Occurrence	Energy (J)
Creation of the Universe	10^{68}
Emission from a radio galaxy	10^{55}
$E = mc^2$ of the Sun	10^{47}
Supernova explosion	10^{44}
Yearly solar emission	10^{34}
Earth moving in orbit	10^{33}
D-D fusion energy possible from worlds oceans	10^{31}
Earth spinning	10^{29}
Earth's annual sunshine	10^{25}
Cretaceous-Tertiary extinction theory meteorite	10^{23}
Energy available from earth's fossil fuels	10^{23}
Yearly U.S. sunshine	10^{23}
Annual tidal friction	10^{20}
U.S. energy consumption	10^{20}
Exploding volcano (Krakatoa)	10^{19}
Severe earthquake (Richter 8)	10^{18}
100-megaton H-bomb	10^{17}
Fission one ton of Uranium	10^{17}
$E = mc^2$ of 1 kilogram	10^{17}
Burning a million tons of coal	10^{16}
Energy to create Meteor Crater in Arizona	10^{16}
1000-MW power station (1 year)	10^{16}
Hurricane	10^{15}
Thunderstorm	10^{15}
Atomic Bomb (Hiroshima)	10^{14}
$E = mc^2$ of 1 gram	10^{14}
Energy to put the space shuttle in orbit	10^{13}
Energy used in one year per capita U.S.	10^{12}
Atlantic crossing (one way) of jet airliner	10^{12}
Saturn V rocket	10^{11}
Energy to heat a house for one year	10^{11}
D-D fusion energy possible from 1 gal. of water	10^{11}

One year of electricity for the average house	10^{10}
Lightening bolt	10^{10}
Burning a cord of wood	10^{10}
One gallon of gasoline	10^{8}
100-W light bulb left on for one day	10^{7}
Human daily diet	10^{7}
One day of heavy manual labor	10^{7}
Explosion of 1 kg of TNT	10^{6}
Woman running for 1 hr	10^{6}
Candy bar	10^{6}
Burning match	10^{3}
1AA battery (alkaline)	10^{3}
Hard-hit baseball	10^{3}
Lifting an apple 1 m	1
Human heartbeat	0.5
Depressing typewriter key	10^{-2}
Cricket chirrup	10^{-3}
Hopping flea	10^{-7}
Proton accelerated to high energy (one trillion eV)	10^{-7}
Fission of 1 uranium nucleus	10^{-11}
Energy released in D-D fusion	10^{-12}
Electron mass-energy	10^{-13}
Chemical reaction per atom	10^{-18}
Photon of light	10^{-19}
Energy of room-temperature air molecule	10^{-21}

Energy Conversions

Energy Unit	Equivalent				
1 Btu	1055 joules	or	778 ftlb	or	252 cal
1 calorie	4.184 joules				
1 food Calorie	1000 calories	or	1 kilocalorie		
1 hphr	2.68 10^6 joules	or	0.746 kwh		
1 kwh	3.6110^6 joules	or	3413 Btu		
1 eV	1.610^{-19} joules				

Power Conversions

Power Unit	Equivalent				
1 watt	1 joule/s	or	3.41 Btu/hr		
1 hp		or	2545 Btu/hr	or	746 watts

Power Converted to Watts

Quantity	Equivalent
1 Btu per hour	0.293 W
1 joule per second	1 W
1 kilowatt-hour per day	41.7 W
1 food Calorie per minute	69.77 W
1 horsepower	745.7 W
1 kilowatt	1000 W
1 Btu per second	1054 W
1 gallon of gasoline per hour	39 kW
1 million barrels of oil per day	73 GW