

Appendix H
Conversion Factors

Table H1. Heat Rates

Fuel	Units	Approximate Heat Content
Coal¹		
Production	million Btu per short ton	21.224
Consumption	million Btu per short ton	20.760
Coke Plants	million Btu per short ton	26.800
Industrial	million Btu per short ton	22.104
Residential and Commercial	million Btu per short ton	22.783
Electric Utilities	million Btu per short ton	20.479
Imports	million Btu per short ton	25.000
Exports	million Btu per short ton	26.243
Coal Coke	million Btu per short ton	24.800
Crude Oil		
Production	million Btu per barrel	5.800
Imports	million Btu per barrel	5.948
Petroleum Products		
Consumption ²	million Btu per barrel	5.360
Motor Gasoline ²	million Btu per barrel	5.234
Jet Fuel	million Btu per barrel	5.670
Distillate Fuel Oil	million Btu per barrel	5.825
Residual Fuel Oil	million Btu per barrel	6.287
Liquefied Petroleum Gas	million Btu per barrel	3.625
Kerosene	million Btu per barrel	5.670
Petrochemical Feedstocks	million Btu per barrel	5.630
Unfinished Oils	million Btu per barrel	5.825
Imports ²	million Btu per barrel	5.487
Exports ²	million Btu per barrel	5.709
Natural Gas Plant Liquids		
Production ²	million Btu per barrel	3.886
Natural Gas		
Production, Dry	Btu per cubic foot	1,026
Consumption	Btu per cubic foot	1,026
Non-electric Utilities	Btu per cubic foot	1,027
Electric Utilities	Btu per cubic foot	1,019
Imports	Btu per cubic foot	1,023
Exports	Btu per cubic foot	1,011
Electricity Consumption	Btu per kilowatthour	3,412

Btu = British thermal unit.

¹Coal conversion factors vary from year to year. Values correspond to those published by EIA for 1998 and may differ slightly from model results.

²Conversion factors vary from year to year. 2010 values are reported.

Sources: Energy Information Administration (EIA), *Annual Energy Review 1999*, DOE/EIA-0384(99) (Washington, DC, July 2000), and EIA, AEO2001 National Energy Modeling System run AEO2001.D101600A.

Conversion Factors

Table H2. Metric Conversion Factors

United States Unit	multiplied by	Conversion Factor	equals	Metric Unit
Mass				
Pounds (lb)	X	0.453 592 37	=	kilograms (kg)
Short Tons (2000 lb)	X	0.907 184 7	=	metric tons (t)
Length				
Miles	X	1.609 344	=	kilometers (km)
Energy				
British Thermal Unit (Btu)	X	1055.056 ^a	=	joules(J)
Quadrillion Btu	X	25.2	=	million tons of oil equivalent (Mtoe)
Kilowatthours (kWh)	X	3.6	=	megajoules(MJ)
Volume				
Barrels of Oil (bbl)	X	0.158 987 3	=	cubic meters (m ³)
Cubic Feet (ft ³)	X	0.028 316 85	=	cubic meters (m ³)
U.S. Gallons (gal)	X	3.785 412	=	liters (L)
Area				
Square feet (ft ²)	X	0.092 903 04	=	square meters (m ²)

Note: Spaces have been inserted after every third digit to the right of the decimal for ease of reading.

^aThe Btu used in this table is the International Table Btu adopted by the Fifth International Conference on Properties of Steam, London, 1956.

Source: Energy Information Administration (EIA), *Annual Energy Review 1999*, DOE/EIA-0384(99) (Washington, DC, July 2000), Table B1 and EIA, *International Energy Outlook 2000*, DOE/EIA-0484 (2000) (Washington, DC, March 2000).

Table H3. Metric Prefixes

Unit Multiple	Prefix	Symbol
10 ³	kilo	k
10 ⁶	mega	M
10 ⁹	giga	G
10 ¹²	tera	T
10 ¹⁵	peta	P
10 ¹⁸	exa	E

Source: Energy Information Administration, *Annual Energy Review 1999*, DOE/EIA-0384(99) (Washington, DC, July 2000), Table B2.