## Introduction

According to The Carbon Trust 30% of energy consumed in the UK is wasted costing businesses millions of pounds in lost revenue every year. This contributes to global warming. Businesses can cut their energy costs by up to 20% very easily and some measures require no investment at all.

## It isn't just the Globe that is Warming

According to the Carbon Trust heating and hot water can account for up to 60% of a building's energy costs. This is obviously an important area to make savings in and help reduce carbon emissions. Simply lowering room temperatures by 1°C can reduce your annual heating bills by 8-10%. In some offices temperatures are frequently a balmy 24°C and we have heard of some offices tipping the positively tropical temperature of 27°C. How many more widgets does a company have to sell so that workers can walk around in their shirt sleeves, whilst unnecessary carbon emissions push the Earth's thermometer ever higher? The Energy Saving Trust recommends that thermostats need be set no higher than 18°C. Clearly it is preferable that the company's profits heat the workspace rather than the neighbourhood - turn heating down rather than opening windows.

## Heating System Energy Management Devices

Very refined energy management systems can be installed on boilers which will run your boiler as efficiently as possible. Weather compensators are available which reduce the water temperature in the heating circuit on mild days. The boiler must also be serviced every year to ensure these optimum savings. Insist on a combustion report each time – efficiency improvements after the service can be seen as reduced flue gas temperatures. Start-up controls should automatically adjust heating start up times so that the building reaches optimum temperature to coincide with occupancy. Further energy management can be provided by room thermostats. These should always be mounted away from draughts, direct sunlight and heat sources such as radiators and office equipment and spotlights. A final control is provided if radiators have thermostatic radiator valves (TRVs) which allow individual occupants to reduce the temperature even further.

## Electricity Energy Management - Equipment

Switching off electrical equipment reduces energy consumption and heat produced, which in turn reduces room temperature which is important in the summer. Seven-day timers can be fitted on shared electrical equipment which reduces the chance of machines being left on overnight. Office equipment that is fitted with standby modes which must be first enabled and set can then reduce energy consumption by 95%, although there is another energy-saving device that can be deployed - the off switch.

'Intellipanels' are energy-saving multi-plugs that monitor when a PC is switched off and automatically shut down peripheral equipment such as printers and scanners. They are available from One Click (http://www.oneclickpower.co.uk).

## Electricity Energy Management - Lighting

According to The Carbon Trust, leaving office lights on overnight wastes enough energy to make 1,000 cups of tea. Available natural light is the cheapest resource. Maximising the use of daylight could save around 15% on your lighting costs. Daylight sensors detect natural light levels and switch off lights but first make sure there is enough daylight in your workspace. This will vary because of the weather but can be measured

with a light meter. Generally an office requires 300-500 lux (measurement of light levels). To save people's eyesight it may be that it is only practical to fit sensors on lights nearest windows. Switches should control groups of lights which are parallel to the windows so that unoccupied areas or those with enough natural light can be switched off.

Occupancy sensors are ideal for rooms that are used infrequently or intermittently and ensure that lights are switched off without having to depend on workers to remember. Daylight sensors save energy on security lighting and can also be used to switch off internal lighting.

## Measuring Energy Use in Small Businesses

For small offices or trading estate units a compact meter called the 'electrisave' (http://www.electrisave.co.uk) or the Owl (http://www.theowl.com) show you exactly how much power is being used at any one time and shows how much particular items use. In this way an office manager can immediately see which devices use the most energy and prioritise what needs switching off.

## Recommended Publications Available from the Carbon Trust

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| Energy use in offices | ECG 19 |
| Energy saving fact sheet – Office | GIL142 v2 |
| Better business guide to energy saving | GPG 367 |
| Energy saving fact sheet – Heating | GIL124 v2 |
| How to operate your office efficiently | CTL006 |
| How to install lighting controls | GIL 153 |

## Sources of Information & Advice

Envirowise - www.envirowise.gov.uk or Environment and Energy Helpline on 0800 585794 for specific advice or to request a site visit. (It may be necessary for Companies to spend more than £10,000 on energy per annum to qualify for a visit.)

The Carbon Trust – http://www.thecarbontrust.co.uk or 0800 0852005. If you are spending over £50,000 on energy per annum The Carbon Trust can visit to give specific advice on energy management.

GASTEC at CRE Ltd – http://www.gastec.uk.com or 01242 677877 offer expert advice on saving energy use from gas boilers.

Spirax Sarco - http://www.spiraxsarco.com. For companies or local authorities that use steam, hot water or compressed air for heating or process, Spirax Sarco who are based in Cheltenham provide a wide range of energy management equipment and carry out energy-saving site surveys.