See all our energy advice leaflets at www.cse.org.uk/advice-leaflets

centre for sustainable energy

What uses watt?

How much electricity am I using?

If you want to save electricity (and why wouldn't you?) it helps to focus on the things that use the most, and so cost you most money.

Some electrical items use a lot of electricity; others don't. As a rule, those which produce heat or refridgeration, and those with moving parts use much more than those that produce light or sound. So to save electricity and money, there's no point worrying about a digital clock or a broadband router since these use so little power you would hardly notice the difference. The big savings lie elsewhere.

Every electrical appliance has a power rating which tells you how much electricity it needs to work. This is usually given in watts (W) or kilowatts (kW) (1000W = 1kW). Of course, the **amount** of electricity it uses depends on how long it's on for, and this is measured in kilowatt-hours (kWh).

An item like a fridge has a low wattage, but because it's on all the time it'll use a lot of electricity. Whereas an iron, even though it is only used now and again, uses a lot of electricity over a short period of time; so the quicker you do your ironing the better.

Electricity is sold by the kilowatt-hour (kWh) – usually referred to as 'units' on your electricity bill. We've done some of the work for you, but if you're feeling mathematical you can work out how much your own appliances cost to run by multiplying their wattage by

A household's electricity bill is mostly for appliances like toasters, dishwashers etc

the amount of time they're on and then by the cost of electricity per kWh. So let's say you have a 500W (0.5 kW) dehumidifier and you run it for a whole day (24 hours). It will use 12kWh of electricity (e.g. half a kilowatt every hour). If your electricity costs 15p per unit, then multiply 12kWh by 15p and you get a grand total of 180p, or £1.80. This is what it costs to run the dehumidifier all day, and you can see how appliances can add a lot to your bills.

But – and sorry if this is complicated – sometimes a higher-wattage appliance will actually use less power overall than a lower-wattage one. This is because it is well designed and does its job quicker. An energy efficient dish washer, for example, may have a power rating of 2kW – the same

Electric shower
£1/hour

Tumble drier
From 30p/hour

Hair drier
30p/hour

Oil-fired radiator
From 38p/hour

Electric mower
From 38p/hour

Vacuum cleaner
From 22p/hour

Phone charger
Almost nothing at all!

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The average power rating of common appliances

(These are 'typical' figures. The actual power rating can vary a lot depending on size and model)

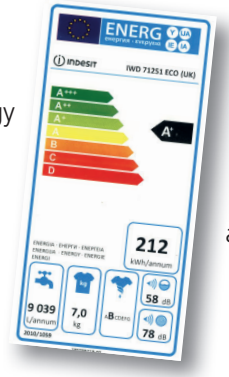
Appliance	Average power rating (Watts)	Cost to use per hour (pence)*	Cost to use per 10 mins (pence)*
Electric shower	7000–10500	105-156	17.5–26.0
Immersion heater	3000	45	7.5
Kettle	3000	45	7.5
Tumble Dryer	2000-3000	30–45	5.0–7.5
Electric fire	2000–3000	30–45	5.0–7.5
Oven	2000-2200	30–33	5.0–5.5
Hairdryer	2000	30	5
Oil-filled radiator	1500-2500	22.5–38.0	3.5–6.5
Washing machine	1200-3000	18–45	3.0–7.5
Dishwasher	1050–1500	16.0–22.5	2.5–3.7
Grill/ hob	1000-2000	15–30	2.5–5.0
Iron	1000-1800	15–27	2.5–4.5
Electric drill	900-1000	13.5–15.0	2.2–2.5
Toaster	800-1500	12–22	2.0–3.5
Microwave	600-1500	9.0–22.5	1.5–3.5
Electric mower	500-1800	7.5–27.0	1.0–4.5
Vacuum cleaner	500-1200	7.5–18.0	1.0–3.0
Dehumidifier	300-700	4.5–10.5	0.5–1.5
Plasma TV	280-450	4.0–6.5	0.5–1.0

Appliance	Average power rating (Watts)	Cost to use per hour (pence)*	Cost to use per 10 mins (pence)*
Towel rail	250-500	3.7–7.5	0.5–1.2
Fridge-freezer	200-400	3–6	0.5–1.0
Freezer	150	2.2	0.4
Heating blanket	130-200	2–3	0.3–0.5
LCD TV	125-200	2–3	0.3–0.5
Desktop computer	80-200	1–3	0.2–0.5
Games console	45-190	0.5–3.0	0.1–0.5
Fridge	40-120	0.6–1.8	~ 0.2
TV box	30-40	0.5–0.6	~ 0.1
Laptop	20-65	0.3–0.9	~ 0.1
Video/DVD/ CD	20-60	0.3–0.9	~ 0.1
Tablet (charge)	10	0.1	<0.1
Broadband router	7-10	0.1–0.2	<0.1
Extractor fan	5-36	0.1–0.5	<0.1
Smart phone (charge)	2.5-5.0	<0.1	<0.1

*All calculations are based on an assumed unit rate of £0.15p per kWh and rounded up or down to the nearest 0.5p or 0.1p as appropriate

(or higher) as a non-energy efficient one. But what makes it energy efficient is that it completes its cycle quicker. So while it may use the same (or more) electricity per hour, it's working for less time so uses less energy overall. In other words, don't judge the energy efficiency of a device only by its given power rating, particularly if it is controlled with thermostat or operates on a timed cycle.

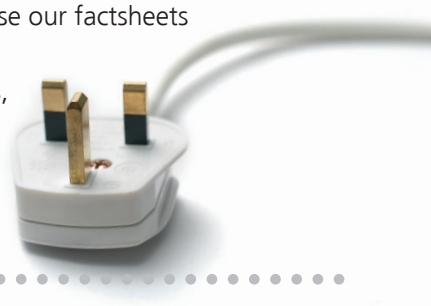
Instead, if you're buying a new fridge or TV or other appliance, the best way to judge its energy efficiency is the label (right). Those rated 'A' or above are the most efficient for their size. To compare between differently sized appliances, energy labels also now print suggested kWh usage per annum for each appliance.



Energy monitors

These are are wireless devices that can tell you useful things like what your current energy use is costing you. The display can show much electricity is being used at that moment, as well as how much was used last week or last month. Your energy supplier should provide an energy monitor (also called in-home display) if you have a smart meter, or you can by a separate energy monitor.

For further help you can use our factsheets that cover using an energy monitor, money saving tips, and low energy lighting.



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The Centre for Sustainable Energy is a national charity that helps people change the way they think and act on energy.

Our Home Energy Team offers free advice on domestic energy use to people in Bristol, Somerset, Wiltshire, South Gloucestershire and Dorset.

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