

ENERGY, POWER, WORK CONVERSION FACTORS

Energy Conversion Table					
	Btu	foot-pound	joule	calorie	Kilowatt-hour
Btu	1	779	1056	252	2.93x10 ⁻⁴
foot-pound	0.00129	1	1.36	0.324	3.77x10 ⁻⁷
joule	9.48x10 ⁻⁴	0.738	1	.239	2.78x10 ⁻⁷
calorie	0.00397	3.09	4.19	1	1.16x10 ⁻⁶
Kilowatt-hour	3413	2.65x10 ⁶	3.6x10 ⁶	8.60x10 ⁵	1

ENERGY: The ability to do Work (Btu, foot-pound, joule, calorie, watt hour)

WORK: Force x Displacement

POWER: Work / Time (Btu/hr, MMBtu/hr, kilowatt)

Power Conversion Table					
	Boiler Horse-power	Lbs Steam per hour	Gallons Water per hour	Btu/hr	MMBtu/hr
Boiler Horsepower	1	34.5	0.242	33,500	0.0335
Lbs Steam per hour	0.029	1	0.120	971	9.71x10 ⁻⁴
Gallons Water per Hour	4.14	8.33	1	8107	8.11x10 ⁻³
Btu/hr	2.99x10 ⁻⁵	1.03x10 ⁻³	1.23x10 ⁻⁴	1	1x10 ⁻⁶
MMBtu/hr	29.85	1030	123.4	1x10 ⁶	1

1 watt = 3.41 Btu/hr 1 Megawatt = 3.41 MMBtu/hr 1000 Btu/hr = 293 watts

Average Energy Content of Various Fuels		
Quantity of Fuel	Equates to	Energy Content
1 Cubic Foot of natural gas	=	1,008 to 1,034 Btu
1 Therm of natural gas	=	100,000 Btu
1 gallon of crude oil	=	138,095 Btu
1 gallon of residual fuel oil	=	149,690 Btu
1 gallon of gasoline	=	125,000 Btu
1 pound of coal	=	8,100 to 13,000 Btu
1 pound of wood	=	4,500 to 8,500 Btu
1 ton wood	=	9 to 17 MMBtu
1 pound of low pressure steam	=	1,000 Btu