

Appendix A
Glossary of Energy Units

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British thermal unit (Btu)--The basic unit of energy in the English system of units. The energy required to heat 1 pound of water 1 oF. One Btu is about the energy given off by burning a single match tip.

Hectare (ha)--An area of land measuring 10,000 square meters or equivalently 100 meters by 100 meters. One hectare is equal to about 2.5 acres.

Joule (J)--A basic unit of energy in the metric system. A joule of energy is very small (a single match tip gives off about 1,000 joules), so joules are often multiplied by orders often (10, 100, 1,000, etc.) to yield useful units:

<i>Name</i>	<i>Value</i>	<i>Abbreviation</i>	<i>Equivalent</i>
kilojoule	thousand (10³) joules	kJ	0.95 Btu
megajoule	million (10⁶) joules	MJ	
gigajoule	billion (10⁹) joules	GJ	
terajoule	10¹² joules	TJ	
petajoule	10¹⁵ joules	PJ	
exajoule	10¹⁸ joules	EJ	0.95 quads

Total energy production and consumption for a country is typically given in exajoules; per capita energy consumption is typically given in gigajoules (1 GJ is equivalent to the energy in about 7.5 gallons of gasoline).

Kilogram (kg)--The basic unit of weight in the metric system, equal to 2.2 pounds.

Kilowatt (kW)--The power (energy per unit time) unit in which electricity is measured.

Kilowatthour (kWh)--The energy unit in which electricity is measured. A 100-watt light bulb burning for 10 hours consumes 100 W X 10 hours= 1,000 Wh = 1 kWh of energy.

Meter (m)--The basic unit of length in the metric system, equal to 39.4 inches.

Quad--101³ Btus. The United States currently consumes about 80 quads (80X 10¹⁵ Btus) of energy per year. 1 Quad is equal to about 1.05 exajoules (EJ).

Tonne (t)--Short for metric tonne, equal to 1,000 kilograms or about 2,200 pounds.