

We hear the words 'environment' and 'technology' and think solar panels, wind turbines, and other renewable sources. However, by focussing solely on the generation of electricity we overlook its use. Gadgets in the home and office are by no means as efficient as they could be. By creating technologies that facilitate efficient use of energy we can reduce environmental damage caused by energy generation.

People can do much in their own homes to cut energy use, from turning off unused lights and electrical equipment, to recycling waste. Even more could be achieved with energy-efficient products.

A study by the International Energy Agency found that 19% of all the electricity generated globally is used on lighting and the carbon dioxide produced is three times that of aviation - itself often a target for energy reduction. Energy-saving light bulbs have been on the market for years and can reduce the amount of energy used in lighting by up to 80

Now, newer technology is gaining ground - light emitting diode (LED) lamps. LEDs are already used in many areas, often individually as indicator lights such as the dreaded 'standby' on TVs - again another target for energy reduction. They come in all shapes, sizes and colours, and have very low power requirements.

A typical LED lamp is made by combining a number of individual LEDs to make a light source of similar strength to a traditional bulb, but more energy efficient. LEDs produce almost no heat, so the majority of the energy is used on illumination. The American research group Sandia National Laboratories predicts that future LED lamps would be 10 times more efficient and 100 times longer living than traditional bulbs. Apply that nationally or even globally and it would go a long way meeting carbon emission targets.

Devices left on standby are a huge waste of energy. But removing the standby function isn't that simple. If standby is banned in the UK it wouldn't necessarily be elsewhere, requiring the need for special 'UK only' products and increased production costs, possibly causing manufacturers to make cuts in other areas, with a negative environmental effect.

There are others changes that can be made to commonly used household appliances.

The average Britain drinks 3 cups of tea a day, but many people fill the kettle to the brim for just one cup, wasting vast amounts of electricity since the excess water is left to cool, then boiled again. The Department for Environment, Transport and the Regions has said that overfilling wastes enough energy in a week to light a house for an entire day, or run a TV set continually for 26 hours.

One company, Product Creation Ltd, has invented a solution - the Eco Kettle which has two separate chambers: one you fill to the brim with water, and the other containing the heating element. When you want a single cup of tea, you simply press a button and the correct amount of water is released from the reservoir and boiled in the other chamber - a perfect example of a simple technological solution that could have a massive environmental benefit.

It isn't only at home that people can make energy savings. According to government advice group Envirowise, the average employee uses up to 50 sheets of A4 each day, and many of this simply ends up in the bin with over five million tons of paper thrown away each year. The trees cut down to provide this paper cause a significant impact on the environment.

Electronic paper (or e-paper), currently in development, could revolutionise the workplace and perhaps finally bring about the 'paperless' office. The goal is to replicate the look of

printed ink on paper in an electronic form, and works by sandwiching a special ink-like liquid between two sheets of electrodes that control the ink using an electric charge. E-paper only uses power when the display is changed, so it is a very low energy technology that would allow the same piece of paper to be used again and again.

As the public becomes more aware of the impact humans have on their environment, the demand for change will increase. However, no one wants to be told that they can no longer use their favourite gadget because it uses too much electricity. This is why it is important that we look at more efficient ways of using energy, with the added bonus that this means lower electricity bills. Something that everyone can appreciate!