

## ENERGY SAVING LIGHTING

Would you like to save money and contribute to Bradford on Avon's journey to Carbon Neutrality? Then choosing LED is a simple choice to make. LED lamps are easy to install into most existing sockets and you can begin to enjoy significant savings immediately.

### What is a LED Light Bulb.

A LED (Light Emitting Diode) lamp is based on electronic technology (diodes) that is used in radios and other electronic devices. The only difference being that when the electricity is switched on these diodes emit light. Unlike the 'conventional' filament light bulb, which gets hot when it is switched on, a LED lamp gives out very little heat.

Crucially LED lamps use less electricity for the same light output. About 85% less electricity when compared to conventional lighting and around 18% less electricity when compared to Compact Fluorescent (CFL) bulbs. A lamp incorporating LEDs is very energy efficient.

Worldwide, around 20% of electricity is consumed in lighting. Switching to LED can make a big impact on your energy use and make savings. Savings are most noticeable in areas such as security, where lights can be left on for long periods.

### Energy savings made by using LED against other types of lamp

	Halogen	Filament	CFL
	50W	60W	11-15W
LED	6.5W	11.5W	11.5W
<b>Save</b>	<b>87%</b>	<b>81%</b>	<b>12-23%</b>

The average EU household has 24 lamp points and there is an LED alternative for nearly all of them.

### LED lamps last much longer - Saving even more

Typically LED lamps have a lifetime of 25,000 hours – that is over 22 years if used for 3 hours per day. Plus, with no filament LED lamps are more robust. They can be switched on-off 50,000 times throughout their life. Overall, this will result in you saving money on replacement lamps. Conventional bulbs last around 1,000-2,000 hours (1-2 years) and CFL around 6,000 -15,000 hours (6 to 13 years).

### Save Now - Using 400 Watts in one room? Replace with only 52 Watts LED!

Gone are the days when a room was lit with just a single 60W lamp. In living rooms, bedrooms and kitchens - they have been replaced with 8 or more spotlights. Each spotlight could be 35W or 50W (Halogen) - leading to a power usage of up to 400W. With retrofit LED lamps, the energy used is lowered to just 52W (6.5W per lamp), for the same amount of light. Despite the fact energy have fallen slightly, they will go up again - it makes sense to switch to LED.

The biggest savings are seen when LED replaces Halogen or conventional filament lighting.

Take a typical example of eight 50W GU10 Halogen spotlights in a kitchen.

Replacement GU10 LED lamps can be installed in a matter of minutes.

LEDs save money in two ways:

- You will save every year based on less energy usage per lamp
- Since LED lamps can last over 20 years, you will save even more by using less lamps

The table below compares a 6.5W LED with a 50W Halogen - with the same light output.

**Payback can be achieved in 1 to 2 years (depending on purchase price).**

Watts/Lifetime	Yearly Cost	Cost over LED Lifetime	No of lamps
<b>LED</b> 6.5W 25,000 hrs	£1.00	£22.83	1
<b>Halogen</b> 50W 2,000 hrs	£7.67	£175.11	12
<b>Savings per lamp</b>	<b>£6.67 per Yr</b>	<b>£152 Lifetime</b>	
<b>Saving for eight lamps</b>	<b>£53.36 per Yr</b>	<b>£1,218 Lifetime</b>	

*Estimated savings, based on 0.14p/kWh - LED lamps like all types of lamps will slowly fade over a long period. LED lamp lifetime could be as much as 22.8 years based on 3hrs/day usage.*

## **OTHER FACTORS**

### **LED is Instant ON - No waiting for light**

- LED lamps switch ON and OFF instantly and are flicker free – There is no warm up time unlike many CFLs

### **LED is Mercury free - Unlike CFL**

- A small amount of Mercury is used in CFL bulbs. Any reduction in the use of Mercury will benefit the environment.

### **LED lamps look the same as 'conventional' filament lightbulbs**

- You may have seen early 'Generation 1' LED lamps that looked more like an alien spaceship than a lightbulb, however, there have been massive advances in LED design so that now LED lamps look nearly identical to the filament and halogen bulbs that you want to replace.

### **LED gets the green light - More light with much less energy**

- Over the lifetime of an LED product, less electricity and replacement products are used; saving even more energy in transportation, packaging and maintenance when compared to conventional lamps. All this adds up to lower CO2 emissions, a win-win for you and the environment. *As LED lamps are very efficient, they are the perfect product to compliment renewable energy sources such as solar panels or wind power.*

### **LEDs run cooler and can be safer**

- LED lamps run much cooler than traditional halogen lamps and can be less of a hazard (please consult a qualified electrician for fire safety regulations in your

area). Halogen lamps are an inefficient way to heat a space. Using LED will allow a heating or air-conditioning system to run more effectively. When lamps run cooler they minimise the deterioration to light fittings, shades and decoration which can occur with hot lamps - so your light fittings will last longer.

### LED is fun

- The range of LED products is increasing and products like LED strips that can change colour and brightness make it easier to produce light effects almost anywhere.

### LED is the future - and it's bright

- Millions of pounds are being spent on research and development to make LED products even more efficient for the future. The low power and weight features of LED products make it ideal for new types of lighting such as LED strips, downlights and luminaires that are available now. LED products are also being integrated into control systems that can be remotely controlled by smartphones and tablets.
- With falling prices of LED products, long-term increases in energy costs tied with improving efficiency of LED, with more light for each unit of energy the argument to switch to LED now is very compelling as payback periods become shorter.

### Where can I buy LEDs

Most retailers are now selling LED lamps as an alternative to conventional filament lamps. Some are selling them at incredibly low prices, but often the performance and reliability of those bulbs can be questioned.

In some cases consumer organisations have found the light emitted and colour produced by a 'cheap' LED lamp is often not the same as that stated on the packaging. Hence, bearing in mind the durability of LED light bulbs and energy saved when compared with conventional filament bulbs, there is merit paying a little bit extra for more reliable LED lamps. *Following the tenet of the Climate Friendly Bradford on Avon and 'shopping local', J Alex Brown's on Silver Street now stocks a range of good quality LED lamps.*

Further information about LED lamps is available on the Internet. Alternatively, do not hesitate to contact the Climate Friendly Bradford on Avon Energy Group on either 07507 782523 or [climatechampions@gmail.com](mailto:climatechampions@gmail.com).