

## Common conversions

Energy required to heat water	
kW	kg/s or l/s x 4.18 x delta T
e.g.	6 x 4.18 x 20°C = 504 kW
<b>Note</b> 4.18 = specific heat capacity of water	

Energy required to heat air	
kW	m <sup>3</sup> /s x 1.2 x delta T
e.g.	6.5 x 1.2 x 15°C = 117 kW
<b>Note</b> 1.2 = efficiency factor	

CO <sub>2</sub> produced from perfect combustion of propane and butane	
1 kg propane = 2.99 kg CO <sub>2</sub>	
1 kg butane = 3.07 kg CO <sub>2</sub>	

### Key

BTU = British Thermal Unit  
 delta T = change in temperature  
 kWh = kilowatt hour  
 psi = pounds per square inch  
 kg = kilogram = 1,000 grams  
 kg/s = kilogram per second  
 kW = kilowatt = 1,000 watts  
 kPa = kilopascals  
 l/s = litre per second  
 MJ = megajoules  
 MJ/hr = megajoules per hour  
 MW = megawatt = MJ/second  
 mbar = milli bar  
 kcal = kilo calorie  
 bar = 100 kPa  
 1 atmosphere = 1.01235 bar

### Conversions

Litres to kg (LPG mix)	÷ 1.86 (propane use 1.96)
kg to litres (LPG mix)	x 1.86 (propane use 1.96)
1 litre of LPG (liquid)	= 250 litres of vapour (approx at 1 atmosphere)
MJ to BTU	x 947.82
BTU to MJ	x 0.001055
MJ to kWh	x 0.2777778
kWh to BTU	x 3,412.14
BTU to kWh	x 0.0002931
BTU to kg of LPG	÷ 47,391
kW to MJ/hr	x 3.6
kW to kg of LPG/hr	x 0.072
kcal to BTU	x 3,967
kcal to MJ	x 0.004187
1 kg (LPG) to MJ	x 50
Cubic metres to kg (LPG)	x 2.1 (at 1 atmosphere)
Capacity of 750 NZ meter @ 3 kPa gauge	= 8 cubic metres/hr
Capacity of 750 NZ meter @ 3 kPa gauge	= 222 kWh
Capacity of 750 NZ meter @ 3 kPa gauge	= 800 MJ/hr
Capacity of AL 425 meter @ 3 kPa gauge	= 15 cubic metres/hr
Capacity of AL 425 meter @ 3 kPa gauge	= 1,500 MJ/hr
kWh to kg of LPG	
kWh x 3.6 = MJ	
÷ by 0.8 to allow for 80% efficiency of appliance	
÷ by 50 to get kg of LPG	
2.75 kPa	= 11" water gauge
2.5 mbar	= 1" water gauge
10 mbar	= 1 kPa
100 kPa	= 1 bar
1 bar	= 14.5 psi
1 psi	= 6.9 kPa



These conversions are indicative only. Please check when completing any job.