

Maxcio Energy Monitor

It can measure the amount of energy used by an electrical appliance.



It can tell you:

- The consumption of the appliance in Watts
- The amount of energy consumed in Amps
- The amount of energy consumed in kWh

It can also tell you the cost of using an appliance in pence, but to be able to do that you have to set the unit cost. This is a tariff for electricity from Octopus Super Green, it will always be on your bill. The number you are interested in is 15.52p/kWh.

YOUR TARIFF ⓘ

Super Green Octopus

Super Green Octopus 12M Fixed
September 2020 v2
Fixed term ends 01/10/2021

15.52p/kWh ⓘ
23.55p/day ⓘ
(All rates inc. VAT) ⓘ

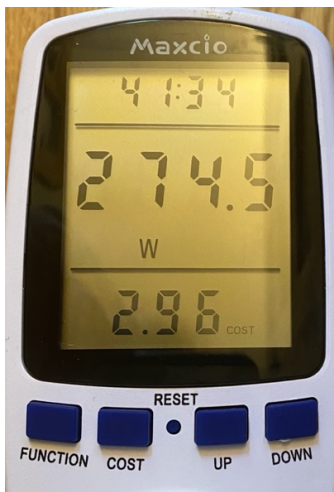
To set the cost, you do the following:



- Press and hold COST button for more than 3 seconds. Then release the button.
- Press the FUNCTION button. The first (RHD) digit will flash.
- Press the UP (or DOWN) button to enter the required number (one press = 1, five presses = 5)
- Press the FUNCTION button. The second digit will flash.
- Press the UP (or DOWN) button to enter the required number.
- Press the FUNCTION button. The third digit will flash.
- Press the UP (or DOWN) button to enter the required number.
- Press the FUNCTION button. The fourth digit will flash.
- Press the UP (or DOWN) button to enter the required number.
- Press the COST button.

You only have to do this once as the device remembers the cost even if it is unplugged.

Here's a photo of the display. You can toggle through different displays by pressing the FUNCTION button.



- 41:34 is the time (41 minutes 34 seconds) that the appliance has been plugged into the energy monitor (NOT how long the energy monitor has been plugged in!)
- 274.5 is the energy consumed in Watts.
- 2.96 is the total cost of the energy used in pence.

The device will also show kWh. 274.5W for 41 mins 34 secs equals 0.189.8 kWh (I haven't got a photo of the display).

- $0.189.8 \times 15.52 = 2.95$ pence

(15.52p/kWh is our unit rate, see above)

2.95 pence doesn't seem very much, but we've only had the appliance on for 41 minutes!



Here's the culprit! An IKEA standard lamp, the photo makes it look very bright, but it isn't really!

It's in our dining room which is quite dark, I also use this room as my study (I work from home).

So, if the lamp is on for 6 hours a day, 5 days a week, 40 weeks a year

$0.274 \text{ kWh} \times 6 \text{ hours} \times 5 \text{ days} \times 40 \text{ weeks} = 328.8 \text{ kWh}$

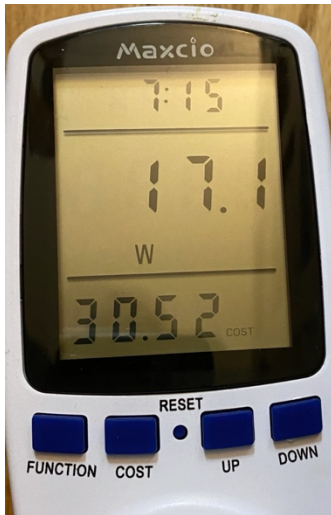
$(328.8 \text{ kWh} \times 15.52 \text{ p/kWh})/100 = \text{£}51.2 \text{ per year !!!}$ for one lamp.



I quite like the lamp, so here's the solution. A dimmable LED replacement bulb.

The sharp eyed amongst you will notice that it is 100W equivalent rather than 300W, but it is plenty bright enough. It is also quite a bit bigger than the halogen bulb, but it still fitted in our lamp.





So, what is the cost?

The energy monitor is showing 17.1W. Again, the sharp eyed amongst you will notice that the package stated that it is a 14W bulb – the difference is due to losses in the dimmer switch.

So, if the lamp is on for 6 hours a day, 5 days a week, 40 weeks a year

$$0.017 \text{ kWh} \times 6 \text{ hours} \times 5 \text{ days} \times 40 \text{ weeks} = 20.4 \text{ kWh}$$

$$(20.4 \text{ kWh} \times 15.52 \text{ p/kWh})/100 = \text{£}3.16 \text{ per year !!!}$$

The bulb cost £17 (Wow, an expensive bulb! A replacement halogen would be about £3). So, what's the payback?

$$\text{Saving over 200 days is } \text{£}51.20 - \text{£}3.16 = \text{£}48.04$$

$$\text{So, payback is } (\text{£}17/\text{£}48.04) \times 200 = 71 \text{ days !}$$