

Energy Conversion Factors

The common unit of energy measure is the British thermal unit (Btu), which is the unit used to calculate and compare energy costs and savings. To convert between the common energy units, use the factors in this table.

To Convert	Into	Multiply by
Barrels, oil	gallons	42.0
Cubic feet, natural gas	therms	0.01
Cubic feet, natural gas	Btus	1,020
Gallons, No. 2 oil	Btus	138,000*
Gallons, No. 4 oil	Btus	145,000*
Gallons, No. 5 oil	Btus	148,000*
Gallons, No. 6 oil	Btus	150,000*
Gallons, kerosene	Btus	135,000*
Gallons, gasoline	Btus	125,000*
Gallons, diesel oil	Btus	138,700*
Horsepower-hours	Btus	2,544
Horsepower-hours	kWhs	0.7457
Horsepower	Btus/min	42.4176
Horsepower (boiler)	Btus/hr	33,479
Kilowatt-hours	Btus	3,413
mCF natural gas	Btus	1,000,000
Short ton, eastern steam coal	Btus	23,100,000*
Short tons, western coal	Btus	21,000,000*
Short tons, anthracite coal	Btus	25,400,000
Short tons, bituminous steam coal	Btus	21,600,000
Short tons, lignite, brown coal	Btus	14,000,000
Steam, saturated (lbs.)	Btus	970
Therms, natural gas	cubic feet	100
Therms, natural gas	Btus	100,000
Tons, refrigeration	Btus/hr	12.000

* These are average values. Since exact Btu content varies with type and source, contact supplier when extreme accuracy is essential.