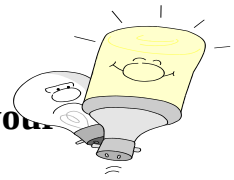
Waterford Energy Bureau - *Energy Efficiency/Renewable Energy Fact Sheet* No.5



LOW ENERGY LIGHTING: A bright idea to help you save money on your electricity bills

What sort of power?

The amount of electricity that any light uses, irrespective of it's type, is it's "Watts" rating - abbreviated to "W".

Main types of lights

Low Energy consumption:

Light Emitting Diode (L.E.D.):

The yields of these lamps are twenty times superior than incandescent lights. LED light bulbs give off directional light like a laser or bean of light. LED bulbs are closer to the colour of daylight and can be used to replace halogen light bulbs. The bright, white LED light works especially well for task and reading lighting. LEDs produce light more efficiently, and they also have a tiny mirror that reflects light in one direction.

Compact Fluorescent Light:

All CFL bulbs intended for use in homes are like miniaturised versions of fluorescent strip lights, which many people have been using in their kitchens, utility rooms and garages etc. for many years. For this reason they are often referred to as "Compact Fluorescent Lights - "CFL's".

The light output from a CFL bulb is equivalent to that of an ordinary Incandescent light bulb. The following table shows the electrical demand of ordinary light bulbs and CFL equivalent. They are 80% more efficient than an ordinary bulb. If you were to change all your light bulbs to 'A' rated CFL light bulbs, an average home could save up to €143.88 per year.

Ratings for equivalent light output	
Ordinary light bulb	**Energy-saving CFL**
25W	5W
40W	7 - 10W
60W	11 - 15W
100W	20 - 25W
150W	32W

Self-contained CFL's are used just about anywhere where ordinary light bulbs are installed– It is possible to replace an ordinary light bulb with a CFL, there is no need for special light fitting as the electronic control gear is built into the CFL.

Banning of Incandescent and halogen light bulbs:

Fluorescent Strip Light:

Fluorescent strip lights are similar to CFLs and T5 tubes (18W) are the most efficient strip lighting available.

Fluorescent lights and CFL's both need 2 main components in order to work: a gas-filled tube, which generates the light, and some electronic starter, which regulates and powers the tube.

Fluorescent strip lights use 40% of the energy that Incandescent light fitting use.

High Energy consumption:

Tungsten Halogen Lamp:

Tungsten halogen lamps contain a halogen gas in the bulb, which reduces the filament evaporation rate and thus increases the lamp life. They also have an inner coating that reflects heat. Together, the filling and coating recycle heat to keep the filament hot with less electricity.

They also are considerably more expensive to buy than standard incandescent lamps, but are less expensive to operate because of their higher efficiency.

Incandescent light:

Ordinary light bulbs are not very efficient at providing light as most of the electricity consumed is in the form of heat. As of September 2013, under EU directive, manufacturing of the ordinary (incandescent) light bulbs have been banned, making way for the new more energy efficient types. The average home with all incandescent light bulbs spends up to €292 per year on light bulbs.

Halogen Light:

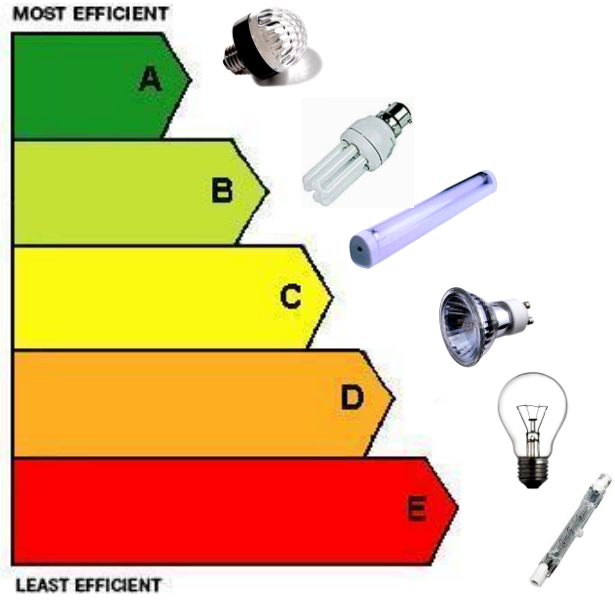
The halogen light is usually used with a free standing lamp: halogen lights use between 3 – 5 times more electricity than incandescent light fittings. The halogen light is usually used in a free standing lamp or for external lighting purposes.

From Sept 1 2012, the 40W incandescent light bulb was banned, finally going the way of the already

phased-out 100W and 60W, which had been banned previously. As lighting can consume up to a fifth of household energy use, this will save energy and will save consumers money in reduced electricity bills.

Energy Labelling of Households lamps:
The Energy Labelling of bulbs is an indication of the lighting consumption (estimated in W). "A" rated bulbs will be the most energy efficient. Currently the labelling of all lighting equipments is just a concept but an official directive will be published in the future.
The Energy label (on the right) is for reference purposes and will differ significantly to the adapted label. When purchasing light fittings, refer to the Energy label on the light fitting container.

"Energy Labelling of Light Fittings"



Summary table about different sort of lighting

Characteristics	Low Energy consumption (Power<40 W)			High energy consumption lighting (Power> 40 W)		
Main types of lights	Light Emitting Diode (L.E.D.) 	Compact Fluorescent Light (C.F.L.) 	Fluorescent Strip Light 	Tungsten Halogen Lamp 	Incandescent Light 	Halogen Light 
Average power	5 W	15 W	35 W	55 W	75 W	250 W
Voltage	230 V	230 V	230 V	6-24 V	230 V	230 V
Life span	50,000 hours	12,000 hours	40,000 hours	3,000 hours	1,000 hours	2,000 hours
Average cost of a bulb	20 €	5 €	8 €	7 €	1 €	10 €
Electricity usage*	44 kWh	131 kWh	307 kWh	482 kWh	657 kWh	2,190 kWh
Cost of electricity**	8.40 €	24.90 €	58.30 €	91.6 €	124.8 €	416.10 €
Total cost***	28.40 €	29.90 €	66.30 €	105.60 €	133.8 €	456.10 €
Total saving compare at an Incandescent Light	**- 105.40 €**	**- 103.90 €**	**- 67.50 €**	**- 28.20 €**		**+ 322.3 €**

** kWh of electricity used over 8 760 hours (lights turn on all the year)*
*** 0.19 € per kWh*
**** Electricity and bulbs over per year*

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