# What is a megawatt?

Eskom often talks about power station units being taken off the system for maintenance and then we indicate by how many megawatts the generation capacity has been reduced. However, not everyone understands what the magnitude of a megawatt is. Following are some simple explanations around the basic energy terms.

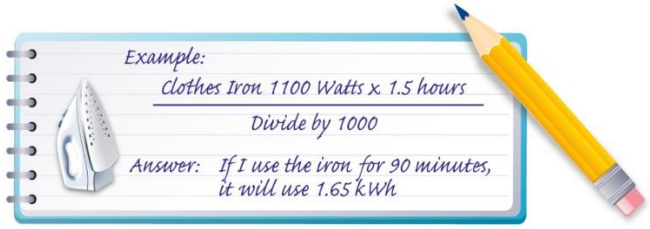
Power is measured in watts and an incandescent light bulb uses 60-100 watts. One kilowatt (kW) is equal to 1 000 watts.

## What is a kilowatt-hour?

Energy is the amount of work done/energy used over a specific time period so it is measured in kilowatt hours (kWh) – in other words, how many kilowatts (kW) of electricity are used (or produced) over how many hours. Leaving a 100 watt light bulb on for 10 hours will use 1 000 watt hours – or one kilowatt hour. Your electricity bill measures your electricity consumption in kilowatt hours.

**Use this formula to measure how many kWh an appliance will use:**

Watts x hours used/1000 = kWh

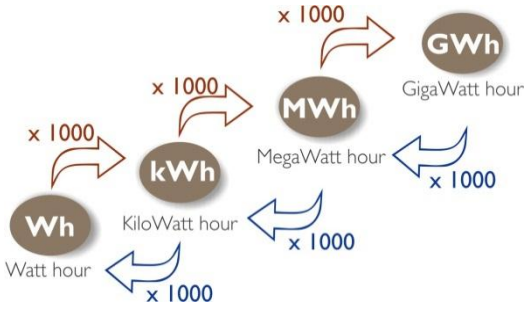



The price of energy is measured in c/kWh.

## How big is a megawatt?

The capacity of a large-scale power station is usually on the scale of megawatts (MW). One MW is equal to one million watts or one thousand kilowatts, so we're talking about a very large amount of energy. As a general rule of thumb, each MW of a coal power station's capacity can supply around 650 average homes.

Majuba power station near Volksrust has the highest output of all Eskom's power stations currently - 3 843MW. The new Medupi and Kusile power stations will deliver 4 764MW and 4 800MW respectively once completed.




## Did you know?

Eskom's power stations each have between two and six units. The output of these units range from 970MW per unit at Koeberg nuclear power station to as little as 57MW per unit at

the Port Rex gas-fired power station. Only eight MW is needed to supply a little town like Parys in the Free State and more than three 600MW units are needed to supply the 1 947MW peak demand required to power the Tshwane Metro area.

**Maximum electricity demand of major metros**

| Metro | Maximum demand (MW) |
|---|---|
| Nelspruit (Mbombela) | 105 |
| Polokwane | 143 |
| Bloemfontein | 321 |
| Rustenburg | 183 |
| Tshwane | 1 947 |
| City Power | 3 004 |
| Ekurhuleni | 2 185 |
| eThekwini | 1 865 |
| City of Cape Town | 1 810 |
| Emalahleni | 175 |
| Vereeniging (Emfuleni) | 429 |
| Port Elizabeth (Nelson Mandela) | 701 |
| Kimberly | 105 |

## What is a gigawatt?

For very large-scale power plants, capacity is often explained in gigawatts (GW). A GW is one billion watts, or 1 000 MW. So the Majuba power station's capacity would be 3.8 GW.

## Hourly appliance usage