

## Watts (W), kilowatts (kW), Megawatts (MW), kilowatt-hours (kWh), Megawatt-hours (MWh), and Million-Megawatt-hours (MMWh)

### Definition

One watt (W) is a measure of electrical power, which is the amount of energy an electric device uses (or produces) per second. A kilowatt (kW) is 1,000 W, and a megawatt is 1,000,000 W.

A kilowatt-hour (kWh) is the amount of energy used by using one kilowatt of power for one hour. A megawatt-hour (MWh) is the amount of energy used by using one megawatt of power for one hour. One million-megawatt-hour (MMWh) is one million megawatt hours.



### Uses

Household appliances are rated in watts or kilowatts, to show how much power they consume when in use.

A electricity bill shows how many kilowatt-hours of energy were used.

Power plants are rated in megawatts, to describe how much power they can produce.

Megawatt-hours and million-megawatt hours might be used to describe how much energy a power plant produced in a year, or how much energy a whole city or state used in a year.

Sometimes an amount of power plant fuel (coal, oil, natural gas, biomass, nuclear) will be described in MWh. This is an estimate of the amount of heat energy it can create if burned. Not all of that energy can be converted into electrical energy.



### Examples

- Old-style incandescent light bulbs use 60W or 100W of power.
- A hot-air hair dryer or a toaster oven might use about 2 kW of power.
- One kW is about 1.34 horsepower.
- A major FM radio station transmitter broadcasts 50 kW of radio signal.
- A small power plant might produce less than 100 MW for about 50,000 homes. Large power plants might produce 500-1,000 MW.

