ENERGY, POWER, WORK CONVERSION FACTORS

Energy Conversion Table					
	Btu	**foot-pound**	**joule**	**calorie**	**Kilowatt-hour**
Btu	1	779	1056	252	2.93×10^{-4}
foot-pound	0.00129	1	1.36	0.324	3.77×10^{-7}
joule	9.48×10^{-4}	0.738	1	.239	2.78×10^{-7}
calorie	0.00397	3.09	4.19	1	1.16×10^{-6}
Kilowatt-hour	3413	2.65×10^{6}	3.6×10^{6}	8.60×10^{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	4.14	33,500	0.0335
Lbs Steam per hour	0.029	1	0.120	971	9.71×10^{-4}
Gallons Water per Hour	0.242	8.33	1	8107	8.11×10^{-3}
Btu/hr	2.99×10^{-5}	1.03×10^{-3}	1.23×10^{-4}	1	1×10^{-6}
MMBtu/hr	29.85	1030	123.4	1×10^{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 (HHV)		
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

Note: Boiler HP is VERY different from mechanical HP.