

# **THE CHICAGO GREEN OFFICE COMPANY**

## **The Green Office Guide**

A guide to help you buy and use environmentally friendly office equipment

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## Introduction

Many people don't realize that operating office equipment can cost much more than the equipment costs them in the first place. For example, a photocopier that costs you \$4,000 to buy, that is left on continuously for seven years over its two million copies life may consume \$1,500 worth of electricity, \$24,000 of paper and \$15,000 of toner. The greenhouse gas emissions from supplying energy from power stations and manufacturing and disposing of the paper you use could exceed 80 tonnes of carbon dioxide, which is equivalent to more than the total greenhouse gas emissions of a typical American home over that seven year period.

Increasingly, leading edge organizations such as yours are considering operating costs as well as environmental impacts when they buy their office equipment. For example, they understand that if you buy an energy efficient photocopier designed to work well with recycled paper and refilled toner cartridges, copy double-sided whenever you can, set up an effective paper recycling system, and set the photocopier to power-save when you're not using it, over its seven year life you may:

- reduce the electricity you use up to 80%.
- Save up to 80% on your electricity bill.
- Halve your paper and toner invoices.
- Reduce greenhouse gas emissions from electricity, paper, and toner by 75%.
- Leave 50 trees in the ground which would otherwise have been chopped down to make paper.
- Involve your staff in doing something for the environment.
- Increase productivity through improved staff morale.
- Enhance your company's profits and image within the community.

Paper reduction and recycling programs can reduce the costs and environmental impacts of paper use by 75-90%. To achieve such spectacular savings, effective staff training and feedback on performance are essential.

## Why go green?

There are some very good reasons for making your office an energy-efficient, environmentally friendly place.

First, buying and using energy-efficient equipment saves you money. It can provide enormous savings in electricity use alone, saving you up to \$180 per 1,000 kilowatt-hours of energy and cutting up to 80% off your electricity bill. It can also cut 20-30% off your air conditioning bill because you are reducing the amount of heat that your equipment generates and that needs to be cooled.

Paper costs can be almost halved simply by printing double sided, and you can save \$100 on toner and \$30 on ink by refilling your printer and toner cartridges. You can also save on waste disposal costs because the amount of waste you generate is reduced.

Second, the environmental benefits of using energy-efficient equipment are tremendous. By reducing the electricity you use you are reducing air and water pollution from power stations and saving a tonne of greenhouse gas for each 1,000 kilowatt-hour of electricity you save.

Refilling, reusing and recycling the materials you use reduces the amount of waste and pollution you generate. In addition, making equipment from recycled metals, plastics and other materials saves at least two kilograms of greenhouse gas per kilogram of product.

Using recycled paper saves trees. Every 100 reams of recycled office paper that is printed double-sided saves two trees, more than a tonne of greenhouse gas and almost a cubic meter of landfill space compared to 100 reams of paper that is not recycled or printed double-sided.

Third, making your office a "green" one will involve your staff in doing something for the environment. Knowing that their actions can really make a difference will enhance a natural motivation to act in an environmentally responsible way. Since motivated staff are a productive staff, you can expect an increase in productivity. Since most office-based workplaces spend about 100 times as much on wages as they do on energy, small increases in staff productivity can have major impacts on profitability and your company's bottom line.

## Myths and Realities

People often use office equipment in what they believe is a cost-effective and environmentally friendly way when in fact what they are doing is exactly the opposite. Often they are acting on widely believed but wrong information, or they've had a bad experience with older models of equipment and don't realize that the problem doesn't apply to the newer models. Here are some of the more common polluting, dollar – and energy-wasting myths and the realities behind them.

**Myth:** When equipment is turned on, or powers up from sleep or suspend modes, there is often a current surge. The energy consumed during this current surge is so large that leaving your equipment in normal operating mode wastes less energy than turning it off or using power management features.

**Reality:** Startup current surges are very short duration and at most they consume a few seconds of average running time energy. Whenever your equipment is not being used for more than a few minutes it makes sense to turn it off or switch to a lower power setting.

**Myth:** Screen savers save energy.

**Reality:** Screen savers are energy wasters. Most computers use about twice as much energy lighting up the screen as they use for processing. Originally, screen savers were designed to stop screens being burnt by a constant image, but they aren't needed for modern screens. Not only can screen savers use as much energy as a full screen of work, but many require considerable processing energy as well. If you want to save energy you can set your screen saver to 'none' or 'blank screen'.

**Myth:** Turning off computers crashes the hard drive.

**Reality:** Switching off computers will have no effect on the useful lifetime of the hard drive. In the past, larger hard drives were degraded by mechanical stress. Today manufacturers specify a life of 40,000 power cycles for their hard drives. That is equivalent to 30 stop/start cycles for each working day over five years.

**Myth:** Turning off or power managing computers and printers causes network problems.

**Reality:** Major network software suppliers say that if networks have been properly set up there should be no problem with turning off or power managing computers and printers in the network. If you are installing or upgrading a network, you can save energy by making effective power management capacity a mandatory condition of the contract. While servers need to be left on, they don't need their screens on after hours to assist processing.

**Myth:** Printing double-sided and/or using recycled paper causes photocopiers and printers to jam and makes you use more paper.

**Reality:** Many of us have had these experiences, but they are quite avoidable in modern equipment. When buying new photocopiers and printers, ensure that manufacturers and suppliers are prepared to guarantee effective performance in these areas. Some copier manufacturers will specify the brands of recycled paper they approve.

**Myth:** Refilled toner or ink cartridges leak everywhere and make an incredible mess.

**Reality:** As with recycled paper, this problem is avoidable and manufacturers should be prepared to guarantee effective performance. The truth is, refilled cartridges are as effective as OEM cartridges at a fraction of the cost.

## ENERGY STAR office equipment

Manufacturers of office equipment are responding to consumer desire for more environmentally sound products. An important driving force behind this trend has been the ENERGY STAR program which was started by the United States EPA (Environmental Protection Agency) in 1992. Under the program, manufacturers can display the ENERGY STAR logo on their equipment if it meets established ever-tightening energy efficiency standards. The program started with standards for personal computers and monitors and has since expanded to cover photocopiers, printers, fax machines, scanners, and devices that can print, fax, and scan as well as photocopy, called "multifunction devices".

Most commonly, ENERGY STAR features on office equipment involve an ability to power down or sleep when they're not being used and wake up when they're needed. Many products actually exceed ENERGY STAR requirements, although there is a great variation in performance. Interestingly, this often has little to do with price.

As well as looking for the ENERGY STAR logo, it pays to ask questions about the actual power rating in different operating modes, and to shop around for the most efficient equipment. ENERGY STAR equipment still uses energy while in sleep mode. You can avoid this by turning off your equipment overnight and when you are away from your desk for long periods of time.

Operating your equipment so that it meets ENERGY STAR criteria will reduce your electricity consumption by half compared to equipment that is not power-managed. However, you can save a lot more energy by using more efficient equipment and power-managing it by switching it off when you're not using it.

## **Training Your Staff To Use Green Office Equipment**

If you introduce power management features into your office without telling your staff about it, you can cause concern that the equipment is not functioning correctly. On the other hand, you can enhance staff morale and performance by choosing your equipment well and following its installation with training. It is desirable to train staff in its capabilities and explain how they can help protect the environment. It is equally important to train new staff in the environmental systems you introduce. Require suppliers to demonstrate pre-set power management features after installation in your office. Get them to provide training for all staff in how to operate the pre-set features and program more efficient settings to suit individual and group preferences. Remember it is important to give staff feedback on their progress and achievements.

## General Principles for Buying Green Office Equipment

The following are some general principles for buying environmentally friendly office equipment which will ensure that you achieve the full economic and environmental benefits.

### ENERGY EFFICIENCY

Ensure that all equipment conforms at least to ENERGY STAR requirements. Specifying the requirement of ENERGY STAR compliant and enabled office equipment in purchasing policies and procurement contracts ensures that your supplier delivers all products with the ENERGY STAR low-power feature enabled and tested.

Check power ratings in operating, low power, sleep and off modes so that you can select the most energy efficient, value-for-money model that meets all your operating requirements.

Bear in mind that some equipment can still consume energy after the on/off button has been switched off and the power point is still switched on.

Obtain data on the time the equipment takes to return to operation when it is switched on or woken up so that you can select equipment that works quickly. There is no correlation between energy use in sleep mode and speed of wake-up.

Look for the lowest possible time options to move to low power, sleep and off modes. This will save you both energy and money.

### PAPER AND OTHER CONSUMABLES

Producing and transporting a sheet of paper to your office usually takes more energy than your printer, fax, or photocopier uses to place images on it. The embodied energy of paper is therefore a significant issue, and becomes more so with energy-efficient equipment.

Manufacturing recycled paper can use up to 90% less water and 50% less energy than making it from trees. For Office Equipment that uses paper, specify:

- capacity to operate effectively using recycled paper.
- Capacity for double-sided printing.
- Plain paper instead of thermal paper for fax machine.
- A capacity for photocopiers to scan paper printed on both sides.
- Long-life printing drums and toner cartridges, which are generally cheaper overall, and less environmentally damaging than shorter-lived alternatives.
- A guarantee that the use of remanufactured or refilled toner or ink cartridges will not void warranties or decrease reliability.

Bear in mind that the cost of buying imaging consumables can be much more than the cost of buying the paper-imaging equipment. For example, a very popular brand of color inkjet printer with two bonus ink cartridges can be bought for \$250, while replacement cartridges cost \$50-60 each. Think of longevity, reusability, and refillability of imaging components when buying equipment.