

# Energy and Power (“Demand”) Units

## Common Energy Unit Conversions

1 KWh	=	3414 Btu
1 Therm	=	100,000 Btu
1 Barrel crude oil	=	5,800,000 Btu
1 Ton coal	=	25,000,000 Btu
1 Gallon gasoline	=	125,000 Btu
1 Gallon #2 fuel oil	=	140,000 Btu
1 cord of wood	=	30,000,000 Btu

## Common Power (Demand or the rate of energy use)

### Unit Conversions

1 Watt	=	3.414 Btu/hr
1 KW	=	3414 Btu/hr
1 Hp	=	.746 KW
1 Hp	=	2545 Btu/hr
1 Hp	=	33,000 ft-lb/min
1 BHP (boiler hp)	=	33,475 Btu/hr (BHP is often used in boiler ratings)
1 Ton Refrigeration	=	12,000 Btu/hr

**The watt:** This SI unit is named after James Watt. As for all SI units whose names are derived from the proper name of a person, the first letter of its symbol is uppercase (W). But when an SI unit is spelled out, it should always be written in lowercase (watt), with the exception of the “degree Celsius.”

*from Wikipedia*

The **watt** is the basic unit of power, which is the rate of energy conversion of 1 joule per second. The **kilowatt** (1000 watt) is commonly used for generators and motors, but the **horsepower** is still used for car motors, fans and pumps. The **Btu/hr** is used for heating systems.