

Constants and Conversion Factors

IDL Energy Policy 2005

A British Thermal Unit (BTU) is the amount of energy required to raise the temperature of one pound of water one degree Fahrenheit. Common fuels have the following characteristics.

- 1 barrel (42 gallons) of crude oil = 5,800,000 Btu
- 1 gallon of gasoline = 124,000 Btu
- 1 gallon of heating oil = 139,000 Btu
- 1 gallon of diesel fuel = 139,000 Btu
- 1 barrel of residual fuel oil = 6,287,000 Btu
- 1 cubic foot of natural gas = 1,026 Btu
- 1 gallon of propane = 91,000 Btu
- 1 short ton of coal = 20,681,000 Btu
- 1 kilowatthour of electricity = 3,412 Btu

Conversion Factors for Moving from the Metric to the English System

- 1 cubic metre or cubic meter (m³) of oil at 15°C and 922 kg/m³ = 6.29 barrels
- 1 cubic metre or cubic meter (m³) of natural gas = 35.315 cubic feet
- 1 tonne or metric ton = 1.102 short tons
- 1 quadrillion British thermal units (Btu) = 1 quad
- 1 kilojoule = 0.9482 Btu
- 1 gigajoule (GJ) = approximately 0.95 million Btu
- 1 petajoule (PJ) = approximately 0.95 billion cubic feet of natural gas
- 1 litre or liter (L) = approximately 0.22 Imperial gallon
- 1 kilogram (kg) = approximately 2.2046 pounds
- 1 metre or meter (m) = approximately 3.28 feet

For converters, go to

Mcf = thousand cubic feet

MMcf= million cubic feet

Bcf = billion cubic feet

http://www.shodor.org/UNChem/unit_conv_tab.html

http://www.slcc.edu/schools/hum_sci/physics/convert.html

Some of the numbers are big.

k	kilo	10 ³
M	mega	10 ⁶

G	giga	10^9
T	tera	10^{12}
P	peta	10^{15}
E	exa	10^{18}

Notes on Measures

A Mcf measures only the volume of gas.

In contrast, an MMBtu takes into account the heating value of the gas.

One MM Btu is approximately the same as one Mcf.

Likewise, one therm is roughly equivalent to one Ccf.

1 Btu = 293.07 terawatt hours (TWh)

Therm: One hundred thousand (100,000) Btu.

1 cubic metre	Equals	35.315 cubic feet
1 cubic metre	Equals	1.3079 cubic yards
1 cubic foot	Equals	0.0283 cubic metre
1 cubic yard	Equals	0.7646 cubic metre