

An Energy Smart Office

ENERGY STAR® and Office Equipment

If you are interested in saving money and helping the environment, you can take a giant step in the right direction by selecting ENERGY STAR qualified products when buying new office equipment. ENERGY STAR is the symbol for energy efficiency. To qualify, products must meet strict technical specifications designed to ensure that they are among the most energy-efficient on the market.



This familiar symbol appears on a wide range of products sold in Canada.

The power of the ENERGY STAR symbol is its simplicity – the technical evaluation to determine which products are the most energy-efficient has been done for you. If you buy ENERGY STAR labelled equipment, you can rest assured you're getting a product that is at the top of its class in terms of energy performance. And the less energy a product consumes, the fewer emissions are produced.

Computers, printers, photocopiers, fax machines and scanners have become essential equipment in the modern office. They are tools we rely on each day to do our jobs effectively and efficiently, and it is difficult to imagine life without them. But there is a price to be paid for the convenience offered by current office technology, and it's a price that goes well beyond the purchase cost.

Computers and other types of office equipment represent the fastest-growing use of electricity in commercial buildings and homes in the United States today,¹ and there is no reason to believe that the situation is any different in Canada. Two decades ago, office equipment accounted for only about one percent of the total energy consumed in a typical office. Today, thanks to the automation of many office tasks, it accounts for as much as 20 percent of office energy consumption (the rest is attributed to lighting, heating/cooling and miscellaneous energy uses).

With the cost of electricity on the rise across Canada, this explosion in energy consumption by office equipment is no small matter. But it's often a difficult one to pin down. Although office managers are generally aware of the purchase price of different types of equipment, ongoing energy costs – the so-called "second price tag" – often remain hidden because they are rolled into one large utility bill at the end of the month. The fact is that, depending on the type and model of equipment you purchase, over time your electricity expenses may exceed the machine's original purchase price.

The good news is that the situation is far from hopeless – in fact, it's well within your control. By understanding how office equipment affects your utility costs and what you can do about it, you can start to plan today for an energy smart, environmentally responsible office that will be just as efficient and productive as it is today – maybe even more so!

¹ Suozzo, Margaret. "Energy-Efficient Office Equipment." American Council for an Energy-Efficient Economy web site, www.aceee.org/press/op-ed4.htm.

How office equipment increases your utility costs

Each machine in your office increases your electricity bill in three ways:

- Uses electricity while operating and even when sitting idle. Although things are changing for the better, many office machines are not built with energy efficiency in mind, which means they generally use more energy than is required to complete a task.
- Adds to the total electricity demand in the office during peak daytime hours, when utilities charge a premium for higher demand.
- Generate heat, which causes indoor temperatures to rise and increases the demand for air conditioning in the summer months. By some estimates, energy consumption by cooling systems may increase by as much as 40 percent to counteract the heat generated by office equipment.

There are other costs associated with operating office equipment:

- In older buildings, increases in power density (watts per square metre) caused by an abundance of office machines can lead to very expensive upgrades of electrical systems.
- In new buildings, electrical systems are being installed with higher load capacities, at a higher cost.
- Taxes and electricity rates may rise if demand reaches the point where new electricity-generating and distribution facilities are needed.

The cost of consumables (e.g., paper and toner for copiers and printers) will increase proportionately the more the equipment is used.

Usage habits also affect energy consumption

How a piece of equipment is designed and manufactured has a big impact on its overall energy consumption, but usage habits can be even more important.

The easiest way to save energy and money is to simply turn off equipment when it is not in use, either manually or by using a power management product. For example, intelligent switching devices can be used to turn off computers when an overnight processing job is completed. Similarly, call-activated devices can switch on the system in response to an incoming fax/modem call, and switch it off when the call is completed. The latter device can also be used for a stand-alone fax machine or multi-function device. Certain external devices can shut off a computer, monitor, printer and other equipment after a user-specified period of inactivity, and automatically reactivate the machine with any new activity. Keep in mind that installing power management products for your office machines can do more than save energy, it can extend their operating life.

Another key to an energy smart office is to manage information, rather than paper. Communicating electronically is fast, efficient and uses far less energy than producing text or images on paper (some printing technologies are among the most energy-intensive processes in the office). Storing information electronically, rather than on paper, can also save vast amounts of money

and space. In short, reducing your office's use of paper will lower your energy, operating and capital costs and increase your competitiveness, productivity and profitability.

This may require some "cultural change" within your organization. Even though e-mail, modems and electronic data storage devices (high-capacity hard drives, diskettes, CD-ROMs and tape backup/restore systems) have been around for years, many people still print documents as a matter of habit. In most cases, this is simply a waste of paper, energy, money and time. Although paper can be a valuable communications tool for many applications, it is often an overused one.

Addressing the "human factor" can be difficult – old habits are hard to break. Nevertheless, it is a good idea to implement some basic policies to minimize energy consumption in the office. Whatever steps you take, explain to staff what is being proposed, why and, most importantly, show leadership by example.

Office equipment and the environment

Although much of Canada's electricity is generated from hydro-electric and nuclear sources, significant amounts are also produced by generating stations powered by fossil fuels such as coal, natural gas and oil. The combustion of these fuels generates greenhouse gases (primarily carbon dioxide), which are accumulating in the earth's atmospheres and causing temperatures to rise around the world. This global warming effect is causing changes in our climate that, if left unchecked, could have significant repercussions for Canada's economy and environment.

Climate change is a serious global issue and Canada needs to be part of the solution. The production of greenhouse gases and pollutants that cause urban smog can be minimized by reducing our use of electricity and other forms of energy, not only in the office but in factories and institutions, at home and on the road. As well, by controlling demand for electricity, we can help avoid the environmental damage caused during construction of new generating facilities.

There are other clear linkages between office equipment and the environment. The production of paper (both virgin and recycled) has a direct impact on the environment, both in terms of the energy expended in the production process and in the loss of trees, which provide the fibre needed to make paper. Trees also help address the greenhouse gas problem by absorbing and storing carbon dioxide. When trees are harvested, the carbon dioxide is released back into the atmosphere.

As well, despite the success of recycling efforts across Canada, a great deal of used paper continues to go to landfill sites. And unless you have a recycling program in place, chances are that all of your discarded computers, monitors, printers and other equipment also end up in a landfill at the end of their useful lives. Attention to detail can help you purchase long-lasting, energy-efficient equipment and recyclable office products.