

Energy Unit Conversion Factors

		J	kWh	Btu
1 Joule (J)	equals	1	2.78×10^{-7}	9.49×10^{-4}
1 kilowatt hour (kWh)	equals	3.60×10^6	1	3413
1 calorie (cal)	equals	4.184	1.19×10^{-6}	3.97×10^{-3}
1 British thermal unit (Btu)	equals	1055	2.93×10^{-4}	1
1 foot-pound (ft · lb)	equals	1.36	3.78×10^{-7}	1.29×10^{-3}
1 electron volt (eV)	equals	1.60×10^{-19}	4.45×10^{-26}	1.52×10^{-22}

Energy Equivalents

	J	kWh	Btu
Crude petroleum (42 gallon barrel)	6.12×10^9	1700	5.80×10^6
Bituminous coal (1 ton ^a)	2.81×10^{10}	7800	2.66×10^7
Natural gas (1000 cubic feet ^b)	1.09×10^9	303	1.035×10^6
Gasoline (1 gallon ^c)	1.32×10^8	36.6	1.25×10^5
Uranium = 235 (1 gram)	8.28×10^{10}	2.30×10^4	7.84×10^7
Deuterium (1 gram)	2.38×10^{11}	6.60×10^4	2.25×10^8

^a 1 ton = 2000 lb = 0.907 tonne.

^b At STP.

^c The U.S. gallon is used in this text. The Imperial gallon used in Canada and Great Britain equals 1.200 U.S. gallons.