Table A3. Approximate Heat Content of Petroleum Consumption and Biofuels Production, Selected Years, 1949-2010

(Million Btu per Barrel)

Year	Total Petroleum [1] Consumption by Sector						Liquefied Petroleum Gases Consumption [6]	Motor Gasoline Consumption [7]	Fuel Ethanol [8]	*Fuel Ethanol Feedstock Factor* [9]	Biodiesel	*Biodiesel Feedstock Factor* [10]
	Residential	Commercial [2]	Industrial [2]	Trans-portation [2,3]	Electric Power [4,5]	Total [2]						
1949	R5.484	R5.813	R5.957	5.465	6.254	5.649	4.011	5.253	NA	*NA*	NA	*NA*
1950	R5.473	R5.817	R5.953	5.461	6.254	5.649	4.011	5.253	NA	*NA*	NA	*NA*
1955	R5.469	R5.781	R5.881	R5.407	6.254	5.591	4.011	5.253	NA	*NA*	NA	*NA*
1960	R5.417	R5.781	R5.818	R5.387	6.267	5.555	4.011	5.253	NA	*NA*	NA	*NA*
1965	R5.364	R5.760	R5.748	R5.386	6.267	5.532	4.011	5.253	NA	*NA*	NA	*NA*
1970	R5.260	R5.708	R5.595	5.393	6.252	5.503	[6]3.779	5.253	NA	*NA*	NA	*NA*
1975	R5.253	R5.649	R5.513	5.392	6.250	5.494	3.715	5.253	NA	*NA*	NA	*NA*
1976	R5.277	R5.672	R5.523	R5.396	6.251	5.504	3.711	5.253	NA	*NA*	NA	*NA*
1977	R5.285	R5.682	R5.539	R5.401	6.249	5.518	3.677	5.253	NA	*NA*	NA	*NA*
1978	R5.287	R5.665	R5.536	R5.405	6.251	5.519	3.669	5.253	NA	*NA*	NA	*NA*
1979	R5.365	R5.717	R5.409	R5.429	6.258	5.494	3.680	5.253	NA	*NA*	NA	*NA*
1980	R5.321	R5.751	R5.366	R5.441	6.254	5.479	3.674	5.253	3.563	*6.586*	NA	*NA*
1981	R5.283	R5.693	R5.299	R5.433	6.258	5.448	3.643	5.253	3.563	*6.562*	NA	*NA*
1982	R5.266	R5.698	R5.247	R5.423	6.258	5.415	3.615	5.253	3.563	*6.539*	NA	*NA*
1983	R5.140	R5.591	R5.254	R5.416	6.255	5.406	3.614	5.253	3.563	*6.515*	NA	*NA*
1984	R5.307	R5.657	R5.207	5.418	6.251	5.395	3.599	5.253	3.563	*6.492*	NA	*NA*
1985	R5.263	R5.598	R5.199	R5.423	6.247	5.387	3.603	5.253	3.563	*6.469*	NA	*NA*
1986	R5.268	R5.632	R5.269	R5.426	6.257	5.418	3.640	5.253	3.563	*6.446*	NA	*NA*
1987	R5.239	R5.594	R5.233	5.429	6.249	5.403	3.659	5.253	3.563	*6.423*	NA	*NA*
1988	R5.257	R5.597	R5.228	5.433	6.250	5.410	3.652	5.253	3.563	*6.400*	NA	*NA*
1989	R5.194	R5.549	R5.219	R5.438	[4]6.240	5.410	3.683	5.253	3.563	*6.377*	NA	*NA*
1990	R5.145	R5.553	R5.253	5.442	6.244	5.411	3.625	5.253	3.563	*6.355*	NA	*NA*
1991	R5.094	R5.528	R5.167	R5.441	6.246	5.384	3.614	5.253	3.563	*6.332*	NA	*NA*
1992	R5.124	R5.513	R5.168	R5.443	6.238	5.378	3.624	5.253	3.563	*6.309*	NA	*NA*
1993	R5.102	2,R5.505	2,R5.178	[2]5.436	6.230	[2]5.379	3.606	5.253	3.563	*6.287*	NA	*NA*
1994	R5.098	R5.515	R5.150	5.424	6.213	5.361	3.635	[7]5.230	3.563	*6.264*	NA	*NA*
1995	R5.063	R5.478	R5.121	5.417	6.188	5.341	3.623	5.215	3.563	*6.242*	NA	*NA*
1996	R4.998	R5.433	R5.114	5.420	6.195	5.336	3.613	5.216	3.563	*6.220*	NA	*NA*
1997	R4.989	R5.391	R5.120	5.416	6.199	5.336	3.616	5.213	3.563	*6.198*	NA	*NA*
1998	R4.975	R5.365	R5.137	5.413	6.210	5.349	3.614	5.212	3.563	*6.176*	NA	*NA*
1999	R4.902	R5.291	R5.092	5.413	6.205	5.328	3.616	5.211	3.563	*6.167*	NA	*NA*
2000	R4.908	R5.316	R5.057	R5.422	6.189	5.326	3.607	5.210	3.563	*6.159*	NA	*NA*
2001	R4.937	R5.325	R5.142	5.412	6.199	5.345	3.614	5.210	3.563	*6.151*	5.359	*5.433*
2002	R4.886	R5.293	R5.093	R5.411	6.173	5.324	3.613	5.208	3.563	*6.143*	5.359	*5.433*
2003	R4.907	R5.307	R5.142	R5.409	6.182	5.340	3.629	5.207	3.563	*6.116*	5.359	*5.433*
2004	R4.953	R5.328	R5.144	R5.421	6.192	5.350	3.618	5.215	3.563	*6.089*	5.359	*5.433*
2005	R4.916	R5.364	R5.178	R5.427	6.188	5.365	3.620	5.218	3.563	*6.063*	5.359	*5.433*
2006	R4.894	R5.310	R5.160	5.431	6.143	5.353	3.605	5.218	3.563	*6.036*	5.359	*5.433*
2007	R4.850	R5.298	R5.127	R5.434	6.151	5.346	3.591	5.219	3.563	*6.009*	5.359	*5.433*
2008	R4.732	R5.175	R5.149	5.426	6.123	5.339	3.600	5.218	3.563	*5.983*	5.359	*5.433*
2009	R4.691	R5.266	R5.018	5.414	6.105	R5.301	R3.558	5.218	3.563	*5.957*	5.359	*5.433*
2010	E4.701	E5.280	E5.014	E5.420	P6.085	P5.300	P3.558	P5.218	P3.561	*5.930*	5.359	*5.433*

[1] Petroleum products supplied, including natural gas plant liquids and crude oil burned directly as fuel. Quantity-weighted averages of the petroleum products included in each category are calculated by using heat content values shown in Table A1.

[2] Beginning in 1993, includes fuel ethanol blended into motor gasoline.

[3] Beginning in 2009, includes renewable diesel fuel (including biodiesel) blended into distillate fuel oil.

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

[5] Electric power sector factors are weighted average heat contents for distillate fuel oil, petroleum coke, and residual fuel oil; they exclude other liquids.

[6] There is a discontinuity in this time series between 1966 and 1967; beginning in 1967, the single constant factor is replaced by a quantity-weighted factor—quantity-weighted averages of the major components of liquefied petroleum gases are calculated by using heat content values shown in Table A1.

[7] There is a discontinuity in this time series between 1993 and 1994; beginning in 1994, the single constant factor is replaced by a quantity-weighted factor—quantity-weighted averages of the major components of motor gasoline, including fuel ethanol, are calculated by using heat content values shown in Table A1.

[8] Includes denaturant (petroleum added to ethanol to make it undrinkable). Fuel ethanol factors are weighted average heat contents for undenatured ethanol (3.539 million Btu per barrel), pentanes plus used as denaturant (4.620 million Btu per barrel), and conventional motor gasoline used as denaturant (5.253 million Btu per barrel). The factor for 2009 is used as the estimated factor for 1980-2008.

[9] Corn input to the production of undenatured ethanol (million Btu corn per barrel undenatured ethanol), used as the factor to estimate total biomass inputs to the production of undenatured ethanol. Observed ethanol yields (gallons undenatured ethanol per bushel of corn) are 2.5 in 1980, 2.666 in 1998, 2.68 in 2002, and 2.764 in 2009; yields in other years are estimated. Corn is assumed to have a gross heat content of 0.392 million Btu per bushel. Undenatured ethanol is assumed to have a gross heat content of 3.539 million Btu per barrel.

[10] Soybean oil input to the production of biodiesel (million Btu soybean oil per barrel biodiesel), used as the factor to estimate total biomass inputs to the production of biodiesel. It is assumed that 7.65 pounds of soybean oil are needed to produce one gallon of biodiesel, and 5.433 million Btu of soybean oil are needed to produce one barrel of biodiesel. Soybean oil is assumed to have a gross heat content of 16,909 Btu per pound, or 5.483 million Btu per barrel. Biodiesel is assumed to have a gross heat content of 17,253 Btu per pound, or 5.359 million Btu per barrel.

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

Notes: • Residential, commercial, industrial, and transportation petroleum heat contents are revised beginning in 1949 due to a change in the estimation methodology. • The heat content values in this table are for gross heat contents. See "Heat Content" in Glossary.

Web Page: For all data beginning in 1949, see http://www.eia.gov/totalenergy/data/annual/#appendices.

Sources: See "Thermal Conversion Factor Source Documentation," which follows Table A6.