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# COST SAVINGS THROUGH RESOURCE EFFICIENCY

## A Practical Guide to Green IT

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# COST SAVINGS THROUGH RESOURCE EFFICIENCY

## A Practical Guide to Green IT

by David Tebbutt

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## 1

# INTRODUCTION

Businesses are facing both recessionary pressures and a need to be more environmentally responsible. Either burden would be enough on its own. Larger organisations, especially, are soon to be hit with legislation in the form of the Carbon Reduction Commitment which comes into force in 2010. And all companies are increasingly coming under pressure from customers and other stakeholders to declare their environmental credentials.

It is rare for a business to want to take environmental action for its own sake. Usually, it is done in response to a business threat. The most common threats are financial, reputational and regulatory. They are often tied together. For example, a major customer may decide to only buy from suppliers with ISO 14001 certification. If you don't have it, you lose both business and reputation.

This guide will focus on how IT can help your organisation reduce its environmental impact and concentrate, in particular, on areas where the greatest cost savings can be achieved.

## 2

## AREAS WHERE IT CAN HELP

While IT is reputed (Gartner, 2007) to generate around two percent of the world's carbon emissions, it has the potential to help companies make substantial environmental improvements and cost savings inside its own operations and, more significantly, outside in the company at large. Indeed, its influence can be brought to bear up and down the supply chain, depending on the nature of your organisation and the products and services it provides. This chapter takes a look at potential steps you can take as well as suggesting methods for monitoring and measuring key environmental outputs.

### Transport

The best way to cut transport costs and emissions is to do less of it. Every mile not travelled is a mile's-worth of emissions and costs saved. And, fewer miles means longer vehicle lives as well. IT can help out by providing online meeting facilities and transport logistics planning systems.

Meeting tools range from the expensive boardroom-style 'telepresence' suite in which life-sized images of participants are shown on screens curved around the far side of a boardroom table, to a simple desktop meeting facility which works through a personal computer. Each has its advocates, but all save travel, time and, in many cases, accommodation costs. Broadly speaking, the lower the cost of the system you choose, the greater your financial return.

Transport logistics is already a high art, but it is possible to improve it still further by considering whether to deliver larger orders or to pick up unwanted goods for the return journey to fill the space left by those already delivered. Some companies are already planning routes that minimise the number of turns that involve queuing in order to cross oncoming traffic (right in the UK, left elsewhere).

### Consumables

Waste is endemic in the office; most notably in relation to printers. They use paper and ink or toner, none of which is cheap and all of which have an environmental impact, quite apart from the energy cost of running the machines. If printers are too convenient for staff, then their usage rises. Some companies have moved away from desktop printers to work group or 'floor' printers. If people have to cross the room to print, it is hardly inconvenient, but

it does make them pause for thought. Some companies have installed printers that require a code or a card before they will print; this eliminates abandoned print runs and the associated waste. It is also worth printing double-sided, using draft mode and considering greyscale for colour documents whenever possible for substantial paper and ink savings. If you are feeling generous, you might want to design your online collateral with its environment impact in mind, even if you are not the direct beneficiary. Make sure that the printers you retain, or buy if you have to, have a low energy standby mode.

Some company operations are geared towards printing; invoice and statement production, for example. Since most companies are connected to the internet, why not see if you can deliver these documents electronically? Accounts packages usually provide the option and their sophistication can vary from a straightforward invoice image to a structured electronic document which can be read and understood by a computer. Obviously, it would pay to accept inbound electronic documents as well and resist the urge to print them out. But the savings don't stop there. Although this section is about consumables, the major benefit of XML-based document exchange is that the computer applications can actually talk to each other and get on with the straightforward work automatically. Transcription, miskeying, delays and all the other problems of human intervention can be largely eliminated. Done properly, this ends up benefitting the bottom line as well as the environment.

## Optimising IT

IT can improve its own act considerably, but you have to be careful not to eject the baby with the bathwater. Sometimes an increased burden on IT can result in a much larger environmental saving elsewhere. However, you can take immediate and effective measures.

The first is to consider reducing the number of servers you run. Is each being used to its optimum capacity? In many companies, some servers run dedicated applications and sit there idle a lot of the time or use just a small part of their capacity. By using a technique called virtualisation, multiple virtual servers can be crammed into the same physical server, allowing more applications to run inside the same device at the same time. If you moved your efficiency from 25 percent to 75 percent, you would theoretically reduce your server estate and, therefore, the energy costs for running and cooling the equipment

correspondingly. You would also save space which could give you room to grow, or which could be put to another purpose.

Cloud computing is an extension of the virtualisation idea, it enables you to run applications anywhere but, typically, with cloud they run on an external service. The provider can afford to buy and operate the most environmentally friendly equipment while you don't need so much equipment and your overall environmental damage is probably reduced. Be careful with this one though, many types of cloud exist and a great deal of hype suggests that it's a revolution. It's not. It's an evolution and you are likely to be using a mix of internal and external IT for some years to come.

Computer makers have introduced power saving capabilities in their machines over recent years. It is possible to install standard 'profiles' which switch various components off in order to save power. If networked, these controls can be activated from a central location, switching machines on and off according to time of day or other parameters, such as installing software upgrades at night.

Depending on your organisation size and computer set-up, you might consider running all your applications at the centre and distributing them to users at specially cut down computers called 'thin clients'. Because these are essentially just a keyboard, mouse and screen with a bit of local intelligence, they consume very little power, generate very little heat, and they last for years – certainly two or three times longer than the average PC. Without delving too much further into cloud computing, the most popular Software as a Service (SaaS) applications are run on your behalf and users can interact with them through the browser on a variety of devices, from smartphones to full-blown computers, from wherever they happen to be working at the time.

When it comes to buying equipment, you will probably want to consider buying from a supplier with a decent green reputation, but you won't want to pay through the nose for the privilege. You should determine your needs then choose the best of the equivalent suppliers, bearing in mind their reputation for other important things such as reliability, customer support and so on. In general, it is a good idea to include an environmental element in all requests for proposals (RFPs) whether computing-related or not. It makes vendors think, if nothing else.



At the end of their planned life, your computers might be perfectly functional, but they just do not meet the demands of modern software. It is important to dispose of such machines in the most environmentally friendly way. Your remaining choices (after ‘extend their life’) are reuse and recycle. If it is at all possible to reuse them, either within your own organisation or in another – through a charity such as ComputerAid perhaps – then do so. If not, then proper disassembly and recycling is the best alternative. Many manufacturers welcome used computers because of the materials they can recover from them. Dropping computer equipment into landfill is really not an environmentally appropriate option.

#### CASE STUDY – WESTGREEN CONSTRUCTION

Westgreen Construction has eight offices, one in Portugal, the rest in the UK. Plans and designs have to be created in real-time. Project managers need to keep in constant touch. And the supply chain needs to participate too. Reliability, flexibility and security are priorities, along with carbon footprint reduction and a need for environmental sustainability.

Its ‘thin-client’ approach gives users, regardless of device, access to popular Microsoft applications, hosted by Virtual Office Desktop. John Gilsenan, Westgreen’s MD, said, “There are considerable financial benefits in moving to thin clients and not having individual PCs at every desk. Direct power consumption is reduced, the maintenance requirement is lower because there are no moving parts and you don’t have the challenge of recycling PCs.” You also reduce the PCs’ demands on air conditioning and ventilation.

Carbon emissions have been cut by forty percent and energy consumption reduced by almost ninety percent. (Some has been exported to the hosting service but it still represents an environmental saving.) Other benefits have also followed: 24-hour access for all users, regardless of location; a more flexible office culture; centralised daily backup; and longer IT hardware life, without the need to invest in servers.

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### Measurement

Although sometimes challenged, the old saw, “you can’t manage what you can’t measure”, holds good in most business situations. If you want to manage your carbon and energy reductions effectively, you cannot know how well you are doing unless you are able to measure progress. And, even if you are quietly confident of progress, without credible measurements and comparisons, you

would be unable to share your confidence with customers, stakeholders and the authorities when required.

Measurement is a fact of life, and fortunately help is at hand in the form of software and hardware tools. But it has to be said, in some areas, help at the moment is either non-existent or very expensive. Expect to see a lot of activity and competition in this area as software vendors and systems consultancies spot the very obvious opportunities to deliver the means to report progress realistically and consistently over time.

#### *Carbon footprint*

A number of carbon footprint calculators exist. While they come up with a top line figure for your emissions, their real value is in getting you into a way of thinking about your carbon footprint which you can then apply to the areas they have not covered. To get your direct carbon footprint, they typically look at your air travel, your commercial vehicle fleet, your use of public transport and the quantities of various energy sources used in your buildings. To get your indirect footprint, they look at things like food, packaging, recycling, finance and so on. Many organisations, including Carbon Footprint, Carbon Trust and FootPrinter provide online calculators.

<http://www.carbontrust.co.uk/>

<http://www.carbonfootprint.co.uk/>

<http://fp1.footprinter.com/>

Whichever approach you choose, it is important that you use the same one consistently in order to spot trends. This is because each currently delivers different footprint figures.

#### *Lifecycle*

A tougher nut to crack is the embedded carbon footprint associated with any product during its lifetime. Where you are in the supply chain will determine where you draw your calculation boundaries but they could extend to extraction, manufacture, shipping, usage, and disposal. (See figure 1.) Consultancy services and software (such as SimaPro or GaBI) are available but the software costs a few thousand pounds per annum and training is required to use it effectively. It is important to include the key questions in your

purchasing criteria, so that your suppliers are obliged to give you coherent answers. Of course, if you are a supplier to a major organisation, you will be obliged to bite the lifecycle bullet sooner or later. The British Standards Institution's Guide to PAS 2050 will give you an excellent overview of what is involved in lifecycle assessment.

<http://www.bsigroup.com/en/Standards-and-Publications/Industry-Sectors/Energy/PAS-2050/>

<http://www.pre.nl/simapro/>

<http://www.gabi-software.com/>

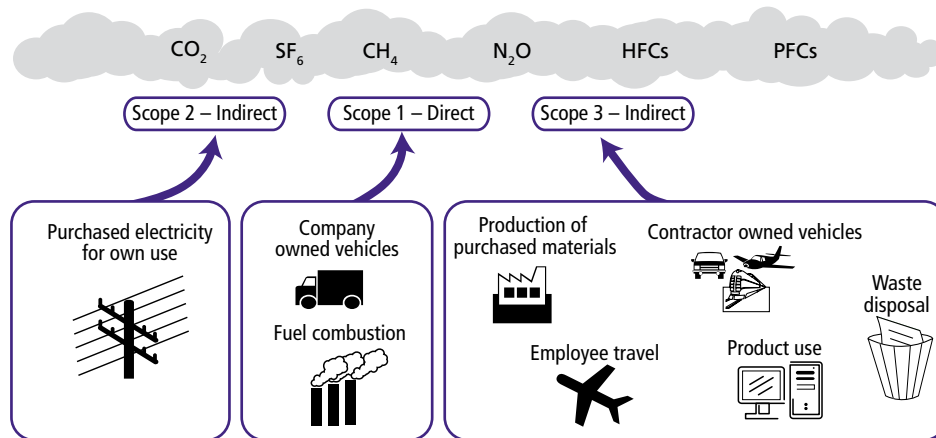


Figure 1: Greenhouse Gas Protocol Scopes

(Source: Forum for the Future, Clean Air Cool Planet and GHG Protocol)

### Carbon emission accounting

Very few accountancy packages include carbon emission accounting capabilities at the time of writing. This is likely to change as consumers and businesses wake up to their financial, reputational and moral obligations. Access provides an 'Accounting for Carbon Emissions' module for its Dimensions product which

quickly captures carbon-related information for each purchase transaction (past, present and future) giving the user a way of monitoring progress and comparing it with carbon budgets.

The purchasing/nominal ledger intersection is the natural point at which to gather, or automatically generate, appropriate information. Microsoft offers its Environmental Sustainability Dashboard at no additional charge to customers of its Dynamics AX product. BASDA (Business Application Software Developers Association) introduced a Green Charter (see box below) in October 2008 which should help you figure out which software developers are likely to help you. After all, public pledges like this are usually a prelude to action.

<http://www.theaccessgroup.com/>

<http://www.microsoft.com/dynamics/environment.msp>

<http://www.basda.org/>

### **BASDA Green Charter**

As BASDA members we will strive to play our part in combating climate change in the following ways:

- We will take pro-active steps to increase the carbon efficiency of our own organisations such that we will be regarded as low-carbon entities.
- We will enhance our software solutions to enable customers to become part of a carbon efficient economy.
- Via BASDA, we will engage in the debate around green ICT – including measurement, reporting, data requirements and standards.
- We will work as an industry through BASDA to educate and increase awareness of green issues as they relate to ICT and particularly business software.

#### *Power metering*

Reducing energy consumption is one of the most obvious measures to cut costs and diminish the harm to the environment. And power metering is the most obvious way to monitor, and therefore, manage it. Whether it is individual

sockets, rooms or departments, the fact of having a measure is the spur to action. How many people even think about the energy consumed by machines left on or charging devices left plugged in? Lights and air conditioning are often left on, even when there is no-one around. Metering is one side of the solution, automation is the other. Both can work in tandem through the use of IT.

It is possible to buy low cost energy meters that can deliver their readings to a PC wirelessly or through a cable. Once there, of course, you can do anything with it. BBS Standby provides a device that can measure power by individual, department or building, sending the results to its own PC software. The Current Cost range of equipment is designed for the home but would work equally well in the small office. Other devices deliver their results to external services which do the number crunching for you and let you pick up the results from a data feed or through web visualisation. You could start by looking at AMEE. It stands for 'Avoiding Mass Extinction Engine', but don't let that put you off.

<http://www.byebyestandby.co.uk/>

<http://www.currentcost.com/>

<http://www.amee.com/>

#### CASE STUDY – ARMSTRONG CONSULTANTS

Armstrong Consultants wanted to take a long hard look at its environmental impacts. Power monitoring devices at the company's offices provided some great insights, not least of which was the huge impact of its electrical equipment. Careless use of lighting and desktops were expected to be the biggest culprits, but it actually found that the age of the equipment itself had a bigger impact than the way it was used. Older hardware, including servers and large LCD display screens, had a much higher power consumption than their more modern counterparts, impacting power usage significantly.

By auditing the hardware and gradually replacing older kit, including a project to virtualise the previous 19 servers down to 6 energy efficient servers, the company has reduced its measured 22kWh consumption in the Harpenden office by more than 30% to around 15kWh. Although one could not justify the replacement of hardware on the basis of power savings alone – this does demonstrate the significant financial contribution that can be gained by investing in energy efficient equipment and the use of virtualisation technologies to optimise efficiency.

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#### *Vehicle emissions metering*

The simplest way of metering vehicle emissions is to take the mileage and apply standard emission figures to it. And the easiest way to do this is to use a carbon calculator which is based on Defra's emissions factors. If you are measuring reasonably recent passenger vehicles then you can get a lead from the cross-governmental 'Act on CO2' campaign. The more complicated, but more accurate and expensive, way is to gather information from the vehicles' engine management computers and GPS information. Depending on your company size and inclination, you can run your own software to derive the results and monitor progress or you can go to one of the services which collect and deliver results and comparisons online.

<http://campaigns.direct.gov.uk/actonco2/home/on-the-move/car-emission-comparison-tools.html>

#### **CASE STUDY – INTERSERVE FM**

Interserve FM's private and public sector clients are increasingly concerned with environmental issues and expect suppliers to demonstrate their own commitment to carbon responsibility and footprint reduction.

It has fitted its fleet vehicles with data transmission units. The control centre system is accessed via a standard web browser. Users and fleet managers can generate exception reports and graphical analyses of driving practices that allow the organisation to achieve wide-ranging cost and carbon savings through tighter route management, closer monitoring of driving habits and real time fleet visibility that enables vehicles to be redeployed on the fly.

The company uses Cybit's Fleetstar-Online fleet management and Fleetstar-MRM job management packages, which works out at about £40 per vehicle, per month. Mark Stimpson, the company's commercial director, says, "We have demonstrated significant cost and emission savings by reducing the number of vehicles and mileage." He points out the importance of involving people – clients, fleet operators, staff, help desk – in what you're doing and ensuring that they understand the reasons behind it, so that they are all party to the decision-making process and nothing is hidden.

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## 3

## IMMEDIATE AND LONGER TERM STEPS

It is easy to become overwhelmed by the sheer volume of sustainability advice out there. However, once you strip away the idealism and the non-IT-related suggestions, you can reasonably end up with a shortlist of practical steps to take. They will, of course, vary by organisation but, in this chapter, we offer you some starting thoughts in the form of quick wins to get the show on the road, and longer term initiatives which may cost a little to implement but will repay the investment.

### Quick wins

The best way to get buy-in to any new behaviour is to demonstrate some quick wins. With green measures, you have the advantage that, with staff, you are generally pushing against an open door. Research (Freeform Dynamics, 2008) shows that staff are likely to be ahead of management in their enthusiasm for environmental measures. Perhaps this is because many of them consider it from an abstract perspective (“create a world for our children that is worth living in”), rather than from a “what will this do for the sustainability of my business?” perspective.

The quickest wins come from reducing energy use. The payback is instant, through lower bills and the environmental benefits are a straightforward by-product, although that should not stop you making it part of your sustainability story.

It costs nothing to turn PCs and printers off at night and to have them go into hibernate mode automatically after a period of inactivity – fifteen minutes, say. Modern flat panel screens do not need screen savers, so you may as well switch them off, so the devices aren’t fooled into thinking they are busy. Power chargers of all kinds may as well be unplugged when not actually charging. We have already mentioned cutting the amount of printing and going draft, greyscale and double-sided, which reduces the costs of power, paper and ink/toner cartridges. All the foregoing are simple measure which, collectively, can add up to a lot of energy saving.

Deferring purchases of new equipment may mean that your power bills remain fairly steady but it also means that you are saving the purchase price and avoiding the embedded environmental harm caused by the creation and delivery

of the new devices. You are also avoiding the potential end-of-life environmental harm of the retired equipment. The trick is to retire machines when they have reached the end of their useful working life, not according to some rigid time-based schedule. When it comes to buying new equipment, be careful not to over-specify and make sure that it is manufactured with environmental considerations in mind – an in-use eco-mode, perhaps, and a take-back and re-use/recycling promise from the maker. Tuck an environmental clause into your RFPs and base your requirements on needs rather than desires.

Another major win can come from reducing commutes although, in many cases, this is ‘grey’ transport – staff using their own cars for work purposes. However, the savings for the company come from a reduced need for office space and the associated expenses, such as heating, lighting and power. A work place can be saved for each person that works more than three days a week from home or on the road. In general, they will work slightly more than their normal office hours but less than their total work time plus commute time. It can be a win all round, depending on their personal circumstances (whether their home would be heated anyway, for example). For many organisations it can increase staff loyalty because of the more agreeable work/life balance. Your central computer system would need to support secure remote working. If it doesn’t then this suggestion belongs in the ‘Longer term strategies’ section below.

A final ‘quick win’ suggestion is that of an online conferencing service, typified by Cisco’s Webex and Citrix Online’s GoToMeeting. These combine voice conferencing with screen sharing, which is often quite enough for effective collaboration, eliminating the need to travel for presentations, support visits and so on. Many versions exist, ranging from free-of-charge upwards. They require no in-house support other than permission for the software to be used and the service to be accessed.

### **Longer term strategies**

While longer term strategies usually involve some up-front investment, the eventual paybacks can be more substantial. For example, some larger organisations have implemented life-like ‘telepresence’ video conferencing systems in which participants feel they are sitting around the same boardroom



table, even though they can be continents apart in reality. The payback can come in months, depending on how many international flights and associated accommodation expenses are saved. Expect hotels and business centres to start offering such facilities soon. One thing companies have noticed if they implement such systems, or their poorer cousins mentioned earlier, is that the number of ad hoc remote meetings increases, accelerating and improving the quality of project work between remote participants.

#### CASE STUDY – SWANKE HAYDEN CONNELL ARCHITECTS

Swanke Hayden Connell Architects (SHCA) is a global architectural practice with offices in London, New York, Paris, Moscow, Istanbul, Sheffield, Miami and Washington DC. It employs around 350 people. Many employees are involved in projects which span several countries and require input from multiple offices.

“Many of our principals spent a considerable amount of time travelling,” says Bob Fry, MD for Europe at SHCA. “This has a big impact, particularly on people with families. So we wanted to improve employees’ work-life balance and put less pressure on their personal lives.” As a result of implementing a Tandberg videoconferencing system with document cameras, business travel has halved, delivering a substantial and sustainable reduction of the company’s carbon footprint into the bargain. Staff now routinely collaborate on projects across geographic boundaries. Productivity has improved and cost savings in the first year were estimated at £25,000.

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The installation of metering equipment is not massively expensive and it brings the ability to measure and control energy usage. Or, indeed, gas and water usage too. Some companies use monitoring equipment to keep an eye on remote resources such as tanks, reservoirs, tunnels and so on, in order to minimise service visits; another way to reduce costs and environmental impacts.

If your IT department has server racks, then you can find ways of reducing power consumption, both for the racks and for the cooling needed for them, by ‘virtualising’ the servers that inhabit them. Depending on the scale of your operation and your local climate, you may be able to make use of ‘free cooling’ in the colder months by mixing outside air with the intake for your air-conditioning. Conversely you may be able to put the waste heat from the computer room to good use elsewhere.

If you are managing networked devices, then modern PCs and printers can often be managed from the centre, allowing you to power up and down according to local needs and, in the case of printers in a multi-site business, collect your paper printouts from the nearest location. A more expensive step for IT is to introduce 'thin client' computing which reduces power needs, heat emissions and desktop expense, and facilitates software upgrades. And then, of course, you have the various flavours of cloud computing which essentially export part of your infrastructure elsewhere.

It is worth extending or upgrading purchasing systems to include information about suppliers and their products. But, before you can reasonably put pressure on suppliers, you will need to get your own environmental house in order. This will make you more attractive to customers and will also prepare you for likely future legislation. The good thing about many environmental measures is that they strip cost from the supply chain. Packaging is a good example. After years of over-packaging, we seem to be returning to a simpler age in which more use is made of recyclable board, and thick manuals are being replaced with thin ones plus online versions if you need more depth. On the administration side, we can

#### CASE STUDY – LINCOLN COLLEGE

Lincoln College has used document imaging technology to streamline its purchase-to-pay processes. Invoice approval time has been cut by four days, document storage space has been liberated and document archiving costs eliminated. As with many digital systems, it also supports the College's environmental agenda. The DbArchive system, from Version One, can be accessed by up to 70 authorised Lincoln College staff across multiple sites directly from its Symmetry Financial system.

Purchase invoices are scanned in, imaged and then automatically linked to the appropriate record in Symmetry. Authorised staff can view invoices on their PC screens instead of wasting time locating physical documents. Symmetry's workflow automatically notifies approvers by email, allowing them to approve, reject or query invoices on-screen. The avoidance of printing and photocopying has, according to finance manager, Paul Allison, "dramatically reduced our environmental impact."

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eliminate masses of unnecessary paper (and ink/toner) if we were to conduct our transactions electronically.

### **Carbon offsets**

One last thought: carbon offsets. Organisations which strive for carbon neutrality will do everything possible to reduce their greenhouse gas emissions and gain credits from using renewable energy, recycling etc. In the end, though, it is a rare company that is completely carbon neutral. This is where the purchase of carbon offsets comes in. It is not a 'get out of jail free' card, to avoid the necessity of taking action. It's there to counter what emissions you have left after taking all reasonable measures.

## 4

## THE NEED FOR PROCESS AND BEHAVIOURAL CHANGE

A genuine commitment to sustainability is hard to achieve unless it is supported at board level. The directors need to commit and to understand what they're committing to, and declare an appropriate policy. This is effectively raising a flag in support of sustainability throughout the organisation. They need to make at least one senior (and respected) person a sustainability 'champion', someone to go to with questions and to provide encouragement. Ideally, the word needs to spread to every nook and cranny of the organisation. And, more importantly, the individuals in the organisation need to understand the benefits and adopt the necessary behaviours. Depending on company size, you may nominate further champions by department, community of practice, or sphere of influence. They will, of course, need to be enthusiastic about the subject and effective as communicators.

Just as the quality movement was used to ingrain attention to quality at every step of every process, so sustainability needs to become part of the thinking of every employee. "Do these lights need to be on?", "Do I really need this new computer?", "Could this product be packaged differently?", "Do we really need to ship thick manuals with every product?", and so on. Everyone, at every point in the organisation can contribute to the sustainability effort. If sustainability becomes a natural part of the thinking process, then this will affect behaviour which will lead to results. And, as with most aspects of business, the outcomes are the things that matter.

Most companies that have embarked on a sustainability programme have found that many of the best ideas come from the staff themselves. They are at the coalface and they can see where energy and materials can be saved. It is vital that they have a way of airing and discussing their suggestions and any implications, plus a means for the most effective measures to be adopted. The traditional suggestion box is one way, but it is not very open. More effective methods up to and including social media, such as blogs and wikis, can provide a useful nucleus around which anyone, from the board to the shop floor, can gather to discuss the suggestions. Access did it by setting up a staff-driven green focus group. Good ideas that cost nothing were implemented. Those that required funding were escalated for approval.

Plenty of advice is available to help you shape your thoughts. The 'Sustainability at Work' website is a very good starting point, it gathers together some of the

best advice around and contains plenty of pointers to further resources. The Carbon Trust is another popular destination; apart from a wealth of advice, it also provides a variety of poster designs, clip-art images and checklists to help you drive your sustainability initiatives. One of its posters says, “Lighting an office overnight wastes enough energy to heat water for 1000 cups of tea.”

So, at one level you need to infuse the organisation with a desire to help, probably through initial training followed by other regular, but relevant, communications, including recognition for successful initiatives. But, at another level, you need to make sure that the areas that have the potential to deliver major results get special attention. This means embedding sustainability objectives into the job descriptions and appraisal mechanisms of those responsible.

You can do physical things too, which act as silent reminders of the new sustainability culture. Getting staff agreement to replacing their desktide waste bins with strategically placed recycling bins, for example, acts as a persistent memory jogger. Or replacing desktop printers with the occasional shared printer. If people have to walk across the office they’ll maybe think twice about the need to print.

These actions, and many more, may only require a commitment of time. Some will involve an initial expenditure as well. What you choose to do and how you choose to do it will depend partly on the existing company culture. If it has a sharing culture, then all manner of informal networks can be used very effectively to spread the word. If it is a more ‘top down’ organisation, then staff will need to be strongly encouraged from above. The last thing you want to do, though, is to embark on a culture change programme in order to introduce sustainability. However, what you may find is that the culture might start to change as a consequence of cross-functional teams consulting with each other on environmental matters.

If you’re stuck for where to start and you do not want to spend a lot of money, you might find Business in the Community a useful source of guidance.

<http://www.carbontrust.co.uk/>

<http://www.sustainabilityatwork.org.uk>

<http://www.bitc.org.uk/>

## 5

## TOP TEN TIPS

We thought it would be helpful to pluck out the ten most important steps you can take with respect to improving your resource efficiency. Although this guide has focused on green IT, it is easy to see that some of the steps below can be applied beyond the IT remit.

- Determine the company's environmental policy and tell everyone: unless commitment comes from the top, environmental measures are likely to be piecemeal and largely ineffective.
- Encourage enthusiastic (but realistic) staff to become local 'champions': this spreads the load and gives staff someone local to go to for advice or with suggestions.
- Start measuring, to make progress visible: once staff start to see the impact of their activities, they are likely to continue with them and, indeed, try to improve on performance.
- Start switching things off: this is a good habit to get into because it means unnecessary power consumption large and small just becomes part of business as usual.
- Avoid/optimize printing – go electronic where possible: printing uses up consumables – ink and paper – as well as energy. Print draft and double sided but, best of all, read and share on-screen.
- Replace commutes and other travel with online communications: use the phone, webcams, videoconferencing, and telepresence to avoid land and air travel wherever possible.
- Go public on your own environmental credentials and promises: many customers, suppliers, business partners and prospects will be attracted to working with you if you show commitment.
- Add sustainability questions into your RFPs: by doing this, you are extending your environmental credentials up the supply chain and encouraging your suppliers to do the same.

- Prolong the working life of everything – IT equipment, motor vehicles: with obvious caveats, extending the life of any equipment is the most environmentally friendly action you can take.
- Virtualise IT servers: it is possible to make a single server work three or four times harder by running multiple virtual servers inside the one machine. This saves space and energy.

You will, of course, need to blend the IT-related actions with your wider sustainability objectives and plans.

## APPENDIX



## SOURCES OF HELP

Once you get involved with sustainability-related issues, you will find that quite an industry has sprung up offering help. Some sources are a thin veneer on a selling organisation. Others are genuinely out to help you at a reasonable cost. We cannot guarantee the list below but, in various ways, they have all proved helpful during the preparation of this guide.

Access: <http://www.theaccessgroup.com/>

Act On CO2: <http://campaigns2.direct.gov.uk/actonco2/home.html>

AMEE: <http://www.amee.com/>

BASDA Green Charter: <http://www.basda.org/BASDA-Green-Charter-39099.htm>

ByeByeStandby: <http://www.byebyestandby.co.uk/>

Carbon Footprint: <http://www.carbonfootprint.co.uk/>

Carbon Trust: <http://www.carbontrust.co.uk/>

Climate Futures: the economic, political, social and psychological consequences of climate change: [http://www.forumforthefuture.org/files/Climate%20Futures\\_WEB.pdf](http://www.forumforthefuture.org/files/Climate%20Futures_WEB.pdf)

ComputerAid: <http://www.computeraid.org/>

Cradle to Cradle: remaking the way we make things by Michael Braungart and William McDonough: [http://www.mcdonough.com/cradle\\_to\\_cradle.htm](http://www.mcdonough.com/cradle_to_cradle.htm)

Energy Star – energy efficient products and practices: <http://www.energystar.gov/>

EPEAT – desktop computers, notebooks and monitors with environmental attributes: <http://www.epeat.net/>

Footprinter: <http://fp1.footprinter.com/>

GaBi Software: <http://www.gabi-software.com/>

Getting to Zero: defining corporate carbon neutrality: [http://www.forumforthefuture.org/files/Getting%20to%20Zero\\_UK%20version\\_June%202008.pdf](http://www.forumforthefuture.org/files/Getting%20to%20Zero_UK%20version_June%202008.pdf)



Microsoft Dynamics AX 2009 Environmental Sustainability Dashboard: <http://www.microsoft.com/dynamics/environment.msp>

PAS-2050 Guide: <http://www.bsigroup.com/en/Standards-and-Publications/Industry-Sectors/Energy/PAS-2050/>

SimaPro: <http://www.pre.nl/simapro/>

WWF: IT solutions that help business and the planet: [http://assets.panda.org/downloads/it\\_user\\_guide\\_a4.pdf](http://assets.panda.org/downloads/it_user_guide_a4.pdf)

## THE AUTHOR

David Tebbutt is Programme Director with Freeform Dynamics. In this role he oversees all of Freeform Dynamics' training, coaching and other personal development and consulting activities. In addition, he works as an industry analyst specialising in the human and environmental aspects of IT, with a particular interest in areas such as personal productivity, collaboration, social computing and sustainability.

David has extensive practical and management experience in end-user and vendor environments. In the first part of his career, he held positions as a programmer, analyst, project manager and IT manager within companies such as NCR, Givaudan and ICL. Through a later move into the media sector, David has helped in the launch of a number of magazines, and as an analyst today, continues to contribute columns, features and blogs to various IT and business publications.

In addition to his IT, media and analyst skills, David is a fully trained and experienced instructor, and has coached over 3,000 staff for blue chip IT companies during his career.

Freeform Dynamics is a research and analysis firm. It tracks and reports on the business impact of developments in the IT and communications sectors. As part of this, it uses an innovative research methodology to gather feedback directly from those involved in ITC strategy, planning, procurement and implementation. Its output is therefore grounded in real-world practicality for use by mainstream IT and business professionals.

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