

**MISCELLANEOUS ENERGY & POWER CONVERSIONS**  
**FOR ENERGY ENGINEERS**

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**Power & Heat Units**

1 MW	=	1,000 kW
1 kW	=	1,000 Watts
1 kWh	=	3,412 Btu
1 kWh	=	1.340 Hp hours
1,000 Btu	=	0.293 kWh
1 Therm	=	100,000 Btu (British Thermal Units)
1 Million Btu	=	293.1 Kilowatt hours
100,000 Btu	=	1 Therm
1 Watt	=	3.412 Btu per hour
1 Horsepower	=	746 Watts
1 Horsepower hr.	=	2,545 Btu

**Heat & Energy Units**

1 KJ	=	1,000 Joules
1 MJ	=	1,000 KJ
1 MJ	=	1,000,000 Joules
1 KJ	=	.239005 Kilocalories
1 Joule	=	0.23901 Calories
1 Calorie	=	4.184 Joules
1 Kcal/Kg	=	1.8 Btu's/lb.
1 Million Btu	=	252 Megacalories
1 Btu	=	252 Calories
1 Btu	=	1,055 Joules
1 Million Btu	=	1,055 Megajoules
1 Btu/hour	=	.2519 Kilocalories/hour
1 Btu/lb.	=	2.3260000 KJ/KG
1 Btu/lb.	=	0.5559 Kilocalories/KG

## Power Generation Units

1 MW <sub>e</sub>	=	1,000 kW
1 MWh	=	3,600 MJ
1 MW <sub>t</sub> (thermal energy)	=	Approximately 1,000 kg. steam/hr.

## Natural Gas Units

1 Cubic foot of natural gas	=	1,020 Btu (approx)
1 Therm	=	100,000 Btu
1 Decatherm	=	10 therms
1 Decatherm	=	10 <sup>6</sup> Btu
1 Decatherm	=	1,000 cubic feet of natural gas (approx)
1 Decatherm	=	0.974 Mcf at 1,026 Btu per cubic foot
1 Mcf	=	1.026 MMBtu (approx)
1 Mcf	=	1.026 Decatherm (approx)
1 MMBtu	=	10 <sup>6</sup> Btu's

## Mass Units

$$^{\circ}\text{F} = (9/5)(^{\circ}\text{C}) + 32$$

1 Metric ton	=	1,000 KG
1 Metric ton	=	0.9071847 short tons
1 Metric ton	=	1.016047 long tons
1 Metric ton	=	2,204.622 pounds (lb.)

## OTHER CONVERSION FACTORS

### Temperature

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \frac{5}{9}$$

$$^{\circ}\text{F} = (9/5)(^{\circ}\text{C}) + 32$$