



## SNAPSHOT PAPER

### Reducing Business Energy Costs & Carbon Emissions

#### General

There is now absolutely no doubt that our environment is suffering as a result of the pollution caused by modern day living.

In the UK we are starting to see an increasing desire by the Government to force businesses to adopt a stronger social conscience by introducing eco taxes. UK businesses are now recognising the importance of reducing their carbon footprint, and in some cases are even promoting this desire in their marketing messages.

The Climate Change Levy (CCL), where a small charge is added to the energy bills of non-domestic users, is currently the only eco tax. The Carbon Reduction Commitment (CRC), which becomes law in April 2010, is a much more definitive attempt to tax the carbon footprint of businesses in the UK (For more information see the Ivy document, downloadable from our web site, entitled, [The Carbon Reduction Commitment – A Briefing Paper](#)).

#### Good News

The good news for businesses is that a commitment to reduce carbon emissions directly results in the reduction of energy costs. Given the current economic climate cost reduction is undoubtedly a major priority for all business owners.

#### What can be done?

Whilst there are numerous areas where simple action can be taken to reduce costs and carbon emissions - such as using a low energy kettle in the staff kitchen, turning down central heating and so on - this document focuses on the major areas in a business where energy costs can be cut. In particular, where the use of retrofit solutions negate the need for the heavy investment that the straight replacement with an energy efficient equivalent might incur - thereby returning the maximum gain with the minimum ROI. As an example, replacing fluorescent tube fittings will cost nearly three times that of just using retrofit low-energy tubes instead.

- **Electricity Supply** – it may be worth looking into your current supplier's kWh rate to see whether you can either improve the price you are paying as well as the quantity of sustainable energy generated on your required tariff or, better still, switch to a supplier that only provides energy derived from environmentally friendly and sustainable sources, such as Ecotricity ([www.ecotricity.co.uk](http://www.ecotricity.co.uk)) or Good Energy ([www.goodenergy.com](http://www.goodenergy.com)).

- **Lights** – one of the biggest areas of wastage in the office environment. If your office has recessed spotlighting or uses traditional incandescent bulbs look at replacing the lights with low energy LED versions. Similarly, also look at replacing fluorescent tubes with low energy T5 types that also disable the existing ballast and use an in-line high frequency ballast.

✓ **Savings Snapshot** - using standard halogen GU10 spotlights can cost £18.20 a year a light, an LED can cost 71p and save 56 Kgs of CO<sub>2</sub> emissions. whilst retrofit low energy T5 fluorescent tubes could save you over 50%.

- **Audio-Visual etc** – if you have a TV or audio equipment for AV presentation purposes etc ensure you switch it off as this could add an additional 570 kWh a year to electricity bill if left on in standby mode.\* There are a number of remote control standby busters on the market. Look for those that are Energy Saving Trust approved.

✓ **Savings Snapshot** - 570kWh of electricity over the course of the year is £57 if you pay 10p kWh. Most standby busters cost less than £20.

- **Light Switches and Timers** - using a timer switch for heating and ventilation will reduce wastage if set correctly.

In terms of lighting, using a traditional on/off switch that also includes a built-in absence and presence motion sensor, is an excellent way of reducing the

\*Based on the Which? Report, Use Less Electricity

cost of lighting in areas where illumination is not-critical to office operations, such as corridors, the toilet, kitchen and so on.

✓ **Savings Snapshot** - *it's a given that dimming lights or switching them off will save electricity and emissions, but the exact saving is difficult to quantify. The toilet is an obvious area where constant illumination might be unnessary and according to The World Toilet Organsiation (yes, it really does exist) we spend an average of 3 years, or 4%, of our life on the loo. If we then assume an 8 hour day and that the loo is in greatest demand early in the working day and after lunch, then it is not unreasonable to assume at least 2-3 hours of that day the lights could be off - a considerable saving when annualised.*

• **Office Computers, Monitors and Printers** – possibly the second highest user of electricity in a typical office environment. According to the research group Gartner, ICT accounts for approximately 2% of global carbon dioxide (CO2) emissions, with PCs and monitors accounting for 39% of this total - roughly equivalent to the carbon footprint of the airline industry, and growing – not only resulting in an enormous waste of energy and cost but also creating massive carbon emissions.

Yet, solving this problem is relatively simple. With careful planning and a little PC configuration any company can benefit quite quickly from the use of a software application that shuts down PCs at the end of the day. In addition, this can be extended to reflect working practices by setting rules for lunch breaks, office absence through meetings etc, thereby extending massively extending the cost benefit and reducing the return on investment period.

Finally, by adding the use of smart plug boards, into which monitors and printers etc can be plugged, that automatically shut the power to peripheral devices when the PC closes down, and you will achieve the maximum gain possible.

✓ **Savings Snapshot** - *a basic Pentium 4 PC if left on out-of-hours could cost a company £48.43 (including £1.77 for the Climate Change Levy). This equates to 186 Kgs of unnecessary carbon emissions. Add monitors and printers etc and the emission and financial cost escalates.*

• **Voltage Regulator** - the supply of electricity is not constant and as such the current rating and wattage can increase, which ultimately causes a rise in the kWh supplied, used and billed. A voltage regulator stops this by managing, and optimising, the voltage demands thus reducing the total current drawn from the mains source - as well as stabilizing the during power surges. These devices simply plug into a traditional mains socket.

✓ **Savings Snapshot** - *a good quality voltage regulator, suitable for an office or school environment, will cost less than £100 and they are proven to save between 10-20%, making them an excellent investment.*

### Grants and Loans

Whilst any attempt to reduce expenses through the purchase of new equipment may initially be an unwelcome capital expenditure cost - as opposed to the operating cost energy represents - a large number of grant schemes and interest free loans exist to help reduce this burden.

Similarly, there are also Pay-As-You-Save schemes. In essence, these are lease rental arrangements, where any investment in energy reducing equipment is paid from the resulting savings. Contact Ivy Energy Saving Ltd for more information.

### SNAPSHOT TIP: Appoint An Energy Officer

Energy saving and the role of reducing a company's carbon emissions ideally needs to be handled by one person – it is a complicated and fast-changing sector.

Whilst it may not be a full time role for a small organisation, many companies will have a member of staff who will be skilled enough to take the role of Energy Officer on a part-time basis – a bit like a first aid officer.

This may turn out to be a worthwhile exercise as, in due course, it is highly likely that the government will look to tax the carbon emissions of much smaller businesses than is currently covered by the forthcoming CRC legislation.

For more detailed information on some of the topics contained within this document, please see [www.ivyenergysaving.com/briefingpapers.html](http://www.ivyenergysaving.com/briefingpapers.html)