

Supporting information for Energy Diary

Conversion factors for kWh

Gas

The formula for converting gas meter readings in cubic feet to kWh is:
Units used $\times 2.83 \times 1.02264 \times 40.5 \div 3.6$

The formula for converting gas meter readings in cubic metres to kWh is:
Units used $\times 1.02264 \times 40.5 \div 3.6$

Where:

2.83 is a constant to convert cubic feet to cubic metres

1.02264 is a typical volume conversion factor

40 is a typical calorific value

3.6 is a constant to give the number of kWh.

Oil

Multiply consumption in litres by 10.80 to get consumption in kWh.

Fuel prices

Electricity per kWh standard rate	£0.048
Electricity per kWh Economy 7 day rate	£0.056
Electricity per kWh Economy 7 night rate	£0.022
Gas per kWh	£0.013
Oil per litre	£0.344

Taken from pricing reported in FEEDU schools surveys, Autumn 2005. NB these prices are likely to have changed since then.

Conversion factors for CO₂

1 kWh	Kg of CO ₂
Electricity	0.43
Gas	0.19
Oil	0.265

Illustrative data

Hot air balloons

Multiply Kg of CO₂ by 703.34 to get the number of hot air balloons that could be filled with CO₂ gas. This information was provided by Climate Care, a carbon offset company. See www.climatecare.org

Trees

This information was provided by Carbon Neutral, a carbon offset company formerly known as Future Forests. See www.carbonneutral.com

For every 734 Kg of CO₂ gas to be offset, Carbon Neutral plant three coniferous saplings. On average, one of the three survives to maturity and will live approximately 100 years, offsetting 734 Kg throughout its lifetime. This is why the spreadsheet mentions that the number of trees must be maintained indefinitely to avoid re-releasing the CO₂ back into the atmosphere.

$3 \div 734 = 0.00409$ (to 3 significant figures), the number of trees required to offset 1 Kg CO₂ gas, taking into account the 1/3 survival rate.