

Appendix B

Thermal Conversion Factors

Table B1. Approximate Heat Content of Petroleum and Heat Rates for Electricity, 1960-2000

Year	Petroleum Consumption			Electricity Net Generation		
	Liquefied Petroleum Gases (LGTKUS)	Motor Gasoline (MGTKUS)	Total Petroleum Products ^a (PATCKUS)	Fossil-Fueled Steam-Electric Plants ^b (FFEOKUS)	Nuclear Steam-Electric Plants (NUEOKUS)	Geothermal Energy Plants (GEEOKUS)
	Million Btu per Barrel			Btu per Kilowatt-hour		
1960	4.011	5.253	5.55503	10,760	11,629	23,200
1961	4.011	5.253	5.55163	10,650	11,629	23,200
1962	4.011	5.253	5.54496	10,558	11,629	23,200
1963	4.011	5.253	5.53379	10,482	11,877	22,182
1964	4.011	5.253	5.52758	10,462	11,912	22,182
1965	4.011	5.253	5.53200	10,453	11,804	22,182
1966	4.011	5.253	5.53178	10,415	11,623	22,182
1967	3.838	5.253	5.51469	10,432	11,555	21,770
1968	3.818	5.253	5.50368	10,398	11,297	21,606
1969	3.805	5.253	5.49220	10,447	11,037	21,606
1970	3.779	5.253	5.50317	10,494	10,977	21,606
1971	3.772	5.253	5.50449	10,478	10,837	21,655
1972	3.760	5.253	5.50004	10,379	10,792	21,668
1973	3.746	5.253	5.51461	10,389	10,903	21,674
1974	3.730	5.253	5.50388	10,442	11,161	21,674
1975	3.715	5.253	5.49427	10,406	11,013	21,611
1976	3.711	5.253	5.50448	10,373	11,047	21,611
1977	3.677	5.253	5.51825	10,435	10,769	21,611
1978	3.669	5.253	5.51865	10,361	10,941	21,611
1979	3.680	5.253	5.49383	10,353	10,879	21,545
1980	3.674	5.253	5.47933	10,388	10,908	21,639
1981	3.643	5.253	5.44818	10,453	11,030	21,639
1982	3.615	5.253	5.41514	10,454	11,073	21,629
1983	3.614	5.253	5.40567	10,520	10,905	21,290
1984	3.599	5.253	5.39530	10,440	10,843	21,303
1985	3.603	5.253	5.38744	10,447	R 10,622	21,263
1986	3.640	5.253	5.41832	10,446	R 10,579	21,263
1987	3.659	5.253	5.40281	10,419	R 10,442	21,263
1988	3.652	5.253	5.41017	10,324	R 10,602	21,096
1989	3.683	5.253	5.40967	10,432	R 10,583	21,096
1990	3.625	5.253	5.41084	10,402	R 10,582	21,096
1991	3.614	5.253	5.38408	10,436	R 10,484	20,997
1992	3.624	5.253	5.37773	10,342	R 10,471	20,914
1993	3.606	5.253	5.37911	10,309	R 10,504	20,914
1994	3.635	^c 5.230	5.36097	10,316	R 10,452	20,914
1995	3.623	5.215	5.34138	10,312	R 10,507	20,914
1996	3.613	5.216	5.33638	10,340	R 10,503	20,960
1997	3.616	5.213	5.33598	R 10,213	R 10,494	20,960
1998	3.614	5.212	5.34900	R 10,197	R 10,491	21,017
1999	3.616	5.211	5.32807	R 10,226	R 10,450	21,017
2000	3.607	5.210	5.32576	10,201	10,429	21,017

^a This factor is not actually applied in SEDS but is displayed here for information.

^b This factor is the average for electricity generated at U.S. fossil-fueled steam-electric plants. In SEDS, it is applied to convert hydroelectricity, electricity generated for distribution from wood, waste, wind, photovoltaic, and solar thermal energy, and imports and exports of electricity produced at hydroelectric and conventional power plants.

^c There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a factor that is a quantity-weighted average of motor gasoline's major components.

R=Revised data.

Sources: See source listing at the end of this appendix.

Table B2. Approximate Heat Content of Natural Gas Consumed by Electric Utilities, 1960-1988, Selected Years
(Thousand Btu per Cubic Foot)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	1.03500	1.03400	1.03100	1.03300	1.13300	1.13400	1.12500	1.10300	1.12400	1.09900	1.09100	1.05400	1.03900
Alaska	—	1.01000	1.00500	1.00600	1.00600	1.00500	1.00600	1.00600	1.00600	1.00600	1.00600	1.00600	1.00600
Arizona	1.03500	1.07600	1.05900	1.07100	1.05700	1.04900	1.05100	1.04200	1.05100	1.05900	1.04400	1.03400	1.03400
Arkansas	1.03500	1.00100	1.00400	1.01100	1.02600	1.02300	1.03200	1.03500	1.03700	1.05500	1.05300	1.03100	1.02900
California	1.03500	1.07300	1.05400	1.06300	1.05200	1.05500	1.05300	1.04800	1.05000	1.05100	1.04500	1.03800	1.03600
Colorado	1.03500	0.91200	0.97400	0.99600	0.98100	0.97500	0.96400	0.98900	0.98800	0.98900	0.99400	0.98800	0.98500
Connecticut	1.03500	1.02200	1.01600	1.00500	—	—	—	—	1.02800	1.03100	1.03600	1.03100	1.03100
Delaware	1.03500	1.04300	1.02000	1.07300	1.04200	1.03600	1.03300	1.03500	1.03900	1.03800	1.04600	1.03600	1.07200
District of Columbia	—	—	—	—	—	—	—	—	—	—	—	—	—
Florida	1.03500	1.03700	1.04100	1.00900	1.01500	1.01300	1.01400	1.01100	1.01100	1.01100	1.00800	1.00800	1.00800
Georgia	1.03500	1.04000	1.03100	1.02900	1.03500	1.02700	1.02800	1.02500	1.02300	1.02400	1.02400	1.02300	1.02300
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	1.05300	1.03700	1.08700	1.07500	1.04700	1.04500	1.04900	1.02100	1.01700	—
Illinois	1.03500	1.02900	1.02500	1.02900	1.02400	1.02300	1.02400	1.02900	1.03100	1.02700	1.02600	1.02500	1.02100
Indiana	1.03500	0.99900	1.00600	1.00000	1.00400	1.00200	1.00200	1.00200	1.00300	1.00500	1.00600	1.00500	1.00200
Iowa	1.03500	1.01000	1.00900	1.00800	1.00800	1.00700	1.01900	1.02700	1.03500	1.02100	1.01700	1.00700	1.00700
Kansas	1.03500	0.99500	0.99800	0.99100	0.96000	0.96200	0.95600	0.95300	0.97500	0.96800	0.96900	0.98800	0.99300
Kentucky	1.03500	1.02800	1.01700	1.01700	1.02400	1.02400	1.02400	1.02300	1.02400	1.02400	1.02200	1.02100	1.02300
Louisiana	1.03500	1.04200	1.02900	1.05900	1.04100	1.04100	1.04600	1.04900	1.04800	1.04700	1.04400	1.04300	1.04500
Maine	—	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	1.03500	1.02500	1.02200	0.94300	1.02300	1.01500	1.02500	1.02500	1.02500	1.02500	1.05800	1.04300	1.04200
Massachusetts	1.03500	1.01300	1.01200	1.00200	1.00000	1.00000	1.04800	1.05400	1.06000	1.03900	1.02900	1.02600	1.02900
Michigan	1.03500	1.01400	1.01500	0.83400	0.73700	0.65300	0.66200	0.21300	0.59200	0.46000	0.34600	0.40400	0.16100
Minnesota	1.03500	0.99800	1.00200	0.98400	0.99400	0.99400	0.99900	1.01100	1.00100	1.00200	0.99900	0.99800	1.00300
Mississippi	1.03500	1.02900	1.02500	1.03000	1.01700	1.01600	1.02200	1.02900	1.02700	1.03900	1.03800	1.02800	1.02600
Missouri	1.03500	1.02000	1.00700	0.97700	0.97900	0.98600	1.02200	0.99500	0.99800	0.99200	0.98300	0.99000	0.99400
Montana	1.03500	1.00100	1.03200	1.14900	1.04900	1.07500	1.17300	1.19700	1.17900	1.20400	1.20100	1.20500	1.20800
Nebraska	1.03500	0.99100	1.00800	0.98200	0.95000	0.94200	0.98200	0.94900	0.94800	0.95700	0.97100	0.97700	0.95400
Nevada	1.03500	1.06200	1.08200	1.06700	1.07100	1.07500	1.06800	1.06300	1.06000	1.06500	1.05300	1.03500	1.02700
New Hampshire	—	—	—	1.00000	—	—	1.02500	—	1.02700	—	—	1.02700	1.02700
New Jersey	1.03500	1.04500	1.02600	1.02800	1.03400	1.03600	1.03300	1.03700	1.03600	1.04600	1.03600	1.03300	1.03300
New Mexico	1.03500	1.10800	1.08300	1.03300	1.02900	1.02900	1.02100	0.99200	0.99600	1.01300	1.04100	1.02600	1.02600
New York	1.03500	1.02600	1.02100	1.02500	1.03600	1.03200	1.03000	1.03100	1.03300	1.03500	1.03600	1.03000	1.03100
North Carolina	1.03500	1.03300	1.02400	1.03100	1.03400	1.03500	1.03300	1.03300	1.03300	1.03300	1.03300	1.03300	1.03300
North Dakota	1.03500	1.00000	1.03100	1.05400	1.05400	1.05400	1.05400	1.05400	1.05400	1.05400	1.05400	1.07200	1.06500
Ohio	1.03500	1.03300	1.02300	0.86400	1.00400	1.01000	1.01400	1.01100	1.01400	1.01400	1.01800	1.00900	1.01200
Oklahoma	1.03500	1.02600	1.03200	1.03800	1.04800	1.04700	1.04500	1.05100	1.04000	1.04400	1.04300	1.04700	1.03900
Oregon	1.03500	1.07000	1.04500	1.03700	0.99800	1.04700	0.99000	0.99000	0.99000	—	0.99000	—	—
Pennsylvania	1.03500	1.03800	1.03300	1.00000	1.02000	1.01500	1.00900	1.00000	1.00000	1.00000	1.02500	1.03100	1.03500
Rhode Island	1.03500	1.04200	1.02100	1.04200	1.02200	1.02200	1.02000	1.03900	1.03000	1.03400	—	1.03100	1.03200
South Carolina	1.03500	1.04200	1.02800	1.02800	1.03000	1.02300	1.02900	1.02600	1.02700	1.02900	1.02300	1.02700	1.03200
South Dakota	1.03500	0.99700	1.00400	1.00000	0.98800	0.99300	0.94800	1.01100	1.01100	1.01000	1.00500	1.01300	1.02000
Tennessee	1.03500	1.04600	1.02200	—	1.01600	1.01600	—	1.02300	—	—	—	—	1.03100
Texas	1.03500	1.03700	1.02700	1.01900	1.03700	1.03000	1.03300	1.02400	1.03000	1.03600	1.03500	1.03500	1.03300
Utah	1.03500	0.92500	0.93800	0.94100	0.95500	0.93200	0.94000	0.94100	1.03000	1.07500	1.08700	1.07800	1.07800
Vermont	—	—	—	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	—	—
Virginia	1.03500	1.03100	1.02600	1.09800	1.10400	1.09700	1.08100	1.04600	1.04100	1.04000	1.05300	1.03900	1.05400
Washington	—	—	—	—	1.03000	1.03100	1.03300	1.03300	1.03300	1.03300	1.03300	1.03300	1.03300
West Virginia	1.03500	1.07100	1.02900	0.57500	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Wisconsin	1.03500	1.01800	1.01900	1.01600	1.00700	1.00800	1.01200	0.99100	0.99200	1.00000	1.00300	0.99200	1.00200
Wyoming	1.03500	0.92600	1.02300	0.84300	0.84700	0.85500	0.84700	1.03900	1.04700	1.04800	1.02200	1.01900	1.02600
U.S. Average	1.03500	1.03765	1.02944	1.02341	1.03313	1.03258	1.03396	1.02794	1.03332	1.03706	1.03311	1.03153	1.02742

— =Not applicable.
Sources: See source listing at the end of this appendix.

Table B3. Approximate Heat Content of Natural Gas Consumed by Electric Utilities, 1989-2000
(Thousand Btu per Cubic Foot)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	1.03000	1.03000	1.02200	1.02100	1.01600	1.01100	1.01600	1.02400	1.03100	1.04400	1.01100	1.03400
Alaska	1.00600	1.00600	1.00100	1.00000	0.99900	0.99900	1.00200	1.00100	1.00000	1.00000	1.00000	1.00000
Arizona	1.03500	1.03400	1.02700	1.03100	1.02700	1.02300	1.02200	1.01500	1.01400	1.01400	1.01100	1.01600
Arkansas	1.01900	1.01800	1.02000	1.02500	1.02900	1.02400	1.02300	1.02400	1.02900	1.02300	1.02000	1.02000
California	1.04000	1.03300	1.02800	1.03300	1.03000	1.02900	1.02700	1.02600	1.01900	1.01800	1.00600	1.00200
Colorado	0.97700	0.98800	0.99500	1.00000	1.01200	1.04200	1.00800	0.99800	0.99500	0.99400	1.03200	1.02100
Connecticut	1.03000	1.03300	1.03300	1.03100	1.03200	1.01700	1.01700	1.01900	1.01900	1.03000	1.02500	—
Delaware	1.07500	1.05400	1.05200	1.03700	1.03300	1.03700	1.03200	1.03400	1.03500	0.97100	0.98300	1.00800
District of Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Florida	1.01000	1.01100	1.01400	1.01100	1.00900	1.01000	1.01000	1.00800	1.04400	1.05300	1.04400	1.03800
Georgia	1.02400	1.02400	1.02500	1.02400	1.02300	1.02500	1.02400	1.02400	1.02400	1.02800	1.03200	1.03100
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	1.01700	1.02100	1.01800	1.01600	1.01600	1.02200	1.01600	1.02000	1.01600	1.01900	1.02200	1.03100
Indiana	1.00200	1.00200	1.00100	1.00100	1.01300	1.02300	1.02100	1.02100	1.02100	1.02500	1.02600	1.02300
Iowa	1.00700	1.00600	1.00400	1.00400	1.00600	1.00600	1.00500	1.00300	1.00300	1.00300	1.00400	1.00300
Kansas	0.97100	0.99000	0.96800	0.97000	0.97500	0.98300	0.98000	0.97300	0.97800	1.00100	1.01000	1.01000
Kentucky	1.02100	1.02000	1.02000	1.02000	1.02000	1.02100	1.02200	1.02200	1.02300	1.02400	1.02500	1.02500
Louisiana	1.04400	1.04500	1.04200	1.04300	1.04300	1.04600	1.04300	1.04300	1.03600	1.04300	1.03900	1.03400
Maine	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	1.04500	1.04200	1.04600	1.04500	1.04100	1.04300	1.03900	1.04100	1.04100	1.04700	1.04000	1.04400
Massachusetts	1.04800	1.05200	1.04100	1.03200	1.03400	1.03700	1.02600	1.03700	1.03300	1.02900	1.02600	1.03700
Michigan	0.10800	0.22400	0.38900	0.41400	0.37900	0.40300	0.36500	0.27400	0.31000	0.54200	0.60800	0.70900
Minnesota	1.00500	1.00300	1.00800	1.00800	1.00800	1.00500	1.00600	1.00300	1.00400	1.00800	1.01100	1.01100
Mississippi	1.02500	1.03600	1.02500	1.02900	1.02200	1.04300	1.03900	1.03800	1.03600	1.03900	1.02700	1.02800
Missouri	1.01600	1.01800	1.01400	1.00800	1.00800	1.00000	1.00600	1.01100	1.00600	1.01100	1.00300	1.00700
Montana	1.21300	1.21800	1.19400	1.20600	1.16500	1.05500	1.07300	1.07500	1.07100	1.07200	1.09100	1.13900
Nebraska	0.95900	0.94600	0.94200	0.95900	0.97600	0.98700	0.99800	1.00400	0.99800	0.98900	0.99500	1.00100
Nevada	1.02700	1.03100	1.02400	1.02500	1.02900	1.03300	1.02900	1.02900	1.02900	1.03400	1.03700	1.02300
New Hampshire	1.02700	—	—	1.01800	1.01600	1.01500	1.01800	1.01800	1.01700	1.01700	1.02400	1.06900
New Jersey	1.03300	1.03200	1.03200	1.03400	1.03400	1.03500	1.03100	1.02000	1.03700	1.04500	1.03100	1.02700
New Mexico	1.03300	1.03400	1.01600	1.01700	1.01600	1.02200	1.01700	1.01200	1.01700	1.01000	1.01300	1.01600
New York	1.02800	1.03300	1.03100	1.03000	1.03100	1.03100	1.02600	1.02900	1.02600	1.02900	1.02400	1.01900
North Carolina	1.03300	1.03300	1.03200	1.03600	1.03300	1.03800	1.03300	1.03600	1.03700	1.04800	1.03100	1.02600
North Dakota	1.05000	1.03800	1.00400	1.03700	1.08000	1.09500	1.06600	1.05900	1.06600	—	—	—
Ohio	1.00700	1.00800	1.00700	1.03300	1.03000	1.02900	1.02700	1.02800	1.02400	1.02700	1.02800	1.02500
Oklahoma	1.04300	1.04500	1.04000	1.03700	1.03900	1.03400	1.03400	1.02800	1.03200	1.03000	1.02800	1.02900
Oregon	1.03500	1.02300	1.01100	1.01100	1.01100	1.01100	1.01200	1.00900	1.01100	1.01100	1.01200	1.01600
Pennsylvania	1.02900	1.03200	1.03400	1.03100	1.03000	1.03100	1.03000	1.02800	1.03400	1.02900	1.03300	1.03300
Rhode Island	1.03100	1.03300	1.03200	1.03100	1.05100	1.02900	1.02800	1.02800	1.02700	1.02800	—	—
South Carolina	1.02300	1.02300	1.02500	1.02200	1.02100	1.02300	1.02400	1.02500	1.02400	1.02400	1.02800	1.02800
South Dakota	1.01700	1.01600	1.00600	1.01900	1.01400	0.97200	1.00200	1.01400	1.01800	1.00000	1.00600	1.00600
Tennessee	1.03200	1.03500	1.03300	1.03100	1.03500	1.03200	1.03100	1.03200	1.03100	1.03000	1.02700	1.02700
Texas	1.03400	1.03500	1.03000	1.02600	1.02600	1.02300	1.02300	1.02300	1.02300	1.02400	1.02100	1.02000
Utah	1.07800	1.00000	1.06700	1.07400	1.06300	1.04400	1.05500	1.02100	1.03200	1.04400	1.04300	1.04900
Vermont	1.00000	1.00000	0.98800	0.98800	0.99800	0.99600	1.00100	1.01500	1.01200	1.01400	1.01200	1.01200
Virginia	1.04100	1.04100	1.04400	1.05000	1.03800	1.03700	1.03100	1.05700	1.04800	1.04900	1.05500	1.03300
Washington	1.03300	1.03300	1.05000	1.05000	1.05000	1.05000	1.05000	1.05000	1.04800	1.05500	1.05500	1.05500
West Virginia	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Wisconsin	1.00300	1.00700	1.00800	1.00900	1.01200	1.01100	1.00900	1.01000	1.00800	1.01300	1.01000	1.00800
Wyoming	1.03600	1.03500	1.05100	1.03900	1.04400	1.03300	1.04300	1.04000	1.04100	1.04400	1.04400	1.04400
U.S. Average	1.02720	1.02658	1.02316	1.02297	1.02300	1.02337	1.01779	1.01543	1.01837	1.02136	1.01851	1.01915

— =Not applicable.
Sources: See source listing at the end of this appendix.

Table B4. Approximate Heat Content of Natural Gas Consumed by Sectors Other Than Electric Utilities, 1960-1988, Selected Years
(Thousand Btu per Cubic Foot)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	1.03500	1.03400	1.03100	1.02891	1.03349	1.03535	1.05159	1.03784	1.03286	1.03770	1.03571	1.03285	1.02889
Alaska	1.03500	1.01000	1.00500	1.00470	1.00231	1.00369	0.99910	1.00140	1.00144	1.00600	1.00960	1.00942	1.00376
Arizona	1.03500	1.07600	1.05900	1.04957	1.04558	1.05486	1.05490	1.04560	1.04594	1.04578	1.03683	1.03659	1.03400
Arkansas	1.03500	1.00100	1.00400	0.99503	0.99415	0.99524	0.99681	1.02070	1.01884	1.01677	1.01334	1.01250	1.00673
California	1.03500	1.07300	1.05400	1.05594	1.04358	1.04419	1.04714	1.04083	1.03782	1.03848	1.03655	1.02602	1.02879
Colorado	1.03500	0.91200	0.97400	0.89576	0.99471	0.99530	1.00099	1.00637	1.00231	0.99923	1.00322	1.00046	1.00681
Connecticut	1.03500	1.02200	1.01600	1.00500	1.02200	1.02500	1.02700	1.02900	1.02903	1.02998	1.02994	1.03100	1.03201
Delaware	1.03500	1.04300	1.02000	1.01468	1.03285	1.03477	1.03300	1.01514	1.01746	1.02197	1.01639	1.00929	1.01777
District of Columbia	1.03500	1.02400	1.01600	1.01200	1.00300	1.01400	1.01700	1.01000	1.01200	1.01500	1.01300	1.01400	1.01100
Florida	1.03500	1.03700	1.04100	1.07754	1.06968	1.10649	1.08246	1.09719	1.10065	1.10911	1.07589	1.09473	1.07984
Georgia	1.03500	1.04000	1.03100	1.02672	1.03196	1.02700	1.03001	1.02601	1.02601	1.02801	1.02706	1.02601	1.02501
Hawaii	—	—	—	—	0.96300	0.95900	0.98900	1.02300	1.02600	1.08200	1.08600	1.06800	1.07800
Idaho	1.03500	1.06500	1.06100	1.05500	1.05301	1.06999	1.07200	1.04700	1.04500	1.04900	1.02100	1.01700	1.02000
Illinois	1.03500	1.02900	1.02500	1.02590	1.02196	1.01996	1.02198	1.04115	1.04005	1.04008	1.02097	1.01496	1.01798
Indiana	1.03500	0.99900	1.00600	0.98976	0.98894	0.99290	1.01608	1.00603	1.00701	1.00801	1.00901	1.00901	1.01510
Iowa	1.03500	1.01000	1.00900	1.00800	1.00287	1.00295	1.00788	1.01381	1.01474	1.01091	1.00995	1.00802	1.00700
Kansas	1.03500	0.99500	0.99800	0.98159	0.99404	0.99267	1.00673	1.00627	0.99365	0.99990	0.98581	1.04899	0.98560
Kentucky	1.03500	1.02800	1.01700	1.00799	1.00886	1.01387	1.01392	1.01998	1.02198	1.03004	1.03804	1.03703	1.03703
Louisiana	1.03500	1.04200	1.02900	1.03153	1.03707	1.03578	1.04731	1.04014	1.04060	1.03819	1.03908	1.03941	1.04137
Maine	—	—	1.01200	1.02400	1.02400	1.02500	1.02500	1.02600	1.03200	1.03500	1.03100	1.04000	1.02700
Maryland	1.03500	1.02500	1.02200	1.01323	1.01990	1.01396	1.01796	1.02095	1.02601	1.03408	1.03568	1.03333	1.03168
Massachusetts	1.03500	1.01300	1.01200	1.00402	1.01646	1.01662	1.02196	1.02077	1.02454	1.02388	1.02574	1.02965	1.03010
Michigan	1.03500	1.01400	1.01500	1.02420	1.01961	1.02596	1.02823	1.03896	1.02283	1.02304	1.03829	1.03126	1.03962
Minnesota	1.03500	0.99800	1.00200	1.00225	0.99709	0.99502	1.00508	1.02314	1.00302	1.00401	0.99900	0.99902	1.00707
Mississippi	1.03500	1.02900	1.02500	1.02189	1.03421	1.02898	1.03068	1.02647	1.03091	1.02459	1.02130	1.01554	1.01533
Missouri	1.03500	1.02000	1.00700	1.00822	1.01577	1.01581	1.01794	1.02735	1.01718	1.01714	1.01114	1.01113	1.00608
Montana	1.03500	1.00100	1.03200	1.01927	1.00926	1.00837	1.00995	1.00662	1.00365	0.99897	0.99799	1.01769	1.02374
Nebraska	1.03500	0.99100	1.00800	0.99650	0.98019	0.97923	0.98099	0.98241	0.98137	0.98226	0.99337	0.98513	0.98349
Nevada	1.03500	1.06200	1.08200	1.06700	1.05209	1.07753	1.07101	1.06689	1.05871	1.06122	1.06045	1.00363	0.99619
New Hampshire	1.03500	1.01200	1.01000	1.01024	1.02000	1.02196	1.02000	1.02099	1.02700	1.02700	1.02700	1.02900	1.02499
New Jersey	1.03500	1.04500	1.02600	1.03111	1.03269	1.03348	1.03058	1.02912	1.02046	1.02214	1.02595	1.02448	1.02502
New Mexico	1.03500	1.10800	1.08300	1.07555	1.04776	1.05393	1.05173	1.04148	1.06146	1.08795	1.08337	1.08057	1.07381
New York	1.03500	1.02600	1.02100	1.01476	1.02277	1.01751	1.02128	1.02607	1.02536	1.02724	1.02743	1.03000	1.02854
North Carolina	1.03500	1.03300	1.02400	1.01799	1.01175	1.01186	1.03300	1.03300	1.03400	1.03400	1.03300	1.03098	1.02998
North Dakota	1.03500	1.00000	1.03100	1.00077	1.05200	1.04199	1.02598	1.04500	1.04900	1.06200	1.04300	1.04800	1.05500
Ohio	1.03500	1.03300	1.02300	1.02403	1.01606	1.02303	1.02902	1.03403	1.03702	1.04403	1.04602	1.04504	1.04003
Oklahoma	1.03500	1.02600	1.03200	0.99619	1.00198	1.02610	1.01036	1.03656	1.01711	1.01970	1.02282	1.03094	1.03757
Oregon	1.03500	1.07000	1.04500	1.03900	1.04620	1.04399	1.04402	1.04100	1.03600	1.03000	1.02200	1.02800	1.02300
Pennsylvania	1.03500	1.03800	1.03300	1.02505	1.02201	1.02203	1.02804	1.02907	1.03413	1.03409	1.03601	1.03602	1.03600
Rhode Island	1.03500	1.04200	1.02100	1.01399	1.02094	1.02200	1.03647	1.03453	1.03000	1.03291	1.02900	1.02748	1.02697
South Carolina	1.03500	1.04200	1.02800	1.02346	1.03312	1.02300	1.03001	1.02701	1.02600	1.02800	1.03010	1.02801	1.02689
South Dakota	1.03500	0.99700	1.00400	1.00000	0.99811	1.00202	0.99906	1.01100	1.01100	1.01000	1.00500	1.01300	1.02000
Tennessee	1.03500	1.04600	1.02200	1.03100	1.01600	1.01600	1.02400	1.02300	1.02400	1.03400	1.03200	1.03200	1.03100
Texas	1.03500	1.03700	1.02700	1.02966	1.03085	1.03308	1.03139	1.03190	1.03950	1.03909	1.04266	1.04233	1.04010
Utah	1.03500	0.92500	0.93800	0.95023	1.09212	1.07740	0.93897	1.07655	1.07511	1.07500	0.94770	1.08001	1.08101
Vermont	—	—	1.00600	1.00930	0.98936	0.99268	0.99282	0.99157	0.99153	0.99185	0.98699	0.98700	0.99000
Virginia	1.03500	1.03100	1.02600	1.01868	1.01471	1.02294	1.02590	1.02962	1.03589	1.03899	1.03992	1.04001	1.04091
Washington	1.03500	1.07500	1.05500	1.04200	1.05216	1.05007	1.05302	1.04300	1.04500	1.04000	1.02900	1.03300	1.02592
West Virginia	1.03500	1.07100	1.02900	1.03805	1.03201	1.04005	1.04705	1.03804	1.05305	1.06707	1.07620	1.07415	1.07705
Wisconsin	1.03500	1.01800	1.01900	1.02023	1.00804	1.00902	1.01200	1.00921	1.00810	1.01004	1.01005	1.00813	1.00805
Wyoming	1.03500	0.92600	1.02300	0.93453	1.06069	1.05932	1.00223	1.05903	1.05301	1.05100	1.05005	1.05704	1.05306
U.S. Average	1.03500	1.03182	1.02543	1.02232	1.02375	1.02575	1.02739	1.03099	1.03023	1.03156	1.03018	1.03127	1.02995

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B5. Approximate Heat Content of Natural Gas Consumed by Sectors Other Than Electric Utilities, 1989-2000

(Thousand Btu per Cubic Foot)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	1.03000	1.02898	1.02708	1.02809	1.03023	1.03026	1.02931	1.03317	1.04132	1.03858	1.03661	1.04297
Alaska	0.99821	0.94820	1.00209	1.00216	0.99360	1.00117	1.00630	0.98918	1.00000	0.99893	1.00000	0.76111
Arizona	1.04268	1.03153	1.02454	1.03100	1.02822	1.02786	1.03742	1.01024	1.02252	1.01667	1.01685	1.01055
Arkansas	1.00426	1.00756	1.01654	1.00681	1.01249	1.02177	1.08374	1.02629	1.01354	1.02417	1.01845	1.01884
California	1.03582	1.03168	1.02670	1.02746	1.03785	1.02063	1.01316	1.03328	1.01776	1.05151	1.01780	0.97764
Colorado	1.01222	1.00540	1.02976	1.02347	1.01098	1.00433	1.01814	1.02447	1.01231	1.01263	1.00539	1.00667
Connecticut	1.03414	1.03300	1.03090	1.02794	1.02697	1.03093	1.02988	1.02880	1.02811	1.02561	1.02389	1.02500
Delaware	1.01404	1.01536	1.02464	1.03446	1.03553	1.03544	1.03561	1.03576	1.03500	1.06179	1.06673	1.03963
District of Columbia	1.01000	1.00800	1.00600	1.00700	1.00700	1.01100	1.00600	1.00900	1.02100	1.02700	1.02100	1.02700
Florida	1.08571	1.08663	1.09834	1.10018	1.09842	1.12409	1.07028	1.10872	1.05429	1.04796	1.04140	1.09280
Georgia	1.02600	1.02702	1.02701	1.02500	1.02703	1.03002	1.02604	1.02299	1.02706	1.02693	1.02667	1.01726
Hawaii	1.08000	1.07000	1.08000	1.07300	1.06200	1.05100	1.04800	1.05700	1.03000	1.05600	1.05500	1.04700
Idaho	1.02700	1.02800	1.03300	1.03000	1.03800	1.03800	1.03000	1.03000	1.03100	1.03800	1.03800	1.02500
Illinois	1.02204	1.02201	1.01901	1.01802	1.02108	1.02097	1.02015	1.01898	1.02122	1.02219	1.02200	1.02198
Indiana	1.01612	1.01824	1.01429	1.01116	1.01300	1.01282	1.01186	1.01092	1.01092	1.01686	1.01789	1.02503
Iowa	1.01104	1.00702	1.00806	1.00400	1.00295	1.00802	1.00500	1.00604	1.00910	1.01121	1.01935	1.00504
Kansas	0.99325	0.99975	1.01121	0.98772	0.98770	0.99905	1.00381	0.99756	1.00290	0.99424	0.99525	1.00777
Kentucky	1.03903	1.04003	1.04703	1.05805	1.04804	1.06207	1.09629	1.04921	1.05026	1.03429	1.03218	1.04028
Louisiana	1.04281	1.04138	1.04801	1.04420	1.03590	1.03877	1.03315	1.04418	1.13446	1.07688	1.04282	1.06372
Maine	1.00300	1.00500	1.00600	1.01300	1.01400	1.01400	1.01600	1.01600	1.01400	1.01700	1.01800	1.07300
Maryland	1.03054	1.02641	1.02506	1.02684	1.02733	1.03011	1.02460	1.02845	1.03361	1.03626	1.03345	1.03291
Massachusetts	1.03559	1.03419	1.03863	1.03775	1.03841	1.02458	1.02600	1.02556	1.02028	1.02265	1.04854	1.04205
Michigan	1.05189	1.04510	1.03863	1.03742	1.03457	1.03340	1.04195	1.03617	1.04083	1.04905	1.04230	1.03738
Minnesota	1.00601	1.00402	1.01208	1.01105	1.01104	1.01111	1.01317	1.01822	1.01825	1.02029	1.01916	1.01506
Mississippi	1.03124	1.03196	1.03033	1.05226	1.02321	1.02829	1.01782	1.02642	1.03320	1.04924	1.04056	1.04258
Missouri	1.00796	1.01089	1.00874	1.00194	1.00393	1.00610	1.00705	1.01100	1.01011	1.01100	1.01379	1.01596
Montana	1.01857	1.02614	1.02802	1.02211	1.01725	1.02362	1.02971	1.02965	1.03072	1.02560	1.02369	1.02367
Nebraska	0.98762	0.98430	0.98538	0.97936	0.97498	0.98495	0.97959	1.00705	0.99800	1.00356	0.99916	1.00518
Nevada	1.03172	1.03100	1.03603	1.03432	1.03567	1.03593	1.03526	1.04028	1.02565	1.04615	1.03174	1.02833
New Hampshire	1.01899	1.01400	1.00700	1.00865	1.00995	1.01286	1.01011	1.01900	1.01083	1.01095	1.00857	1.05757
New Jersey	1.02503	1.02525	1.02508	1.02539	1.03614	1.03931	1.03425	1.03672	1.03490	1.03761	1.03945	1.03524
New Mexico	1.05044	1.05639	1.04239	1.04287	1.04238	0.99975	1.02052	1.03166	1.01931	0.97655	0.97276	0.96343
New York	1.02927	1.02895	1.02704	1.02872	1.02855	1.02734	1.02855	1.02557	1.02600	1.02778	1.02753	1.02874
North Carolina	1.03098	1.03198	1.03200	1.03396	1.03503	1.03599	1.03300	1.03600	1.03598	1.03950	1.03521	1.03017
North Dakota	1.04900	1.03200	1.04600	1.04500	1.06000	1.05800	1.05000	1.05100	1.05000	1.03800	1.04500	1.03500
Ohio	1.04204	1.04005	1.04416	1.03601	1.03803	1.03703	1.03809	1.03803	1.04508	1.04012	1.03712	1.04213
Oklahoma	1.02168	1.02002	1.01312	1.02185	1.02130	1.02581	1.01479	1.02274	1.00603	1.00692	1.02065	1.00846
Oregon	1.03500	1.02300	1.03074	1.03817	1.04052	1.04630	1.04423	1.04281	1.04832	1.04824	1.05590	1.02949
Pennsylvania	1.03705	1.03702	1.03500	1.03602	1.03709	1.03609	1.03518	1.03406	1.03501	1.03608	1.03605	1.03501
Rhode Island	1.02673	1.02710	1.02788	1.01792	1.02889	1.02900	1.02585	1.07392	1.02254	1.02434	1.02300	1.03800
South Carolina	1.02607	1.02828	1.02716	1.02707	1.02911	1.03117	1.02714	1.03004	1.03113	1.03439	1.03110	1.02902
South Dakota	1.01700	1.01600	1.01808	1.01499	1.01299	1.01020	1.01433	1.01400	1.01800	1.01095	1.00600	1.00490
Tennessee	1.03200	1.03500	1.03300	1.03100	1.03500	1.03200	1.03100	1.03200	1.03100	1.03000	1.02700	1.03707
Texas	1.03958	1.04194	1.03975	1.04956	1.02880	1.04261	1.04232	1.03652	1.02983	1.04858	1.03701	1.03288
Utah	1.08705	1.08869	1.07324	1.07823	1.08081	1.06860	1.06347	1.04255	1.04225	1.04607	1.05551	1.05114
Vermont	0.98591	0.98554	0.98800	0.99582	0.99800	0.99600	0.99590	1.01500	1.01200	1.01195	1.01200	1.01200
Virginia	1.04100	1.04204	1.04189	1.03836	1.04460	1.03809	1.03100	1.03819	1.04380	1.04245	1.03635	1.03512
Washington	1.03195	1.03000	1.03098	1.03244	1.03667	1.04089	1.03970	1.03663	1.04598	1.04447	1.05192	1.03514
West Virginia	1.07707	1.07108	1.07309	1.06510	1.06506	1.06411	1.06117	1.06108	1.06809	1.06318	1.05515	1.06820
Wisconsin	1.00501	1.00599	1.00699	1.00900	1.01099	1.01201	1.01105	1.01306	1.01112	1.01090	1.01208	1.01006
Wyoming	1.05502	1.09905	1.06001	1.05801	1.05601	1.05603	1.06303	1.06102	1.06903	1.06706	1.05101	1.04604
U.S. Average	1.03182	1.03076	1.03110	1.03164	1.02884	1.03022	1.03000	1.03064	1.03496	1.03680	1.02922	1.02038

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B6. Approximate Heat Content of Natural Gas Total Consumption, 1960-1988, Selected Years
(Thousand Btu per Cubic Foot)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	1.03500	1.03400	1.03100	1.02900	1.03400	1.03600	1.05200	1.03800	1.03300	1.03800	1.03600	1.03300	1.02900
Alaska	1.03500	1.01000	1.00500	1.00500	1.00300	1.00400	1.00000	1.00200	1.00200	1.00600	1.00900	1.00900	1.00400
Arizona	1.03500	1.07600	1.05900	1.05200	1.04900	1.05300	1.05400	1.04500	1.04700	1.05000	1.03900	1.03600	1.03400
Arkansas	1.03500	1.00100	1.00400	0.99700	1.00100	1.00100	1.00200	1.02300	1.02100	1.01900	1.01900	1.01600	1.00900
California	1.03500	1.07300	1.05400	1.05700	1.04600	1.04800	1.04900	1.04300	1.04200	1.04300	1.03900	1.03000	1.03100
Colorado	1.03500	0.91200	0.97400	0.91300	0.99300	0.99400	1.00000	1.00600	1.00200	0.99900	1.00300	1.00000	1.00600
Connecticut	1.03500	1.02200	1.01600	1.00500	1.02200	1.02500	1.01600	1.02900	1.02900	1.03000	1.03000	1.03100	1.03200
Delaware	1.03500	1.04300	1.02000	1.02000	1.03500	1.03500	1.03300	1.01800	1.02100	1.02500	1.01800	1.01500	1.02300
District of Columbia	1.03500	1.02400	1.01600	1.01200	1.00300	1.01400	1.01700	1.01000	1.01200	1.01500	1.01300	1.01400	1.01100
Florida	1.03500	1.03700	1.04100	1.04300	1.04100	1.05900	1.04400	1.04800	1.04900	1.05300	1.03600	1.04400	1.04200
Georgia	1.03500	1.04000	1.03100	1.02700	1.03200	1.02700	1.03000	1.02600	1.02600	1.02800	1.02700	1.02600	1.02500
Hawaii	1.03500	—	0.96200	0.94700	0.96300	0.95900	0.98900	1.02300	1.02600	1.08200	1.08600	1.06800	1.07800
Idaho	1.03500	1.06500	1.06100	1.05500	1.05300	1.07000	1.07200	1.04700	1.04500	1.04900	1.02100	1.01700	1.02000
Illinois	1.03500	1.02900	1.02500	1.02600	1.02200	1.02000	1.02200	1.04100	1.04000	1.04000	1.02100	1.01500	1.01800
Indiana	1.03500	0.99900	1.00600	0.99000	0.98900	0.99300	1.01600	1.00600	1.00700	1.00800	1.00900	1.00900	1.01500
Iowa	1.03500	1.01000	1.00900	1.00800	1.00300	1.00300	1.00800	1.01400	1.01500	1.01100	1.01000	1.00800	1.00700
Kansas	1.03500	0.99500	0.99800	0.98400	0.98700	0.98700	0.99900	0.99900	0.99200	0.99800	0.98500	1.04600	0.98600
Kentucky	1.03500	1.02800	1.01700	1.00800	1.00900	1.01400	1.01400	1.02000	1.02200	1.03000	1.03800	1.03700	1.03700
Louisiana	1.03500	1.04200	1.02900	1.03700	1.03800	1.03700	1.04700	1.04200	1.04200	1.04000	1.04000	1.04000	1.04200
Maine	1.03500	—	1.01200	1.02400	1.02400	1.02500	1.02500	1.02600	1.03200	1.03500	1.03100	1.04000	1.02700
Maryland	1.03500	1.02500	1.02200	1.01300	1.02000	1.01400	1.01800	1.02100	1.02600	1.03400	1.03600	1.03400	1.03200
Massachusetts	1.03500	1.01300	1.01200	1.00400	1.01600	1.01600	1.02400	1.02500	1.03000	1.02700	1.02600	1.02900	1.03000
Michigan	1.03500	1.01400	1.01500	1.01200	1.01100	1.01700	1.02200	1.02400	1.01700	1.01500	1.02700	1.02100	1.02200
Minnesota	1.03500	0.99800	1.00200	1.00100	0.99700	0.99500	1.00500	1.02300	1.00300	1.00400	0.99900	0.99900	1.00700
Mississippi	1.03500	1.02900	1.02500	1.02300	1.02800	1.02500	1.02800	1.02700	1.03000	1.02800	1.02500	1.01800	1.01700
Missouri	1.03500	1.02000	1.00700	1.00600	1.01400	1.01500	1.01800	1.02700	1.01700	1.01700	1.01100	1.01100	1.00600
Montana	1.03500	1.00100	1.03200	1.02100	1.01200	1.01100	1.01100	1.00800	1.00500	1.00100	1.00000	1.02000	1.02500
Nebraska	1.03500	0.99100	1.00800	0.99400	0.97800	0.97800	0.98100	0.98200	0.98100	0.98200	0.99300	0.98500	0.98300
Nevada	1.03500	1.06200	1.08200	1.06700	1.06100	1.07600	1.07000	1.06600	1.05900	1.06200	1.05900	1.00900	1.00300
New Hampshire	1.03500	1.01200	1.01000	1.01000	1.02000	1.02200	1.02000	1.02100	1.02700	1.02700	1.02700	1.02900	1.02500
New Jersey	1.03500	1.04500	1.02600	1.03100	1.03300	1.03400	1.03100	1.03100	1.02400	1.02600	1.02700	1.02600	1.02600
New Mexico	1.03500	1.10800	1.08300	1.06400	1.04300	1.04700	1.04500	1.03300	1.04900	1.07400	1.07700	1.07400	1.06800
New York	1.03500	1.02600	1.02100	1.01500	1.02500	1.02000	1.02300	1.02700	1.02700	1.02900	1.02900	1.03000	1.02900
North Carolina	1.03500	1.03300	1.02400	1.01800	1.01200	1.01200	1.03300	1.03300	1.03400	1.03400	1.03300	1.03100	1.03000
North Dakota	1.03500	1.00000	1.03100	1.00100	1.05200	1.04200	1.02600	1.04500	1.04900	1.06200	1.04300	1.04800	1.05500
Ohio	1.03500	1.03300	1.02300	1.02300	1.01600	1.02300	1.02900	1.03400	1.03700	1.04400	1.04600	1.04500	1.04000
Oklahoma	1.03500	1.02600	1.03200	1.01500	1.02300	1.03500	1.02300	1.04200	1.02500	1.02800	1.03000	1.03600	1.03800
Oregon	1.03500	1.07000	1.04500	1.03900	1.04600	1.04400	1.04400	1.04100	1.03600	1.03000	1.02200	1.02800	1.02300
Pennsylvania	1.03500	1.03800	1.03300	1.02500	1.02200	1.02200	1.02800	1.02900	1.03400	1.03400	1.03600	1.03600	1.03600
Rhode Island	1.03500	1.04200	1.02100	1.01400	1.02100	1.02200	1.03600	1.03500	1.03000	1.03300	1.02900	1.02800	1.02700
South Carolina	1.03500	1.04200	1.02800	1.02400	1.03300	1.02300	1.03000	1.02700	1.02600	1.02800	1.03000	1.02800	1.02700
South Dakota	1.03500	0.99700	1.00400	1.00000	0.99800	1.00200	0.99900	1.01100	1.01100	1.01000	1.00500	1.01300	1.02000
Tennessee	1.03500	1.04600	1.02200	1.03100	1.01600	1.01600	1.02400	1.02300	1.02400	1.03400	1.03200	1.03200	1.03100
Texas	1.03500	1.03700	1.02700	1.02600	1.03300	1.03200	1.03200	1.02900	1.03600	1.03800	1.04000	1.04000	1.03800
Utah	1.03500	0.92500	0.93800	0.95000	1.08600	1.07300	0.93900	1.07500	1.07500	1.07500	0.94800	1.08000	1.08100
Vermont	1.03500	—	1.00600	1.00800	0.99000	0.99300	0.99300	0.99200	0.99200	0.99200	0.98700	0.98700	0.99000
Virginia	1.03500	1.03100	1.02600	1.01900	1.01600	1.02400	1.02700	1.03000	1.03600	1.03900	1.04000	1.04000	1.04100
Washington	1.03500	1.07500	1.05500	1.04200	1.05200	1.05000	1.05300	1.04300	1.04500	1.04000	1.02900	1.03300	1.02600
West Virginia	1.03500	1.07100	1.02900	1.03700	1.03200	1.04000	1.04700	1.03800	1.05300	1.06700	1.07600	1.07400	1.07700
Wisconsin	1.03500	1.01800	1.01900	1.02000	1.00800	1.00900	1.01200	1.00900	1.00800	1.01000	1.01000	1.00800	1.00800
Wyoming	1.03500	0.92600	1.02300	0.93400	1.06000	1.05900	1.00200	1.05900	1.05300	1.05100	1.05000	1.05700	1.05300
U.S. Average	1.03500	1.03271	1.02618	1.02249	1.02549	1.02703	1.02856	1.03046	1.03077	1.03253	1.03065	1.03131	1.02958

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B7. Approximate Heat Content of Natural Gas Total Consumption, 1989-2000
(Thousand Btu per Cubic Foot)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	1.03000	1.02900	1.02700	1.02800	1.03000	1.03000	1.02900	1.03300	1.04100	1.03900	1.03500	1.04200
Alaska	0.99900	0.95400	1.00200	1.00200	0.99400	1.00100	1.00600	0.99000	1.00000	0.99900	1.00000	0.78100
Arizona	1.04000	1.03200	1.02500	1.03100	1.02800	1.02700	1.03500	1.01100	1.02100	1.01600	1.01500	1.01300
Arkansas	1.00600	1.00900	1.01700	1.00900	1.01400	1.02200	1.07600	1.02600	1.01500	1.02400	1.01900	1.01900
California	1.03700	1.03200	1.02700	1.02900	1.03600	1.02300	1.01600	1.03200	1.01800	1.04700	1.01700	0.97900
Colorado	1.01100	1.00500	1.02900	1.02300	1.01100	1.00500	1.01800	1.02400	1.01200	1.01200	1.00700	1.00800
Connecticut	1.03400	1.03300	1.03100	1.02800	1.02700	1.03000	1.02800	1.02800	1.02700	1.02600	1.02400	1.02500
Delaware	1.02800	1.02600	1.03400	1.03500	1.03500	1.03600	1.03400	1.03500	1.03500	1.03700	1.03700	1.03700
District of Columbia	1.01000	1.00800	1.00600	1.00700	1.00700	1.01100	1.00600	1.00900	1.02100	1.02700	1.02100	1.02700
Florida	1.04200	1.04300	1.04900	1.04900	1.05200	1.06800	1.03300	1.05000	1.04800	1.05100	1.04300	1.06000
Georgia	1.02600	1.02700	1.02700	1.02500	1.02700	1.03000	1.02600	1.02300	1.02700	1.02700	1.02700	1.01800
Hawaii	1.08000	1.07000	1.08000	1.07300	1.06200	1.05100	1.04800	1.05700	1.03000	1.05600	1.05500	1.04700
Idaho	1.02700	1.02800	1.03300	1.03000	1.03800	1.03800	1.03000	1.03000	1.03100	1.03800	1.03800	1.02500
Illinois	1.02200	1.02200	1.01900	1.01800	1.02100	1.02100	1.02000	1.01900	1.02100	1.02200	1.02200	1.02200
Indiana	1.01600	1.01800	1.01400	1.01100	1.01300	1.01300	1.01200	1.01100	1.01100	1.01700	1.01800	1.02500
Iowa	1.01100	1.00700	1.00800	1.00400	1.00300	1.00800	1.00500	1.00600	1.00900	1.01100	1.01900	1.00500
Kansas	0.99200	0.99900	1.00700	0.98700	0.98700	0.99800	1.00200	0.99600	1.00100	0.99500	0.99700	1.00800
Kentucky	1.03900	1.04000	1.04700	1.05800	1.04800	1.06200	1.09600	1.04900	1.05000	1.03400	1.03200	1.04000
Louisiana	1.04300	1.04200	1.04700	1.04400	1.03700	1.04000	1.03500	1.04400	1.11800	1.07000	1.04200	1.05800
Maine	1.00300	1.00500	1.00600	1.01300	1.01400	1.01400	1.01600	1.01600	1.01400	1.01700	1.01800	1.07300
Maryland	1.03200	1.02800	1.02700	1.02800	1.02800	1.03100	1.02600	1.02900	1.03400	1.03700	1.03400	1.03400
Massachusetts	1.03800	1.03800	1.03900	1.03700	1.03800	1.02600	1.02600	1.02700	1.02200	1.02300	1.04800	1.04200
Michigan	1.02900	1.02200	1.02000	1.02000	1.02100	1.02100	1.01700	1.01200	1.01600	1.02000	1.01800	1.02200
Minnesota	1.00600	1.00400	1.01200	1.01100	1.01100	1.01100	1.01300	1.01800	1.01800	1.02000	1.01900	1.01500
Mississippi	1.03000	1.03300	1.02900	1.04700	1.02300	1.03300	1.02600	1.03000	1.03400	1.04600	1.03600	1.03800
Missouri	1.00800	1.01100	1.00900	1.00200	1.00400	1.00600	1.00700	1.01100	1.01000	1.01100	1.01300	1.01500
Montana	1.02000	1.02800	1.02900	1.02300	1.01800	1.02400	1.03000	1.03000	1.03100	1.02600	1.02400	1.02400
Nebraska	0.98700	0.98300	0.98400	0.97900	0.97500	0.98500	0.98000	1.00700	0.99800	1.00300	0.99900	1.00500
Nevada	1.03000	1.03100	1.03200	1.03100	1.03400	1.03500	1.03300	1.03600	1.02700	1.04100	1.03400	1.02600
New Hampshire	1.01900	1.01400	1.00700	1.00900	1.01000	1.01300	1.01100	1.01900	1.01100	1.01100	1.00900	1.05800
New Jersey	1.02600	1.02600	1.02600	1.02600	1.03600	1.03900	1.03400	1.03600	1.03500	1.03800	1.03900	1.03500
New Mexico	1.04800	1.05400	1.03900	1.04000	1.03900	1.00300	1.02000	1.02900	1.01900	0.98200	0.97900	0.97200
New York	1.02900	1.03000	1.02800	1.02900	1.02900	1.02800	1.02800	1.02600	1.02600	1.02800	1.02700	1.02800
North Carolina	1.03100	1.03200	1.03200	1.03400	1.03500	1.03600	1.03300	1.03600	1.03600	1.04000	1.03500	1.03000
North Dakota	1.04900	1.03200	1.04600	1.04500	1.06000	1.05800	1.05000	1.05100	1.05000	1.03800	1.04500	1.03500
Ohio	1.04200	1.04000	1.04400	1.03600	1.03800	1.03700	1.03800	1.03800	1.04500	1.04000	1.03700	1.04200
Oklahoma	1.02800	1.02700	1.02100	1.02600	1.02600	1.02800	1.02000	1.02400	1.01200	1.01400	1.02300	1.01500
Oregon	1.03500	1.02300	1.02900	1.03500	1.03700	1.04000	1.04000	1.04000	1.04600	1.04300	1.05100	1.02700
Pennsylvania	1.03700	1.03700	1.03500	1.03600	1.03700	1.03600	1.03500	1.03400	1.03500	1.03600	1.03600	1.03500
Rhode Island	1.02700	1.02800	1.02800	1.01800	1.02900	1.02900	1.02600	1.06000	1.02400	1.02500	1.02300	1.03800
South Carolina	1.02600	1.02800	1.02700	1.02700	1.02900	1.03100	1.02700	1.03000	1.03100	1.03400	1.03100	1.02900
South Dakota	1.01700	1.01600	1.01800	1.01500	1.01300	1.01000	1.01400	1.01400	1.01800	1.01000	1.00600	1.00500
Tennessee	1.03200	1.03500	1.03300	1.03100	1.03500	1.03200	1.03100	1.03200	1.03100	1.03000	1.02700	1.03700
Texas	1.03800	1.04000	1.03700	1.04300	1.02800	1.03700	1.03700	1.03300	1.02800	1.04100	1.03200	1.02900
Utah	1.08700	1.08800	1.07300	1.07800	1.08000	1.06700	1.06300	1.04200	1.04200	1.04600	1.05500	1.05100
Vermont	0.98600	0.98700	0.98800	0.99500	0.99800	0.99600	0.99600	1.01500	1.01200	1.01200	1.01200	1.01200
Virginia	1.04100	1.04200	1.04200	1.03900	1.04400	1.03800	1.03100	1.03900	1.04400	1.04300	1.03800	1.03500
Washington	1.03200	1.03000	1.03100	1.03300	1.03700	1.04100	1.04000	1.03700	1.04600	1.04500	1.05200	1.03800
West Virginia	1.07700	1.07100	1.07300	1.06500	1.06500	1.06400	1.06100	1.06100	1.06800	1.06300	1.05500	1.06800
Wisconsin	1.00500	1.00600	1.00700	1.00900	1.01100	1.01200	1.01100	1.01300	1.01100	1.01100	1.01200	1.01000
Wyoming	1.05500	1.09900	1.06000	1.05800	1.05600	1.05600	1.06300	1.06100	1.06900	1.06700	1.05100	1.04600
U.S. Average	1.03113	1.03014	1.02994	1.03041	1.02806	1.02923	1.02819	1.02875	1.03271	1.03444	1.02768	1.02021

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B8. Approximate Heat Content of Coal Consumed by the Residential and Commercial Sector, 1960-1988, Selected Years
(Million Btu per Short Ton)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	24.90955	24.77905	23.93285	23.51979	24.04242	24.22595	24.31574	24.15500	24.30488	24.40711	24.63975	25.09224	25.79312
Alaska	18.90636	18.80731	18.16504	17.68304	—	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	—	—
Arizona	—	—	—	—	—	—	19.99547	—	19.79000	19.78800	—	20.38365	19.88394
Arkansas	—	—	—	—	23.89952	26.51913	22.89048	22.94798	22.81074	22.99046	—	21.49000	21.92000
California	23.01295	22.89238	22.11061	—	23.10930	23.02922	23.28646	23.09600	23.14219	23.55520	—	22.68814	23.26606
Colorado	22.95289	22.83264	22.05291	20.82582	21.46057	21.36454	21.51570	21.37000	21.55892	21.21743	21.56464	21.39947	21.96858
Connecticut	24.86790	24.40178	23.47600	22.27200	22.71900	23.79290	24.57800	24.53600	25.12800	23.03100	24.41222	26.24085	26.01755
Delaware	24.72100	24.31600	23.47600	22.27200	23.14289	23.74900	24.45649	24.57080	25.12800	24.11686	24.61300	24.88751	25.04435
District of Columbia	25.10862	24.97707	24.12411	23.24075	24.54122	24.30399	24.49456	24.78297	24.81686	24.88768	24.95163	25.06317	25.10269
Florida	—	—	—	—	24.28341	—	24.32752	22.98457	24.68400	24.75000	24.88200	24.96195	25.15453
Georgia	24.74225	24.61262	23.77210	23.49417	24.32123	24.31119	24.36058	24.50100	24.74515	24.83223	24.96009	25.12917	25.24006
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	24.83140	24.70130	23.85776	22.66294	22.29152	21.71739	21.67035	22.12100	22.22887	22.83215	22.85769	22.57736	22.58220
Illinois	24.04164	23.91539	23.09871	22.52260	22.06925	22.09115	22.02660	22.23204	22.27945	22.26944	22.34029	22.54401	22.46561
Indiana	24.06516	23.93847	23.12085	22.13233	21.88129	21.96392	22.07240	22.05553	22.08524	22.25860	22.40131	22.72483	22.59869
Iowa	21.32126	21.20956	20.48526	18.27722	20.22308	20.64206	20.63901	21.64800	20.96397	21.40188	21.14227	20.66543	20.68997
Kansas	21.78815	21.67400	20.93384	—	21.18218	21.18317	22.42143	21.32800	21.43826	21.14600	21.37600	21.49000	24.07838
Kentucky	24.43091	24.28447	23.45391	23.17784	23.83696	23.95829	23.97724	24.01125	24.30442	24.34440	24.55696	24.59749	24.40698
Louisiana	—	—	—	—	21.36502	—	21.42848	—	22.77784	—	24.40000	—	26.02100
Maine	24.96425	24.70177	23.61235	22.51890	23.54561	23.83461	24.53978	24.65317	24.90790	24.27817	24.96511	25.56672	25.37013
Maryland	25.03270	24.87495	23.94377	22.93823	24.04282	24.04338	24.52543	24.59992	24.77490	24.74887	24.84254	24.89692	25.00312
Massachusetts	24.89361	24.49344	23.55718	22.43028	23.41739	24.04580	24.69795	24.75732	24.94468	23.77832	24.56342	26.08110	25.83987
Michigan	24.75940	24.62836	23.78687	23.46574	24.35257	24.24031	24.38627	24.56482	24.38314	24.46038	24.86180	24.92704	25.02966
Minnesota	21.97087	21.85576	21.10939	19.25676	20.82860	18.49710	18.04556	19.19900	18.57345	19.14210	18.97575	17.94151	18.20799
Mississippi	—	—	—	—	22.99343	—	—	23.87900	24.75000	24.54115	24.96200	24.40747	23.61910
Missouri	22.94167	22.82147	22.04212	21.40447	21.80697	21.54143	21.47124	21.66500	21.67702	22.80191	22.61640	21.77716	22.01665
Montana	21.33557	21.22380	20.49901	20.38911	22.04235	17.67068	17.59846	20.40500	17.70690	17.68025	17.57944	17.57643	17.76117
Nebraska	20.91322	20.80366	20.09322	18.40616	18.03826	17.70058	19.19546	20.68553	21.37525	21.52621	20.80859	20.93504	18.27452
Nevada	25.11444	25.04926	24.21082	23.32668	22.43015	22.78594	23.09437	23.09600	21.78448	23.56200	23.23400	23.41600	23.15000
New Hampshire	24.72100	24.31600	23.47600	22.27200	22.71900	23.74900	24.57800	24.55128	25.12800	23.03100	24.39900	26.29300	25.89967
New Jersey	24.72427	24.35398	23.48102	22.26344	22.71900	23.78155	24.57800	24.53600	25.08425	23.21834	24.40861	26.29300	26.02100
New Mexico	22.99301	22.87255	22.09147	—	19.78553	20.01748	20.06988	19.86600	19.79000	19.81693	19.88600	17.96000	19.89220
New York	24.70038	24.36019	23.49620	22.57414	23.33679	23.96123	24.45885	24.60498	24.80844	23.81886	24.53845	25.50505	25.27796
North Carolina	24.76213	24.63240	23.79120	23.49258	24.42236	24.32632	24.49270	24.74734	24.75007	24.85944	24.96217	25.05752	25.05733
North Dakota	15.55018	15.46871	14.94046	13.75718	13.24298	13.22083	13.26253	13.15700	13.00063	13.13815	13.12892	13.19509	13.12579
Ohio	23.86178	23.73246	22.92073	22.32478	23.20690	23.47123	23.57506	23.74880	23.80453	23.83693	23.98061	24.15228	24.28873
Oklahoma	22.72718	22.60811	21.83605	20.67259	23.29143	21.66746	21.84151	21.31800	21.50073	23.39403	21.89519	22.90130	22.02965
Oregon	24.60503	24.47612	23.64027	22.38275	22.72195	20.26182	19.75846	20.24000	21.75434	22.60723	20.67402	22.83495	24.26966
Pennsylvania	24.73076	24.36478	23.54189	22.48706	23.15028	23.83682	24.54335	24.56954	24.96488	23.72419	24.61908	25.66325	25.58187
Rhode Island	24.72100	24.31600	23.47600	22.27200	22.71900	23.74900	24.57800	24.54428	25.12800	23.03100	24.39900	26.29300	26.02100
South Carolina	24.76172	24.63199	23.79081	23.49264	24.41433	24.14642	24.49270	24.75000	24.67873	24.85378	24.96200	25.03600	25.04632
South Dakota	19.41154	19.30984	18.65041	16.85997	18.42630	18.29957	18.03164	19.83900	23.33603	19.36902	20.80221	17.78380	16.94015
Tennessee	24.71533	24.58404	23.74488	23.48019	23.96977	24.15563	24.00493	24.58200	24.27867	24.38903	24.08855	24.32695	24.72055
Texas	14.95177	14.87344	14.36552	—	15.20049	19.31609	18.76230	—	—	22.51056	24.95990	23.52781	23.50056
Utah	25.89198	25.75633	24.87676	23.74007	23.17910	23.13998	23.27931	23.09600	23.14200	23.56200	23.23400	23.41600	23.05294
Vermont	24.72100	24.31600	23.47600	22.27200	22.71900	23.74900	24.57800	24.54428	25.12800	24.39899	24.45137	26.29300	26.02100
Virginia	24.78525	24.65237	23.81029	23.46220	24.41436	24.35764	24.58808	24.84057	24.80052	24.86362	25.00811	25.07452	25.18035
Washington	22.90924	22.78922	22.01097	19.96772	22.77100	22.97649	23.03893	22.74400	22.78786	23.45190	22.18962	22.47533	22.03219
West Virginia	24.99691	24.86595	24.01679	23.70919	24.05881	24.18392	24.71510	24.89546	24.81981	24.85990	25.21287	25.27135	25.27942
Wisconsin	21.92254	21.80607	21.06114	18.98021	24.26544	23.34779	23.45215	23.27582	24.17606	24.56793	24.59385	24.09312	24.42087
Wyoming	20.62538	20.51732	19.81665	18.57163	17.80856	17.90710	17.58366	17.46800	17.91289	17.26200	17.65003	17.36854	17.83575
U.S. Average	23.94283	23.77600	22.98985	22.12012	22.89233	22.51920	22.73582	22.81660	22.87600	22.68213	22.97530	23.87517	23.58839

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B9. Approximate Heat Content of Coal Consumed by the Residential and Commercial Sector, 1989-2000
(Million Btu per Short Ton)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	24.47287	24.62888	24.64742	24.20442	24.24951	24.45597	24.64589	24.63827	24.64215	24.71187	24.71187	25.45000
Alaska	—	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.84800	15.71000	15.71000	25.67739
Arizona	—	18.69794	20.99769	21.90138	21.38908	25.03703	21.96150	19.28500	19.10306	19.90041	—	21.95554
Arkansas	24.24994	24.83396	25.96800	24.68871	23.97978	26.10174	—	—	24.49708	24.43167	—	—
California	22.37275	23.18400	23.14011	23.07808	23.20120	23.24015	23.29600	23.28200	23.10055	23.04000	23.04000	23.79000
Colorado	21.38168	21.43489	21.57494	20.93156	21.83245	22.14453	22.16939	22.10652	18.71008	22.19459	22.19459	21.70600
Connecticut	27.19218	25.19900	25.26800	24.79498	24.09600	25.05358	23.80410	24.63800	24.49700	24.49700	24.49700	24.84184
Delaware	24.82214	24.85615	25.02730	24.71273	23.83238	23.85575	24.69600	24.93390	25.05444	25.14287	24.49700	26.11800
District of Columbia	24.82886	24.96081	25.04028	24.93794	24.98614	24.95716	25.17800	24.74271	24.57946	24.44600	24.44600	25.30000
Florida	27.08936	24.86125	25.26805	23.34733	24.96116	24.94758	24.64400	25.04400	—	24.95800	24.95800	25.75000
Georgia	24.71324	25.14330	25.18826	25.19263	24.99917	25.34326	24.98009	25.04400	25.69800	25.73000	25.73000	25.64200
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	21.58937	22.47778	22.57314	22.43044	22.43248	22.47832	21.71685	21.72486	22.68311	22.80723	22.80723	22.06000
Illinois	22.63635	22.45162	22.59360	22.82204	22.61287	22.44937	22.51632	22.68127	22.80243	22.89998	22.89998	21.95496
Indiana	22.31875	22.46054	22.45911	22.45790	22.60689	22.64376	22.29025	22.23182	22.19420	22.32203	22.30114	23.51901
Iowa	22.77643	23.96001	24.08672	23.73387	23.46034	23.62240	24.36084	24.52912	23.56166	23.80418	23.80418	26.10085
Kansas	23.70114	24.27951	24.51147	24.41040	22.71888	24.51341	23.94481	24.10800	22.52800	23.04000	23.04000	24.15600
Kentucky	23.51099	24.45011	24.71246	24.79925	24.87005	24.86330	24.92797	24.35637	23.26395	24.28534	24.28534	26.40800
Louisiana	—	—	25.26800	—	24.09600	—	25.07800	—	24.53000	—	—	23.48200
Maine	25.84290	24.93701	25.24114	24.95461	24.67605	25.03700	24.69600	24.63800	24.49700	24.49700	24.49700	25.92200
Maryland	25.06364	25.06708	25.16569	25.13399	24.95297	25.25646	24.83796	25.08097	25.13840	25.14888	25.15194	25.07200
Massachusetts	26.35960	25.07028	25.21557	24.84729	24.43131	25.02901	24.83425	24.79549	24.70762	24.73061	24.83378	27.07000
Michigan	24.86234	24.81175	24.86677	24.91422	24.72948	24.48071	24.66160	24.84902	24.59315	24.91309	24.89578	25.09987
Minnesota	19.28170	17.89230	17.73444	17.80440	18.36730	19.60526	20.25825	17.54796	18.40880	23.48431	23.48431	19.29400
Mississippi	23.87343	24.85200	25.26800	24.61700	24.09667	—	—	—	24.49708	—	—	—
Missouri	22.36218	21.93558	21.94880	22.01651	22.44298	22.86902	22.63423	22.66103	22.82574	22.71555	22.73920	22.01372
Montana	19.74860	18.78135	18.01546	18.17794	18.88756	18.05498	21.22785	18.18800	17.85986	18.04509	18.04509	16.01600
Nebraska	21.37921	21.37396	22.63244	21.59428	21.70581	21.88812	20.32116	24.63800	17.33200	17.33400	—	—
Nevada	22.87600	24.01028	23.14800	23.09600	23.20000	23.23600	23.44269	23.28200	23.09600	23.04000	—	23.10820
New Hampshire	26.91010	25.17092	25.26800	24.77167	24.09600	25.03700	24.86761	24.84196	24.55195	24.58889	24.49700	25.92200
New Jersey	27.02343	25.17308	25.26177	24.71277	24.09600	25.03700	24.69600	24.63800	24.49700	24.49700	24.49700	25.50000
New Mexico	22.98538	18.69800	18.63858	19.82432	19.35042	19.54379	19.23183	19.32888	18.92150	18.87750	18.87750	25.21200
New York	25.78144	24.85588	25.01257	24.73886	24.38320	25.04668	24.95806	24.82789	24.83757	24.81804	24.90220	25.31147
North Carolina	24.89007	25.18700	25.26828	25.03861	25.01550	24.99588	25.16371	24.83876	24.99447	24.84401	24.84401	27.00000
North Dakota	13.10832	13.90962	13.90692	14.54945	14.76482	14.92006	15.53547	14.92702	14.93796	15.51366	15.51366	14.22800
Ohio	23.91295	24.14408	24.17839	24.36654	24.32312	24.33250	24.43882	23.79691	23.89197	24.36585	24.36578	24.01316
Oklahoma	23.17381	24.83400	25.96800	24.88048	23.89800	26.02613	25.89400	26.12800	17.35345	25.32800	25.32800	—
Oregon	24.51672	23.18400	23.14800	23.09600	23.70388	23.86580	23.29600	—	23.09600	23.04000	—	23.30868
Pennsylvania	26.29086	25.11754	25.17103	24.87198	24.45001	25.05420	24.82982	24.70349	24.64969	24.55659	24.70518	26.38599
Rhode Island	27.19600	25.19900	25.26800	24.61700	24.09600	25.03700	24.69600	24.63800	24.49700	24.49700	24.49700	25.92200
South Carolina	24.92428	24.87489	25.13865	24.98263	24.88256	24.94988	25.50314	24.71660	24.97200	24.67971	24.67971	—
South Dakota	18.31322	18.37453	17.50120	19.09582	17.29400	20.61708	19.07166	21.61937	17.33200	17.33400	17.33400	20.86800
Tennessee	24.42166	24.74124	25.11263	24.27714	25.11816	25.16264	25.27626	25.04338	25.02904	24.44179	24.44179	26.04538
Texas	23.96416	25.89608	25.71797	21.70100	18.41093	26.10171	—	—	25.51014	25.72933	25.72933	16.28000
Utah	22.82872	23.14974	23.14850	23.09571	23.20000	23.24200	23.29600	23.28200	23.09345	23.04000	23.04000	23.21000
Vermont	27.19196	25.19900	25.26800	24.61700	24.09600	24.83200	24.69600	24.63800	24.61419	24.49700	24.49700	25.92200
Virginia	25.01571	25.08712	25.12517	25.13025	24.99384	24.98404	24.99689	25.10405	24.92831	24.87939	24.87913	26.17391
Washington	22.05743	21.73662	22.33357	22.18710	22.50221	22.42899	22.63392	23.09783	22.87154	23.04000	23.04000	25.96100
West Virginia	25.23992	25.01748	25.01572	24.94682	24.82827	24.95405	24.82246	24.68019	24.73754	24.53365	24.53394	25.74200
Wisconsin	24.81776	25.06509	25.03715	24.96032	24.96032	24.94413	25.07766	25.05235	24.92021	24.95800	24.95800	27.65942
Wyoming	17.55041	19.93489	23.14964	18.91636	18.55083	18.45662	18.24057	18.19276	18.03000	18.03200	18.03200	20.11600
U.S. Average	23.66470	23.02050	23.09941	23.14212	22.83810	22.91565	23.02709	22.71754	22.37887	22.70627	22.72753	24.63440

— =Not applicable.
Sources: See source listing at the end of this appendix.

Table B10. Approximate Heat Content of Coal Consumed by Other Industrial Users, 1960-1988, Selected Years
(Million Btu per Short Ton)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	25.17776	24.96027	23.54166	22.98960	24.10560	24.21638	24.20235	24.14298	24.28706	24.38311	24.61800	24.79546	24.64083
Alaska	19.42837	19.25707	18.14004	17.68383	—	—	—	—	—	—	—	—	—
Arizona	21.61434	21.42376	20.18105	19.77788	20.37305	20.36083	20.32161	20.17200	20.30712	20.25740	20.21478	19.87616	20.71872
Arkansas	25.42843	25.20422	—	21.33575	21.40613	21.48376	21.43682	21.39500	21.54256	21.30956	22.44793	22.33706	22.22611
California	26.05221	25.82250	24.32464	22.98540	22.17313	22.20987	22.12271	21.99800	22.30241	23.29909	22.80390	23.24871	23.00584
Colorado	23.55826	23.35054	21.99607	21.39183	21.81821	21.42057	21.38860	21.38932	21.62012	21.56832	21.47479	21.01452	21.29369
Connecticut	25.78016	25.55285	24.07063	23.62736	—	23.74900	24.88341	24.62611	23.28787	24.41914	24.79680	22.80893	24.78165
Delaware	25.35920	25.12886	23.74325	23.44148	24.47242	24.29050	24.42794	24.59859	24.61906	24.71973	24.80744	24.82025	24.77264
District of Columbia	25.88358	25.65536	24.16719	23.78591	24.35746	24.32752	—	—	—	—	—	—	—
Florida	—	—	—	23.54145	22.89184	23.91109	24.48338	24.68100	24.58028	24.77766	24.90880	25.04849	25.12972
Georgia	25.42319	25.19903	23.73733	23.50777	24.33122	24.31228	24.47558	24.71700	24.72172	24.81778	24.93814	25.02236	24.99695
Hawaii	—	—	—	—	—	—	24.68800	24.68800	24.68800	24.68800	24.68800	24.97000	24.83000
Idaho	22.54363	22.34486	21.04872	19.93455	17.68403	17.67976	17.49468	17.61400	17.59828	17.76163	18.12513	17.71016	17.85898
Illinois	23.84790	23.63069	22.26726	21.69430	22.35658	22.37511	22.48531	22.58180	22.72860	22.79936	23.05884	23.05645	22.86326
Indiana	24.01127	23.79938	22.41888	21.82415	22.25323	22.45341	22.17513	22.24746	22.35514	22.43118	22.44918	22.44930	22.46129
Iowa	23.56545	23.33520	21.98253	21.31980	21.51657	21.73481	21.98130	22.07116	22.39036	22.69286	22.87409	22.87409	23.66991
Kansas	22.67087	22.47098	21.16753	20.47974	21.56793	21.44305	21.41953	21.44300	21.44035	21.50635	21.37701	21.74703	21.92655
Kentucky	24.73441	24.49683	23.11929	22.90395	24.05911	24.04083	24.15962	24.32679	24.41984	24.51775	24.62137	24.84413	24.94947
Louisiana	—	—	—	—	22.15263	22.00482	22.87797	22.60500	23.21779	24.05362	24.02324	24.00203	19.27994
Maine	25.88863	25.62632	24.13365	23.97519	24.43949	24.29392	24.49709	24.66633	24.70565	24.86127	24.74737	24.98287	24.86344
Maryland	25.90399	25.67570	24.18970	23.65802	24.48487	24.25288	24.48400	24.68180	24.67499	24.72752	24.74687	24.77206	24.69211
Massachusetts	26.14994	25.90591	24.40195	23.79824	24.60203	24.38089	24.67961	24.76189	24.83471	24.84959	25.02830	25.19141	25.22229
Michigan	24.83068	24.61006	23.18747	22.89244	24.04413	24.04710	24.24256	24.50316	24.63514	24.74112	24.82187	24.86238	24.85303
Minnesota	19.52134	19.34921	18.22684	18.91730	17.08375	17.80847	16.78828	16.83900	18.34313	20.69045	20.99818	20.25035	19.15646
Mississippi	25.68109	25.45466	23.97813	23.21260	23.44243	22.97063	24.19676	23.75100	23.41970	23.39939	23.79396	23.70762	23.66501
Missouri	23.60136	23.39246	22.03613	21.43028	22.00267	21.95193	21.99572	22.07900	22.35139	22.32881	22.56176	23.01241	23.10579
Montana	22.82715	22.62588	21.31344	20.87854	19.03489	19.40601	19.55212	19.53400	18.98653	18.06841	17.74214	17.89376	18.28713
Nebraska	21.97456	21.78080	20.51738	19.28537	19.19380	18.66559	18.84731	19.72143	19.39072	18.59708	18.41551	18.61192	18.72539
Nevada	26.49581	26.14446	24.78307	23.42175	23.16143	23.14666	23.28646	23.08500	23.15000	23.56200	23.23400	23.41600	23.15000
New Hampshire	24.45007	24.23285	22.94496	23.36408	24.11207	24.07710	24.42958	24.59400	24.65243	24.62418	24.60931	25.13548	25.33270
New Jersey	25.38804	25.15576	23.71203	23.37734	23.52635	24.01976	24.52890	25.13010	25.14897	24.45329	25.23271	25.35244	25.34075
New Mexico	23.03750	22.83438	21.50984	—	21.86701	21.61083	21.73974	21.46000	21.64352	21.62540	21.81929	21.38000	21.92000
New York	25.71896	25.48611	24.05437	23.63516	24.45387	24.33718	24.67610	24.81811	24.77457	24.85826	25.14191	25.13502	25.12715
North Carolina	25.44614	25.22177	23.75876	23.49028	24.41869	24.34556	24.49467	24.75700	24.75049	24.88021	24.96364	25.03348	25.04255
North Dakota	14.81208	14.68148	13.82987	13.03850	13.12013	13.14596	13.19186	13.11100	13.15921	13.16040	13.24299	13.37441	13.28101
Ohio	24.78928	24.56848	23.14857	22.67582	23.33942	23.34657	23.70381	23.96320	24.03407	24.17814	24.40010	24.46626	24.52427
Oklahoma	25.38348	25.15967	—	23.43863	21.21166	21.30121	21.17427	21.60606	21.22483	21.43419	21.48894	21.10301	21.26017
Oregon	22.67719	22.47724	21.17342	20.34784	17.69347	18.85957	17.62852	17.85400	18.79888	17.86804	17.84128	17.90776	17.40340
Pennsylvania	25.47879	25.24913	23.88921	23.42998	24.11035	24.14890	24.43848	24.70511	24.70093	24.67778	24.92320	25.05160	25.00680
Rhode Island	24.72100	24.31600	23.47600	22.96321	24.09889	24.80291	—	—	24.75000	24.41914	25.33053	25.03600	25.04478
South Carolina	25.42102	25.19405	23.75586	23.47287	24.39898	24.32158	24.49337	24.74704	24.74652	24.86134	24.95781	25.04671	25.04344
South Dakota	19.90924	19.73370	18.58902	18.76511	19.21967	18.90864	19.53656	17.49100	17.30716	17.26200	17.34693	17.27400	17.41784
Tennessee	25.05567	24.83269	23.41284	23.12927	24.14518	24.07218	24.22258	24.14026	24.44900	24.57948	24.68605	24.81513	24.77898
Texas	16.85433	16.90156	17.88528	18.82484	16.29553	16.10035	17.14674	15.68112	15.95326	15.57653	15.90799	15.15529	14.06940
Utah	26.19847	25.96747	24.46120	23.64361	22.33114	22.37915	22.74751	22.49900	22.29674	22.27355	21.75680	22.08866	22.91524
Vermont	26.52519	26.29132	24.76626	24.05572	24.88781	24.82061	24.57800	24.91581	25.12800	24.26487	24.39900	25.97808	25.34106
Virginia	25.46128	25.23740	23.77727	23.47269	24.44795	24.30683	24.52215	24.87945	24.78337	24.90014	25.00628	25.06927	25.09309
Washington	25.95480	25.72596	24.23369	23.54643	21.36337	21.14789	20.83484	20.21374	21.42922	21.63429	19.84933	19.76416	20.92868
West Virginia	25.51633	25.29299	23.83024	23.52175	24.34671	24.23873	24.49198	24.69878	24.63733	24.84946	25.05155	25.06833	25.10744
Wisconsin	24.59694	24.37976	22.96605	22.95744	22.73534	22.59914	22.86160	22.76400	22.65299	23.32299	23.60199	23.10643	21.87679
Wyoming	20.53852	20.35742	19.17657	18.35566	17.95474	17.97026	17.82097	17.72300	17.51430	17.55529	17.33813	17.46332	17.72115
U.S. Average	24.65746	24.46031	23.06438	22.29033	22.69605	22.44873	22.58688	22.68732	22.55569	22.24944	22.29675	22.37033	22.40934

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B11. Approximate Heat Content of Coal Consumed by Other Industrial Users, 1989-2000

(Million Btu per Short Ton)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	24.39340	24.67898	24.58103	24.64283	24.53557	24.65614	24.84808	24.78508	24.67890	24.87433	24.87429	25.45000
Alaska	—	—	—	—	15.80000	16.46473	—	15.80000	15.84800	15.71000	15.71000	15.71000
Arizona	20.70390	20.07050	19.94197	20.31671	19.99527	20.15810	19.96204	19.79709	19.54036	19.25030	19.23730	22.16400
Arkansas	22.41294	22.80790	24.19421	24.00205	23.45115	24.82810	23.95685	23.98664	23.58123	24.43193	24.43179	25.15400
California	22.70929	22.52224	22.73094	22.97040	23.20026	23.22969	23.29600	23.28200	23.05519	22.99659	22.99659	23.79000
Colorado	20.79333	21.10513	21.08138	20.10740	20.93740	21.56872	21.70231	21.57372	21.57222	21.26260	21.25734	21.70600
Connecticut	24.78080	25.19900	24.84324	24.93613	24.79454	25.27560	—	—	—	—	—	—
Delaware	24.72413	24.93784	25.07321	25.25103	25.20759	25.24459	25.19175	25.14560	25.21542	25.16859	25.16618	26.15092
District of Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Florida	24.79673	25.00471	25.13081	25.00174	24.88237	24.92795	25.10701	25.11598	25.05234	25.00217	25.00308	25.75000
Georgia	24.79070	25.14819	25.13954	25.14655	25.10235	25.07263	25.19814	25.13735	25.08994	25.07925	25.07909	25.64200
Hawaii	24.83000	24.81000	24.85000	24.83000	24.83000	21.50000	21.50000	21.50000	22.49862	23.04000	23.04000	19.51800
Idaho	17.71086	17.85823	17.75592	17.52799	18.16523	17.74360	19.03477	18.16585	17.33200	18.15972	18.15972	22.06000
Illinois	22.76004	22.55646	21.86486	22.75432	22.86151	22.65432	22.83681	22.84938	23.17145	23.04887	23.05062	22.55200
Indiana	22.52258	22.71236	22.92005	22.95050	22.85609	22.63570	23.05468	22.71535	23.18017	23.25752	23.26278	23.86600
Iowa	22.94444	22.58587	22.19280	20.56822	20.16583	20.11051	20.97803	21.30743	20.93210	21.17668	21.17762	20.98000
Kansas	22.21132	24.22372	24.42437	24.48944	23.55304	23.96144	24.24071	25.47579	24.52305	24.79541	24.79543	24.15600
Kentucky	24.75714	24.63342	24.90217	24.89135	24.83788	24.75797	24.84676	24.74520	24.48063	24.69544	24.69546	26.40800
Louisiana	20.30941	19.97897	18.36116	18.56416	18.41604	18.41001	18.13611	25.01815	24.85731	25.18061	25.18061	24.50200
Maine	24.84296	24.92375	25.01017	25.06970	24.97451	24.96127	25.10225	25.02589	24.98213	24.50979	24.50979	25.92200
Maryland	24.73987	25.11792	25.14601	25.20668	25.26143	25.40216	25.32368	25.13270	25.11468	25.02943	24.99151	25.07200
Massachusetts	25.20166	24.87740	24.92877	24.89677	24.90752	24.96452	25.17556	24.90749	25.03547	24.47621	24.47621	27.07000
Michigan	24.66256	24.45063	24.52149	24.40010	24.20802	24.22421	24.02603	24.34533	24.35386	23.73938	23.73938	24.91200
Minnesota	19.58753	18.56250	19.36088	18.52981	18.14535	18.50432	19.07827	19.14046	18.86921	18.61519	18.61053	19.29400
Mississippi	23.34870	23.25386	23.26526	23.34142	24.01959	23.89459	24.07263	23.90664	23.67600	24.07408	24.07408	23.92200
Missouri	22.94751	22.98843	23.26695	23.43390	23.57812	23.00631	23.17545	23.13412	22.82012	22.90858	22.91315	23.12800
Montana	18.48953	18.37578	18.47768	18.78661	18.55546	18.33765	18.09956	18.21032	18.24449	17.91315	18.02330	16.01600
Nebraska	19.12737	19.05305	18.91741	18.44837	18.77025	19.10347	19.35912	18.82313	19.13176	19.07469	19.04352	20.50800
Nevada	21.18601	23.18400	23.14800	23.09600	23.20000	23.23600	22.66800	22.61981	22.98074	23.13890	23.13890	23.28000
New Hampshire	24.94947	24.93865	25.26108	25.31936	24.98000	—	25.21628	—	—	—	—	—
New Jersey	25.23159	25.23639	25.26680	25.33154	25.26040	25.06850	23.98345	24.63800	24.49700	23.78144	23.53789	25.50000
New Mexico	24.43675	21.38800	21.54400	20.39800	21.70600	21.92600	22.00800	21.97600	21.78800	21.98800	21.98800	25.21200
New York	25.08104	25.10824	25.19174	25.15526	25.14915	25.20620	25.11701	25.02823	25.16298	25.04125	25.04584	26.29400
North Carolina	24.88239	24.93830	25.10847	25.08579	25.14470	25.10470	25.26890	25.14978	25.06093	25.06861	25.06878	26.49200
North Dakota	13.32203	13.48903	13.41305	13.32713	13.32920	13.45017	13.35266	13.38232	13.28668	13.34170	13.34170	14.22800
Ohio	24.31511	24.30376	24.44410	24.42144	24.55123	24.55067	24.51161	24.46949	24.43845	24.36431	24.36436	24.81600
Oklahoma	21.31431	22.80216	23.80519	22.75512	22.42776	21.09034	22.67545	22.23193	20.88353	23.32931	23.32931	19.88200
Oregon	17.66001	17.35230	17.33432	17.88959	19.00958	19.69751	19.02589	21.29915	20.52349	20.16974	—	—
Pennsylvania	25.00496	24.92015	25.06594	25.08790	25.07589	25.11963	25.13491	25.06116	25.16267	24.90182	24.90660	24.47600
Rhode Island	24.88400	25.19900	—	—	—	—	—	—	—	—	—	—
South Carolina	24.89088	25.11786	25.22595	25.19592	25.17487	25.07478	25.19274	25.06364	25.08769	25.03090	25.03144	26.27000
South Dakota	17.35218	17.33800	17.46595	17.29575	17.29400	17.26800	17.25800	17.30000	17.41854	17.51564	17.51564	20.86800
Tennessee	24.67908	25.13269	25.12446	25.25216	25.15832	25.05625	25.13542	25.02032	25.00384	25.02139	25.02261	26.08800
Texas	14.56476	14.78967	15.05322	14.31012	15.18809	15.48368	14.96538	15.34020	15.55204	14.23099	14.22843	16.28000
Utah	22.46491	23.18867	23.12437	23.09600	23.49359	22.92161	23.00279	23.28200	23.48885	23.05627	23.05627	23.21000
Vermont	25.54155	25.07890	25.74698	25.70000	—	—	—	—	—	24.44600	24.44600	—
Virginia	24.97913	25.06954	25.16480	25.19517	25.09637	25.05070	25.08451	25.09830	24.94586	24.86104	24.86104	26.38600
Washington	20.75464	22.70686	21.74506	20.69363	20.21833	19.27531	19.00628	19.65817	20.64702	23.00664	23.00664	22.33200
West Virginia	24.99948	24.88832	24.99430	24.94736	24.93580	24.97828	24.97467	24.93964	24.96660	24.78222	24.78182	25.74200
Wisconsin	22.60505	24.15041	24.30622	24.27108	23.95843	24.16167	24.21942	23.89132	24.13111	24.27928	24.27942	23.69800
Wyoming	17.74126	22.17752	22.05079	21.11792	21.28174	21.75639	21.94055	21.89685	21.58115	21.93124	21.93124	20.11600
U.S. Average	22.17523	22.42959	22.45443	22.20892	22.16755	22.02827	22.11162	22.17054	22.17032	21.97026	21.88346	22.47611

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B12. Approximate Heat Content of Coal Consumed by Electric Utilities, 1960-1988, Selected Years
(Million Btu per Short Ton)

State	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	24.12600	23.70400	23.31400	23.16350	23.91189	23.99756	24.04115	23.97230	24.05936	24.11116	24.34921	24.44506	24.32805
Alaska	17.72900	17.85800	17.08000	17.40000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000
Arizona	—	20.85000	21.23800	21.08957	21.24312	21.01265	21.08605	21.26936	21.19024	20.98564	21.04448	21.21656	21.29993
Arkansas	—	—	—	—	17.00887	16.96304	17.04517	17.46096	17.18364	17.20748	17.33929	17.36371	17.32804
California	—	—	—	—	—	—	—	—	—	—	—	—	—
Colorado	20.54600	21.32200	21.53000	19.80780	19.99201	20.11977	19.62760	19.46681	19.31025	19.49701	19.54026	19.68454	19.54309
Connecticut	26.54800	25.90800	23.54800	23.90400	—	—	—	—	26.27193	26.31651	26.34394	26.26827	26.27739
Delaware	25.98200	26.39200	24.18600	24.53412	24.92212	24.96266	25.21723	25.59153	25.97302	25.92406	26.00008	26.13094	25.80238
District of Columbia	27.46000	26.94800	25.92000	25.61888	—	—	—	—	—	—	—	—	—
Florida	24.60600	23.76200	22.74800	23.09252	23.68622	23.71000	24.02140	24.36947	24.45588	24.45038	24.55139	24.79878	24.84874
Georgia	25.04200	24.93200	23.75600	23.75121	23.80495	23.90946	23.99180	24.12916	24.25098	24.24094	24.29147	24.34988	24.34509
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	21.69400	21.44800	21.00200	20.25912	20.59267	20.81535	20.85878	20.80897	21.18724	20.96903	21.07475	21.39665	21.27149
Indiana	22.64000	22.46600	22.03000	21.22923	21.63186	21.64290	21.77556	21.89759	21.57470	21.31356	21.35811	21.75674	21.66827
Iowa	20.76800	21.21800	20.88800	20.38486	18.63318	18.28830	18.27544	18.28866	17.94484	18.19661	18.37163	18.30428	18.42196
Kansas	23.75400	24.19200	24.10000	19.95680	18.36976	18.12214	17.74540	17.55593	17.58032	17.53691	17.45659	17.52886	17.95627
Kentucky	22.97200	22.89200	21.85200	21.48102	22.91705	22.89628	22.80264	22.97313	22.87114	22.76930	23.04657	22.99234	23.05611
Louisiana	—	16.03793	—	—	—	16.18703	16.71399	17.05934	17.01545	16.90673	16.24104	16.32004	16.38486
Maine	28.58000	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	26.61600	26.37200	24.61200	24.32290	24.75727	24.51454	24.82195	25.34179	25.23585	25.32555	25.37716	25.35115	25.44911
Massachusetts	26.35200	26.07200	23.26000	24.34726	26.75129	26.11421	26.30974	26.59218	26.46597	26.56066	26.43708	26.25661	26.21825
Michigan	24.88400	24.80400	24.20200	23.66213	24.02458	23.48699	23.90599	23.35495	23.33954	23.39292	23.44262	23.12783	23.22394
Minnesota	22.39000	22.17600	20.27400	17.94022	17.55670	17.54394	17.61363	17.67612	17.35450	17.45075	17.45061	17.48309	17.47699
Mississippi	24.85800	24.89000	24.09800	23.16389	23.99361	24.10518	24.17577	24.27107	24.23072	24.25244	24.45673	25.34749	25.32763
Missouri	21.90400	21.55000	21.51800	21.49363	21.30576	21.18322	21.39835	21.42307	21.41418	21.28922	21.37715	21.19511	20.80806
Montana	13.50000	13.14000	15.47400	15.95909	17.00328	17.08734	17.01129	16.69349	17.02300	17.09975	17.09975	17.18001	17.03980
Nebraska	24.78200	24.56800	23.91400	20.95357	18.80879	18.01500	17.85122	17.57216	17.79651	17.29876	17.42659	17.20153	17.23870
Nevada	—	25.48800	25.65400	22.38788	22.07779	22.06220	22.09859	22.27924	22.38221	22.76835	22.44442	22.36459	22.15912
New Hampshire	25.44800	27.90400	27.43200	26.70098	26.81635	26.95102	27.04008	27.09411	27.08116	26.90451	26.88676	26.83174	26.66593
New Jersey	26.76842	26.45784	24.94400	25.40124	26.18199	26.22582	26.40196	26.44328	26.42461	26.47525	26.45777	26.47223	26.64705
New Mexico	25.00000	18.00400	17.96600	17.84874	17.69514	18.27875	18.28261	18.19864	18.06930	18.37577	18.21464	18.09713	18.07206
New York	26.50514	26.67800	24.66400	24.05032	24.63519	24.41983	24.84383	24.96993	25.10649	25.20035	25.44420	25.57463	25.62880
North Carolina	26.24200	25.81400	24.11400	23.78836	24.53799	24.44275	24.53774	24.88739	24.95315	24.97487	25.10762	25.09931	25.15052
North Dakota	13.83600	13.91800	13.66600	13.34445	13.23368	13.24692	13.28593	13.18710	13.04344	13.15028	13.15796	13.20282	13.16802
Ohio	23.77000	23.56400	22.50000	21.91934	22.88041	22.70638	23.10614	23.57204	23.51935	23.62539	23.82083	23.80822	23.79040
Oklahoma	25.94198	24.00000	25.07600	25.07607	17.39280	17.11773	17.06022	17.15725	17.20674	17.16768	17.32594	17.70292	17.82347
Oregon	—	—	—	—	16.39258	16.57304	16.61288	16.61300	16.65419	16.58400	—	—	—
Pennsylvania	23.43570	24.09503	23.34132	23.49794	24.17625	24.03849	24.24281	24.45194	24.43204	24.44508	24.48426	24.50083	24.47017
Rhode Island	28.15200	27.46800	—	—	—	—	—	—	—	—	—	—	—
South Carolina	26.73400	25.82200	24.27400	24.16051	24.84295	24.60532	24.76354	25.05966	25.05792	25.13214	25.32515	25.29714	25.35043
South Dakota	17.16800	17.90400	16.57200	12.61613	12.59940	12.62686	12.68694	12.29735	12.20422	12.20986	12.16911	12.12305	12.67660
Tennessee	24.04000	23.59000	22.59400	21.98283	23.25397	23.22690	23.62140	23.55640	23.61027	23.65727	23.81593	23.95699	24.08916
Texas	—	—	—	13.10305	14.79112	14.99738	14.98340	14.85580	14.66297	14.80734	14.58271	14.48383	14.60802
Utah	24.94000	25.18400	24.81200	23.64976	22.90042	22.91941	23.08217	22.86611	22.85458	23.60722	22.97536	23.23687	22.98103
Vermont	27.76000	27.34000	24.87000	25.74400	25.92600	25.09632	25.62833	25.62800	25.62800	25.62800	25.62800	—	—
Virginia	26.72600	26.47400	24.78200	23.93019	25.01317	24.79074	24.97461	25.31446	25.24274	25.62794	25.70845	25.62891	25.59915
Washington	—	—	—	16.20000	16.20000	16.20000	16.20000	16.20000	16.20000	16.20000	16.20000	16.20000	16.41283
West Virginia	23.90800	23.73600	23.31800	23.22075	24.26929	24.20780	24.45099	24.71696	24.66725	24.82719	24.87872	24.87305	24.94550
Wisconsin	24.20800	24.03600	22.44600	21.23552	20.52333	19.76022	20.08694	19.87583	19.90783	19.54733	19.32331	19.25995	19.38606
Wyoming	14.84600	15.99000	16.53400	16.62585	17.59029	17.31142	17.33698	17.42590	17.29186	17.50962	17.41260	17.55502	17.51124
U.S. Average	23.92159	23.78120	22.57470	21.65048	21.35691	21.15104	21.11922	21.08884	21.01391	21.02274	21.04710	21.05440	20.94772

— =Not applicable.

Sources: See source listing at the end of this appendix.

Table B13. Approximate Heat Content of Coal Consumed by Electric Utilities, 1989-2000

(Million Btu per Short Ton)

State	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alabama	24.04527	24.18828	24.21421	24.12231	24.18379	24.17560	23.72228	23.58782	23.16839	23.03741	21.92557	22.04926
Alaska	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.80000	15.71000	15.71000	20.98038
Arizona	21.19271	20.96337	20.71212	20.60673	20.54290	20.56138	20.54809	20.46484	20.31761	20.37299	20.51329	20.42598
Arkansas	17.43904	17.47970	17.46879	17.44830	17.32933	17.41418	17.37423	17.40510	17.41407	17.34133	17.30145	17.35216
California	—	—	—	—	—	—	—	—	—	—	—	—
Colorado	19.69685	19.61551	19.77520	19.83981	19.77533	19.89191	19.79050	19.71663	19.74334	19.66760	19.49709	19.59658
Connecticut	26.61558	26.46571	26.47664	26.33450	26.28876	26.18816	26.21972	26.20002	26.26388	26.27555	—	—
Delaware	25.88695	26.06988	26.10578	26.12845	26.05318	25.90726	26.17075	26.04029	26.12436	25.92332	25.87070	26.09877
District of Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Florida	24.76555	24.72855	24.70131	24.73977	24.66394	24.58521	24.59295	24.38601	24.24307	24.28767	24.59737	24.38355
Georgia	24.19948	23.78608	23.87269	24.07813	24.29572	23.54887	23.15189	23.16181	23.51077	23.50066	23.47906	23.17564
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	21.41052	21.57798	21.44217	21.33289	20.72305	20.36161	19.94090	19.75506	19.56279	19.40084	19.12098	19.45123
Indiana	21.39682	21.12394	21.13900	21.25663	21.07839	21.06908	20.67609	20.71372	20.92237	21.03476	21.23983	21.23875
Iowa	17.87940	17.78347	17.78073	17.73343	17.31996	17.56560	17.35696	17.31594	17.32483	17.27195	17.16250	17.70150
Kansas	17.75137	17.89698	17.99569	17.79922	17.30731	17.41698	17.46010	17.65448	17.53189	17.39208	17.25612	17.35757
Kentucky	22.98604	23.11655	23.10311	23.24019	23.39372	23.36552	23.24978	23.07184	23.14125	23.15715	23.16483	23.18271
Louisiana	16.37353	16.38807	16.44601	16.24345	16.18493	16.27256	16.21951	16.34229	16.20350	16.19456	16.29872	15.91068
Maine	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	25.39531	25.46891	25.59121	25.50566	25.50384	25.64809	25.93085	25.75778	25.82585	25.82899	25.88507	25.92918
Massachusetts	26.01748	26.12464	26.28298	26.14010	25.90208	25.62884	25.39576	25.26651	25.14198	25.23391	26.31921	26.27350
Michigan	22.55661	22.26254	22.10306	21.99037	21.70619	21.85082	21.35367	21.00751	21.13297	21.12631	20.97363	20.84376
Minnesota	17.53444	17.57650	17.60493	17.67522	17.68736	17.64162	17.82721	17.87937	17.78977	17.76587	17.76626	17.88333
Mississippi	25.30847	25.08625	25.11010	25.01366	24.67509	22.62320	22.44121	22.04690	20.97206	21.13795	22.12427	23.07236
Missouri	20.73534	20.79962	20.59603	20.64120	19.71902	19.43673	18.43195	18.12585	17.98834	17.87674	17.89638	17.83803
Montana	17.01785	17.12889	17.04419	17.15114	16.99101	17.00015	16.87714	16.85154	16.86633	16.87000	13.23555	—
Nebraska	17.32878	17.12200	17.08328	17.10544	17.12281	17.14137	17.18777	17.19766	17.18964	17.16895	16.99644	17.26387
Nevada	22.23307	22.24492	22.24210	22.10266	22.02420	22.58166	22.15036	22.27947	22.33768	22.39808	22.51434	22.46450
New Hampshire	26.71818	26.60524	26.49442	26.52056	26.35868	26.06363	26.22105	26.29103	26.10859	26.26535	26.26674	26.26371
New Jersey	26.63810	26.85863	26.80446	26.93038	26.79478	26.68271	26.56460	25.98652	26.16773	26.22677	26.29982	26.22277
New Mexico	18.25702	18.23411	18.18453	18.02544	17.98299	18.08502	18.06533	18.23235	18.13797	18.16456	18.26448	18.38786
New York	25.64752	25.69197	25.84622	25.95997	25.82701	25.91765	26.10186	26.02591	26.21098	26.10375	26.06778	26.26902
North Carolina	25.06111	25.08769	25.01190	24.91255	24.92951	24.83219	24.92268	24.84374	24.73536	24.79516	24.90022	24.91238
North Dakota	13.15988	13.27219	13.21236	13.11531	13.13958	13.18516	13.16914	13.19349	13.11843	13.13244	13.09457	13.05680
Ohio	23.66929	23.76388	23.89059	23.96512	24.09765	24.10449	24.24332	24.11103	23.78207	23.82583	23.83596	23.50601
Oklahoma	17.65022	17.78795	17.58356	17.40032	17.24222	17.14643	17.11329	17.20030	17.28203	17.30245	17.23900	17.43815
Oregon	17.05668	16.69610	16.85865	19.28329	17.60154	17.87428	17.76458	17.56307	17.51491	17.37052	17.92286	17.27270
Pennsylvania	24.46610	24.41347	24.39052	24.70037	24.68927	24.61460	24.60313	24.57339	24.49334	24.56273	24.94295	24.99645
Rhode Island	—	—	—	—	—	—	—	—	—	—	—	—
South Carolina	25.23524	25.30955	25.44893	25.63409	25.60405	25.54228	25.70337	25.51496	25.71003	25.61042	25.61851	25.40681
South Dakota	12.27333	12.19168	12.05040	12.06852	12.11449	12.09793	13.94369	18.06768	17.37335	17.45545	17.25950	17.18875
Tennessee	23.78969	23.93271	24.33817	24.36350	24.53656	24.37185	24.26010	24.12411	23.71094	23.46508	23.27013	24.20313
Texas	14.57334	14.58137	14.45089	14.46813	14.56804	14.69177	14.69101	14.88092	14.84508	15.01800	15.01164	15.19314
Utah	22.64441	22.96536	22.93866	22.76877	22.97756	22.98241	23.09903	23.02688	22.66014	22.62079	23.24037	23.31249
Vermont	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	25.38617	25.42742	25.53520	25.66017	25.63333	25.55607	25.48669	25.19465	25.10770	25.20529	25.40303	25.72027
Washington	16.32236	16.27014	16.02823	16.37826	16.24949	16.80068	16.53312	15.87148	16.08594	16.43006	16.44807	16.61940
West Virginia	24.79060	24.90334	25.01093	25.04815	24.97885	24.93653	24.83633	24.75682	24.79556	24.61094	24.72214	24.58720
Wisconsin	19.41028	19.28565	19.44991	18.94991	18.98003	19.12997	18.70226	18.44322	18.74990	18.59798	18.22942	18.88084
Wyoming	17.57672	17.62122	17.51118	17.68028	17.55731	17.53159	17.47534	17.43285	17.57360	17.58854	17.56763	17.63312
U.S. Average	20.85930	20.79742	20.73426	20.76273	20.70187	20.63772	20.56087	20.53395	20.51076	20.47640	20.35555	20.40689

— =Not applicable.

Sources: See source listing at the end of this appendix.

Thermal Conversion Factor Source Documentation

Approximate Heat Content of Petroleum and Natural Gas Plant Liquids

Asphalt. 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. EIA adopted the Bureau of Mines thermal conversion factor of 5.048 million Btu per barrel for “Gasoline, Aviation” 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.

Butane. EIA adopted the Bureau of Mines thermal conversion factor of 4.326 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Butane-Propane Mixture. EIA adopted the Bureau of Mines calculation of 4.130 million Btu per barrel based on an assumed mixture of 60 percent butane and 40 percent propane. See **Butane** and **Propane**.

Crude Oil (Including Lease Condensate) Used Directly. 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 Value of Various Fuels, Adopted January 3, 1950.”

Distillate Fuel Oil. EIA adopted the 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 Value of Various Fuels, Adopted January 3, 1950.”

Ethane. EIA adopted the Bureau of Mines thermal conversion factor of 3.082 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Ethane-Propane Mixture. EIA calculated 3.308 million Btu per barrel on the basis of an assumed mixture of 70 percent ethane and 30 percent propane. See **Ethane** and **Propane**.

Isobutane. EIA adopted the Bureau of Mines thermal conversion factor of 3.974 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Jet Fuel, Kerosene Type. EIA adopted the Bureau of Mines thermal conversion factor of 5.670 million Btu per barrel for “Jet Fuel, Commercial” as published by the Texas Eastern Transmission Corporation in Appendix V of *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 Appendix V of *Competition and Growth in American Energy Markets 1947-1985*, a 1968 release of historical and projected statistics.

Kerosene. EIA adopted the thermal conversion factor of 5.670 million Btu per barrel as reported in a Bureau of Mines internal memorandum, “Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950.”

Liquefied Petroleum Gases. (LGTCCKUS) 1960 through 1966: U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys*, “Crude Petroleum and Petroleum Products, 1956,” Table 4 footnote, constant value of 4.011 million Btu per barrel. 1967 forward: Calculated annually

by EIA as a weighted average by multiplying the quantity consumed of each of the component products by each product's conversion factor, listed in this appendix, and dividing the sum of those heat contents by the sum of the quantities consumed. The component products are ethane (including ethylene), propane (including propylene), normal butane (including butylene), butane-propane mixtures, ethane-propane mixtures, and isobutane. Quantities consumed are from: 1967 through 1980: EIA, *Energy Data Reports*, "Petroleum Statement, Annual," Table 1. 1981 forward: EIA, *Petroleum Supply Annual*, Table 2.

Lubricants. EIA adopted the thermal conversion factor of 6.065 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Miscellaneous Products. EIA adopted the thermal conversion factor of 5.796 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Motor Gasoline. (MGTCCKUS) 1960 through 1993: 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. 1994 forward: EIA calculated national annual quantity-weighted average conversion factors for conventional, reformulated, and oxygenated motor gasolines (shown in appendix Table C1). The factor for conventional motor gasoline is 5.253 million Btu per barrel, as used for previous years. The factors for reformulated and oxygenated gasolines, both currently 5.150 million Btu per barrel, are based on data published in the Environmental Protection Agency, Office of Mobile Sources, National Vehicle and Fuel Emissions Laboratory report EPA 420-F-95-003, *Fuel Economy Impact Analysis of Reformulated Gasoline*.

Natural Gasoline. EIA adopted the thermal conversion factor of 4.620 million Btu per barrel as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.

Pentanes Plus. EIA assumed the thermal conversion factor to be 4.620 million Btu per barrel, equal to that for natural gasoline. See **Natural Gasoline**.

Petrochemical Feedstocks, Naphtha Less Than 401 °F. EIA assumed the thermal conversion factor to be 5.248 million Btu per barrel, equal to that for special naphthas. See **Special Naphthas**.

Petrochemical Feedstock, Other Oils Equal to or Greater Than 401 °F. EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel, equal to that for distillate fuel oil. See **Distillate Fuel Oil**.

Petrochemical Feedstock, Still Gas. Assumed by EIA to be 6.000 million Btu per barrel, equal to the thermal conversion factor for still gas. See **Still Gas**.

Petroleum Coke. EIA adopted the thermal conversion factor of 6.024 million Btu per barrel as reported in Btu per short ton in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Value of Various Fuels, Adopted January 3, 1950." The Bureau of Mines calculated this factor by dividing 30,120,000 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.

Petroleum Products, Total Consumption. Calculated annually by EIA as the average of the thermal conversion factors for all petroleum products consumed, weighted by the quantity of each petroleum product consumed.

Plant Condensate. EIA estimated 5.418 million Btu per barrel from data provided by McClanahan Consultants, Inc., Houston, Texas.

Propane. EIA adopted the thermal conversion factor of 3.836 million Btu per barrel as published in the *California Oil World and Petroleum Industry*, First Issue, April 1942.

Residual Fuel Oil. EIA adopted the thermal conversion factor of 6.287 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."

Road Oil. EIA adopted the Bureau of Mines thermal conversion factor of 6.636 million Btu per barrel, equal to that of asphalt and first published by the Bureau of Mines in the *Petroleum Statement, Annual, 1970*. See **Asphalt**.

Special Naphthas. EIA adopted the Bureau of Mines thermal conversion factor of 5.248 million Btu per barrel, equal to that of total gasoline (aviation and motor) and first published in the *Petroleum Statement, Annual, 1970*.

Still Gas. EIA adopted the Bureau of Mines estimated thermal conversion factor of 6.000 million Btu per barrel and first published in the *Petroleum Statement, Annual, 1970*.

Unfinished Oil. EIA assumed the thermal conversion factor to be 5.825 million Btu per barrel, equal to that for distillate fuel oil and first published in the *Annual Report to Congress, Volume 3, 1977*. See **Distillate Fuel Oil**.

Unfractionated Stream. EIA assumed the thermal conversion factor to be 5.418 million Btu per barrel, equal to that for plant condensate and first published in the EIA, *Annual Report to Congress, Volume 2, 1981*. See **Plant Condensate**.

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 EIA, *Petroleum Statement, Annual, 1956*.

Approximate Heat Content of Natural Gas

Natural Gas, Total Consumption. (NGTCKZZ) 1960 through 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 through 1979: EIA adopted the thermal conversion factors calculated annually by the American Gas Association (AGA) and published in *Gas Facts*, an AGA annual. 1980 forward: EIA, *Historical Natural Gas Annual 1930 Through 2000*, Table 16. This report is available only via the Internet at <http://www.eia.doe.gov>. In the box titled “Search EIA by Google” type “Historical Natural Gas Annual 1930” and click the “Go” button. Select the report from the list.

Natural Gas, Consumption by Electric Utilities. (NGEUKZZ) 1960 through 1971: Assumed by EIA to be equal to the thermal conversion factor for the consumption of natural gas by all users. See **Natural Gas, Total Consumption**. 1972 through 1982: Calculated annually by EIA by dividing the total heat content of natural gas received at steam

electric plants 25 megawatts or greater by the total quantity received at those electric plants. The heat contents and quantities received are from the Federal Energy Regulatory Commission (FERC) Form 423, “Monthly Report of Cost and Quality of Fuels for Electric Plants.” 1983 forward: The average heat content of natural gas received at steam electric plants 50 megawatts capacity or larger from FERC Form 423 and published from 1993 forward in Btu per cubic foot in the EIA, *Cost and Quality of Fuels for Electric Utility Plants*, Table 14. This report is available only via the Internet at <http://www.eia.doe.gov>. In the box titled “Search EIA by Google” type “Cost and Quality of Fuels for Electric” and click on the “Go” button. Select the report from the list.

Natural Gas, Consumption by Sectors Other Than Electric Utilities. (NGNUKZZ) 1960 through 1972: Assumed by EIA to be equal to the thermal conversion factor for the consumption of natural gas. See **Natural Gas, Total Consumption**. 1973 forward: Calculated annually by EIA by dividing the heat content of all natural gas consumed less the heat content of natural gas consumed at electric utilities by the quantity of all natural gas consumed less the quantity of electric utility consumption. Data are from FERC Form 423, Forms EIA-176 and EIA-759, and predecessor forms.

Approximate Heat Content of Coal and Coal Coke

Coal, Total Consumption. Calculated annually by EIA by dividing the sum of the heat content of coal consumed by electric utilities, coal coke plants, other industrial plants, the residential and commercial sector, and the transportation sector by the sum of their respective tonnages.

Coal, Consumption by Coke Plants. 1960 through 1999: Calculated by EIA as the consumption-weighted average of national-level anthracite conversion factors and State-level bituminous coal and lignite factors using factors and consumption from SEDS. Anthracite conversion factor (for all end-use sectors) sources: 1960 through 1999: Calculated annually by EIA by dividing the heat content of anthracite produced less the heat content of the anthracite consumed at electric utilities, net exports, and shipments to U.S. Armed Forces overseas by the quantity of anthracite consumption by all sectors other than the electric utility sector less the

quantity of anthracite stock changes, losses, and “unaccounted for.” Bituminous coal and lignite conversion factor sources: 1960 through 1972: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*, “Coal-Bituminous and Lignite,” sum of columns “Beehive coke plants” and “Oven coke plants.” 1973 through 1984: EIA, *Weekly Coal Production*, August 9, 1986, Table 8. 1985 through 1987: EIA, *Weekly Coal Production*, July 16, 1988, Table 7. 1988 through 1999: EIA, Unpublished data from Form EIA-5. 2000: No data were available. 1999 values were used for 2000.

Coal, Consumption by Electric Utilities. (CLEUKZZ) 1960 through 1997: Calculated by EIA as the consumption-weighted average of national-level anthracite conversion factors and State-level bituminous coal and lignite factors using factors and consumption from SEDS. Anthracite conversion factor sources: 1960 through 1972: Energy Information Administration (EIA) assumed that all anthracite consumed at electric utilities was recovered from culm banks and river dredging and was estimated to have an average heat content of 17.500 million Btu per short ton. 1973 through 1997: Calculated annually by EIA by dividing the heat content of anthracite receipts at electric utilities by the quantity of anthracite received at electric utilities. These data are reported on the Federal Energy Regulatory Commission (FERC) Form 423, “Monthly Report of Cost and Quality of Fuels for Electric Plants,” and predecessor forms. Bituminous coal and lignite conversion factor sources: 1960 through 1972: EIA adopted the average thermal conversion factor of the Bureau of Mines, which used the National Coal Association (NCA) average thermal conversion factor for electric utilities calculated from the Federal Power Commission’s (FPC) Form 1 and published in *Steam Electric Plant Factors*, an NCA annual report. The specific tables are: 1960 and 1961: Table 1. 1962 through 1972: Table 2. 1973 through 1982: The average heat content of coal received at steam electric plants 25 megawatts or greater from FPC Form 423 and published in Btu per pound in EIA, *Cost and Quality of Fuels for Electric Utility Plants*, tables titled “Destination and Origin of Coal ‘Delivered to’ (1973–1979) ‘Receipts to’ (1980) ‘Received at’ (1981–1982) Steam-Electric Plants 25-MW or Greater.” 1983 through 1997: The average heat content of coal received at steam electric plants 50 megawatts capacity or larger from FERC Form 423 and published in Btu per pound in the EIA, *Cost and Quality of Fuels for Electric Utility Plants*. The 1997 edition is available electronically only via Internet at: <ftp://ftp.eia.doe.gov/pub/pdf/electricity/019197.pdf>. The specific tables are: 1983 and 1984: Table 58. 1985 through 1989: Table 48. 1990

and 1991: Table 35. 1992: Table 22. 1993 forward: Both Table 4 and Table 22. Notes: The State conversion factors for 1960 through 1972 were derived from actual consumption data, while the conversion factors for 1973 to 1997 were based on receipts of coal. The factors for 1960 through 1972 may also have included some quantities of anthracite. These breaks in the series create some data discrepancies. Alaska and Hawaii were excluded from the NCA report, FPC Form 423, and FERC Form 423. However, Alaska reported consumption of bituminous coal and lignite at electric utilities for all years. An FPC heat rate for coal at electric utilities in Alaska was used for 1960 through 1978 as published in EIA, *Federal Energy Data System (FEDS) Technical Documentation*, June 1978, Table 21. The 1972 conversion factor (the last year for which a conversion factor was reported for Alaska) was used for 1972 through 1978. According to industry sources, new mines were opened in 1978 and a more representative factor was used for 1979 and following years. In instances where a State had no receipts for a particular year but did report consumption, it was assumed that the coal received in one year was consumed during the following year and the Btu value of the previous year’s receipts was used. 1998 forward: The average heat content of coal received at steam electric plants 50 megawatts capacity or larger from FERC Form 423 and published in Btu per pound in the EIA, *Cost and Quality of Fuels for Electric Utility Plants*, Table 4.

Coal, Consumption by Other Power Producers. (CLITKZZ)

1960–1988: Coal consumed by other power producers was included in the other industrial category. Zero was entered for this variable. 1989 forward: Calculated by EIA using unpublished data from Form EIA-860B, “Annual Electric Generator Report - Nonutility.”

Coal, Consumption by Other Industrial Users. (CLOCKZZ) 1960 through 1997: Calculated by EIA as the consumption-weighted average of national level anthracite conversion factors and State-level bituminous coal and lignite factors using factors and consumption from SEDS. Anthracite conversion factor sources: 1960 through 1997: Calculated annually by EIA by dividing the heat content of anthracite produced less the heat content of the anthracite consumed at electric utilities, net exports, and shipments to U.S. Armed Forces overseas by the quantity of anthracite consumption by all sectors other than the electric utility sector less the quantity of anthracite stock changes, losses, and “unaccounted for.” Bituminous coal and lignite conversion factor sources: 1960 through 1973: Estimated by EIA by adjusting the 1974 average heat value of bituminous

coal and lignite consumed by industrial users other than coke plants by the ratios of 1960 through 1973 national averages for the other industrial users to its 1974 average. 1974 through 1978: Calculated by EIA by assuming that the bituminous coal and lignite consumed by industrial users other than coke plants in each State contained heating values equal to those of bituminous coal and lignite received at electric utilities in each State from identified coal-producing districts as reported on Federal Energy Regulatory Commission (FERC) Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." The average Btu content of coal delivered from each coal-producing district was applied to deliveries to other industrial users in each State and the sum total of the heat content was divided by total tonnages, yielding a weighted average. The coal distribution data by coal-producing district are reported on Form EIA-6, "Coal Distribution Report," and predecessor Bureau of Mines Form 6-1419-Q. 1998 forward: The average heat content of coal received at manufacturing plants (other than coke plants) consuming more than 1,000 short tons of coal during the year from Form EIA-3A and published in Btu per pound in the *EIA Coal Industry Annual*.

Coal, Consumption by Residential and Commercial Users. (CLHCKZZ) 1960 through 1997: Calculated by EIA as the consumption-weighted average of national-level anthracite conversion factors and State-level bituminous coal and lignite factors using factors and consumption from SEDS. Anthracite conversion factor (for all end-use sectors) sources: 1960 through 1997: Calculated annually by EIA by dividing the heat content of anthracite produced less the heat content of the anthracite consumed at electric utilities, net exports, and shipments to U.S. Armed Forces overseas by the quantity of anthracite consumption by all sectors other than the electric utility sector less the quantity of anthracite stock changes, losses, and "unaccounted for." Bituminous coal and lignite conversion factor sources: 1960 through 1973: Estimated by EIA by adjusting the 1974 average heat value of bituminous coal and lignite consumed in the residential and commercial sector by the ratios of 1960 through 1973 national averages for the sector to its 1974 average. 1974 through 1997: Calculated by EIA by assuming that the bituminous coal and lignite consumed in the residential and commercial sector in each State contained heating values equal to those of bituminous coal and lignite received at electric utilities in each State from identified coal-producing districts as reported on the Federal Energy Regulatory Commission (FERC) Form 423, "Monthly Report of Cost and Quality of

Fuels for Electric Plants." The average Btu content of coal delivered from each coal-producing district was applied to deliveries to the residential and commercial sector in each State and the sum total of the heat content was divided by total tonnages, yielding a weighted average. The coal distribution data by coal-producing district are reported on Form EIA-6, "Coal Distribution Report," and predecessor Bureau of Mines Form 6-1419-Q. 1998 forward: The average heat content of coal received for the residential and commercial sectors as reported on the EIA-860B. For States that are not represented in data on the EIA-860B, it is assumed that the heat content of the coal receipts in these sectors is equivalent to the heat content of coal received in the other industrial sector. For states that are not represented in either the EIA-3A data or the EIA-860B data (CT, NH, VT and DC), the heat content of coal receipts in MA is used for CT, NH, and VT and the heat content of coal receipts in MD is used for DC, since the origin of the coal receipts are similar

Coal, Consumption by Transportation Users. (CLACKZZ) 1960 through 1977: Assumed by EIA to be equal to the Btu conversion factor for bituminous coal and lignite consumption by industrial users other than coke plants: 1960 through 1973: Estimated by EIA by adjusting the 1974 average heat value of bituminous coal and lignite consumed by industrial users other than coke plants by the ratios of 1960 through 1973 national averages for the other industrial users to its 1974 average. 1974 through 1977: Calculated by EIA by assuming that the bituminous coal and lignite consumed by industrial users other than coke plants in each State contained heating values equal to those of bituminous coal and lignite received at electric utilities in each State from identified coal-producing districts as reported on Federal Energy Regulatory Commission (FERC) Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." The average Btu content of coal delivered from each coal-producing district was applied to deliveries to other industrial users in each State and the sum total of the heat content was divided by total tonnages, yielding a weighted average. The coal distribution data by coal-producing district are reported on Form EIA-6, "Coal Distribution Report," and predecessor Bureau of Mines Form 6-1419-Q. 1978 forward: Transportation sector coal is included in the other industrial category. Zero is entered for this variable.

Coal Coke, Imports and Exports. EIA adopted the Bureau of Mines estimate of 24.800 million Btu per short ton.

Approximate Heat Content of Renewable Energy Sources

Ethanol, Consumption by the Transportation Sector. Fuel ethanol, which is derived from agricultural feedstocks (primarily corn) and blended into motor gasoline, is shown separately in *SEDR* to display the use of renewable energy in the transportation sector. Its gross heat content, calculated by EIA, is 3.539 million Btu per barrel.

Wood, Consumption by the Residential and Commercial Sectors. Estimated by EIA to be 20 million Btu per cord of wood. This rough average factor takes into account a number of variables, such as moisture content and species of wood, as explained in the EIA, *Household Energy Consumption and Expenditures 1993*, page 314.

Approximate Heat Rates for Electricity

Fossil-Fueled Steam-Electric Plant Generation. (FFEOKUS) There is no generally accepted practice for measuring the thermal conversion rates for power plants that generate electricity from hydroelectric, biomass fuels, wind, photovoltaic, or solar thermal energy sources. Therefore, EIA uses data from Form EIA-767 to calculate a rate factor that is equal to the prevailing annual average heat rate factor for fossil-fueled steam-electric power plants in the United States. By using that factor, it is possible to evaluate fossil fuel requirements for replacing those sources during periods

of interruption, such as droughts. The heat content of a kilowatthour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatthour. 1960 through 1988: The weighted annual average heat rate for fossil-fueled steam-electric power plants in the United States, as published by EIA in *Electric Plant Cost and Power Production Expenses 1991*, Table 9. 1989 forward: Calculated annually by EIA on the basis of data from Form EIA-767 "Steam-Electric Plant Operation and Design Report."

Geothermal Energy Plant Generation. (GEEOKUS) 1960 through 1981: Calculated by EIA by weighting the annual average heat rates of operating geothermal units by the installed nameplate capacities as reported on FPC Form 12. 1982 forward: Estimated annually by EIA based on an informal survey of relevant plants.

Nuclear Steam-Electric Plant Generation. (NUEOKUS) 1960 through 1991: Calculated annually by EIA 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 data are reported on FERC Form 1, Form EIA-412, and predecessor forms. The factors for 1982 through 1991 are published in the following EIA reports—1982: *Historical Plant Cost and Annual Production Expenses for Selected Electric Plants 1982*, page 215; 1983 through 1991: *Electric Plant Cost and Power Production Expenses 1991*, Table 13. 1992 forward: Calculated annually by EIA by dividing the total heat content of the steam leaving nuclear generating units to generate electricity by the total (net) electricity generated by nuclear generating units. The heat content and electricity generation data are reported in the Nuclear Regulatory Commission, *Licensed Operating Reactors—Status Summary Report*.