	**31**	**176**	**28**	**9**	**75**	**522**	**19**	**–**	**11**	**886**
2021 January	24	40	89	–	33	145	237	33	–	(s)	603
February	60	15	140	29	122	78	268	10	–	3	724
March	57	62	135	–	21	123	351	10	–	36	796
April	68	21	175	66	123	119	331	37	–	2	942
May	19	42	178	14	118	123	395	25	–	2	916
June	33	25	180	32	105	203	576	21	–	–	1,175
July	38	47	237	37	95	150	452	96	–	8	1,160
August	27	65	131	46	114	140	471	81	–	8	1,082
September	22	29	40	51	96	132	547	71	–	–	987
October	39	24	185	47	128	87	419	46	–	–	975
November	52	57	165	43	83	87	555	3	–	–	1,046
December	39	2	223	34	55	110	550	38	–	10	1,062
Average	**40**	**36**	**157**	**33**	**91**	**125**	**430**	**40**	**–**	**6**	**957**
2022 January	–	69	261	58	76	29	553	35	–	17	1,096

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

[b] Angola joined OPEC in January 2007. For 1960–2006, Angola is included in "Total Non-OPEC" on Table 3.3d.

[c] 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.

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

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

[f] Includes these countries for the dates indicated: 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).

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 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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports. • **2021 and 2022:** EIA, *Petroleum Supply Monthly,* monthly reports.

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**
2006 Average	**193**	**2,353**	**155**	**278**	**1,705**	**174**	**196**	**369**	**272**	**328**	**2,168**	**8,190**
2007 Average	**200**	**2,455**	**155**	**203**	**1,532**	**128**	**142**	**414**	**277**	**346**	**1,636**	**7,489**
2008 Average	**258**	**2,493**	**200**	**([a])**	**1,302**	**168**	**102**	**465**	**236**	**320**	**1,416**	**6,961**
2009 Average	**309**	**2,479**	**276**	**([a])**	**1,210**	**140**	**108**	**563**	**245**	**277**	**1,307**	**6,915**
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 January	101	4,521	337	242	854	48	1	601	109	–	839	7,654
February	132	4,607	343	236	804	64	–	614	74	–	624	7,499
March	120	4,381	322	260	801	114	18	645	62	–	805	7,530
April	104	4,093	277	176	631	93	16	408	54	–	715	6,567
May	110	3,688	250	58	889	24	44	350	101	–	715	6,230
June	167	3,752	369	112	849	98	99	551	87	–	667	6,751
July	115	3,981	331	108	755	72	12	563	84	–	808	6,831
August	113	3,877	186	242	769	91	20	552	64	–	928	6,843
September	92	3,944	351	227	728	125	15	527	91	–	791	6,891
October	113	3,967	248	165	574	56	60	660	113	–	731	6,689
November	166	4,260	175	227	611	72	36	597	66	–	775	6,983
December	173	4,440	219	176	740	132	26	416	116	7	827	7,271
Average	**126**	**4,125**	**284**	**186**	**751**	**82**	**29**	**540**	**85**	**1**	**770**	**6,977**
2021 January	121	4,468	205	164	747	75	31	649	42	42	767	7,312
February	56	4,308	272	134	613	77	56	453	74	34	847	6,924
March	83	4,512	167	142	568	192	92	740	119	67	811	7,492
April	77	4,044	223	251	708	189	56	688	68	26	996	7,325
May	96	4,057	235	196	728	154	98	844	88	59	1,099	7,654
June	157	4,586	197	153	788	161	67	848	154	25	987	8,123
July	220	4,177	157	120	851	143	94	761	121	7	984	7,635
August	177	4,234	198	198	715	132	59	795	127	4	992	7,630
September	260	4,277	141	165	814	174	74	630	113	(s)	1,297	7,944
October	188	4,104	205	144	650	64	75	635	129	(s)	953	7,148
November	175	4,536	217	127	700	83	62	595	80	2	849	7,426
December	101	4,783	228	219	645	71	96	405	126	–	821	7,494
Average	**143**	**4,340**	**203**	**168**	**711**	**126**	**72**	**672**	**104**	**22**	**950**	**7,512**
2022 January	110	4,557	200	100	758	69	48	283	81	–	856	7,062

[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.

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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports. • **2021 and 2022:** 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**
2006 Average	**25**	**215**	**45**	**68**	**41**	**142**	**283**	**544**	**1,317**
2007 Average	**27**	**268**	**42**	**70**	**41**	**127**	**330**	**569**	**1,433**
2008 Average	**29**	**528**	**53**	**101**	**61**	**172**	**355**	**555**	**1,802**
2009 Average	**44**	**587**	**85**	**139**	**69**	**195**	**415**	**574**	**2,024**
2010 Average	**42**	**656**	**109**	**164**	**84**	**296**	**405**	**706**	**2,353**
2011 Average	**47**	**854**	**124**	**249**	**97**	**479**	**424**	**835**	**2,986**
2012 Average	**67**	**1,007**	**171**	**314**	**132**	**409**	**388**	**886**	**3,205**
2013 Average	**134**	**1,134**	**302**	**468**	**156**	**373**	**362**	**994**	**3,621**
2014 Average	**351**	**1,101**	**423**	**703**	**163**	**442**	**364**	**1,052**	**4,176**
2015 Average	**465**	**1,176**	**615**	**966**	**168**	**476**	**326**	**1,161**	**4,738**
2016 Average	**591**	**1,179**	**799**	**1,211**	**175**	**635**	**298**	**1,171**	**5,261**
2017 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 January	3,388	1,237	1,210	2,136	227	837	186	1,218	9,228
February	3,537	1,315	1,205	2,204	247	823	197	1,267	9,589
March	3,625	1,427	1,267	2,068	211	782	166	1,243	9,522
April	2,883	1,044	1,279	2,140	80	776	231	1,201	8,353
May	3,177	799	1,054	1,790	22	320	156	847	7,112
June	2,747	1,305	1,229	1,968	44	455	149	940	7,608
July	3,343	1,372	1,243	2,043	54	588	121	964	8,485
August	3,409	1,346	1,129	1,953	30	767	121	925	8,550
September	3,265	1,184	1,150	1,934	46	782	140	964	8,315
October	2,939	1,050	1,423	2,337	41	787	109	1,126	8,389
November	2,786	995	1,331	2,154	79	830	127	941	7,913
December	3,356	1,169	1,615	2,246	82	922	77	1,070	8,924
Average	**3,206**	**1,187**	**1,262**	**2,081**	**96**	**722**	**148**	**1,058**	**8,498**
2021 January	3,165	913	1,469	2,381	93	799	74	1,303	8,729
February	2,703	866	1,206	2,175	68	687	116	1,048	7,661
March	2,685	867	1,180	2,208	65	722	91	1,040	7,679
April	3,283	1,133	1,403	2,497	74	738	182	1,202	9,110
May	2,736	1,013	1,245	2,285	91	840	81	1,224	8,270
June	3,349	1,251	1,335	2,333	92	868	126	1,241	9,262
July	2,700	1,296	1,329	2,308	102	843	135	1,263	8,647
August	2,996	1,257	1,244	2,391	123	907	63	1,160	8,897
September	2,667	906	1,260	2,163	97	743	98	1,133	7,807
October	2,900	1,093	1,261	2,373	138	847	47	1,261	8,660
November	3,110	1,142	1,400	2,429	169	930	66	1,335	9,182
December	3,452	1,337	1,367	2,326	161	941	58	1,344	9,618
Average	**2,980**	**1,091**	**1,309**	**2,323**	**106**	**823**	**94**	**1,214**	**8,632**
2022 January	[R] 3,347	[R] 965	[R] 1,342	[R] 2,284	[R] 132	[R] 806	[R] 80	[R] 1,150	[R] 8,763
February	[E] 2,866	[E] 884	NA	NA	[E] 134	[E] 574	[E] 116	NA	[E] 7,716
March	[E] 3,274	[E] 1,226	NA	NA	[E] 162	[E] 838	[E] 129	NA	[E] 9,159
3-Month Average	**[E] 3,172**	**[E] 1,030**	**NA**	**NA**	**[E] 143**	**[E] 745**	**[E] 108**	**NA**	**[E] 8,574**
2021 3-Month Average	**2,856**	**883**	**1,288**	**2,257**	**76**	**738**	**93**	**1,133**	**8,035**
2020 3-Month Average	**3,516**	**1,326**	**1,228**	**2,134**	**228**	**814**	**183**	**1,242**	**9,444**

[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 renewable fuels (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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2021 and 2022:** 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**
2006 Average	**42**	**159**	**11**	**8**	**58**	**255**	**83**	**45**	**21**	**28**	**607**	**1,317**
2007 Average	**46**	**189**	**14**	**14**	**54**	**279**	**81**	**71**	**16**	**9**	**660**	**1,433**
2008 Average	**54**	**264**	**13**	**10**	**54**	**333**	**131**	**77**	**18**	**17**	**830**	**1,802**
2009 Average	**55**	**223**	**44**	**30**	**58**	**322**	**192**	**115**	**23**	**33**	**928**	**2,024**
2010 Average	**123**	**233**	**52**	**10**	**88**	**448**	**165**	**128**	**13**	**19**	**1,073**	**2,353**
2011 Average	**157**	**351**	**73**	**17**	**79**	**570**	**248**	**121**	**15**	**35**	**1,320**	**2,986**
2012 Average	**166**	**416**	**85**	**36**	**89**	**565**	**239**	**115**	**16**	**41**	**1,435**	**3,205**
2013 Average	**179**	**549**	**129**	**41**	**117**	**532**	**274**	**136**	**13**	**36**	**1,616**	**3,621**
2014 Average	**217**	**809**	**89**	**70**	**150**	**559**	**241**	**124**	**46**	**53**	**1,817**	**4,176**
2015 Average	**188**	**955**	**191**	**78**	**166**	**690**	**226**	**122**	**65**	**89**	**1,968**	**4,738**
2016 Average	**260**	**935**	**203**	**140**	**250**	**880**	**265**	**147**	**108**	**92**	**1,980**	**5,261**
2017 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 January	506	1,302	98	490	650	1,171	505	178	772	411	3,145	9,228
February	487	1,229	82	532	454	1,067	640	192	484	552	3,869	9,589
March	516	1,013	241	526	655	1,262	565	225	393	369	3,757	9,522
April	391	860	414	405	637	935	357	480	421	310	3,142	8,353
May	269	699	1,487	434	486	521	373	204	351	230	2,058	7,112
June	307	814	878	482	460	835	411	225	374	327	2,496	7,608
July	452	904	896	329	560	966	494	60	491	373	2,959	8,485
August	486	871	788	362	390	1,114	492	185	424	455	2,983	8,550
September	443	1,046	1,053	428	326	1,053	380	114	412	234	2,825	8,315
October	533	872	993	460	463	1,045	363	51	458	332	2,819	8,389
November	355	847	663	567	416	1,223	496	60	313	340	2,632	7,913
December	500	738	947	642	724	1,308	399	34	506	267	2,858	8,924
Average	**438**	**932**	**715**	**471**	**519**	**1,042**	**456**	**167**	**451**	**350**	**2,959**	**8,498**
2021 January	511	834	713	673	758	1,021	210	161	533	260	3,054	8,729
February	426	814	527	641	383	1,085	570	282	366	149	2,418	7,661
March	270	865	753	510	446	1,094	297	109	551	233	2,551	7,679
April	453	921	559	637	476	1,151	626	334	532	377	3,044	9,110
May	364	766	725	542	492	1,279	400	167	469	332	2,734	8,270
June	552	852	476	720	529	1,214	420	362	781	342	3,014	9,262
July	516	840	500	517	501	1,225	442	312	802	313	2,679	8,647
August	572	885	508	609	453	1,123	431	301	584	397	3,033	8,897
September	389	761	461	521	433	1,095	485	247	539	271	2,604	7,807
October	459	768	660	545	492	1,090	508	96	348	458	3,237	8,660
November	498	874	765	663	482	1,172	460	292	600	385	2,992	9,182
December	385	853	463	808	598	1,392	519	246	583	346	3,425	9,618
Average	**449**	**836**	**593**	**615**	**505**	**1,163**	**446**	**241**	**558**	**323**	**2,902**	**8,632**
2022 January	399	718	456	817	460	1,101	252	542	523	293	3,203	8,763

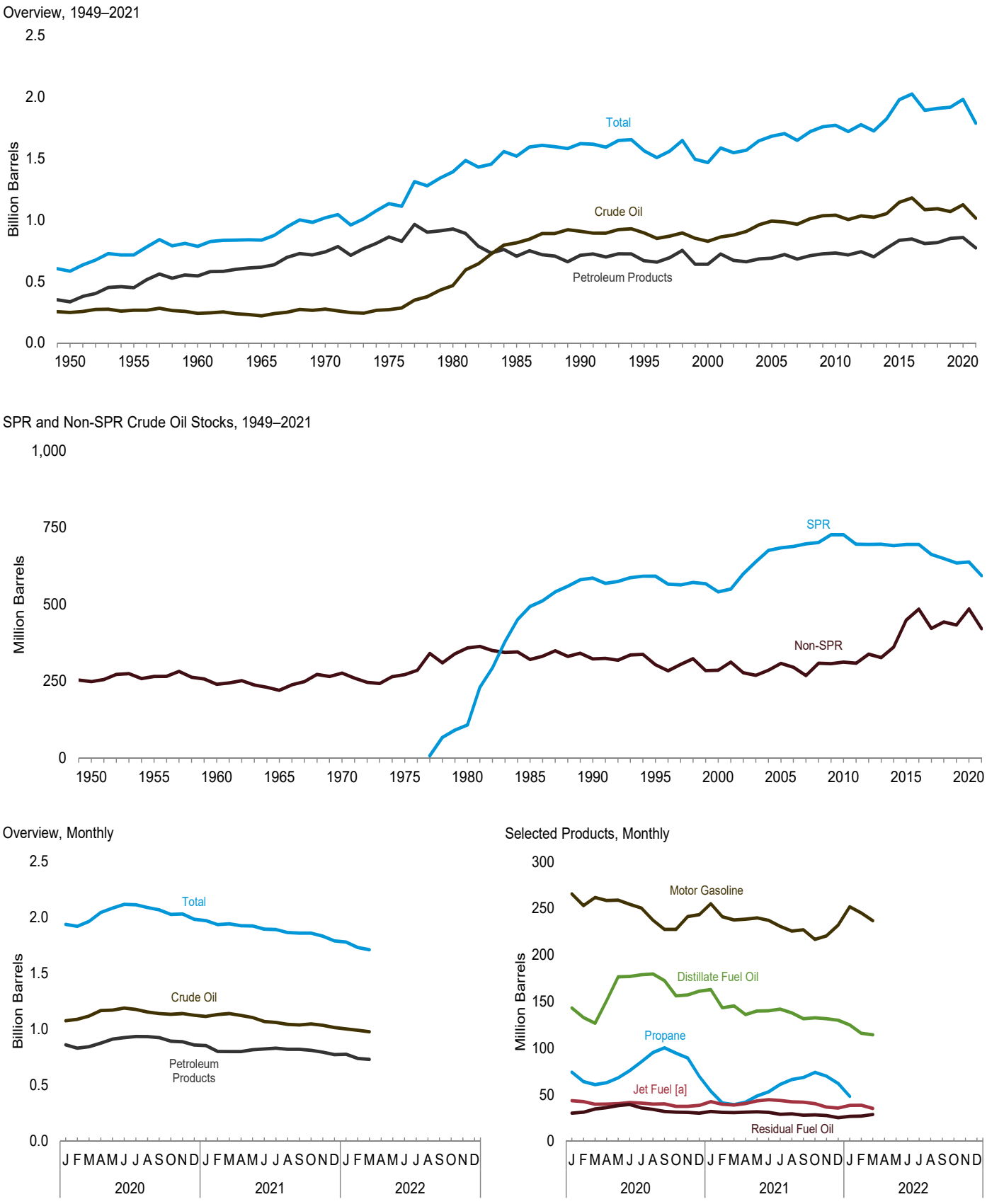
NA=Not available. – =No data reported.

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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports. • **2021 and 2022:** EIA, *Petroleum Supply Monthly*, monthly reports.

Figure 3.4 Petroleum Stocks



[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**
2006 Year	**689**	**296**	**984**	**144**	**NA**	**NA**	**62**	**125**	**39**	**212**	**42**	**157**	**1,703**
2007 Year	**697**	**268**	**965**	**134**	**NA**	**NA**	**52**	**106**	**39**	**218**	**39**	**146**	**1,648**
2008 Year	**702**	**308**	**1,010**	**146**	**NA**	**NA**	**55**	**127**	**38**	**214**	**36**	**149**	**1,719**
2009 Year	**727**	**307**	**1,034**	**166**	**NA**	**NA**	**50**	**113**	**43**	**223**	**37**	**142**	**1,758**
2010 Year	**727**	**312**	**1,039**	**164**	**46**	**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 January	635	440	1,075	143	74	2	76	197	44	266	30	180	1,935
February	635	453	1,088	133	64	1	65	180	43	253	31	190	1,918
March	635	483	1,118	127	61	2	62	183	40	262	35	197	1,962
April	638	529	1,167	151	63	1	64	200	40	258	36	189	2,041
May	648	522	1,170	177	68	1	69	214	40	259	38	182	2,081
June	656	533	1,189	177	76	2	77	236	42	254	40	177	2,114
July	656	520	1,176	179	85	1	87	257	41	250	36	171	2,110
August	648	504	1,152	180	95	2	97	283	40	238	34	159	2,085
September	642	498	1,140	173	100	2	102	299	40	228	32	154	2,065
October	639	494	1,132	156	95	1	96	287	38	228	31	153	2,025
November	638	501	1,139	157	89	1	91	266	38	241	31	155	2,027
December	**638**	**485**	**1,124**	**161**	**70**	**1**	**71**	**228**	**39**	**243**	**30**	**156**	**1,981**
2021 January	638	476	1,114	163	54	1	55	192	43	255	32	170	1,968
February	638	493	1,131	143	41	1	42	171	40	241	31	175	1,933
March	638	502	1,140	145	39	1	40	169	39	238	31	178	1,940
April	633	490	1,123	136	42	1	43	177	41	238	31	176	1,923
May	628	477	1,104	140	49	1	50	187	43	240	32	176	1,921
June	621	448	1,069	140	53	1	54	196	45	237	31	175	1,893
July	621	439	1,060	142	61	1	62	212	44	231	29	172	1,890
August	621	422	1,043	138	66	1	67	220	43	226	29	164	1,863
September	618	420	1,038	132	69	1	70	226	42	227	28	166	1,858
October	611	437	1,047	133	74	1	75	230	40	217	28	163	1,858
November	601	434	1,035	132	70	2	72	216	37	221	28	163	1,830
December	**594**	**421**	**1,015**	**130**	**62**	**1**	**63**	**188**	**36**	**232**	**25**	**161**	**1,788**
2022 January	588	R 414	R 1,003	R 125	R 48	R 1	R 50	R 161	R 39	R 252	R 27	R 173	R 1,778
February	E 579	E 412	E 991	E 116	NA	NA	E 36	RF 138	E 39	E 245	E 27	RE 173	E 1,729
March	E 565	E 412	E 977	E 114	NA	NA	E 34	F 140	E 35	E 237	E 29	E 177	E 1,708

[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 renewable fuels (excluding fuel ethanol) and other hydrocarbons.

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

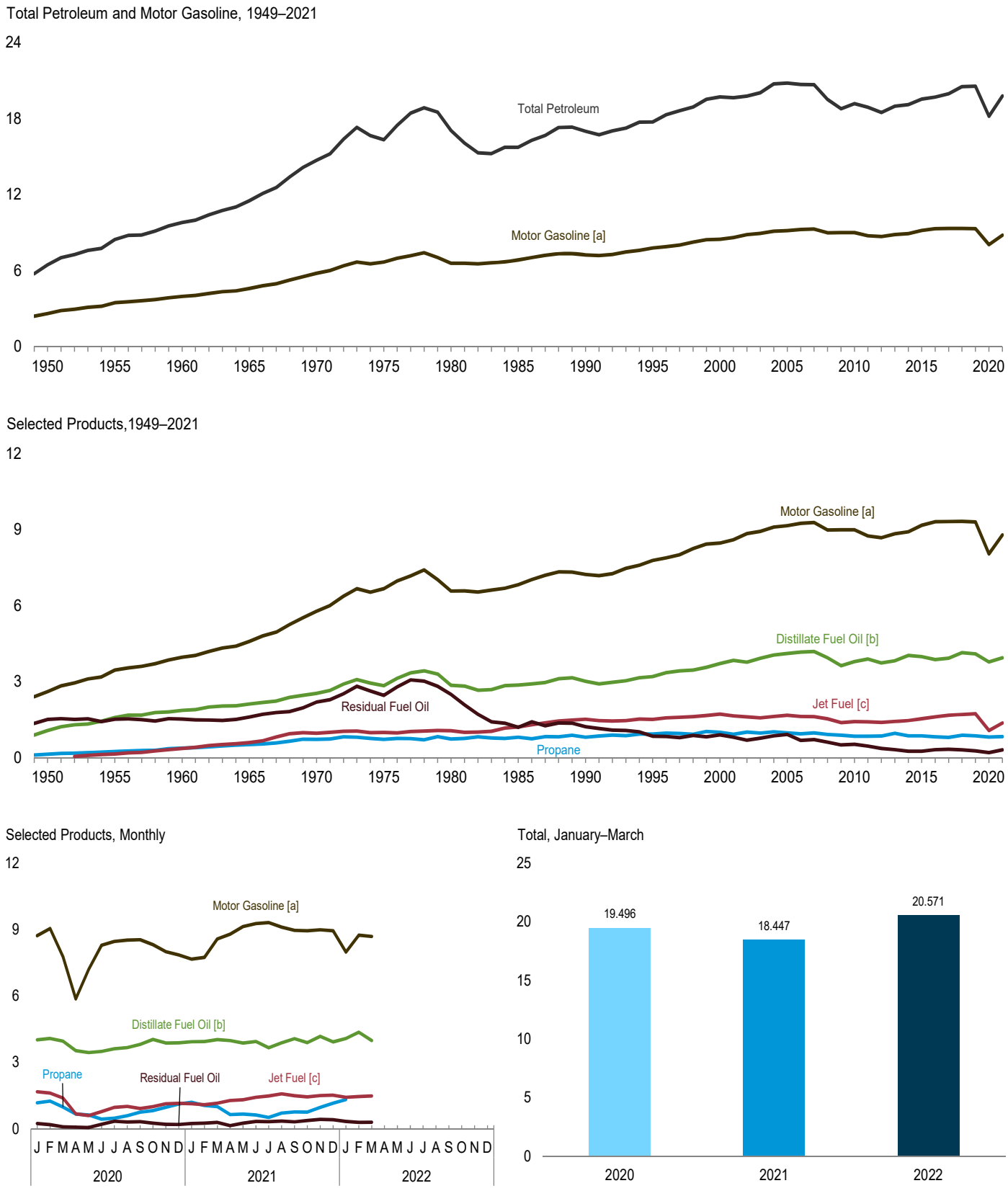
Notes: • Stocks are at end of period. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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. • **1981–2020:** EIA, *Petroleum Supply Annual,* annual reports, and unpublished revisions. • **2021 and 2022:** EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Figure 3.5 Petroleum Products Supplied by Type

(Million Barrels per Day)



[a] Beginning in 1993, includes fuel ethanol blended into motor gasoline.
[b] For 2009-2020, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil. Beginning in 2021, includes refinery and blender net inputs of renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[c] Beginning in 2005, includes kerosene-type jet fuel only.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Source: Table 3.5.

Table 3.5 Petroleum Products Supplied by Type

(Thousand Barrels per Day)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[a]	Hydrocarbon Gas Liquids			Jet Fuel[d]	Kerosene	Lubricants	Motor Gasoline[e]	Petroleum Coke	Residual Fuel Oil	Other[f]	Total
				Propane/Propylene										
				Propane	Propylene	Total[b]	Total[c]								
1950 Average	**180**	**108**	**1,082**	E **146**	E **13**	E **158**	**234**	([d])	**323**	**106**	**2,616**	**41**	**1,517**	**250**	**6,458**
1955 Average	**254**	**192**	**1,592**	E **251**	E **22**	E **273**	**404**	**154**	**320**	**116**	**3,463**	**67**	**1,526**	**366**	**8,455**
1960 Average	**302**	**161**	**1,872**	E **386**	E **33**	E **419**	**621**	**371**	**271**	**117**	**3,969**	**149**	**1,529**	**435**	**9,797**
1965 Average	**368**	**120**	**2,126**	E **523**	E **45**	E **568**	**841**	**602**	**267**	**129**	**4,593**	**202**	**1,608**	**657**	**11,512**
1970 Average	**447**	**55**	**2,540**	E **727**	E **55**	**782**	**1,224**	**967**	**263**	**136**	**5,785**	**212**	**2,204**	**866**	**14,697**
1975 Average	**419**	**39**	**2,851**	E **730**	E **60**	**790**	**1,352**	**1,001**	**159**	**137**	**6,675**	**247**	**2,462**	**982**	**16,322**
1980 Average	**396**	**35**	**2,866**	E **742**	E **72**	**813**	**1,590**	**1,068**	**158**	**159**	**6,579**	**237**	**2,508**	**1,460**	**17,056**
1985 Average	**425**	**27**	**2,868**	E **810**	E **72**	**883**	**1,721**	**1,218**	**114**	**145**	**6,831**	**264**	**1,202**	**909**	**15,726**
1990 Average	**483**	**24**	**3,021**	E **812**	E **105**	**917**	**1,705**	**1,522**	**43**	**164**	**7,235**	**339**	**1,229**	**1,225**	**16,988**
1995 Average	**486**	**21**	**3,207**	E **938**	E **157**	**1,096**	**2,100**	**1,514**	**54**	**156**	**7,789**	**365**	**852**	**1,180**	**17,725**
2000 Average	**525**	**20**	**3,722**	E **1,011**	E **224**	**1,235**	**2,434**	**1,725**	**67**	**166**	**8,472**	**406**	**909**	**1,255**	**19,701**
2005 Average	**546**	**19**	**4,118**	E **986**	E **243**	**1,229**	**2,146**	**1,679**	**70**	**141**	**9,159**	**515**	**920**	**1,489**	**20,802**
2006 Average	**521**	**18**	**4,169**	E **947**	E **268**	**1,215**	**2,135**	**1,633**	**54**	**137**	**9,253**	**522**	**689**	**1,557**	**20,687**
2007 Average	**494**	**17**	**4,196**	E **983**	E **252**	**1,235**	**2,191**	**1,622**	**32**	**142**	**9,286**	**490**	**723**	**1,487**	**20,680**
2008 Average	**417**	**15**	**3,945**	E **924**	E **230**	**1,154**	**2,044**	**1,539**	**14**	**131**	**8,989**	**464**	**622**	**1,317**	**19,498**
2009 Average	**360**	**14**	**3,631**	E **893**	E **267**	**1,160**	**2,127**	**1,393**	**18**	**118**	**8,997**	**427**	**511**	**1,175**	**18,771**
2010 Average	**362**	**15**	**3,800**	**852**	**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 January	190	12	4,024	1,181	284	1,465	3,442	1,673	25	126	8,724	252	238	1,228	19,933
February	190	8	4,080	1,257	258	1,514	3,313	1,619	29	109	9,050	256	188	1,291	20,132
March	209	11	3,961	992	254	1,245	3,361	1,388	5	80	7,779	253	91	1,324	18,463
April	300	6	3,528	666	281	947	2,725	678	3	85	5,866	189	74	1,095	14,549
May	364	14	3,446	625	274	899	2,937	597	(s)	83	7,198	222	61	1,156	16,078
June	508	11	3,495	437	263	700	2,895	784	1	102	8,292	225	209	1,057	17,578
July	488	13	3,615	477	275	752	3,025	968	(s)	112	8,460	264	346	1,090	18,381
August	480	11	3,668	591	259	850	2,974	1,016	9	95	8,524	365	306	1,110	18,558
September	421	12	3,814	758	285	1,043	3,017	921	8	105	8,541	309	322	944	18,415
October	402	12	4,036	823	299	1,121	3,316	1,006	3	111	8,316	219	255	938	18,614
November	321	11	3,879	972	300	1,272	3,732	1,130	1	104	8,001	309	208	1,046	18,743
December	234	10	3,888	1,122	298	1,420	3,982	1,148	8	114	7,855	255	194	1,113	18,802
Average	**343**	**11**	**3,786**	**824**	**278**	**1,101**	**3,228**	**1,076**	**7**	**102**	**8,049**	**260**	**208**	**1,116**	**18,186**
2021 January	239	11	3,934	1,200	323	1,522	3,999	1,131	9	110	7,666	257	242	996	18,595
February	201	5	3,946	1,061	266	1,328	2,893	1,092	32	113	7,744	163	259	996	17,444
March	268	9	4,033	1,009	282	1,291	3,257	1,158	2	96	8,577	234	291	1,279	19,204
April	351	15	3,988	646	312	959	3,138	1,279	8	112	8,791	226	143	1,410	19,459
May	383	9	3,874	669	338	1,007	3,442	1,318	1	106	9,137	310	259	1,255	20,094
June	504	17	3,940	623	318	941	3,413	1,425	(s)	98	9,273	344	335	1,189	20,537
July	476	11	3,658	515	311	826	3,133	1,490	1	110	9,313	219	327	1,156	19,894
August	491	15	3,886	710	311	1,021	3,424	1,578	(s)	95	9,111	354	348	1,207	20,511
September	469	14	4,075	767	286	1,053	3,368	1,499	(s)	95	8,966	266	319	1,152	20,224
October	448	12	3,891	753	276	1,029	3,125	1,441	10	103	8,949	239	377	1,298	19,892
November	366	10	4,174	968	314	1,283	3,613	1,500	1	108	8,989	290	432	1,112	20,595
December	239	11	3,931	1,164	324	1,487	4,063	1,525	1	95	8,949	323	415	1,213	20,764
Average	**370**	**12**	**3,943**	**840**	**305**	**1,145**	**3,410**	**1,371**	**5**	**104**	**8,795**	**269**	**313**	**1,190**	**19,782**
2022 January	R 244	R 7	R 4,081	R 1,319	R 298	R 1,617	R 4,081	R 1,423	R 16	R 115	R 7,982	R 262	R 334	R 1,186	R 19,731
February	F 184	F 5	E 4,366	NA	NA	E 1,751	RF 3,962	E 1,457	RF 6	F 104	E 8,751	F 208	E 296	RE 2,300	E 21,638
March	F 251	F 8	E 3,983	NA	NA	E 1,367	F 3,682	E 1,490	F 9	F 101	E 8,690	F 326	E 304	E 1,605	E 20,448
3-Month Average	E **228**	E **7**	E **4,136**	**NA**	**NA**	E **1,573**	E **3,907**	E **1,456**	E **10**	E **107**	E **8,465**	E **267**	E **312**	E **1,677**	E **20,571**
2021 3-Month Average	**237**	**9**	**3,972**	**1,091**	**291**	**1,382**	**3,399**	**1,128**	**14**	**106**	**8,004**	**220**	**264**	**1,093**	**18,447**
2020 3-Month Average	**197**	**10**	**4,020**	**1,141**	**265**	**1,406**	**3,374**	**1,559**	**19**	**105**	**8,506**	**253**	**172**	**1,281**	**19,496**

[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, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

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

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

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel. Beginning in 2021, also includes renewable fuels (excluding fuel ethanol) products supplied.

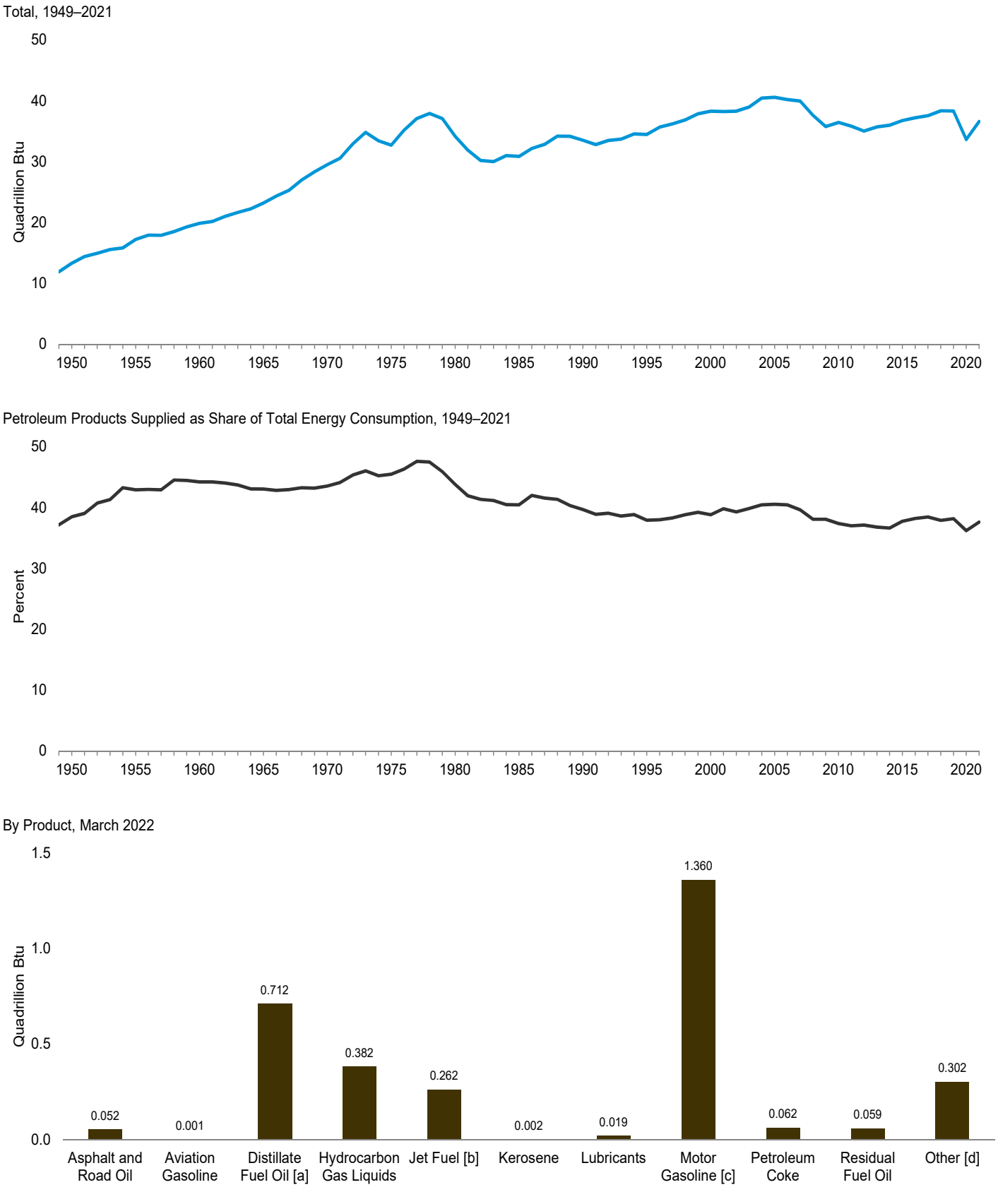
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

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

Table 3.6 Heat Content of Petroleum Products Supplied by Type

(Trillion Btu)

	Asphalt and Road Oil	Aviation Gasoline	Distillate Fuel Oil[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**
2006 Total	**1,261**	**33**	**8,831**	E 1,328	E 375	**1,703**	**2,768**	**3,379**	**111**	**303**	**17,511**	**1,141**	**1,581**	**3,276**	**40,196**
2007 Total	**1,197**	**32**	**8,858**	E 1,379	E 352	**1,731**	**2,835**	**3,358**	**67**	**313**	**17,428**	**1,072**	**1,659**	**3,134**	**39,952**
2008 Total	**1,012**	**28**	**8,346**	E 1,299	E 323	**1,622**	**2,656**	**3,193**	**30**	**291**	**16,799**	**1,017**	**1,432**	**2,788**	**37,591**
2009 Total	**873**	**27**	**7,657**	E 1,252	E 374	**1,626**	**2,707**	**2,883**	**36**	**262**	**16,714**	**937**	**1,173**	**2,483**	**35,752**
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 January	39	2	718	141	34	174	357	294	4	24	1,366	48	46	227	3,126
February	37	1	681	140	29	169	317	266	5	19	1,326	45	34	223	2,955
March	43	2	707	118	30	148	351	244	1	15	1,218	48	18	244	2,891
April	60	1	609	77	32	109	265	115	(s)	15	889	35	14	195	2,199
May	75	2	615	74	33	107	300	105	(s)	16	1,127	42	12	213	2,507
June	101	2	603	50	30	81	285	133	(s)	19	1,257	41	39	189	2,670
July	100	2	645	57	33	90	306	170	(s)	21	1,325	50	67	201	2,889
August	99	2	654	70	31	101	309	179	2	18	1,335	69	60	205	2,930
September	84	2	658	87	33	120	309	157	1	19	1,294	57	61	170	2,812
October	83	2	720	98	36	133	351	177	(s)	21	1,302	42	50	173	2,921
November	64	2	670	112	35	147	379	192	(s)	19	1,213	57	39	187	2,822
December	48	2	694	134	35	169	426	202	1	21	1,230	48	38	205	2,915
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 January	49	2	703	143	38	181	426	199	2	21	1,200	49	47	183	2,881
February	37	1	637	114	29	143	281	173	5	19	1,095	28	46	166	2,488
March	55	1	721	120	33	154	346	203	(s)	18	1,343	44	57	234	3,023
April	70	2	690	74	36	110	314	218	1	20	1,332	42	27	249	2,964
May	79	1	692	80	40	120	356	232	(s)	20	1,430	59	51	230	3,151
June	100	3	681	72	37	108	345	242	(s)	18	1,405	63	63	212	3,132
July	98	2	654	61	37	98	324	262	(s)	21	1,458	42	64	212	3,136
August	101	2	694	85	37	122	360	277	(s)	18	1,426	67	68	222	3,237
September	93	2	705	88	33	121	340	255	(s)	17	1,358	49	60	204	3,084
October	92	2	695	90	33	122	322	253	2	19	1,401	45	73	238	3,143
November	73	2	722	112	36	148	366	255	(s)	20	1,362	53	81	197	3,131
December	49	2	703	139	38	177	422	268	(s)	18	1,401	61	81	222	3,227
Total	**897**	**22**	**8,296**	**1,177**	**427**	**1,605**	**4,202**	**2,838**	**11**	**229**	**16,212**	**603**	**717**	**2,570**	**36,597**
2022 January	R 50	R 1	R 729	R 157	R 35	R 193	R 428	R 250	R 3	R 22	R 1,250	R 50	R 65	R 218	R 3,065
February	F 34	F 1	E 705	NA	NA	E 188	RF 371	E 231	F 1	F 18	E 1,237	F 36	E 52	RE 385	E 3,071
March	F 52	F 1	E 712	NA	NA	E 163	F 382	E 262	F 2	F 19	E 1,360	F 62	E 59	E 302	E 3,213
3-Month Total	**E 136**	**E 3**	**E 2,146**	**NA**	**NA**	**E 544**	**E 1,181**	**E 743**	**E 5**	**E 58**	**E 3,847**	**E 147**	**E 177**	**E 906**	**E 9,350**
2021 3-Month Total	**142**	**4**	**2,061**	**377**	**100**	**478**	**1,054**	**576**	**7**	**58**	**3,638**	**121**	**149**	**583**	**8,392**
2020 3-Month Total	**119**	**5**	**2,107**	**399**	**93**	**491**	**1,025**	**804**	**10**	**58**	**3,910**	**141**	**99**	**694**	**8,971**

[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, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

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

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

[f] Petrochemical feedstocks, still gas (refinery gas), waxes, and miscellaneous products. Beginning in 1964, also includes special naphthas. Beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel. Beginning in 2021, also includes renewable fuels (excluding fuel ethanol) products supplied.

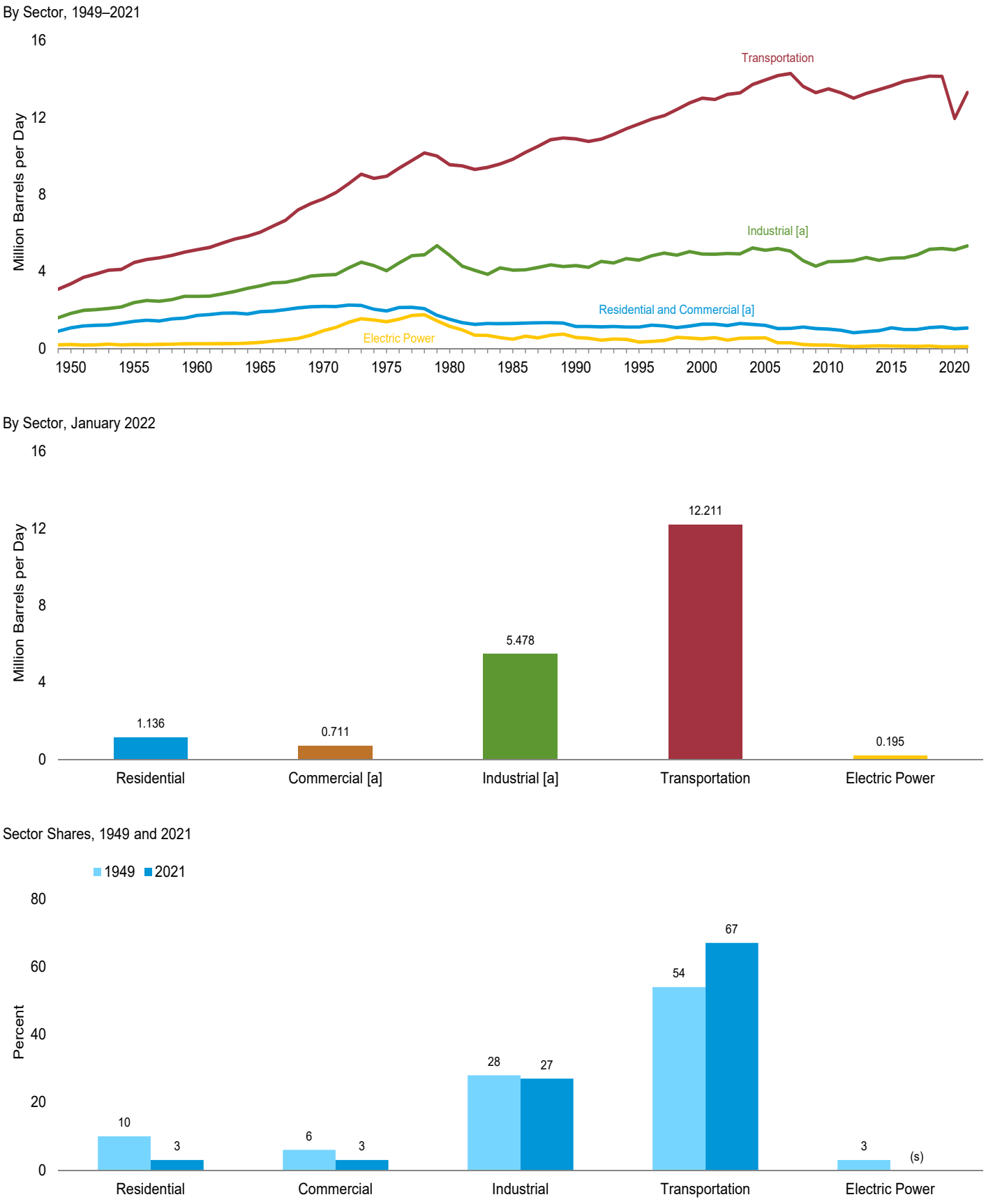
R=Revised. E=Estimate. F=Forecast. NA=Not available. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

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**
2006 Average	**335**	**318**	**32**	**685**	**189**	**88**	**7**	**26**	**(s)**	**33**	**343**
2007 Average	**342**	**345**	**21**	**708**	**181**	**87**	**4**	**32**	**(s)**	**33**	**337**
2008 Average	**354**	**394**	**10**	**758**	**181**	**113**	**2**	**24**	**(s)**	**31**	**351**
2009 Average	**276**	**391**	**13**	**680**	**187**	**99**	**2**	**28**	**(s)**	**31**	**348**
2010 Average	**266**	**378**	**14**	**658**	**185**	**100**	**2**	**28**	**(s)**	**27**	**343**
2011 Average	**248**	**351**	**9**	**608**	**186**	**102**	**2**	**24**	**(s)**	**23**	**336**
2012 Average	**228**	**281**	**4**	**513**	**168**	**96**	**1**	**21**	**(s)**	**14**	**300**
2013 Average	**233**	**331**	**4**	**568**	**163**	**108**	**(s)**	**22**	**(s)**	**11**	**304**
2014 Average	**253**	**349**	**7**	**609**	**169**	**114**	**1**	**29**	**(s)**	**3**	**318**
2015 Average	**262**	**318**	**5**	**584**	**171**	**106**	**1**	**[d] 204**	**(s)**	**2**	**483**
2016 Average	**206**	**306**	**7**	**518**	**154**	**107**	**1**	**203**	**(s)**	**2**	**467**
2017 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 January	294	R 635	17	R 946	199	R 222	3	218	(s)	2	R 644
February	259	R 605	20	R 884	175	R 214	3	226	(s)	1	R 620
March	226	R 458	4	R 688	153	R 173	1	194	0	1	R 522
April	210	R 380	2	R 592	142	R 151	(s)	146	0	1	R 441
May	229	R 232	(s)	R 461	155	R 109	(s)	180	0	1	R 445
June	149	R 142	1	R 291	101	R 84	(s)	207	0	1	R 393
July	97	R 126	(s)	R 224	66	R 80	(s)	211	0	1	R 357
August	86	R 128	6	R 220	58	R 80	1	213	0	(s)	R 352
September	148	R 165	5	R 318	100	R 90	1	213	0	1	R 405
October	166	R 295	2	R 462	112	R 127	(s)	207	0	1	R 448
November	207	R 425	1	R 633	140	R 163	(s)	200	0	1	R 504
December	251	R 642	6	R 898	170	R 224	1	196	0	1	R 593
Average	**193**	**R 352**	**5**	**R 551**	**131**	**R 143**	**1**	**201**	**(s)**	**1**	**R 477**
2021 January	308	R 679	6	R 993	208	R 235	1	191	0	2	R 638
February	358	R 730	22	R 1,110	242	R 249	3	193	(s)	3	R 691
March	268	R 474	2	R 744	182	R 177	(s)	214	(s)	2	R 575
April	189	R 343	5	R 538	128	R 141	1	219	0	1	R 490
May	158	R 228	1	R 387	107	R 108	(s)	228	0	1	R 445
June	139	R 132	(s)	R 272	94	R 81	(s)	231	0	1	R 408
July	94	R 127	1	R 221	63	R 80	(s)	232	0	1	R 376
August	80	R 128	(s)	R 208	54	R 80	(s)	227	0	1	R 362
September	141	R 152	(s)	R 293	95	R 87	(s)	224	0	1	R 407
October	184	R 248	7	R 439	125	R 114	1	223	(s)	1	R 465
November	217	R 487	1	R 705	147	R 181	(s)	224	(s)	2	R 554
December	289	R 549	(s)	R 839	196	R 199	(s)	223	(s)	2	R 620
Average	**201**	**R 354**	**4**	**R 559**	**136**	**R 144**	**1**	**219**	**(s)**	**2**	**R 502**
2022 January	371	754	11	1,136	251	256	2	199	(s)	3	711

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

[b] Hydrocarbon gas liquids.

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

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

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

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

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

Sources: See end of section.

Table 3.7b Petroleum Consumption: Industrial Sector

(Thousand Barrels per Day)

	Industrial Sector[a]												
			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**
2006 Average	**521**	**594**	**521**	**268**	**789**	**1,710**	**14**	**71**	**198**	**425**	**104**	**1,557**	**5,193**
2007 Average	**494**	**595**	**536**	**252**	**787**	**1,744**	**6**	**73**	**161**	**412**	**84**	**1,487**	**5,056**
2008 Average	**417**	**637**	**389**	**230**	**619**	**1,510**	**2**	**67**	**131**	**394**	**84**	**1,317**	**4,559**
2009 Average	**360**	**509**	**383**	**267**	**650**	**1,617**	**2**	**61**	**128**	**363**	**57**	**1,175**	**4,272**
2010 Average	**362**	**547**	**R 371**	**305**	**R 676**	**R 1,782**	**4**	**61**	**140**	**310**	**52**	**1,251**	**R 4,510**
2011 Average	**355**	**586**	**R 395**	**310**	**R 705**	**R 1,794**	**2**	**58**	**138**	**295**	**59**	**1,240**	**R 4,525**
2012 Average	**340**	**602**	**R 481**	**308**	**R 790**	**R 1,912**	**1**	**53**	**136**	**319**	**30**	**1,165**	**R 4,559**
2013 Average	**323**	**601**	**R 526**	**306**	**R 832**	**R 2,058**	**1**	**57**	**142**	**295**	**21**	**1,227**	**R 4,725**
2014 Average	**327**	**648**	**R 402**	**298**	**R 699**	**R 1,975**	**1**	**59**	**114**	**290**	**18**	**1,151**	**R 4,583**
2015 Average	**343**	**555**	**436**	**295**	**731**	**2,121**	**1**	**64**	**[e] 140**	**295**	**15**	**1,153**	**4,687**
2016 Average	**351**	**548**	**R 414**	**301**	**R 716**	**R 2,122**	**1**	**61**	**142**	**289**	**23**	**1,170**	**R 4,705**
2017 Average	**351**	**572**	**R 378**	**309**	**R 687**	**R 2,212**	**1**	**56**	**143**	**269**	**22**	**1,228**	**R 4,855**
2018 Average	**327**	**595**	**R 395**	**311**	**R 706**	**R 2,520**	**1**	**55**	**146**	**278**	**19**	**1,210**	**R 5,152**
2019 Average	**348**	**573**	**R 330**	**298**	**R 629**	**R 2,601**	**1**	**53**	**145**	**267**	**18**	**1,189**	**R 5,194**
2020 January	190	768	R 321	284	R 605	R 2,582	5	62	158	210	16	1,228	R 5,219
February	190	816	R 434	258	R 692	R 2,490	6	53	164	218	13	1,291	R 5,241
March	209	663	R 358	254	R 611	R 2,727	1	39	141	207	6	1,324	R 5,318
April	300	320	R 132	281	R 413	R 2,191	(s)	42	106	147	5	1,095	R 4,206
May	364	202	R 281	274	R 555	R 2,593	(s)	41	130	181	4	1,156	R 4,671
June	508	248	R 208	263	R 471	R 2,667	(s)	50	150	172	14	1,057	R 4,865
July	488	353	R 268	275	R 543	R 2,816	(s)	55	153	211	23	1,090	R 5,189
August	480	387	R 380	259	R 639	R 2,763	2	47	154	315	20	1,110	R 5,278
September	421	512	R 499	285	R 784	R 2,759	1	51	154	280	22	944	R 5,145
October	402	638	R 398	299	R 697	R 2,892	1	54	150	194	17	938	R 5,286
November	321	587	R 381	300	R 681	R 3,141	(s)	51	145	272	14	1,046	R 5,577
December	234	582	R 252	298	R 550	R 3,112	2	56	142	207	14	1,113	R 5,462
Average	**343**	**506**	**R 326**	**278**	**R 603**	**R 2,729**	**1**	**50**	**146**	**218**	**14**	**1,116**	**R 5,123**
2021 January	239	650	R 282	323	R 605	R 3,082	2	54	139	212	16	913	R 5,306
February	201	496	R 79	266	R 345	R 1,910	6	56	140	113	18	885	R 3,825
March	268	605	R 354	282	R 636	R 2,602	(s)	47	155	191	20	1,149	R 5,038
April	351	560	R 159	312	R 471	R 2,650	1	55	159	200	10	1,286	R 5,272
May	383	474	R 330	338	R 668	R 3,102	(s)	52	165	277	18	1,119	R 5,591
June	504	468	R 406	318	R 723	R 3,195	(s)	48	168	311	23	1,065	R 5,781
July	476	320	R 305	311	R 616	R 2,923	(s)	54	168	175	22	1,046	R 5,186
August	491	458	R 499	311	R 810	3,213	(s)	47	165	306	24	1,075	R 5,778
September	469	615	R 525	286	R 811	R 3,126	(s)	47	162	224	22	1,054	R 5,718
October	448	466	R 388	276	R 664	R 2,760	2	51	162	199	27	1,134	R 5,247
November	366	698	R 297	314	R 611	R 2,941	(s)	53	163	237	30	961	R 5,449
December	239	511	R 413	324	R 737	R 3,312	(s)	47	162	284	29	1,059	R 5,642
Average	**370**	**526**	**R 338**	**305**	**R 644**	**R 2,909**	**1**	**51**	**159**	**228**	**22**	**1,063**	**R 5,329**
2022 January	244	634	306	298	604	3,068	3	56	144	225	21	1,082	5,478

[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, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[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, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

R=Revised. (s)=Less than 500 barrels per day and greater than -500 barrels per day.

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

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

Sources: See end of section.

Table 3.7c Petroleum Consumption: Transportation and Electric Power Sectors

(Thousand Barrels per Day)

	Transportation Sector									Electric Power Sector[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**
2006 Average	**18**	**3,017**	**20**	**1,633**	**67**	**9,029**	**395**	**NA**	**14,178**	**35**	**97**	**157**	**289**
2007 Average	**17**	**3,037**	**16**	**1,622**	**69**	**9,093**	**433**	**NA**	**14,287**	**42**	**78**	**173**	**293**
2008 Average	**15**	**2,738**	**29**	**1,539**	**64**	**8,834**	**402**	**NA**	**13,621**	**34**	**70**	**104**	**209**
2009 Average	**14**	**2,626**	**20**	**1,393**	**57**	**8,841**	**344**	**(h)**	**13,297**	**33**	**63**	**79**	**175**
2010 Average	**15**	**2,764**	**d,R 3**	**1,432**	**70**	**8,824**	**389**	**(h)**	**R 13,496**	**38**	**65**	**67**	**170**
2011 Average	**15**	**2,849**	**R 3**	**1,425**	**67**	**8,591**	**338**	**(h)**	**R 13,289**	**30**	**66**	**41**	**137**
2012 Average	**14**	**2,719**	**R 3**	**1,398**	**61**	**8,525**	**291**	**(h)**	**R 13,011**	**25**	**41**	**33**	**99**
2013 Average	**12**	**2,804**	**R 4**	**1,434**	**65**	**8,679**	**253**	**(h)**	**R 13,252**	**26**	**59**	**34**	**119**
2014 Average	**12**	**2,928**	**R 4**	**1,470**	**67**	**8,778**	**195**	**(h)**	**R 13,454**	**39**	**57**	**41**	**137**
2015 Average	**11**	**2,974**	**5**	**1,548**	**74**	**g 8,835**	**202**	**(h)**	**13,650**	**33**	**54**	**41**	**128**
2016 Average	**11**	**2,944**	**R 6**	**1,614**	**70**	**8,973**	**271**	**(h)**	**13,888**	**26**	**57**	**31**	**113**
2017 Average	**11**	**2,976**	**R 7**	**1,682**	**64**	**8,988**	**290**	**(h)**	**R 14,017**	**26**	**47**	**29**	**101**
2018 Average	**12**	**3,118**	**R 6**	**1,707**	**62**	**8,984**	**263**	**(h)**	**R 14,153**	**38**	**49**	**34**	**121**
2019 Average	**13**	**3,127**	**R 6**	**1,743**	**59**	**8,965**	**231**	**(h)**	**R 14,143**	**26**	**36**	**26**	**88**
2020 January	12	2,737	R 3	1,673	64	8,348	196	(h)	R 13,034	25	41	24	91
February	8	2,807	R 3	1,619	56	8,661	152	(h)	R 13,306	23	38	21	81
March	11	2,901	R 3	1,388	41	7,444	65	(h)	R 11,853	17	46	19	82
April	6	2,840	R 3	678	43	5,613	50	(h)	R 9,235	16	41	19	76
May	14	2,841	R 3	597	42	6,888	37	(h)	R 10,423	19	41	19	79
June	11	2,973	R 3	784	52	7,935	170	(h)	R 11,929	23	53	24	100
July	13	3,075	R 3	968	57	8,096	297	(h)	R 12,508	24	53	26	103
August	11	3,115	R 3	1,016	48	8,157	259	(h)	R 12,610	22	49	26	98
September	12	3,037	R 3	921	54	8,174	276	(h)	R 12,477	18	29	24	71
October	12	3,100	R 3	1,006	57	7,959	212	(h)	R 12,348	20	24	26	70
November	11	2,924	R 3	1,130	53	7,657	170	(h)	R 11,948	21	37	22	80
December	10	2,860	R 3	1,148	58	7,517	155	(h)	R 11,752	24	47	25	97
Average	**11**	**2,935**	**R 3**	**1,076**	**52**	**7,703**	**170**	**(h)**	**R 11,951**	**21**	**42**	**23**	**86**
2021 January	11	2,748	R 3	1,131	56	7,336	196	82	R 11,565	20	45	28	93
February	5	2,779	R 3	1,092	58	7,410	208	112	R 11,668	70	50	30	150
March	9	2,959	R 3	1,158	49	8,208	247	130	R 12,763	19	43	21	83
April	15	3,090	R 3	1,279	57	8,413	111	124	R 13,092	20	26	20	66
May	9	3,114	R 3	1,318	54	8,744	219	136	R 13,597	21	33	21	75
June	17	3,217	R 3	1,425	50	8,874	287	124	R 13,998	21	33	24	78
July	11	3,162	R 3	1,490	56	8,912	280	110	R 14,024	19	44	24	87
August	15	3,267	R 3	1,578	49	8,719	288	132	R 14,053	26	48	35	109
September	14	3,205	R 3	1,499	49	8,580	267	97	R 13,714	20	42	29	91
October	12	3,095	R 3	1,441	53	8,564	325	164	R 13,656	22	40	24	85
November	10	3,090	R 3	1,500	55	8,602	377	151	R 13,788	23	52	23	99
December	11	2,910	R 3	1,525	49	8,564	361	154	R 13,576	26	38	23	87
Average	**12**	**3,054**	**R 3**	**1,371**	**53**	**8,417**	**264**	**127**	**R 13,301**	**25**	**41**	**25**	**92**
2022 January	7	2,738	3	1,423	59	7,639	238	104	12,211	87	36	72	195

[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] Renewable fuels (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 renewable fuels (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.

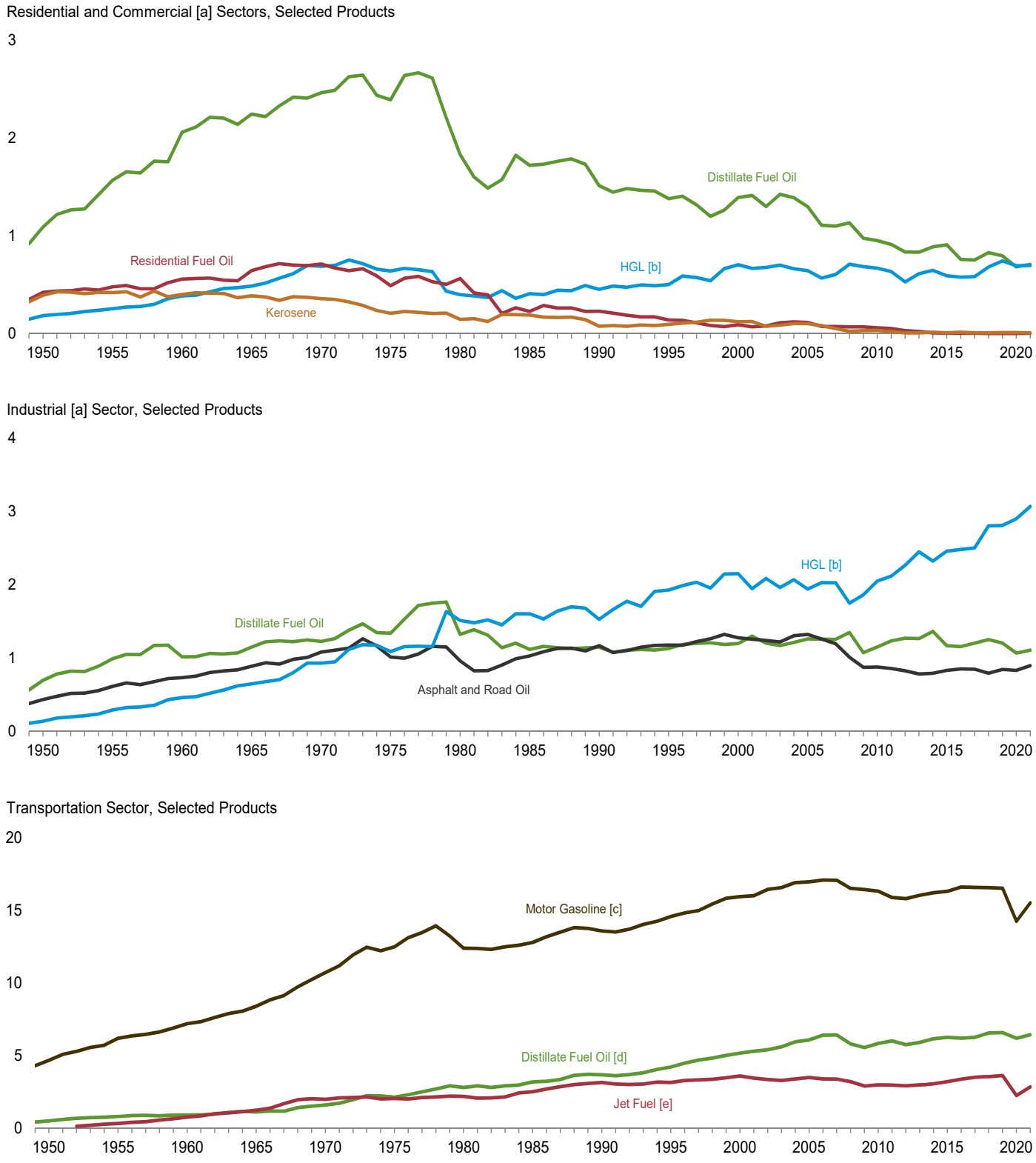
Notes: • Transportation sector data are estimates. • For total petroleum consumption by all sectors, see petroleum products supplied data in Table 3.5. Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c.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

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

Sources: See end of section.

Figure 3.8a Heat Content of Petroleum Consumption by End-Use Sector, 1949-2021

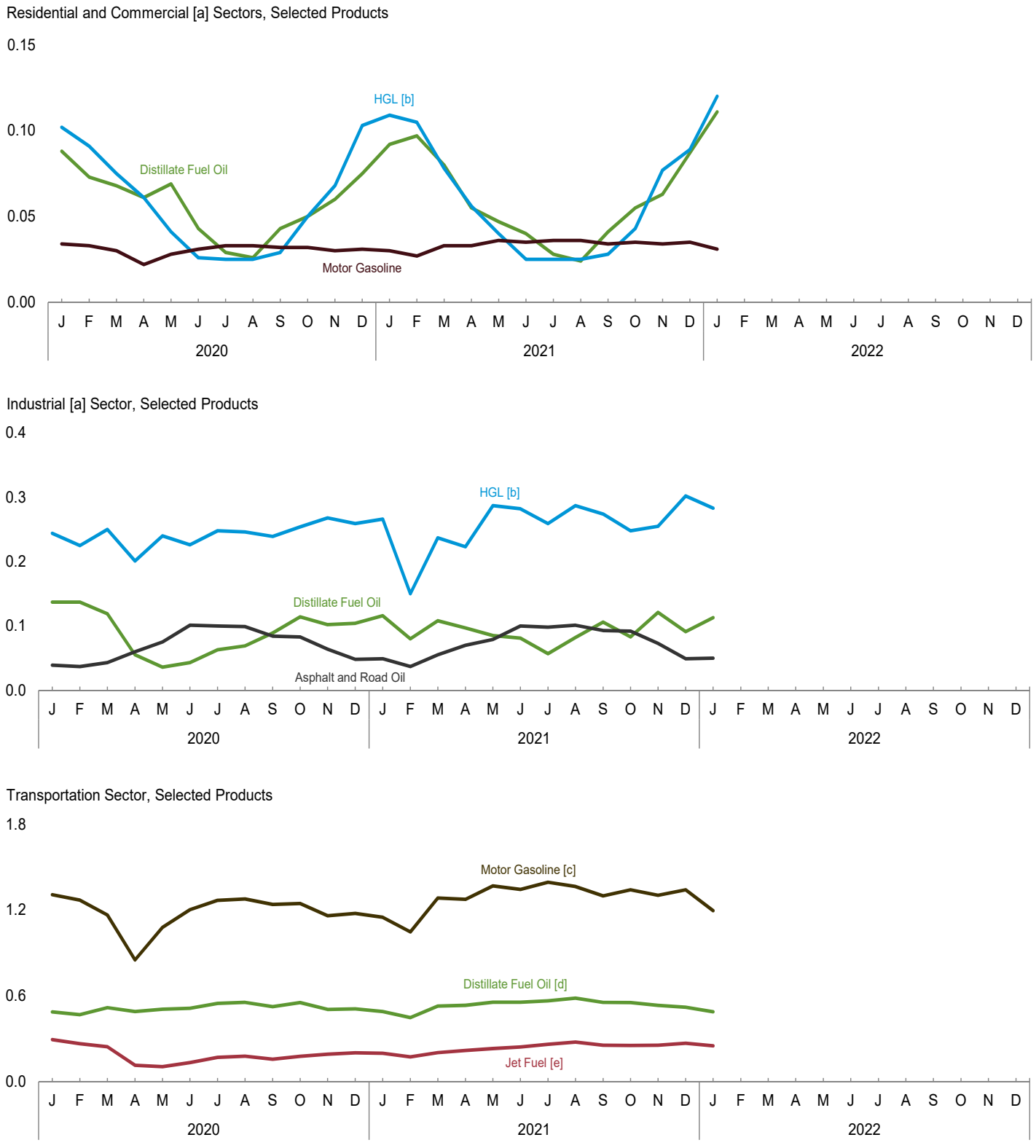
(Quadrillion Btu)



[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] From 2009–2020, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil. Beginning in 2021, includes refinery and blender net inputs of renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[e] Beginning in 2005, includes kerosene-type jet fuel only.
Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

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

(Quadrillion Btu)



[a] Includes combined-heat-and-power plants and a small number of electricity-only plants.
[b] Hydrocarbon gas liquids.
[c] Includes fuel ethanol blended into motor gasoline.
[d] Through 2020, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil. Beginning in 2021, includes refinery and blender net inputs of renewable diesel fuel (including biodiesel) blended into distillate fuel oil.
[e] Includes kerosene-type jet fuel only.
Note: Petroleum products supplied is an approximation of petroleum consumption and is synonymous with the term "petroleum consumption" in Tables 3.7a–3.8c. Other measurements of consumption by fuel type or sector may differ. For example, jet fuel product supplied may not equal jet fuel consumed by U.S.-flagged aircraft.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#petroleum.
Sources: Tables 3.8a–3.8c.

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

(Trillion Btu)

	Residential Sector				Commercial Sector[a]						
	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Total	Distillate Fuel Oil	HGL[b] Propane	Kero-sene	Motor Gasoline[c,d]	Petroleum Coke	Residual Fuel Oil	Total
1950 Total	**829**	**146**	**347**	**1,322**	**262**	**39**	**47**	**100**	**NA**	**424**	**872**
1955 Total	**1,194**	**202**	**371**	**1,767**	**377**	**54**	**51**	**133**	**NA**	**480**	**1,095**
1960 Total	**1,568**	**305**	**354**	**2,228**	**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	**1,878**	**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**
2006 Total	**709**	**446**	**66**	**1,222**	**400**	**123**	**15**	**48**	**(s)**	**75**	**662**
2007 Total	**721**	**484**	**44**	**1,249**	**381**	**122**	**9**	**60**	**(s)**	**75**	**648**
2008 Total	**750**	**553**	**21**	**1,325**	**384**	**158**	**4**	**45**	**(s)**	**71**	**663**
2009 Total	**582**	**548**	**28**	**1,158**	**395**	**139**	**4**	**52**	**(s)**	**71**	**662**
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 January	53	R 76	3	R 131	36	R 26	(s)	34	(s)	(s)	R 97
February	43	R 67	3	R 114	29	R 24	1	33	(s)	(s)	R 87
March	40	R 55	1	R 96	27	R 21	(s)	30	0	(s)	R 79
April	36	R 44	(s)	R 80	25	R 17	(s)	22	0	(s)	R 64
May	41	R 28	(s)	R 69	28	R 13	(s)	28	0	(s)	R 69
June	26	R 16	(s)	R 42	17	R 10	(s)	31	0	(s)	R 59
July	17	R 15	(s)	R 32	12	R 9	(s)	33	0	(s)	R 54
August	15	R 15	1	R 32	10	R 10	(s)	33	0	(s)	R 53
September	26	R 19	1	R 45	17	R 10	(s)	32	0	(s)	R 60
October	30	R 35	(s)	R 65	20	R 15	(s)	32	0	(s)	R 68
November	36	R 49	(s)	R 85	24	R 19	(s)	30	0	(s)	R 74
December	45	R 76	1	R 122	30	R 27	(s)	31	0	(s)	R 88
Total	**408**	**R 495**	**11**	**R 914**	**276**	**R 201**	**2**	**371**	**(s)**	**2**	**R 853**
2021 January	55	R 81	1	R 137	37	R 28	(s)	30	0	(s)	R 96
February	58	R 79	4	R 140	39	R 27	1	27	(s)	(s)	R 94
March	48	R 56	(s)	R 105	32	R 21	(s)	33	(s)	(s)	R 88
April	33	R 40	1	R 73	22	R 16	(s)	33	0	(s)	R 72
May	28	R 27	(s)	R 56	19	R 13	(s)	36	0	(s)	R 68
June	24	R 15	(s)	R 39	16	R 9	(s)	35	0	(s)	R 61
July	17	R 15	(s)	R 32	11	R 9	(s)	36	0	(s)	R 57
August	14	R 15	(s)	R 30	10	R 10	(s)	36	0	(s)	R 55
September	24	R 18	(s)	R 42	16	R 10	(s)	34	0	(s)	R 61
October	33	R 30	1	R 64	22	R 14	(s)	35	(s)	(s)	R 71
November	38	R 56	(s)	R 94	25	R 21	(s)	34	(s)	(s)	R 81
December	52	R 65	(s)	R 117	35	R 24	(s)	35	(s)	(s)	R 94
Total	**424**	**R 497**	**7**	**R 928**	**287**	**R 202**	**1**	**404**	**(s)**	**4**	**R 898**
2022 January	66	90	2	158	45	30	(s)	31	(s)	1	107

[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.

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**	**9,463**
1985 Total	**1,029**	**1,119**	**696**	**101**	**798**	**1,813**	**44**	**166**	**218**	**575**	**748**	**1,944**	**7,655**
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**
2006 Total	**1,261**	**1,258**	**731**	**375**	**1,106**	**2,171**	**30**	**156**	**374**	**938**	**239**	**3,276**	**9,703**
2007 Total	**1,197**	**1,256**	**751**	**352**	**1,103**	**2,207**	**13**	**161**	**302**	**910**	**193**	**3,134**	**9,373**
2008 Total	**1,012**	**1,348**	**547**	**323**	**870**	**1,904**	**4**	**150**	**245**	**870**	**194**	**2,788**	**8,514**
2009 Total	**873**	**1,073**	**537**	**374**	**911**	**1,992**	**4**	**135**	**238**	**805**	**130**	**2,483**	**7,733**
2010 Total	**878**	**1,153**	**R 520**	**428**	**R 947**	**R 2,207**	**7**	**136**	**260**	**694**	**120**	**2,645**	**R 8,099**
2011 Total	**859**	**1,236**	**R 554**	**434**	**R 988**	**R 2,172**	**4**	**127**	**254**	**663**	**135**	**2,621**	**R 8,071**
2012 Total	**827**	**1,271**	**R 677**	**432**	**R 1,109**	**R 2,351**	**2**	**118**	**252**	**717**	**70**	**2,474**	**R 8,082**
2013 Total	**783**	**1,266**	**R 738**	**429**	**R 1,166**	**R 2,545**	**1**	**125**	**263**	**663**	**48**	**2,583**	**R 8,279**
2014 Total	**793**	**1,366**	**R 563**	**417**	**R 980**	**R 2,411**	**3**	**131**	**210**	**653**	**41**	**2,430**	**R 8,036**
2015 Total	**832**	**1,170**	**611**	**413**	**R 1,024**	**2,620**	**2**	**142**	**e 258**	**663**	**34**	**2,435**	**8,155**
2016 Total	**853**	**1,157**	**R 582**	**423**	**R 1,005**	**R 2,595**	**2**	**135**	**262**	**653**	**52**	**2,553**	**R 8,264**
2017 Total	**849**	**1,205**	**R 530**	**432**	**R 962**	**R 2,677**	**1**	**125**	**264**	**610**	**50**	**2,667**	**R 8,449**
2018 Total	**793**	**1,254**	**R 553**	**436**	**R 989**	**R 3,028**	**2**	**122**	**269**	**629**	**43**	**2,630**	**R 8,769**
2019 Total	**844**	**1,206**	**R 463**	**418**	**R 881**	**R 3,143**	**1**	**118**	**267**	**602**	**41**	**2,585**	**R 8,807**
2020 January	39	137	R 38	34	R 72	R 255	1	12	25	41	3	227	R 739
February	37	137	R 48	29	R 77	R 225	1	9	24	39	2	223	R 697
March	43	119	R 43	30	R 73	R 276	(s)	7	22	40	1	244	R 752
April	60	55	R 15	32	R 48	R 204	(s)	8	16	28	1	195	R 566
May	75	36	33	33	R 66	R 259	(s)	8	20	35	1	213	647
June	101	43	24	30	54	259	(s)	9	23	32	3	189	659
July	100	63	32	33	65	281	(s)	10	24	41	4	201	726
August	99	69	45	31	76	283	(s)	9	24	61	4	205	754
September	84	89	57	33	90	R 280	(s)	9	23	52	4	170	710
October	83	114	R 47	36	R 83	R 301	(s)	10	24	37	3	173	R 745
November	64	102	R 44	35	R 78	R 311	(s)	9	22	50	3	187	R 748
December	48	104	R 30	35	R 65	R 322	(s)	10	22	40	3	205	R 755
Total	**832**	**1,068**	**R 458**	**390**	**R 847**	**R 3,256**	**3**	**111**	**269**	**495**	**32**	**2,433**	**R 8,499**
2021 January	49	116	R 34	38	R 72	R 317	(s)	10	22	41	3	169	R 728
February	37	80	R 8	29	R 37	R 175	1	9	20	20	3	149	R 495
March	55	108	R 42	33	R 76	R 268	(s)	9	24	37	4	212	R 718
April	70	97	R 18	36	R 54	R 257	(s)	10	24	37	2	229	R 727
May	79	85	39	40	79	R 316	(s)	10	26	53	4	207	R 779
June	100	81	47	37	83	320	(s)	9	25	58	4	191	789
July	98	57	36	37	73	R 299	(s)	10	26	34	4	194	723
August	101	82	59	37	96	335	(s)	9	26	59	5	200	816
September	93	106	R 61	33	93	312	(s)	9	25	42	4	189	779
October	92	83	R 46	33	R 79	278	(s)	10	25	38	5	210	R 743
November	73	121	R 34	36	R 70	R 288	(s)	10	25	44	6	173	R 739
December	49	91	R 49	38	R 88	R 333	(s)	9	25	54	6	196	R 764
Total	**897**	**1,108**	**R 474**	**427**	**R 902**	**R 3,499**	**2**	**112**	**293**	**517**	**50**	**2,319**	**R 8,798**
2022 January	50	113	36	35	72	307	1	11	23	43	4	200	752

[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, natural gasoline (pentanes plus), and refinery olefins (ethylene, propylene, butylene, and isobutylene). Through 1983, also includes plant condensate and unfractionated stream.

[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, and other products (from both primary and secondary supply) reclassified as gasoline blending components. Beginning in 1983, also includes crude oil burned as fuel. Beginning in 2005, also includes naphtha-type jet fuel.

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

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

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

Sources: See end of section.

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

	Transportation Sector									Electric Power Sector[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**
2006 Total	**33**	**6,390**	**28**	**3,379**	**147**	**17,088**	**906**	**NA**	**27,972**	**73**	**203**	**361**	**637**
2007 Total	**32**	**6,411**	**22**	**3,358**	**152**	**17,066**	**994**	**NA**	**28,034**	**89**	**163**	**397**	**648**
2008 Total	**28**	**5,792**	**40**	**3,193**	**141**	**16,510**	**926**	**NA**	**26,630**	**73**	**146**	**240**	**459**
2009 Total	**27**	**5,537**	**28**	**2,883**	**127**	**16,425**	**791**	**(h)**	**25,817**	**70**	**132**	**181**	**382**
2010 Total	**27**	**5,826**	**d,R 4**	**2,963**	**155**	**16,320**	**892**	**(h)**	**R 26,187**	**80**	**137**	**154**	**370**
2011 Total	**27**	**5,997**	**R 5**	**2,950**	**148**	**15,877**	**776**	**(h)**	**R 25,780**	**64**	**138**	**93**	**295**
2012 Total	**25**	**5,736**	**R 4**	**2,901**	**135**	**15,795**	**671**	**(h)**	**R 25,268**	**52**	**85**	**77**	**214**
2013 Total	**22**	**5,894**	**R 5**	**2,969**	**143**	**16,030**	**581**	**(h)**	**R 25,644**	**55**	**123**	**77**	**255**
2014 Total	**22**	**6,154**	**R 6**	**3,042**	**149**	**16,209**	**447**	**(h)**	**R 26,028**	**82**	**118**	**95**	**295**
2015 Total	**21**	**6,251**	**R 8**	**3,204**	**163**	**g 16,308**	**463**	**(h)**	**26,417**	**70**	**112**	**94**	**276**
2016 Total	**20**	**6,197**	**R 9**	**3,350**	**154**	**16,601**	**623**	**(h)**	**R 26,955**	**55**	**118**	**71**	**244**
2017 Total	**21**	**6,248**	**R 9**	**3,481**	**142**	**16,576**	**665**	**(h)**	**R 27,142**	**55**	**97**	**66**	**218**
2018 Total	**22**	**6,550**	**R 9**	**3,533**	**137**	**16,573**	**604**	**(h)**	**R 27,428**	**81**	**101**	**78**	**260**
2019 Total	**23**	**6,567**	**R 9**	**3,608**	**131**	**16,531**	**529**	**(h)**	**R 27,398**	**54**	**76**	**59**	**189**
2020 January	2	488	R (s)	294	12	1,307	38	(h)	2,142	5	7	5	17
February	1	468	R (s)	266	10	1,269	28	(h)	R 2,042	4	6	4	14
March	2	517	R (s)	244	8	1,166	13	(h)	1,950	3	8	4	15
April	1	490	R (s)	115	8	851	9	(h)	1,475	3	7	4	13
May	2	507	R (s)	105	8	1,079	7	(h)	1,708	3	7	4	14
June	2	513	R (s)	133	9	1,203	32	(h)	1,893	4	9	4	18
July	2	548	R (s)	170	11	1,268	58	(h)	2,057	4	9	5	19
August	2	555	R (s)	179	9	1,278	51	(h)	2,073	4	9	5	18
September	2	524	R (s)	157	10	1,239	52	(h)	R 1,983	3	5	5	13
October	2	553	R (s)	177	11	1,246	41	(h)	2,030	4	4	5	13
November	2	505	R (s)	192	10	1,161	32	(h)	1,901	4	6	4	14
December	2	510	R (s)	202	11	1,177	30	(h)	1,932	4	8	5	18
Total	**20**	**6,179**	**R 5**	**2,234**	**116**	**14,243**	**391**	**(h)**	**R 23,187**	**44**	**87**	**53**	**184**
2021 January	2	491	R (s)	199	11	1,149	38	14	1,903	4	8	5	17
February	1	448	R (s)	173	10	1,048	37	17	1,734	11	8	5	25
March	1	529	R (s)	203	9	1,285	48	22	2,098	3	8	4	15
April	2	534	R (s)	218	10	1,275	21	20	R 2,080	3	4	4	12
May	1	556	R (s)	232	10	1,369	43	23	2,234	4	6	4	14
June	3	556	R (s)	242	9	1,344	54	20	R 2,229	4	6	5	14
July	2	565	R (s)	262	11	1,395	55	18	2,308	3	8	5	16
August	2	584	R (s)	277	9	1,365	56	22	2,317	5	9	7	20
September	2	554	R (s)	255	9	1,300	50	16	R 2,186	3	7	6	16
October	2	553	R (s)	253	10	1,341	63	28	2,250	4	7	5	16
November	2	534	R (s)	255	10	1,303	71	25	2,200	4	9	4	17
December	2	520	R (s)	268	9	1,341	70	26	2,236	5	7	5	16
Total	**22**	**6,424**	**R 5**	**2,838**	**117**	**15,514**	**607**	**251**	**R 25,776**	**53**	**86**	**58**	**197**
2022 January	1	489	(s)	250	11	1,196	46	18	2,012	15	6	14	36

[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] Renewable fuels (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 renewable fuels (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. (s)=Less than 0.5 trillion Btu and greater than -0.5 trillion Btu.

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.

Note 1. Petroleum Products Supplied and Petroleum Consumption. Total petroleum products supplied is the sum of the products supplied for each petroleum product, crude oil, unfinished oils, and gasoline blending components. This also includes petroleum products supplied for non-combustion use in the industrial and transportation sectors (see Tables 1.11a and 1.11b). In general, except for crude oil, product supplied of each product is computed as follows: field production, plus renewable fuels and oxygenate plant net production, plus refinery and blender net production, plus imports, plus net receipts, plus adjustments, minus stock change, minus refinery and blender net inputs, minus exports. Crude oil product supplied is the sum of crude oil burned on leases and at pipeline pump stations as reported on Form EIA-813, "Monthly Crude Oil Report." Prior to 1983, crude oil burned on leases and used at pipeline pump stations was reported as either distillate or residual fuel oil and was included as product supplied for these products. Petroleum product supplied (see Tables 3.5 and 3.6) is an approximation of petroleum consumption and is synonymous with the term "Petroleum Consumption" in Tables 3.7a–3.8c.

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

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

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

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

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

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

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

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

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

Table 3.1 Sources

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

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

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

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

Table 3.2 Sources

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

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

1981–2020: EIA, *Petroleum Supply Annual*, annual reports, unpublished revisions, and estimates. (For 1981–1985, refinery and blender net production estimates for propylene are equal to "Propane/Propylene Production at Refineries for Petrochemical Use"; and estimates for propane are equal to total propane/propylene minus propylene. For 1986–1988, refinery and blender net production estimates for propylene are created using the 1989 annual propylene share of "Net Refinery Production of Propane/Propylene"; and estimates for propane are equal to total propane/propylene minus propylene.)

2021 and 2022: 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.)

1981–2020: EIA, *Petroleum Supply Annual*, annual reports, unpublished revisions, and estimates. (For 1981–1992, product supplied estimates for propylene are equal to propylene refinery and blender net production from Table 3.2; and estimates for propane are equal to total propane/propylene minus propylene. For 1993–2009, product supplied

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

2021 and 2022: EIA, *Petroleum Supply Monthly,* monthly reports; and, for the current two months, *Weekly Petroleum Status Report* data system, Short-Term Integrated Forecasting System, and *Monthly Energy Review* data system calculations.

Table 3.6 Sources

Asphalt and Road Oil

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

Aviation Gasoline

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

Distillate Fuel Oil

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

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and "biomass-based diesel fuel" data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). 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, and refinery olefins—ethylene, propylene, butylene, and isobutylene) are from the PSA, PSM, and earlier publications (see sources for Table 3.5). These data are converted to trillion Btu by multiplying by the appropriate heat content factors in Table A1. Total HGL product supplied is the sum of the data in trillion Btu for the HGL component products.

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

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

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

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

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

Other Petroleum Products
Prior to the current two months, product supplied data in thousand barrels per day for "other" petroleum products are from the PSA, PSM, and earlier publications (see sources for Table 3.5). "Other" petroleum products include petrochemical feedstocks, special naphthas, still gas (refinery gas), waxes, and miscellaneous products; beginning in 1981, also includes negative barrels per day of distillate and residual fuel oil reclassified as unfinished oils, and other products (from both primary and secondary supply) reclassified as gasoline blending components; beginning in 1983, also includes crude oil burned as fuel; beginning in 2005, also includes naphtha-type jet fuel; and beginning in 2021, also includes renewable fuels 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" petroleum product supplied is the sum of the data in trillion Btu for the individual products.

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

Petroleum Coke

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

Residual Fuel Oil

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

Total Petroleum

Total petroleum products supplied is the sum of the data in trillion Btu for the products (except "Propane") shown in Table 3.6.

Tables 3.7a–3.7c Sources

Petroleum consumption data for 1949–1972 are from the following sources:

1949–1959: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement, Annual*, annual reports, and U.S. Energy Information Administration (EIA) estimates.

1960–1972: EIA, State Energy Data System.

Petroleum consumption data beginning in 1973 are derived from data for "petroleum products supplied" from the following sources:

1973–1975: Bureau of Mines, Mineral Industry Surveys, *Petroleum Statement Annual*, annual reports.

1976–1980: EIA, Energy Data Reports, *Petroleum Statement Annual*, annual reports.

1981–2020: EIA, *Petroleum Supply Annual* (PSA), annual reports, and unpublished revisions.

2021 and 2022: EIA, *Petroleum Supply Monthly* (PSM), monthly reports.

Beginning in 1973, energy-use allocation procedures by individual product are as follows:

Asphalt and Road Oil

All consumption of asphalt and road oil is assigned to the industrial sector.

Aviation Gasoline

All consumption of aviation gasoline is assigned to the transportation sector.

Distillate Fuel Oil

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

Distillate Fuel Oil, Electric Power Sector

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

Distillate Fuel Oil, End-Use Sectors, Annual Data

The aggregate end-use amount is total distillate fuel oil product supplied minus the amount consumed by the electric power sector. The end-use total consumed annually is allocated to the individual end-use sectors (residential, commercial, industrial, and transportation) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-0535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172). Shares for the current year are based on the most recent Sales report.

Following are notes on the individual sector groupings:

Beginning in 1979, the residential sector sales total is directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares.

Beginning in 1979, the commercial sector sales total is directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares.

Beginning in 1979, the industrial sector sales total is the sum of the sales for industrial, farm, oil company, off-highway diesel, and all other uses. Through 1978, each year's sales subtotal of the heating plus industrial category is split into residential, commercial, and industrial (including farm) in proportion to the 1979 shares, and this estimated industrial portion is added to oil company, off-highway diesel, and all other uses.

The transportation sector sales total is the sum of the sales for railroad, vessel bunkering, on-highway diesel, and military uses for all years.

Distillate Fuel Oil, End-Use Sectors, Monthly Data

Residential sector and commercial sector monthly consumption is estimated by allocating the annual estimates, which are described above, into the months in proportion to each month's share of the year's sales of No. 2 heating oil. (For each month of the current year, the residential and commercial consumption increase from the same month in the previous year is based on the percent increase in that month's No. 2 heating oil sales from the same month in the previous year.) The years' No. 2 heating oil sales totals are from the following sources: for 1973–1980, the Ethyl Corporation, *Monthly Report of Heating Oil Sales*; for 1981 and 1982, the American Petroleum Institute, *Monthly Report of Heating Oil Sales*; and for 1983 forward, EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale.

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

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

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

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

Hydrocarbon Gas Liquids (HGL)—Propane

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 1.9. 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 1.9. 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

Kerosene product supplied is allocated to the individual end-use sectors (residential, commercial, and industrial) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-0535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172).

Beginning in 1979, the residential sector sales total is directly from the Sales reports. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial, and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, the commercial sector sales total is directly from the Sales reports. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial, and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, the industrial sector sales total is the sum of the sales for industrial, farm, and all other uses. Through 1978, each year's sales category called "heating" is allocated to the residential, commercial and industrial sectors in proportion to the 1979 shares, and the estimated industrial (including farm) portion is added to all other uses.

Lubricants

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

2010 forward: The consumption of lubricants in the industrial sector is estimated by EIA based on Kline & Company data on finished lubricant demand for industrial (less marine and railroad) use. The consumption of lubricants in the transportation sector is estimated by EIA based on Kline & Company data on finished lubricant demand for consumer

total, commercial total, marine, and railroad use. Estimates for lubricant consumption from 2010 forward are not compatible with data before 2010.

Motor Gasoline

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

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

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

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

Petroleum Coke

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

Residual Fuel Oil

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

Residual Fuel Oil, Electric Power Sector

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

Residual Fuel Oil, End-Use Sectors, Annual Data

The aggregate end-use amount is total residual fuel oil product supplied minus the amount consumed by the electric power sector. The end-use total consumed annually is allocated to the individual end-use sectors (commercial, industrial, and transportation) in proportion to each sector's share of sales as reported in EIA's *Fuel Oil and Kerosene Sales (Sales)* report series (DOE/EIA-535), which is based primarily on data collected by Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report" (previously Form EIA-172). Shares for the current year are based on the most recent Sales report.

Following are notes on the individual sector groupings:

Beginning in 1979, commercial sales data are directly from the Sales reports. Through 1978, each year's sales subtotal of the heating plus industrial category is allocated to the commercial and industrial sectors in proportion to the 1979 shares.

Beginning in 1979, industrial sales data are the sum of sales for industrial, oil company, and all other uses. Through 1978, each year's sales subtotal of the heating plus industrial category is allocated to the commercial and industrial sectors in proportion to the 1979 shares, and the estimated industrial portion is added to oil company and all other uses.

Transportation sales are the sum of sales for railroad, vessel bunkering, and military uses for all years.

Residual Fuel Oil, End-Use Sectors, Monthly Data

Commercial sector monthly consumption is estimated by allocating the annual estimates, which are described above, into the months in proportion to each month's share of the year's sales of No. 2 heating oil. (For each month of the current year, the consumption increase from the same month in the previous year is based on the percent increase in

that month's No. 2 heating oil sales from the same month in the previous year.) The years' No. 2 heating oil sales totals are from the following sources: for 1973–1980, the Ethyl Corporation, *Monthly Report of Heating Oil Sales*; for 1981 and 1982, the American Petroleum Institute, *Monthly Report of Heating Oil Sales*; and for 1983 forward, EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," No. 2 Fuel Oil Sales to End Users and for Resale.

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

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

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

Other Petroleum Products

Consumption of renewable fuels excluding fuel ethanol is assigned to the transportation sector. Consumption of all remaining petroleum 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.

Renewable Fuels Excluding Fuel Ethanol

Beginning in 2021, renewable fuels excluding fuel ethanol consumption is assigned to the transportation sector. Renewable fuels excluding fuel ethanol consumption consists of products supplied of biodiesel, renewable diesel fuel, and other biofuels; consumption does not include renewable fuels blended with distillate fuel oil, motor gasoline, or other petroleum products.

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.

Other Petroleum Products
Industrial sector "Other" petroleum data are equal to the "Other" petroleum data in Table 3.6 minus “Renewable Fuels Excluding Fuel Ethanol” data (see sources for Table 3.8c).

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

2004 forward: Industrial sector consumption data for petroleum coke are calculated by subtracting petroleum coke consumption data in trillion Btu for the commercial (Table 3.8a) and electric power (Table 3.8c) sectors from total petroleum coke consumption (Table 3.6).

Residual Fuel Oil

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

Total Petroleum

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

Table 3.8c Sources

Aviation Gasoline

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

Distillate Fuel Oil, Electric Power Sector

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

Distillate Fuel Oil, Transportation Sector

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

2009–2011: Consumption data for biodiesel are calculated using biodiesel data from U.S. Energy Information Administration (EIA), EIA-22M, "Monthly Biodiesel Production Survey"; and "biomass-based diesel fuel" data from EIA-810, "Monthly Refinery Report," EIA-812, "Monthly Product Pipeline Report," and EIA-815, "Monthly Bulk Terminal and Blender Report" (the data are converted to Btu by multiplying by the biodiesel heat content factor in Table A1). 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.

Renewable Fuels Excluding Fuel Ethanol
Beginning in 2021, transportation sector data in thousand barrels per day for “Renewable Fuels Excluding Fuel Ethanol” 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.

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

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

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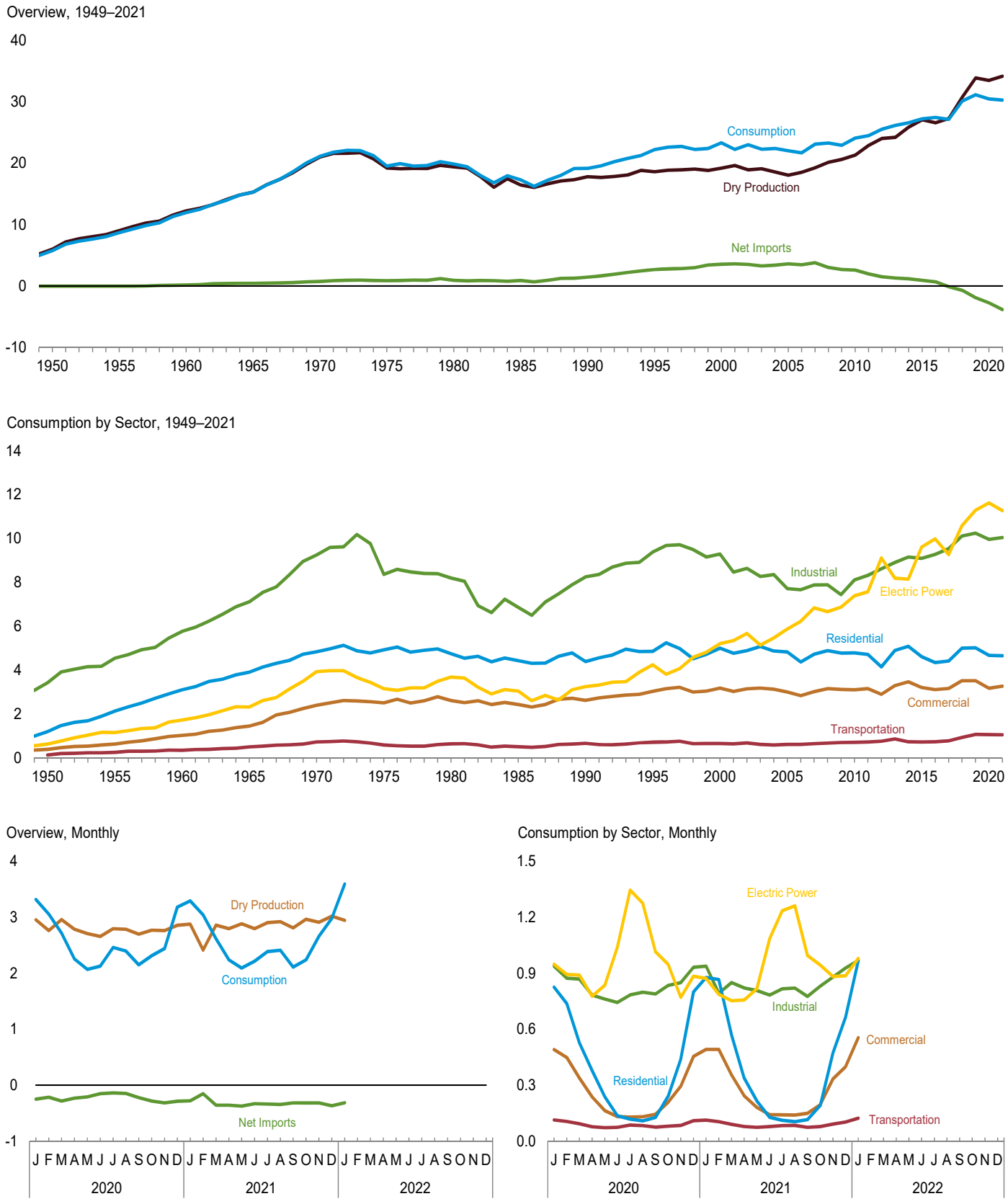
4. Natural Gas

Figure 4.1 Natural Gas

(Trillion Cubic Feet)



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

Table 4.1 Natural Gas Overview

(Billion Cubic Feet)

	Gross Withdrawals[a]	Marketed Production (Wet)[b]	NGPL Production[c]	Dry Gas Production[d]	Supplemental Gaseous Fuels[e]	Trade			Net Storage Withdrawals[f]	Balancing Item[g]	Consumption[h]
						Imports	Exports	Net Imports			
1950 Total	**8,480**	**[i] 6,282**	**260**	**[i] 6,022**	**NA**	**0**	**26**	**-26**	**-54**	**-175**	**5,767**
1955 Total	**11,720**	**[i] 9,405**	**377**	**[i] 9,029**	**NA**	**11**	**31**	**-20**	**-68**	**-247**	**8,694**
1960 Total	**15,088**	**[i] 12,771**	**543**	**[i] 12,228**	**NA**	**156**	**11**	**144**	**-132**	**-274**	**11,967**
1965 Total	**17,963**	**[i] 16,040**	**753**	**[i] 15,286**	**NA**	**456**	**26**	**430**	**-118**	**-319**	**15,280**
1970 Total	**23,786**	**[i] 21,921**	**906**	**[i] 21,014**	**NA**	**821**	**70**	**751**	**-398**	**-228**	**21,139**
1975 Total	**21,104**	**[i] 20,109**	**872**	**[i] 19,236**	**NA**	**953**	**73**	**880**	**-344**	**-235**	**19,538**
1980 Total	**21,870**	**20,180**	**777**	**19,403**	**155**	**985**	**49**	**936**	**23**	**-640**	**19,877**
1985 Total	**19,607**	**17,270**	**816**	**16,454**	**126**	**950**	**55**	**894**	**235**	**-428**	**17,281**
1990 Total	**21,523**	**18,594**	**784**	**17,810**	**123**	**1,532**	**86**	**1,447**	**-513**	**307**	**[j] 19,174**
1995 Total	**23,744**	**19,506**	**908**	**18,599**	**110**	**2,841**	**154**	**2,687**	**415**	**396**	**22,207**
2000 Total	**24,174**	**20,198**	**1,016**	**19,182**	**90**	**3,782**	**244**	**3,538**	**829**	**-306**	**23,333**
2005 Total	**23,457**	**18,927**	**876**	**18,051**	**64**	**4,341**	**729**	**3,612**	**52**	**236**	**22,014**
2006 Total	**23,535**	**19,410**	**906**	**18,504**	**66**	**4,186**	**724**	**3,462**	**-436**	**103**	**21,699**
2007 Total	**24,664**	**20,196**	**930**	**19,266**	**63**	**4,608**	**822**	**3,785**	**192**	**-203**	**23,104**
2008 Total	**25,636**	**21,112**	**953**	**20,159**	**61**	**3,984**	**963**	**3,021**	**34**	**2**	**23,277**
2009 Total	**26,057**	**21,648**	**1,024**	**20,624**	**65**	**3,751**	**1,072**	**2,679**	**-355**	**-103**	**22,910**
2010 Total	**26,816**	**22,382**	**1,066**	**21,316**	**65**	**3,741**	**1,137**	**2,604**	**-13**	**115**	**24,087**
2011 Total	**28,479**	**24,036**	**1,134**	**22,902**	**60**	**3,469**	**1,506**	**1,963**	**-354**	**-94**	**24,477**
2012 Total	**29,542**	**25,283**	**1,250**	**24,033**	**61**	**3,138**	**1,619**	**1,519**	**-9**	**-66**	**25,538**
2013 Total	**29,523**	**25,562**	**1,357**	**24,206**	**55**	**2,883**	**1,572**	**1,311**	**546**	**38**	**26,155**
2014 Total	**31,405**	**27,498**	**1,608**	**25,890**	**60**	**2,695**	**1,514**	**1,181**	**-254**	**-283**	**26,593**
2015 Total	**32,915**	**28,772**	**1,707**	**27,065**	**59**	**2,718**	**1,784**	**935**	**-547**	**-268**	**27,244**
2016 Total	**32,592**	**28,400**	**1,808**	**26,592**	**57**	**3,006**	**2,335**	**671**	**340**	**-216**	**27,444**
2017 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**	**-299**	**30,140**
2019 Total	**40,780**	**36,447**	**2,548**	**33,899**	**61**	**2,742**	**4,658**	**-1,916**	**-503**	**-408**	**31,132**
2020 January	3,597	3,194	240	2,954	6	262	510	-248	581	25	3,317
February	3,363	2,985	224	2,761	5	238	454	-216	545	-40	3,055
March	3,582	3,196	240	2,956	6	213	497	-284	53	-13	2,718
April	3,374	3,012	226	2,786	5	190	421	-231	-311	5	2,254
May	3,285	2,927	220	2,707	5	187	395	-209	-454	20	2,069
June	3,217	2,873	216	2,657	5	187	338	-151	-363	-23	2,126
July	3,374	3,021	227	2,795	5	210	349	-139	-165	-34	2,462
August	3,350	3,012	226	2,786	5	211	359	-148	-232	-14	2,397
September	3,265	2,918	219	2,699	5	174	395	-221	-329	-5	2,149
October	3,364	2,992	225	2,767	5	199	482	-282	-96	-81	2,313
November	3,352	2,985	224	2,761	5	212	528	-316	-6	-4	2,439
December	3,490	3,089	232	2,857	5	267	553	-287	597	6	3,179
Total	**40,614**	**36,202**	**2,717**	**33,485**	**63**	**2,551**	**5,284**	**-2,732**	**-180**	**-159**	**30,477**
2021 January	[E] 3,506	[E] 3,110	233	[E] 2,877	5	284	564	-279	707	-18	3,292
February	[E] 2,924	[E] 2,586	172	[E] 2,415	5	272	424	-152	781	-7	3,042
March	[E] 3,482	[E] 3,092	231	[E] 2,861	5	239	595	-357	59	47	2,616
April	[E] 3,409	[E] 3,036	239	[E] 2,797	5	208	564	-356	-174	-33	2,238
May	[E] 3,510	[E] 3,130	247	[E] 2,883	5	205	578	-373	-416	-5	2,094
June	[E] 3,391	[E] 3,036	239	[E] 2,797	4	208	539	-331	-248	-6	2,215
July	[E] 3,491	[E] 3,151	247	[E] 2,904	5	228	566	-338	-170	-13	2,388
August	[E] 3,531	[E] 3,173	251	[E] 2,922	5	221	564	-343	-159	[R] -14	[R] 2,411
September	[E] 3,413	[E] 3,050	241	[E] 2,809	4	220	536	-315	-391	[R] 3	2,110
October	[E] 3,595	[E] 3,220	257	[E] 2,963	5	228	545	-317	-361	-52	2,238
November	[RE] 3,552	[E] 3,161	251	[RE] 2,910	6	242	557	-315	132	[R] -73	[R] 2,660
December	[RE] 3,688	[RE] 3,275	258	[RE] 3,017	5	253	621	-368	323	[R] 4	2,980
Total	**[RE] 41,492**	**[RE] 37,020**	**2,866**	**[RE] 34,154**	**59**	**2,808**	**6,653**	**-3,845**	**83**	**[R] -167**	**30,284**
2022 January	[E] 3,594	[E] 3,187	245	[E] 2,943	6	296	610	-314	994	-36	3,592

[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: 1949–2020—**U.S. Energy Information Administration (EIA), *Natural Gas Annual,* annual reports. **2021 forward—**EIA, *Natural Gas Monthly,* March 2022, 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**
2006 Total	**17**	**0**	**3,590**	**120**	**13**	**57**	**0**	**0**	**0**	**389**	**0**	**0**	**0**	**4,186**
2007 Total	**77**	**0**	**3,783**	**115**	**54**	**95**	**0**	**0**	**18**	**448**	**0**	**0**	**18**	**4,608**
2008 Total	**0**	**0**	**3,589**	**55**	**43**	**12**	**15**	**0**	**3**	**267**	**0**	**0**	**15**	**3,984**
2009 Total	**0**	**0**	**3,271**	**160**	**28**	**13**	**29**	**0**	**13**	**236**	**0**	**0**	**29**	**3,751**
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**	**(s)**	**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**	**(s)**	**2,718**
2016 Total	**0**	**0**	**2,918**	**0**	**1**	**0**	**3**	**0**	**0**	**84**	**0**	**0**	**(s)**	**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 January	0	0	249	0	(s)	2	3	0	0	9	0	0	0	262
February	0	0	232	0	(s)	0	0	0	0	6	0	0	0	238
March	0	0	210	0	(s)	0	0	0	0	3	0	0	(s)	213
April	0	0	187	0	(s)	0	0	0	0	3	0	0	0	190
May	0	0	184	0	(s)	0	0	0	0	3	0	0	0	187
June	0	0	183	0	(s)	3	0	0	0	2	0	0	0	187
July	0	0	206	0	(s)	0	0	0	0	4	0	0	0	210
August	0	0	208	0	(s)	0	0	0	0	3	0	0	0	211
September	0	0	173	0	(s)	0	0	0	0	1	0	0	**(s)**	174
October	0	0	199	0	(s)	0	0	0	0	0	0	0	0	199
November	0	0	209	0	(s)	0	0	0	0	3	0	0	(s)	212
December	0	0	261	0	(s)	3	**0**	0	0	3	0	**0**	(s)	267
Total	**0**	**0**	**2,500**	**0**	**2**	**7**	3	**0**	**0**	**39**	**0**	0	**0**	**2,551**
2021 January	0	0	278	0	(s)	0	0	0	0	6	0	0	0	284
February	0	0	265	0	1	0	0	0	0	6	0	0	0	272
March	0	0	237	0	(s)	0	0	0	0	1	0	0	0	239
April	0	0	208	0	(s)	0	0	0	0	0	0	0	0	208
May	0	0	203	0	(s)	0	0	0	0	2	0	0	0	205
June	0	0	208	0	(s)	0	0	0	0	0	0	0	0	208
July	0	0	226	0	(s)	0	0	0	0	2	0	0	0	228
August	0	0	221	0	(s)	0	0	0	0	0	0	0	0	221
September	0	0	219	0	(s)	0	0	0	0	1	0	0	0	220
October	0	0	228	0	(s)	0	0	0	0	0	0	0	0	228
November	0	0	241	0	(s)	0	0	0	0	2	0	0	0	242
December	0	0	251	0	(s)	0	**0**	0	0	2	0	**0**	0	253
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	0	296

[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." • **1988–2020:** EIA, *Natural Gas Annual,* annual reports. • **2021 forward:** EIA, *Natural Gas Monthly,* March 2022, 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**
2006 Total	**0**	**341**	**0**	**0**	**0**	**0**	**61**	**322**	**0**	**0**	**0**	**0**	**0**	**724**
2007 Total	**0**	**482**	**0**	**0**	**0**	**0**	**47**	**292**	**0**	**0**	**0**	**0**	**2**	**822**
2008 Total	**0**	**559**	**0**	**0**	**0**	**0**	**39**	**365**	**0**	**0**	**0**	**0**	**0**	**963**
2009 Total	**0**	**701**	**0**	**0**	**0**	**0**	**31**	**338**	**3**	**0**	**0**	**0**	**3**	**1,072**
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**	**(s)**	**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 January	8	99	6	0	7	3	32	168	45	24	33	30	55	510
February	10	77	11	0	21	0	21	154	11	20	24	29	75	454
March	7	87	3	18	23	17	22	174	28	24	6	20	68	497
April	0	72	14	21	16	17	18	139	24	23	14	0	63	421
May	0	68	11	15	10	11	14	145	21	29	7	0	66	395
June	0	67	3	0	0	10	22	163	28	10	0	0	36	338
July	0	72	2	10	0	7	11	181	10	14	3	3	36	349
August	4	61	7	14	0	10	23	190	14	3	0	0	34	359
September	0	62	3	11	0	11	7	185	32	15	4	4	61	395
October	23	73	7	35	7	18	32	193	14	14	0	17	49	482
November	30	81	3	45	3	10	33	169	49	10	13	27	54	528
December	30	84	10	46	4	10	54	165	40	14	20	30	47	553
Total	**112**	**903**	**81**	**214**	**90**	**124**	**288**	**2,026**	**317**	**200**	**124**	**160**	**644**	**5,284**
2021 January	21	85	10	39	4	20	64	173	56	7	27	21	36	564
February	13	78	7	3	15	14	18	151	18	4	21	34	48	424
March	22	91	21	28	34	17	28	183	32	14	4	17	103	595
April	12	75	10	47	36	14	29	183	22	23	0	14	101	564
May	20	71	18	38	12	28	25	193	46	5	3	11	110	578
June	32	70	0	42	4	17	40	198	56	8	0	0	73	539
July	40	68	20	42	0	13	25	199	39	9	6	0	106	566
August	34	72	16	52	7	21	20	194	50	23	0	0	75	564
September	38	72	8	49	7	24	10	179	31	31	24	3	59	536
October	41	62	6	42	9	11	38	186	34	36	19	3	58	545
November	11	85	3	50	10	15	34	166	31	23	47	31	52	557
December	24	109	3	17	34	3	24	167	38	33	38	60	70	621
Total	**308**	**937**	**122**	**450**	**171**	**196**	**355**	**2,172**	**453**	**215**	**189**	**195**	**891**	**6,653**
2022 January	17	81	3	0	50	7	22	175	22	49	45	60	78	610

[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." • **1988–2020:** EIA, *Natural Gas Annual,* annual reports. • **2021 forward:** EIA, *Natural Gas Monthly,* March 2022, 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**
2006 Total	**4,368**	**2,832**	**1,142**	**1,115**	**5,412**	**6,527**	**7,669**	**584**	**24**	**608**	**6,222**	**21,699**
2007 Total	**4,722**	**3,013**	**1,226**	**1,050**	**5,604**	**6,655**	**7,881**	**621**	**25**	**646**	**6,841**	**23,104**
2008 Total	**4,892**	**3,153**	**1,220**	**955**	**5,715**	**6,670**	**7,890**	**648**	**26**	**674**	**6,668**	**23,277**
2009 Total	**4,779**	**3,119**	**1,275**	**990**	**5,178**	**6,167**	**7,443**	**670**	**27**	**697**	**6,873**	**22,910**
2010 Total	**4,782**	**3,103**	**1,286**	**1,029**	**5,797**	**6,826**	**8,112**	**674**	**29**	**703**	**7,387**	**24,087**
2011 Total	**4,714**	**3,155**	**1,323**	**1,063**	**5,931**	**6,994**	**8,317**	**688**	**30**	**718**	**7,574**	**24,477**
2012 Total	**4,150**	**2,895**	**1,396**	**1,149**	**6,077**	**7,226**	**8,622**	**731**	**30**	**761**	**9,111**	**25,538**
2013 Total	**4,897**	**3,295**	**1,483**	**1,170**	**6,255**	**7,425**	**8,909**	**833**	**30**	**863**	**8,191**	**26,155**
2014 Total	**5,087**	**3,466**	**1,512**	**1,145**	**6,501**	**7,646**	**9,158**	**700**	**35**	**735**	**8,146**	**26,593**
2015 Total	**4,613**	**3,202**	**1,576**	**1,222**	**6,300**	**7,522**	**9,098**	**678**	**39**	**718**	**9,613**	**27,244**
2016 Total	**4,347**	**3,110**	**1,545**	**1,209**	**6,519**	**7,729**	**9,274**	**687**	**42**	**729**	**9,985**	**27,444**
2017 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**	**10,590**	**30,140**
2019 Total	**5,019**	**3,515**	**1,823**	**1,374**	**7,042**	**8,417**	**10,240**	**1,018**	**53**	**1,071**	**11,288**	**31,132**
2020 January	825	491	159	145	634	779	938	110	4	114	948	3,317
February	737	448	149	132	592	724	873	102	4	106	893	3,055
March	527	339	159	133	577	710	869	90	4	94	890	2,718
April	378	238	150	123	510	633	783	73	4	77	777	2,254
May	237	163	146	109	507	616	762	67	4	72	836	2,069
June	136	132	143	113	487	600	743	70	4	74	1,040	2,126
July	118	129	151	122	511	633	784	82	4	86	1,345	2,462
August	109	131	150	120	528	648	798	79	4	83	1,275	2,397
September	127	144	145	109	534	643	789	71	4	75	1,015	2,149
October	242	209	149	115	571	686	835	76	4	80	947	2,313
November	440	294	149	112	589	701	850	80	4	84	771	2,439
December	800	454	154	126	652	778	932	106	4	110	884	3,179
Total	**4,674**	**3,170**	**1,805**	**1,458**	**6,692**	**8,151**	**9,955**	**1,007**	**49**	**1,056**	**11,621**	**30,477**
2021 January	877	492	[E] 155	124	659	783	938	[E] 109	[E] 5	[E] 113	872	3,292
February	866	492	[E] 129	100	564	664	793	[E] 101	[E] 4	[E] 105	787	3,042
March	568	355	[E] 154	108	588	696	850	[E] 86	[E] 5	[E] 91	752	2,616
April	[R] 339	244	[E] 151	105	565	670	821	[E] 74	[E] 4	[E] 78	756	2,238
May	[R] 215	181	[E] 156	108	544	651	[R] 807	[E] 69	[E] 5	[E] 74	816	2,094
June	128	[R] 142	[E] 151	111	520	631	783	[E] 73	[E] 4	[E] 78	1,085	2,215
July	112	[R] 141	[E] 157	118	[R] 541	659	816	[E] 79	[E] 5	[E] 83	1,235	2,388
August	105	[R] 140	[E] 158	117	545	[R] 662	820	[E] 80	[E] 5	[E] 84	1,261	[R] 2,411
September	116	149	[E] 152	108	515	624	776	[E] 70	[E] 4	[E] 74	995	2,110
October	191	195	[E] 161	112	558	670	830	[E] 74	[E] 5	[E] 78	944	2,238
November	473	[R] 334	[E] 158	115	[R] 606	[R] 721	[R] 879	[E] 88	[E] 4	[E] 92	882	[R] 2,660
December	[R] 664	[R] 399	[E] 163	122	643	765	928	[E] 98	[E] 5	[E] 103	886	2,980
Total	[R] **4,654**	**3,264**	[E] **1,845**	**1,349**	[R] **6,847**	**8,197**	[R] **10,042**	[E] **1,001**	[E] **53**	[E] **1,054**	**11,271**	**30,284**
2022 January	967	555	[E] 159	124	686	809	968	[E] 119	[E] 5	[E] 123	979	3,592

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

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

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

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

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

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

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

[h] Included in "Non-CHP."

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

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

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

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

Sources: • **Residential, Commercial, Lease and Plant Fuel, Other Industrial Total** and **Pipelines and Distribution: 1949–2020—**U.S. Energy Information Administration (EIA), *Natural Gas Annual (NGA),* annual reports and unpublished revisions. **2021 forward—**EIA, *Natural Gas Monthly (NGM),* March 2022, 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). **1999–2020—**EIA, NGA, annual reports. **2021 forward—**EIA, NGM, March 2022, 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**
2006 Total	**4,211**	**3,070**	**7,281**	**435**	**16.5**	**2,493**	**2,924**	**-431**
2007 Total	**4,234**	**2,879**	**7,113**	**-191**	**-6.2**	**3,325**	**3,133**	**192**
2008 Total	**4,232**	**2,840**	**7,073**	**-39**	**-1.4**	**3,374**	**3,340**	**34**
2009 Total	**4,277**	**3,130**	**7,407**	**290**	**10.2**	**2,966**	**3,315**	**-349**
2010 Total	**4,301**	**3,111**	**7,412**	**-19**	**-.6**	**3,274**	**3,291**	**-17**
2011 Total	**4,302**	**3,462**	**7,764**	**351**	**11.3**	**3,074**	**3,422**	**-348**
2012 Total	**4,372**	**3,413**	**7,785**	**-49**	**-1.4**	**2,818**	**2,825**	**-7**
2013 Total	**4,365**	**2,890**	**7,255**	**-523**	**-15.3**	**3,702**	**3,156**	**546**
2014 Total	**4,365**	**3,141**	**7,506**	**251**	**8.7**	**3,586**	**3,839**	**-253**
2015 Total	**4,372**	**3,667**	**8,038**	**525**	**16.7**	**3,100**	**3,638**	**-539**
2016 Total	**4,380**	**3,297**	**7,677**	**-370**	**-10.1**	**3,325**	**2,977**	**348**
2017 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 January	4,380	2,616	6,997	622	31.2	665	94	571
February	4,379	2,081	6,460	655	45.9	634	99	536
March	4,379	2,029	6,409	844	71.3	285	236	49
April	4,384	2,332	6,716	773	49.6	131	437	-306
May	4,387	2,778	7,164	747	36.8	74	522	-448
June	4,389	3,133	7,523	672	27.3	85	443	-358
July	4,390	3,294	7,684	579	21.3	151	312	-161
August	4,390	3,522	7,912	524	17.5	174	401	-227
September	4,389	3,840	8,229	425	12.4	126	450	-323
October	4,393	3,929	8,321	166	4.4	191	283	-92
November	4,394	3,932	8,325	322	8.9	214	218	-4
December	4,394	3,341	7,735	153	4.8	681	94	587
Total	**4,394**	**3,341**	**7,735**	**153**	**4.8**	**3,412**	**3,590**	**-178**
2021 January	4,394	2,635	7,029	19	.7	783	76	707
February	4,390	1,858	6,248	-223	-10.7	904	122	781
March	4,388	1,801	6,189	-229	-11.3	321	262	59
April	4,380	1,974	6,355	-358	-15.4	173	347	-174
May	4,383	2,388	6,771	-390	-14.0	75	491	-416
June	4,436	2,583	7,019	-550	-17.6	140	388	-248
July	4,436	2,752	7,189	-541	-16.4	171	341	-170
August	4,436	2,916	7,352	-607	-17.2	186	346	-159
September	4,438	3,305	7,743	-535	-13.9	83	473	-391
October	4,439	3,665	8,103	-264	-6.7	91	452	-361
November	4,439	3,532	7,971	-400	-10.2	321	189	132
December	4,440	3,208	7,648	-133	-4.0	513	190	323
Total	**4,440**	**3,208**	**7,648**	**-133**	**-4.0**	**3,760**	**3,677**	**83**
2022 January	4,439	2,214	6,653	-421	-16.0	1,069	76	994

[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 forward—**EIA, NGM, March 2022, 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." **1996–2020—**EIA, NGA, annual reports. **2021 forward—**EIA, NGM, March 2022, 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[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 1.11a and 1.11b); "Transportation Sector": pipelines and distribution use, and vehicle fuel use; and "Electric Power Sector": electric utility and independent power producer use.

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

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

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

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

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

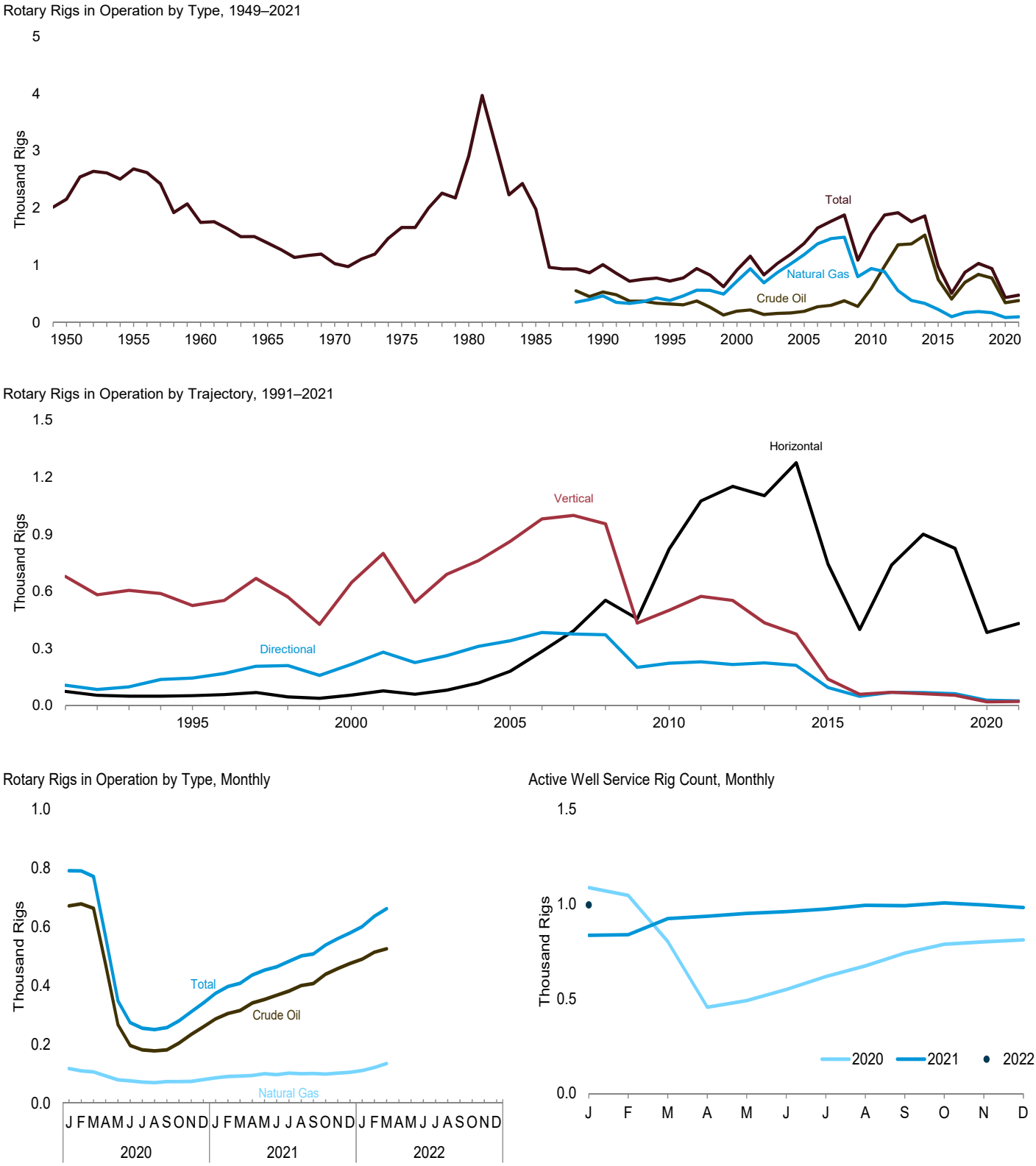
Note 9. Natural Gas Imports and Exports. The United States imports natural gas via pipeline from Canada and Mexico; and imports liquefied natural gas (LNG) via vessel from other countries. In addition, small amounts of LNG arrived from Canada via truck in 1973, 1977, 1981, and 2013 forward. Also, small 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	**[R] 1,290**	**[R] 93**	**194**	**1,186**	**181**	**341**	**862**	**1,383**	**2,222**
2006 Average	**1,559**	**90**	**274**	**1,372**	**285**	**384**	**980**	**1,649**	**2,364**
2007 Average	**1,695**	**72**	**297**	**1,466**	**393**	**376**	**999**	**1,768**	**2,388**
2008 Average	**1,814**	**65**	**379**	**1,491**	**553**	**372**	**954**	**1,879**	**2,515**
2009 Average	**1,046**	**44**	**278**	**801**	**456**	**201**	**433**	**1,090**	**1,722**
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 January	770	21	671	118	706	46	39	791	1,086
February	768	23	678	110	712	46	33	790	1,046
March	752	20	663	106	693	49	30	771	802
April	548	18	471	93	512	32	22	565	456
May	335	13	267	79	315	24	9	348	490
June	262	12	196	76	241	21	12	274	549
July	243	12	181	72	218	21	16	255	617
August	237	13	178	70	215	22	13	250	674
September	242	15	181	73	218	21	17	257	741
October	266	14	204	73	240	21	19	280	788
November	298	12	234	74	270	21	19	311	800
December	326	15	260	80	305	20	16	341	811
Average	**417**	**15**	**345**	**85**	**384**	**28**	**20**	**433**	**738**
2021 January	358	16	287	86	334	21	19	374	835
February	381	17	305	91	357	18	23	397	838
March	395	13	315	92	369	15	24	408	923
April	424	12	341	94	396	20	20	436	936
May	439	14	353	100	411	27	16	453	950
June	451	13	367	97	420	26	18	464	960
July	468	16	381	102	435	31	17	483	973
August	486	15	400	100	455	28	18	501	993
September	502	6	407	101	465	16	27	508	991
October	526	12	439	99	481	28	29	538	1,006
November	545	15	458	102	503	34	23	560	995
December	565	14	475	105	523	31	26	579	982
Average	**464**	**14**	**380**	**98**	**431**	**25**	**22**	**478**	**949**
2022 January	583	18	490	111	543	35	23	601	[R] 995
February	622	14	514	121	578	32	26	636	NA
March	649	12	525	135	605	34	24	662	NA
3-Month Average	**618**	**15**	**510**	**122**	**575**	**34**	**24**	**633**	**NA**
2021 3-Month Average	**378**	**15**	**302**	**90**	**353**	**18**	**22**	**393**	**865**
2020 3-Month Average	**764**	**21**	**671**	**112**	**703**	**47**	**34**	**785**	**978**

[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.

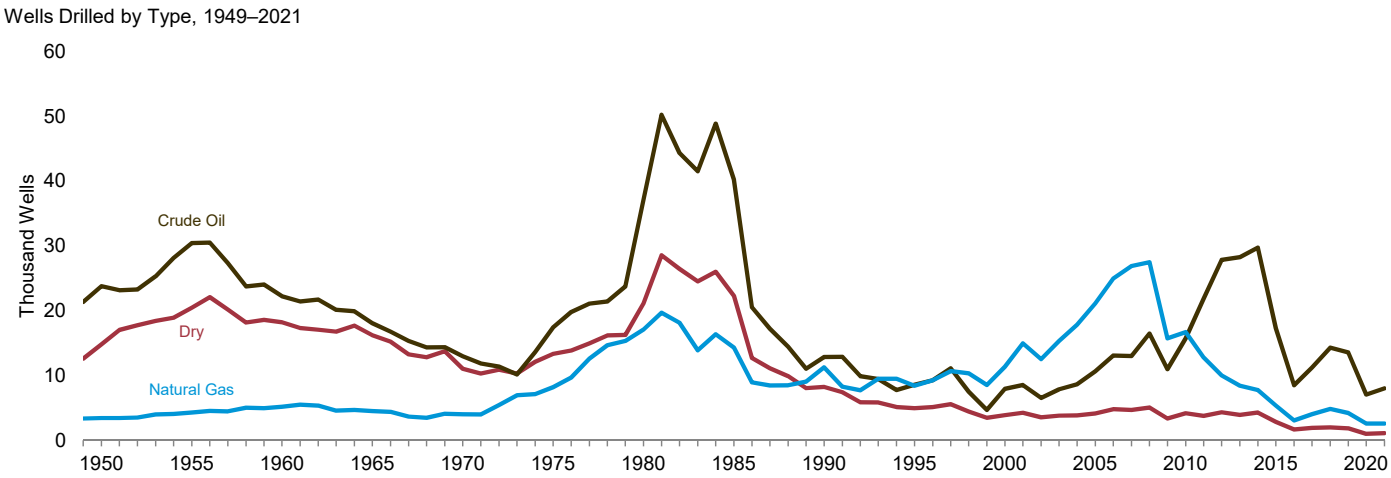
R=Revised. NA=Not available.

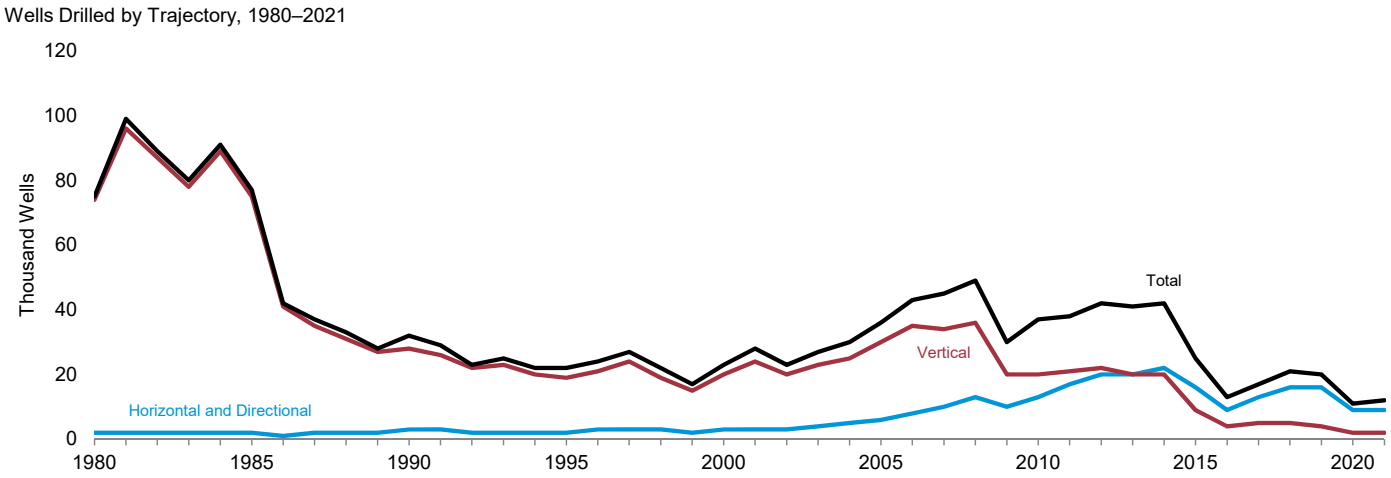
Note: Geographic coverage is the 50 states and the District of Columbia.

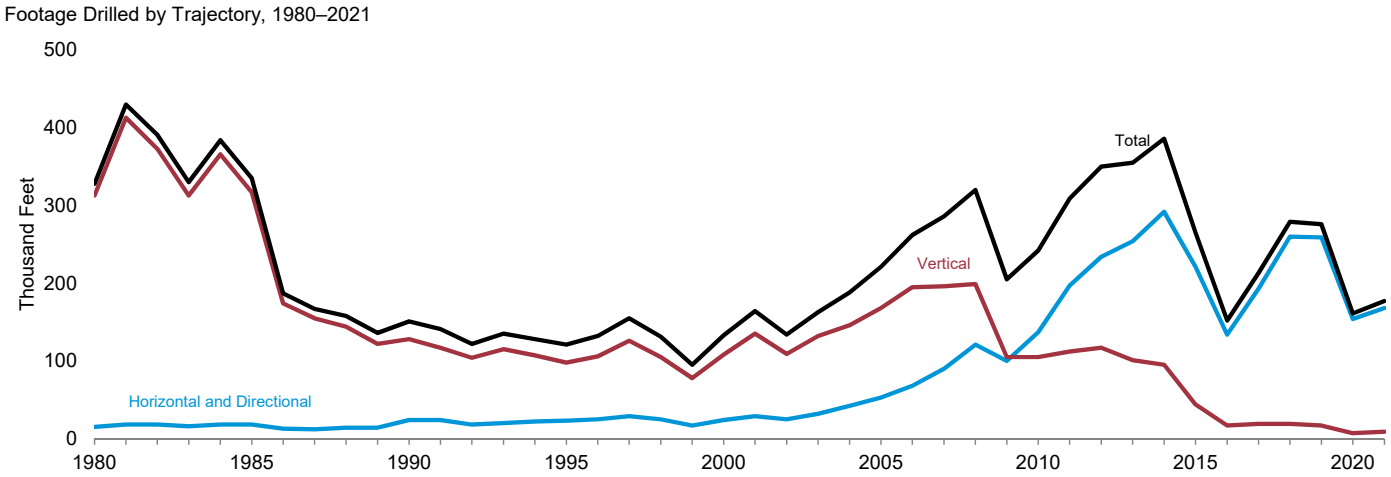
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#crude (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, TX, "North America Rig Count," used with permission. See http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother. • **Active Well Service Rig Count:** 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 8,577**	**R 8,421**	**R 4,925**	**R 2,480**	**R 19,443**	**R 21,923**	**R 41,651**	**R 53,276**	**R 26,507**	**R 23,013**	**R 98,421**	**R 121,434**
2000 Total	**R 7,920**	**R 11,344**	**R 3,873**	**R 2,894**	**R 20,243**	**R 23,137**	**34,710**	**R 75,133**	**R 22,694**	**R 24,264**	**R 108,272**	**R 132,536**
2005 Total	**R 10,634**	**R 21,151**	**R 4,132**	**6,016**	**R 29,901**	**R 35,917**	**R 49,519**	**R 148,666**	**R 22,933**	**53,228**	**R 167,890**	**R 221,117**
2006 Total	**R 13,059**	**R 24,989**	**R 4,789**	**R 7,762**	**R 35,075**	**R 42,837**	**R 61,048**	**R 175,858**	**R 25,413**	**R 67,815**	**R 194,504**	**R 262,319**
2007 Total	**R 13,019**	**R 26,913**	**R 4,672**	**R 10,120**	**R 34,484**	**R 44,604**	**R 62,708**	**R 197,714**	**R 25,691**	**R 90,216**	**R 195,896**	**R 286,112**
2008 Total	**R 16,487**	**R 27,480**	**R 5,062**	**R 12,988**	**R 36,041**	**R 49,029**	**R 80,369**	**R 213,227**	**R 26,282**	**R 121,316**	**R 198,562**	**R 319,877**
2009 Total	**R 10,962**	**R 15,739**	**R 3,368**	**10,051**	**20,018**	**R 30,069**	**R 56,362**	**R 131,156**	**R 17,327**	**R 99,916**	**R 104,929**	**R 204,845**
2010 Total	**R 15,409**	**R 14,042**	**R 3,795**	**12,913**	**R 20,333**	**R 33,246**	**R 93,097**	**129,965**	**R 19,135**	**R 137,245**	**R 104,952**	**R 242,196**
2011 Total	**R 21,861**	**R 12,795**	**R 3,774**	**R 17,186**	**R 21,244**	**38,430**	**R 154,226**	**R 135,635**	**R 18,884**	**R 196,974**	**R 111,771**	**R 308,745**
2012 Total	**R 27,856**	**R 9,990**	**R 4,324**	**R 19,789**	**R 22,381**	**R 42,170**	**R 218,384**	**R 111,211**	**R 20,768**	**R 233,636**	**R 116,727**	**R 350,363**
2013 Total	**R 28,260**	**R 8,431**	**3,910**	**R 20,432**	**R 20,169**	**R 40,601**	**R 235,703**	**R 99,414**	**19,941**	**R 254,196**	**R 100,863**	**R 355,058**
2014 Total	**R 29,737**	**7,759**	**R 4,294**	**R 22,269**	**R 19,521**	**R 41,790**	**R 267,589**	**95,419**	**R 23,092**	**R 291,577**	**R 94,523**	**R 386,100**
2015 Total	**R 17,299**	**5,348**	**R 2,819**	**R 16,006**	**R 9,460**	**R 25,466**	**R 177,764**	**70,675**	**R 16,603**	**R 221,280**	**R 43,763**	**R 265,043**
2016 Total	**R 8,484**	**R 3,050**	**R 1,656**	**R 9,075**	**R 4,115**	**R 13,190**	**R 98,506**	**R 43,207**	**R 9,787**	**R 134,328**	**R 17,172**	**R 151,501**
2017 Total	**R 11,236**	**R 4,032**	**R 1,915**	**R 12,621**	**4,562**	**R 17,183**	**R 139,336**	**R 60,512**	**R 13,038**	**R 193,466**	**R 19,420**	**R 212,885**
2018 Total	**R 14,313**	**R 4,835**	**R 1,970**	**R 16,356**	**R 4,762**	**R 21,118**	**R 188,729**	**R 76,496**	**R 13,866**	**260,292**	**R 18,798**	**R 279,090**
2019 Total	**R 13,572**	**R 4,204**	**R 1,827**	**R 15,556**	**R 4,047**	**R 19,603**	**R 191,267**	**R 70,325**	**R 13,937**	**R 258,663**	**R 16,866**	**R 275,529**
2020 January	R 999	279	R 134	R 1,155	R 257	R 1,412	R 14,951	4,877	R 1,303	R 20,052	R 1,080	R 21,132
February	R 998	273	R 130	R 1,177	R 224	1,401	R 15,264	4,911	R 978	R 20,239	R 915	R 21,153
March	R 891	260	R 118	R 1,096	R 173	R 1,269	R 14,112	4,835	R 887	R 19,089	R 745	R 19,834
April	R 595	270	R 83	R 830	R 118	R 948	R 8,566	R 5,081	R 661	R 13,829	R 479	R 14,308
May	R 337	R 173	52	R 503	59	R 562	R 5,302	R 3,188	R 391	R 8,641	R 240	R 8,882
June	R 342	161	55	R 455	103	R 558	R 5,097	2,733	R 414	R 7,822	R 422	R 8,244
July	382	179	61	R 502	R 120	622	R 5,368	R 3,385	R 510	R 8,776	R 487	R 9,263
August	447	140	64	R 505	R 146	651	R 6,779	2,509	R 484	R 9,180	R 593	R 9,773
September	R 474	R 226	73	R 632	R 141	R 773	R 7,383	R 4,296	R 549	R 11,656	R 572	R 12,229
October	534	172	R 76	R 615	167	R 782	R 7,952	R 3,009	600	R 10,883	R 678	R 11,561
November	552	R 184	R 77	R 668	145	R 813	8,752	R 3,284	R 579	R 12,026	R 589	R 12,615
December	487	R 248	R 77	672	140	812	R 7,314	R 4,608	R 579	R 11,931	R 571	R 12,501
Total	**R 7,038**	**R 2,565**	**R 1,000**	**R 8,810**	**1,793**	**R 10,603**	**R 106,843**	**R 46,716**	**R 7,935**	**R 154,124**	**R 7,370**	**R 161,494**
2021 January	R 598	196	R 89	676	R 207	R 883	R 8,824	3,460	R 726	R 12,146	R 864	R 13,010
February	R 506	188	71	R 638	127	R 765	R 7,944	3,555	R 534	R 11,514	R 519	R 12,033
March	R 683	216	R 92	R 833	R 158	R 991	R 10,650	R 4,016	R 692	R 14,712	R 645	R 15,358
April	R 798	R 208	R 101	R 926	R 181	R 1,107	R 12,617	R 3,803	R 760	R 16,435	R 744	R 17,179
May	R 696	R 285	104	R 903	R 182	R 1,085	R 11,027	R 5,309	R 782	R 16,379	R 739	R 17,118
June	R 649	R 232	R 92	R 764	209	R 973	R 9,951	R 4,435	R 692	R 14,214	R 865	R 15,078
July	R 707	R 200	93	R 815	R 185	R 1,000	R 10,808	R 3,796	R 699	R 14,521	R 782	R 15,303
August	R 843	R 223	R 112	R 948	R 230	R 1,178	R 13,281	R 4,143	R 842	R 17,332	R 935	R 18,267
September	R 670	R 239	R 96	R 761	R 244	R 1,005	R 9,721	R 4,310	R 725	R 13,765	R 990	R 14,756
October	R 675	225	R 97	R 775	R 222	R 997	R 9,969	R 4,109	R 733	R 13,910	R 901	R 14,811
November	R 586	R 202	R 81	R 670	R 199	R 869	R 8,103	R 3,609	R 611	R 11,515	R 808	R 12,323
December	R 600	R 180	82	R 694	R 168	R 862	R 8,296	R 2,980	R 629	R 11,224	R 682	R 11,906
Total	**R 8,011**	**R 2,594**	**R 1,110**	**R 9,403**	**R 2,312**	**R 11,715**	**R 121,191**	**R 47,526**	**R 8,425**	**R 167,667**	**R 9,475**	**R 177,142**
2022 January	R 619	R 191	85	R 754	R 141	R 895	R 8,850	R 3,242	R 674	R 12,194	R 572	R 12,767
February	R 650	R 208	R 89	R 805	R 142	R 947	R 9,338	R 3,548	R 709	R 13,019	R 576	R 13,595
March	664	232	93	858	131	989	9,653	4,004	750	13,876	532	14,408
3-Month Total	**1,933**	**631**	**267**	**2,417**	**414**	**2,831**	**27,842**	**10,794**	**2,134**	**39,090**	**1,680**	**40,770**
2021 3-Month Total	**1,787**	**600**	**252**	**2,147**	**492**	**2,639**	**27,417**	**11,032**	**1,952**	**38,373**	**2,028**	**40,401**
2020 3-Month Total	**2,888**	**812**	**382**	**3,428**	**654**	**4,082**	**44,328**	**14,623**	**3,168**	**59,380**	**2,740**	**62,119**

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.

Crude Oil and Natural Gas Resource Development

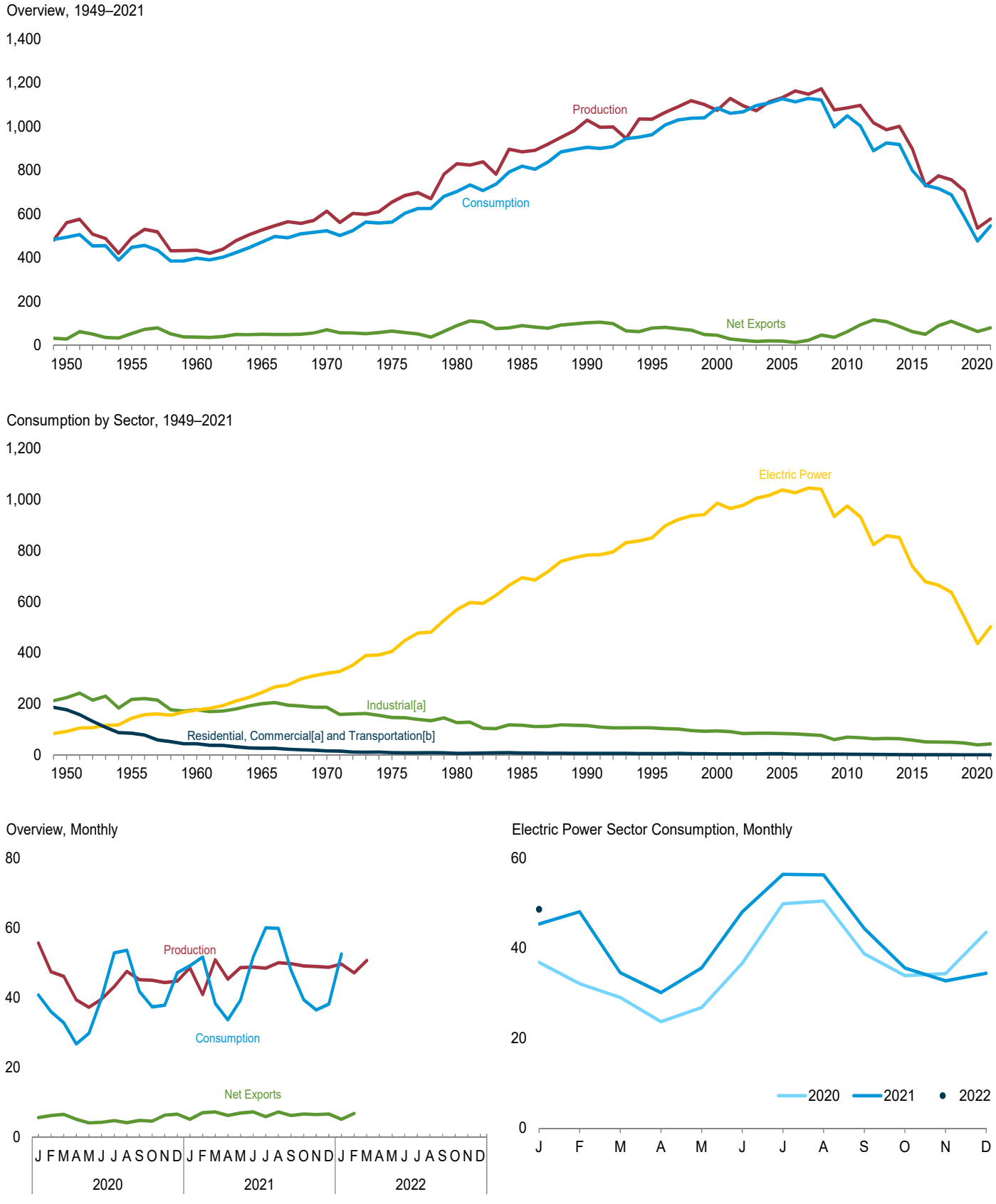
Note. Crude Oil and Natural Gas Wells. The U.S. Energy Information Administration (EIA) considers six well types in the *Monthly Energy Review* (MER): "completed for crude oil," "completed for natural gas," "dry hole," "vertical," "horizontal and directional," and "total." Wells that produce both crude 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**
2006 Total	**1,162,750**	**14,409**	**36,246**	**49,647**	**-13,401**	**42,642**	**8,824**	**1,112,292**
2007 Total	**1,146,635**	**14,076**	**36,347**	**59,163**	**-22,816**	**5,812**	**4,085**	**1,127,998**
2008 Total	**1,171,809**	**14,146**	**34,208**	**81,519**	**-47,311**	**12,354**	**5,740**	**1,120,548**
2009 Total	**1,074,923**	**13,666**	**22,639**	**59,097**	**-36,458**	**39,668**	**14,985**	**997,478**
2010 Total	**1,084,368**	**13,651**	**19,353**	**81,716**	**-62,363**	**-13,039**	**182**	**1,048,514**
2011 Total	**1,095,628**	**13,209**	**13,088**	**107,259**	**-94,171**	**211**	**11,506**	**1,002,948**
2012 Total	**1,016,458**	**11,196**	**9,159**	**125,746**	**-116,586**	**6,902**	**14,980**	**889,185**
2013 Total	**984,842**	**11,279**	**8,906**	**117,659**	**-108,753**	**-38,525**	**1,451**	**924,442**
2014 Total	**1,000,049**	**12,090**	**11,350**	**97,257**	**-85,907**	**-2,601**	**11,101**	**917,731**
2015 Total	**896,941**	**9,969**	**11,318**	**73,958**	**-62,640**	**40,704**	**5,452**	**798,115**
2016 Total	**728,364**	**10,138**	**9,846**	**60,271**	**-50,425**	**-45,441**	**2,449**	**731,071**
2017 Total	**774,609**	**9,951**	**7,803**	**96,945**	**-89,142**	**-26,033**	**4,596**	**716,856**
2018 Total	**756,167**	**10,431**	**5,954**	**116,244**	**-110,290**	**-37,160**	**5,363**	**688,105**
2019 Total	**706,309**	**8,003**	**6,697**	**93,765**	**-87,068**	**35,538**	**5,164**	**586,543**
2020 January	55,667	672	535	6,230	-5,694	6,117	3,756	40,771
February	47,425	654	343	6,611	-6,268	5,246	554	36,012
March	46,106	536	461	7,070	-6,610	4,795	2,394	32,843
April	39,347	531	365	5,551	-5,186	6,821	1,116	26,754
May	37,263	431	535	4,714	-4,179	2,635	1,096	29,784
June	39,608	430	227	4,583	-4,356	-5,659	1,544	39,798
July	43,217	580	530	5,344	-4,814	-14,396	527	52,852
August	47,523	641	314	4,545	-4,231	-9,149	-529	53,610
September	45,141	604	501	5,371	-4,870	-1,918	966	41,828
October	44,988	583	264	4,921	-4,657	3,740	-219	37,393
November	44,345	526	639	7,034	-6,395	1,763	-1,161	37,874
December	44,804	692	423	7,093	-6,670	-3,611	-4,738	47,175
Total	**535,434**	**6,880**	**5,137**	**69,067**	**-63,929**	**-3,616**	**5,308**	**476,693**
2021 January	48,556	771	526	5,730	-5,204	-3,769	-1,262	49,154
February	40,868	740	309	7,395	-7,087	-15,655	-1,480	51,657
March	50,881	679	241	7,581	-7,340	1,676	4,181	38,363
April	45,318	449	509	6,811	-6,302	6,358	-585	33,692
May	48,632	560	512	7,487	-6,975	2,898	67	39,253
June	48,798	643	509	7,836	-7,327	-11,615	2,107	51,621
July	48,475	782	564	6,511	-5,947	-15,387	-1,344	60,043
August	50,042	712	368	7,692	-7,324	-12,894	-3,566	59,889
September	49,762	624	202	6,515	-6,313	-4,767	911	47,929
October	49,079	R 573	526	7,259	-6,734	R 5,322	R -1,807	R 39,403
November	48,950	R 635	436	6,994	-6,559	R 7,514	R -978	R 36,490
December	48,700	R 689	689	7,397	-6,708	R 3,006	R 1,498	R 38,177
Total	**578,061**	**R 7,856**	**5,390**	**85,208**	**-79,819**	**R -37,315**	**R -2,257**	**R 545,671**
2022 January	49,631	RF 629	503	5,710	-5,208	R -6,671	R -775	R 52,499
February	47,115	NA	R 289	R 7,164	R -6,874	NA	NA	NA
March	50,692	NA	NA	NA	NA	NA	NA	NA
3-Month Total	**147,438**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
2021 3-Month Total	**140,306**	**2,189**	**1,075**	**20,706**	**-19,631**	**-17,749**	**1,439**	**139,174**
2020 3-Month Total	**149,198**	**1,862**	**1,339**	**19,911**	**-18,572**	**16,158**	**6,705**	**109,626**

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

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

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

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

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

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

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

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

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

Sources: See end of section.

Table 6.2 Coal Consumption by Sector

(Thousand Short Tons)

	End-Use Sectors										Electric Power Sector[e,f]	Total
		Commercial			Industrial							
						Other Industrial						
	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)**	**[f]782,567**	**904,498**
1995 Total	**755**	**1,419**	**3,633**	**5,052**	**33,011**	**29,363**	**43,693**	**73,055**	**106,067**	**(h)**	**850,230**	**962,104**
2000 Total	**454**	**1,547**	**2,126**	**3,673**	**28,939**	**28,031**	**37,177**	**65,208**	**94,147**	**(h)**	**985,821**	**1,084,095**
2005 Total	**378**	**1,922**	**2,420**	**4,342**	**23,434**	**25,875**	**34,465**	**60,340**	**83,774**	**(h)**	**1,037,485**	**1,125,978**
2006 Total	**290**	**1,886**	**1,050**	**2,936**	**22,957**	**25,262**	**34,210**	**59,472**	**82,429**	**(h)**	**1,026,636**	**1,112,292**
2007 Total	**353**	**1,927**	**1,247**	**3,173**	**22,715**	**22,537**	**34,078**	**56,615**	**79,331**	**(h)**	**1,045,141**	**1,127,998**
2008 Total	**(i)**	**2,021**	**1,485**	**3,506**	**22,070**	**21,902**	**32,491**	**54,393**	**76,463**	**(h)**	**1,040,580**	**1,120,548**
2009 Total	**(i)**	**1,798**	**1,412**	**3,210**	**15,326**	**19,766**	**25,549**	**45,314**	**60,641**	**(h)**	**933,627**	**997,478**
2010 Total	**(i)**	**1,720**	**1,361**	**3,081**	**21,092**	**24,638**	**24,650**	**49,289**	**70,381**	**(h)**	**975,052**	**1,048,514**
2011 Total	**(i)**	**1,668**	**1,125**	**2,793**	**21,434**	**22,319**	**23,919**	**46,238**	**67,671**	**(h)**	**932,484**	**1,002,948**
2012 Total	**(i)**	**1,450**	**595**	**2,045**	**20,751**	**20,065**	**22,773**	**42,838**	**63,589**	**(h)**	**823,551**	**889,185**
2013 Total	**(i)**	**1,356**	**595**	**1,951**	**21,474**	**19,761**	**23,294**	**43,055**	**64,529**	**(h)**	**857,962**	**924,442**
2014 Total	**(i)**	**1,063**	**824**	**1,887**	**21,297**	**19,076**	**23,870**	**42,946**	**64,243**	**(h)**	**851,602**	**917,731**
2015 Total	**(i)**	**798**	**706**	**1,503**	**19,708**	**16,984**	**21,475**	**38,459**	**58,167**	**(h)**	**738,444**	**798,115**
2016 Total	**(i)**	**683**	**500**	**1,183**	**16,485**	**14,720**	**20,129**	**34,849**	**51,333**	**(h)**	**678,554**	**731,071**
2017 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 January	(i)	50	52	102	1,435	967	1,417	2,384	3,819	(h)	36,851	40,771
February	(i)	54	57	111	1,434	894	1,473	2,367	3,801	(h)	32,100	36,012
March	(i)	45	48	93	1,408	823	1,495	2,318	3,726	(h)	29,024	32,843
April	(i)	30	16	46	1,192	729	1,129	1,858	3,050	(h)	23,658	26,754
May	(i)	30	16	47	1,055	709	1,153	1,862	2,917	(h)	26,820	29,784
June	(i)	32	17	49	1,208	676	1,241	1,917	3,125	(h)	36,624	39,798
July	(i)	31	13	44	1,019	749	1,220	1,969	2,988	(h)	49,821	52,852
August	(i)	34	14	48	1,086	734	1,267	2,001	3,087	(h)	50,475	53,610
September	(i)	40	16	56	1,058	745	1,256	2,001	3,059	(h)	38,713	41,828
October	(i)	34	19	53	1,153	806	1,494	2,300	3,453	(h)	33,886	37,393
November	(i)	39	22	61	1,167	761	1,568	2,328	3,496	(h)	34,317	37,874
December	(i)	53	29	82	1,200	861	1,494	2,355	3,554	(h)	43,539	47,175
Total	**(i)**	**473**	**320**	**793**	**14,414**	**9,453**	**16,207**	**25,660**	**40,073**	**(h)**	**435,827**	**476,693**
2021 January	(i)	51	36	87	1,491	860	1,376	2,236	3,727	(h)	45,340	49,154
February	(i)	61	44	105	1,351	775	1,349	2,124	3,475	(h)	48,077	51,657
March	(i)	47	33	80	1,519	798	1,417	2,214	3,733	(h)	34,550	38,363
April	(i)	38	14	52	1,477	792	1,253	2,045	3,522	(h)	30,118	33,692
May	(i)	34	13	48	1,527	827	1,233	2,060	3,587	(h)	35,618	39,253
June	(i)	38	15	53	1,485	789	1,265	2,053	3,539	(h)	48,030	51,621
July	(i)	42	10	52	1,474	863	1,262	2,125	3,599	(h)	56,392	60,043
August	(i)	44	10	55	1,482	793	1,318	2,111	3,593	(h)	56,241	59,889
September	(i)	47	11	58	1,409	831	1,270	2,101	3,510	(h)	44,361	47,929
October	(i)	47	R 26	R 74	R 1,495	837	R 1,418	R 2,254	R 3,749	(h)	35,580	R 39,403
November	(i)	49	R 27	R 76	R 1,438	944	R 1,317	R 2,261	R 3,698	(h)	32,716	R 36,490
December	(i)	45	R 25	R 70	R 1,439	865	R 1,396	R 2,261	R 3,700	(h)	34,406	R 38,177
Total	**(i)**	**545**	**R 266**	**R 811**	**R 17,589**	**9,972**	**R 15,873**	**R 25,845**	**R 43,433**	**(h)**	**501,427**	**R 545,671**
2022 January	(i)	47	F 20	F 67	F 1,496	917	F 1,406	F 2,323	F 3,819	(h)	48,613	52,499

[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. F=Forecast.

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

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

Sources: See end of section.

Table 6.3 Coal Stocks by Sector

(Thousand Short Tons)

	Producers and Distributors	End-Use Sectors					Electric Power Sector[c,d]	Total
		Residential[a] and Commercial	Industrial			Total		
			Coke Plants	Other[b]	Total			
1950 Year	**NA**	**2,462**	**16,809**	**26,182**	**42,991**	**45,453**	**31,842**	**77,295**
1955 Year	**NA**	**998**	**13,422**	**15,880**	**29,302**	**30,300**	**41,391**	**71,691**
1960 Year	**NA**	**666**	**11,122**	**11,637**	**22,759**	**23,425**	**51,735**	**75,160**
1965 Year	**NA**	**353**	**10,640**	**13,122**	**23,762**	**24,115**	**54,525**	**78,640**
1970 Year	**NA**	**300**	**9,045**	**11,781**	**20,826**	**21,126**	**71,908**	**93,034**
1975 Year	**12,108**	**233**	**8,797**	**8,529**	**17,326**	**17,559**	**110,724**	**140,391**
1980 Year	**24,379**	**NA**	**9,067**	**11,951**	**21,018**	**21,018**	**183,010**	**228,407**
1985 Year	**33,133**	**NA**	**3,420**	**10,438**	**13,857**	**13,857**	**156,376**	**203,367**
1990 Year	**33,418**	**NA**	**3,329**	**8,716**	**12,044**	**12,044**	**156,166**	**201,629**
1995 Year	**34,444**	**NA**	**2,632**	**5,702**	**8,334**	**8,334**	**126,304**	**169,083**
2000 Year	**31,905**	**NA**	**1,494**	**4,587**	**6,081**	**6,081**	**102,296**	**140,282**
2005 Year	**34,971**	**NA**	**2,615**	**5,582**	**8,196**	**8,196**	**101,137**	**144,304**
2006 Year	**36,548**	**NA**	**2,928**	**6,506**	**9,434**	**9,434**	**140,964**	**186,946**
2007 Year	**33,977**	**NA**	**1,936**	**5,624**	**7,560**	**7,560**	**151,221**	**192,758**
2008 Year	**34,688**	**498**	**2,331**	**6,007**	**8,338**	**8,836**	**161,589**	**205,112**
2009 Year	**47,718**	**529**	**1,957**	**5,109**	**7,066**	**7,595**	**189,467**	**244,780**
2010 Year	**49,820**	**552**	**1,925**	**4,525**	**6,451**	**7,003**	**174,917**	**231,740**
2011 Year	**51,897**	**603**	**2,610**	**4,455**	**7,065**	**7,668**	**172,387**	**231,951**
2012 Year	**46,157**	**583**	**2,522**	**4,475**	**6,997**	**7,581**	**185,116**	**238,853**
2013 Year	**45,652**	**495**	**2,200**	**4,097**	**6,297**	**6,792**	**147,884**	**200,328**
2014 Year	**38,894**	**449**	**2,640**	**4,196**	**6,836**	**7,285**	**151,548**	**197,727**
2015 Year	**35,871**	**394**	**2,236**	**4,382**	**6,618**	**7,012**	**195,548**	**238,431**
2016 Year	**25,309**	**360**	**1,675**	**3,637**	**5,312**	**5,672**	**162,009**	**192,990**
2017 Year	**23,999**	**310**	**1,718**	**3,242**	**4,960**	**5,270**	**137,687**	**166,956**
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**	**128,176**	**165,334**
2020 January	31,382	235	2,271	3,179	5,450	5,685	134,384	171,451
February	31,803	223	2,210	3,100	5,309	5,533	139,361	176,697
March	30,829	212	2,148	3,020	5,168	5,380	145,283	181,492
April	31,168	212	2,106	3,020	5,126	5,338	151,807	188,313
May	31,522	212	2,064	3,019	5,083	5,296	154,130	190,948
June	29,510	213	2,022	3,019	5,041	5,253	150,525	185,289
July	27,716	220	2,007	2,981	4,988	5,208	137,970	170,893
August	27,138	227	1,991	2,944	4,935	5,162	129,444	161,744
September	25,537	234	1,975	2,907	4,882	5,116	129,173	159,826
October	25,025	239	1,868	2,887	4,755	4,994	133,547	163,566
November	24,152	245	1,761	2,867	4,628	4,873	136,304	165,329
December	**23,640**	**250**	**1,654**	**2,848**	**4,501**	**4,751**	**133,327**	**161,718**
2021 January	F 27,799	243	1,618	2,750	4,368	4,611	125,539	157,949
February	F 28,313	236	1,581	2,652	4,234	4,470	109,511	142,294
March	F 28,146	229	1,545	2,555	4,100	4,329	111,494	143,969
April	F 28,539	223	1,648	2,580	4,228	4,451	117,337	150,327
May	F 28,861	217	1,750	2,606	4,356	4,573	119,791	153,225
June	F 26,064	210	1,853	2,632	4,485	4,695	110,851	141,610
July	F 24,206	207	1,833	2,656	4,489	4,697	97,320	126,222
August	F 24,205	204	1,814	2,681	4,494	4,698	84,425	113,329
September	F 23,449	201	1,794	2,705	4,499	4,700	80,413	108,562
October	F 24,444	R 193	R 1,749	R 2,677	R 4,425	R 4,618	84,821	R 113,883
November	F 24,559	R 184	R 1,704	R 2,648	R 4,352	R 4,536	92,302	R 121,397
December	F **25,295**	R **176**	R **1,658**	R **2,620**	R **4,278**	R **4,454**	**94,654**	R **124,403**
2022 January	F 24,755	F 182	F 1,946	F 3,498	F 5,445	F 5,627	87,350	117,732

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

[b] Through 1979, data are for manufacturing plants and the transportation sector. For 1980–2007, data are for manufacturing plants only. Beginning in 2008, data are for manufacturing plants and coal transformation/processing plants.

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

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

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 1.11a and 1.11b).

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

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

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

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

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

Industrial Coke Plants—Through 1979, monthly stocks at coke plants were taken directly from reported data. Beginning

in 1980, coke plant stocks are estimated by using one-third of the current quarterly change to indicate the monthly change in stocks. Quarterly stocks are taken directly from data reported on Form EIA-5.

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

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

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

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

Table 6.1 Sources

Production

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

Waste Coal Supplied

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

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

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

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

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

Imports and Exports

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

Stock Change

1950 forward: Calculated from data in Table 6.3.

Losses and Unaccounted for

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

Consumption
1949 forward: Table 6.2.

Table 6.2 Sources

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

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

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

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

Commercial CHP
1989 forward: Table 7.4c.

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

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

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

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

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

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

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

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

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

Other Industrial CHP
1989 forward: Table 7.4c.

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

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

Electric Power
1949 forward: Table 7.4b.

Table 6.3 Sources

Producers and Distributors
1973–1979: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Form 6-1419Q, "Distribution of Bituminous Coal and Lignite Shipments."

1980–1997: U.S. Energy Information Administration (EIA), Form EIA-6, "Coal Distribution Report," quarterly.

1998–2007: EIA, Form EIA-6A, "Coal Distribution Report," annual.

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

Residential and Commercial
1949–1976: DOI, BOM, *Minerals Yearbook*.

January–September 1977: DOI, BOM, Form 6-1400, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

October 1977–1979: EIA, Form EIA-2, "Monthly Coal Report, Retail Dealers—Upper Lake Docks."

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

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

October 1977–1980: EIA, Form EIA-5/5A, "Coke and Coal Chemicals—Monthly/Annual."

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

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

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

October 1977–2007: EIA, Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms.

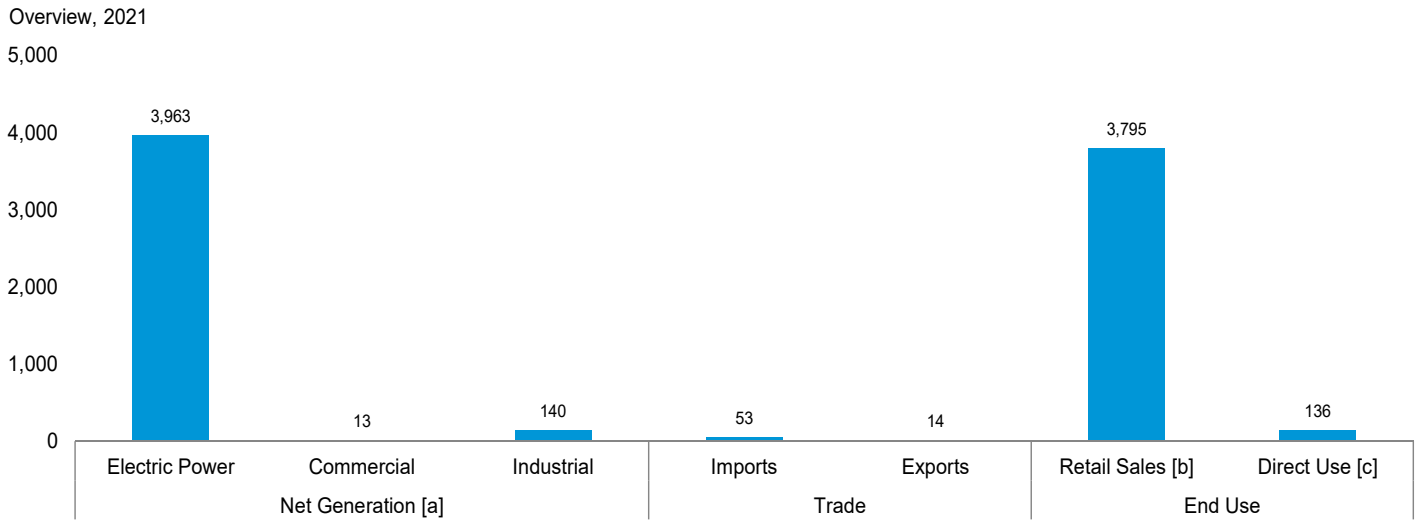
2008 forward: EIA, Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called, "Quarterly Survey of Non-Electric Sector Coal Data"); and, for forecast values, EIA, STIFS.

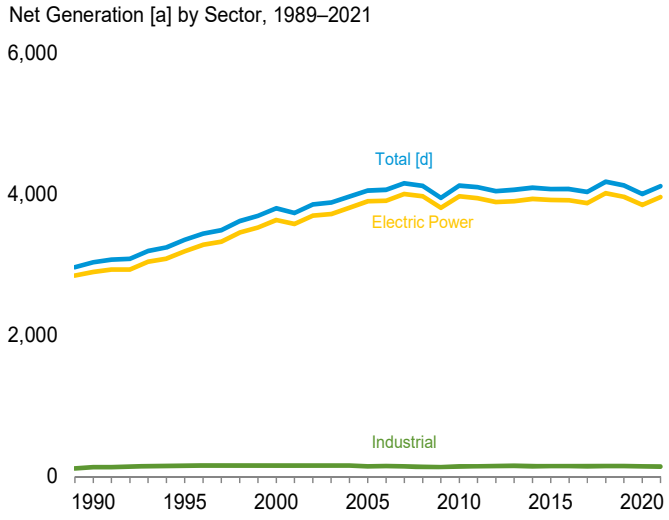
Electric Power
1949 forward: Table 7.5.

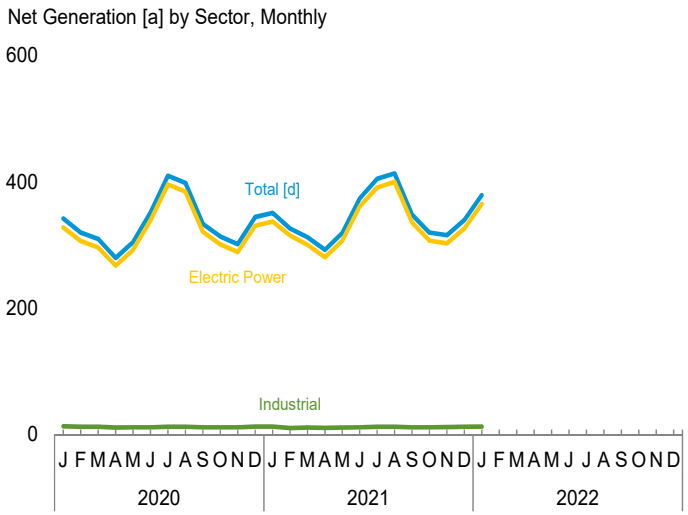
7. Electricity

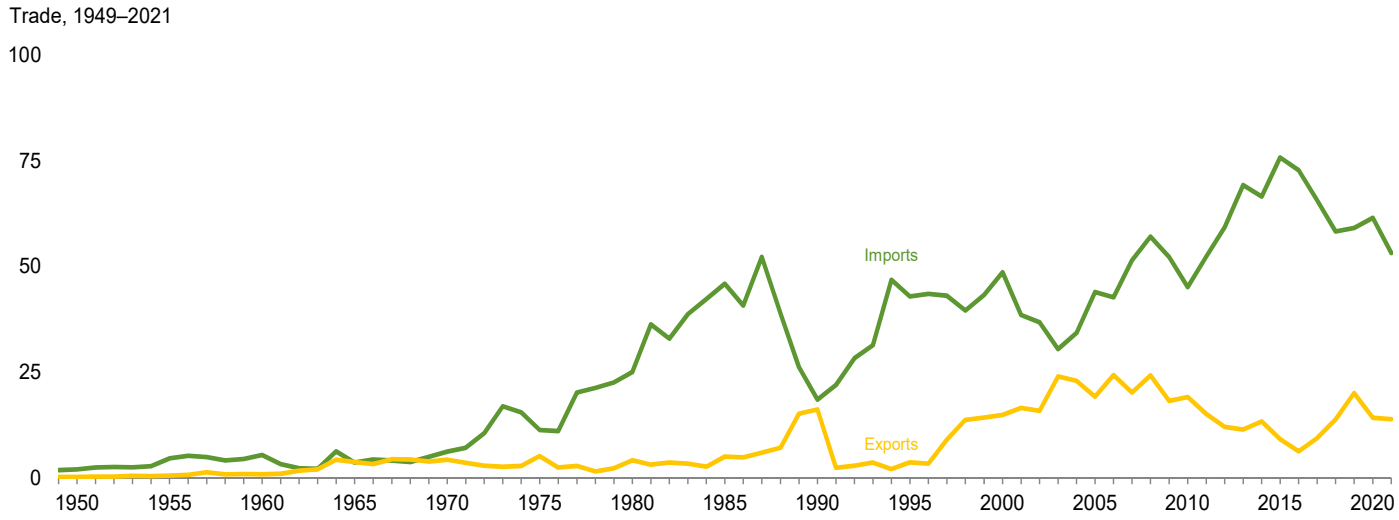
Figure 7.1 Electricity Overview

(Billion Kilowatthours)









[a] Data are for utility-scale facilities.
[b] Electricity retail sales to ultimate customers reported by electric utilities and other energy service providers.
[c] See "Direct Use" in Glossary.
[d] Includes commercial sector.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.1.

Table 7.1 Electricity Overview

(Billion Kilowatthours)

	Net Generation[a]				Trade			T&D Losses[f] and Unaccounted for[g]	End Use		
	Electric Power Sector[b]	Commercial Sector[c]	Industrial Sector[d]	Total	Imports[e]	Exports[e]	Net Imports[e]		Retail Sales[h]	Direct Use[i]	Total
1950 Total	**329**	**NA**	**5**	**334**	**2**	**(s)**	**2**	**44**	**291**	**NA**	**291**
1955 Total	**547**	**NA**	**3**	**550**	**5**	**(s)**	**4**	**58**	**497**	**NA**	**497**
1960 Total	**756**	**NA**	**4**	**759**	**5**	**1**	**5**	**76**	**688**	**NA**	**688**
1965 Total	**1,055**	**NA**	**3**	**1,058**	**4**	**4**	**(s)**	**104**	**954**	**NA**	**954**
1970 Total	**1,532**	**NA**	**3**	**1,535**	**6**	**4**	**2**	**145**	**1,392**	**NA**	**1,392**
1975 Total	**1,918**	**NA**	**3**	**1,921**	**11**	**5**	**6**	**180**	**1,747**	**NA**	**1,747**
1980 Total	**2,286**	**NA**	**3**	**2,290**	**25**	**4**	**21**	**216**	**2,094**	**NA**	**2,094**
1985 Total	**2,470**	**NA**	**3**	**2,473**	**46**	**5**	**41**	**190**	**2,324**	**NA**	**2,324**
1990 Total	**2,901**	**6**	**[d] 131**	**3,038**	**18**	**16**	**2**	**203**	**2,713**	**125**	**2,837**
1995 Total	**3,194**	**8**	**151**	**3,353**	**43**	**4**	**39**	**229**	**3,013**	**151**	**3,164**
2000 Total	**3,638**	**8**	**157**	**3,802**	**49**	**15**	**34**	**244**	**3,421**	**171**	**3,592**
2005 Total	**3,902**	**8**	**145**	**4,055**	**44**	**19**	**25**	**269**	**3,661**	**150**	**3,811**
2006 Total	**3,908**	**8**	**148**	**4,065**	**43**	**24**	**18**	**266**	**3,670**	**147**	**3,817**
2007 Total	**4,005**	**8**	**143**	**4,157**	**51**	**20**	**31**	**298**	**3,765**	**126**	**3,890**
2008 Total	**3,974**	**8**	**137**	**4,119**	**57**	**24**	**33**	**286**	**3,734**	**132**	**3,866**
2009 Total	**3,810**	**8**	**132**	**3,950**	**52**	**18**	**34**	**261**	**3,597**	**127**	**3,724**
2010 Total	**3,972**	**9**	**144**	**4,125**	**45**	**19**	**26**	**264**	**3,755**	**132**	**3,887**
2011 Total	**3,948**	**10**	**142**	**4,100**	**52**	**15**	**37**	**255**	**3,750**	**133**	**3,883**
2012 Total	**3,890**	**11**	**146**	**4,048**	**59**	**12**	**47**	**263**	**3,695**	**138**	**3,832**
2013 Total	**3,904**	**12**	**150**	**4,066**	**69**	**11**	**58**	**256**	**3,725**	**143**	**3,868**
2014 Total	**3,937**	**13**	**144**	**4,094**	**67**	**13**	**53**	**244**	**3,765**	**139**	**3,903**
2015 Total	**3,919**	**13**	**146**	**4,078**	**76**	**9**	**67**	**244**	**3,759**	**141**	**3,900**
2016 Total	**3,918**	**13**	**146**	**4,077**	**73**	**6**	**67**	**241**	**3,762**	**140**	**3,902**
2017 Total	**3,877**	**13**	**144**	**4,034**	**66**	**9**	**56**	**226**	**3,723**	**141**	**3,864**
2018 Total	**4,018**	**13**	**147**	**4,178**	**58**	**14**	**44**	**220**	**3,859**	**144**	**4,003**
2019 Total	**3,966**	**14**	**149**	**4,128**	**59**	**20**	**39**	**212**	**3,811**	**143**	**3,954**
2020 January	328	1	13	342	5	1	3	17	316	[E] 13	328
February	306	1	12	320	4	2	3	16	295	[E] 12	306
March	296	1	12	310	5	1	4	12	290	[E] 12	302
April	268	1	11	280	5	1	3	10	262	[E] 11	273
May	292	1	11	305	5	1	4	23	275	[E] 11	286
June	339	1	12	352	5	1	4	24	320	[E] 11	331
July	396	1	12	410	7	1	5	23	380	[E] 12	392
August	385	1	12	398	7	1	6	23	369	[E] 12	381
September	321	1	11	333	5	1	4	3	323	[E] 11	334
October	301	1	11	314	5	1	4	10	297	[E] 11	308
November	289	1	11	301	4	1	3	16	277	[E] 11	288
December	331	1	13	344	5	1	4	21	315	[E] 12	328
Total	**3,851**	**13**	**143**	**4,007**	**61**	**14**	**47**	**198**	**3,718**	**139**	**3,856**
2021 January	337	1	13	351	5	1	4	22	321	[E] 12	333
February	315	1	10	326	4	1	3	21	299	[E] 10	309
March	300	1	11	312	5	1	4	12	293	[E] 11	304
April	281	1	11	293	4	1	3	14	272	[E] 10	282
May	307	1	11	319	5	1	4	23	289	[E] 11	300
June	361	1	12	374	5	1	4	29	338	[E] 11	349
July	391	1	12	405	6	1	4	24	373	[E] 12	385
August	400	1	12	413	5	1	3	24	380	[E] 12	392
September	336	1	11	348	4	1	3	4	336	[E] 11	347
October	307	1	12	320	4	1	3	10	301	[E] 11	313
November	302	1	12	315	3	2	1	19	286	[E] 12	298
December	326	1	12	340	4	2	2	23	307	[E] 12	319
Total	**3,963**	**13**	**140**	**4,116**	**53**	**14**	**39**	**225**	**3,795**	**136**	**3,930**
2022 January	365	1	13	379	[F] 6	[F] 2	[F] 5	35	337	[E] 12	349

[a] Electricity net generation at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic (PV) generation shown on Table 10.6. See Note 1, "Coverage of Electricity Statistics," at end of section.

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

[c] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

[d] Industrial combined-heat-and-power (CHP) and industrial electricity-only plants. Through 1988, data are for industrial hydroelectric power only.

[e] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

[f] Transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer). See Note 1, "Electrical System Energy Losses," at end of Section 2.

[g] Data collection frame differences and nonsampling error.

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

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

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

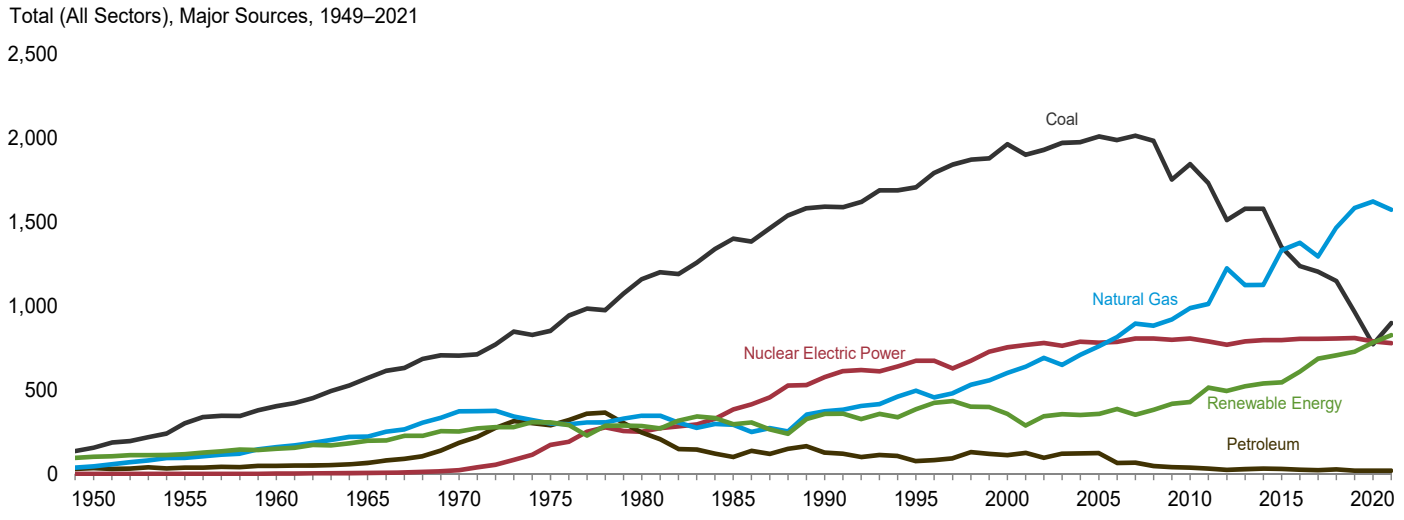
Notes: • See Note 1, "Coverage of Electricity Statistics," and Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Data values preceded by "F" are derived from the U.S. Energy Information Administration's Short-Term Integrated Forecasting System. See Note 3, "Electricity Forecast Values," at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

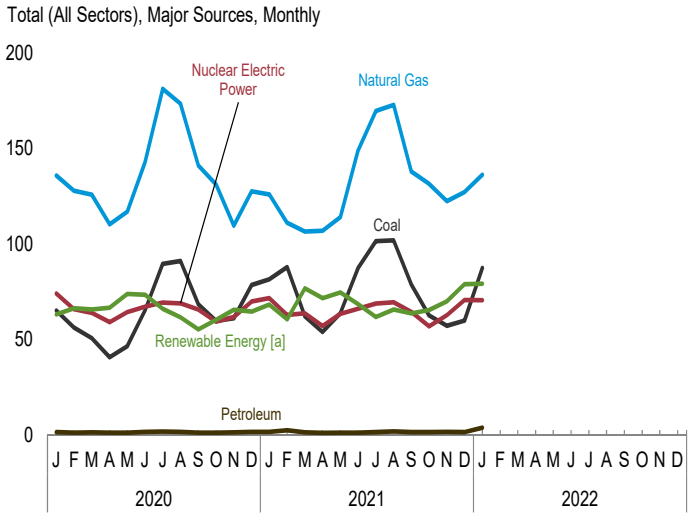
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

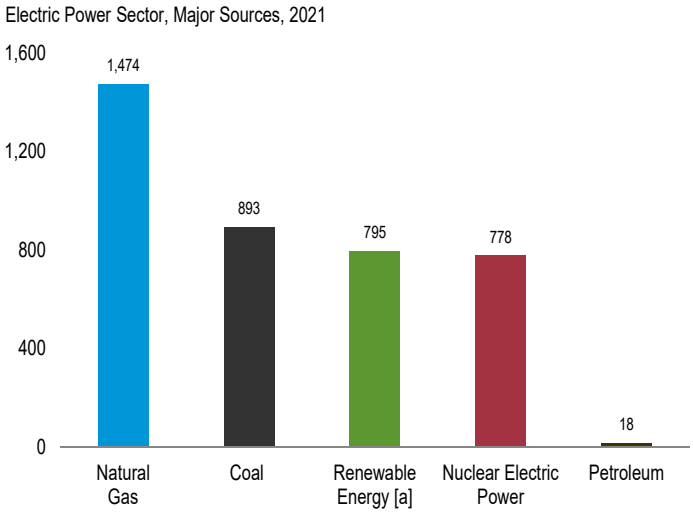
Sources: See end of section.

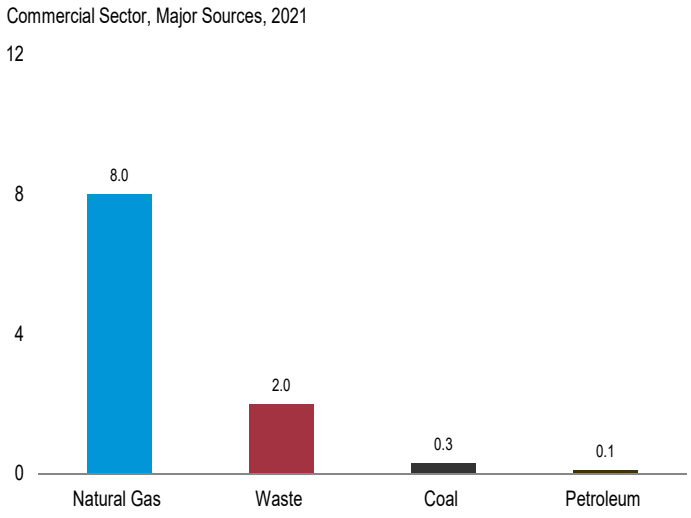
Figure 7.2 Electricity Net Generation

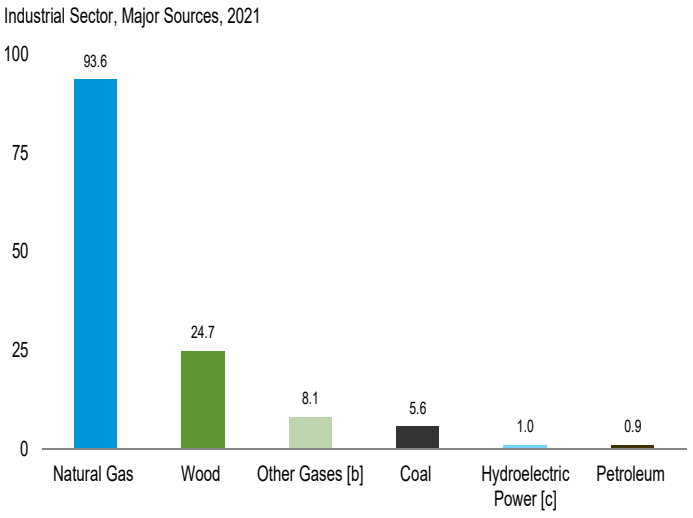
(Billion Kilowatthours)











[a] Conventional hydroelectric power, wood, waste, geothermal, solar, and wind.
[b] Blast furnace gas, and other manufactured and waste derived from fossil fuels.
[c] Conventional hydroelectric power.
Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.2a-7.2c.

Table 7.2a Electricity Net Generation: Total (All Sectors)

(Sum of Tables 7.2b and 7.2c; Million Kilowatthours)

	Fossil Fuels				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)**	**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**
2006 Total	**1,990,511**	**64,166**	**816,441**	**14,177**	**787,219**	**-6,558**	**289,246**	**38,762**	**16,099**	**14,568**	**508**	**26,589**	**4,064,702**
2007 Total	**2,016,456**	**65,739**	**896,590**	**13,453**	**806,425**	**-6,896**	**247,510**	**39,014**	**16,525**	**14,637**	**612**	**34,450**	**4,156,745**
2008 Total	**1,985,801**	**46,243**	**882,981**	**11,707**	**806,208**	**-6,288**	**254,831**	**37,300**	**17,734**	**14,840**	**864**	**55,363**	**4,119,388**
2009 Total	**1,755,904**	**38,937**	**920,979**	**10,632**	**798,855**	**-4,627**	**273,445**	**36,050**	**18,443**	**15,009**	**891**	**73,886**	**3,950,331**
2010 Total	**1,847,290**	**37,061**	**987,697**	**11,313**	**806,968**	**-5,501**	**260,203**	**37,172**	**18,917**	**15,219**	**1,212**	**94,652**	**4,125,060**
2011 Total	**1,733,430**	**30,182**	**1,013,689**	**11,566**	**790,204**	**-6,421**	**319,355**	**37,449**	**19,222**	**15,316**	**1,818**	**120,177**	**4,100,141**
2012 Total	**1,514,043**	**23,190**	**1,225,894**	**11,898**	**769,331**	**-4,950**	**276,240**	**37,799**	**19,823**	**15,562**	**4,327**	**140,822**	**4,047,765**
2013 Total	**1,581,115**	**27,164**	**1,124,836**	**12,853**	**789,016**	**-4,681**	**268,565**	**40,028**	**20,830**	**15,775**	**9,036**	**167,840**	**4,065,964**
2014 Total	**1,581,710**	**30,232**	**1,126,609**	**12,022**	**797,166**	**-6,174**	**259,367**	**42,340**	**21,650**	**15,877**	**17,691**	**181,655**	**4,093,606**
2015 Total	**1,352,398**	**28,249**	**1,333,482**	**13,117**	**797,178**	**-5,091**	**249,080**	**41,929**	**21,703**	**15,918**	**24,893**	**190,719**	**4,077,601**
2016 Total	**1,239,149**	**24,205**	**1,378,307**	**12,807**	**805,694**	**-6,686**	**267,812**	**40,947**	**21,813**	**15,826**	**36,054**	**226,993**	**4,076,675**
2017 Total	**1,205,835**	**21,390**	**1,296,442**	**12,469**	**804,950**	**-6,495**	**300,333**	**41,124**	**21,610**	**15,927**	**53,287**	**254,303**	**4,034,271**
2018 Total	**1,149,487**	**25,226**	**1,469,133**	**13,463**	**807,084**	**-5,905**	**292,524**	**40,936**	**20,896**	**15,967**	**63,825**	**272,667**	**4,178,277**
2019 Total	**964,957**	**18,341**	**1,585,814**	**12,591**	**809,409**	**-5,261**	**287,874**	**38,543**	**18,964**	**15,473**	**71,937**	**295,882**	**4,127,855**
2020 January	65,140	1,548	135,916	1,155	74,170	-377	24,498	3,325	1,654	1,148	4,459	28,121	341,850
February	56,201	1,289	127,871	1,152	65,911	-247	25,868	3,119	1,512	1,230	5,561	29,110	319,550
March	50,731	1,395	125,905	1,047	63,997	-353	23,823	3,169	1,647	1,465	6,350	29,320	309,587
April	40,675	1,239	110,301	802	59,170	-325	23,194	2,844	1,558	1,379	7,921	29,752	279,583
May	46,527	1,301	116,943	884	64,338	-367	29,976	2,918	1,590	1,362	9,653	28,378	304,593
June	65,283	1,618	142,833	867	67,205	-499	27,999	2,823	1,456	1,274	9,654	30,212	351,745
July	89,709	1,751	181,260	937	69,385	-686	26,742	3,021	1,541	1,331	10,610	22,866	409,562
August	91,145	1,674	173,390	1,094	68,982	-784	23,284	3,159	1,561	1,323	9,315	23,029	398,280
September	68,407	1,194	141,164	1,013	65,727	-525	18,679	2,894	1,483	1,288	7,732	23,186	333,258
October	59,805	1,227	131,242	918	59,362	-423	18,810	2,839	1,489	1,288	7,085	28,823	313,531
November	61,182	1,412	109,658	950	61,760	-369	20,893	2,951	1,453	1,399	5,767	33,129	301,250
December	78,588	1,691	127,685	999	69,871	-368	21,508	3,149	1,549	1,403	5,091	32,011	344,346
Total	**773,393**	**17,341**	**1,624,167**	**11,818**	**789,879**	**-5,321**	**285,274**	**36,210**	**18,493**	**15,890**	**89,199**	**337,938**	**4,007,135**
2021 January	81,483	1,603	125,960	1,077	71,732	-424	25,814	3,273	1,624	1,372	5,726	30,452	350,796
February	87,849	2,408	111,111	846	62,954	-425	21,624	2,917	1,425	1,315	6,413	26,870	326,223
March	62,037	1,436	106,565	854	63,708	-236	21,574	3,207	1,615	1,249	9,272	39,944	312,285
April	53,989	1,145	106,920	855	57,092	-197	19,201	2,714	1,520	1,295	10,830	36,179	292,504
May	63,900	1,312	114,131	886	63,394	-416	22,795	3,077	1,567	1,366	12,292	33,555	318,859
June	87,356	1,306	148,843	932	66,070	-376	24,075	3,174	1,505	1,414	11,841	26,611	373,754
July	101,600	1,512	169,663	1,010	68,832	-685	22,113	3,280	1,528	1,395	11,915	21,540	404,749
August	101,923	1,916	172,859	1,028	69,471	-670	20,954	3,370	1,509	1,362	11,813	26,783	413,353
September	78,891	1,546	138,062	982	64,484	-434	17,966	3,101	1,483	1,359	11,106	28,676	348,201
October	62,614	1,498	131,490	1,048	56,945	-427	17,999	3,010	1,490	1,310	9,243	32,440	319,638
November	57,160	1,623	122,458	877	62,749	-377	20,460	2,858	1,446	1,347	7,874	36,043	315,495
December	59,878	1,477	127,169	889	70,720	-445	25,650	3,189	1,598	1,454	6,355	40,676	339,684
Total	**898,679**	**18,782**	**1,575,230**	**11,283**	**778,152**	**-5,112**	**260,225**	**37,170**	**18,309**	**16,238**	**114,678**	**379,767**	**4,115,540**
2022 January	87,506	3,785	136,317	971	70,577	-493	27,017	3,084	1,489	1,500	8,004	38,194	378,967

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

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

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.

[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

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

NA=Not available.

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

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

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

Table 7.2b Electricity Net Generation: Electric Power Sector

(Subset of Table 7.2a; Million Kilowatthours)

	Fossil Fuels						Renewable Energy						
								Biomass					
	Coal[a]	Petroleum[b]	Natural Gas[c]	Other Gases[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power[f]	Wood[g]	Waste[h]	Geothermal	Solar[i]	Wind	Total[j]
1950 Total	**154,520**	**33,734**	**44,559**	**NA**	**0**	**(f)**	**95,938**	**390**	**NA**	**NA**	**NA**	**NA**	**329,141**
1955 Total	**301,363**	**37,138**	**95,285**	**NA**	**0**	**(f)**	**112,975**	**276**	**NA**	**NA**	**NA**	**NA**	**547,038**
1960 Total	**403,067**	**47,987**	**157,970**	**NA**	**518**	**(f)**	**145,833**	**140**	**NA**	**33**	**NA**	**NA**	**755,549**
1965 Total	**570,926**	**64,801**	**221,559**	**NA**	**3,657**	**(f)**	**193,851**	**269**	**NA**	**189**	**NA**	**NA**	**1,055,252**
1970 Total	**704,394**	**184,183**	**372,890**	**NA**	**21,804**	**(f)**	**247,714**	**136**	**220**	**525**	**NA**	**NA**	**1,531,868**
1975 Total	**852,786**	**289,095**	**299,778**	**NA**	**172,505**	**(f)**	**300,047**	**18**	**174**	**3,246**	**NA**	**NA**	**1,917,649**
1980 Total	**1,161,562**	**245,994**	**346,240**	**NA**	**251,116**	**(f)**	**276,021**	**275**	**158**	**5,073**	**NA**	**NA**	**2,286,439**
1985 Total	**1,402,128**	**100,202**	**291,946**	**NA**	**383,691**	**(f)**	**281,149**	**743**	**640**	**9,325**	**11**	**6**	**2,469,841**
1990 Total[k]	**1,572,109**	**118,864**	**309,486**	**621**	**576,862**	**-3,508**	**289,753**	**7,032**	**11,500**	**15,434**	**367**	**2,789**	**2,901,322**
1995 Total	**1,686,056**	**68,146**	**419,179**	**1,927**	**673,402**	**-2,725**	**305,410**	**7,597**	**17,986**	**13,378**	**497**	**3,164**	**3,194,230**
2000 Total	**1,943,111**	**105,192**	**517,978**	**2,028**	**753,893**	**-5,539**	**271,338**	**8,916**	**20,307**	**14,093**	**493**	**5,593**	**3,637,529**
2005 Total	**1,992,054**	**116,482**	**683,829**	**3,777**	**781,986**	**-6,558**	**267,040**	**10,570**	**13,031**	**14,692**	**550**	**17,811**	**3,902,192**
2006 Total	**1,969,737**	**59,708**	**734,417**	**4,254**	**787,219**	**-6,558**	**286,254**	**10,341**	**13,927**	**14,568**	**508**	**26,589**	**3,908,077**
2007 Total	**1,998,390**	**61,306**	**814,752**	**4,042**	**806,425**	**-6,896**	**245,843**	**10,711**	**14,294**	**14,637**	**612**	**34,450**	**4,005,343**
2008 Total	**1,968,838**	**42,881**	**802,372**	**3,200**	**806,208**	**-6,288**	**253,096**	**10,638**	**15,379**	**14,840**	**864**	**55,363**	**3,974,349**
2009 Total	**1,741,123**	**35,811**	**841,006**	**3,058**	**798,855**	**-4,627**	**271,506**	**10,738**	**15,954**	**15,009**	**891**	**73,886**	**3,809,837**
2010 Total	**1,827,738**	**34,679**	**901,389**	**2,967**	**806,968**	**-5,501**	**258,455**	**11,446**	**16,376**	**15,219**	**1,206**	**94,636**	**3,972,386**
2011 Total	**1,717,891**	**28,202**	**926,290**	**2,939**	**790,204**	**-6,421**	**317,531**	**10,733**	**15,989**	**15,316**	**1,727**	**120,121**	**3,948,186**
2012 Total	**1,500,557**	**20,072**	**1,132,791**	**2,984**	**769,331**	**-4,950**	**273,859**	**11,050**	**16,555**	**15,562**	**4,164**	**140,749**	**3,890,358**
2013 Total	**1,567,722**	**24,510**	**1,028,949**	**4,322**	**789,016**	**-4,681**	**265,058**	**12,302**	**16,918**	**15,775**	**8,724**	**167,742**	**3,903,715**
2014 Total	**1,568,774**	**28,043**	**1,033,172**	**3,358**	**797,166**	**-6,174**	**258,046**	**15,027**	**17,602**	**15,877**	**17,304**	**181,496**	**3,937,003**
2015 Total	**1,340,993**	**26,505**	**1,237,656**	**3,715**	**797,178**	**-5,091**	**247,636**	**14,563**	**17,823**	**15,918**	**24,456**	**190,547**	**3,919,294**
2016 Total	**1,229,663**	**22,710**	**1,279,380**	**3,912**	**805,694**	**-6,686**	**266,326**	**13,420**	**18,183**	**15,826**	**35,497**	**226,790**	**3,918,078**
2017 Total	**1,197,838**	**20,039**	**1,196,753**	**4,126**	**804,950**	**-6,495**	**298,711**	**13,641**	**18,084**	**15,927**	**52,724**	**254,074**	**3,877,453**
2018 Total	**1,142,173**	**23,928**	**1,365,822**	**4,086**	**807,084**	**-5,905**	**291,148**	**13,385**	**17,623**	**15,934**	**63,253**	**272,396**	**4,018,167**
2019 Total	**958,732**	**17,220**	**1,477,139**	**4,037**	**809,409**	**-5,261**	**286,652**	**12,020**	**16,091**	**15,031**	**71,265**	**295,604**	**3,965,629**
2020 January	64,564	1,454	126,257	357	74,170	-377	24,378	1,054	1,395	1,112	4,423	28,097	327,543
February	55,665	1,198	119,048	368	65,911	-247	25,741	964	1,273	1,189	5,518	29,086	306,309
March	50,230	1,318	117,059	292	63,997	-353	23,683	938	1,391	1,422	6,297	29,294	296,241
April	40,234	1,161	102,381	172	59,170	-325	23,066	766	1,318	1,340	7,858	29,726	267,504
May	46,090	1,226	108,918	179	64,338	-367	29,851	838	1,345	1,324	9,576	28,354	292,304
June	64,863	1,539	134,240	157	67,205	-499	27,905	856	1,231	1,240	9,576	30,138	339,027
July	89,246	1,667	171,971	182	69,385	-686	26,657	1,009	1,301	1,301	10,528	22,787	396,003
August	90,696	1,594	164,074	316	68,982	-784	23,203	1,097	1,322	1,293	9,246	22,962	384,667
September	67,925	1,116	132,786	295	65,727	-525	18,611	906	1,259	1,254	7,673	23,102	320,734
October	59,339	1,139	123,089	213	59,362	-423	18,743	838	1,252	1,249	7,034	28,717	301,160
November	60,748	1,323	101,458	296	61,760	-369	20,811	941	1,222	1,358	5,725	33,011	288,893
December	78,101	1,599	118,396	347	69,871	-368	21,409	1,004	1,317	1,359	5,058	31,879	330,648
Total	**767,702**	**16,333**	**1,519,676**	**3,174**	**789,879**	**-5,321**	**284,059**	**11,211**	**15,625**	**15,441**	**88,511**	**337,153**	**3,851,034**
2021 January	81,012	1,517	116,597	333	71,732	-424	25,698	1,090	1,372	1,328	5,683	30,345	336,928
February	87,399	2,294	103,856	198	62,954	-425	21,527	1,035	1,217	1,275	6,370	26,759	315,025
March	61,576	1,347	98,822	199	63,708	-236	21,469	1,084	1,368	1,232	9,204	39,853	300,258
April	53,549	1,076	99,318	251	57,092	-197	19,101	735	1,287	1,257	10,751	36,082	280,881
May	63,416	1,229	106,135	261	63,394	-416	22,691	1,015	1,341	1,315	12,207	33,478	306,659
June	86,850	1,236	140,282	302	66,070	-376	23,976	1,097	1,303	1,374	11,764	26,534	361,007
July	101,092	1,430	160,411	301	68,832	-685	22,014	1,129	1,301	1,356	11,833	21,481	391,099
August	101,413	1,829	163,682	322	69,471	-670	20,856	1,224	1,281	1,321	11,734	26,701	399,767
September	78,371	1,477	129,813	286	64,484	-434	17,876	1,014	1,264	1,316	11,029	28,608	335,686
October	62,127	NM	122,997	326	56,945	-427	17,907	1,041	1,258	1,262	9,177	32,329	306,951
November	56,626	1,543	113,710	180	62,749	-377	20,362	808	1,209	1,303	7,813	35,916	302,400
December	59,373	1,401	118,012	215	70,720	-445	25,539	1,088	1,343	1,397	6,307	40,540	326,123
Total	**892,804**	**17,798**	**1,473,635**	**3,173**	**778,152**	**-5,112**	**259,016**	**12,361**	**15,545**	**15,736**	**113,871**	**378,626**	**3,962,785**
2022 January	86,986	3,681	126,915	271	70,577	-493	26,905	1,008	1,233	1,443	7,950	38,163	365,204

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[b] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

[d] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[e] Pumped storage facility production minus energy used for pumping.

[f] Through 1989, hydroelectric pumped storage is included in "Conventional Hydroelectric Power."

[g] Wood and wood-derived fuels.

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

[i] Electricity net generation from solar thermal and photovoltaic (PV) energy at utility-scale facilities. Does not include distributed (small-scale) solar photovoltaic generation. See Table 10.6.

[j] Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels).

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

NA=Not available. 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**
2006 Total	**1,310**	**235**	**4,355**	**1,599**	**8,371**	**19,464**	**4,223**	**77,669**	**9,923**	**2,899**	**28,400**	**572**	**148,254**
2007 Total	**1,371**	**189**	**4,257**	**1,599**	**8,273**	**16,694**	**4,243**	**77,580**	**9,411**	**1,590**	**28,287**	**631**	**143,128**
2008 Total	**1,261**	**142**	**4,188**	**1,534**	**7,926**	**15,703**	**3,219**	**76,421**	**8,507**	**1,676**	**26,641**	**821**	**137,113**
2009 Total	**1,096**	**163**	**4,225**	**1,748**	**8,165**	**13,686**	**2,963**	**75,748**	**7,574**	**1,868**	**25,292**	**740**	**132,329**
2010 Total	**1,111**	**124**	**4,725**	**1,672**	**8,592**	**18,441**	**2,258**	**81,583**	**8,343**	**1,668**	**25,706**	**869**	**144,082**
2011 Total	**1,049**	**89**	**5,487**	**2,315**	**10,080**	**14,490**	**1,891**	**81,911**	**8,624**	**1,799**	**26,691**	**917**	**141,875**
2012 Total	**883**	**196**	**6,603**	**2,319**	**11,301**	**12,603**	**2,922**	**86,500**	**8,913**	**2,353**	**26,725**	**948**	**146,107**
2013 Total	**839**	**124**	**7,154**	**2,567**	**12,234**	**12,554**	**2,531**	**88,733**	**8,531**	**3,463**	**27,691**	**1,346**	**150,015**
2014 Total	**595**	**255**	**7,227**	**2,681**	**12,520**	**12,341**	**1,934**	**86,209**	**8,664**	**1,282**	**27,239**	**1,367**	**144,083**
2015 Total	**509**	**191**	**7,471**	**2,637**	**12,595**	**10,896**	**1,552**	**88,355**	**9,401**	**1,410**	**27,318**	**1,243**	**145,712**
2016 Total	**383**	**82**	**7,730**	**2,496**	**12,706**	**9,103**	**1,412**	**91,197**	**8,895**	**1,269**	**27,458**	**1,134**	**145,890**
2017 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 January	25	12	731	179	1,145	551	83	8,928	799	102	2,264	80	13,163
February	31	7	669	168	1,074	506	84	8,154	784	108	2,149	72	12,168
March	24	7	623	182	1,050	476	71	8,222	755	123	2,226	74	12,296
April	13	5	546	169	943	429	73	7,373	631	111	2,077	71	11,136
May	14	9	578	177	1,012	422	67	7,447	705	102	2,076	67	11,277
June	17	7	685	165	1,103	403	73	7,909	710	73	1,959	60	11,615
July	16	10	855	177	1,293	447	75	8,433	755	64	1,999	63	12,266
August	15	10	819	177	1,241	435	70	8,497	777	62	2,048	63	12,371
September	23	8	695	170	1,097	459	70	7,683	718	54	1,982	53	11,426
October	17	8	638	167	1,032	449	80	7,515	705	53	1,991	70	11,340
November	20	8	596	165	987	414	80	7,604	654	67	2,003	66	11,370
December	26	10	675	158	1,069	461	83	8,614	653	83	2,135	74	12,629
Total	**240**	**100**	**8,110**	**2,053**	**13,046**	**5,451**	**908**	**96,381**	**8,644**	**1,001**	**24,908**	**814**	**143,056**
2021 January	27	10	680	179	1,118	444	76	8,683	745	89	2,172	73	12,750
February	35	NM	608	145	998	414	100	6,647	648	74	1,867	63	10,200
March	24	9	622	170	1,033	436	80	7,122	655	84	2,115	76	10,993
April	19	8	570	160	988	421	61	7,031	604	81	1,970	74	10,634
May	15	9	602	157	1,028	469	74	7,395	625	81	2,056	70	11,172
June	21	8	686	151	1,103	485	63	7,875	630	75	2,062	51	11,645
July	23	9	767	169	1,216	485	72	8,485	709	78	2,133	58	12,434
August	27	NM	794	168	1,244	483	78	8,383	706	78	2,128	60	12,342
September	29	NM	722	162	1,153	492	63	7,526	696	74	2,072	57	11,361
October	30	8	646	161	1,069	456	NM	7,847	723	76	1,957	70	11,619
November	26	9	647	165	1,069	508	71	8,102	697	80	2,039	72	12,025
December	21	10	681	175	1,127	484	66	8,476	674	85	2,085	79	12,434
Total	**297**	**110**	**8,023**	**1,963**	**13,148**	**5,577**	**874**	**93,572**	**8,110**	**955**	**24,657**	**802**	**139,607**
2022 January	31	NM	707	183	1,203	488	80	8,694	700	84	2,061	73	12,560

[a] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

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

[c] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

[d] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

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

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

[g] Includes a small amount of conventional hydroelectric power, geothermal, other gases, solar photovoltaic (PV) energy, wind, wood, and other, which are not separately displayed. Does not include distributed (small-scale) solar photovoltaic generation. shown on Table 10.6.

[h] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[i] Conventional hydroelectric power.

[j] Wood and wood-derived fuels.

[k] Includes photovoltaic (PV) energy, wind, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, miscellaneous technologies, and, beginning in 2001, non-renewable waste (municipal solid waste from non-biogenic sources, and tire-derived fuels). Does not include distributed (small-scale) solar photovoltaic generation shown on Table 10.6.

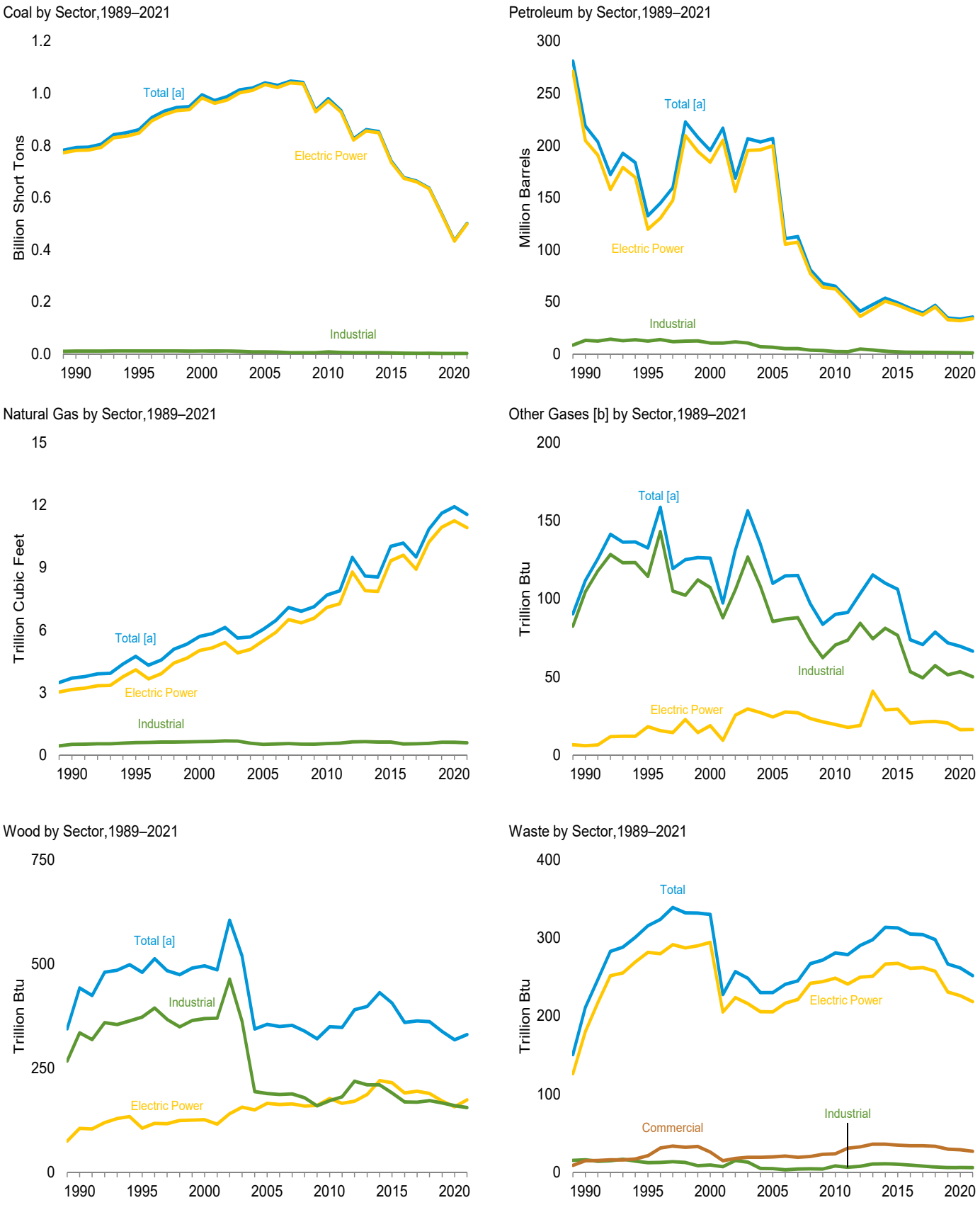
NA=Not available. NM=Not meaningful.

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

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

Sources: See end of section.

Figure 7.3 Consumption of Selected Combustible Fuels for Electricity Generation



[a] Includes commercial sector.
[b] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

Note: Data are for utility-scale facilities.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Sources: Tables 7.3a-7.3c.

Table 7.3a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors) (Sum of Tables 7.3b and 7.3c)

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**792,457**	**18,143**	**190,652**	**437**	**1,914**	**218,800**	**3,692**	**112**	**442**	**211**	**36**
1995 Total	**860,594**	**19,615**	**95,507**	**680**	**3,355**	**132,578**	**4,738**	**133**	**480**	**316**	**42**
2000 Total	**994,933**	**31,675**	**143,381**	**1,450**	**3,744**	**195,228**	**5,691**	**126**	**496**	**330**	**46**
2005 Total	**1,041,448**	**20,651**	**141,518**	**2,968**	**8,330**	**206,785**	**6,036**	**110**	**355**	**230**	**173**
2006 Total	**1,030,556**	**13,174**	**58,473**	**2,174**	**7,363**	**110,634**	**6,462**	**115**	**350**	**241**	**172**
2007 Total	**1,046,795**	**15,683**	**63,833**	**2,917**	**6,036**	**112,615**	**7,089**	**115**	**353**	**245**	**168**
2008 Total	**1,042,335**	**12,832**	**38,191**	**2,822**	**5,417**	**80,932**	**6,896**	**97**	**339**	**267**	**172**
2009 Total	**934,683**	**12,658**	**28,576**	**2,328**	**4,821**	**67,668**	**7,121**	**84**	**320**	**272**	**170**
2010 Total	**979,684**	**14,050**	**23,997**	**2,056**	**4,994**	**65,071**	**7,680**	**90**	**350**	**281**	**184**
2011 Total	**934,938**	**11,231**	**14,251**	**1,844**	**5,012**	**52,387**	**7,884**	**91**	**348**	**279**	**205**
2012 Total	**825,734**	**9,285**	**11,755**	**1,565**	**3,675**	**40,977**	**9,485**	**103**	**390**	**290**	**204**
2013 Total	**860,729**	**9,784**	**11,766**	**1,681**	**4,852**	**47,492**	**8,596**	**115**	**398**	**298**	**200**
2014 Total	**853,634**	**14,465**	**14,704**	**2,363**	**4,412**	**53,593**	**8,544**	**110**	**431**	**314**	**200**
2015 Total	**739,594**	**12,438**	**14,124**	**2,363**	**4,044**	**49,145**	**10,017**	**106**	**407**	**313**	**204**
2016 Total	**677,371**	**9,662**	**11,195**	**1,548**	**4,253**	**43,671**	**10,170**	**74**	**360**	**305**	**199**
2017 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**	**10,833**	**79**	**362**	**298**	**190**
2019 Total	**537,620**	**9,620**	**9,251**	**1,965**	**2,724**	**34,454**	**11,602**	**72**	**338**	**267**	**199**
2020 January	36,810	805	756	179	257	3,026	976	6	29	23	16
February	32,074	680	614	152	217	2,532	917	7	27	21	15
March	29,028	561	591	141	285	2,718	914	6	28	23	16
April	23,654	498	551	120	245	2,396	798	5	24	22	16
May	26,801	600	587	136	256	2,602	858	5	25	22	16
June	36,589	713	703	120	323	3,152	1,065	5	25	21	15
July	49,751	773	797	130	332	3,360	1,372	6	27	22	17
August	50,406	726	794	127	308	3,189	1,302	6	29	22	17
September	38,685	556	710	138	175	2,278	1,037	6	25	21	16
October	33,823	651	781	149	155	2,355	970	6	25	21	16
November	34,271	649	661	151	226	2,593	796	6	26	21	16
December	43,459	780	752	176	297	3,191	912	6	28	22	17
Total	**435,351**	**7,991**	**8,299**	**1,719**	**3,077**	**33,391**	**11,918**	**70**	**318**	**262**	**193**
2021 January	45,254	644	846	140	275	3,006	899	6	29	22	16
February	47,969	1,958	824	585	273	4,731	804	5	26	19	13
March	34,479	630	646	115	264	2,710	772	5	29	22	15
April	30,062	635	599	127	153	2,128	775	5	23	21	14
May	35,597	666	653	93	201	2,416	838	5	27	21	15
June	47,962	666	717	159	184	2,464	1,108	5	28	21	15
July	56,287	613	726	136	272	2,833	1,262	6	30	22	16
August	56,137	841	1,072	190	290	3,552	1,286	6	30	21	16
September	44,276	614	875	133	246	2,853	1,018	6	27	21	15
October	35,573	702	724	140	245	2,790	968	6	27	20	15
November	32,681	726	672	147	312	3,107	908	5	25	20	15
December	34,316	815	714	132	226	2,789	913	5	29	22	16
Total	**500,592**	**9,509**	**9,070**	**2,098**	**2,940**	**35,378**	**11,551**	**66**	**331**	**252**	**181**
2022 January	48,494	2,702	2,202	549	217	6,539	1,002	5	27	20	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. • Data are for fuels consumed to produce electricity. Data also include fuels consumed to produce useful thermal output at a small number of electric utility combined-heat-and-power (CHP) plants. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See "Table 7.3b Sources" at end of section and sources for Table 7.3c.

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

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**781,301**	**16,394**	**183,285**	**25**	**1,008**	**204,745**	**3,147**	**6**	**106**	**180**	**(s)**
1995 Total	**847,854**	**18,066**	**88,895**	**441**	**2,452**	**119,663**	**4,094**	**18**	**106**	**282**	**2**
2000 Total	**982,713**	**29,722**	**138,047**	**403**	**3,155**	**183,946**	**5,014**	**19**	**126**	**294**	**1**
2005 Total	**1,033,567**	**19,450**	**138,337**	**2,591**	**7,877**	**199,760**	**5,485**	**24**	**166**	**205**	**116**
2006 Total	**1,022,802**	**12,578**	**56,347**	**1,783**	**6,905**	**105,235**	**5,891**	**28**	**163**	**216**	**117**
2007 Total	**1,041,346**	**15,135**	**62,072**	**2,496**	**5,523**	**107,316**	**6,502**	**27**	**165**	**221**	**117**
2008 Total	**1,036,891**	**12,318**	**37,222**	**2,608**	**5,000**	**77,149**	**6,342**	**23**	**159**	**242**	**122**
2009 Total	**929,692**	**11,848**	**27,768**	**2,110**	**4,485**	**64,151**	**6,567**	**21**	**160**	**244**	**115**
2010 Total	**971,245**	**13,677**	**23,560**	**1,848**	**4,679**	**62,477**	**7,085**	**20**	**177**	**249**	**116**
2011 Total	**928,857**	**10,961**	**13,861**	**1,655**	**4,726**	**50,105**	**7,265**	**18**	**166**	**241**	**133**
2012 Total	**820,762**	**9,000**	**11,292**	**1,339**	**2,861**	**35,937**	**8,788**	**19**	**171**	**250**	**132**
2013 Total	**855,546**	**9,511**	**11,322**	**1,488**	**4,189**	**43,265**	**7,888**	**41**	**187**	**251**	**130**
2014 Total	**848,803**	**14,052**	**14,132**	**2,157**	**4,039**	**50,537**	**7,849**	**29**	**220**	**266**	**127**
2015 Total	**735,433**	**12,056**	**13,893**	**2,086**	**3,789**	**46,978**	**9,322**	**29**	**215**	**268**	**127**
2016 Total	**674,239**	**9,421**	**11,056**	**1,284**	**4,018**	**41,853**	**9,590**	**20**	**191**	**261**	**126**
2017 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**	**10,215**	**21**	**189**	**257**	**125**
2019 Total	**535,382**	**9,254**	**9,163**	**1,724**	**2,545**	**32,868**	**10,928**	**21**	**171**	**231**	**133**
2020 January	36,615	775	749	157	242	2,890	915	2	15	20	11
February	31,890	649	605	135	204	2,411	862	2	14	18	10
March	28,858	535	584	123	273	2,605	858	2	13	20	11
April	23,507	462	546	104	237	2,295	748	1	11	19	11
May	26,658	571	583	116	242	2,480	807	1	12	19	11
June	36,454	680	698	104	310	3,031	1,009	1	12	18	10
July	49,606	734	794	114	319	3,235	1,311	1	14	19	11
August	50,259	692	790	118	294	3,068	1,241	2	16	19	12
September	38,527	523	706	127	162	2,164	984	1	13	18	11
October	33,672	622	776	132	141	2,236	917	1	12	18	11
November	34,128	616	655	135	212	2,468	743	2	13	18	11
December	43,303	751	742	159	283	3,066	852	2	14	19	12
Total	**433,477**	**7,609**	**8,228**	**1,523**	**2,917**	**31,947**	**11,247**	**16**	**157**	**226**	**132**
2021 January	45,096	612	839	127	263	2,893	840	2	15	19	11
February	47,821	1,919	814	541	263	4,590	758	1	14	17	10
March	34,329	592	639	97	251	2,584	723	1	15	19	11
April	29,918	600	593	111	144	2,024	727	1	11	18	10
May	35,434	633	647	73	189	2,298	787	1	14	19	10
June	47,792	632	713	143	173	2,355	1,055	1	15	18	11
July	56,116	575	722	120	260	2,715	1,204	2	16	19	11
August	55,962	803	1,064	173	278	3,431	1,228	2	17	19	11
September	44,093	582	868	125	235	2,751	966	2	14	19	11
October	35,401	662	716	126	233	2,671	915	2	15	17	10
November	32,497	697	664	133	299	2,990	852	1	12	17	10
December	34,144	784	706	116	214	2,677	855	1	15	19	11
Total	**498,602**	**9,091**	**8,985**	**1,885**	**2,804**	**33,980**	**10,910**	**16**	**174**	**219**	**128**
2022 January	48,314	2,645	2,187	534	207	6,399	946	1	14	17	10

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

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

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

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

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

Sources: See end of section.

Table 7.3c Consumption of Selected Combustible Fuels for Electricity Generation: Commercial and Industrial Sectors (Subset of Table 7.3a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**417**	**953**	**28**	**15**	**10,740**	**13,103**	**517**	**104**	**335**	**16**	**36**
1995 Total	**569**	**649**	**43**	**21**	**12,171**	**12,265**	**601**	**114**	**373**	**13**	**40**
2000 Total	**514**	**823**	**37**	**26**	**11,706**	**10,459**	**640**	**107**	**369**	**10**	**45**
2005 Total	**377**	**585**	**34**	**20**	**7,504**	**6,440**	**518**	**85**	**189**	**5**	**46**
2006 Total	**347**	**333**	**35**	**21**	**7,408**	**5,066**	**536**	**87**	**187**	**3**	**45**
2007 Total	**361**	**258**	**34**	**19**	**5,089**	**5,041**	**554**	**88**	**188**	**4**	**41**
2008 Total	**369**	**166**	**33**	**20**	**5,075**	**3,617**	**520**	**73**	**179**	**5**	**39**
2009 Total	**317**	**190**	**34**	**23**	**4,674**	**3,328**	**520**	**62**	**160**	**4**	**42**
2010 Total	**314**	**172**	**39**	**24**	**8,125**	**2,422**	**555**	**70**	**172**	**8**	**55**
2011 Total	**347**	**137**	**47**	**31**	**5,735**	**2,145**	**572**	**74**	**182**	**7**	**57**
2012 Total	**307**	**279**	**63**	**33**	**4,665**	**4,761**	**633**	**84**	**219**	**8**	**54**
2013 Total	**513**	**335**	**67**	**36**	**4,670**	**3,892**	**642**	**74**	**210**	**11**	**50**
2014 Total	**202**	**462**	**72**	**36**	**4,629**	**2,594**	**623**	**81**	**210**	**11**	**54**
2015 Total	**163**	**260**	**70**	**35**	**3,999**	**1,907**	**625**	**77**	**191**	**10**	**58**
2016 Total	**111**	**116**	**46**	**34**	**3,021**	**1,701**	**534**	**53**	**169**	**10**	**53**
2017 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 January	7	25	5	3	189	111	56	5	15	1	3
February	9	14	4	2	175	107	51	5	14	1	3
March	7	17	4	3	163	95	53	5	14	1	3
April	4	13	3	2	143	89	47	4	13	1	3
May	4	22	4	2	139	99	48	4	13	1	3
June	5	20	4	2	129	101	51	4	13	(s)	3
July	5	25	5	3	141	100	55	5	13	(s)	3
August	4	24	5	2	142	97	55	5	13	(s)	3
September	7	23	4	2	151	92	49	4	13	(s)	3
October	6	17	4	2	145	102	49	4	13	1	4
November	6	21	4	2	137	104	49	4	13	1	4
December	8	21	4	2	149	104	56	4	14	1	4
Total	**72**	**242**	**52**	**29**	**1,802**	**1,202**	**619**	**53**	**160**	**6**	**40**
2021 January	8	23	4	2	150	90	55	5	14	1	3
February	11	25	4	2	138	116	42	4	12	1	2
March	7	24	4	2	143	102	45	4	13	1	3
April	6	23	4	2	138	81	45	4	12	1	3
May	4	21	4	2	158	96	47	4	13	1	3
June	7	21	4	2	163	87	50	4	13	(s)	3
July	7	24	5	2	164	94	53	4	14	(s)	3
August	8	23	5	2	167	98	53	4	13	(s)	3
September	9	18	4	2	174	84	47	4	13	(s)	3
October	9	26	4	2	163	93	49	5	12	1	3
November	8	19	4	2	176	97	52	4	13	1	3
December	7	23	4	2	165	89	54	4	13	1	3
Total	**91**	**269**	**50**	**27**	**1,899**	**1,128**	**591**	**50**	**156**	**6**	**34**
2022 January	8	NM	4	2	172	98	52	4	13	1	3

[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).

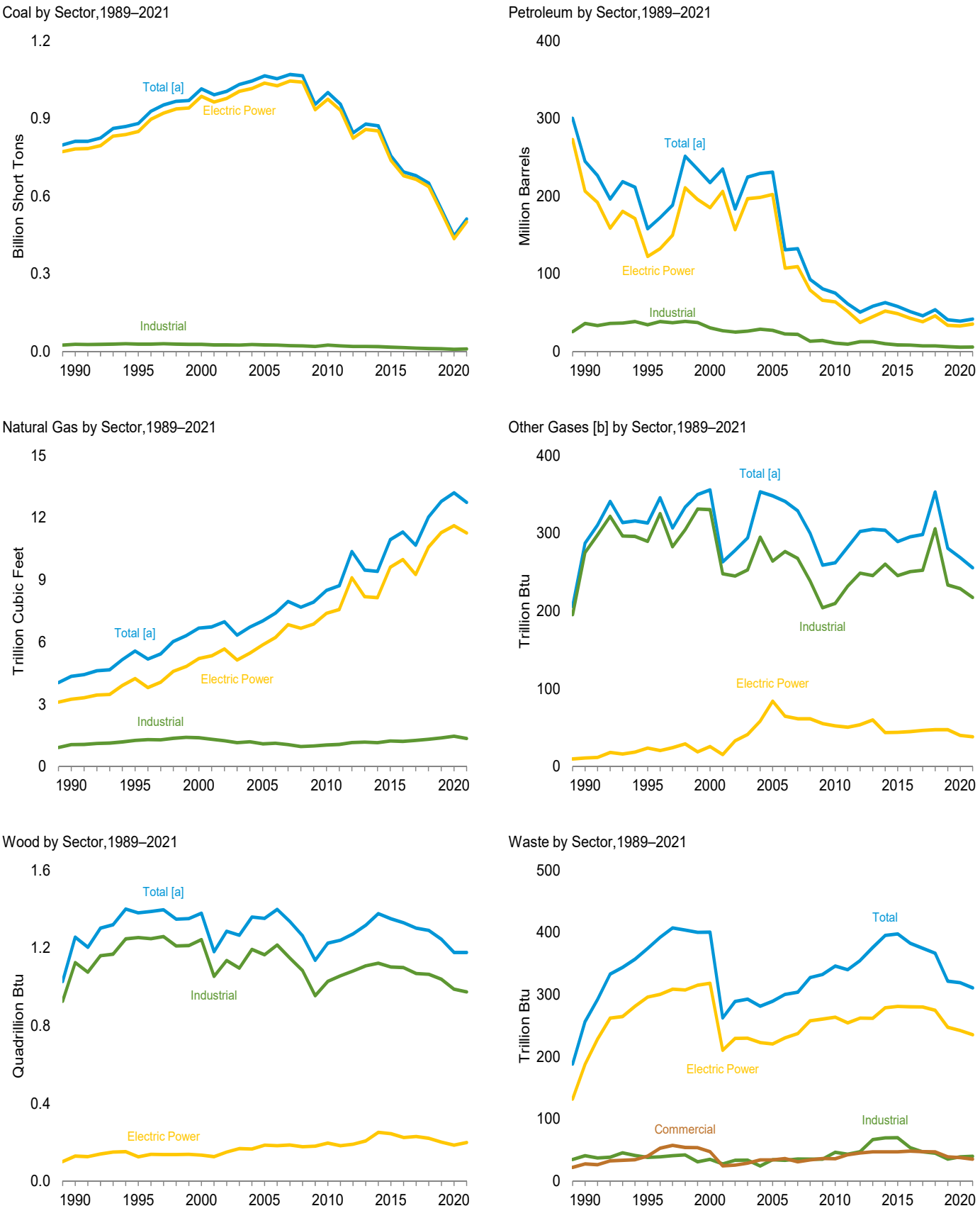
NM=Not meaningful. (s)=Less than 0.5 trillion Btu.

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**
2006 Total	**1,053,783**	**14,655**	**69,846**	**3,396**	**8,622**	**131,005**	**7,404**	**341**	**1,399**	**300**	**247**
2007 Total	**1,069,606**	**17,042**	**74,616**	**4,237**	**7,299**	**132,389**	**7,962**	**329**	**1,336**	**304**	**239**
2008 Total	**1,064,503**	**14,137**	**43,477**	**3,765**	**6,314**	**92,948**	**7,689**	**300**	**1,263**	**328**	**212**
2009 Total	**955,190**	**14,800**	**33,672**	**3,218**	**5,828**	**80,830**	**7,938**	**259**	**1,137**	**333**	**228**
2010 Total	**1,001,411**	**15,247**	**26,944**	**2,777**	**6,053**	**75,231**	**8,502**	**262**	**1,226**	**346**	**237**
2011 Total	**956,470**	**11,735**	**16,877**	**2,540**	**6,092**	**61,610**	**8,724**	**282**	**1,241**	**340**	**261**
2012 Total	**845,066**	**9,945**	**13,571**	**2,185**	**5,021**	**50,805**	**10,371**	**302**	**1,273**	**355**	**252**
2013 Total	**879,078**	**10,277**	**14,199**	**2,212**	**6,338**	**58,378**	**9,479**	**305**	**1,318**	**376**	**236**
2014 Total	**871,741**	**15,107**	**16,615**	**2,908**	**5,695**	**63,106**	**9,410**	**304**	**1,378**	**395**	**236**
2015 Total	**756,226**	**12,924**	**16,136**	**3,008**	**5,188**	**58,009**	**10,952**	**290**	**1,351**	**398**	**237**
2016 Total	**693,958**	**10,278**	**12,231**	**2,173**	**5,352**	**51,441**	**11,322**	**296**	**1,330**	**383**	**238**
2017 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**	**12,039**	**353**	**1,291**	**367**	**226**
2019 Total	**550,017**	**10,369**	**10,049**	**2,580**	**3,563**	**40,811**	**12,798**	**281**	**1,246**	**322**	**234**
2020 January	37,867	840	822	224	331	3,541	1,105	25	107	29	19
February	33,048	739	687	188	273	2,977	1,036	25	101	27	18
March	29,892	589	649	178	331	3,072	1,033	25	103	29	19
April	24,417	643	593	152	284	2,808	909	20	94	27	19
May	27,559	636	624	176	318	3,028	954	21	97	27	19
June	37,331	754	755	151	396	3,642	1,164	21	93	24	18
July	50,601	814	834	175	405	3,848	1,479	22	96	26	19
August	51,243	766	846	161	384	3,691	1,408	23	98	26	20
September	39,498	599	762	165	247	2,761	1,135	21	93	24	18
October	34,727	695	829	190	222	2,821	1,072	22	96	26	19
November	35,117	706	724	186	293	3,082	893	22	98	26	19
December	44,452	822	849	215	373	3,750	1,022	23	104	28	20
Total	**445,753**	**8,604**	**8,974**	**2,160**	**3,856**	**39,020**	**13,210**	**269**	**1,178**	**319**	**226**
2021 January	46,251	707	925	175	352	3,567	1,008	23	104	28	18
February	48,913	2,106	912	659	344	5,394	898	19	92	25	16
March	35,394	736	717	148	339	3,293	871	21	99	28	18
April	30,947	703	659	158	217	2,605	870	20	92	26	16
May	36,480	730	714	135	273	2,946	933	20	102	27	17
June	48,857	717	766	201	261	2,988	1,206	20	99	24	17
July	57,297	677	784	166	342	3,338	1,365	21	106	25	18
August	57,078	908	1,150	232	359	4,084	1,389	22	102	25	18
September	45,239	672	936	156	320	3,362	1,114	22	98	25	17
October	36,464	773	803	176	313	3,316	1,066	23	96	25	17
November	33,708	778	751	181	379	3,602	1,008	23	91	25	17
December	35,316	870	792	174	306	3,364	1,019	22	97	28	18
Total	**511,944**	**10,378**	**9,908**	**2,559**	**3,803**	**41,859**	**12,746**	**256**	**1,178**	**311**	**208**
2022 January	49,577	2,895	2,353	596	282	7,252	1,115	22	96	27	17

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

[k] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

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

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

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

Sources: See "Table 7.4b Sources" at end of section and sources for Table 7.4c.

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

	Coal[a]	Petroleum					Natural Gas[f]	Other Gases[g]	Biomass		Other[j]
		Distillate Fuel Oil[b]	Residual Fuel Oil[c]	Other Liquids[d]	Petroleum Coke[e]	Total[e]			Wood[h]	Waste[i]	
	Thousand Short Tons	Thousand Barrels			Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1950 Total	**91,871**	**5,423**	**69,998**	**NA**	**NA**	**75,421**	**629**	**NA**	**5**	**NA**	**NA**
1955 Total	**143,759**	**5,412**	**69,862**	**NA**	**NA**	**75,274**	**1,153**	**NA**	**3**	**NA**	**NA**
1960 Total	**176,685**	**3,824**	**84,371**	**NA**	**NA**	**88,195**	**1,725**	**NA**	**2**	**NA**	**NA**
1965 Total	**244,788**	**4,928**	**110,274**	**NA**	**NA**	**115,203**	**2,321**	**NA**	**3**	**NA**	**NA**
1970 Total	**320,182**	**24,123**	**311,381**	**NA**	**636**	**338,686**	**3,932**	**NA**	**1**	**2**	**NA**
1975 Total	**405,962**	**38,907**	**467,221**	**NA**	**70**	**506,479**	**3,158**	**NA**	**(s)**	**2**	**NA**
1980 Total	**569,274**	**29,051**	**391,163**	**NA**	**179**	**421,110**	**3,682**	**NA**	**3**	**2**	**NA**
1985 Total	**693,841**	**14,635**	**158,779**	**NA**	**231**	**174,571**	**3,044**	**NA**	**8**	**7**	**NA**
1990 Total[k]	**782,567**	**16,567**	**184,915**	**26**	**1,008**	**206,550**	**3,245**	**11**	**129**	**188**	**(s)**
1995 Total	**850,230**	**18,553**	**90,023**	**499**	**2,674**	**122,447**	**4,237**	**24**	**125**	**296**	**2**
2000 Total	**985,821**	**30,016**	**138,513**	**454**	**3,275**	**185,358**	**5,206**	**25**	**134**	**318**	**1**
2005 Total	**1,037,485**	**19,675**	**139,409**	**2,685**	**8,083**	**202,184**	**5,869**	**84**	**185**	**221**	**123**
2006 Total	**1,026,636**	**12,646**	**57,345**	**1,870**	**7,101**	**107,365**	**6,222**	**65**	**182**	**231**	**125**
2007 Total	**1,045,141**	**15,327**	**63,086**	**2,594**	**5,685**	**109,431**	**6,841**	**61**	**186**	**237**	**124**
2008 Total	**1,040,580**	**12,547**	**38,241**	**2,670**	**5,119**	**79,056**	**6,668**	**61**	**177**	**258**	**131**
2009 Total	**933,627**	**12,035**	**28,782**	**2,210**	**4,611**	**66,081**	**6,873**	**55**	**180**	**261**	**124**
2010 Total	**975,052**	**13,790**	**24,503**	**1,877**	**4,777**	**64,055**	**7,387**	**52**	**196**	**264**	**124**
2011 Total	**932,484**	**11,021**	**14,803**	**1,658**	**4,837**	**51,667**	**7,574**	**50**	**182**	**255**	**143**
2012 Total	**823,551**	**9,080**	**12,203**	**1,339**	**2,974**	**37,495**	**9,111**	**54**	**190**	**262**	**143**
2013 Total	**857,962**	**9,598**	**12,283**	**1,489**	**4,285**	**44,794**	**8,191**	**60**	**207**	**262**	**139**
2014 Total	**851,602**	**14,235**	**15,132**	**2,208**	**4,132**	**52,235**	**8,146**	**44**	**251**	**279**	**137**
2015 Total	**738,444**	**12,193**	**14,929**	**2,131**	**3,907**	**48,787**	**9,613**	**44**	**244**	**281**	**136**
2016 Total	**678,554**	**9,510**	**11,242**	**1,322**	**4,138**	**42,763**	**9,985**	**45**	**224**	**281**	**139**
2017 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**	**10,590**	**47**	**221**	**275**	**136**
2019 Total	**538,606**	**9,336**	**9,352**	**1,750**	**2,655**	**33,712**	**11,288**	**47**	**201**	**248**	**145**
2020 January	36,851	780	757	160	254	2,966	948	4	17	22	12
February	32,100	654	613	137	218	2,493	893	4	16	20	11
March	29,024	539	594	125	285	2,680	890	4	16	22	12
April	23,658	469	557	106	249	2,377	777	3	13	20	12
May	26,820	576	593	117	255	2,564	836	3	14	21	12
June	36,624	686	708	106	319	3,094	1,040	2	14	19	11
July	49,821	739	806	116	329	3,306	1,345	3	16	20	12
August	50,475	697	802	120	306	3,149	1,275	4	18	20	13
September	38,713	528	719	128	174	2,246	1,015	3	15	19	12
October	33,886	628	792	134	151	2,309	947	3	14	19	12
November	34,317	621	673	136	223	2,545	771	4	15	19	11
December	43,539	756	768	161	294	3,157	884	4	17	21	13
Total	**435,827**	**7,673**	**8,382**	**1,543**	**3,057**	**32,885**	**11,621**	**40**	**185**	**242**	**144**
2021 January	45,340	616	860	131	281	3,011	872	4	17	20	12
February	48,077	1,970	834	555	281	4,763	787	2	16	19	11
March	34,550	598	657	98	266	2,686	752	3	18	21	12
April	30,118	605	611	113	155	2,105	756	3	13	19	11
May	35,618	639	659	74	202	2,385	816	3	16	20	11
June	48,030	638	723	144	198	2,497	1,085	3	17	19	11
July	56,392	579	738	122	275	2,816	1,235	4	18	20	12
August	56,241	808	1,081	175	300	3,562	1,261	4	19	20	12
September	44,361	587	882	127	251	2,850	995	3	16	20	11
October	35,580	669	732	128	247	2,765	944	4	17	19	11
November	32,716	703	687	135	315	3,098	882	3	14	19	11
December	34,406	793	724	119	238	2,827	886	3	17	21	12
Total	**501,427**	**9,205**	**9,190**	**1,920**	**3,010**	**35,364**	**11,271**	**38**	**199**	**236**	**136**
2022 January	48,613	2,683	2,230	544	224	6,577	979	3	17	19	11

[a] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

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

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

[d] Jet fuel, kerosene, other petroleum liquids, waste oil, and, beginning in 2011, propane.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

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

[g] Blast furnace gas, and other manufactured and waste gases derived from fossil fuels. Through 2010, also includes propane gas.

[h] Wood and wood-derived fuels.

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

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

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

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

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

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

Sources: See end of section.

Table 7.4c Consumption of Selected Combustible Fuels for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors (Subset of Table 7.4a)

	Commercial Sector[a]				Industrial Sector[b]						
				Biomass					Biomass		
	Coal[c]	Petroleum[d]	Natural Gas[e]	Waste[f]	Coal[c]	Petroleum[d]	Natural Gas[e]	Other Gases[g]	Wood[h]	Waste[f]	Other[i]
	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu	Thousand Short Tons	Thousand Barrels	Billion Cubic Feet	Trillion Btu			
1990 Total	**1,191**	**2,056**	**46**	**28**	**27,781**	**36,159**	**1,055**	**275**	**1,125**	**41**	**86**
1995 Total	**1,419**	**1,245**	**78**	**40**	**29,363**	**34,448**	**1,258**	**290**	**1,255**	**38**	**95**
2000 Total	**1,547**	**1,615**	**85**	**47**	**28,031**	**30,520**	**1,386**	**331**	**1,244**	**35**	**108**
2005 Total	**1,922**	**1,630**	**68**	**34**	**25,875**	**27,380**	**1,084**	**264**	**1,166**	**34**	**94**
2006 Total	**1,886**	**935**	**68**	**36**	**25,262**	**22,706**	**1,115**	**277**	**1,216**	**33**	**102**
2007 Total	**1,927**	**752**	**70**	**31**	**22,537**	**22,207**	**1,050**	**268**	**1,148**	**36**	**98**
2008 Total	**2,021**	**671**	**66**	**34**	**21,902**	**13,222**	**955**	**239**	**1,084**	**35**	**60**
2009 Total	**1,798**	**521**	**76**	**36**	**19,766**	**14,228**	**990**	**204**	**955**	**35**	**82**
2010 Total	**1,720**	**437**	**86**	**36**	**24,638**	**10,740**	**1,029**	**210**	**1,029**	**47**	**91**
2011 Total	**1,668**	**333**	**87**	**43**	**22,319**	**9,610**	**1,063**	**232**	**1,057**	**43**	**94**
2012 Total	**1,450**	**457**	**111**	**45**	**20,065**	**12,853**	**1,149**	**249**	**1,082**	**47**	**81**
2013 Total	**1,356**	**887**	**118**	**47**	**19,761**	**12,697**	**1,170**	**246**	**1,109**	**67**	**69**
2014 Total	**1,063**	**758**	**119**	**47**	**19,076**	**10,112**	**1,145**	**260**	**1,122**	**70**	**72**
2015 Total	**798**	**622**	**116**	**47**	**16,984**	**8,600**	**1,222**	**246**	**1,103**	**70**	**73**
2016 Total	**683**	**404**	**127**	**48**	**14,720**	**8,273**	**1,209**	**251**	**1,100**	**54**	**70**
2017 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 January	50	61	12	3	967	514	145	21	89	4	5
February	54	37	11	3	894	447	132	21	84	4	4
March	45	37	10	3	823	354	133	21	87	4	4
April	30	24	9	3	729	407	123	17	81	3	5
May	30	52	9	3	709	413	109	18	83	3	5
June	32	37	11	3	676	511	113	18	78	2	5
July	31	50	13	3	749	492	122	19	79	2	5
August	34	55	12	3	734	486	120	19	80	3	5
September	40	46	11	3	745	469	109	18	78	2	4
October	34	34	11	3	806	479	115	19	81	4	5
November	39	46	10	3	761	491	112	18	82	4	5
December	53	48	11	3	861	546	126	19	87	4	5
Total	**473**	**527**	**131**	**38**	**9,453**	**5,609**	**1,458**	**229**	**988**	**39**	**55**
2021 January	51	59	12	3	860	497	124	19	86	4	4
February	61	90	11	3	775	541	100	17	75	4	4
March	47	58	11	3	798	549	108	19	81	4	4
April	38	52	9	3	792	448	105	17	80	4	4
May	34	50	9	3	827	511	108	17	86	4	4
June	38	42	10	3	789	449	111	17	81	2	4
July	42	50	11	3	863	472	118	18	87	2	4
August	44	48	11	3	793	474	117	18	82	2	4
September	47	37	10	3	831	475	108	18	81	2	4
October	47	57	10	3	837	494	112	19	80	4	4
November	49	48	10	3	944	456	115	20	77	4	4
December	45	62	11	3	865	475	122	19	79	4	4
Total	**545**	**653**	**126**	**35**	**9,972**	**5,842**	**1,349**	**218**	**975**	**40**	**47**
2022 January	47	NM	12	3	917	517	124	19	79	4	4

[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).

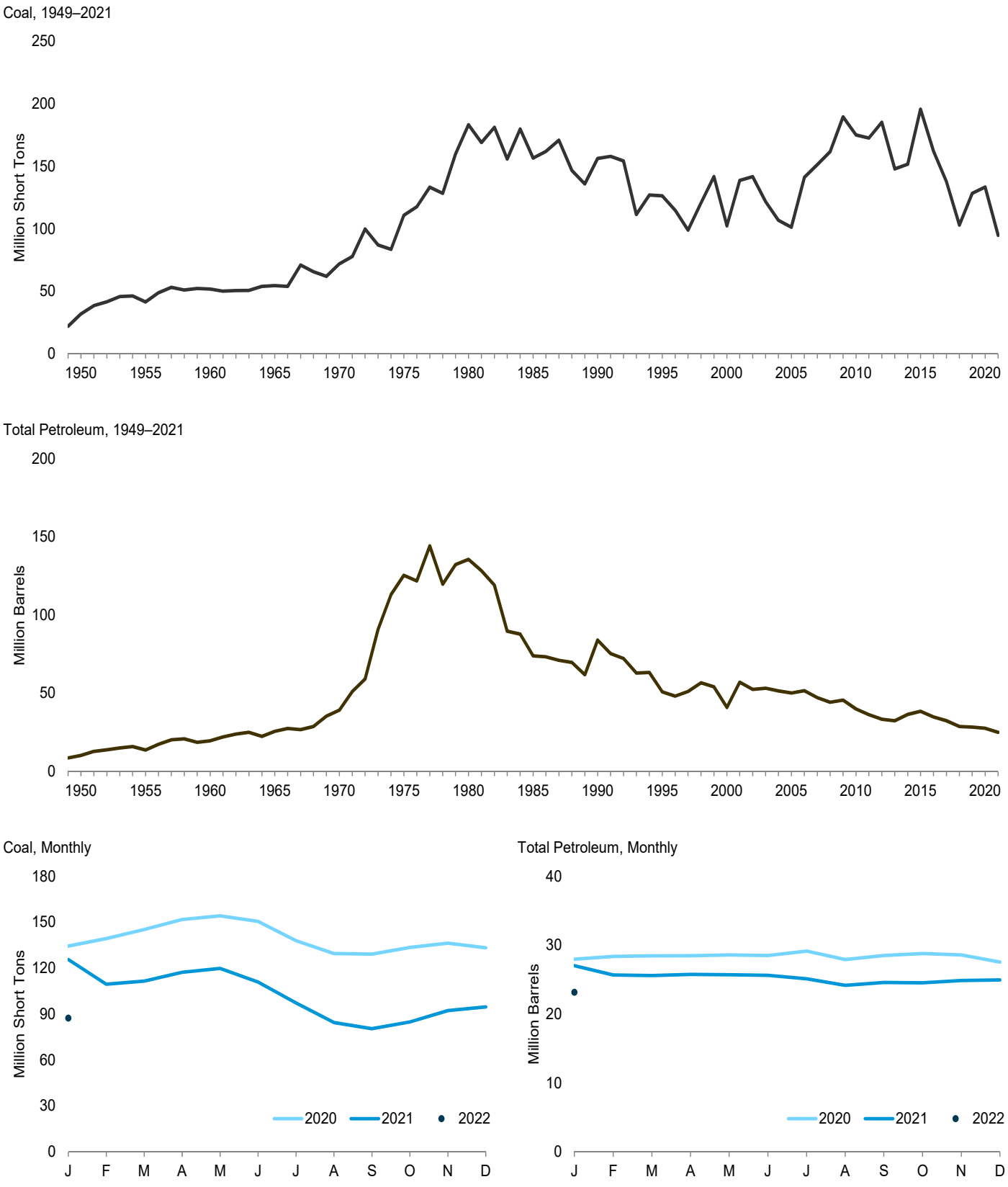
NM=Not meaningful.

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**
2006 Year	**140,964**	**18,013**	**28,823**	**1,380**	**674**	**51,583**
2007 Year	**151,221**	**18,395**	**24,136**	**1,902**	**554**	**47,203**
2008 Year	**161,589**	**17,761**	**21,088**	**1,634**	**739**	**44,178**
2009 Year	**189,467**	**17,886**	**19,068**	**1,651**	**1,394**	**45,575**
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	**151,548**	**18,309**	**12,764**	**1,249**	**827**	**36,459**
2015 Year	**195,548**	**17,955**	**12,566**	**1,173**	**1,340**	**38,396**
2016 Year	**162,009**	**17,855**	**11,789**	**949**	**845**	**34,818**
2017 Year	**137,687**	**16,342**	**10,930**	**816**	**864**	**32,407**
2018 Year	**102,793**	**16,436**	**8,785**	**756**	**539**	**28,674**
2019 Year	**128,176**	**16,733**	**8,549**	**678**	**471**	**28,317**
2020 January	134,384	16,443	8,073	637	562	27,963
February	139,361	16,346	8,120	635	650	28,351
March	145,283	16,683	8,280	647	566	28,440
April	151,807	16,601	8,473	658	549	28,476
May	154,130	16,860	8,421	657	529	28,580
June	150,525	16,882	8,540	673	479	28,492
July	137,970	17,611	8,578	681	455	29,147
August	129,444	17,384	7,775	722	408	27,921
September	129,173	17,475	8,219	711	416	28,486
October	133,547	17,509	8,264	711	457	28,766
November	136,304	17,384	8,148	691	472	28,584
December	**133,327**	**17,116**	**8,269**	**678**	**298**	**27,552**
2021 January	125,539	16,903	8,190	650	253	27,008
February	109,511	16,110	8,036	490	207	25,672
March	111,494	15,997	7,976	484	226	25,589
April	117,337	15,729	7,791	481	353	25,766
May	119,791	15,621	7,621	475	397	25,704
June	110,851	15,490	7,432	464	445	25,610
July	97,320	15,398	6,999	481	445	25,103
August	84,425	15,299	6,588	473	360	24,161
September	80,413	15,348	6,886	473	375	24,584
October	84,821	15,438	6,932	466	339	24,532
November	92,302	15,719	6,980	474	340	24,872
December	**94,654**	**15,956**	**7,017**	**473**	**302**	**24,957**
2022 January	87,350	15,110	5,935	426	336	23,152

[a] Anthracite, bituminous coal, subbituminous coal, and lignite; excludes waste coal.

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

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

[d] Jet fuel and kerosene. Through 2003, data also include a small amount of waste oil.

[e] Petroleum coke is converted from short tons to barrels by multiplying by 5.

[f] Distillate fuel oil and residual fuel oil. Beginning in 1970, also includes petroleum coke. Beginning in 2002, also includes other liquids.

[g] Through 1998, data are for electric utilities only. Beginning in 1999, data are for electric utilities and independent power producers.

NA=Not available.

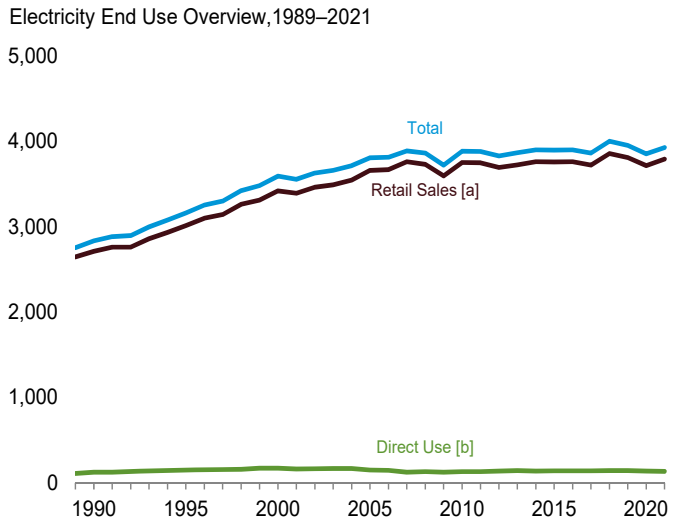
Notes: • Data are for utility-scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity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

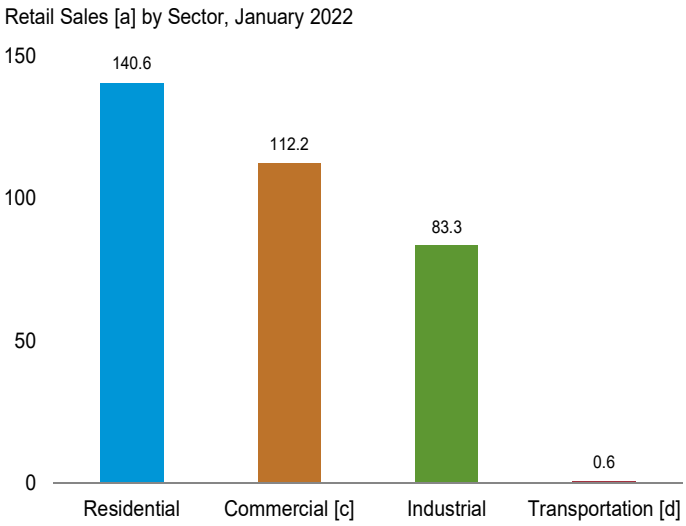
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#electricity (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

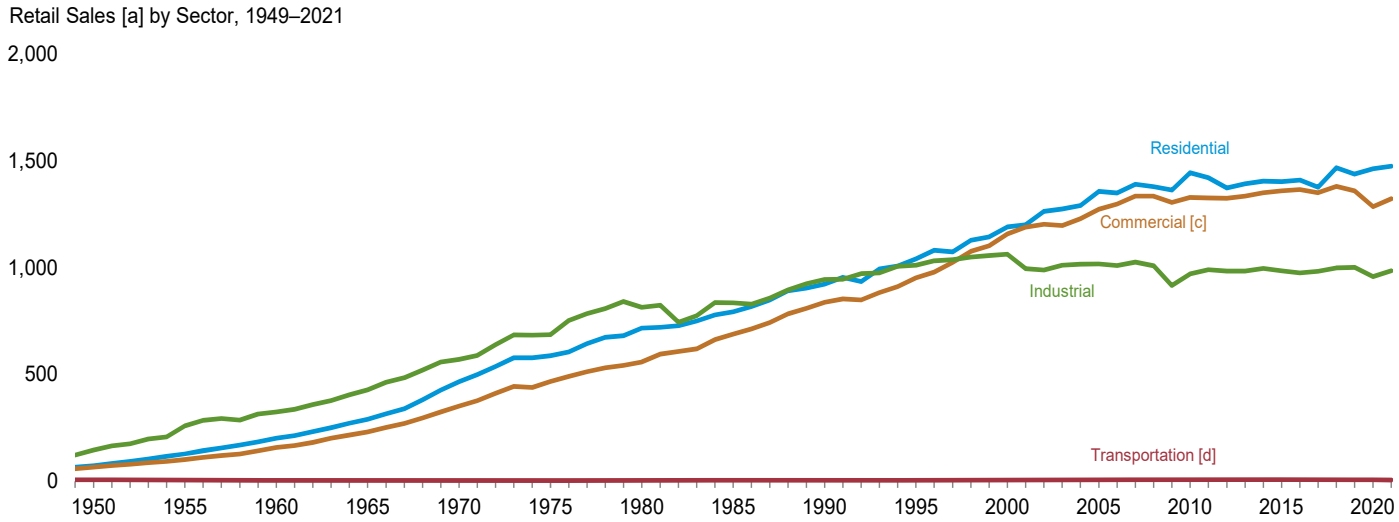
Sources: • **1949–September 1977:** Federal Power Commission, Form FPC-4, "Monthly Power Plant Report." • **October 1977–1981:** Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • **1982–1988:** U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." • **1989–1997:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." • **1998–2000:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." • **2001–2003:** EIA, Form EIA-906, "Power Plant Report." • **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." • **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report."

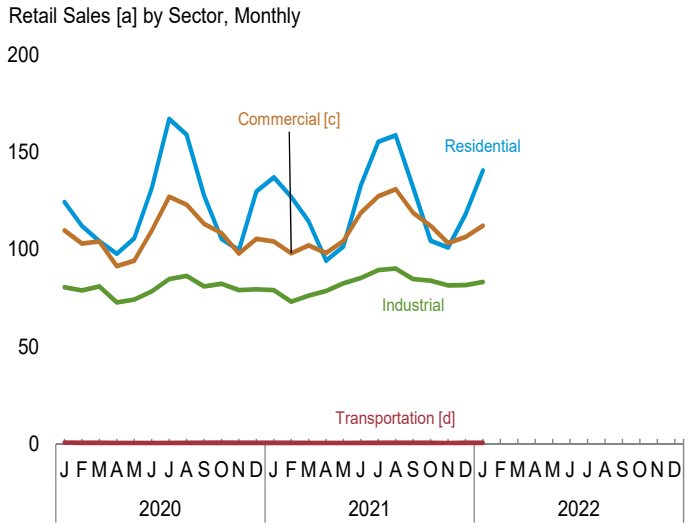
Figure 7.6 Electricity End Use

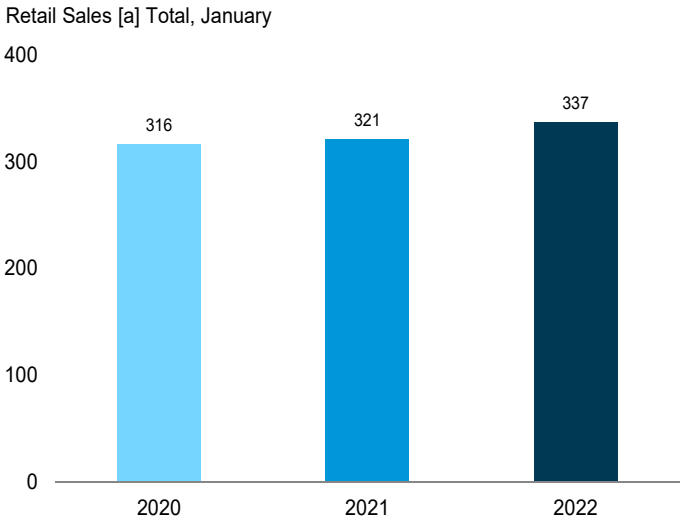
(Billion Kilowatthours)











[a] Electricity retail sales to ultimate customers reported by utilities and other energy service providers.
[b] See "Direct Use" in Glossary.
[c] Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.
[d] Transportation sector, including sales to railroads and railways.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#electricity.
Source: Table 7.6.

Table 7.6 Electricity End Use

(Million Kilowatthours)

	Retail Sales[a]						
	Residential	Commercial[b]	Industrial[c]	Transportation[d]	Total Retail Sales[e]	Direct Use[f]	Total End Use[g]
1950 Total	**72,200**	**[E] 65,971**	**146,479**	**[E] 6,793**	**291,443**	**NA**	**291,443**
1955 Total	**128,401**	**[E] 102,547**	**259,974**	**[E] 5,826**	**496,748**	**NA**	**496,748**
1960 Total	**201,463**	**[E] 159,144**	**324,402**	**[E] 3,066**	**688,075**	**NA**	**688,075**
1965 Total	**291,013**	**[E] 231,126**	**428,727**	**[E] 2,923**	**953,789**	**NA**	**953,789**
1970 Total	**466,291**	**[E] 352,041**	**570,854**	**[E] 3,115**	**1,392,300**	**NA**	**1,392,300**
1975 Total	**588,140**	**[E] 468,296**	**687,680**	**[E] 2,974**	**1,747,091**	**NA**	**1,747,091**
1980 Total	**717,495**	**558,643**	**815,067**	**3,244**	**2,094,449**	**NA**	**2,094,449**
1985 Total	**793,934**	**689,121**	**836,772**	**4,147**	**2,323,974**	**NA**	**2,323,974**
1990 Total	**924,019**	**838,263**	**945,522**	**4,751**	**2,712,555**	**124,529**	**2,837,084**
1995 Total	**1,042,501**	**953,117**	**1,012,693**	**4,975**	**3,013,287**	**150,677**	**3,163,963**
2000 Total	**1,192,446**	**1,159,347**	**1,064,239**	**5,382**	**3,421,414**	**170,943**	**3,592,357**
2005 Total	**1,359,227**	**1,275,079**	**1,019,156**	**7,506**	**3,660,969**	**150,016**	**3,810,984**
2006 Total	**1,351,520**	**1,299,744**	**1,011,298**	**7,358**	**3,669,919**	**146,927**	**3,816,845**
2007 Total	**1,392,241**	**1,336,315**	**1,027,832**	**8,173**	**3,764,561**	**125,670**	**3,890,231**
2008 Total	**1,380,662**	**1,336,133**	**1,009,516**	**7,653**	**3,733,965**	**132,197**	**3,866,161**
2009 Total	**1,364,758**	**1,306,853**	**917,416**	**7,768**	**3,596,795**	**126,938**	**3,723,733**
2010 Total	**1,445,708**	**1,330,199**	**971,221**	**7,712**	**3,754,841**	**131,910**	**3,886,752**
2011 Total	**1,422,801**	**1,328,057**	**991,316**	**7,672**	**3,749,846**	**132,754**	**3,882,600**
2012 Total	**1,374,515**	**1,327,101**	**985,714**	**7,320**	**3,694,650**	**137,657**	**3,832,306**
2013 Total	**1,394,812**	**1,337,079**	**985,352**	**7,625**	**3,724,868**	**143,462**	**3,868,330**
2014 Total	**1,407,208**	**1,352,158**	**997,576**	**7,758**	**3,764,700**	**138,574**	**3,903,274**
2015 Total	**1,404,096**	**1,360,752**	**986,508**	**7,637**	**3,758,992**	**141,168**	**3,900,160**
2016 Total	**1,411,058**	**1,367,191**	**976,715**	**7,497**	**3,762,462**	**139,837**	**3,902,298**
2017 Total	**1,378,648**	**1,352,888**	**984,298**	**7,523**	**3,723,356**	**140,959**	**3,864,315**
2018 Total	**1,469,093**	**1,381,755**	**1,000,673**	**7,665**	**3,859,185**	**143,904**	**4,003,089**
2019 Total	**1,440,289**	**1,360,877**	**1,002,353**	**7,632**	**3,811,150**	**143,270**	**3,954,421**
2020 January	124,442	109,812	80,609	670	315,533	[E] 12,712	328,244
February	112,123	103,015	78,903	619	294,659	[E] 11,764	306,424
March	104,255	104,110	80,931	598	289,894	[E] 11,858	301,751
April	97,759	91,406	72,791	444	262,401	[E] 10,732	273,132
May	105,681	94,299	74,273	454	274,707	[E] 10,919	285,626
June	131,538	109,593	78,445	480	320,056	[E] 11,299	331,355
July	167,108	127,107	84,758	556	379,530	[E] 12,046	391,576
August	158,939	123,057	86,366	522	368,885	[E] 12,094	380,978
September	127,824	113,220	80,977	534	322,555	[E] 11,127	333,681
October	105,514	108,468	82,371	523	296,877	[E] 10,991	307,868
November	99,661	97,897	79,167	525	277,249	[E] 10,979	288,228
December	129,761	105,456	79,492	622	315,330	[E] 12,170	327,500
Total	**1,464,605**	**1,287,440**	**959,082**	**6,548**	**3,717,674**	**138,690**	**3,856,364**
2021 January	137,127	104,135	79,104	569	320,936	[E] 12,321	333,257
February	126,970	98,028	73,138	552	298,688	[E] 9,949	308,637
March	114,426	102,112	76,293	546	293,378	[E] 10,685	304,063
April	94,177	98,200	78,736	510	271,623	[E] 10,326	281,948
May	101,498	104,403	82,651	489	289,041	[E] 10,839	299,880
June	132,834	118,879	85,301	519	337,532	[E] 11,326	348,858
July	155,325	127,404	89,391	559	372,679	[E] 12,127	384,806
August	158,651	130,998	90,176	573	380,399	[E] 12,071	392,469
September	131,864	118,793	84,825	531	336,013	[E] 11,118	347,132
October	104,581	112,161	84,036	532	301,310	[E] 11,272	312,582
November	101,030	103,311	81,528	491	286,360	[E] 11,634	297,994
December	118,085	106,357	81,618	521	306,581	[E] 12,048	318,630
Total	**1,476,569**	**1,324,782**	**986,797**	**6,392**	**3,794,539**	**135,716**	**3,930,255**
2022 January	140,594	112,248	83,286	564	336,692	[E] 12,228	348,920

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

[b] Commercial sector, including public street and highway lighting, interdepartmental sales, and other sales to public authorities.

[c] Industrial sector. Through 2002, excludes agriculture and irrigation; beginning in 2003, includes agriculture and irrigation.

[d] Sales to public railroads and railway systems only.

[e] The sum of "Residential," "Commercial," "Industrial," and "Transportation."

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

[g] The sum of "Total Retail Sales" and "Direct Use."

E=Estimate. NA=Not available.

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

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

Sources: See end of section.

Note 1. Coverage of Electricity Statistics. Data in Section 7 cover the following:

Through 1984, data for electric utilities also include institutions (such as universities) and military facilities that generated electricity primarily for their own use; beginning in 1985, data for electric utilities exclude institutions and military facilities. Beginning in 1989, data for the commercial sector include institutions and military facilities.

The generation, consumption, and stocks data in Section 7 are for utility-scale facilities—those with a combined generation nameplate capacity of 1 megawatt or more. Data exclude distributed (small-scale) facilities—those with a combined generator nameplate capacity of less than 1 megawatt. For data on distributed solar photovoltaic (PV) generation in the residential, commercial, and industrial sectors, see Table 10.6.

Note 2. Classification of Power Plants into Energy-Use Sectors. The U.S. Energy Information Administration (EIA) classifies power plants (both electricity-only and combined-heat-and-power plants) into energy-use sectors based on the North American Industry Classification System (NAICS), which replaced the Standard Industrial Classification (SIC) system in 1997. Plants with a NAICS code of 22 are assigned to the Electric Power Sector. Those with NAICS codes beginning with 11 (agriculture, forestry, fishing, and hunting); 21 (mining, including oil and gas extraction); 23 (construction); 31–33 (manufacturing); 2212 (natural gas distribution); and 22131 (water supply and irrigation systems) are assigned to the Industrial Sector. Those with all other codes are assigned to the Commercial Sector. Form EIA-860, "Annual Electric Generator Report," asks respondents to indicate the primary purpose of the facility by assigning a NAICS code from the list at http://www.eia.gov/survey/form/eia_860/instructions.pdf.

Note 3. Electricity Forecast Values. Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). STIFS is driven primarily by data and assumptions about key macroeconomic variables, energy prices, and weather. The electricity forecast relies on additional variables such as alternative fuel prices (natural gas and oil) and power generation by sources other than fossil fuels, including nuclear, renewables, and hydroelectric power. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the electricity industry.

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

Table 7.1 Sources

Net Generation, Electric Power Sector

1949 forward: Table 7.2b.

Net Generation, Commercial and Industrial Sectors

1949 forward: Table 7.2c.

Trade

1949–September 1977: Unpublished Federal Power Commission data.

October 1977–1980: Unpublished Economic Regulatory Administration (ERA) data.

1981: U.S. Department of Energy (DOE), Office of Energy Emergency Operations, "Report on Electric Energy Exchanges with Canada and Mexico for Calendar Year 1981," April 1982 (revised June 1982).

1982 and 1983: DOE, ERA, *Electricity Exchanges Across International Borders*.

1984–1986: DOE, ERA, *Electricity Transactions Across International Borders*.

1987 and 1988: DOE, ERA, Form ERA-781R, "Annual Report of International Electrical Export/Import Data."

1989: DOE, Fossil Energy, Form FE-781R, "Annual Report of International Electrical Export/Import Data."

1990–2000: National Energy Board of Canada; and DOE, Office of Electricity Delivery and Energy Reliability, Form FE-781R, "Annual Report of International Electrical Export/Import Data."

2001–May 2011: National Energy Board of Canada; DOE, Office of Electricity Delivery and Energy Reliability, Form OE-781R, "Monthly Electricity Imports and Exports Report," and predecessor form; and California Independent System Operator.

June 2011–2015: National Energy Board of Canada; California Independent System Operator; and EIA estimates for Texas transfers.

2016 forward: EIA, Form EIA-111, "Quarterly Electricity Imports and Exports Report"; and for forecast values, EIA Short-Term Integrated Forecasting System (STIFS).

T&D Losses and Unaccounted for

1949 forward: Calculated as the sum of total net generation and imports minus end use and exports.

End Use

1949 forward: Table 7.6.

Table 7.2b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.2c Sources

Industrial Sector, Hydroelectric Power, 1949–1988

1949–September 1977: Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FPC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.

October 1977–1978: Federal Energy Regulatory Commission (FERC), Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and FERC, Form FPC-12C, "Industrial Electric Generating Capacity," for all other plants.

1979: FERC, Form FPC-4, "Monthly Power Plant Report," for plants with generating capacity exceeding 10 megawatts, and U.S. Energy Information Administration (EIA) estimates for all other plants.

1980–1988: Estimated by EIA as the average generation over the 6-year period of 1974–1979.

All Data, 1989 Forward

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

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

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.3b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.4b Sources

1949–September 1977: Federal Power Commission, Form FPC-4, "Monthly Power Plant Report."

October 1977–1981: Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report."

1982–1988: U.S. Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report."

1989–1997: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report."

1998–2000: EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility."

2001–2003: EIA, Form EIA-906, "Power Plant Report."

2004–2007: EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

2008 forward: EIA, Form EIA-923, "Power Plant Operations Report".

Table 7.6 Sources

Retail Sales, Residential and Industrial

1949–September 1977: Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income."

October 1977–February 1980: Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenue and Income."

March 1980–1982: FERC, Form FPC-5, "Electric Utility Company Monthly Statement."

1983: U.S. Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement."

1984–2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, *Electric Power Monthly* (*EPM*) March 2022, Table 5.1.

Retail Sales, Commercial

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM, March 2022, Table 5.1.

Retail Sales, Transportation

1949–2002: Data are estimates. See estimation methodology at http://www.eia.gov/state/seds/sep_use/notes/use_elec.pdf.

2003: EIA, Form EIA-861, "Annual Electric Utility Report."

2004 forward: EIA, EPM March 2022, 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."

2001–2020: EIA, *Electric Power Annual* 2020, October 2021, 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.

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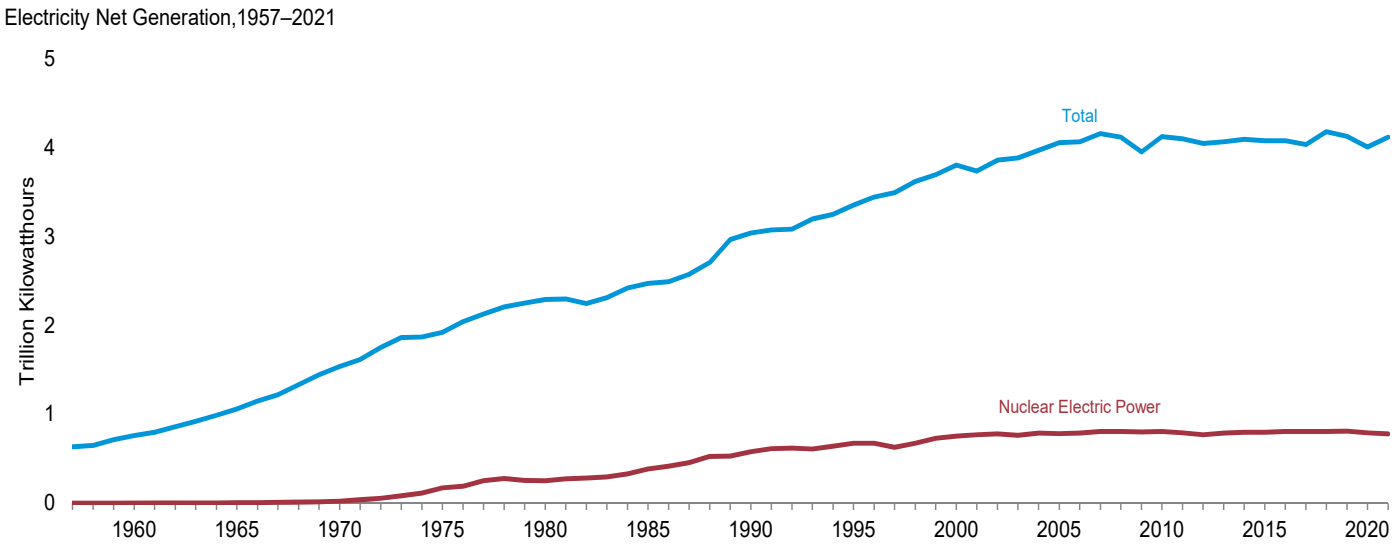
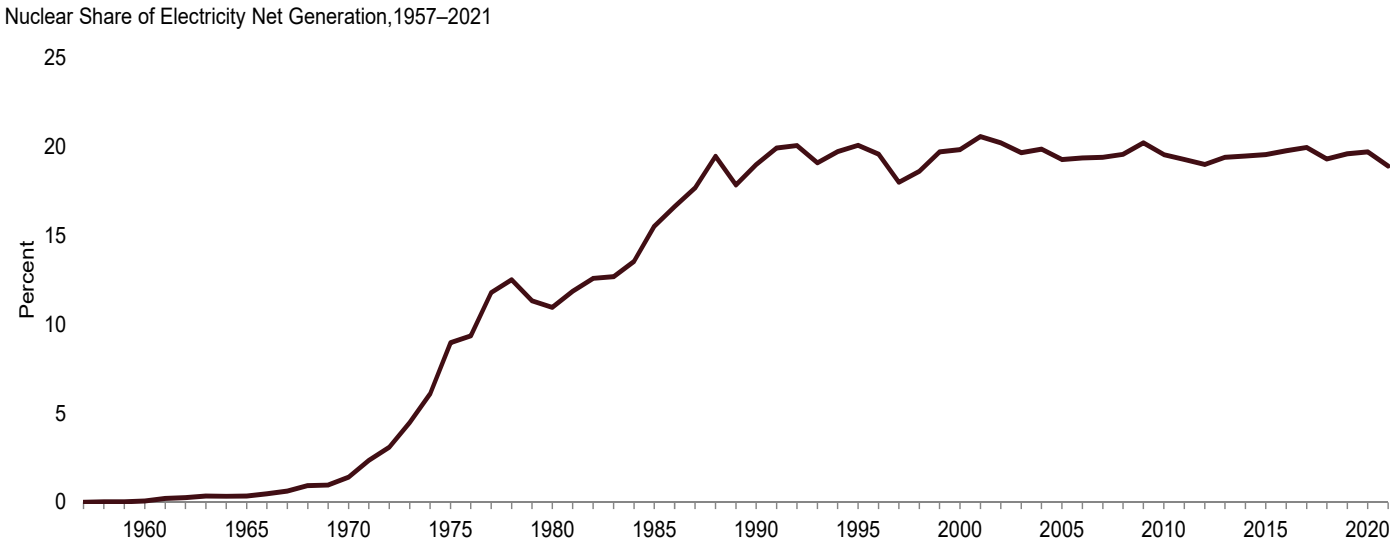
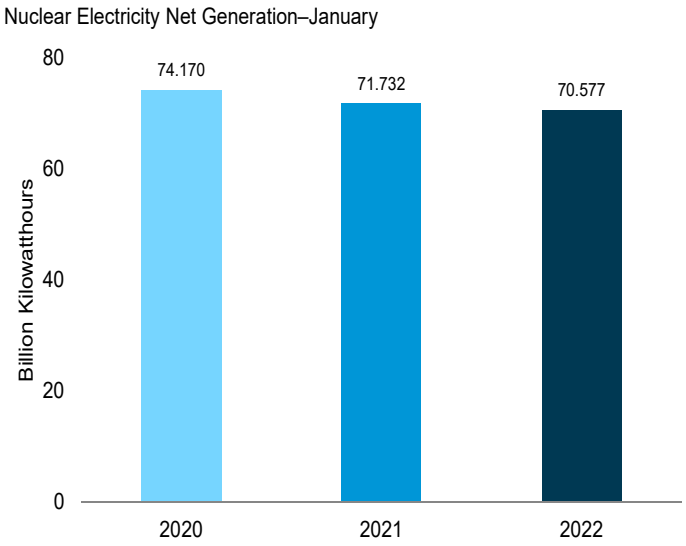
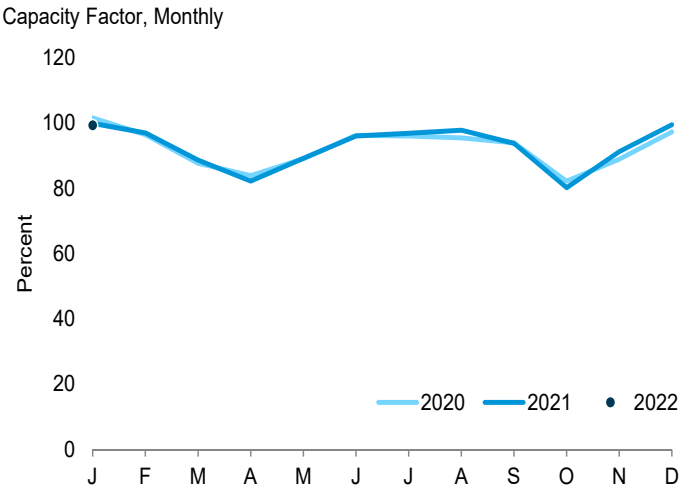
8. Nuclear Energy

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**
2006 Total	**104**	**100.334**	**787,219**	**19.4**	**89.6**
2007 Total	**104**	**100.266**	**806,425**	**19.4**	**91.8**
2008 Total	**104**	**100.755**	**806,208**	**19.6**	[d] **91.1**
2009 Total	**104**	**101.004**	**798,855**	**20.2**	**90.3**
2010 Total	**104**	**101.167**	**806,968**	**19.6**	**91.1**
2011 Total	**104**	[c] **101.419**	**790,204**	**19.3**	**89.1**
2012 Total	**104**	**101.885**	**769,331**	**19.0**	**86.1**
2013 Total	**100**	**99.240**	**789,016**	**19.4**	**89.9**
2014 Total	**99**	**98.569**	**797,166**	**19.5**	**91.7**
2015 Total	**99**	**98.672**	**797,178**	**19.6**	**92.3**
2016 Total	**99**	**99.565**	**805,694**	**19.8**	**92.3**
2017 Total	**99**	**99.629**	**804,950**	**20.0**	**92.3**
2018 Total	**98**	**99.433**	**807,084**	**19.3**	**92.5**
2019 Total	**96**	**98.119**	**809,409**	**19.6**	**93.4**
2020 January	96	98.094	74,170	21.7	101.6
February	96	98.094	65,911	20.6	96.5
March	96	98.094	63,997	20.7	87.7
April	95	97.082	59,170	21.2	83.9
May	95	97.082	64,338	21.1	89.1
June	95	97.082	67,205	19.1	96.2
July	95	97.082	69,385	16.9	96.1
August	95	97.082	68,982	17.3	95.5
September	94	97.082	65,727	19.7	94.0
October	94	97.102	59,362	18.9	82.2
November	94	96.501	61,760	20.5	88.9
December	94	96.501	69,871	20.3	97.3
Total	**94**	**96.501**	**789,879**	**19.7**	**92.4**
2021 January	94	[E] 96.531	71,732	20.4	[E] 99.9
February	94	[E] 96.531	62,954	19.3	[E] 97.0
March	94	[E] 96.531	63,708	20.4	[E] 88.7
April	93	[E] 95.492	57,092	19.5	[E] 82.2
May	93	[E] 95.492	63,394	19.9	[E] 89.2
June	93	[E] 95.492	66,070	17.7	[E] 96.1
July	93	[E] 95.492	68,832	17.0	[E] 96.9
August	93	[E] 95.492	69,471	16.8	[E] 97.8
September	93	[E] 95.492	64,484	18.5	[E] 93.8
October	93	[E] 95.492	56,945	17.8	[E] 80.2
November	93	[E] 95.492	62,749	19.9	[E] 91.3
December	93	[E] 95.492	70,720	20.8	[E] 99.5
Total	**93**	[E] **95.492**	**778,152**	**18.9**	[E] **92.7**
2022 January	93	[E] 95.489	70,577	18.6	[E] 99.3

[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.

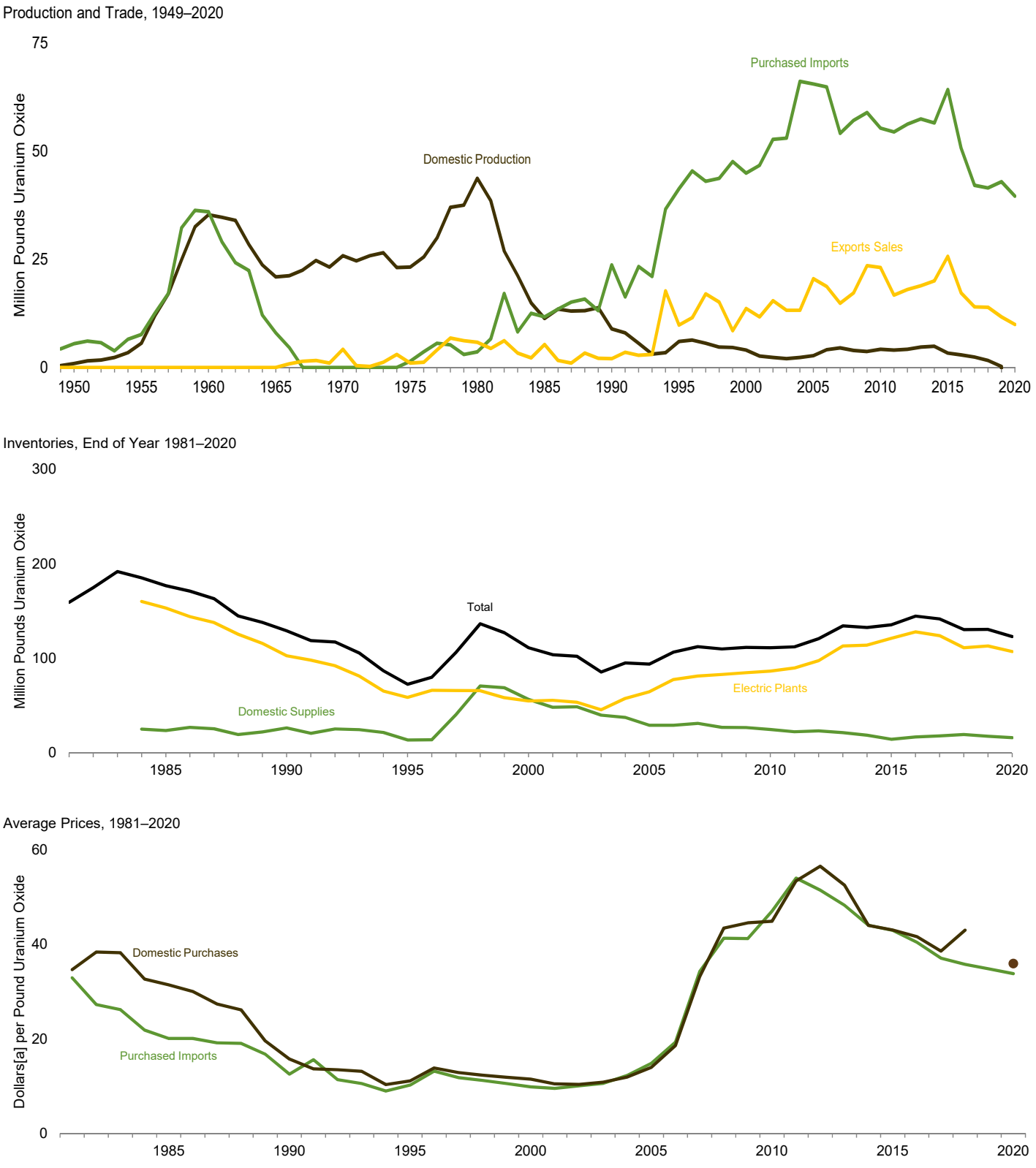
E=Estimate. NA=Not available. (s)=Less than 0.05%.

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	[P]48.6	[P]16.0	[P]107.2	[P]123.1	33.79	35.92

[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. • **2003–2017:** EIA, "Domestic Uranium Production Report," annual reports; and EIA, "Uranium Marketing Annual Report," annual reports. • **2018 forward:** EIA, "2020 Domestic Uranium Production Report" (May 2021), Table 3; and EIA, "2020 Uranium Marketing Annual Report" (May 2021), Tables 5, 18, 19, 21, and 22.

Note 1. Operable Nuclear Reactors. A reactor is defined as operable when it possesses a full-power license from the Nuclear Regulatory Commission or its predecessor, the Atomic Energy Commission, or equivalent permission to operate, at the end of the year or month shown. The definition includes units retaining full-power licenses during long, non-routine shutdowns that for a time rendered them unable to generate electricity.

Note 2. Nuclear Capacity. Nuclear generating units may have more than one type of net capacity rating, including the following:

(a) Net Summer Capacity—The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand. Auxiliary power of a typical nuclear power plant is about 5% of gross generation.

(b) Net Design Capacity or Net Design Electrical Rating (DER)—The nominal net electrical output of a unit, specified by the utility and used for plant design.

Through 2007, the monthly capacity factors are calculated as the monthly nuclear electricity net generation divided by the maximum possible nuclear electricity net generation for that month. The maximum possible nuclear electricity net generation is the number of hours in the month (assuming 24-hour days, with no adjustment for changes to or from Daylight Savings Time) multiplied by the net summer capacity of operable nuclear generating units at the end of the month. That fraction is then multiplied by 100 to obtain a percentage. Annual capacity factors are calculated as the annual nuclear electricity net generation divided by the annual maximum possible nuclear electricity net generation (the sum of the monthly values for maximum possible nuclear electricity net generation). For the methodology used to calculate capacity factors beginning in 2008, see U.S. Energy Information Administration, *Electric Power Monthly*, Appendix C notes on "Average Capacity Factors."

Table 8.1 Sources

Total Operable Units and Net Summer Capacity of Operable Units

1957–1982: Compiled from various sources, primarily U.S. Department of Energy, Office of Nuclear Reactor Programs, "U.S. Central Station Nuclear Electric Generating Units: Significant Milestones."

1983 forward: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report," and predecessor forms; Form EIA-860M, "Monthly Update to the Annual Electric Generator Report"; and monthly updates as appropriate. See https://www.eia.gov/nuclear/generation/index.html for a list of operable units.

Nuclear Electricity Net Generation and Nuclear Share of Electricity Net Generation

1957 forward: Table 7.2a.

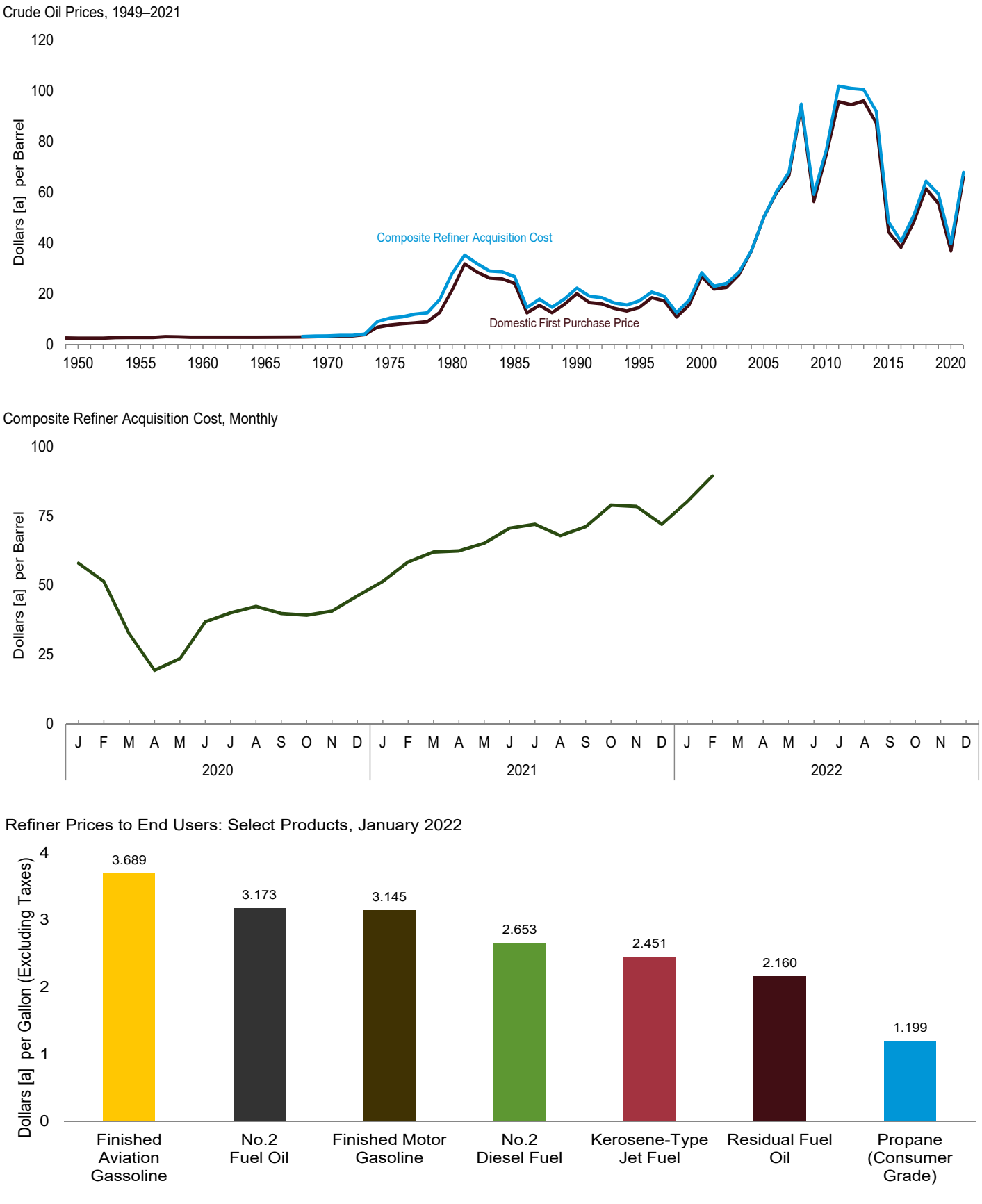
Capacity Factor

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

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

9. Energy Prices

Figure 9.1 Petroleum Prices



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

Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Sources: Tables 9.1, 9.5 and 9.7.

Table 9.1 Crude Oil Price Summary

(Dollars[a] per Barrel)

	Domestic First Purchase Price[c]	F.O.B. Cost of Imports[d]	Landed Cost of Imports[e]	Refiner Acquisition Cost[b]		
				Domestic	Imported	Composite
1950 Average	**2.51**	**NA**	**NA**	**NA**	**NA**	**NA**
1955 Average	**2.77**	**NA**	**NA**	**NA**	**NA**	**NA**
1960 Average	**2.88**	**NA**	**NA**	**NA**	**NA**	**NA**
1965 Average	**2.86**	**NA**	**NA**	**NA**	**NA**	**NA**
1970 Average	**3.18**	**NA**	**NA**	E **3.46**	E **2.96**	E **3.40**
1975 Average	**7.67**	**11.18**	**12.70**	**8.39**	**13.93**	**10.38**
1977 Average	**8.57**	**13.24**	**14.36**	**9.55**	**14.53**	**11.96**
1982 Average	**28.52**	**32.02**	**33.18**	**31.22**	**33.55**	**31.87**
1987 Average	**15.40**	**16.69**	**17.65**	**17.76**	**18.13**	**17.90**
1992 Average	**15.99**	**16.77**	**17.75**	**18.63**	**18.20**	**18.43**
1997 Average	**17.23**	**16.94**	**18.11**	**19.61**	**18.53**	**19.04**
1998 Average	**10.87**	**10.76**	**11.84**	**13.18**	**12.04**	**12.52**
1999 Average	**15.56**	**16.47**	**17.23**	**17.90**	**17.26**	**17.51**
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**
2006 Average	**59.69**	**57.03**	**59.11**	**62.62**	**59.02**	**60.24**
2007 Average	**66.52**	**66.36**	**67.97**	**69.65**	**67.04**	**67.94**
2008 Average	**94.04**	**90.32**	**93.33**	**98.47**	**92.77**	**94.74**
2009 Average	**56.35**	**57.78**	**60.23**	**59.49**	**59.17**	**59.29**
2010 Average	**74.71**	**74.19**	**76.50**	**78.01**	**75.86**	**76.69**
2011 Average	**95.73**	**101.66**	**102.92**	**100.71**	**102.63**	**101.87**
2012 Average	**94.52**	**99.78**	**101.00**	**100.72**	**101.09**	**100.93**
2013 Average	**95.99**	**96.56**	**96.99**	**102.91**	**98.11**	**100.49**
2014 Average	**87.39**	**85.65**	**88.16**	**94.05**	**89.56**	**92.02**
2015 Average	**44.39**	**41.91**	**45.38**	**49.94**	**46.38**	**48.39**
2016 Average	**38.29**	**36.37**	**38.56**	**42.41**	**38.75**	**40.66**
2017 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 January	56.55	46.98	51.20	60.39	53.87	57.92
February	49.66	42.13	44.69	54.01	47.39	51.37
March	31.01	24.16	27.14	35.00	28.50	32.55
April	15.18	14.22	17.50	21.07	16.74	19.32
May	18.02	19.28	22.73	24.43	22.56	23.55
June	33.81	33.74	36.17	37.25	36.14	36.80
July	37.44	36.73	38.97	40.56	39.33	40.08
August	39.37	37.39	40.15	42.83	41.72	42.42
September	36.82	36.06	38.19	40.41	38.73	39.81
October	36.39	34.35	37.11	40.06	37.81	39.21
November	38.25	36.44	39.28	41.56	39.15	40.68
December	43.92	41.86	44.78	46.69	45.34	46.20
Average	**36.86**	**33.66**	**36.42**	**41.23**	**37.41**	**39.75**
2021 January	49.73	46.77	49.38	52.45	49.52	51.36
February	56.72	53.08	55.50	60.14	55.67	58.39
March	60.67	57.48	59.12	63.24	59.78	61.96
April	59.87	57.83	60.75	63.25	60.86	62.39
May	62.80	61.76	63.92	65.94	63.81	65.15
June	68.57	64.97	67.50	71.60	68.85	70.54
July	70.12	65.73	68.11	73.28	69.88	71.97
August	65.67	63.00	65.82	69.27	65.66	67.87
September	69.08	66.36	68.66	72.38	69.26	71.09
October	78.51	73.40	75.61	80.82	76.08	78.88
November	76.45	R 71.48	R 74.83	79.67	76.35	78.41
December	70.55	R 64.56	R 67.03	R 74.47	R 68.22	R 71.98
Average	**65.90**	R **61.99**	R **64.90**	R **69.08**	R **65.81**	R **67.82**
2022 January	R 80.32	R 71.51	R 73.86	R 82.34	R 76.78	R 80.07
February	NA	NA	NA	E 91.39	E 86.25	E 89.42

[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**
2006 Average	**62.23**	**59.77**	**52.91**	**65.69**	**56.09**	**66.03**	**55.80**	**56.02**	**59.18**	**55.35**
2007 Average	**67.80**	**67.93**	**61.35**	**76.64**	**W**	**69.96**	**64.10**	**69.93**	**69.58**	**62.69**
2008 Average	**95.66**	**91.17**	**84.61**	**102.06**	**93.03**	**96.33**	**88.06**	**91.44**	**93.15**	**87.15**
2009 Average	**57.07**	**57.90**	**56.47**	**64.61**	**57.87**	**65.63**	**55.58**	**59.53**	**58.53**	**57.16**
2010 Average	**78.18**	**72.56**	**72.46**	**80.83**	**76.44**	**W**	**70.30**	**75.65**	**75.23**	**73.24**
2011 Average	**111.82**	**100.21**	**100.90**	**115.35**	**107.08**	**–**	**97.23**	**106.47**	**105.34**	**98.49**
2012 Average	**111.23**	**106.43**	**101.84**	**114.51**	**106.65**	**–**	**100.15**	**105.45**	**104.39**	**95.71**
2013 Average	**107.71**	**101.24**	**98.40**	**110.06**	**101.16**	**W**	**97.52**	**100.62**	**100.57**	**93.67**
2014 Average	**W**	**80.75**	**86.55**	**W**	**95.60**	**–**	**84.51**	**94.03**	**89.76**	**82.95**
2015 Average	**W**	**47.52**	**44.90**	**W**	**47.53**	**–**	**40.73**	**46.95**	**43.25**	**41.19**
2016 Average	**42.68**	**35.28**	**36.22**	**46.20**	**39.30**	**W**	**34.71**	**38.76**	**38.51**	**34.81**
2017 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 January	–	56.90	53.70	W	49.26	W	–	50.36	51.96	46.61
February	–	W	47.74	W	W	W	–	51.87	53.40	40.68
March	W	27.34	28.59	W	W	W	–	24.18	28.56	23.61
April	W	19.88	12.25	W	21.44	–	–	21.44	22.92	12.23
May	–	W	22.92	W	W	W	–	29.19	30.80	18.09
June	–	33.32	34.36	W	W	W	–	40.59	41.17	32.84
July	–	W	37.95	W	42.98	–	–	40.60	41.32	36.08
August	–	40.34	40.16	W	W	–	–	W	44.02	37.20
September	–	37.36	38.42	W	W	–	–	W	41.19	35.82
October	W	W	37.12	W	–	–	–	–	40.10	34.01
November	–	W	39.55	–	–	W	–	W	W	36.36
December	W	W	45.09	W	W	–	–	W	52.06	40.99
Total	**W**	**36.03**	**36.00**	**W**	**35.35**	**43.39**	**–**	**36.06**	**38.34**	**33.22**
2021 January	–	W	50.54	W	55.18	–	–	54.23	55.26	45.40
February	–	W	56.46	W	60.73	W	–	58.53	60.66	52.03
March	–	W	59.46	W	W	–	–	62.12	63.76	56.49
April	–	62.48	59.54	W	65.55	–	–	63.85	64.57	56.49
May	W	W	62.26	72.66	67.70	–	–	66.13	68.01	60.31
June	W	W	67.27	W	70.06	W	–	70.06	71.60	64.02
July	W	W	68.52	W	W	–	–	W	73.71	64.65
August	W	W	63.71	W	73.37	–	–	70.48	71.50	61.62
September	W	W	66.81	W	W	–	–	W	76.73	64.89
October	W	W	74.81	–	W	W	–	W	78.24	72.86
November	–	W	R 75.08	W	W	–	–	R 76.78	R 79.24	R 70.10
December	W	W	R 67.18	–	W	R W	–	R 71.23	R 71.80	R 63.99
Total	**75.02**	**65.33**	**R 64.42**	**73.83**	**R 67.94**	**W**	**–**	**R 66.39**	**R 68.99**	**R 60.91**
2022 January	–	W	75.16	W	W	–	–	80.68	83.31	70.39

[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**
2006 Average	**64.85**	**53.90**	**62.13**	**53.76**	**68.26**	**59.19**	**67.44**	**57.37**	**58.92**	**61.21**	**57.14**
2007 Average	**71.27**	**60.38**	**70.91**	**62.31**	**78.01**	**70.78**	**72.47**	**66.13**	**69.83**	**71.14**	**63.96**
2008 Average	**98.18**	**90.00**	**93.43**	**85.97**	**104.83**	**94.75**	**96.95**	**90.76**	**93.59**	**95.49**	**90.59**
2009 Average	**61.32**	**57.60**	**58.50**	**57.35**	**68.01**	**62.14**	**63.87**	**57.78**	**62.15**	**61.90**	**58.58**
2010 Average	**80.61**	**72.80**	**74.25**	**72.86**	**83.14**	**79.29**	**80.29**	**72.43**	**78.60**	**78.28**	**74.68**
2011 Average	**114.05**	**89.92**	**102.57**	**101.21**	**116.43**	**108.83**	**118.45**	**100.14**	**108.01**	**107.84**	**98.64**
2012 Average	**114.95**	**84.24**	**107.07**	**102.45**	**116.88**	**108.15**	**W**	**101.58**	**107.74**	**107.56**	**95.05**
2013 Average	**110.81**	**84.41**	**103.00**	**99.06**	**112.87**	**102.60**	**111.23**	**99.34**	**102.53**	**102.98**	**91.99**
2014 Average	**99.25**	**81.30**	**88.29**	**87.48**	**102.16**	**94.91**	**W**	**86.88**	**95.30**	**93.10**	**84.67**
2015 Average	**51.73**	**41.99**	**49.53**	**45.51**	**54.70**	**49.78**	**W**	**42.87**	**49.43**	**47.44**	**44.09**
2016 Average	**44.65**	**36.27**	**38.86**	**36.64**	**48.11**	**42.14**	**W**	**35.50**	**41.20**	**40.54**	**37.09**
2017 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 January	W	45.70	62.93	55.93	W	53.68	W	–	55.30	56.42	50.32
February	–	39.83	54.16	49.66	54.23	55.20	W	–	54.48	54.45	43.29
March	W	23.51	34.75	29.42	W	24.34	W	–	27.39	28.49	26.76
April	30.93	13.35	23.24	13.73	W	22.98	W	–	23.42	23.99	15.55
May	W	17.45	28.61	24.35	W	28.84	W	–	29.99	30.70	20.75
June	–	34.85	33.13	35.04	W	40.23	W	–	41.20	41.61	35.20
July	–	37.69	37.64	38.72	W	43.64	45.81	–	42.95	43.61	38.42
August	–	38.89	41.71	40.88	W	43.83	–	–	42.75	43.04	39.86
September	W	35.66	38.27	39.01	W	43.13	W	–	41.83	42.13	37.66
October	W	35.63	38.29	37.53	W	44.98	W	–	43.49	42.11	36.68
November	W	36.98	43.35	40.06	W	W	48.92	–	43.86	45.41	38.87
December	W	41.59	46.62	45.76	53.81	54.19	51.22	–	51.59	52.89	43.75
Total	**41.03**	**33.81**	**41.04**	**37.18**	**46.24**	**35.84**	**44.51**	**–**	**37.98**	**39.28**	**35.95**
2021 January	W	46.06	W	51.32	W	58.83	–	–	57.43	58.18	48.21
February	–	51.58	60.79	57.08	W	62.72	66.55	–	60.95	62.41	54.46
March	W	56.03	W	60.74	W	65.49	W	–	64.56	65.26	58.25
April	–	57.36	64.38	60.30	68.45	69.04	W	–	66.60	67.17	59.60
May	70.56	60.48	66.44	63.05	72.44	70.61	W	–	69.15	70.09	62.58
June	W	64.53	69.84	68.09	W	70.17	74.58	–	70.85	72.24	66.68
July	W	65.10	71.74	69.12	67.47	71.81	76.48	–	72.05	72.12	67.55
August	W	62.22	67.43	64.40	W	75.14	W	–	72.86	73.48	64.44
September	W	64.91	71.23	67.62	W	75.58	W	–	74.11	75.04	67.51
October	W	72.79	80.14	75.96	–	76.63	84.79	–	76.91	77.70	75.24
November	–	71.47	75.86	R 76.03	W	R 80.81	–	–	R 79.32	R 80.48	R 73.73
December	W	R 63.39	R 75.60	R 68.04	–	R 75.09	R 80.80	–	R 71.88	R 73.69	R 66.38
Total	**R 75.64**	**R 61.29**	**R 69.25**	**R 65.48**	**73.90**	**R 71.55**	**R 74.71**	**–**	**R 70.53**	**R 71.24**	**R 63.86**
2022 January	–	69.96	79.77	76.57	W	84.43	–	–	80.51	81.79	72.78

[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,* April 2022, Table 22.

Table 9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices

(Dollars[a] per Gallon, Including Taxes)

	Platt's / Bureau of Labor Statistics Data				U.S. Energy Information Administration Data			
	Motor Gasoline by Grade				Regular Motor Gasoline by Area Type			
	Leaded Regular	Unleaded Regular	Unleaded Premium[b]	All Grades[c]	Conventional Gasoline Areas[d]	Reformulated Gasoline Areas[e]	All Areas	On-Highway Diesel Fuel
1950 Average	**0.268**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1955 Average	**.291**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1960 Average	**.311**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1965 Average	**.312**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1970 Average	**.357**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1975 Average	**.567**	**NA**	**NA**	**NA**	**– –**	**– –**	**– –**	**– –**
1980 Average	**1.191**	**1.245**	**NA**	**1.221**	**– –**	**– –**	**– –**	**– –**
1985 Average	**1.115**	**1.202**	**1.340**	**1.196**	**– –**	**– –**	**– –**	**– –**
1990 Average	**1.149**	**1.164**	**1.349**	**1.217**	**NA**	**NA**	**NA**	**NA**
1995 Average	**– –**	**1.147**	**1.336**	**1.205**	**1.103**	**1.163**	**1.111**	**1.109**
2000 Average	**– –**	**1.510**	**1.693**	**1.563**	**1.462**	**1.543**	**1.484**	**1.491**
2005 Average	**– –**	**2.295**	**2.491**	**2.338**	**2.240**	**2.335**	**2.270**	**2.402**
2006 Average	**– –**	**2.589**	**2.805**	**2.635**	**2.533**	**2.654**	**2.572**	**2.705**
2007 Average	**– –**	**2.801**	**3.033**	**2.849**	**2.767**	**2.857**	**2.796**	**2.885**
2008 Average	**– –**	**3.266**	**3.519**	**3.317**	**3.213**	**3.314**	**3.246**	**3.803**
2009 Average	**– –**	**2.350**	**2.607**	**2.401**	**2.315**	**2.433**	**2.353**	**2.467**
2010 Average	**– –**	**2.788**	**3.047**	**2.836**	**2.742**	**2.864**	**2.782**	**2.992**
2011 Average	**– –**	**3.527**	**3.792**	**3.577**	**3.476**	**3.616**	**3.521**	**3.840**
2012 Average	**– –**	**3.644**	**3.922**	**3.695**	**3.552**	**3.757**	**3.618**	**3.968**
2013 Average	**– –**	**3.526**	**3.843**	**3.584**	**3.443**	**3.635**	**3.505**	**3.922**
2014 Average	**– –**	**3.367**	**3.713**	**3.425**	**3.299**	**3.481**	**3.358**	**3.825**
2015 Average	**– –**	**2.448**	**2.866**	**2.510**	**2.334**	**2.629**	**2.429**	**2.707**
2016 Average	**– –**	**2.142**	**2.610**	**2.204**	**2.070**	**2.296**	**2.143**	**2.304**
2017 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 January	– –	2.567	3.157	2.631	2.459	2.740	2.548	3.048
February	– –	2.465	3.071	2.530	2.348	2.645	2.442	2.910
March	– –	2.267	2.893	2.334	2.126	2.468	2.234	2.729
April	– –	1.876	2.527	1.946	1.721	2.096	1.841	2.493
May	– –	1.879	2.490	1.946	1.769	2.084	1.870	2.392
June	– –	2.076	2.673	2.141	1.998	2.263	2.082	2.408
July	– –	2.176	2.783	2.243	2.099	2.365	2.183	2.434
August	– –	2.177	2.795	2.245	2.093	2.374	2.182	2.429
September	– –	2.193	2.810	2.260	2.095	2.375	2.183	2.414
October	– –	2.159	2.782	2.228	2.073	2.344	2.158	2.389
November	– –	2.090	2.727	2.159	2.015	2.312	2.108	2.432
December	– –	2.168	2.778	2.235	2.105	2.387	2.195	2.585
Average	**– –**	**2.174**	**2.791**	**2.242**	**2.074**	**2.370**	**2.168**	**2.551**
2021 January	– –	2.326	2.921	2.391	2.244	2.527	2.334	2.681
February	– –	2.496	3.073	2.559	2.412	2.694	2.501	2.847
March	– –	2.791	3.386	2.856	2.725	2.997	2.810	3.152
April	– –	2.839	3.455	2.907	2.771	3.048	2.858	3.130
May	– –	2.972	3.596	3.041	2.885	3.202	2.985	3.217
June	– –	3.154	3.802	3.245	2.964	3.281	3.064	3.287
July	– –	3.233	3.897	3.326	3.044	3.339	3.136	3.339
August	– –	3.255	3.938	3.351	3.062	3.368	3.158	3.350
September	– –	3.265	3.945	3.361	3.081	3.382	3.175	3.384
October	– –	3.385	4.040	3.477	3.193	3.506	3.291	3.612
November	– –	3.482	4.148	3.576	3.275	3.659	3.395	3.727
December	– –	3.408	4.100	3.505	3.168	3.608	3.307	3.641
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

[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
Total	**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
Total	**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

[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,* April 2022, Table 16.

Table 9.6 Refiner Prices of Petroleum Products for Resale

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.434**	**0.537**	**0.386**	**0.404**	**0.369**	**0.365**	**0.237**
1980 Average	**.941**	**1.128**	**.868**	**.864**	**.803**	**.801**	**.415**
1985 Average	**.835**	**1.130**	**.794**	**.874**	**.776**	**.772**	**.398**
1990 Average	**.786**	**1.063**	**.773**	**.839**	**.697**	**.694**	**.386**
1995 Average	**.626**	**.975**	**.539**	**.580**	**.511**	**.538**	**.344**
2000 Average	**.963**	**1.330**	**.880**	**.969**	**.886**	**.898**	**.595**
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
Total	**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	[R] 2.273	1.140
Total	**2.193**	**3.133**	**1.914**	**2.069**	**1.876**	**2.116**	**1.087**
2022 January	2.423	3.376	2.422	2.655	2.438	2.552	1.249

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

[b] See Note 5, "Motor Gasoline Prices," at end of section.

R=Revised.

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,* April 2022, Table 4.

Table 9.7 Refiner Prices of Petroleum Products to End Users

(Dollars[a] per Gallon, Excluding Taxes)

	Finished Motor Gasoline[b]	Finished Aviation Gasoline	Kerosene-Type Jet Fuel	Kerosene	No. 2 Fuel Oil	No. 2 Diesel Fuel	Propane (Consumer Grade)
1978 Average	**0.484**	**0.516**	**0.387**	**0.421**	**0.400**	**0.377**	**0.335**
1980 Average	**1.035**	**1.084**	**.868**	**.902**	**.788**	**.818**	**.482**
1985 Average	**.912**	**1.201**	**.796**	**1.030**	**.849**	**.789**	**.717**
1990 Average	**.883**	**1.120**	**.766**	**.923**	**.734**	**.725**	**.745**
1995 Average	**.765**	**1.005**	**.540**	**.589**	**.562**	**.560**	**.492**
2000 Average	**1.106**	**1.306**	**.899**	**1.123**	**.927**	**.935**	**.603**
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
Total	**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	[R] 2.168	[R] 3.279	2.760	[R] 2.374	1.098
Total	**2.569**	**3.469**	**1.954**	**W**	**2.413**	**2.203**	**1.088**
2022 January	3.145	3.689	2.451	3.814	3.173	2.653	1.199

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

[b] See Note 5, "Motor Gasoline Prices," at end of section.

R=Revised. W=Value withheld to avoid disclosure of individual company data.

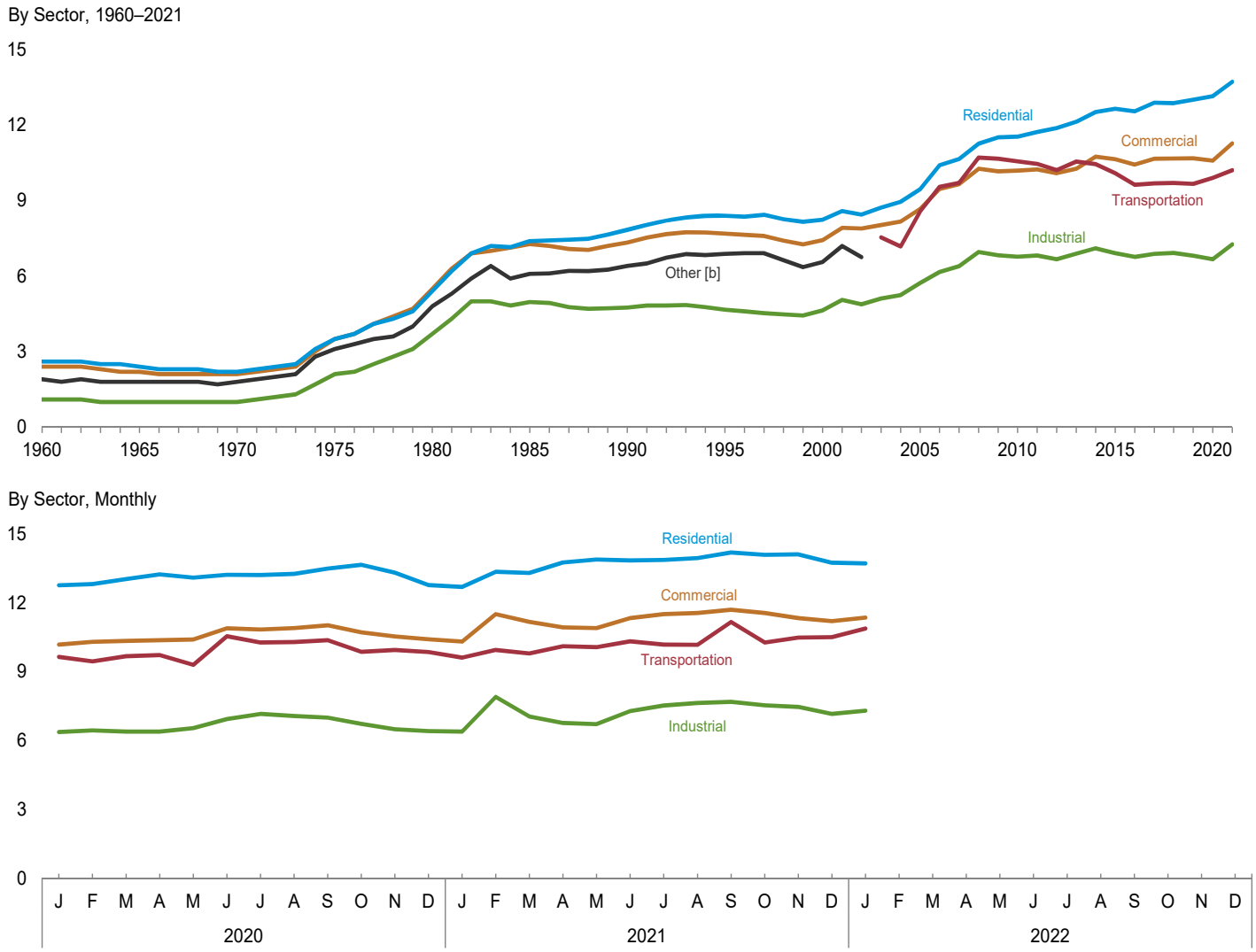
Notes: • Sales to end users are those made directly to ultimate consumers, including bulk consumers (such as agriculture, industry, and electric utilities) and residential and commercial consumers. Sales for resale are shown in Table 9.6; they are sales made to purchasers other than ultimate consumers. • 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,* April 2022, Table 2.

Figure 9.2 Average Retail Prices of Electricity

(Cents [a] per Kilowatthour)



[a] Prices are not adjusted for inflation. See "Nominal Dollars" in Glossary.
[b] Public street and highway lighting, interdepartmental sales, other sales to public authorities, agricultural and irrigation, and transportation including railroads and railways.

Note: Includes taxes.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#prices.
Source: Table 9.8.

Table 9.8 Average Retail Prices of Electricity

(Cents[a] per Kilowatthour, Including Taxes)

	Residential	Commercial[b]	Industrial[c]	Transportation[d]	Other[e]	Total
1960 Average	**2.60**	**2.40**	**1.10**	**NA**	**1.90**	**1.80**
1965 Average	**2.40**	**2.20**	**1.00**	**NA**	**1.80**	**1.70**
1970 Average	**2.20**	**2.10**	**1.00**	**NA**	**1.80**	**1.70**
1975 Average	**3.50**	**3.50**	**2.10**	**NA**	**3.10**	**2.90**
1980 Average	**5.40**	**5.50**	**3.70**	**NA**	**4.80**	**4.70**
1985 Average	**7.39**	**7.27**	**4.97**	**NA**	**6.09**	**6.44**
1990 Average	**7.83**	**7.34**	**4.74**	**NA**	**6.40**	**6.57**
1995 Average	**8.40**	**7.69**	**4.66**	**NA**	**6.88**	**6.89**
2000 Average	**8.24**	**7.43**	**4.64**	**NA**	**6.56**	**6.81**
2005 Average	**9.45**	**8.67**	**5.73**	**8.57**	**– –**	**8.14**
2006 Average	**10.40**	**9.46**	**6.16**	**9.54**	**– –**	**8.90**
2007 Average	**10.65**	**9.65**	**6.39**	**9.70**	**– –**	**9.13**
2008 Average	**11.26**	**10.26**	**6.96**	**10.71**	**– –**	**9.74**
2009 Average	**11.51**	**10.16**	**6.83**	**10.66**	**– –**	**9.82**
2010 Average	**11.54**	**10.19**	**6.77**	**10.56**	**– –**	**9.83**
2011 Average	**11.72**	**10.24**	**6.82**	**10.46**	**– –**	**9.90**
2012 Average	**11.88**	**10.09**	**6.67**	**10.21**	**– –**	**9.84**
2013 Average	**12.13**	**10.26**	**6.89**	**10.55**	**– –**	**10.07**
2014 Average	**12.52**	**10.74**	**7.10**	**10.45**	**– –**	**10.44**
2015 Average	**12.65**	**10.64**	**6.91**	**10.09**	**– –**	**10.41**
2016 Average	**12.55**	**10.43**	**6.76**	**9.63**	**– –**	**10.27**
2017 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 January	12.76	10.18	6.37	9.64	– –	10.22
February	12.82	10.30	6.44	9.45	– –	10.22
March	13.04	10.34	6.39	9.67	– –	10.21
April	13.24	10.37	6.39	9.72	– –	10.34
May	13.10	10.40	6.54	9.30	– –	10.39
June	13.22	10.89	6.94	10.55	– –	10.88
July	13.21	10.84	7.16	10.27	– –	11.06
August	13.26	10.90	7.07	10.29	– –	11.02
September	13.49	11.02	7.00	10.37	– –	10.99
October	13.66	10.72	6.72	9.87	– –	10.65
November	13.31	10.53	6.49	9.95	– –	10.38
December	12.78	10.41	6.41	9.86	– –	10.37
Average	**13.15**	**10.59**	**6.67**	**9.90**	**– –**	**10.59**
2021 January	12.69	10.31	6.39	9.61	– –	10.36
February	13.35	11.51	7.90	9.95	– –	11.40
March	13.30	11.17	7.05	9.79	– –	10.93
April	13.76	10.93	6.76	10.11	– –	10.70
May	13.89	10.90	6.71	10.07	– –	10.75
June	13.85	11.34	7.28	10.32	– –	11.30
July	13.87	11.51	7.52	10.18	– –	11.54
August	13.95	11.56	7.64	10.17	– –	11.63
September	14.19	11.70	7.69	11.16	– –	11.66
October	14.09	11.56	7.53	10.27	– –	11.31
November	14.11	11.34	7.46	10.48	– –	11.21
December	13.75	11.20	7.16	10.50	– –	11.10
Average	**13.72**	**11.27**	**7.26**	**10.21**	**– –**	**11.18**
2022 January	13.72	11.36	7.30	10.88	– –	11.34

[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.

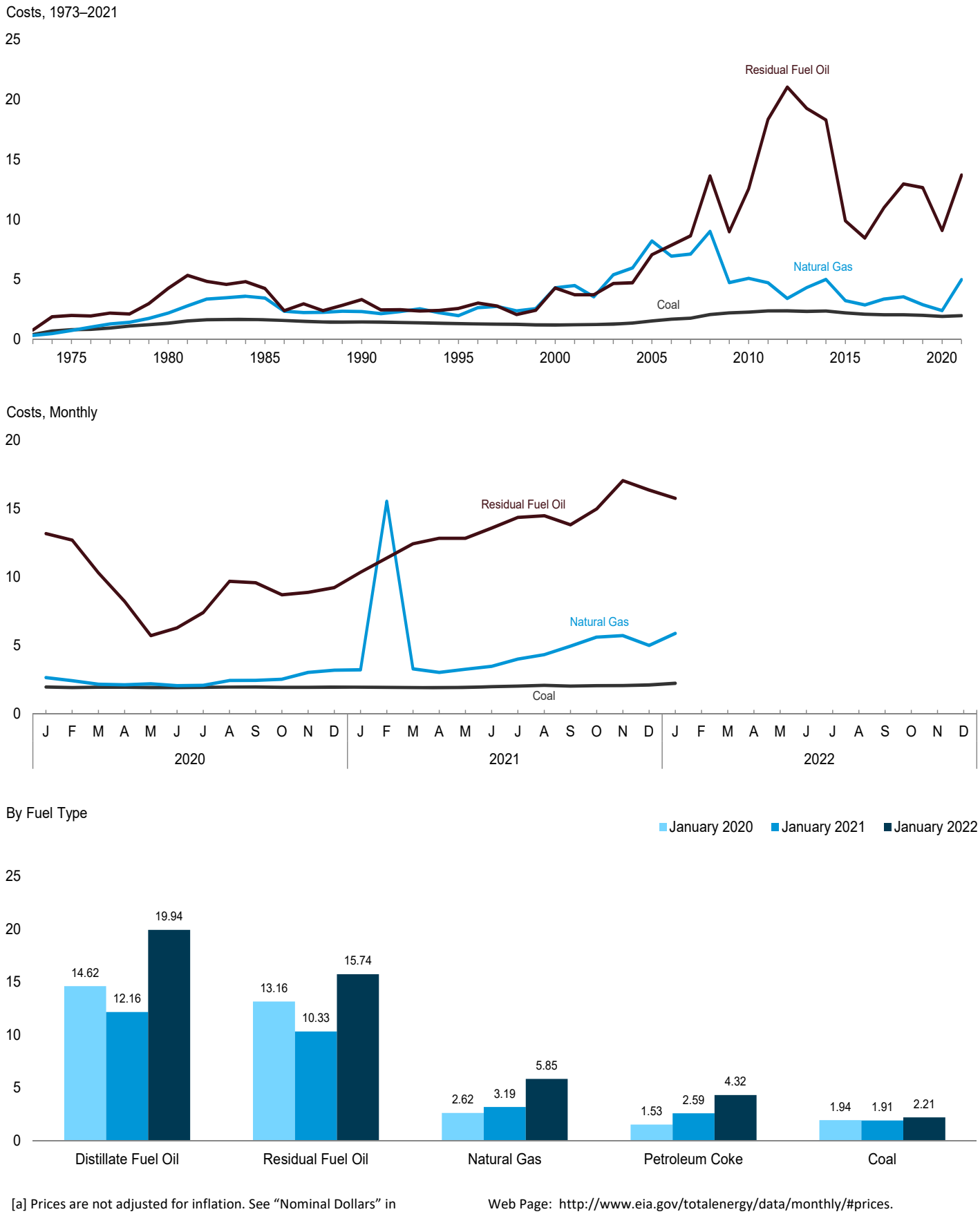
Notes: • Beginning in 2003, the category "Other" has been replaced by "Transportation," and the categories "Commercial" and "Industrial" have been redefined. • Prices are calculated by dividing revenue by sales. Revenue may not correspond to sales for a particular month because of energy service provider 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 Retail Prices," at end of section for plant coverage, and for information on preliminary and final values. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#prices (Excel and CSV files) for all available annual data beginning in 1960 and monthly data beginning in 1976.

Sources: • **1960–September 1977:** Federal Power Commission, Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **October 1977–February 1980:** Federal Energy Regulatory Commission (FERC), Form FPC-5, "Monthly Statement of Electric Operating Revenues and Income." • **March 1980–1982:** FERC, Form FERC-5, "Electric Utility Company Monthly Statement." • **1983:** U.S. Energy Information Administration (EIA), Form EIA-826, "Electric Utility Company Monthly Statement." • **1984–2010:** EIA, Form EIA-861, "Annual Electric Power Industry Report." • **2011 forward:** EIA, *Electric Power Monthly,* March 2022, 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**
2010 Average	**2.27**	**12.57**	**16.61**	**2.28**	**9.54**	**5.09**	**3.26**
2011 Average	**2.39**	**18.35**	**22.46**	**3.03**	**12.48**	**4.72**	**3.29**
2012 Average	**2.38**	**21.03**	**23.49**	**2.24**	**12.48**	**3.42**	**2.83**
2013 Average	**2.34**	**19.26**	**23.03**	**2.18**	**11.57**	**4.33**	**3.09**
2014 Average	**2.37**	**18.30**	**21.88**	**1.98**	**11.60**	**5.00**	**3.31**
2015 Average	**2.22**	**9.89**	**14.06**	**1.84**	**6.74**	**3.23**	**2.65**
2016 Average	**2.11**	**8.45**	**10.90**	**1.65**	**5.24**	**2.87**	**2.47**
2017 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 January	1.94	13.16	14.62	1.53	6.52	2.62	2.33
February	1.90	12.68	13.83	1.47	7.26	2.40	2.22
March	1.93	10.29	10.85	1.36	6.72	2.14	2.09
April	1.92	8.20	8.83	1.38	4.66	2.10	2.04
May	1.89	5.70	7.42	1.61	4.40	2.17	2.08
June	1.90	6.26	9.14	1.46	4.76	2.03	2.00
July	1.91	7.38	10.96	1.54	5.14	2.06	2.03
August	1.94	9.67	10.70	1.87	5.42	2.41	2.24
September	1.94	9.56	9.87	1.93	6.27	2.42	2.24
October	1.91	8.68	10.37	2.08	6.83	2.50	2.27
November	1.91	8.86	10.63	2.25	6.30	3.00	2.50
December	1.92	9.21	11.54	2.33	7.34	3.17	2.63
Average	**1.92**	**9.09**	**10.73**	**1.70**	**5.98**	**2.40**	**2.22**
2021 January	1.91	10.33	12.16	2.59	7.36	3.19	2.63
February	1.93	11.37	13.71	2.33	8.69	15.52	9.35
March	1.90	12.41	14.39	2.56	7.69	3.26	2.63
April	1.90	12.81	14.76	2.88	8.02	3.01	2.51
May	1.90	12.82	15.09	2.73	8.58	3.24	2.62
June	1.96	13.56	15.73	3.34	9.74	3.45	2.83
July	2.01	14.34	16.00	3.35	9.25	3.98	3.18
August	2.06	14.47	16.03	3.21	10.44	4.30	3.39
September	2.01	13.80	16.61	3.62	10.40	4.92	3.65
October	2.03	14.97	18.28	3.03	10.84	5.58	4.00
November	2.04	17.03	18.14	4.34	11.65	5.69	4.01
December	2.08	16.35	17.71	3.89	12.21	4.98	3.68
Average	**1.98**	**13.70**	**15.81**	**3.16**	**9.60**	**4.98**	**3.64**
2022 January	2.21	15.74	19.94	4.32	13.49	5.85	4.29

[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.

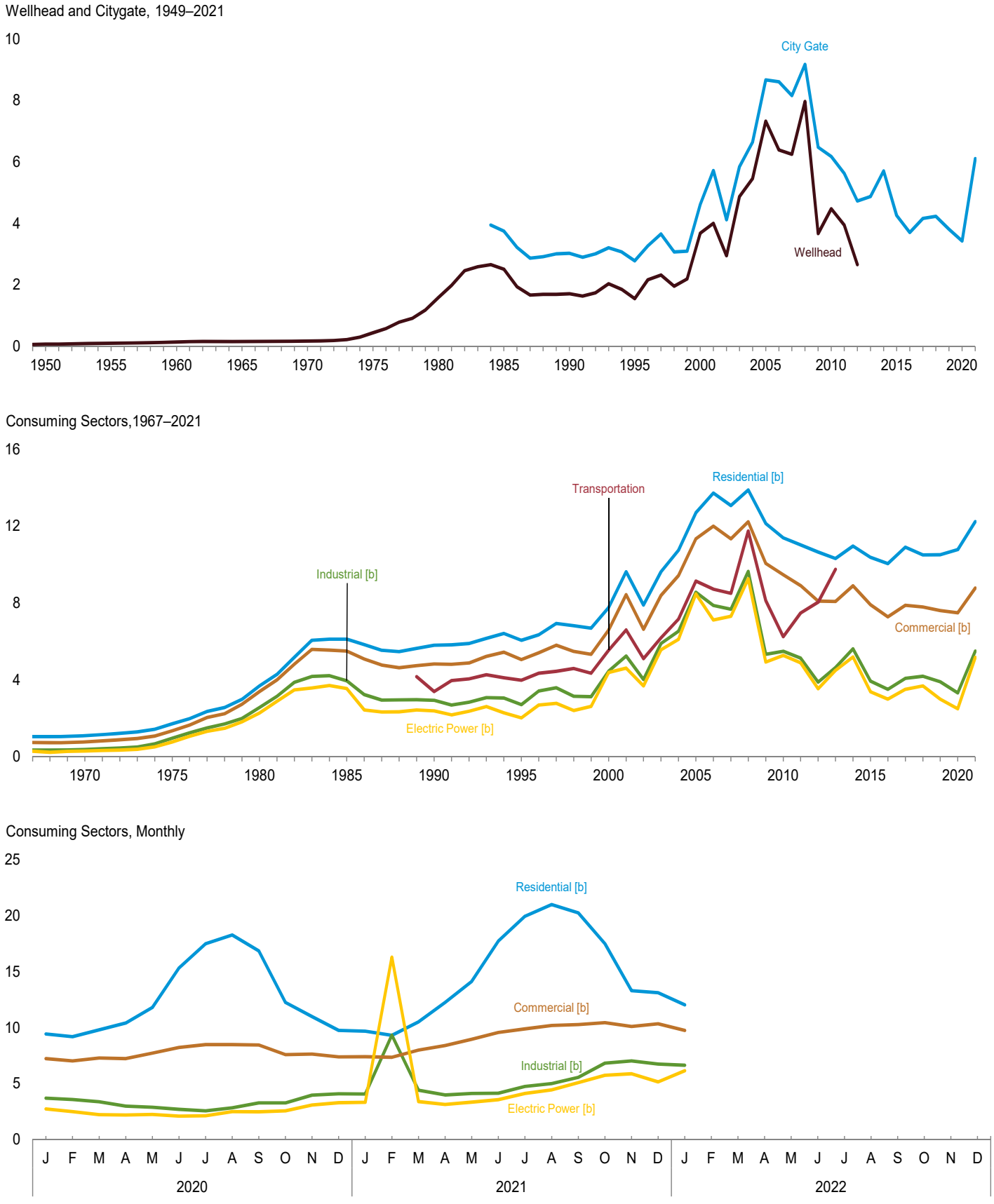
Notes: • Receipts are purchases of fuel. • Yearly costs are averages of monthly values, weighted by quantities in Btu. • For this table, there are several breaks in the data series related to what plants and fuels are covered. Beginning in 2013, data cover all regulated generating plants; plus unregulated 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**
2006 Average	**6.39**	**8.61**	**13.73**	**98.1**	**12.00**	**80.8**	**7.87**	**23.4**	**8.72**	**7.11**	**93.4**
2007 Average	**6.25**	**8.16**	**13.08**	**98.0**	**11.34**	**80.4**	**7.68**	**22.2**	**8.50**	**7.31**	**92.2**
2008 Average	**7.97**	**9.18**	**13.89**	**97.5**	**12.23**	**79.7**	**9.65**	**20.4**	**11.75**	**9.26**	**101.1**
2009 Average	**3.67**	**6.48**	**12.14**	**97.4**	**10.06**	**77.8**	**5.33**	**18.8**	**8.13**	**4.93**	**101.1**
2010 Average	**4.48**	**6.18**	**11.39**	**97.4**	**9.47**	**77.5**	**5.49**	**18.0**	**6.25**	**5.27**	**100.8**
2011 Average	**3.95**	**5.63**	**11.03**	**96.3**	**8.91**	**67.3**	**5.13**	**16.3**	**7.48**	**4.89**	**101.2**
2012 Average	**E 2.66**	**4.73**	**10.65**	**95.8**	**8.10**	**65.2**	**3.88**	**16.2**	**8.04**	**3.54**	**95.5**
2013 Average	**NA**	**4.88**	**10.32**	**95.7**	**8.08**	**65.8**	**4.64**	**16.6**	**9.76**	**4.49**	**94.9**
2014 Average	**NA**	**5.71**	**10.97**	**95.5**	**8.90**	**65.8**	**5.62**	**15.9**	**NA**	**5.19**	**94.6**
2015 Average	**NA**	**4.26**	**10.38**	**95.6**	**7.91**	**65.7**	**3.93**	**14.8**	**NA**	**3.38**	**94.6**
2016 Average	**NA**	**3.71**	**10.05**	**95.8**	**7.28**	**64.8**	**3.51**	**14.9**	**NA**	**2.99**	**95.6**
2017 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 January	NA	3.26	9.43	96.4	7.24	69.4	3.70	13.2	NA	2.74	95.0
February	NA	3.09	9.19	96.3	7.03	68.9	3.58	13.3	NA	2.50	96.2
March	NA	3.25	9.80	96.0	7.29	66.5	3.38	13.1	NA	2.23	96.0
April	NA	3.05	10.42	95.9	7.24	63.7	2.99	12.9	NA	2.20	96.1
May	NA	3.31	11.79	95.7	7.73	58.9	2.90	13.2	NA	2.26	96.4
June	NA	3.81	15.33	95.9	8.24	56.4	2.71	13.0	NA	2.10	96.7
July	NA	3.92	17.49	96.3	8.49	55.8	2.57	12.9	NA	2.14	96.4
August	NA	4.09	18.27	95.9	8.48	54.3	2.84	12.8	NA	2.50	96.2
September	NA	4.07	16.85	96.6	8.45	54.9	3.29	13.2	NA	2.49	96.4
October	NA	3.50	12.26	96.6	7.59	60.6	3.28	13.0	NA	2.58	96.3
November	NA	3.81	10.99	96.8	7.64	65.4	3.98	13.2	NA	3.09	96.7
December	NA	3.57	9.75	96.8	7.39	69.6	4.10	13.8	NA	3.30	96.0
Average	**NA**	**3.43**	**10.78**	**96.3**	**7.49**	**64.6**	**3.32**	**13.2**	**NA**	**2.49**	**96.2**
2021 January	NA	3.46	9.68	96.7	7.41	70.3	4.07	13.4	NA	3.33	90.7
February	NA	12.45	9.31	96.7	7.35	70.2	9.33	12.7	NA	16.29	88.4
March	NA	4.04	10.51	96.4	7.99	67.9	R 4.41	13.8	NA	3.40	89.0
April	NA	R 3.85	12.25	96.3	8.40	R 64.8	4.00	13.5	NA	3.14	88.7
May	NA	R 4.35	14.13	96.1	8.96	R 60.2	4.12	13.3	NA	3.35	89.4
June	NA	R 4.89	17.73	96.1	R 9.57	R 57.2	4.15	13.0	NA	3.57	88.1
July	NA	R 5.61	19.94	96.6	R 9.89	55.4	R 4.75	12.9	NA	4.12	86.7
August	NA	5.67	R 20.99	96.5	10.19	R 54.9	5.01	13.0	NA	4.45	86.3
September	NA	R 6.24	R 20.24	96.6	R 10.27	R 56.5	5.57	13.7	NA	5.09	87.9
October	NA	6.41	R 17.49	97.1	10.45	59.5	R 6.83	13.4	NA	5.75	87.8
November	NA	R 6.04	R 13.30	97.0	R 10.10	R 65.4	7.03	13.7	NA	5.89	87.2
December	NA	R 5.82	R 13.12	96.7	R 10.34	R 68.4	6.74	14.0	NA	5.15	88.7
Average	**NA**	**6.11**	**12.24**	**96.6**	**8.78**	**R 65.1**	**5.50**	**13.4**	**NA**	**5.17**	**88.1**
2022 January	NA	5.33	12.04	96.9	9.76	71.3	6.64	13.3	NA	6.15	87.2

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

[b] See Note 8, "Natural Gas Prices," at end of section.

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

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

[e] The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Through 2001, data are for electric utilities only; beginning in 2002, data also include independent power producers.

[f] See "Natural Gas Wellhead Price" in Glossary.

[g] See "Citygate" in Glossary.

[h] Includes taxes.

[i] The percentage of the sector's consumption in Table 4.3 for which price data are available. For details on how the percentages are derived, see Table 9.10 sources at end of section.

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

[k] Percentages exceed 100% when reported natural gas receipts are greater than reported natural gas consumption—this can occur when combined-heat-and-power plants report fuel receipts related to non-electric generating activities.

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

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

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

Sources: See end of section.

Note 1. Crude Oil Refinery Acquisition Costs. Beginning with January 1981, refiner acquisition costs of crude oil are from data collected on U.S. Energy Information Administration (EIA) Form EIA-14, "Refiners' Monthly Cost Report." Those costs were previously published from data collected on Economic Regulatory Administration (ERA) Form ERA-49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report." Form ERA-49 was discontinued with the decontrol of crude oil on January 28, 1981. Crude oil purchases and costs are defined for Form EIA-14 in accordance with conventions used for Form ERA-49. The respondents for the two forms are also essentially the same. However, due to possible different interpretations of the filing requirements and a different method for handling prior period adjustments, care must be taken when comparing the data collected on the two forms.

The refiner acquisition cost of crude oil is the average price paid by refiners for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. Domestic crude oil is that oil produced in the United States or from the outer continental shelf as defined in 43 USC Section 1331. Imported crude oil is either that oil reported on Form ERA-51, "Transfer Pricing Report," or any crude oil that is not domestic oil. The composite cost is the weighted average of domestic and imported crude oil costs.

Crude oil costs and volumes reported on Form ERA-49 excluded unfinished oils but included the Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on Federal Energy Administration (FEA) Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report," included unfinished oils but excluded SPR. Imported averages derived from Form ERA-49 exclude oil purchased for SPR, whereas the composite averages derived from Form ERA-49 include SPR. None of the prices derived from Form EIA-14 include either unfinished oils or SPR.

Note 2. Crude Oil Domestic First Purchase Prices. The average domestic first purchase price represents the average price at which all domestic crude oil is purchased. Crude oil domestic first purchase prices were derived as follows: for 1949–1973, weighted average domestic first purchase values as reported by state agencies and calculated by the Bureau of Mines; for 1974 and 1975, weighted averages of a sample survey of major first purchasers' purchases; for 1976 forward, weighted averages of all first purchasers' purchases. The data series was previously called "Actual Domestic Wellhead Price."

Note 3. Crude Oil F.O.B. Costs. F.O.B. literally means "Free on Board." It denotes a transaction whereby the seller makes the product available with an agreement on a given port at a given price; it is the responsibility of the buyer to arrange for the transportation and insurance.

Note 4. Crude Oil Landed Costs. The landed cost of imported crude oil from selected countries does not represent the total cost of all imported crude. Prior to April 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude oil from countries that export only small amounts to the United States were also excluded. Beginning in April 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

Note 5. Motor Gasoline Prices. Several different series of motor gasoline prices are published in this section. U.S. city average retail prices of motor gasoline by grade are calculated monthly by the Bureau of Labor Statistics during the development of the Consumer Price Index (CPI). These prices include all federal, state, and local taxes paid at the time of sale. Prior to 1977, prices were collected in 56 urban areas. From 1978 forward, prices are collected from a new sample of service stations in 85 urban areas selected to represent all urban consumers—about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-serve).

Regular motor gasoline prices by area type are determined by EIA in a weekly survey of retail motor gasoline outlets (Form EIA-878, "Motor Gasoline Price Survey"). Prices include all federal, state, and local taxes paid at the time of sale. A representative sample of outlets by geographic area and size is randomly selected from a sampling frame of approximately 115,000 retail motor gasoline outlets. Monthly and annual prices are simple averages of weighted

weekly estimates from "Weekly U.S. Retail Gasoline Prices, Regular Grade." For more information on the survey methodology, see EIA, *Weekly Petroleum Status Report*, Appendix B, "Weekly Petroleum Price Surveys" section.

Refiner prices of finished motor gasoline for resale and to end users are determined by EIA in a monthly survey of refiners and gas plant operators (Form EIA-782A). The prices do not include any federal, state, or local taxes paid at the time of sale. Estimates of prices prior to January 1983 are based on Form FEA-P302-M-1/EIA-460, "Petroleum Industry Monthly Report for Product Prices," and also exclude all federal, state, or local taxes paid at the time of sale. Sales for resale are those made to purchasers who are other-than-ultimate consumers. Sales to end users are sales made directly to the consumer of the product, including bulk consumers (such as agriculture, industry, and utilities) and residential and commercial consumers.

Note 6. Historical Petroleum Prices. Starting in January 1983, Form EIA-782, "Monthly Petroleum Product Sales Report," replaced 10 previous surveys. Every attempt was made to continue the most important price series. However, prices published through December 1982 and those published since January 1983 do not necessarily form continuous data series due to changes in survey forms, definitions, instructions, populations, samples, processing systems, and statistical procedures. To provide historical data, continuous series were generated for annual data 1978–1982 and for monthly data 1981 and 1982 by estimating the prices that would have been published had Form EIA-782 survey and system been in operation at that time. This form of estimation was performed after detailed adjustment was made for product and sales type matching and for discontinuity due to other factors. An important difference between the previous and present prices is the distinction between wholesale and resale and between retail and end user. The resale category continues to include sales among resellers. However, sales to bulk consumers, such as utility, industrial, and commercial accounts previously included in the wholesale category, are now counted as made to end users. The end-user category continues to include retail sales through company-owned and operated outlets but also includes sales to the bulk consumers such as agriculture, industry, and electric utilities. Additional information may be found in "Estimated Historic Time Series for the EIA-782," a feature article by Paula Weir, printed in the December 1983 [3] *Petroleum Marketing Monthly*, published by EIA.

Note 7. Electricity Retail Prices. Average annual retail prices of electricity have the following plant coverage: Through 1979, annual data are for Classes A and B privately owned electric utilities only. For 1980–1982, annual data are for selected Class A utilities whose electric operating revenues were $100 million or more during the previous year. For 1983, annual data are for a selected sample of electric utilities. Beginning in 1984, data are for a census of electric utilities. Beginning in 1996, annual data also include energy service providers selling to retail customers.

Average monthly retail prices of electricity have the following plant coverage: Through 1985, monthly data are derived from selected privately owned electric utilities and, therefore, are not national averages. Beginning in 1986, monthly data are based on a sample of publicly and privately owned electric utilities. Beginning in 1996, monthly data also include energy service providers selling to retail customers.

Preliminary monthly data are from Form EIA-861M (formerly Form EIA-826), "Monthly Electric Power Industry Report," which is a monthly collection of data from approximately 450 of the largest publicly and privately owned electric utilities as well as a census of energy service providers with retail sales in deregulated states; a model is then applied to the collected data to estimate for the entire universe of U.S. electric utilities. Preliminary annual data are the sum of the monthly revenues divided by the sum of the monthly sales. When final annual data become available each year from Form EIA-861, "Annual Electric Power Industry Report," their ratios to the preliminary Form EIA-861M values are used to derive adjusted final monthly values.

Note 8. Natural Gas Prices. Natural gas prices are intended to include all taxes. Instructions on the data collection forms specifically direct that all federal, state, and local taxes, surcharges, and/or adjustments billed to consumers are to be included. However, sales and other taxes itemized on more than 3,000 consumers' bills are sometimes excluded by the reporting utilities. Delivered-to-consumers prices for 1987 forward represent natural gas delivered and sold to residential, commercial, industrial, vehicle fuel, and electric power consumers. They do not include the price of natural

gas delivered on behalf of third parties to residential, commercial, industrial, and vehicle fuel customers except for certain states in the residential and commercial sectors for 2002 forward. Volumes of natural gas delivered on behalf of third parties are included in the consumption data shown in Table 4.3. Additional information is available in EIA, *Natural Gas Monthly*, Appendix C.

Table 9.1 Sources

Domestic First Purchase Price

1949–1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), Minerals Yearbook, "Crude Petroleum and Petroleum Products" chapter.

1977: Federal Energy Administration, based on Form FEA-P124, "Domestic Crude Oil Purchaser's Monthly Report."

1978–2009: U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly,* April 2022, Table 1.

F.O.B. and Landed Cost of Imports

October 1973–September 1977: Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report."

October–December 1977: EIA, Form FEA-F701-M-0, "Transfer Pricing Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly*, April 2022, Table 1.

Refiner Acquisition Cost

1968–1973: EIA estimates. The cost of domestic crude oil was derived by adding estimated transportation costs to the reported average domestic first purchase price. The cost of imported crude oil was derived by adding an estimated ocean transport cost based on the published "Average Freight Rate Assessment" to the average "Free Alongside Ship" value published by the U.S. Census Bureau.

1974–1976: DOI, BOM, *Minerals Yearbook*, "Crude Petroleum and Petroleum Products" chapter.

1977: January–September, FEA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report."

1977: October–December, EIA, based on Form FEA-P110-M-1, "Refiners' Monthly Cost Allocation Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 1.

2010 forward: EIA, *Petroleum Marketing Monthly*, April 2022, Table 1.

Table 9.2 Sources

October 1973–September 1977: Federal Energy Administration, Form FEA-F701-M-0, "Transfer Pricing Report."

October 1977–December 1977: U.S. Energy Information Administration (EIA), Form FEA-F701-M-0, "Transfer Pricing Report."

1978–2009: EIA, *Petroleum Marketing Annual* 2009, Table 21.

2010 forward: EIA, *Petroleum Marketing Monthly*, April 2022, Table 21.

Table 9.9 Sources

1973–September 1977: Federal Power Commission, Form FPC-423, "Monthly Report of Cost and Quality of Fuels for

Electric Utility Plants." October 1977–December 1977: Federal Energy Regulatory Commission, Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants."

1978 and 1979: U.S. Energy Information Administration (EIA), Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants."

1980–1989: EIA, *Electric Power Monthly*, July 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 2022, 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 2022, 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 2022, 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 2022, 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).

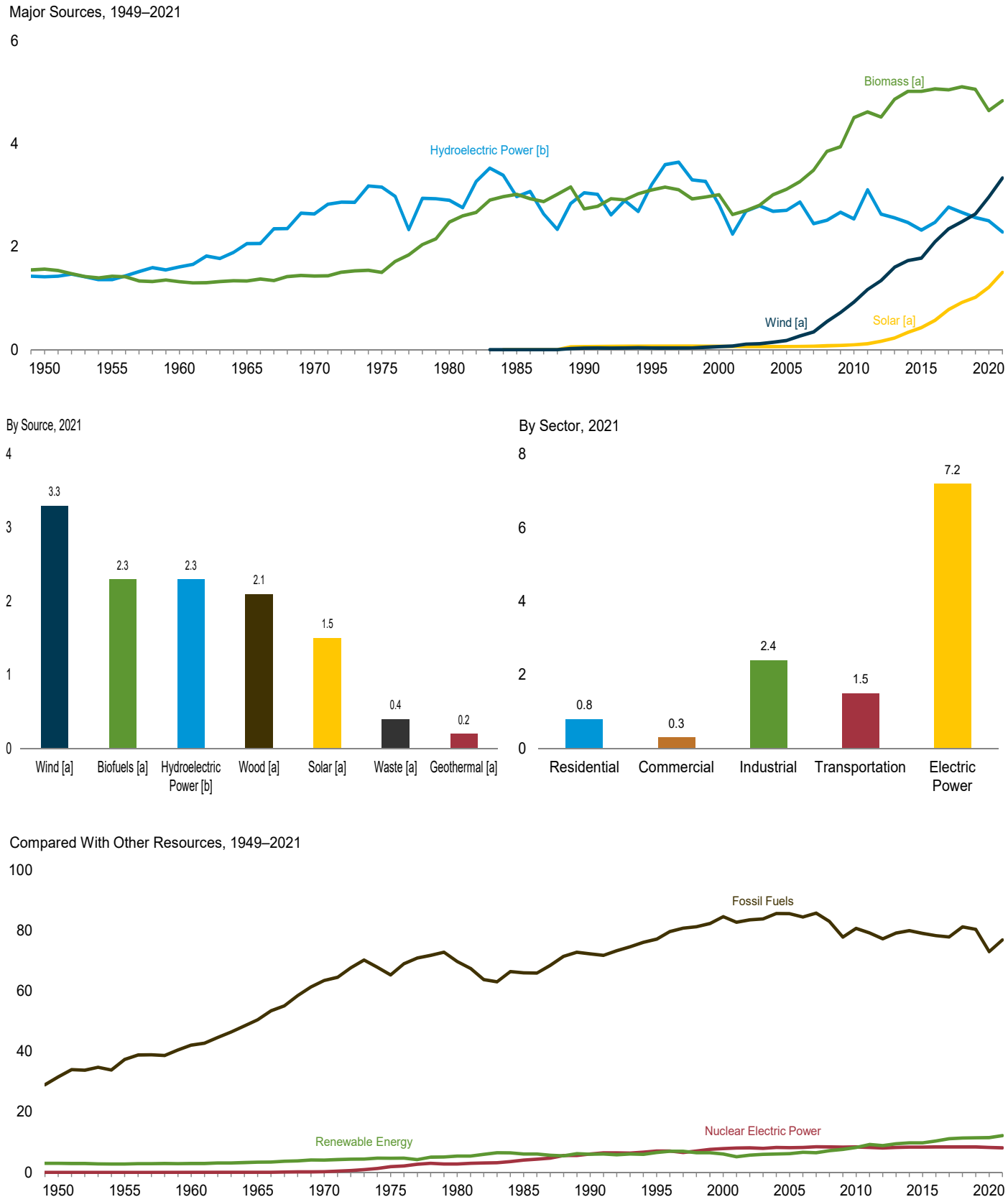
2002–2007: Calculated by EIA as the quantity of natural gas receipts by electric utilities and independent power producers reported on Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Utility Plants," and EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report," 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**	**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**	**64**	**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**	**6,234**
2006 Total	**2,099**	**716**	**3,212**	**6,587**	**2,869**	**181**	**61**	**264**	**2,099**	**397**	**766**	**3,262**	**6,637**
2007 Total	**2,089**	**970**	**3,472**	**6,511**	**2,446**	**186**	**66**	**341**	**2,089**	**413**	**983**	**3,485**	**6,523**
2008 Total	**2,059**	**1,374**	**3,868**	**7,192**	**2,511**	**192**	**75**	**546**	**2,059**	**435**	**1,357**	**3,851**	**7,175**
2009 Total	**1,935**	**1,570**	**3,957**	**7,626**	**2,669**	**200**	**79**	**721**	**1,935**	**452**	**1,553**	**3,940**	**7,609**
2010 Total	**2,217**	**1,868**	**4,553**	**8,315**	**2,539**	**208**	**93**	**923**	**2,217**	**468**	**1,821**	**4,506**	**8,268**
2011 Total	**2,213**	**2,037**	**4,712**	**9,310**	**3,103**	**212**	**114**	**1,168**	**2,213**	**462**	**1,941**	**4,616**	**9,214**
2012 Total	**2,151**	**1,936**	**4,554**	**8,896**	**2,629**	**212**	**162**	**1,340**	**2,151**	**467**	**1,899**	**4,517**	**8,860**
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**	**2,467**	**214**	**337**	**1,728**	**2,401**	**516**	**2,099**	**5,016**	**9,762**
2015 Total	**2,312**	**2,201**	**5,031**	**9,768**	**2,321**	**212**	**427**	**1,777**	**2,312**	**518**	**2,185**	**5,015**	**9,752**
2016 Total	**2,299**	**2,329**	**5,132**	**10,480**	**2,472**	**210**	**570**	**2,096**	**2,227**	**503**	**2,333**	**5,063**	**10,411**
2017 Total	**2,264**	**2,407**	**5,166**	**11,263**	**2,767**	**210**	**777**	**2,343**	**2,185**	**495**	**2,364**	**5,045**	**11,142**
2018 Total	**2,356**	**2,471**	**5,314**	**11,584**	**2,663**	**209**	**915**	**2,482**	**2,262**	**487**	**2,355**	**5,105**	**11,374**
2019 Total	**2,341**	**2,432**	**5,215**	**11,632**	**2,564**	**201**	**1,017**	**2,635**	**2,237**	**442**	**2,376**	**5,056**	**11,473**
2020 January	189	213	442	982	215	15	63	247	182	40	198	419	960
February	179	196	412	986	227	16	76	255	171	36	186	394	968
March	188	193	420	996	209	18	91	257	178	39	172	389	964
April	175	121	333	923	203	17	109	261	167	37	121	325	916
May	180	146	364	1,022	263	17	129	249	172	37	155	365	1,023
June	175	174	383	1,039	246	16	129	265	165	34	183	382	1,038
July	178	191	404	995	235	17	139	201	171	36	188	395	986
August	182	189	407	955	204	17	125	202	173	36	186	395	944
September	175	185	395	885	164	17	106	203	165	34	185	384	874
October	180	192	408	939	165	17	96	253	171	36	181	388	919
November	179	196	411	981	183	17	78	291	170	36	187	393	963
December	190	199	427	985	189	18	70	281	179	38	194	411	969
Total	**2,171**	**2,194**	**4,805**	**11,687**	**2,503**	**203**	**1,212**	**2,965**	**2,065**	**440**	**2,136**	**4,640**	**11,523**
2021 January	190	189	417	1,006	226	17	78	267	181	38	168	388	977
February	170	151	355	882	190	16	86	236	161	34	152	347	875
March	187	193	418	1,097	189	16	123	350	176	38	194	408	1,087
April	176	185	397	1,041	168	17	141	317	167	36	184	387	1,031
May	188	205	430	1,101	200	17	159	294	179	37	206	422	1,093
June	185	200	418	1,036	211	18	156	233	174	34	199	407	1,025
July	191	207	433	991	194	18	157	189	183	36	202	421	979
August	190	193	418	1,008	184	17	154	235	179	35	198	412	1,002
September	184	183	402	970	158	17	142	252	173	35	185	393	961
October	182	214	431	1,011	158	17	120	285	174	35	213	422	1,002
November	178	216	429	1,044	179	17	102	316	166	35	205	406	1,021
December	R 186	224	R 448	R 1,133	225	18	85	357	174	38	209	422	1,106
Total	**R 2,207**	**2,359**	**R 4,998**	**R 12,320**	**2,283**	**206**	**1,501**	**3,332**	**2,087**	**431**	**2,316**	**4,835**	**12,157**
2022 January	185	214	436	1,130	237	19	103	335	175	37	188	400	1,093

[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, includes production of renewable diesel fuel. Beginning in 2014, 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. • 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**	**1**	**3**	**(s)**	**–**	**66**	**28**	**(s)**	**94**	**98**
1995 Total	**7**	**63**	**520**	**589**	**1**	**5**	**(s)**	**–**	**72**	**40**	**(s)**	**113**	**119**
2000 Total	**9**	**58**	**420**	**486**	**1**	**8**	**1**	**–**	**71**	**47**	**(s)**	**119**	**128**
2005 Total	**16**	**50**	**430**	**496**	**1**	**14**	**2**	**–**	**70**	**34**	**1**	**105**	**122**
2006 Total	**18**	**53**	**380**	**451**	**1**	**14**	**3**	**–**	**65**	**36**	**1**	**103**	**120**
2007 Total	**22**	**55**	**420**	**497**	**1**	**14**	**4**	**–**	**70**	**31**	**2**	**103**	**122**
2008 Total	**26**	**58**	**470**	**555**	**1**	**15**	**6**	**–**	**73**	**34**	**2**	**109**	**131**
2009 Total	**33**	**60**	**504**	**597**	**1**	**17**	**9**	**(s)**	**73**	**36**	**3**	**112**	**138**
2010 Total	**37**	**65**	**541**	**642**	**1**	**19**	**13**	**(s)**	**72**	**36**	**3**	**111**	**143**
2011 Total	**40**	**71**	**524**	**635**	**(s)**	**20**	**22**	**(s)**	**69**	**43**	**3**	**115**	**157**
2012 Total	**40**	**79**	**438**	**557**	**(s)**	**20**	**36**	**1**	**61**	**45**	**3**	**108**	**165**
2013 Total	**40**	**91**	**572**	**703**	**(s)**	**20**	**42**	**1**	**70**	**47**	**3**	**120**	**182**
2014 Total	**40**	**109**	**579**	**728**	**(s)**	**20**	**52**	**1**	**76**	**47**	**4**	**127**	**200**
2015 Total	**40**	**128**	**513**	**681**	**(s)**	**20**	**57**	**1**	**79**	**47**	**[k] 26**	**152**	**230**
2016 Total	**40**	**162**	**445**	**646**	**2**	**20**	**62**	**1**	**84**	**48**	**26**	**158**	**242**
2017 Total	**40**	**193**	**430**	**663**	**2**	**20**	**76**	**1**	**84**	**48**	**25**	**156**	**255**
2018 Total	**40**	**221**	**525**	**785**	**2**	**20**	**94**	**2**	**84**	**47**	**25**	**156**	**274**
2019 Total	**40**	**251**	**546**	**837**	**2**	**24**	**103**	**2**	**84**	**39**	**26**	**149**	**279**
2020 January	3	16	37	56	(s)	2	7	(s)	7	3	2	13	22
February	3	18	35	56	(s)	2	8	(s)	7	3	2	12	22
March	3	23	37	64	(s)	2	10	(s)	7	3	2	12	25
April	3	26	36	66	(s)	2	11	(s)	7	3	1	11	24
May	3	30	37	70	(s)	2	12	(s)	7	3	2	12	27
June	3	30	36	69	(s)	2	12	(s)	7	3	2	12	27
July	3	30	37	71	(s)	2	12	(s)	7	3	2	13	27
August	3	29	37	70	(s)	2	12	(s)	7	3	2	13	27
September	3	26	36	65	(s)	2	11	(s)	7	3	2	12	25
October	3	23	37	64	(s)	2	9	(s)	7	3	2	12	24
November	3	19	36	58	(s)	2	7	(s)	7	3	2	12	22
December	3	17	37	58	(s)	2	7	(s)	7	3	2	12	22
Total	**40**	**286**	**441**	**767**	**2**	**24**	**118**	**1**	**83**	**38**	**26**	**147**	**292**
2021 January	3	18	39	61	(s)	2	8	(s)	7	3	2	12	23
February	3	19	36	58	(s)	2	8	(s)	6	3	2	11	22
March	3	27	39	70	NM	2	12	(s)	7	3	2	12	26
April	3	31	38	72	(s)	2	13	(s)	7	3	2	12	27
May	3	34	39	77	NM	2	14	(s)	7	3	3	12	29
June	3	35	38	76	NM	2	14	(s)	7	3	3	12	29
July	3	35	39	78	NM	2	15	(s)	7	3	3	13	30
August	3	33	39	76	NM	2	14	(s)	7	3	3	13	29
September	3	29	38	71	(s)	2	13	(s)	7	3	2	12	27
October	3	26	39	68	NM	2	11	(s)	7	3	3	12	26
November	3	22	38	64	NM	2	9	(s)	7	3	2	12	23
December	3	19	39	62	(s)	2	8	(s)	7	3	2	13	23
Total	**40**	**329**	**464**	**832**	**2**	**24**	**138**	**1**	**83**	**35**	**29**	**147**	**313**
2022 January	3	22	41	66	(s)	2	9	(s)	7	3	2	13	24

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

[b] Geothermal heat pump and direct use energy.

[c] Distributed (small-scale) solar photovoltaic (PV) electricity generation in the residential sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6) and distributed solar thermal energy in the residential, commercial, and industrial sectors. See Table 10.5.

[d] Wood and wood-derived fuels.

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

[f] Geothermal heat pump and direct use energy. Beginning in December 2018, also includes geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6).

[g] Solar photovoltaic (PV) electricity net generation in the commercial sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), both utility-scale and distributed (small-scale). See Table 10.5.

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

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

[j] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the commercial sector.

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

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

Notes: • Residential sector data are estimates. Commercial sector data are estimates, except for hydroelectric power, wind, and biomass waste. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 10.2b Renewable Energy Consumption: Industrial and Transportation Sectors

(Trillion Btu)

	Industrial Sector[a]										Transportation Sector			
					Biomass						Biomass			
	Hydroelectric Power[b]	Geothermal[c]	Solar[d]	Wind[e]	Wood[f]	Waste[g]	Fuel Ethanol[h,i]	Losses and Co-products[j]	Total	Total	Fuel Ethanol[i,k]	Biodiesel[l]	Other[m]	Total
1950 Total	**69**	**NA**	**NA**	**NA**	**532**	**NA**	**NA**	**NA**	**532**	**602**	**NA**	**NA**	**NA**	**NA**
1955 Total	**38**	**NA**	**NA**	**NA**	**631**	**NA**	**NA**	**NA**	**631**	**669**	**NA**	**NA**	**NA**	**NA**
1960 Total	**39**	**NA**	**NA**	**NA**	**680**	**NA**	**NA**	**NA**	**680**	**719**	**NA**	**NA**	**NA**	**NA**
1965 Total	**33**	**NA**	**NA**	**NA**	**855**	**NA**	**NA**	**NA**	**855**	**888**	**NA**	**NA**	**NA**	**NA**
1970 Total	**34**	**NA**	**NA**	**NA**	**1,019**	**NA**	**NA**	**NA**	**1,019**	**1,053**	**NA**	**NA**	**NA**	**NA**
1975 Total	**32**	**NA**	**NA**	**NA**	**1,063**	**NA**	**NA**	**NA**	**1,063**	**1,096**	**NA**	**NA**	**NA**	**NA**
1980 Total	**33**	**NA**	**NA**	**NA**	**1,600**	**NA**	**NA**	**NA**	**1,600**	**1,633**	**NA**	**NA**	**NA**	**NA**
1985 Total	**33**	**NA**	**NA**	**NA**	**1,645**	**230**	**1**	**42**	**1,918**	**1,951**	**50**	**NA**	**NA**	**50**
1990 Total	**31**	**2**	**(s)**	**–**	**1,442**	**192**	**1**	**49**	**1,684**	**1,717**	**60**	**NA**	**NA**	**60**
1995 Total	**55**	**3**	**(s)**	**–**	**1,652**	**195**	**2**	**86**	**1,934**	**1,992**	**112**	**NA**	**NA**	**112**
2000 Total	**42**	**4**	**(s)**	**–**	**1,636**	**145**	**1**	**99**	**1,881**	**1,928**	**135**	**NA**	**NA**	**135**
2005 Total	**32**	**4**	**(s)**	**–**	**1,452**	**148**	**7**	**227**	**1,834**	**1,871**	**327**	**12**	**NA**	**339**
2006 Total	**29**	**4**	**1**	**–**	**1,472**	**130**	**10**	**280**	**1,892**	**1,926**	**442**	**33**	**NA**	**475**
2007 Total	**16**	**5**	**1**	**–**	**1,413**	**145**	**10**	**369**	**1,937**	**1,958**	**557**	**45**	**NA**	**602**
2008 Total	**17**	**5**	**1**	**–**	**1,339**	**143**	**12**	**519**	**2,012**	**2,035**	**786**	**39**	**NA**	**825**
2009 Total	**18**	**4**	**2**	**–**	**1,178**	**154**	**13**	**603**	**1,948**	**1,973**	**894**	**41**	**NA**	**935**
2010 Total	**16**	**4**	**3**	**–**	**1,409**	**168**	**17**	**727**	**2,320**	**2,344**	**1,041**	**33**	**NA**	**1,075**
2011 Total	**17**	**4**	**5**	**(s)**	**1,438**	**165**	**17**	**756**	**2,375**	**2,401**	**1,045**	**113**	**8**	**1,166**
2012 Total	**22**	**4**	**8**	**(s)**	**1,462**	**159**	**17**	**711**	**2,349**	**2,383**	**1,045**	**115**	**10**	**1,169**
2013 Total	**33**	**4**	**9**	**(s)**	**1,489**	**187**	**18**	**714**	**2,407**	**2,454**	**1,072**	**182**	**39**	**1,292**
2014 Total	**12**	**4**	**11**	**1**	**1,495**	**190**	**14**	**766**	**2,466**	**2,494**	**1,093**	**181**	**40**	**1,314**
2015 Total	**13**	**4**	**14**	**(s)**	**1,476**	**190**	**[i] 18**	**791**	**2,474**	**2,506**	**[i] 1,110**	**191**	**50**	**1,351**
2016 Total	**12**	**4**	**19**	**1**	**1,474**	**174**	**18**	**821**	**2,487**	**2,523**	**1,143**	**266**	**59**	**1,469**
2017 Total	**13**	**4**	**22**	**1**	**1,442**	**168**	**18**	**847**	**2,475**	**2,515**	**1,156**	**253**	**65**	**1,474**
2018 Total	**10**	**4**	**24**	**1**	**1,432**	**165**	**19**	**855**	**2,471**	**2,511**	**1,152**	**243**	**60**	**1,456**
2019 Total	**9**	**4**	**28**	**1**	**1,407**	**156**	**19**	**835**	**2,416**	**2,459**	**1,162**	**231**	**104**	**1,497**
2020 January	1	(s)	2	(s)	120	14	2	74	210	213	95	17	8	120
February	1	(s)	2	(s)	113	13	2	68	196	199	87	18	9	115
March	1	(s)	3	(s)	118	14	1	65	198	202	76	19	9	103
April	1	(s)	3	(s)	111	13	1	38	164	168	54	19	8	81
May	1	(s)	3	(s)	114	14	1	47	176	180	78	19	8	105
June	1	(s)	3	1	108	12	2	57	180	184	90	20	12	121
July	1	(s)	3	1	110	13	2	64	188	193	89	23	9	121
August	1	(s)	3	(s)	111	13	2	63	189	193	88	21	9	119
September	(s)	(s)	3	1	108	12	2	62	183	187	88	22	10	119
October	(s)	(s)	3	1	112	14	2	66	193	198	84	21	6	111
November	1	(s)	2	1	112	14	2	66	193	197	87	20	11	117
December	1	(s)	2	1	118	14	2	67	200	204	88	22	13	124
Total	**9**	**4**	**31**	**5**	**1,356**	**160**	**19**	**735**	**2,269**	**2,319**	**1,004**	**239**	**112**	**1,355**
2021 January	1	(s)	2	1	117	15	1	64	197	201	78	13	10	101
February	1	(s)	2	1	103	13	1	51	168	171	73	15	10	98
March	1	(s)	3	1	112	14	2	65	193	198	93	19	13	125
April	1	(s)	3	1	110	14	2	62	187	192	87	18	13	118
May	1	(s)	4	1	117	14	2	69	202	207	99	19	15	133
June	1	(s)	4	1	111	12	2	68	193	198	97	18	13	127
July	1	(s)	4	(s)	119	12	2	69	202	207	99	18	11	128
August	1	(s)	4	1	113	13	2	64	192	197	96	18	15	129
September	1	(s)	3	(s)	112	12	2	62	188	192	91	18	10	119
October	1	(s)	3	1	111	14	2	71	198	203	100	19	18	138
November	1	(s)	2	1	107	14	2	71	194	198	95	17	17	129
December	1	(s)	2	1	110	14	2	73	199	204	96	19	18	132
Total	**8**	**4**	**35**	**9**	**1,342**	**160**	**21**	**789**	**2,313**	**2,369**	**1,105**	**210**	**162**	**1,477**
2022 January	1	(s)	2	(s)	110	14	2	71	197	200	86	11	17	113

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

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

[c] Geothermal heat pump and direct use energy.

[d] Solar photovoltaic (PV) electricity net generation in the industrial sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), both utility-scale and distributed (small-scale). See Table 10.5.

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

[f] Wood and wood-derived fuels.

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

[h] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10, consumed by the industrial sector.

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

[j] Losses and co-products from the production of fuel ethanol and biodiesel. Does not include natural gas, electricity, and other non-biomass energy used in the production of fuel ethanol and biodiesel—these are included in the industrial sector consumption statistics for the appropriate energy source.

[k] The fuel ethanol (minus denaturant) portion of motor fuels, such as E10 and E85, consumed by the transportation sector.

[l] Although there is biodiesel use in other sectors, all biodiesel consumption is assigned to the transportation sector.

[m] Renewable diesel fuel and other biofuels consumption. Although there is renewable diesel fuel and other biofuels use in other sectors, all consumption is assigned to the transportation sector.

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

Notes: • Industrial sector data are estimates, except for hydroelectric power in 1949–1978 and 1989 forward, and wind. Transportation sector data are estimates, except for biodiesel beginning in 2012. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: See end of section.

Table 10.2c Renewable Energy Consumption: Electric Power Sector

(Trillion Btu)

	Hydro-electric Power[a]	Geo-thermal[b]	Solar[c]	Wind[d]	Biomass			Total
					Wood[e]	Waste[f]	Total	
1950 Total	**1,346**	**NA**	**NA**	**NA**	**5**	**NA**	**5**	**1,351**
1955 Total	**1,322**	**NA**	**NA**	**NA**	**3**	**NA**	**3**	**1,325**
1960 Total	**1,569**	**(s)**	**NA**	**NA**	**2**	**NA**	**2**	**1,571**
1965 Total	**2,026**	**2**	**NA**	**NA**	**3**	**NA**	**3**	**2,031**
1970 Total	**2,600**	**6**	**NA**	**NA**	**1**	**2**	**4**	**2,609**
1975 Total	**3,122**	**34**	**NA**	**NA**	**(s)**	**2**	**2**	**3,158**
1980 Total	**2,867**	**53**	**NA**	**NA**	**3**	**2**	**4**	**2,925**
1985 Total	**2,937**	**97**	**(s)**	**(s)**	**8**	**7**	**14**	**3,049**
1990 Total[g]	**3,014**	**161**	**4**	**29**	**129**	**188**	**317**	**3,524**
1995 Total	**3,149**	**138**	**5**	**33**	**125**	**296**	**422**	**3,747**
2000 Total	**2,768**	**144**	**5**	**57**	**134**	**318**	**453**	**3,427**
2005 Total	**2,670**	**147**	**6**	**178**	**185**	**221**	**406**	**3,406**
2006 Total	**2,839**	**145**	**5**	**264**	**182**	**231**	**412**	**3,665**
2007 Total	**2,430**	**145**	**6**	**341**	**186**	**237**	**423**	**3,345**
2008 Total	**2,494**	**146**	**9**	**546**	**177**	**258**	**435**	**3,630**
2009 Total	**2,650**	**146**	**9**	**721**	**180**	**261**	**441**	**3,967**
2010 Total	**2,521**	**148**	**12**	**923**	**196**	**264**	**459**	**4,064**
2011 Total	**3,085**	**149**	**17**	**1,167**	**182**	**255**	**437**	**4,855**
2012 Total	**2,606**	**148**	**40**	**1,339**	**190**	**262**	**453**	**4,586**
2013 Total	**2,529**	**151**	**83**	**1,600**	**207**	**262**	**470**	**4,833**
2014 Total	**2,454**	**151**	**165**	**1,726**	**251**	**279**	**530**	**5,026**
2015 Total	**2,308**	**148**	**228**	**1,776**	**244**	**281**	**525**	**4,985**
2016 Total	**2,459**	**146**	**328**	**2,094**	**224**	**281**	**505**	**5,531**
2017 Total	**2,752**	**147**	**486**	**2,341**	**229**	**280**	**510**	**6,235**
2018 Total	**2,651**	**145**	**576**	**2,480**	**221**	**275**	**496**	**6,348**
2019 Total	**2,553**	**134**	**635**	**2,632**	**201**	**248**	**448**	**6,402**
2020 January	214	10	39	246	17	22	39	548
February	226	10	48	255	16	20	37	576
March	208	12	55	257	16	22	37	570
April	202	12	69	261	13	20	33	577
May	262	12	84	249	14	21	34	641
June	245	11	84	264	14	19	33	637
July	234	11	92	200	16	20	36	574
August	204	11	81	201	18	20	38	536
September	163	11	67	203	15	19	34	478
October	164	11	62	252	14	19	34	523
November	183	12	50	290	15	19	35	569
December	188	12	44	280	17	21	37	561
Total	**2,492**	**135**	**777**	**2,958**	**185**	**242**	**428**	**6,789**
2021 January	225	12	50	266	17	20	38	591
February	189	11	56	235	16	19	35	526
March	188	11	81	350	18	21	38	668
April	168	11	94	317	13	19	32	621
May	199	12	107	294	16	20	36	647
June	210	12	103	233	17	19	37	595
July	193	12	104	188	18	20	38	536
August	183	12	103	234	19	20	39	571
September	157	12	97	251	16	20	36	552
October	157	11	81	284	17	19	35	567
November	179	11	69	315	14	19	33	606
December	224	12	55	356	17	21	38	685
Total	**2,272**	**138**	**999**	**3,322**	**199**	**236**	**435**	**7,166**
2022 January	236	13	70	335	17	19	36	689

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

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

[c] Solar photovoltaic (PV) and solar thermal electricity net generation in the electric power sector (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6). See Table 10.5.

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

[e] Wood and wood-derived fuels.

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

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

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

Notes: • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: Tables 7.2b, 7.4b, and A6.

Table 10.3 Fuel Ethanol Overview

	Feedstock[a]	Losses and Co-products[b]	Denaturant[c]	Production[d]			Trade[d] Net Imports[e]	Stocks[d,f]	Stock Change[d,g]	Consumption[d]			*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***
2006 Total	**683**	**280**	**2,326**	**116,294**	**4,884**	**414**	**17,408**	**8,760**	**3,197**	**130,505**	**5,481**	**465**	***453***
2007 Total	**907**	**368**	**3,105**	**155,263**	**6,521**	**553**	**10,457**	**10,535**	**1,775**	**163,945**	**6,886**	**584**	***569***
2008 Total	**1,286**	**518**	**4,433**	**221,637**	**9,309**	**790**	**12,610**	**14,226**	**3,691**	**230,556**	**9,683**	**822**	***800***
2009 Total	**1,503**	**602**	**5,688**	**260,424**	**10,938**	**928**	**4,720**	**16,594**	**2,368**	**262,776**	**11,037**	**937**	***910***
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 January	190	74	549	33,346	1,401	119	-3,282	23,884	1,532	28,532	1,198	101	*99*
February	174	67	482	30,511	1,281	109	-3,646	24,582	698	26,167	1,099	93	*91*
March	167	65	482	29,409	1,235	105	-3,657	27,505	2,923	22,829	959	81	*79*
April	97	37	R 307	17,003	714	60	-2,180	26,124	-1,381	16,204	681	58	*56*
May	120	47	383	21,157	889	75	-1,691	22,190	-3,934	23,400	983	83	*81*
June	147	57	473	25,959	1,090	92	-1,700	19,472	-2,718	26,977	1,133	96	*94*
July	163	63	531	28,708	1,206	102	-1,481	19,784	312	26,915	1,130	96	*93*
August	161	63	513	28,420	1,194	101	-1,453	20,142	358	26,609	1,118	95	*92*
September	158	61	498	27,779	1,167	99	-1,520	20,008	-134	26,393	1,109	94	*92*
October	168	65	546	29,614	1,244	105	-2,525	21,738	1,730	25,358	1,065	90	*88*
November	170	66	563	29,915	1,256	106	-2,105	23,502	1,765	26,044	1,094	93	*90*
December	171	66	564	30,108	1,265	107	-2,450	24,663	1,161	26,497	1,113	94	*92*
Total	**1,886**	**732**	**R 5,892**	**331,928**	**13,941**	**1,181**	**-27,692**	**24,663**	**2,311**	**301,925**	**12,681**	**1,074**	***1,050***
2021 January	164	63	491	28,847	1,212	103	-3,956	26,080	[i] 1,393	23,498	987	84	*82*
February	130	50	391	22,928	963	82	-2,437	24,715	-1,365	21,856	918	78	*76*
March	167	65	508	29,338	1,232	104	-3,190	22,836	-1,879	28,028	1,177	100	*97*
April	160	62	483	28,218	1,185	100	-2,695	22,344	-491	26,015	1,093	92	*90*
May	177	69	533	31,223	1,311	111	-1,686	22,013	-331	29,868	1,254	106	*104*
June	174	67	529	30,682	1,289	109	-1,663	21,966	-47	29,066	1,221	103	*101*
July	178	69	542	31,436	1,320	112	-884	22,660	693	29,859	1,254	106	*104*
August	165	64	470	29,076	1,221	103	-1,661	21,116	-1,544	28,959	1,216	103	*101*
September	160	62	466	28,087	1,180	100	-1,562	20,213	-902	27,428	1,152	98	*95*
October	183	71	522	32,165	1,351	114	-2,246	20,074	-139	30,057	1,262	107	*105*
November	184	71	549	32,384	1,360	115	-3,562	20,447	373	28,449	1,195	101	*99*
December	188	73	613	33,118	1,391	118	-2,814	22,011	1,563	28,740	1,207	102	*100*
Total	**2,030**	**786**	**6,095**	**357,502**	**15,015**	**1,271**	**-28,356**	**22,011**	**[i] -2,676**	**331,823**	**13,937**	**1,180**	***1,154***
2022 January	183	71	600	32,207	1,353	114	-2,696	25,759	3,749	25,763	1,082	92	*89*

[a] Total corn and other biomass inputs to the production of undenatured ethanol used for fuel ethanol.

[b] Losses and co-products from the production of fuel ethanol. Does not include natural gas, electricity, and other non-biomass energy used in the production of fuel ethanol—these are included in the industrial sector consumption statistics for the appropriate energy source.

[c] The amount of denaturant in fuel ethanol produced.

[d] Includes denaturant.

[e] Through 2009, data are for fuel ethanol imports only; data for fuel ethanol exports are not available. Beginning in 2010, data are for fuel ethanol imports minus fuel ethanol (including industrial alcohol) exports.

[f] Stocks are at end of period.

[g] A negative value indicates a decrease in stocks and a positive value indicates an increase.

[h] Consumption of fuel ethanol minus denaturant. Data for fuel ethanol minus denaturant are used to develop data for "Renewable Energy/Biomass" in Tables 10.1–10.2b, as well as in Sections 1 and 2.

[i] Derived from the preliminary 2020 stocks value (24,687 thousand barrels), not the final 2020 value (24,663 thousand barrels) that is shown under "Stocks."

R=Revised. 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]		
						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**
2006 Total	**32**	**(s)**	**5,963**	**250**	**32**	**1,105**	**856**	**250**	**NA**	**NA**	**6,213**	**261**	**33**
2007 Total	**63**	**1**	**11,662**	**490**	**62**	**3,455**	**6,696**	**-3,241**	**NA**	**NA**	**8,422**	**354**	**45**
2008 Total	**88**	**1**	**16,145**	**678**	**87**	**7,755**	**16,673**	**-8,918**	**NA**	**NA**	**7,228**	**304**	**39**
2009 Total	**67**	**1**	**12,281**	**516**	**66**	**1,906**	**6,546**	**-4,640**	**711**	**711**	**[g] 7,663**	**322**	**41**
2010 Total	**44**	**1**	**8,177**	**343**	**44**	**564**	**2,588**	**-2,024**	**672**	**-39**	**6,192**	**260**	**33**
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 January	17	(s)	3,196	134	17	336	31	305	4,273	367	3,134	132	17
February	17	(s)	3,139	132	17	302	89	213	4,220	-54	3,405	143	18
March	20	(s)	3,594	151	19	333	228	105	4,429	209	3,490	147	19
April	19	(s)	3,422	144	18	611	526	85	4,411	-18	3,525	148	19
May	20	(s)	3,630	152	19	475	496	-21	4,513	102	3,507	147	19
June	20	(s)	3,590	151	19	446	523	-77	4,318	-195	3,709	156	20
July	21	(s)	3,849	162	21	346	376	-30	3,879	-439	4,258	179	23
August	21	(s)	3,872	163	21	234	512	-278	3,563	-316	3,910	164	21
September	21	(s)	3,790	159	20	360	426	-66	3,221	-342	4,066	171	22
October	20	(s)	3,743	157	20	420	113	307	3,418	197	3,853	162	21
November	20	(s)	3,621	152	19	448	73	375	3,741	323	3,673	154	20
December	20	(s)	3,761	158	20	373	64	309	3,665	-76	4,146	174	22
Total	**235**	**3**	**43,207**	**1,815**	**232**	**4,684**	**3,458**	**1,226**	**3,665**	**-241**	**44,675**	**1,876**	**239**
2021 January	17	(s)	3,115	131	17	228	222	6	4,565	[i] 681	2,440	102	13
February	13	(s)	2,406	101	13	263	122	141	4,253	-312	2,859	120	15
March	18	(s)	3,371	142	18	361	267	94	4,116	-137	3,603	151	19
April	17	(s)	3,210	135	17	500	494	6	4,011	-105	3,320	139	18
May	19	(s)	3,537	149	19	316	585	-269	3,778	-233	3,501	147	19
June	18	(s)	3,241	136	17	446	646	-200	3,540	-238	3,279	138	18
July	18	(s)	3,336	140	18	357	489	-132	3,470	-71	3,275	138	18
August	18	(s)	3,325	140	18	287	548	-261	3,124	-345	3,409	143	18
September	16	(s)	2,990	126	16	418	374	44	2,889	-235	3,269	137	18
October	19	(s)	3,473	146	19	473	211	262	3,084	194	3,541	149	19
November	18	(s)	3,360	141	18	660	182	478	3,741	657	3,180	134	17
December	20	(s)	3,654	153	20	523	204	319	4,184	443	3,530	148	19
Total	**212**	**3**	**39,019**	**1,639**	**209**	**4,832**	**4,342**	**490**	**4,184**	**[i] 301**	**39,208**	**1,647**	**210**
2022 January	16	(s)	2,858	120	15	388	1,124	-736	4,337	152	1,970	83	11

[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 2020 stocks value (3,884 thousand barrels), not the final 2020 value (3,665 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

	Feed-stock[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 January	NA	NA	997	42	5	605	1,714	223	1,379	58	8
February	NA	NA	888	37	5	411	1,388	-326	1,625	68	9
March	NA	NA	1,077	45	6	452	1,431	43	1,486	62	8
April	NA	NA	920	39	5	664	1,557	126	1,458	61	8
May	NA	NA	1,105	46	6	505	1,741	184	1,426	60	8
June	NA	NA	1,267	53	7	615	1,536	-205	2,087	88	11
July	NA	NA	1,112	47	6	318	1,508	-28	1,458	61	8
August	NA	NA	1,046	44	6	435	1,379	-129	1,610	68	9
September	NA	NA	1,146	48	6	517	1,356	-23	1,686	71	9
October	NA	NA	601	25	3	617	1,426	70	1,148	48	6
November	NA	NA	1,168	49	6	645	1,387	-39	1,852	78	10
December	NA	NA	1,376	58	8	874	1,287	-100	2,350	99	13
Total	**NA**	**NA**	**12,702**	**533**	**70**	**6,658**	**1,287**	**-204**	**19,564**	**822**	**107**
2021 January	NA	NA	[e] 1,335	[e] 56	[e] 7	771	1,719	432	1,674	70	9
February	NA	NA	1,156	49	6	741	1,985	266	1,631	69	9
March	NA	NA	1,250	53	7	893	1,974	-11	2,154	90	12
April	NA	NA	1,205	51	7	1,013	1,942	-33	2,251	95	12
May	NA	NA	1,503	63	8	870	1,767	-175	2,548	107	14
June	NA	NA	1,315	55	7	1,092	1,935	168	2,239	94	12
July	NA	NA	1,706	72	9	549	2,300	365	1,890	79	10
August	NA	NA	1,679	71	9	597	2,063	-237	2,513	106	14
September	NA	NA	1,255	53	7	636	2,250	187	1,704	72	9
October	NA	NA	2,027	85	11	795	1,883	-367	3,190	134	18
November	NA	NA	2,255	95	12	890	2,107	223	2,921	123	16
December	NA	NA	2,720	114	15	493	2,353	246	2,967	125	16
Total	**NA**	**NA**	**19,407**	**815**	**107**	**9,340**	**2,353**	**1,066**	**27,681**	**1,163**	**152**
2022 January	NA	NA	2,632	111	14	632	2,710	357	2,907	122	16

[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

	Feed-stock[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 January	NA	NA	55	2	(s)	–	45	-5	60	3	(s)
February	NA	NA	55	2	(s)	–	43	-2	57	2	(s)
March	NA	NA	75	3	(s)	–	47	4	71	3	(s)
April	NA	NA	76	3	(s)	–	46	-1	77	3	(s)
May	NA	NA	56	2	(s)	–	48	2	54	2	(s)
June	NA	NA	60	3	(s)	–	46	-2	62	3	(s)
July	NA	NA	98	4	1	–	42	-4	102	4	1
August	NA	NA	59	2	(s)	–	41	-1	60	3	(s)
September	NA	NA	73	3	(s)	–	33	-8	81	3	(s)
October	NA	NA	29	1	(s)	–	30	-3	32	1	(s)
November	NA	NA	62	3	(s)	–	27	-3	65	3	(s)
December	NA	NA	62	3	(s)	–	27	0	62	3	(s)
Total	**NA**	**NA**	**761**	**32**	**4**	**–**	**27**	**-23**	**784**	**33**	**4**
2021 January[i]	NA	NA	[e] 181	[e] 8	[e] 1	–	136	109	72	3	(s)
February	NA	NA	172	7	1	–	151	15	157	7	1
March	NA	NA	165	7	1	–	131	-20	185	8	1
April	NA	NA	140	6	1	–	101	-29	169	7	1
May	NA	NA	127	5	1	–	119	18	109	5	1
June	NA	NA	91	4	(s)	–	74	-45	136	6	1
July	NA	NA	125	5	1	27	89	15	137	6	1
August	NA	NA	139	6	1	–	85	-5	144	6	1
September	NA	NA	98	4	1	–	67	-17	116	5	1
October	NA	NA	191	8	1	–	90	22	169	7	1
November	NA	NA	227	10	1	–	69	-21	248	10	1
December	NA	NA	261	11	1	–	83	14	247	10	1
Total	**NA**	**NA**	**1,916**	**80**	**10**	**27**	**83**	**56**	**1,887**	**79**	**10**
2022 January	NA	NA	308	13	2	–	211	129	179	8	1

[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. (s)=Less than 0.5 trillion Btu.

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)

	Distributed[a] Solar Energy[b]						Utility-Scale[c] Solar Energy[b]				
		Electricity[d]					Electricity[e]				
	Heat[f]	Residential Sector	Commercial Sector	Industrial Sector	Total	Total[g]	Commercial Sector[h]	Industrial Sector[i]	Electric Power Sector[j]	Total	Total[k]
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**(s)**	**(s)**	**(s)**
1990 Total	**55**	**(s)**	**(s)**	**(s)**	**(s)**	**55**	**–**	**–**	**4**	**4**	**59**
1995 Total	**63**	**(s)**	**(s)**	**(s)**	**1**	**63**	**–**	**–**	**5**	**5**	**68**
2000 Total	**57**	**(s)**	**1**	**(s)**	**1**	**58**	**–**	**–**	**5**	**5**	**64**
2005 Total	**49**	**1**	**2**	**(s)**	**4**	**53**	**–**	**–**	**6**	**6**	**58**
2006 Total	**51**	**2**	**3**	**1**	**5**	**56**	**–**	**–**	**5**	**5**	**61**
2007 Total	**53**	**2**	**4**	**1**	**7**	**60**	**–**	**–**	**6**	**6**	**66**
2008 Total	**54**	**4**	**6**	**1**	**12**	**66**	**(s)**	**–**	**9**	**9**	**75**
2009 Total	**55**	**5**	**9**	**2**	**16**	**70**	**(s)**	**–**	**9**	**9**	**79**
2010 Total	**56**	**9**	**13**	**3**	**25**	**81**	**(s)**	**(s)**	**12**	**12**	**93**
2011 Total	**58**	**13**	**21**	**5**	**39**	**97**	**1**	**(s)**	**17**	**18**	**114**
2012 Total	**59**	**20**	**35**	**8**	**62**	**121**	**1**	**(s)**	**40**	**41**	**162**
2013 Total	**61**	**31**	**39**	**9**	**78**	**139**	**3**	**(s)**	**83**	**86**	**225**
2014 Total	**62**	**47**	**49**	**11**	**107**	**169**	**4**	**(s)**	**165**	**168**	**337**
2015 Total	**63**	**65**	**53**	**14**	**132**	**195**	**4**	**(s)**	**228**	**232**	**427**
2016 Total	**64**	**98**	**57**	**19**	**174**	**237**	**5**	**(s)**	**328**	**333**	**570**
2017 Total	**65**	**128**	**71**	**22**	**221**	**286**	**5**	**(s)**	**486**	**491**	**777**
2018 Total	**65**	**156**	**89**	**24**	**269**	**334**	**5**	**(s)**	**576**	**581**	**915**
2019 Total	**65**	**186**	**98**	**27**	**311**	**376**	**5**	**1**	**635**	**641**	**1,017**
2020 January	4	12	6	2	20	24	(s)	(s)	39	39	63
February	4	14	7	2	23	27	(s)	(s)	48	49	76
March	5	18	9	3	30	35	(s)	(s)	55	56	91
April	6	20	10	3	33	39	(s)	(s)	69	69	109
May	7	23	11	3	37	44	1	(s)	84	85	129
June	7	23	11	3	37	44	1	(s)	84	85	129
July	7	24	12	3	39	46	1	(s)	92	93	139
August	7	22	11	3	37	43	1	(s)	81	82	125
September	6	20	10	3	33	39	(s)	(s)	67	68	106
October	5	18	9	3	29	34	(s)	(s)	62	62	96
November	4	15	7	2	24	28	(s)	(s)	50	51	78
December	4	13	7	2	22	26	(s)	(s)	44	45	70
Total	**65**	**221**	**113**	**31**	**364**	**430**	**5**	**1**	**777**	**783**	**1,212**
2021 January	4	15	8	2	24	28	(s)	(s)	50	50	78
February	4	16	8	2	26	30	(s)	(s)	56	56	86
March	5	22	11	3	36	41	(s)	(s)	81	81	123
April	6	25	12	3	40	46	1	(s)	94	95	141
May	7	27	13	3	44	51	1	(s)	107	108	159
June	7	28	14	3	45	52	1	(s)	103	104	156
July	7	28	14	4	46	53	1	(s)	104	105	157
August	7	26	14	3	43	50	1	(s)	103	104	154
September	6	23	12	3	39	44	1	(s)	97	97	142
October	5	21	10	3	34	39	(s)	(s)	81	81	120
November	4	18	8	2	29	33	(s)	(s)	69	69	102
December	4	15	8	2	25	29	(s)	(s)	55	56	85
Total	**65**	**264**	**133**	**34**	**430**	**495**	**6**	**1**	**999**	**1,006**	**1,501**
2022 January	4	18	9	2	29	33	(s)	(s)	70	70	103

[a] Data are estimates for distributed (small-scale) facilities (combined generator nameplate capacity less than 1 megawatt).

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Data are for utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] Solar photovoltaic (PV) electricity generation at distributed (small-scale) facilities connected to the electric power grid (converted to Btu by multiplying by the fossil fuels heat rate factors in Table A6).

[e] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (converted to Btu by multiplying by the fossil fuels heat rate factors in Table A6).

[f] Solar thermal direct use energy in the residential, commercial, and industrial sectors for all end uses, such as pool heating, hot water heating, and space heating.

[g] Data are the sum of "Distributed Solar Energy Heat" and "Distributed Solar Energy Electricity."

[h] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

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

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

[k] Data are the sum of "Distributed Solar Energy Total" and "Utility-Scale Solar Energy Total."

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

Notes: • Distributed (small-scale) solar energy data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: See end of section.

Table 10.6 Solar Electricity Net Generation

(Million Kilowatthours)

	Distributed[a] Solar Generation[b]				Utility-Scale[c] Solar Generation[b]				
	Residential Sector	Commercial Sector	Industrial Sector	Total	Commercial Sector[d]	Industrial Sector[e]	Electric Power Sector[f]	Total	Total
1985 Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**11**	**11**	**11**
1990 Total	**12**	**19**	**4**	**35**	**–**	**–**	**367**	**367**	**402**
1995 Total	**20**	**33**	**7**	**61**	**–**	**–**	**497**	**497**	**557**
2000 Total	**39**	**64**	**14**	**117**	**–**	**–**	**493**	**493**	**610**
2005 Total	**121**	**198**	**44**	**362**	**–**	**–**	**550**	**550**	**913**
2006 Total	**177**	**288**	**64**	**529**	**–**	**–**	**508**	**508**	**1,036**
2007 Total	**250**	**407**	**90**	**746**	**–**	**–**	**612**	**612**	**1,358**
2008 Total	**401**	**654**	**145**	**1,199**	**(s)**	**–**	**864**	**864**	**2,064**
2009 Total	**539**	**878**	**195**	**1,612**	**(s)**	**–**	**891**	**891**	**2,503**
2010 Total	**900**	**1,342**	**297**	**2,538**	**5**	**2**	**1,206**	**1,212**	**3,750**
2011 Total	**1,358**	**2,191**	**485**	**4,034**	**84**	**7**	**1,727**	**1,818**	**5,851**
2012 Total	**2,058**	**3,634**	**805**	**6,496**	**148**	**14**	**4,164**	**4,327**	**10,823**
2013 Total	**3,217**	**4,064**	**900**	**8,181**	**294**	**17**	**8,724**	**9,036**	**17,217**
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 January	1,385	736	192	2,313	32	4	4,423	4,459	6,771
February	1,578	833	212	2,623	37	6	5,518	5,561	8,184
March	2,049	1,082	292	3,424	46	7	6,297	6,350	9,774
April	2,310	1,189	316	3,816	54	8	7,858	7,921	11,736
May	2,610	1,309	349	4,267	66	12	9,576	9,653	13,921
June	2,610	1,305	354	4,269	66	12	9,576	9,654	13,923
July	2,680	1,355	370	4,405	69	13	10,528	10,610	15,015
August	2,540	1,301	358	4,199	59	11	9,246	9,315	13,514
September	2,241	1,159	321	3,722	50	9	7,673	7,732	11,454
October	2,008	1,011	291	3,310	43	8	7,034	7,085	10,395
November	1,657	804	226	2,687	36	6	5,725	5,767	8,453
December	1,512	774	203	2,489	28	5	5,058	5,091	7,580
Total	**25,179**	**12,859**	**3,484**	**41,522**	**586**	**101**	**88,511**	**89,199**	**130,721**
2021 January	1,668	859	215	2,743	35	7	5,683	5,726	8,468
February	1,768	930	229	2,927	35	7	6,370	6,413	9,340
March	2,484	1,276	328	4,089	57	12	9,204	9,272	13,361
April	2,822	1,416	356	4,593	65	14	10,751	10,830	15,423
May	3,117	1,535	392	5,044	70	15	12,207	12,292	17,336
June	3,166	1,552	394	5,111	64	14	11,764	11,841	16,952
July	3,202	1,602	404	5,208	68	14	11,833	11,915	17,123
August	3,012	1,540	392	4,944	65	15	11,734	11,813	16,757
September	2,666	1,374	354	4,394	60	17	11,029	11,106	15,501
October	2,340	1,196	318	3,854	51	15	9,177	9,243	13,096
November	2,069	947	247	3,264	47	14	7,813	7,874	11,137
December	1,739	894	220	2,853	37	11	6,307	6,355	9,208
Total	**30,054**	**15,121**	**3,849**	**49,025**	**654**	**153**	**113,871**	**114,678**	**163,703**
2022 January	2,085	985	232	3,301	41	13	7,950	8,004	11,305

[a] Data are estimates for solar photovoltaic (PV) electricity generation at small-scale facilities (combined generator nameplate capacity less than 1 megawatt) connected to the electric power grid.

[b] See "Photovoltaic Energy" and "Solar Thermal Energy" in Glossary.

[c] Solar photovoltaic (PV) and solar thermal electricity net generation at utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[d] Commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 7.

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

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

NA=Not available. – =No data reported. (s)=Less than 0.5 million kilowatthours.

Notes: • Distributed (small-scale) solar generation data for all years, and utility-scale solar energy data for the current two years, are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See http://www.eia.gov/totalenergy/data/monthly/#renewable (Excel and CSV files) for all available annual and monthly data beginning in 1984.

Sources: • **Distributed Solar Generation: 1989–2013—**Calculated as distributed solar energy consumption (see Table 10.5) divided by the total fossil fuels heat rate factors (see Table A6). **2014 forward—**U.S. Energy Information Administration (EIA), *Electric Power Monthly,* monthly reports, Tables 1.1, 1.2.C, 1.2.D, and 1.2.E. • **Utility-Scale Solar Generation: 1984–1988—**EIA, Form EIA-759, "Monthly Power Plant Report." **1989–1997:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-867, "Annual Nonutility Power Producer Report." **1998–2000:** EIA, Form EIA-759, "Monthly Power Plant Report," and Form EIA-860B, "Annual Electric Generator Report—Nonutility." **2001–2003:** EIA, Form EIA-906, "Power Plant Report." **2004–2007:** EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **2008 forward:** EIA, Form EIA-923, "Power Plant Operations Report." • **Total:** Calculated as distributed solar generation plus utility-scale solar generation.

Note. Renewable Energy Production and Consumption. In Tables 1.1, 1.3, and 10.1, renewable energy consumption consists of: conventional hydroelectricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6); geothermal electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and geothermal heat pump and geothermal direct use energy; solar thermal and photovoltaic electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6), and solar thermal direct use energy; wind electricity net generation (converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6); wood and wood-derived fuels consumption; biomass waste (municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass) consumption; fuel ethanol (minus denaturant), biodiesel, 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 "Distributed Solar Energy Consumption: Heat" (which includes solar thermal direct use energy in the residential, commercial, and industrial sectors) from Table 10.5 and "Distributed Solar Energy Consumption: Electricity, Residential Sector" from Table 10.5.

Residential Sector, Wood

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

1980–2008: Annual estimates are based on EIA, Form EIA-457, "Residential Energy Consumption Survey"; and National Oceanic and Atmospheric Administration regional heating degree-day data.

2009 forward: Annual estimates based on EIA, Form 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 total fossil fuels heat rate factors in Table A6.

Commercial Sector, Geothermal Heat Pump and Direct Use Energy

1989–2011: Annual estimates by EIA based on data from Oregon Institute of Technology, Geo-Heat Center.

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

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Commercial Sector, Geothermal Electricity Net Generation

December 2018 forward: Commercial sector geothermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Commercial Sector, Geothermal Total

1989–November 2018: Commercial sector geothermal total consumption is equal to commercial sector heat pump and direct use energy.

December 2018 forward: Commercial sector geothermal total consumption is the sum of the commercial sector values for geothermal heat pump and direct use energy, and geothermal electricity net generation.

Commercial Sector, Solar

1989 forward: Commercial sector solar consumption is the sum of the values for "Distributed Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector" from Table 10.5.

Commercial Sector, Wind

2009 forward: Commercial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Commercial Sector, Wood

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

1980–1983: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption 1980 –1983*, Table ES1.

1984: Annual estimate assumed by EIA to be equal to that of 1983.

1985–1988: Annual estimates interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual commercial sector combined-heat-and-power (CHP) wood consumption data are from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms. Annual estimates for commercial sector non-CHP wood consumption are based on EIA, Form EIA-871, "Commercial Buildings Energy Consumption Survey" (for 2014–2016, the annual estimates are based on commercial sector biomass consumption growth rates from EIA's *Annual Energy Outlook* data system; for 2017 forward, annual estimates are assumed by EIA to be equal to that of 2016). For 1989 forward, monthly estimates for commercial sector non-CHP wood consumption are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month. Commercial sector total wood consumption is the sum of commercial sector CHP and non-CHP wood consumption.

Commercial Sector, Biomass Waste

1989 forward: Table 7.4c.

Commercial Sector, Fuel Ethanol (Minus Denaturant)

1981 forward: The commercial sector share of motor gasoline consumption is equal to commercial sector motor gasoline consumption from Table 3.7a divided by motor gasoline product supplied from Table 3.5. Commercial sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the commercial sector share of motor gasoline consumption. Note that there is a discontinuity in this time

series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Commercial Sector, Total Biomass

1949–1980: Commercial sector total biomass consumption is equal to commercial sector wood consumption.

1981–1988: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood and fuel ethanol (minus denaturant).

1989 forward: Commercial sector total biomass consumption is the sum of the commercial sector consumption values for wood, waste, and fuel ethanol (minus denaturant).

Commercial Sector, Total Renewable Energy

1949–1988: Commercial sector total renewable energy consumption is equal to commercial sector total biomass consumption.

1989–2007: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, and total biomass.

2008: Commercial sector total renewable energy consumption is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, and total biomass.

2009 forward: Commercial sector total renewable energy is the sum of the commercial sector consumption values for conventional hydroelectric power, geothermal, solar, wind, and total biomass.

Table 10.2b Sources

Industrial Sector, Hydroelectric Power

1949 forward: Industrial sector conventional hydroelectricity net generation data from Table 7.2c are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Industrial Sector, Geothermal

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on data from Oregon Institute of Technology, Geo-Heat Center.

2010 forward: Annual estimates assumed by EIA to be equal to that of 2009.

(For 1989 forward, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

Industrial Sector, Solar

1989 forward: Industrial sector solar consumption is the sum of the values for "Distributed Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.5 and "Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector" from Table 10.6.

Industrial Sector, Wind

2011 forward: Industrial sector wind electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Industrial Sector, Wood

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

1980–1983: Annual estimates are from EIA, *Estimates of U.S. Wood Energy Consumption 1980 –1983,* Table ES1.

1984: Annual estimate is from EIA, *Estimates of U.S. Biofuels Consumption 1990*, Table 1.

1985 and 1986: Annual estimates interpolated by EIA.

1987: Annual estimate is from EIA, *Estimates of Biofuels Consumption in the United States During 1987*, Table 2.

1988: Annual estimate interpolated by EIA.

(For 1973–1988, monthly estimates are created by dividing the annual estimates by the number of days in the year and then multiplying by the number of days in the month.)

1989 forward: Monthly/annual industrial sector combined-heat-and-power (CHP) wood consumption data are from EIA, Form EIA-923, "Power Plant Operations Report," and predecessor forms. Annual estimates for industrial sector non-CHP wood consumption are based on EIA, Form EIA-846, "Manufacturing Energy Consumption Survey" (for 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.

Transportation Sector, Fuel Ethanol (Minus Denaturant)
1981 forward: The transportation sector share of motor gasoline consumption is equal to transportation sector motor gasoline consumption from Table 3.7c divided by motor gasoline product supplied from Table 3.5. Transportation sector fuel ethanol (minus denaturant) consumption is equal to fuel ethanol (minus denaturant) consumption from Table 10.3 multiplied by the transportation sector share of motor gasoline consumption. Note that there is a discontinuity in this time series between 2014 and 2015 due to a change in the method for allocating motor gasoline consumption to the end-use sectors; beginning in 2015, the commercial and industrial sector shares of fuel ethanol consumption are larger than in 2014, while the transportation sector share is smaller.

Transportation Sector, Biodiesel
2001 forward: Table 10.4a. Transportation sector biodiesel consumption is assumed to equal total biodiesel consumption.

Transportation Sector, Other Biomass
2011–2013: Transportation sector other biomass consumption is equal to renewable diesel fuel consumption from Table 10.4b.

2014 forward: Transportation sector other biomass consumption is the sum of renewable diesel fuel consumption from Table 10.4b and 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.

2001–2008: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant) and biodiesel.

2009 forward: Transportation sector total renewable energy consumption is the sum of the transportation sector consumption values for fuel ethanol (minus denaturant), biodiesel, renewable diesel fuel, and other biofuels.

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, *Petroleum Supply Monthly* (PSM), monthly reports, Table 1. Data in thousand barrels for net production of natural gasoline at renewable fuels and oxygenate plants are multiplied by -1; these data are converted to Btu by multiplying by 4.638 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.

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

Trade, Stocks, and Stock Change

1992–2020: EIA, PSA, annual reports, Table 1.

2021 and 2022: 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).

2009–2020: EIA, PSA, annual reports, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments.

2021 and 2022: 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: EIA, Form EIA-819, “Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene,” data for biodiesel.

2022: 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 and 2020: EIA, PSA, annual report, Tables 25 and 31, data for biodiesel.

2021: EIA, PSM, monthly reports, Tables 37 and 49, data for biodiesel.

2022: 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 2020–2021: 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.

2022: 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: EIA, Form EIA-819, “Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene,” data for renewable diesel fuel.

2022: 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: EIA, PSM, monthly reports, Table 37, data for “other renewable diesel fuel.”

2022: 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: 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 renewable diesel fuel.

2022: 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: EIA, Form EIA-819, "Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene." Data are for renewable heating oil, renewable jet fuel, renewable naphtha and gasoline, and "other renewable fuels and intermediate products."

2022: 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: EIA, PSM, monthly reports, Table 37, data for "other renewable fuels."

2022: 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: EIA, Form EIA-810, "Monthly Refinery Report," and Form EIA-815, "Monthly Bulk Terminal and Blender Report," data for "other renewable fuels and intermediate products"; Form EIA-819, "Monthly Report of Biofuels, Fuels from Non-Biogenic Wastes, Fuel Oxygenates, Isooctane, and Isooctene," data for renewable heating oil, renewable jet fuel, renewable naphtha and gasoline, and "other renewable fuels and intermediate products"; and unpublished revisions.

2022: 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

Distributed Solar Energy Consumption: Heat

Annual Data

1989–2009: Annual estimates by the U.S. Energy Information Administration (EIA) based on EIA, Form EIA-63A, "Annual Solar Thermal Collector/Reflector Shipments Report." Solar energy consumption by solar thermal non-electric applications (mainly in the residential sector, but with some in the commercial and industrial sectors) is based on assumptions about the stock of equipment in place and other factors.

2010 forward: Annual estimates based on commercial sector solar thermal growth rates from EIA's *Annual Energy Outlook* (AEO) data system. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: Monthly estimates for each year are obtained by allocating a given year's annual value to the months in that year. Each month's allocator is the average of that month's "Distributed Solar Energy Consumption: Electricity, Total" values in 2014 and 2015. The allocators, when rounded, are as follows: January—5%; February—6%; March—8%;

April—9%; May—10%; June—10%; July—10%; August—10%; September—9%; October—9%; November—7%; and December—7%.

2014 forward: Once all 12 months of "Distributed Solar Energy Consumption: Electricity, Total" data are available for a given year, they are used as allocators and applied to the annual estimate in order to derive monthly estimates for that year. Initial monthly estimates for the current year use the previous year's allocators.

Distributed Solar Energy Consumption: Electricity, Residential Sector

Beginning in 2014, monthly and annual data for residential sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.E. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates are calculated based on distributed (small-scale) solar electricity consumption in all sectors. Consumption is estimated using information on shipments of solar panels from EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," and assumptions about the stock of equipment in place and other factors. The growth rates are applied to more recent data to create historical annual estimates.

2004–2008: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

2009–2013: Annual growth rates based on residential sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Commercial Sector

Beginning in 2014, monthly and annual data for commercial sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.C. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Distributed Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Industrial Sector

Beginning in 2014, monthly and annual data for industrial sector distributed (small-scale) solar photovoltaic generation are from EIA, *Electric Power Monthly*, Table 1.2.D. Those data are converted to consumption data in Btu by multiplying by the total fossil fuels heat rate factors in MER Table A6.

Backcasts for earlier periods are developed as follows:

Annual Data

1989–2003: Annual growth rates based on EIA, Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report," are applied to more recent data to create historical annual estimates. (See "Distributed Solar Energy Consumption: Electricity, Residential Sector" sources above for details.)

2004–2013: Annual growth rates based on commercial sector solar photovoltaic growth rates from EIA's *Annual Energy Outlook* (AEO) data system are applied to more recent data to create historical annual estimates. (Annual estimates are subject to revision when a new AEO is released.)

Monthly Data

1989–2013: See "Distributed Solar Energy Consumption: Heat, Monthly Data."

Distributed Solar Energy Consumption: Electricity, Total

1989 forward: Distributed (small-scale) solar energy consumption for total electricity is the sum of the distributed solar energy consumption (for electricity) values for the residential, commercial, and industrial sectors.

Distributed Solar Energy Consumption: Total

1989 forward: Distributed (small-scale) solar energy consumption total is the sum of distributed solar energy consumption values for heat and total electricity.

Utility-Scale Solar Energy Consumption: Electricity, Commercial Sector

2008 forward: Commercial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Industrial Sector

2010 forward: Industrial sector solar photovoltaic and solar thermal electricity net generation data from EIA, Form EIA-923, "Power Plant Operations Report," are converted to Btu by multiplying by the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Electric Power Sector

1984 forward: Electric power sector solar photovoltaic and solar thermal electricity net generation data from Table 7.2b are converted to Btu by multiplying the total fossil fuels heat rate factors in Table A6.

Utility-Scale Solar Energy Consumption: Electricity, Total

1984 forward: Utility-scale solar energy consumption for total electricity is the sum of the utility-scale solar energy consumption (for electricity) values for the commercial, industrial, and electric power sectors.

Solar Energy Consumption: Total

1984 forward: Total solar energy consumption is the sum of the values for total distributed solar energy consumption and total utility-scale solar energy consumption.

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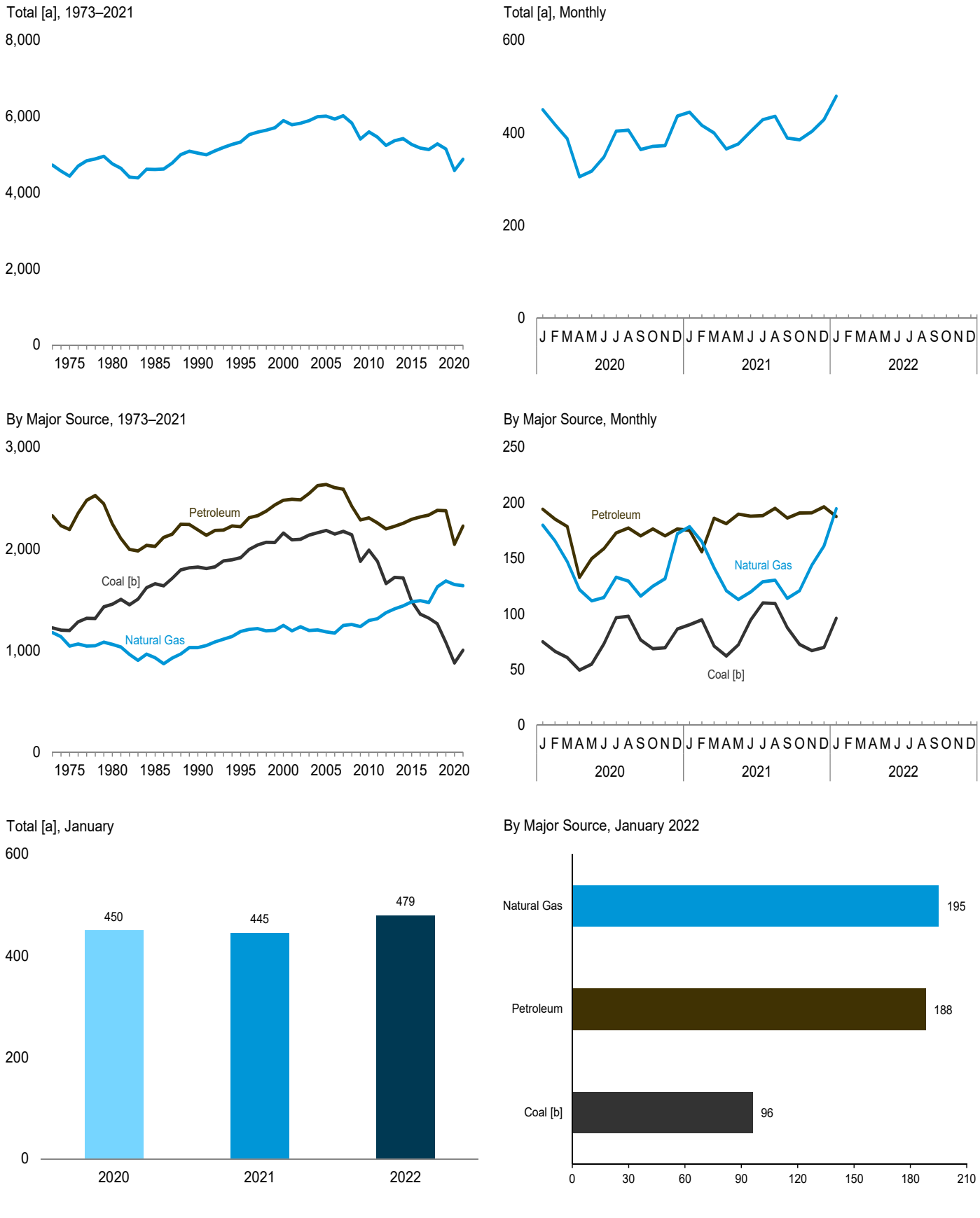
11. Environment

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**	**2,185**	**5,038**
1995 Total	**1,912**	**1,185**	**3**	**504**	**90**	**222**	**8**	**13**	**1,042**	**77**	**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**
2006 Total	**2,146**	**1,170**	**2**	**658**	**86**	**244**	**8**	**11**	**1,217**	**106**	**119**	**151**	**2,602**	**5,929**
2007 Total	**2,171**	**1,245**	**2**	**657**	**90**	**242**	**5**	**12**	**1,209**	**99**	**125**	**147**	**2,587**	**6,016**
2008 Total	**2,139**	**1,255**	**2**	**619**	**89**	**231**	**2**	**11**	**1,134**	**94**	**107**	**130**	**2,418**	**5,823**
2009 Total	**1,875**	**1,233**	**2**	**563**	**86**	**208**	**3**	**10**	**1,127**	**87**	**88**	**111**	**2,283**	**5,404**
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**	**75**	**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**	**2,251**	**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**	**2,313**	**R 5,170**
2017 Total	**1,318**	**1,471**	**1**	**591**	**85**	**251**	**1**	**10**	**1,131**	**71**	**59**	**130**	**2,331**	**5,131**
2018 Total	**1,263**	**1,626**	**2**	**626**	**98**	**255**	**1**	**10**	**1,131**	**73**	**55**	**127**	**2,377**	**5,277**
2019 Total	**1,078**	**1,684**	**2**	**621**	**R 107**	**261**	**1**	**9**	**1,128**	**67**	**47**	**131**	**R 2,374**	**R 5,146**
2020 January	75	180	(s)	52	11	21	(s)	1	90	5	3	11	194	450
February	66	166	(s)	49	9	19	(s)	1	87	5	3	12	185	418
March	61	147	(s)	51	10	18	(s)	1	80	5	1	13	179	387
April	49	122	(s)	44	7	8	(s)	1	59	3	1	10	133	305
May	55	112	(s)	44	7	8	(s)	1	74	4	1	11	150	317
June	73	115	(s)	43	6	10	(s)	1	82	4	3	10	159	R 348
July	97	133	(s)	46	7	12	(s)	1	87	5	5	10	173	403
August	98	129	(s)	47	7	13	(s)	1	88	7	4	10	177	R 406
September	77	116	(s)	47	8	11	(s)	1	85	6	5	8	170	364
October	69	125	(s)	52	9	13	(s)	1	86	4	4	8	176	371
November	69	132	(s)	48	10	14	(s)	1	79	6	3	9	170	372
December	86	172	(s)	50	13	15	(s)	1	80	5	3	10	R 176	436
Total	**875**	**1,648**	**1**	**572**	**104**	**161**	**1**	**8**	**977**	**58**	**36**	**123**	**R 2,043**	**R 4,577**
2021 January	90	178	(s)	52	13	14	(s)	1	79	5	4	8	175	R 445
February	R 95	165	(s)	47	10	13	(s)	1	72	3	3	7	156	416
March	71	141	(s)	53	10	15	(s)	1	88	4	4	11	186	R 400
April	62	121	(s)	50	8	16	(s)	1	88	4	2	12	181	365
May	72	113	(s)	51	8	17	(s)	1	94	6	4	10	190	376
June	94	120	(s)	50	8	18	(s)	1	92	6	5	9	188	R 403
July	110	129	(s)	48	7	19	(s)	1	96	4	5	9	188	428
August	109	130	(s)	51	8	20	(s)	1	94	7	5	10	195	R 436
September	R 88	114	(s)	51	8	18	(s)	1	89	5	5	9	186	R 389
October	R 73	121	(s)	51	8	18	(s)	1	92	5	6	11	191	385
November	67	144	(s)	53	10	18	(s)	1	89	5	6	8	191	403
December	70	161	(s)	51	12	19	(s)	1	92	6	6	9	196	R 428
Total	**R 1,001**	**1,637**	**1**	**607**	**110**	**205**	**1**	**8**	**1,064**	**60**	**54**	**113**	**R 2,224**	**R 4,872**
2022 January	96	195	(s)	53	13	18	(s)	1	82	5	5	10	188	479

[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.

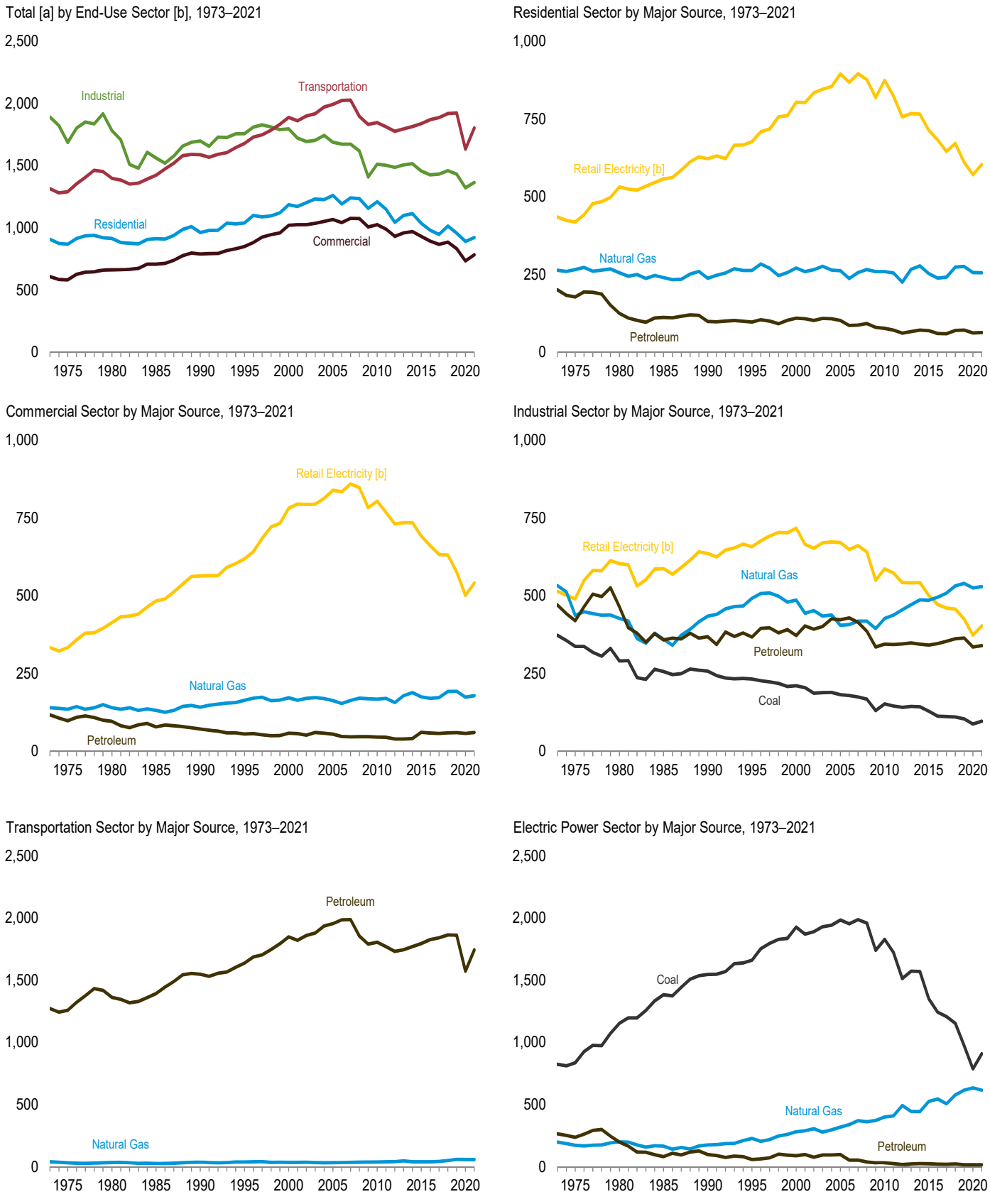
Notes: • Data are estimates for carbon dioxide emissions from energy consumption, plus the relatively small amount of emissions from the non-combustion use of fossil fuels. See "Section 11 Methodology and Sources" at end of section. • See "Carbon Dioxide" in Glossary. • See Note 1, "Emissions of Carbon 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 retail sales.

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				Retail 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**
2006 Total	**1**	**237**	**53**	**28**	**5**	**86**	**868**	**1,191**
2007 Total	**1**	**256**	**54**	**30**	**3**	**87**	**896**	**1,240**
2008 Total	**NA**	**266**	**56**	**35**	**2**	**92**	**877**	**1,234**
2009 Total	**NA**	**259**	**43**	**34**	**2**	**80**	**818**	**1,157**
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**	**671**	**1,015**
2019 Total	**NA**	**276**	**35**	**35**	**1**	**71**	**611**	**958**
2020 January	NA	45	4	5	(s)	9	48	102
February	NA	40	3	R 4	(s)	8	41	90
March	NA	29	3	R 3	(s)	R 6	37	R 72
April	NA	21	3	3	(s)	R 5	32	59
May	NA	13	3	2	(s)	5	37	55
June	NA	7	2	1	(s)	3	52	62
July	NA	6	1	1	(s)	2	73	82
August	NA	6	1	1	(s)	2	70	R 78
September	NA	7	2	1	(s)	3	50	61
October	NA	13	2	2	(s)	R 4	41	59
November	NA	24	3	3	(s)	6	38	68
December	NA	44	3	5	(s)	R 8	53	R 105
Total	**NA**	**256**	**30**	R **31**	**1**	R **62**	**571**	R **889**
2021 January	NA	48	4	R 5	(s)	R 9	56	114
February	NA	47	4	5	(s)	R 9	R 57	R 113
March	NA	31	4	4	(s)	7	41	80
April	NA	19	2	R 2	(s)	5	34	R 57
May	NA	12	2	2	(s)	4	39	55
June	NA	7	2	1	(s)	3	58	68
July	NA	6	1	1	(s)	2	72	80
August	NA	6	1	1	(s)	2	72	80
September	NA	6	2	1	(s)	3	54	63
October	NA	10	2	2	(s)	R 4	41	56
November	NA	26	3	4	(s)	R 6	39	71
December	NA	36	4	4	(s)	8	R 44	88
Total	**NA**	**255**	**31**	R **31**	**1**	R **63**	R **604**	R **922**
2022 January	NA	53	5	6	(s)	11	61	124

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 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							Retail 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**
2006 Total	**6**	**154**	**30**	**8**	**1**	**3**	**(s)**	**6**	**48**	**834**	**1,042**
2007 Total	**7**	**164**	**28**	**8**	**1**	**4**	**(s)**	**6**	**46**	**860**	**1,077**
2008 Total	**8**	**171**	**29**	**10**	**(s)**	**3**	**(s)**	**5**	**47**	**848**	**1,074**
2009 Total	**7**	**169**	**29**	**9**	**(s)**	**3**	**(s)**	**5**	**47**	**784**	**1,007**
2010 Total	**7**	**168**	**29**	**9**	**(s)**	**3**	**(s)**	**5**	**46**	**804**	**1,025**
2011 Total	**6**	**171**	**29**	**9**	**(s)**	**3**	**(s)**	**4**	**45**	**768**	**990**
2012 Total	**4**	**157**	**26**	**9**	**(s)**	**3**	**(s)**	**2**	**40**	**731**	**932**
2013 Total	**4**	**179**	**25**	**10**	**(s)**	**3**	**(s)**	**2**	**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**	**631**	**885**
2019 Total	**2**	**193**	**24**	**11**	**(s)**	**24**	**(s)**	**(s)**	**60**	**577**	**832**
2020 January	(s)	27	3	R 2	(s)	2	(s)	(s)	R 7	42	R 76
February	(s)	25	2	R 2	(s)	2	(s)	(s)	6	38	R 69
March	(s)	19	2	1	(s)	2	0	(s)	5	37	61
April	(s)	13	2	1	(s)	1	0	(s)	4	30	48
May	(s)	9	2	1	(s)	2	0	(s)	5	33	47
June	(s)	7	1	1	(s)	2	0	(s)	4	43	54
July	(s)	7	1	1	(s)	2	0	(s)	4	56	66
August	(s)	7	1	1	(s)	2	0	(s)	R 4	54	65
September	(s)	8	1	1	(s)	2	0	(s)	4	45	57
October	(s)	11	1	1	(s)	2	0	(s)	R 5	42	58
November	(s)	16	2	1	(s)	2	0	(s)	5	37	59
December	(s)	25	2	R 2	(s)	2	0	(s)	6	43	74
Total	**1**	**174**	**20**	R **13**	**(s)**	**24**	**(s)**	**(s)**	R **58**	**502**	R **735**
2021 January	(s)	27	3	2	(s)	2	0	(s)	R 7	43	R 77
February	(s)	27	3	R 2	(s)	2	(s)	(s)	6	44	77
March	(s)	19	2	1	(s)	2	(s)	(s)	6	37	62
April	(s)	13	2	1	(s)	2	0	(s)	5	35	R 54
May	(s)	10	1	1	(s)	2	0	(s)	R 5	40	55
June	(s)	8	1	1	(s)	2	0	(s)	4	52	64
July	(s)	8	1	1	(s)	2	0	(s)	4	59	70
August	(s)	8	1	1	(s)	2	0	(s)	4	60	71
September	(s)	8	1	1	(s)	2	0	(s)	4	48	61
October	(s)	11	2	1	(s)	2	(s)	(s)	5	44	R 60
November	(s)	18	2	1	(s)	2	(s)	(s)	5	40	R 64
December	(s)	22	3	1	(s)	2	(s)	(s)	6	39	R 68
Total	**1**	**179**	**21**	R **13**	**(s)**	**27**	**(s)**	**(s)**	R **61**	R **542**	R **783**
2022 January	(s)	30	3	2	(s)	2	(s)	(s)	7	48	86

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 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									Retail 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**	**1,686**
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**
2006 Total	**180**	**7**	**407**	**93**	**48**	**2**	**6**	**26**	**85**	**18**	**151**	**430**	**649**	**1,673**
2007 Total	**175**	**3**	**419**	**93**	**50**	**1**	**6**	**21**	**83**	**14**	**147**	**415**	**661**	**1,672**
2008 Total	**168**	**5**	**419**	**99**	**41**	**(s)**	**6**	**17**	**79**	**15**	**130**	**386**	**641**	**1,619**
2009 Total	**131**	**-3**	**395**	**79**	**41**	**(s)**	**5**	**16**	**73**	**10**	**111**	**335**	**550**	**1,408**
2010 Total	**152**	**-1**	**428**	**85**	**42**	**1**	**5**	**17**	**67**	**9**	**119**	**345**	**587**	**1,511**
2011 Total	**146**	**1**	**438**	**91**	**38**	**(s)**	**5**	**17**	**64**	**10**	**118**	**R 344**	**574**	**1,502**
2012 Total	**142**	**(s)**	**455**	**94**	**42**	**(s)**	**4**	**17**	**69**	**5**	**114**	**345**	**543**	**1,485**
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**	**457**	**1,459**
2019 Total	**105**	**-2**	**540**	**89**	**R 60**	**(s)**	**4**	**18**	**60**	**3**	**131**	**R 364**	**425**	**R 1,432**
2020 January	8	(s)	50	10	4	(s)	(s)	2	4	(s)	11	32	31	R 121
February	8	(s)	46	10	R 4	(s)	(s)	2	4	(s)	12	32	29	115
March	8	(s)	46	9	5	(s)	(s)	1	4	(s)	13	R 33	29	115
April	7	(s)	41	4	3	(s)	(s)	1	3	(s)	10	21	24	93
May	6	(s)	40	3	4	(s)	(s)	1	3	(s)	11	24	26	96
June	7	(s)	39	3	5	(s)	(s)	1	3	(s)	10	23	31	99
July	7	(s)	41	5	5	(s)	(s)	2	4	(s)	10	26	37	111
August	7	(s)	42	5	R 6	(s)	(s)	2	6	(s)	10	29	38	116
September	7	(s)	42	7	6	(s)	(s)	2	5	(s)	8	28	32	108
October	8	(s)	44	8	6	(s)	(s)	2	4	(s)	8	28	32	112
November	8	(s)	45	8	6	(s)	(s)	1	5	(s)	9	30	30	112
December	8	(s)	49	8	6	(s)	(s)	1	4	(s)	10	30	33	120
Total	**88**	**-1**	**525**	**79**	**R 60**	**(s)**	**4**	**18**	**49**	**2**	**123**	**R 335**	**374**	**R 1,321**
2021 January	8	(s)	49	9	6	(s)	(s)	1	4	(s)	8	29	33	R 119
February	8	(s)	42	6	3	(s)	(s)	1	2	(s)	7	20	R 33	102
March	8	(s)	45	8	5	(s)	(s)	2	4	(s)	11	30	R 28	111
April	8	(s)	43	7	5	(s)	(s)	2	4	(s)	12	30	28	109
May	8	(s)	43	6	6	(s)	(s)	2	5	(s)	10	R 30	32	R 112
June	8	-1	41	6	6	(s)	(s)	2	6	(s)	9	29	37	115
July	8	(s)	43	4	6	(s)	(s)	2	3	(s)	9	25	41	R 117
August	8	-1	43	6	7	(s)	(s)	2	6	(s)	10	R 31	41	122
September	8	-1	41	8	6	(s)	(s)	2	4	(s)	9	29	35	112
October	8	(s)	44	6	5	(s)	(s)	2	4	(s)	11	29	33	113
November	R 8	-1	46	9	5	(s)	(s)	2	4	(s)	8	29	31	R 114
December	8	-1	49	7	6	(s)	(s)	2	5	(s)	9	30	30	116
Total	**97**	**-6**	**530**	**82**	**R 66**	**(s)**	**4**	**19**	**51**	**4**	**113**	**R 340**	**403**	**R 1,364**
2022 January	8	-1	51	8	5	(s)	(s)	1	4	(s)	10	30	36	125

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] Aviation gasoline blending components, crude oil, motor gasoline blending components, petrochemical feedstocks, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products.
[g] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 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								Retail 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**
2006 Total	**(h)**	**33**	**2**	**476**	**2**	**244**	**5**	**1,188**	**68**	**1,985**	**5**	**2,023**
2007 Total	**(h)**	**35**	**2**	**476**	**1**	**242**	**6**	**1,184**	**75**	**1,986**	**5**	**2,026**
2008 Total	**(h)**	**37**	**2**	**430**	**3**	**231**	**5**	**1,114**	**70**	**1,854**	**5**	**1,896**
2009 Total	**(h)**	**38**	**2**	**406**	**2**	**208**	**5**	**1,107**	**59**	**1,789**	**5**	**1,832**
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**	**(s)**	**231**	**6**	**1,073**	**35**	**1,794**	**4**	**1,837**
2016 Total	**(h)**	**40**	**1**	**437**	**R 1**	**242**	**6**	**1,092**	**47**	**1,826**	**4**	**1,869**
2017 Total	**(h)**	**42**	**1**	**442**	**R 1**	**251**	**5**	**1,090**	**50**	**1,841**	**4**	**1,886**
2018 Total	**(h)**	**51**	**2**	**466**	**R 1**	**255**	**5**	**1,090**	**45**	**1,863**	**4**	**1,918**
2019 Total	**(h)**	**59**	**2**	**468**	**R 1**	**261**	**5**	**1,086**	**40**	**1,862**	**3**	**1,924**
2020 January	(h)	6	(s)	35	(s)	21	(s)	86	3	145	(s)	152
February	(h)	6	(s)	33	(s)	19	(s)	83	2	139	(s)	145
March	(h)	5	(s)	37	(s)	18	(s)	77	1	133	(s)	138
April	(h)	4	(s)	35	(s)	8	(s)	56	1	101	(s)	105
May	(h)	4	(s)	36	(s)	8	(s)	71	1	115	(s)	119
June	(h)	4	(s)	37	(s)	10	(s)	79	2	128	(s)	132
July	(h)	5	(s)	39	(s)	12	(s)	83	4	139	(s)	144
August	(h)	5	(s)	40	(s)	13	(s)	84	4	141	(s)	146
September	(h)	4	(s)	37	(s)	11	(s)	81	4	134	(s)	139
October	(h)	4	(s)	39	(s)	13	(s)	82	3	138	(s)	143
November	(h)	5	(s)	36	(s)	14	(s)	76	2	129	(s)	133
December	(h)	6	(s)	36	(s)	15	(s)	77	2	130	(s)	137
Total	**(h)**	**58**	**1**	**439**	**(s)**	**161**	**4**	**935**	**29**	**1,571**	**3**	**1,632**
2021 January	(h)	6	(s)	36	(s)	14	(s)	76	3	129	(s)	136
February	(h)	6	(s)	33	(s)	13	(s)	69	3	117	(s)	123
March	(h)	5	(s)	38	(s)	15	(s)	84	4	141	(s)	147
April	(h)	4	(s)	39	(s)	16	(s)	84	2	141	(s)	145
May	(h)	4	(s)	41	(s)	17	(s)	90	3	151	(s)	155
June	(h)	4	(s)	41	(s)	18	(s)	88	4	151	(s)	155
July	(h)	5	(s)	41	(s)	19	(s)	92	4	156	(s)	161
August	(h)	5	(s)	43	(s)	20	(s)	90	4	157	(s)	162
September	(h)	4	(s)	40	(s)	18	(s)	85	4	148	(s)	153
October	(h)	4	(s)	40	(s)	18	(s)	88	5	152	(s)	156
November	(h)	5	(s)	39	(s)	18	(s)	85	5	149	(s)	154
December	(h)	6	(s)	38	(s)	19	(s)	88	5	151	(s)	157
Total	**(h)**	**58**	**1**	**468**	**(s)**	**205**	**4**	**1,018**	**46**	**1,743**	**3**	**R 1,803**
2022 January	(h)	7	(s)	36	(s)	18	(s)	78	3	136	(s)	143

[a] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[b] Natural gas, excluding supplemental gaseous fuels.
[c] Distillate fuel oil, excluding biodiesel.
[d] Hydrocarbon gas liquids.
[e] Finished motor gasoline, excluding fuel ethanol.
[f] Emissions from energy consumption (for electricity and a small amount of useful thermal output) in the electric power sector are allocated to the end-use sectors in proportion to each sector's share of total electricity retail sales. See Tables 7.6 and 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.

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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**
2006 Total	**1,953**	**338**	**5**	**21**	**27**	**53**	**(s)**	**12**	**2,356**
2007 Total	**1,986**	**371**	**7**	**17**	**30**	**53**	**(s)**	**11**	**2,422**
2008 Total	**1,958**	**362**	**5**	**15**	**18**	**38**	**(s)**	**12**	**2,371**
2009 Total	**1,740**	**373**	**5**	**13**	**14**	**32**	**(s)**	**11**	**2,157**
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**	**577**	**6**	**10**	**6**	**22**	**(s)**	**11**	**1,764**
2019 Total	**974**	**616**	**4**	**8**	**4**	**16**	**(s)**	**11**	**1,617**
2020 January	67	52	(s)	1	(s)	1	(s)	1	121
February	58	49	(s)	1	(s)	1	(s)	1	109
March	52	49	(s)	1	(s)	1	(s)	1	103
April	43	42	(s)	1	(s)	1	(s)	1	87
May	48	46	(s)	1	(s)	1	(s)	1	96
June	66	57	(s)	1	(s)	2	(s)	1	125
July	90	73	(s)	1	(s)	2	(s)	1	166
August	91	70	(s)	1	(s)	2	(s)	1	163
September	70	55	(s)	1	(s)	1	(s)	1	127
October	61	52	(s)	(s)	(s)	1	(s)	1	115
November	62	42	(s)	1	(s)	1	(s)	1	106
December	79	48	(s)	1	(s)	2	(s)	1	129
Total	**787**	**634**	**3**	**9**	**4**	**16**	**(s)**	**11**	R **1,448**
2021 January	82	48	(s)	1	(s)	1	(s)	1	132
February	87	43	1	1	(s)	2	(s)	1	133
March	R 63	41	(s)	1	(s)	1	(s)	1	106
April	R 55	41	(s)	(s)	(s)	1	(s)	1	98
May	64	45	(s)	1	(s)	1	(s)	1	111
June	87	59	(s)	1	(s)	1	(s)	1	148
July	102	67	(s)	1	(s)	1	(s)	1	172
August	102	69	(s)	1	1	2	(s)	1	173
September	80	54	(s)	1	(s)	1	(s)	1	137
October	64	52	(s)	1	(s)	1	(s)	1	118
November	59	48	(s)	1	(s)	2	(s)	1	110
December	62	48	(s)	1	(s)	1	(s)	1	113
Total	R **908**	**615**	**4**	**9**	**4**	**17**	**(s)**	**11**	R **1,551**
2022 January	88	53	1	1	1	3	(s)	1	145

[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**
2006 Total	**197**	**36**	**31**	**2**	**266**	**36**	**9**	**151**	**33**	**38**	**266**
2007 Total	**196**	**37**	**39**	**3**	**276**	**39**	**9**	**146**	**41**	**39**	**276**
2008 Total	**193**	**39**	**55**	**3**	**290**	**44**	**10**	**139**	**57**	**40**	**290**
2009 Total	**182**	**41**	**62**	**3**	**288**	**47**	**10**	**125**	**64**	**41**	**288**
2010 Total	**208**	**42**	**73**	**2**	**325**	**51**	**10**	**149**	**74**	**42**	**325**
2011 Total	**208**	**42**	**73**	**8**	**331**	**49**	**11**	**151**	**80**	**40**	**331**
2012 Total	**202**	**42**	**73**	**8**	**325**	**41**	**10**	**153**	**80**	**42**	**325**
2013 Total	**219**	**45**	**75**	**13**	**353**	**54**	**11**	**158**	**87**	**43**	**353**
2014 Total	**225**	**47**	**76**	**13**	**361**	**54**	**12**	**158**	**88**	**49**	**361**
2015 Total	**217**	**47**	**79**	**14**	**357**	**48**	**13**	**157**	**90**	**48**	**357**
2016 Total	**209**	**46**	**81**	**20**	**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 January	17	4	7	1	29	4	1	13	8	4	29
February	16	3	6	1	27	3	1	12	7	3	27
March	17	4	5	1	27	4	1	12	7	3	27
April	16	3	4	1	24	3	1	12	5	3	24
May	16	3	6	1	26	4	1	12	7	3	26
June	15	3	6	1	26	3	1	11	8	3	26
July	16	3	6	2	27	4	1	12	8	3	27
August	16	3	6	2	27	4	1	12	8	4	27
September	15	3	6	2	26	3	1	11	8	3	26
October	16	3	6	2	27	4	1	12	7	3	27
November	16	3	6	1	27	3	1	12	7	3	27
December	17	3	6	2	28	4	1	12	8	3	28
Total	**194**	**40**	**72**	**18**	**323**	**41**	**13**	**143**	**86**	**39**	**323**
2021 January	17	3	6	1	27	4	1	12	6	3	27
February	15	3	5	1	25	3	1	11	6	3	25
March	17	3	7	1	28	4	1	12	8	4	28
April	16	3	6	1	26	4	1	12	7	3	26
May	17	3	7	1	29	4	1	12	8	3	29
June	16	3	7	1	28	4	1	12	8	3	28
July	17	3	7	1	29	4	1	12	8	4	29
August	17	3	7	1	28	4	1	12	8	4	28
September	16	3	7	1	27	4	1	12	8	3	27
October	16	3	7	1	28	4	1	12	8	3	28
November	16	3	7	1	27	4	1	11	8	3	27
December	16	3	7	1	28	4	1	12	8	3	28
Total	**196**	**39**	**79**	**16**	**329**	**44**	**13**	**142**	**91**	**40**	**329**
2022 January	16	3	6	1	27	4	1	12	7	3	27

[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.

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) and "other petroleum" (aviation gasoline blending components, crude oil, motor gasoline blending components, naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, special naphthas, still gas, unfinished oils, waxes, and miscellaneous petroleum products), consumption (product supplied) data in thousand barrels per day are from EIA's *Petroleum Supply Annual* (PSA), *Petroleum Supply Monthly* (PSM), and earlier publications (see sources for MER Table 3.5). Petroleum consumption data by product are converted to trillion Btu by multiplying by the petroleum heat content factors in MER Tables A1 and A3.

Biomass—Sectoral consumption data in trillion Btu for wood, biomass waste, fuel ethanol (minus denaturant), and biodiesel are from MER Tables 10.2a–10.2c.

Step 2. Remove Biofuels From Petroleum

Distillate Fuel Oil—Beginning in 2009, the distillate fuel oil data (for total and transportation sector) in Step 1 include biodiesel and 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 1.11a and 1.11b 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 1.11b 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-32, A-38, and A-232. 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.

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	[P] 5.691	[P] 3.584	[P] 6.063	[P] 5.222	[P] 5.508	[P] 5.909	[P] 5.722	[P] 5.222	[P] 4.860	[P] 5.158
2022	[E] 5.691	[E] 3.584	[E] 6.063	[E] 5.222	[E] 5.508	[E] 5.909	[E] 5.722	[E] 5.222	[E] 4.860	[E] 5.158

[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	[R] 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	[R] 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	4.798	5.303	5.885	5.161	5.773	3.424	5.055	6.104	3.558	*5.811*
2017	4.623	5.006	4.768	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	[R] 5.309	5.896	5.122	5.772	3.381	5.054	6.122	3.553	*5.797*
2019	4.540	4.962	[R] 4.646	5.307	5.900	5.111	5.771	3.401	5.052	6.132	3.555	*5.790*
2020	[R] 4.536	[R] 4.889	[R] 4.533	[R] 5.301	5.883	5.054	5.770	3.349	5.052	6.130	3.557	*5.784*
2021	[RE] 4.547	[RE] 4.904	[RE] 4.523	[RE] 5.310	[P] 5.889	[P] 5.069	[P] 5.770	[P] 3.376	[P] 5.050	[P] 6.135	[P] 3.555	*5.777*
2022	[RE] 4.547	[RE] 4.904	[RE] 4.523	[RE] 5.310	[E] 5.889	[E] 5.069	[E] 5.770	[E] 3.376	[E] 5.050	[E] 6.135	[E] 3.555	*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	1,146	1,037	1,039	1,034	1,037	1,025	1,009
2021	[E] 1,146	[P] 1,037	[P] 1,039	[P] 1,034	[P] 1,037	[E] 1,025	[E] 1,009
2022	[E] 1,146	[E] 1,037	[E] 1,039	[E] 1,034	[E] 1,037	[E] 1,025	[E] 1,009

[a] Consumption factors are for natural gas, plus a small amount of supplemental gaseous fuels.

[b] Residential, commercial, industrial, and transportation sectors.

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

P=Preliminary. E=Estimate. – – =Not applicable.

Note: The values in this table are for gross heat contents. See "Heat Content" in Glossary.

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.

Table A5. Approximate Heat Content of Coal and Coal Coke

(Million Btu per Short Ton)

	Coal									Coal Coke
			Consumption							
	Production[a]	Waste Coal Supplied[b]	Residential and Commercial Sectors[c]	Industrial Sector		Electric Power Sector[e,f]	Total	Imports	Exports	Imports and Exports
				Coke Plants	Other[d]					
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	[RP] 19.950	[P] 11.268	[RP] 18.398	[RP] 28.666	[RP] 20.578	[RP] 18.934	[RP] 19.329	[RP] 20.295	[RP] 24.257	[P] 24.800
2022	[RE] 19.950	[E] 11.268	[RE] 18.398	[RE] 28.666	[RE] 20.578	[RE] 18.934	[RE] 19.329	[RE] 20.295	[RE] 24.257	[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						
	Fossil Fuels[b]						
	Coal[c]	Petroleum[d]	Natural Gas[e]	Total Fossil Fuels[f,g]	Nuclear[h]	Noncombustible Renewable Energy[g,i]	Heat Content[j] of Electricity[k]
1950	NA	NA	NA	14,030	– –	14,030	3,412
1955	NA	NA	NA	11,699	– –	11,699	3,412
1960	NA	NA	NA	10,760	11,629	10,760	3,412
1965	NA	NA	NA	10,453	11,804	10,453	3,412
1970	NA	NA	NA	10,494	10,977	10,494	3,412
1975	NA	NA	NA	10,406	11,013	10,406	3,412
1980	NA	NA	NA	10,388	10,908	10,388	3,412
1981	NA	NA	NA	10,453	11,030	10,453	3,412
1982	NA	NA	NA	10,454	11,073	10,454	3,412
1983	NA	NA	NA	10,520	10,905	10,520	3,412
1984	NA	NA	NA	10,440	10,843	10,440	3,412
1985	NA	NA	NA	10,447	10,622	10,447	3,412
1986	NA	NA	NA	10,446	10,579	10,446	3,412
1987	NA	NA	NA	10,419	10,442	10,419	3,412
1988	NA	NA	NA	10,324	10,602	10,324	3,412
1989	NA	NA	NA	10,432	10,583	10,432	3,412
1990	NA	NA	NA	10,402	10,582	10,402	3,412
1991	NA	NA	NA	10,436	10,484	10,436	3,412
1992	NA	NA	NA	10,342	10,471	10,342	3,412
1993	NA	NA	NA	10,309	10,504	10,309	3,412
1994	NA	NA	NA	10,316	10,452	10,316	3,412
1995	NA	NA	NA	10,312	10,507	10,312	3,412
1996	NA	NA	NA	10,340	10,503	10,340	3,412
1997	NA	NA	NA	10,213	10,494	10,213	3,412
1998	NA	NA	NA	10,197	10,491	10,197	3,412
1999	NA	NA	NA	10,226	10,450	10,226	3,412
2000	NA	NA	NA	10,201	10,429	10,201	3,412
2001	10,378	10,742	10,051	[b] 10,333	10,443	10,333	3,412
2002	10,314	10,641	9,533	10,173	10,442	10,173	3,412
2003	10,297	10,610	9,207	10,125	10,422	10,125	3,412
2004	10,331	10,571	8,647	10,016	10,428	10,016	3,412
2005	10,373	10,631	8,551	9,999	10,436	9,999	3,412
2006	10,351	10,809	8,471	9,919	10,435	9,919	3,412
2007	10,375	10,794	8,403	9,884	10,489	9,884	3,412
2008	10,378	11,015	8,305	9,854	10,452	9,854	3,412
2009	10,414	10,923	8,160	9,760	10,459	9,760	3,412
2010	10,415	10,984	8,185	9,756	10,452	9,756	3,412
2011	10,444	10,829	8,152	9,716	10,464	9,716	3,412
2012	10,498	10,991	8,039	9,516	10,479	9,516	3,412
2013	10,459	10,713	7,948	9,541	10,449	9,541	3,412
2014	10,428	10,814	7,907	9,510	10,459	9,510	3,412
2015	10,495	10,687	7,878	9,319	10,458	9,319	3,412
2016	10,493	10,811	7,870	9,232	10,459	9,232	3,412
2017	10,465	10,834	7,812	9,213	10,459	9,213	3,412
2018	10,481	11,095	7,821	9,104	10,455	9,104	3,412
2019	10,551	11,205	7,732	8,905	10,442	8,905	3,412
2020	10,655	11,259	[R] 7,732	8,773	10,446	8,773	3,412
2021	[E] 10,655	[E] 11,259	[RE] 7,732	[E] 8,773	[E] 10,446	[E] 8,773	3,412
2022	[E] 10,655	[E] 11,259	[RE] 7,732	[E] 8,773	[E] 10,446	[E] 8,773	3,412

[a] The values in columns 1–6 of this table are for net heat rates. See "Heat Rate" in Glossary.

[b] Through 2000, heat rates are for fossil-fueled steam-electric plants at electric utilities. Beginning in 2001, heat rates are for all fossil-fueled plants at electric utilities and electricity-only independent power producers.

[c] Includes anthracite, bituminous coal, subbituminous coal, lignite, and, beginning in 2002, waste coal and coal synfuel.

[d] Includes distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

[e] Includes natural gas and supplemental gaseous fuels.

[f] Includes coal, petroleum, natural gas, and, beginning in 2001, other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

[g] The fossil-fuels heat rate is used as the thermal conversion factor for electricity net generation from noncombustible renewable energy (hydro, geothermal, solar thermal, photovoltaic, and wind) to approximate the quantity of fossil fuels replaced by these sources. Through 2000, also used as the thermal conversion factor for wood and waste electricity net generation at electric utilities; beginning in 2001, Btu data for wood and waste at electric utilities are available from surveys.

[h] Used as the thermal conversion factor for nuclear electricity net generation.

[i] Technology-based geothermal heat rates are no longer used in Btu calculations in this report. For technology-based geothermal heat rates for 1960–2010, see the *Annual Energy Review 2010,* Table A6.

[j] See "Heat Content" in Glossary.

[k] The value of 3,412 Btu per kilowatthour is a constant. It is used as the thermal conversion factor for electricity retail sales, and electricity imports and exports.

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

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

Sources: See "Thermal Conversion Factor Source Documentation," which follows this table.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of 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 Transportation Model" (GREET), version GREET1_2021, October 2021.

Distillate Fuel Oil, Greater Than 15 ppm to 500 ppm Sulfur. EIA adopted the thermal conversion factor of 5.817 million Btu per barrel (138,490 Btu per gallon) for low-sulfur diesel from U.S. Department of Energy, Argonne Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2021, October 2021.

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 Transportation Model" (GREET), version GREET1_2021, October 2021.

Motor Gasoline Exports. • 1949–2005: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel for "Gasoline, Motor Fuel" as published by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947–1985*, a 1968 release of historical and projected statistics. • 2006 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and the methyl tertiary butyl ether (MTBE) blended into motor gasoline exports. The factor for gasoline

blendstock is 5.253 million Btu per barrel in 2006 and 5.222 million Btu per barrel beginning in 2007 (see **Motor Gasoline Blending Components**). For MTBE, EIA adopted the thermal conversion factor of 4.247 million Btu per barrel (101,130 Btu per gallon) from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2021, October 2021.

Motor Gasoline (Finished) Consumption. • 1949–1992: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel for "Gasoline, Motor Fuel" as published by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Markets 1947-1985,* a 1968 release of historical and projected statistics. • 1993–2006: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and the oxygenates blended into motor gasoline. The factor for gasoline blendstock is 5.253 million Btu per barrel (the motor gasoline factor used for previous years). The factors for fuel ethanol are shown in Table A3 (see **Fuel Ethanol, Denatured**). The following factors for other oxygenates are from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2021, October 2021—methyl tertiary butyl ether (MTBE): 4.247 million Btu per barrel (101,130 Btu per gallon); tertiary amyl methyl ether (TAME): 4.560 million Btu per barrel (108,570 Btu per gallon); ethyl tertiary butyl ether (ETBE): 4.390 million Btu per barrel (104,530 Btu per gallon); methanol: 2.738 million Btu per barrel (65,200 Btu per gallon); and butanol: 4.555 million Btu per barrel (108,458 Btu per gallon). • 2007 forward: Calculated by EIA as the annual quantity-weighted average of the conversion factors for gasoline blendstock and fuel ethanol blended into motor gasoline. The factor for gasoline blendstock is 5.222 million Btu per barrel (124,340 Btu per gallon), which is from the GREET model (see above). The factors for fuel ethanol are shown in Table A3 (see **Fuel Ethanol, Denatured**).

Motor Gasoline Imports. • 1949–2006: EIA adopted the Bureau of Mines thermal conversion factor of 5.253 million Btu per barrel for "Gasoline, Motor Fuel" as published by the Texas Eastern Transmission Corporation in Appendix V of *Competition and Growth in American Energy Markets 1947–1985*, a 1968 release of historical and projected statistics. • 2007 forward: EIA adopted the thermal conversion factor of 5.222 million Btu per barrel (124,340 Btu per gallon) for gasoline blendstock from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2021, October 2021.

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 Transportation Model" (GREET), version GREET1_2021, October 2021.

Petrochemical Feedstocks, Naphtha Less Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.248 million Btu per barrel or equal to the thermal conversion factor for **Special Naphthas**.

Petrochemical Feedstocks, Other Oils Equal to or Greater Than 401 Degrees Fahrenheit. Assumed by EIA to be 5.825 million Btu per barrel or equal to the thermal conversion factor for **Distillate Fuel Oil**.

Petrochemical Feedstocks, Still Gas. Assumed by EIA to be equal to the thermal conversion factor for **Still Gas**.

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

Petroleum Coke, Marketable. EIA adopted the thermal conversion factor of 5.719 million Btu per barrel, calculated by dividing 28,595,925 Btu per short ton for petroleum coke (from U.S. Department of Energy, Argonne National Laboratory, "The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model" (GREET), version GREET1_2021, October 2021) 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 Transportation Model" (GREET), version GREET1_2021, October 2021.

Approximate Heat Content of Natural Gas

Natural Gas Consumption, Electric Power Sector. Calculated annually by EIA by dividing the heat content of natural gas consumed by the electric power sector by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Natural Gas Consumption, End-Use Sectors. Calculated annually by EIA by dividing the heat content of natural gas consumed by the end-use sectors (residential, commercial, industrial, and transportation) by the quantity consumed. The heat content of natural gas consumed by the end-use sectors is calculated as the total heat content of natural gas consumed minus the heat content of natural gas consumed by the electric power sector. The quantity of natural gas consumed by the end-use sectors is calculated as the total quantity of natural gas consumed minus the quantity of natural gas consumed by the electric power sector. Data are from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; and Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Natural Gas Consumption, Total. • 1949–1962: EIA adopted the thermal conversion factor of 1,035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*. • 1963–1979: EIA adopted the thermal conversion factor calculated annually by the American Gas Association (AGA) and published in *Gas Facts*, an AGA annual publication. • 1980 forward: Calculated annually by EIA by dividing the total heat content of natural gas consumed by the total quantity consumed.

Natural Gas Exports. • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas exported by the quantity exported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

Natural Gas Imports. • 1949–1972: Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed (see **Natural Gas Consumption, Total**). • 1973 forward: Calculated annually by EIA by dividing the heat content of natural gas imported by the quantity imported. For 1973–1995, data are from Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Beginning in 1996, data are from U.S. Department of Energy, Office of Fossil Energy, *Natural Gas Imports and Exports*.

Natural Gas Production, Dry. Assumed by EIA to be equal to the thermal conversion factor for dry natural gas consumed. See **Natural Gas Consumption, Total**.

Natural Gas Production, Marketed. Calculated annually by EIA by dividing the heat content of dry natural gas produced (see **Natural Gas Production, Dry**) and natural gas liquids produced (see **Natural Gas Liquids Production**) by the total quantity of marketed natural gas produced.

Approximate Heat Content of Coal and Coal Coke

Coal Coke Imports and Exports. EIA adopted the Bureau of Mines estimate of 24.800 million Btu per short ton.

Coal Consumption, Electric Power Sector. Calculated annually by EIA by dividing the heat content of coal consumed by the electric power sector by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms.

Coal Consumption, Industrial Sector, Coke Plants. • 1949–2011: Calculated annually by EIA based on the reported volatility (low, medium, or high) of coal received by coke plants. (For 2011, EIA used the following volatility factors, in million Btu per short ton: low volatile—26.680; medium volatile—27.506; and high volatile—25.652.) Data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal received by coke plants by the quantity received. Through June 2014, data are from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Industrial Sector, Other. • 1949–2007: Calculated annually by EIA by dividing the heat content of coal received by manufacturing plants by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing Plants," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by manufacturing, gasification, and liquefaction plants by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Residential and Commercial Sectors. • 1949–1999: Calculated annually by EIA by dividing the heat content of coal received by the residential and commercial sectors by the quantity received. Data are from Form EIA-6, "Coal Distribution Report," and predecessor forms. • 2000–2007: Calculated annually by EIA by dividing the heat content of coal consumed by commercial combined-heat-and-power (CHP) plants by the quantity consumed. Data are from Form EIA-923, "Power Plant Operations Report," and predecessor forms. • 2008 forward: Calculated annually by EIA by dividing the heat content of coal received by commercial and institutional users by the quantity received. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data").

Coal Consumption, Total. Calculated annually by EIA by dividing the total heat content of coal consumed by all sectors by the total quantity consumed.

Coal Exports. • 1949–2011: Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. Data are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report EM 545," and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of steam coal and metallurgical coal exported by the quantity exported. The average heat content of steam coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"), and Form EIA-923, "Power Plant Operations Report." Through June 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; beginning in July 2014, the average heat content of metallurgical coal is derived from receipts data from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"). Data for export quantities are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report EM 545."

Coal Imports. • 1949–1963: Calculated annually by EIA by dividing the heat content of coal imported by the quantity imported. Data are from U.S. Department of Commerce, U.S. Census Bureau, "Monthly Report IM 145," and predecessor forms. • 1964–2011: Assumed by EIA to be 25.000 million Btu per short ton. • 2012 forward: Calculated annually by EIA by dividing the heat content of coal imported (received) by the quantity imported (received). Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); and Form EIA-923, "Power Plant Operations Report."

Coal Production. • 1949–2011: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received by the quantity received. Data are from Form EIA-3, "Quarterly Coal Consumption and Quality Report—Manufacturing and Transformation/Processing Coal Plants and Commercial and Institutional Users"; Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants"; Form EIA-923, "Power Plant Operations Report"; and predecessor forms. • 2012 forward: Calculated annually by EIA by dividing the heat content of domestic coal (excluding waste coal) received and exported by the quantity received and exported. Data are from Form EIA-3, "Quarterly Survey of Industrial, Commercial, and Institutional Coal Users" (formerly called "Quarterly Survey of Non-Electric Sector Coal Data"); Form EIA-5, "Quarterly Coal Consumption and Quality Report—Coke Plants" (data through June 2014); Form EIA-

923, “Power Plant Operations Report”; U.S. Department of Commerce, U.S. Census Bureau, “Monthly Report EM 545”; and predecessor forms.

Waste Coal Supplied. • 1989–2000: Calculated annually by EIA by dividing the heat content of waste coal consumed by the quantity consumed. Data are from Form EIA-860B, “Annual Electric Generator Report—Nonutility,” and predecessor form. • 2001 forward: Calculated by EIA by dividing the heat content of waste coal received (or consumed) by the quantity received (or consumed). Receipts data are from Form EIA-3, “Quarterly Survey of Industrial, Commercial, and Institutional Coal Users” (formerly called “Quarterly Survey of Non-Electric Sector Coal Data”), and predecessor forms. Consumption data are from Form EIA-923, “Power Plant Operations Report,” and predecessor forms.

Approximate Heat Rates for Electricity

Electricity Net Generation, Coal. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using anthracite, bituminous coal, subbituminous coal, lignite, and beginning in 2002, waste coal and coal synfuel.

Electricity Net Generation, Natural Gas. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using natural gas and supplemental gaseous fuels.

Electricity Net Generation, Noncombustible Renewable Energy. There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydro, geothermal, solar thermal, photovoltaic, and wind energy sources. Therefore, EIA calculates a rate factor that is equal to the annual average heat rate factor for fossil-fueled power plants in the United States (see “Electricity Net Generation, Total Fossil Fuels”). By using that factor it is possible to evaluate fossil fuel requirements for replacing those sources during periods of interruption, such as droughts. See Appendix E for more information.

Electricity Net Generation, Nuclear. • 1957–1984: Calculated annually by dividing the total heat content consumed in nuclear generating units by the total (net) electricity generated by nuclear generating units. The heat content and electricity generation were reported on Form FERC-1, “Annual Report of Major Electric Utilities, Licensees, and Others”; Form EIA-412, “Annual Report of Public Electric Utilities”; and predecessor forms. For 1982, the factors were published in EIA, *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants 1982*, page 215. For 1983 and 1984, the factors were published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 13. • 1985 forward: Calculated annually by EIA by using the heat rate data reported on Form EIA-860, “Annual Electric Generator Report,” and predecessor forms.

Electricity Net Generation, Petroleum. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using distillate fuel oil, residual fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

Electricity Net Generation, Total Fossil Fuels. • 1949–1955: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Thermal-Electric Plant Construction Cost and Annual Production Expenses—1981* and *Steam-Electric Plant Construction Cost and Annual Production Expenses—1978*. • 1956–1988: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published in EIA, *Electric Plant Cost and Power Production Expenses 1991*, Table 9. • 1989–2000: Calculated annually by EIA by using heat rate data reported on Form EIA-860, “Annual Electric Generator Report,” and predecessor forms; and net generation data reported on Form EIA-759, “Monthly Power Plant Report.” The computation includes data for all electric utility steam-electric plants using fossil fuels. • 2001 forward: Calculated annually by EIA by using fuel consumption and net generation data reported on Form EIA-923, “Power Plant Operations Report,” and predecessor forms. The computation includes data for all electric utilities and electricity-only independent power producers using coal, petroleum, natural gas, and other gases (blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels).

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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 (2012) Dollars[e]	Implicit Price Deflator[c] (2012 = 1.00000)	Billion Nominal Dollars[d]
	Million People		Percent				
1950	152.3	2,557.6	6.0	299.8	2,291.1	0.13087	577.8
1955	165.9	2,782.1	6.0	425.5	2,873.2	.14809	802.6
1960	180.7	3,043.0	5.9	542.4	3,262.1	.16627	1,006.0
1965	194.3	3,350.8	5.8	742.3	4,173.4	.17786	1,356.0
1970	205.1	3,713.5	5.5	1,073.3	4,954.4	.21663	1,903.0
1975	216.0	4,089.4	5.3	1,684.9	5,648.5	.29829	3,055.3
1980	227.2	4,446.0	5.1	2,857.3	6,763.5	.42246	5,462.0
1981	229.5	4,527.4	5.1	3,207.0	6,935.2	.46243	6,033.5
1982	231.7	4,610.6	5.0	3,343.8	6,810.1	.49100	6,175.0
1983	233.8	4,694.9	5.0	3,634.0	7,122.3	.51023	6,631.0
1984	235.8	4,777.1	4.9	4,037.6	7,637.7	.52864	7,313.8
1985	237.9	4,862.3	4.9	4,339.0	7,956.2	.54536	7,775.7
1986	240.1	4,950.0	4.9	4,579.6	8,231.7	.55634	8,031.0
1987	242.3	5,040.3	4.8	4,855.2	8,516.4	.57010	8,707.5
1988	244.5	5,131.6	4.8	5,236.4	8,872.2	.59021	9,434.2
1989	246.8	5,222.7	4.7	5,641.6	9,198.0	.61335	10,069.8
1990	249.6	5,315.5	4.7	5,963.1	9,371.5	.63631	10,624.6
1991	253.0	5,403.3	4.7	6,158.1	9,361.3	.65783	10,808.0
1992	256.5	5,490.5	4.7	6,520.3	9,691.1	.67282	11,381.0
1993	259.9	5,568.2	4.7	6,858.6	9,957.7	.68877	12,024.4
1994	263.1	5,650.2	4.7	7,287.2	10,358.9	.70347	12,826.8
1995	266.3	5,733.2	4.6	7,639.7	10,637.0	.71823	13,653.2
1996	269.4	5,815.3	4.6	8,073.1	11,038.3	.73138	14,463.4
1997	272.6	5,895.8	4.6	8,577.6	11,529.2	.74399	15,393.3
1998	275.9	5,975.2	4.6	9,062.8	12,045.8	.75236	16,216.8
1999	279.0	6,054.0	4.6	9,631.2	12,623.4	.76296	17,270.7
2000	282.2	6,132.5	4.6	10,251.0	13,138.0	.78025	18,625.2
2001	285.0	6,211.3	4.6	10,581.9	13,263.4	.79783	18,881.2
2002	287.6	6,290.3	4.6	10,929.1	13,488.4	.81026	19,170.8
2003	290.1	6,369.2	4.6	11,456.5	13,865.5	.82625	20,138.0
2004	292.8	6,448.3	4.5	12,217.2	14,399.7	.84843	21,688.9
2005	295.5	6,527.1	4.5	13,039.2	14,901.3	.87504	23,514.7
2006	298.4	6,607.4	4.5	13,815.6	15,315.9	.90204	24,924.7
2007	301.2	6,689.4	4.5	14,474.2	15,623.9	.92642	26,245.0
2008	304.1	6,773.3	4.5	14,769.9	15,643.0	.94419	27,023.5
2009	306.8	6,857.2	4.5	14,478.1	15,236.3	.95024	24,954.6
2010	309.3	6,939.8	4.5	15,049.0	15,649.0	.96166	26,475.7
2011	311.6	7,022.1	4.4	15,599.7	15,891.5	.98164	28,045.9
2012	313.8	7,105.0	4.4	16,254.0	16,254.0	1.00000	29,222.8
2013	316.0	7,188.5	4.4	16,843.2	16,553.3	1.01751	30,350.1
2014	318.3	7,271.6	4.4	17,550.7	16,932.1	1.03654	31,756.4
2015	320.6	7,353.5	4.4	18,206.0	17,390.3	1.04691	32,183.1
2016	322.9	7,435.2	4.3	18,695.1	17,680.3	1.05740	32,855.1
2017	325.0	7,516.8	4.3	19,479.6	18,079.1	1.07747	34,436.6
2018	326.7	7,597.1	4.3	20,527.2	18,606.8	1.10321	36,478.0
2019	328.2	7,676.7	4.3	21,372.6	19,032.7	1.12294	37,597.1
2020	331.5	7,756.9	4.3	20,893.7	18,384.7	1.13648	36,478.1
2021	331.9	7,831.7	4.2	22,997.5	19,428.4	1.18371	R 41,170.5

[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 (2012) dollars.
[d] See "Nominal Dollars" in Glossary.
[e] See "Chained Dollars" in Glossary.
R=Revised. NA=Not available.
Notes: • Data are estimates. • U.S. geographic coverage is the 50 states and the District of Columbia.
Web Page: See http://www.eia.gov/totalenergy/data/monthly/#appendices (Excel and CSV files) for all available annual data beginning in 1949.
Sources: • **United States Population: 1949–1989—**U.S. Department of Commerce (DOC), U.S. Census Bureau, Current Population Reports Series P-25 (June 2000). **1990–1999—**DOC, U.S. Census Bureau, "Time Series of Intercensal State Population Estimates" (April 2002). **2000–2009—**DOC, U.S. Census Bureau, "Intercensal Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico" (September 2011). **2010 forward—**DOC, U.S. Census Bureau, "Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico" (December 2021). • **World Population: 1950 forward—**DOC, U.S. Census Bureau, International Database (December 2021). • **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 (August 2021), Tables 1.1.5, 1.1.6, and 1.1.9. • **U.S. Gross Output: 1949–1996—**DOC, BEA, GDP by industry (Historical) data (October 2019). **1997 forward—**DOC, BEA, GDP by Industry data (February 2022).

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				
	Coal	Natural Gas	Petroleum	Total	Conventional Hydroelectric Power	Biomass: Wood [a]	Biomass: Total	Electricity Net Imports[b]	Total
1635	NA	– –	– –	NA	– –	(s)	(s)	– –	(s)
1645	NA	– –	– –	NA	– –	0.001	0.001	– –	0.001
1655	NA	– –	– –	NA	– –	.002	.002	– –	.002
1665	NA	– –	– –	NA	– –	.005	.005	– –	.005
1675	NA	– –	– –	NA	– –	.007	.007	– –	.007
1685	NA	– –	– –	NA	– –	.009	.009	– –	.009
1695	NA	– –	– –	NA	– –	.014	.014	– –	.014
1705	NA	– –	– –	NA	– –	.022	.022	– –	.022
1715	NA	– –	– –	NA	– –	.037	.037	– –	.037
1725	NA	– –	– –	NA	– –	.056	.056	– –	.056
1735	NA	– –	– –	NA	– –	.080	.080	– –	.080
1745	NA	– –	– –	NA	– –	.112	.112	– –	.112
1755	NA	– –	– –	NA	– –	.155	.155	– –	.155
1765	NA	– –	– –	NA	– –	.200	.200	– –	.200
1775	NA	– –	– –	NA	– –	.249	.249	– –	.249
1785	NA	– –	– –	NA	– –	.310	.310	– –	.310
1795	NA	– –	– –	NA	– –	.402	.402	– –	.402
1805	NA	– –	– –	NA	– –	.537	.537	– –	.537
1815	NA	– –	– –	NA	– –	.714	.714	– –	.714
1825	NA	– –	– –	NA	– –	.960	.960	– –	.960
1835	NA	– –	– –	NA	– –	1.305	1.305	– –	1.305
1845	NA	– –	– –	NA	– –	1.757	1.757	– –	1.757
1850	0.219	– –	– –	0.219	– –	2.138	2.138	– –	2.357
1855	.421	– –	– –	.421	– –	2.389	2.389	– –	2.810
1860	.518	– –	0.003	.521	– –	2.641	2.641	– –	3.162
1865	.632	– –	.010	.642	– –	2.767	2.767	– –	3.409
1870	1.048	– –	.011	1.059	– –	2.893	2.893	– –	3.952
1875	1.440	– –	.011	1.451	– –	2.872	2.872	– –	4.323
1880	2.054	– –	.096	2.150	– –	2.851	2.851	– –	5.001
1885	2.840	0.082	.040	2.962	– –	2.683	2.683	– –	5.645
1890	4.062	.257	.156	4.475	0.022	2.515	2.537	– –	7.012
1895	4.950	.147	.168	5.265	.090	2.306	2.396	– –	7.661
1900	6.841	.252	.229	7.322	.250	2.015	2.265	– –	9.587
1905	10.001	.372	.610	10.983	.386	1.843	2.229	– –	13.212
1910	12.714	.540	1.007	14.261	.539	1.765	2.304	– –	16.565
1915	13.294	.673	1.418	15.385	.659	1.688	2.347	0.002	17.734
1920	15.504	.813	2.676	18.993	.738	1.610	2.348	.003	21.344
1925	14.706	1.191	4.280	20.177	.668	1.533	2.201	.004	22.382
1930	13.639	1.932	5.897	21.468	.752	1.455	2.207	.005	23.680
1935	10.634	1.919	5.675	18.228	.806	1.397	2.203	.005	20.436
1940	12.535	2.665	7.760	22.960	.880	1.358	2.238	.007	25.205
1945	15.972	3.871	10.110	29.953	1.442	[a]1.261	2.703	.009	32.665

[a] There is a discontinuity in the "Wood" time series between 1945 (in this table) and 1949 (in Table 10.1). Through 1945, data are for fuelwood only; beginning in 1949, data are for wood and wood-derived fuels.

[b] Electricity transmitted across U.S. borders. Net imports equal imports minus exports.

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

Notes: • For years not shown, data are not available. • See Tables 1.3 and 10.1 for continuation of these data series beginning in 1949. • See Note, "Geographic Coverage of Statistics for 1635–1945," at end of section.

Sources: • **Fossil Fuels:** *Energy in the American Economy, 1850–1975,* Table VII. • **Conventional Hydroelectric Power:** *Energy in the American Economy, 1850–1975,* Table II. • **Wood: 1635–1845—**U.S. Department of Agriculture, Circular No. 641, *Fuel Wood Used in the United States 1630–1930,* February 1942. This source estimates fuelwood consumption in cords per decade, which were converted to Btu using the conversion factor of 20 million Btu per cord. The annual average value for each decade was assigned to the fifth year of the decade on the assumption that annual use was likely to increase during any given decade and the average annual value was more likely to reflect mid-decade yearly consumption than use at either the beginning or end of the decade. Values thus begin in 1635 and are plotted at 10-year intervals. **1850–1945—***Energy in the American Economy, 1850–1975,* Table VII. • **Electricity Net Imports:** *Energy in the American Economy, 1850–1975,* Tables I and VI. Electricity net imports are assumed to equal hydroelectric consumption minus hydroelectric production (data are converted to Btu by multiplying by 3,412 Btu per kilowatthour).

Note. Geographic Coverage of Statistics for 1635–1945.
Table D1 presents estimates of U.S. energy consumption by energy source for a period that begins a century and a half before the original 13 colonies formed a political union and continues through the decades during which the United States was still expanding territorially. The question thus arises, what exactly is meant by "U.S. consumption" of an energy source for those years when the United States did not formally exist or consisted of less territory than is now encompassed by the 50 states and the District of Columbia?

The documents used to assemble the estimates, and (as far as possible) the sources of those documents, were reviewed carefully for clues to geographic coverage. For most energy sources, the extent of coverage expanded more rapidly than the nation, defined as all the official states and the District of Columbia. Estimates or measurements of consumption of each energy source generally appear to follow settlement patterns. That is, they were made for areas of the continent that were settled enough to have economically significant consumption even though those areas were not to become states for years. The wood data series, for example, begins in 1635 and includes 12 of the original colonies (excepting Georgia), as well as Maine, Vermont, and the area that would become the District of Columbia. By the time the series reaches 1810, the rest of the continental states are all included, although the last of the 48 states to achieve statehood did not do so until 1912. Likewise, the coal data series begins in 1850 but includes consumption in areas, such as Utah and Washington (state), which were significant coal producing regions but had not yet attained statehood. (Note: No data were available on state-level historical coal consumption. The coal data shown in Table D1 through 1945 describe *apparent* consumption, i.e., production plus imports minus exports. The geographic coverage for coal was therefore based on a tally of coal-*producing* states listed in various historical issues of *Minerals Yearbook*. It is likely that coal was consumed in states where it was not mined in significant quantities.)

By energy source, the extent of coverage can be summarized as follows: • Coal—35 coal-producing states by 1885. • Natural Gas—All 48 contiguous states, the District of Columbia, and Alaska by 1885. • Petroleum—All 48 contiguous states, the District of Columbia, and Alaska by 1885. • Conventional Hydroelectric Power—Coverage for 1890 and 1895 is uncertain, but probably the 48 contiguous states and the District of Columbia. Coverage for 1900–1945 is the 48 contiguous states, and the District of Columbia. • Wood—All 48 contiguous states and the District of Columbia by 1810.

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Appendix E

Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables

Alternative Approaches for Deriving Energy Contents of Noncombustible Renewables

EIA compiles data on most energy sources in physical units, such as barrels and cubic feet, in order to calculate total primary energy consumption. To sum data for different energy sources, EIA converts the data to the common unit of British thermal units (Btu), a measure that is based on the thermal conversion of energy resources to heat and power.

Noncombustible renewables are resources from which energy is extracted without burning or combusting fuel. They include hydroelectric, geothermal, solar, and wind energy. When noncombustible renewables are used to generate electricity, there is no fuel combustion and, therefore, no set Btu conversion factors for the energy sources.[1] However, there are several possible approaches for converting that electricity to Btu. Three of these approaches are described below.

Fossil Fuel Equivalency Approach

In Sections 1, 2, and 10 of the *Monthly Energy Review*, EIA calculates total primary energy consumption for noncombustible renewable electricity in Btu by applying a fossil fuel equivalency factor. Under that approach, the primary energy consumption of noncombustible renewable electricity can be viewed as the sum of captured energy "transformed into electricity" and an "adjustment for fossil fuel equivalency."

The adjustment for fossil fuel equivalency is equal to the difference between total primary consumption of noncombustible renewables for electricity generation in Btu (calculated using the fossil fuels heat rate in Table A6) and the captured energy of that electricity (calculated using the constant conversion factor of 3,412 Btu per kWh). The fossil fuels heat rate is equal to the thermal efficiency across fossil fuel-fired generating stations based on net generation. The fossil fuel equivalency adjustment represents the energy that would have been consumed if electricity had been generated by fossil fuels. By using that factor, it is possible, for example, to evaluate fossil fuel requirements for replacing electricity generation during periods of interruptions, such as droughts.

Captured Energy Approach

Captured energy (Tables E1a and E1b) reflects the primary energy captured for economic use and does not include losses. Thus, it is the net energy available for direct consumption after transformation of a noncombustible renewable into electricity. In other words, captured energy is the energy measured as the "output" of a generating unit, such as electricity from a wind turbine or solar plant. The captured energy approach is often used to show the economically significant energy transformations in the United States. There is no market for the resource-specific energy apart from its immediate, site-specific energy conversion, and there is no substantive opportunity cost to its continued exploitation.[2]

Incident Energy Approach

Incident energy is the mechanical, radiation, or thermal energy that is measurable as the "input" of the device. EIA defines "incident energy" for noncombustible renewables as the gross energy that first strikes an energy conversion device:

- For hydroelectric, the energy contained in the water passing through the penstock (a closed conduit for carrying water to the turbines)
- For geothermal, the energy contained in the hot fluid at the surface of the wellbore
- For wind, the energy contained in the wind that passes through the rotor disc
- For solar, the energy contained in the sunlight that strikes the panel or collector mirror

The incident energy approach to converting noncombustible renewable electricity to Btu could, in theory, be used to account for "losses" that are due to the inability to convert 100% of incident energy to a useful form of energy. EIA does not publish total primary energy consumption estimates based on the incident energy approach because it would be difficult to obtain accurate estimates of input energy without creating undue burden on survey respondents. Few renewable electricity power plants track cumulative input energy due to its lack of economic significance or other purpose. In addition, estimated energy efficiencies of renewable conversion technologies vary significantly across technologies, site-specific configurations, and environmental factors.[3]

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[1]Direct use of noncombustible renewables in the form of heat (e.g., solar thermal heating) is estimated separately and is measured in Btu.
[2]There is an initial opportunity cost when a facility is first built: water behind a dam might flood land that could have been used for other purposes, or a solar panel might shade an area that could have used the sunlight. But that is a "fixed" opportunity cost that does not change during the operation of the plant.
[3]Based on EIA research conducted in 2016, engineering estimates of conversion efficiencies for noncombustible renewables range from less than 20% for solar photovoltaics and geothermal to 90% for large-scale hydroelectricity plants. Those estimates are notional indications of the energy output as a percent of energy input at each technology based on typical equipment operating within the normal operating range for that technology.

Table E1a. Noncombustible Renewable Primary Energy Consumption: Conventional Hydroelectric Power, Geothermal, and Wind (Trillion Btu)

	Conventional Hydroelectric Power[a]			Geothermal[b]				Wind[c]		
	Transformed Into Electricity[d,e]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[g]	Direct Consumption[h]	Transformed Into Electricity[d,i]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[j]	Transformed Into Electricity[d,i]	Adjustment for Fossil Fuel Equivalence[f]	Total Primary Energy[g]
1950	344	1,071	1,415	NA	NA	NA	NA	NA	NA	NA
1955	397	963	1,360	NA	NA	NA	NA	NA	NA	NA
1960	510	1,098	1,608	NA	(s)	(s)	(s)	NA	NA	NA
1965	672	1,387	2,059	NA	1	1	2	NA	NA	NA
1970	856	1,777	2,634	NA	2	4	6	NA	NA	NA
1975	1,034	2,120	3,155	NA	11	23	34	NA	NA	NA
1980	953	1,948	2,900	NA	17	35	53	NA	NA	NA
1981	900	1,858	2,758	NA	19	40	59	NA	NA	NA
1982	1,066	2,200	3,266	NA	17	34	51	NA	NA	NA
1983	1,144	2,383	3,527	NA	21	43	64	(s)	(s)	(s)
1984	1,107	2,279	3,386	NA	26	54	81	(s)	(s)	(s)
1985	970	2,000	2,970	NA	32	66	97	(s)	(s)	(s)
1986	1,003	2,068	3,071	NA	35	73	108	(s)	(s)	(s)
1987	863	1,772	2,635	NA	37	76	112	(s)	(s)	(s)
1988	771	1,563	2,334	NA	35	71	106	(s)	(s)	(s)
1989	[e] 928	1,909	2,837	9	[i] 50	102	162	[i] 7	15	22
1990	999	2,047	3,046	10	53	108	171	10	19	29
1991	986	2,030	3,016	11	54	112	178	10	21	31
1992	864	1,754	2,617	12	55	112	179	10	20	30
1993	957	1,935	2,892	13	57	116	186	10	21	31
1994	888	1,796	2,683	13	53	107	173	12	24	36
1995	1,061	2,145	3,205	14	46	92	152	11	22	33
1996	1,185	2,405	3,590	15	49	99	163	11	22	33
1997	1,216	2,424	3,640	16	50	100	167	11	22	34
1998	1,103	2,194	3,297	18	50	100	168	10	21	31
1999	1,090	2,177	3,268	19	51	101	171	15	31	46
2000	940	1,871	2,811	21	48	96	164	19	38	57
2001	740	1,502	2,242	22	47	95	164	23	47	70
2002	902	1,787	2,689	24	49	98	171	35	70	105
2003	941	1,851	2,793	27	49	97	173	38	75	113
2004	916	1,773	2,688	30	51	98	178	48	93	142
2005	922	1,781	2,703	34	50	97	181	61	117	178
2006	987	1,882	2,869	37	50	95	181	91	173	264
2007	845	1,602	2,446	41	50	95	186	118	223	341
2008	869	1,642	2,511	46	51	96	192	189	357	546
2009	933	1,736	2,669	54	51	95	200	252	469	721
2010	888	1,651	2,539	60	52	97	208	323	600	923
2011	1,090	2,013	3,103	64	52	97	212	410	758	1,168
2012	943	1,686	2,629	64	53	95	212	480	860	1,340
2013	916	1,646	2,562	64	54	97	214	573	1,029	1,601
2014	885	1,582	2,467	64	54	97	214	620	1,108	1,728
2015	850	1,471	2,321	64	54	94	212	651	1,127	1,777
2016	914	1,559	2,472	64	54	92	210	774	1,321	2,096
2017	1,025	1,742	2,767	64	54	92	210	868	1,475	2,343
2018	998	1,665	2,663	64	54	91	209	930	1,552	2,482
2019	982	1,581	2,564	64	53	85	201	1,010	1,625	2,635
2020	973	1,529	2,503	64	54	85	203	1,153	1,812	2,965
2021	888	1,395	2,283	64	55	87	206	1,296	2,036	3,332

[a] Conventional hydroelectricity net generation. Through 1989, also includes hydroelectric pumped storage.

[b] Geothermal heat pump and direct use energy; and geothermal electricity net generation.

[c] Wind electricity net generation.

[d] Electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[e] Through 1988, data are for electric utilities and industrial plants. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

[f] Equals the difference between the fossil-fuel equivalent value of electricity and the captured energy consumed as electricity. The fossil-fuel equivalent value of electricity equals electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6). The captured energy consumed as electricity equals electricity net generation in kilowatthours multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[g] Electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

[h] Geothermal heat pump and direct use energy.

[i] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

[j] Direct consumption of energy; and energy used to generate electricity, calculated as electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

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

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

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

Sources: • **Conventional Hydroelectric Power** and **Wind:** Tables 7.2a, 10.1, and A6. • **Geothermal:** Tables 7.2a, 10.1, 10.2a, 10.2b, and A6.

Table E1b. Noncombustible Renewable Primary Energy Consumption: Solar and Total

(Trillion Btu)

	Solar[a]						Total[b]		
	Distributed[c]			Utility-Scale[d]					
	Direct Consumption[e]	Transformed Into Electricity[f]	Adjustment for Fossil Fuel Equivalence[g]	Transformed Into Electricity[f,h]	Adjustment for Fossil Fuel Equivalence[g]	Total Primary Energy[i]	Captured Energy[j]	Adjustment for Fossil Fuel Equivalence[g]	Total Primary Energy[i]
1950	NA	NA	NA	NA	NA	NA	344	1,071	1,415
1955	NA	NA	NA	NA	NA	NA	397	963	1,360
1960	NA	NA	NA	NA	NA	NA	510	1,098	1,608
1965	NA	NA	NA	NA	NA	NA	673	1,388	2,061
1970	NA	NA	NA	NA	NA	NA	858	1,781	2,639
1975	NA	NA	NA	NA	NA	NA	1,045	2,143	3,188
1980	NA	NA	NA	NA	NA	NA	970	1,983	2,953
1981	NA	NA	NA	NA	NA	NA	920	1,898	2,817
1982	NA	NA	NA	NA	NA	NA	1,082	2,234	3,316
1983	NA	NA	NA	NA	NA	NA	1,165	2,426	3,591
1984	NA	NA	NA	(s)	(s)	(s)	1,133	2,334	3,467
1985	NA	NA	NA	(s)	(s)	(s)	1,002	2,066	3,068
1986	NA	NA	NA	(s)	(s)	(s)	1,038	2,141	3,179
1987	NA	NA	NA	(s)	(s)	(s)	900	1,847	2,747
1988	NA	NA	NA	(s)	(s)	(s)	807	1,634	2,441
1989	52	(s)	(s)	[h] 1	2	54	1,047	2,029	3,075
1990	55	(s)	(s)	1	3	59	1,128	2,177	3,305
1991	56	(s)	(s)	2	3	62	1,120	2,166	3,286
1992	58	(s)	(s)	1	3	63	1,000	1,889	2,889
1993	60	(s)	(s)	2	3	65	1,099	2,075	3,173
1994	62	(s)	(s)	2	3	67	1,029	1,931	2,960
1995	63	(s)	(s)	2	3	68	1,196	2,263	3,458
1996	63	(s)	(s)	2	4	69	1,325	2,531	3,856
1997	62	(s)	1	2	3	68	1,358	2,551	3,909
1998	61	(s)	1	2	3	67	1,245	2,319	3,564
1999	60	(s)	1	2	3	66	1,238	2,313	3,551
2000	57	(s)	1	2	3	64	1,087	2,009	3,096
2001	55	(s)	1	2	4	62	890	1,648	2,538
2002	53	1	1	2	4	60	1,066	1,960	3,026
2003	51	1	1	2	4	59	1,109	2,028	3,138
2004	50	1	2	2	4	59	1,098	1,969	3,067
2005	49	1	2	2	4	58	1,119	2,001	3,120
2006	51	2	3	2	3	61	1,218	2,157	3,375
2007	53	3	5	2	4	66	1,110	1,928	3,039
2008	54	4	8	3	6	75	1,217	2,107	3,324
2009	55	6	10	3	6	79	1,353	2,316	3,669
2010	56	9	16	4	8	93	1,391	2,372	3,762
2011	58	14	25	6	11	114	1,693	2,904	4,597
2012	59	22	40	15	26	162	1,636	2,707	4,343
2013	61	28	50	31	55	225	1,726	2,877	4,603
2014	62	38	68	60	108	337	1,783	2,963	4,746
2015	63	48	84	85	147	427	1,815	2,922	4,737
2016	64	64	109	123	210	570	2,057	3,291	5,348
2017	65	82	139	182	309	777	2,339	3,758	6,097
2018	65	101	168	218	363	915	2,430	3,839	6,269
2019	65	119	192	245	395	1,017	2,538	3,879	6,417
2020	65	142	223	304	478	1,212	2,756	4,127	6,883
2021	65	167	263	391	615	1,501	2,926	4,396	7,322

[a] Solar thermal direct use energy; and solar photovoltaic (PV) and solar thermal electricity net generation.

[b] Conventional hydroelectricity net generation; geothermal heat pump and direct use energy; geothermal electricity net generation; wind electricity net generation; solar thermal direct use energy; and solar photovoltaic (PV) and solar thermal electricity net generation.

[c] Distributed (small-scale) facilities (electric generators have a combined generator nameplate capacity of less than 1 megawatt).

[d] Utility-scale facilities (combined generator nameplate capacity of 1 megawatt or more).

[e] Solar thermal direct use energy.

[f] Electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[g] Equals the difference between the fossil-fuel equivalent value of electricity and the captured energy consumed as electricity. The fossil-fuel equivalent value of electricity equals electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6). The captured energy consumed as electricity equals electricity net generation in kilowatthours multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

[h] Through 1988, data are for electric utilities only. Beginning in 1989, data are for electric utilities, independent power producers, commercial plants, and industrial plants.

[i] Direct consumption of energy; and energy used to generate electricity, calculated as electricity net generation in kilowatthours multiplied by the total fossil fuels heat rate factors (see Table A6).

[j] Direct consumption of energy plus captured energy consumed as electricity, which is calculated as electricity net generation in kilowatthours (kWh) multiplied by 3,412 Btu/kWh, the heat content of electricity (see Table A6).

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

Notes: • Beginning in 1989, data for distributed solar and total captured energy are estimates. For the current year, data for utility-scale solar are estimates. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia.

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

Sources: • **Solar:** Tables 10.5, 10.6, and A6. • **Total:** Tables 7.2a, 10.1, 10.2a, 10.2b, 10.5, 10.6, and A6.

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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.

Biodiesel: A fuel typically made from soybean, canola, or other vegetable oils; animal fats; and recycled grease. It can serve as a substitute for **petroleum**-derived **diesel fuel** or **distillate fuel oil**. For U.S. Energy Information Administration

reporting, it is a fuel composed of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM (American Society for Testing & Materials) D 6751.

Biofuels: Liquid fuels and blending components produced from **biomass** (plant) feedstocks, used primarily for transportation. See **Biodiesel**, **Fuel ethanol**, **Other biofuels**, and **Renewable diesel fuel**.

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 heat and power (CHP) plant: A plant designed to produce both heat and electricity from a single heat source. ***Note:*** This term is being used in place of the term "cogenerator" that was used by EIA in the past. CHP better describes the facilities because some of the plants included do not produce heat and power in a sequential fashion and, as a result, do not meet the legal definition of cogeneration specified in the Public Utility Regulatory Policies Act (PURPA).

Commercial sector: An energy-consuming sector that consists of service-providing facilities and equipment of: businesses; federal, state, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. It also includes sewage treatment facilities. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a wide variety of other equipment. ***Note:*** This sector includes generators

that produce electricity and/or useful thermal output primarily to support the activities of the above- mentioned commercial establishments. See **End-use sectors** and **Energy-use sectors**.

Completion: The installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a well (classified as an oil well or gas well) and the definition of a completion are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a well is not synonymous with a completion.

Conventional hydroelectric power: Hydroelectric power generated from flowing water that is not created by **hydroelectric pumped storage**.

Conventional motor gasoline: See **Motor gasoline conventional**.

Conversion factor: A factor for converting data between one unit of measurement and another (such as between **short tons** and **British thermal units**, or between **barrels** and gallons).
(See http://www.eia.gov/totalenergy/data/monthly/#appendices. See **Btu conversion factor** and **Thermal conversion factor**.

Cost, insurance, freight (CIF): A sales transaction in which the seller pays for the transportation and insurance of the goods to the port of destination specified by the buyer.

Crude oil: A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include: (1) small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casing head) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included; (2) small amounts of nonhydrocarbons produced with the oil, such as sulfur and various metals; and (3) drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Crude oil f.o.b. price: The crude oil price actually charged at the oil-producing country's port of loading. Includes deductions for any rebates and discounts or additions of premiums, where applicable. It is the actual price paid with no adjustment for credit terms.

Crude oil (including lease condensate): A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Where identifiable, liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded.

Crude oil landed cost: The price of crude oil at the port of discharge, including charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. The cost does not include charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage).

Crude oil refinery input: The total crude oil put into processing units at refineries.

Crude oil stocks: Stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Crude oil used directly: Crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Crude oil well: A well completed for the production of crude oil from one or more oil zones or reservoirs. Wells producing both crude oil and natural gas are classified as oil wells.

Cubic foot (natural gas): The amount of **natural gas** contained at standard temperature and pressure (60 degrees Fahrenheit and 14.73 pounds standard per square inch) in a cube whose edges are one foot long.

Degree Day Normals: Simple arithmetic averages of monthly or annual degree days over a long period of time (usually the 30-year period 1961–1990). The averages may be simple degree day normals or population-weighted degree day normals.

Degree Days, Cooling (CDD): A measure of how warm a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the base temperature (65 degrees) from the average of the day's high and low temperatures, with negative values set equal to zero. Each day's cooling degree days are summed to create a cooling degree day measure for a specified reference period. Cooling degree days are used in energy analysis as an indicator of air conditioning energy requirements or use.

Degree Days, Heating (HDD): A measure of how cold a location is over a period of time relative to a base temperature, most commonly specified as 65 degrees Fahrenheit. The measure is computed for each day by subtracting the average of the day's high and low temperatures from the base temperature (65 degrees), with negative values set equal to zero. Each day's heating degree days are summed to create a heating degree day measure for a specified reference period. Heating degree days are used in energy analysis as an indicator of space heating energy requirements or use.

Degree Days, Population-weighted: Heating or cooling degree days weighted by the population of the area in which the degree days are recorded. To compute state population-weighted degree days, each state is divided into from one to nine climatically homogeneous divisions, which are assigned weights based on the ratio of the population of the division to the total population of the state. Degree day readings for each division are multiplied by the corresponding population weight for each division and those products are then summed to arrive at the state population-weighted degree day figure. To compute national population-weighted degree days, the nation is divided into nine Census regions, each comprising from three to eight states, which are assigned weights based on the ratio of the population of the region to the total population of the nation. Degree day readings for each region are multiplied by the corresponding population weight for each region and those products are then summed to arrive at the national population-weighted degree day figure.

Denaturant: Petroleum, typically **natural gasoline** or **conventional motor gasoline**, added to **fuel ethanol** to make it unfit for human consumption. Fuel ethanol is denatured, usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent denaturant. See **Fuel ethanol** and **Fuel ethanol minus denaturant**.

Densified biomass fuel: Raw biomass, primarily wood, that has been condensed into a homogenously sized, energy-dense product, such as wood pellets, intended for use as fuel. It is mainly used for residential and commercial space heating and electricity generation.

Design electrical rating, net: The nominal net electrical output of a nuclear unit as specified by the electric utility for the purpose of plant design.

Development well: A well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Diesel fuel: A fuel composed of **distillate fuel oils** obtained in petroleum refining operation or blends of such distillate fuel oils with **residual fuel oil** used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline.

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

Distillate fuel oil: A general classification for one of the **petroleum** fractions produced in conventional distillation operations. It includes **diesel fuels** and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and **electricity generation**.

Dry hole: An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Dry natural gas production: See **Natural gas (dry) production**.

E85: A fuel containing a mixture of 85 percent **ethanol** and 15 percent **motor gasoline**.

Electric power plant: A station containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

Electric power sector: An energy-consuming sector that consists of electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public-i.e., North American Industry Classification System 22 plants. See also **Combined heat and power (CHP) plant**, **Electricity-only plant**, **Electric utility**, and **Independent power producer**.

Electric utility: Any entity that generates, transmits, or distributes **electricity** and recovers the cost of its generation, transmission or distribution assets and operations, either directly or indirectly, through cost-based rates set by a separate regulatory authority (e.g., State Public Service Commission), or is owned by a governmental unit or the consumers that the entity serves. Examples of these entities include: investor-owned entities, public power districts, public utility districts, municipalities, rural electric cooperatives, and state and federal agencies. Electric utilities may have Federal Energy Regulatory Commission approval for interconnection agreements and wholesale trade tariffs covering either cost-of-service and/or market-based rates under the authority of the Federal Power Act. See **Electric power sector**.

Electrical system energy losses: The amount of energy lost during generation, transmission, and distribution of electricity, including plant and unaccounted-for uses.

Electricity: A form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.

Electricity generation: The process of producing electric energy, or the amount of electric energy produced by transforming other forms of energy, commonly expressed in **kilowatthours** (kWh) or megawatthours (MWh).

Electricity generation, gross: The total amount of electric energy produced by generating units and measured at the generating terminal in **kilowatthours** (kWh) or megawatthours (MWh).

Electricity generation, net: The amount of **gross electricity generation** less **station use** (the **electric energy** consumed at the generating station(s) for station service or auxiliaries). ***Note:*** Electricity required for pumping at **hydroelectric pumped-storage** plants is regarded as electricity for station service and is deducted from gross generation.

Electricity only plant: A plant designed to produce electricity only. See also **Combined heat and power (CHP) plant**.

Electricity retail sales: The amount of electricity sold to customers purchasing electricity for their own use and not for resale.

End use sectors: The **residential**, **commercial**, **industrial**, and **transportation** sectors of the economy.

Energy: The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units.

Energy consumption: The use of energy as a source of heat or power or as an input in the manufacturing process.

Energy service provider: An energy entity that provides service to a retail or end-use customer.

Energy use sectors: A group of major energy-consuming components of U.S. society developed to measure and analyze energy use. The sectors most commonly referred to in EIA are: **residential**, **commercial**, **industrial**, **transportation**, and **electric power**.

Ethane (C_2H_6): A straight-chain saturated (paraffinic) **hydrocarbon** extracted predominantly from the natural gas stream, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of -127 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Ethanol (C_2H_5OH): A clear, colorless, flammable **alcohol**. Ethanol is typically produced biologically from **biomass** feedstocks such as agricultural crops and cellulosic residues from agricultural crops or wood. Ethanol can also be produced chemically from **ethylene**. See **Biomass**, **Fuel ethanol**, and **Fuel ethanol minus denaturant**.

Ether: A generic term applied to a group of organic chemical compounds composed of carbon, **hydrogen**, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., **methyl tertiary butyl ether**).

Ethylene (C_2H_4): An olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Ethylene is used as a petrochemical feedstock for many chemical applications and the production of consumer goods. See **Olefinic hydrocarbons (olefins)**.

Exploratory well: A well drilled to find and produce oil or gas in an area previously considered an unproductive area, to find a new reservoir in a known field (i.e., one previously found to be producing oil or gas in another reservoir), or to extend the limit of a known oil or gas reservoir.

Exports: Shipments of goods from within the 50 states and the District of Columbia to U.S. possessions and territories or to foreign countries.

Federal Energy Administration (FEA): A predecessor of the U.S. Energy Information Administration.

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the U.S. Department of Energy and is the successor to the Federal Power Commission.

Federal Power Commission (FPC): The predecessor agency of the Federal Energy Regulatory Commission. The Federal Power Commission was created by an Act of Congress under the Federal Water Power Act on June 10, 1920. It was charged originally with regulating the electric power and natural gas industries. It was abolished on September 30, 1977, when the U.S. Department of Energy was created. Its functions were divided between the U.S. Department of Energy and the Federal Energy Regulatory Commission, an independent regulatory agency.

First purchase price: The price for domestic crude oil reported by the company that owns the crude oil the first time it is removed from the lease boundary.

Flared natural gas: Natural gas burned in flares on the base site or at gas processing plants.

F.O.B. (free on board): A sales transaction in which the seller makes the product available for pick up at a specified port or terminal at a specified price and the buyer pays for the subsequent transportation and insurance.

Footage drilled: Total footage for wells in various categories, as reported for any specified period, includes (1) the deepest total depth (length of well bores) of all wells drilled from the surface, (2) the total of all bypassed footage drilled in connection with reported wells, and (3) all new footage drilled for directional sidetrack wells. Footage reported for directional sidetrack wells does not include footage in the common bore, which is reported as footage for the original well. In the case of old wells drilled deeper, the reported footage is that which was drilled below the total depth of the old well.

Former U.S.S.R.: See **Union of Soviet Socialist Republics (U.S.S.R.)**.

Fossil fuel: An energy source formed in the Earth's crust from decayed organic material, such as **petroleum**, **coal**, and **natural gas**.

Fossil fueled steam electric power plant: An electricity generation plant in which the prime mover is a turbine rotated by high-pressure steam produced in a boiler by heat from burning fossil fuels.

Fuel ethanol: Ethanol intended for fuel use. Fuel ethanol in the United States must be anhydrous (less than 1 percent water). Fuel ethanol is denatured (made unfit for human consumption), usually prior to transport from the ethanol production facility, by adding 2 to 5 volume percent petroleum, typically **natural gasoline** or **conventional motor gasoline**. Fuel ethanol is used principally for blending in low concentrations with **motor gasoline** as an **oxygenate** or octane enhancer. In high concentrations, it is used to fuel **alternative-fuel vehicles** specially designed for its use. See **Alternative-fuel vehicle**, **Denaturant**, **E85**, **Ethanol**, **Fuel ethanol minus denaturant**, and **Oxygenates**.

Fuel ethanol minus denaturant: An unobserved quantity of anhydrous, **biomass**-derived, undenatured **ethanol** for fuel use. The quantity is obtained by subtracting the estimated **denaturant** volume from **fuel ethanol** volume. Fuel ethanol minus denaturant is counted as **renewable energy**, while denaturant is counted as **nonrenewable fuel**. See **Denaturant**, **Ethanol**, **Fuel ethanol**, **Nonrenewable fuels**, **Oxygenates**, and **Renewable energy**.

Full power operation: Operation of a nuclear generating unit at 100 percent of its design capacity. Full-power operation precedes commercial operation.

Gasohol: A blend of finished motor gasoline containing alcohol (generally ethanol but sometimes methanol) at a concentration between 5.7 percent and 10 percent by volume. See **Motor gasoline, oxygenated**.

Gas well: A well completed for production of natural gas from one or more gas zones or reservoirs. Such wells contain no completions for the production of crude oil.

Geothermal energy: Hot water or steam extracted from geothermal reservoirs in the earth's crust and used for geothermal heat pumps, water heating, or electricity generation.

Global warming: An increase in the near-surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is today most often used to refer to the warming some scientists predict will occur as a result of increased anthropogenic emissions of **greenhouse gases**. See **Climate change**.

Global warming potential (GWP): An index used to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emission of one kilogram of a **greenhouse gas** to that from the emission of one kilogram of **carbon dioxide** over a fixed period of time, such as 100 years.

Greenhouse gases: Those gases, such as water vapor, **carbon dioxide**, nitrous oxide, **methane**, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride, that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

Gross domestic product (GDP): The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

GT/IC: Gas turbine and internal combustion plants.

Heat content: The amount of heat energy available to be released by the transformation or use of a specified physical unit of an energy form (e.g., a ton of coal, a barrel of oil, a kilowatthour of electricity, a cubic foot of natural gas, or a pound of steam). The amount of heat energy is commonly expressed in **British thermal units** (**Btu**). ***Note:*** Heat content of combustible energy forms can be expressed in terms of either gross heat content (higher or upper heating value) or net heat content (lower heating value), depending upon whether or not the available heat energy includes or excludes the energy used to vaporize water (contained in the original energy form or created during the combustion process). The U.S. Energy Information Administration typically uses gross heat content values.

Heat rate: A measure of generating station thermal efficiency commonly stated as **Btu** per **kilowatthour**. ***Note:*** Heat rates can be expressed as either gross or net heat rates, depending whether the electricity output is gross or net generation. Heat rates are typically expressed as net heat rates.

Hydrocarbon: An organic chemical compound of **hydrogen** and carbon in the gaseous, liquid, or solid phase. The molecular structure of hydrocarbon compounds varies from the simplest (methane, the primary constituent of **natural gas**) to the very heavy and very complex.

Hydrocarbon gas liquids (HGL): A group of **hydrocarbons** including **ethane**, **propane**, **normal butane**, **isobutane**, and **natural gasoline**, and their associated **olefins**, including **ethylene**, **propylene**, **butylene**, and **isobutylene**. As marketed products, HGL represents all **natural gas liquids** (NGL) and olefins. EIA reports production of HGL from refineries (**liquefied refinery gases**, or LRG) and natural gas plants (**natural gas plant liquids**, or NGPL). Excludes liquefied natural gas (LNG). See **Olefinic hydrocarbons (olefins)**.

Hydroelectric power: The production of electricity from the kinetic energy of falling water.

Hydroelectric power plant: A plant in which the turbine generators are driven by falling water.

Hydroelectric pumped storage: Hydroelectricity that is generated during peak load periods by using water previously pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available to do so. When additional generating capacity is needed, the water can be released from the reservoir through a conduit to turbine generators located in a power plant at a lower level.

Hydrogen (H): The lightest of all gases, hydrogen occurs chiefly in combination with oxygen in water. It also exists in acids, bases, **alcohols**, **petroleum**, and **other hydrocarbons**.

Imports: Receipts of goods into the 50 states and the District of Columbia from U.S. possessions and territories or from foreign countries.

Independent power producer: A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an **electric utility**.

Industrial sector: An **energy**-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity: manufacturing (**NAICS** codes 31-33); agriculture, forestry, fishing and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. ***Note:*** This sector includes **generators** that produce **electricity** and/or **useful thermal output** primarily to support the above-mentioned industrial activities. See **End use sectors** and **Energy use sectors**.

Injections (natural gas): **Natural gas** injected into storage reservoirs.

Isobutane (C_4H_{10}): A branch-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 11 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Isobutylene (C_4H_8): A branch-chain olefinic **hydrocarbon** recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Isobutylene is used in the production of gasoline and various petrochemical products. See **Olefinic hydrocarbons (olefins)**.

Isopentane (C_5H_{12}): A saturated branched-chain **hydrocarbon** obtained by fractionation of **natural gasoline** or isomerization of normal pentane.

Jet fuel: A refined **petroleum** product used in jet aircraft engines. See **Jet fuel**, **Kerosene-type**, and **Jet fuel**, **Naphtha-type**.

Jet fuel, kerosene-type: A **kerosene**-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbo jet and turbo prop aircraft engines.

Jet fuel, naphtha-type: A fuel in the heavy **naphtha** boiling range having an average gravity of 52.8 degrees API, 20% to 90% distillation temperatures of 290 degrees to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4). It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds.

Kerosene: A light **petroleum** distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. See **Jet fuel, kerosene-type**.

Kilowatt: A unit of electrical power equal to 1,000 **watts**.

Kilowatthour (kWh): A measure of electricity defined as a unit of work or energy, measured as 1 **kilowatt** (1,000 watts) of power expended for 1 hour. One kilowatthour is equivalent to 3,412 Btu. See **Watthour**.

Landed costs: The dollar-per-barrel price of crude oil at the port of discharge. Included are the charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. Not included are charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage charges).

Lease and plant fuel: **Natural gas** used in well, field, and lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and used as fuel in natural gas processing plants.

Lease condensate: Light liquid **hydrocarbons** recovered from lease separators or field facilities at associated and non-associated **natural gas** wells. Mostly pentanes and heavier hydrocarbons. Normally enters the **crude oil** stream after production.

Lignite: The lowest rank of coal, often referred to as brown **coal**, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent. The heat content of lignite ranges from 9 to 17 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Liquefied natural gas (LNG): **Natural gas** (primarily methane) that has been liquefied by reducing its temperature to -260 degrees Fahrenheit at atmospheric pressure.

Liquefied petroleum gases (LPG): A group of **hydrocarbon** gases, primarily **propane**, **normal butane**, and **isobutane**, derived from crude oil refining or **natural gas** processing. These gases may be marketed individually or mixed. They can be liquefied through pressurization (without requiring cryogenic refrigeration) for convenience of transportation or storage. Excludes **ethane** and **olefins**. ***Note:*** In some EIA publications, LPG includes ethane and marketed refinery olefin streams, in accordance with definitions used prior to January 2014.

Liquefied refinery gases (LRG): **Hydrocarbon gas liquids** produced in refineries from processing of **crude oil** and **unfinished oils**. They are retained in the liquid state through pressurization and/or refrigeration. The reported categories include **ethane**, **propane**, **normal butane**, **isobutane**, and refinery **olefins** (**ethylene**, **propylene**, **butylene**, and **isobutylene**).

Low power testing: The period of time between a nuclear generating unit's initial fuel loading date and the issuance of its operating (full-power) license. The maximum level of operation during that period is 5 percent of the unit's design thermal rating.

Lubricants: Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Excluded are byproducts of lubricating oil refining, such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. Included are all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Lubricant categories are paraffinic and naphthenic.

Marketed production (natural gas): See **Natural gas marketed production**.

Methane (CH_4): A colorless, flammable, odorless **hydrocarbon** gas which is the major component of **natural gas**. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas. See **Greenhouse gases**.

Methanol (CH_3OH): A light, volatile alcohol eligible for gasoline blending. See **Motor gasoline blending** and **Oxygenates**.

Methyl tertiary butyl ether (MTBE) ($(CH_3)_3COCH_3$): An **ether** intended for gasoline blending. See **Motor gasoline blending** and **Oxygenates**.

Miscellaneous petroleum products: All finished petroleum products not classified elsewhere—for example, petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils.

Motor gasoline blending components: Naphtha (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into finished motor gasoline. These components include reformulated gasoline blendstock (RBOB) but exclude oxygenates (alcohols, ethers), butane, and natural gasoline. ***Note:*** Oxygenates are reported as individual components and are included in the total for other hydrocarbons, hydrogens, and oxygenates.

Motor gasoline, conventional: **Finished motor gasoline** not included in the **oxygenated** or **reformulated** motor gasoline categories. ***Note:*** This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock. Conventional motor gasoline can be leaded or unleaded; regular, midgrade, or premium. See **Motor gasoline grades**.

Motor gasoline (finished): A complex mixture of relatively volatile **hydrocarbons** with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. Motor gasoline includes conventional gasoline; all types of oxygenated gasoline, including **gasohol**; and reformulated gasoline, but excludes aviation gasoline. ***Note:*** Volumetric data on blending components, such as **oxygenates**, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline. See **Motor gasoline**, **conventional**; **Motor gasoline**, **oxygenated**; and **Motor gasoline**, **reformulated**.

Motor gasoline grades: The classification of gasoline by octane ratings. Each type of gasoline (conventional, oxygenated, and reformulated) is classified by three grades: regular, midgrade, and premium. ***Note:*** Gasoline sales are reported by grade in accordance with their classification at the time of sale. In general, automotive octane requirements are lower at high altitudes. Therefore, in some areas of the United States, such as the Rocky Mountain States, the octane ratings for the gasoline grades may be 2 or more octane points lower.

> ***Regular Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than **88**. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Midgrade Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than or equal to **88** and less than or equal to 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.
>
> ***Premium Gasoline:*** Gasoline having an antiknock index, i.e., octane rating, greater than 90. ***Note:*** Octane requirements may vary by altitude. See **Motor gasoline grades**.

Motor gasoline, oxygenated: Finished motor gasoline, other than reformulated gasoline, having an oxygen content of 2.7 percent or higher by weight and required by the U.S. Environmental Protection Agency (EPA) to be sold in areas designated by EPA as carbon monoxide (CO) nonattainment areas. ***Note:*** Oxygenated gasoline excludes oxygenated fuels program reformulated gasoline (OPRG) and reformulated gasoline blendstock for oxygenate blending (RBOB). Data on gasohol that has at least 2.7 percent oxygen, by weight, and is intended for sale inside CO nonattainment areas are included in data on oxygenated gasoline. Other data on gasohol are included in data on conventional gasoline.

Motor gasoline, reformulated: Finished motor gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S.

Environmental Protection Agency under Section 211(k) of the Clean Air Act. ***Note:*** This category includes oxygenated fuels program reformulated gasoline (OPRG) but excludes reformulated gasoline blendstock for oxygenate blending (RBOB).

Motor gasoline retail prices: Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers-about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service).

Motor gasoline (total): For stock level data, a sum including finished motor gasoline stocks plus stocks of motor gasoline blending components but excluding stocks of oxygenates.

MTBE: See **Methyl tertiary butyl ether**.

NAICS (North American Industry Classification System): A coding system developed jointly by the United States, Canada, and Mexico to classify businesses and industries according to the type of economic activity in which they are engaged. NAICS replaces the Standard Industrial Classification (SIC) codes. For additional information on NAICS, go to http://www.census.gov/eos/www/naics/.

Naphtha: A generic term applied to a refined or partially refined **petroleum** fraction with an approximate boiling range between 122 degrees and 400 degrees Fahrenheit.

Natural Gas: A gaseous mixture of **hydrocarbon** compounds, primarily **methane**, used as a fuel for **electricity generation** and in a variety of ways in buildings, and as raw material input and fuel for industrial processes.

Natural gas, dry: **Natural gas** which remains after: (1) the liquefiable **hydrocarbon** portion has been removed from the gas stream (i.e., gas after lease, field, and/or plant separation); and (2) any volumes of **nonhydrocarbon gases** have been removed where they occur in sufficient quantity to render the gas unmarketable. ***Note:*** Dry natural gas is also known as consumer-grade natural gas. The parameters for measurement are cubic feet at 60 degrees Fahrenheit and 14.73 pounds per square inch absolute.

Natural gas (dry) production: The process of producing consumer-grade **natural gas**. Natural gas withdrawn from reservoirs is reduced by volumes used at the production (lease) site and by processing losses. Volumes used at the production site include (1) the volume returned to reservoirs in cycling, **repressuring** of oil reservoirs, and conservation operations; and (2) **vented natural gas** and **flared natural gas**. Processing losses include (1) **nonhydrocarbon gases** (e.g., water vapor, carbon dioxide, helium, hydrogen sulfide, and nitrogen) removed from the gas stream; and (2) gas converted to liquid form, such as **lease condensate** and **natural gas plant liquids**. Volumes of dry gas withdrawn from gas storage reservoirs are not considered part of production. Dry natural gas production equals **natural gas marketed production** less **natural gas plant liquids** production.

Natural gas liquids (NGL): A group of **hydrocarbons** including **ethane**, **propane**, **normal butane**, **isobutane**, and **natural gasoline**. Generally include **natural gas plant liquids** and all **liquefied refinery gases** except **olefins**. See **Paraffinic hydrocarbons**.

Natural gas marketed production: Gross withdrawals of **natural gas** from production reservoirs, less gas used for reservoir **repressuring**; **nonhydrocarbon gases** removed in treating and processing operations; and quantities of **vented natural gas** and **flared natural gas**.

Natural gas plant liquids (NGPL): Those **hydrocarbons** in **natural gas** that are separated as liquids at natural gas processing, fractionating, and cycling plants. Products obtained include **ethane**, **liquefied petroleum gases** (**propane**, **normal butane** and **isobutane**), and **natural gasoline**. Component products may be fractionated or mixed. **Lease condensate** and **plant condensate** are excluded. ***Note:*** Some EIA publications categorize NGPL production as field production, in accordance with definitions used prior to January 2014.

Natural gas wellhead price: The **wellhead price** of **natural gas** is calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing states and the U.S. Minerals Management Service. The price includes all costs prior to shipment from the lease, including

gathering and compression costs, in addition to state production, severance, and similar charges.

Natural gasoline: A commodity product commonly traded in **natural gas liquids** (NGL) markets that comprises liquid **hydrocarbons** (mostly pentanes and hexanes) and generally remains liquid at ambient temperatures and atmospheric pressure. Natural gasoline is equivalent to **pentanes plus**.

Net summer capacity: The maximum output, commonly expressed in **kilowatts** (kW) or megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

Neutral zone: A 6,200 square-mile area shared equally between Kuwait and Saudi Arabia under a 1992 agreement. The Neutral zone contains an estimated 5 billion barrels of oil and 8 trillion cubic feet of natural gas.

Nominal dollars: A measure used to express **nominal price**.

Nominal price: The price paid for a product or service at the time of the transaction. Nominal prices are those that have not been adjusted to remove the effect of changes in the purchasing power of the dollar; they reflect buying power in the year in which the transaction occurred.

Non-biomass waste: Material of non-biological origin that is a byproduct or a discarded product. "Non-biomass waste" includes municipal solid waste from non-biogenic sources, such as plastics, and tire-derived fuels.

Non-combustion use: Fossil fuels (coal, natural gas, and petroleum products) that are not burned to release energy and instead used directly as construction materials, chemical, feedstocks, lubricants, solvents, waxes, and other products.

Nonhydrocarbon gases: Typical nonhydrocarbon gases that may be present in reservoir **natural gas** are **carbon dioxide**, helium, hydrogen sulfide, and nitrogen.

Nonrenewable fuels: Fuels that cannot be easily made or "renewed," such as **crude oil**, **natural gas**, and **coal**.

Normal butane (C_4H_{10}): A straight-chain saturated (paraffinic) **hydrocarbon** extracted from both **natural gas** and **refinery gas** streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 31 degrees Fahrenheit. See **Paraffinic hydrocarbons**.

Nuclear electric power (nuclear power): Electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.

Nuclear electric power plant: A single-unit or multiunit facility in which heat produced in one or more reactors by the fissioning of nuclear fuel is used to drive one or more steam turbines.

Nuclear reactor: An apparatus in which a nuclear fission chain reaction can be initiated, controlled, and sustained at a specific rate. A reactor includes fuel (fissionable material), moderating material to control the rate of fission, a heavy-walled pressure vessel to house reactor components, shielding to protect personnel, a system to conduct heat away from the reactor, and instrumentation for monitoring and controlling the reactor's systems.

OECD: See **Organization for Economic Cooperation and Development**.

Offshore: That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water.

Oil: See **Crude oil**.

Olefinic hydrocarbons (olefins): Unsaturated **hydrocarbon** compounds with the general formula CnH2n containing at least one carbon-to-carbon double-bond. Olefins are produced at crude oil refineries and petrochemical plants and are not naturally occurring constituents of oil and natural gas. Sometimes referred to as alkenes or unsaturated hydrocarbons. Excludes aromatics.

Olefins: See **Olefinic hydrocarbons (olefins)**.

OPEC: See **Organization of the Petroleum Exporting Countries**.

Operable unit (nuclear): In the United States, a nuclear generating unit that has completed low-power testing and been issued a full-power operating license by the Nuclear Regulatory Commission, or equivalent permission to operate.

Organization for Economic Cooperation and Development (OECD): An international organization helping governments tackle the economic, social and governance challenges of a globalized economy. Its membership comprises about 30 member countries. With active relationships with some 70 other countries, non-governmental organizations (NGOs) and civil society, it has a global reach. For details about the organization, see http://www.oecd.org.

Organization of the Petroleum Exporting Countries (OPEC): An intergovernmental organization whose stated objective is to "coordinate and unify the petroleum policies of member countries." It was created at the Baghdad Conference on September 10–14, 1960. Current and former members (with years of membership) include Algeria (1969 forward), Angola (2007 forward), Congo-Brazzaville (2018 forward), Ecuador (1973–1992 and 2007–2019), 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 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.

Primary energy: **Energy** in the form that it is first accounted for in a statistical energy balance, before any transformation to secondary or tertiary forms of energy. For example, **coal** can be converted to synthetic gas, which can be converted to **electricity**; in this example, coal is primary energy, synthetic gas is secondary energy, and electricity is tertiary energy. See **Primary energy production** and **Primary energy consumption**.

Primary energy consumption: Consumption of **primary energy**. The U.S. Energy Information Administration includes the following in U.S. primary energy consumption: coal consumption; coal coke net imports; **petroleum consumption** (**petroleum products supplied**); **dry natural gas**—excluding **supplemental gaseous fuels**—consumption; **nuclear electricity net generation** (converted to **Btu** using the nuclear plants **heat rate**); **conventional hydroelectricity** net generation (converted to Btu using the average heat rate of fossil-fuel fired plants); **geothermal** electricity net generation (converted to Btu using the average annual heat rate of fossil-fueled fired plants), geothermal heat pump energy and geothermal direct-use energy; **solar thermal** and **photovoltaic** electricity net generation (converted to Btu

using the average annual heat rate of fossil-fueled fired plants), and solar thermal direct-use energy; wind electricity net generation (converted to Btu using the average annual heat rate of fossil-fueled fired plants); **wood and wood-derived fuels** consumption; **biomass waste** consumption; **fuel ethanol**, **biodiesel**, **renewable diesel fuel**, and **other biofuels** consumption; losses and co-products from the production of fuel ethanol and biodiesel; and electricity net imports (converted to Btu using the electricity heat content of 3,412 Btu per kilowatthour). Primary energy consumption 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 fossil-fueled plants heat rate); **geothermal** electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and geothermal heat pump energy and geothermal direct use energy; **solar thermal** and **photovoltaic** electricity net generation (converted to Btu using the fossil-fueled plants heat rate), and solar thermal direct use energy; **wind** electricity net generation (converted to Btu using the fossil-fueled plants heat rate); **wood and wood-derived fuels** production; **biomass waste** consumption; and **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: **Diesel fuel** and diesel fuel blending components produced from renewable sources that are coprocessed with **petroleum** feedstocks and meet requirements of advanced biofuels. See **Biomass-based diesel fuel**.

Renewable energy: Energy obtained from sources that are essentially inexhaustible (unlike, for example, the **fossil fuels**, of which there is a finite supply). Renewable sources of energy include **conventional hydroelectric powe**r, **biomass**, **geothermal**, **solar**, and **wind**.

Renewable fuels except fuel ethanol: See **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 energy: Energy, radiated by the sun that is converted into electricity or heat by means of solar concentrating collectors. Examples of solar thermal energy technologies include pool heaters, dark water bladders, or thermal panels (generally small-scale solar thermal energy). Utility-scale solar thermal electric generation typically relies on a large array of mirrors to heat fluids and turn a turbine, which generates electricity.

Special naphthas: All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Station use: Energy that is used to operate an **electric power plant**. It includes energy consumed for plant lighting, power, and auxiliary facilities, regardless of whether the energy is produced at the plant or comes from another source.

Steam coal: All nonmetallurgical coal.

Steam-electric power plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Still gas: Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are **methane** and **ethane**. May contain **hydrogen** and small/trace amounts of other gases. Still gas is typically consumed as refinery fuel or used as petrochemical feedstock. Still gas burned for refinery fuel may differ in composition from marketed still gas sold to other users. See **Refinery gas**.

Stocks: See **Coal stocks**, **Crude oil stocks**, or **Petroleum stocks, primary**.

Strategic Petroleum Reserve (SPR): Petroleum stocks maintained by the federal Government for use during periods of major supply interruption.

Subbituminous coal: A **coal** whose properties range from those of **lignite** to those of **bituminous coal** and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million **Btu** per **short ton** on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Supplemental gaseous fuels: Synthetic **natural gas**, **propane**-air, coke oven gas, **still gas** (**refinery gas**), **biomass** gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Synthetic natural gas (SNG): (Also referred to as substitute natural gas) A manufactured product, chemically similar in most respects to **natural gas**, resulting from the conversion or reforming of **hydrocarbons** that may easily be substituted for or interchanged with pipeline-quality natural gas.

Thermal conversion factor: A factor for converting data between physical units of measure (such as **barrels**, **cubic feet**, or **short tons**) and thermal units of measure (such as **British thermal units**, calories, or joules); or for converting data between different thermal units of measure. See **Btu conversion factor**.

Total energy consumption: **Primary energy consumption** in the **end-use sectors**, plus **electricity retail sales** and **electrical system energy losses**. 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.

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