

Saving energy in business: equipment and appliances



Most New Zealand businesses now rely on IT – and it's still the fastest growing area of business energy use. Computers (including servers and data centres) account for about 15% of the energy used in office buildings. But typically nearly half of the energy used by a computer is simply wasted as heat.

There are many simple free and low-cost ways to cut the amount of energy used by workplace equipment and appliances – bringing instant cost savings for your business.



Staff make the difference

Half of all energy used in offices is under the direct control of staff, so changing workplace habits is one of the most powerful ways to cut energy use. Make staff aware of the best ways to power down – such as switching monitors off altogether when leaving their desks for a while, or unplugging equipment over holidays.

It's a good idea to remind staff regularly and reward the team for what they achieve. Make specific people responsible for switching off shared equipment such as photocopiers, printers and kitchen appliances.

Cut unnecessary printing

Many office printers have piles of un-needed printing sitting around them. This can be reduced by choosing efficient printers with settings that require staff to physically go to the printer to release their print jobs – so only the print-outs that are really needed, are completed. Make it a company policy to print in double-sided or booklet format.

Switch off

Switching off a computer and monitor at the end of the day can save up to \$120 over the course of a year – which equates to \$2,400 for a business with 20 computers. A photocopier switched off every night will typically save \$100 a year. On top of these direct savings, the air conditioning won't have to work as hard to remove the heat generated by equipment left on – which adds another 15% cost savings. Programmable time switches can be used to turn equipment off automatically.

Position to cut the energy load

Servers are typically more efficient than desktop computers, but still waste up to 40% of the energy they use. This all puts extra load on the air conditioning which has to work harder to cool the work environment. Although it isn't usually possible to turn servers off, there may be energy-efficient ways to provide cooling, such as putting servers on the coolest side of the building and providing natural ventilation.

This is also a good idea for shared imaging equipment like printers, faxes and photocopiers. If they can be sited in a separate, ventilated room away from work areas it reduces the need for air conditioning.

Fact

It's estimated that there are more than a billion computers in use around the world. New Zealand already has more computers than people – and it's predicted that by 2020 we'll have close to 11 million computers.

Efficient computing

Monitors

Up to two thirds of a computer's energy can go to power the monitor – and screen savers don't save energy at all. It's best to simply turn the monitor off when away from the desk. Even if a computer must be left on to finish a task, the monitor can be turned off without affecting any applications running.

The older cathode ray tube (CRT) monitors are increasingly being replaced by flat screen (LCD) monitors which typically use about one third less energy. A PC with an old CRT monitor is surprisingly inefficient – it uses more energy per year than a clothes drier, dishwasher or washing machine.

Use laptops

Laptops are 50 to 80% more efficient than a conventional PC and monitor, and they can easily be converted to desktop use with a docking station. When used away from mains power and / or a docking station, a laptop's battery life will be extended if power management features are enabled.



Buy the right equipment

ENERGY STAR® is the global mark of energy efficiency, awarded to the top 25% most energy efficient appliances, home electronics and office equipment. There is no extra cost involved, and the added efficiency will save your business money from day one.

A new ENERGY STAR desktop computer uses about one third less energy than a standard new computer. ENERGY STAR computers have an efficient power supply, operate efficiently in multiple modes (off, sleep and idle) and have power management features including user education on how to use them.

ENERGY STAR monitors and displays use 25 – 60% less electricity than standard models.

Office copiers, printers, scanners and fax machines can be very energy-intensive because they're often left on for long periods. ENERGY STAR imaging equipment performs as well as conventional equipment but is more efficient, so saves money over the life of the product. A multi-function device (MFD or 'all-in-one') will use 50% of the energy of a separate printer, scanner, copier and fax.

A list of ENERGY STAR business equipment and suppliers can be found at www.eeca.govt.nz/suppliers-and-partners/energy-star-partners/energy-star-product-categories

Case study

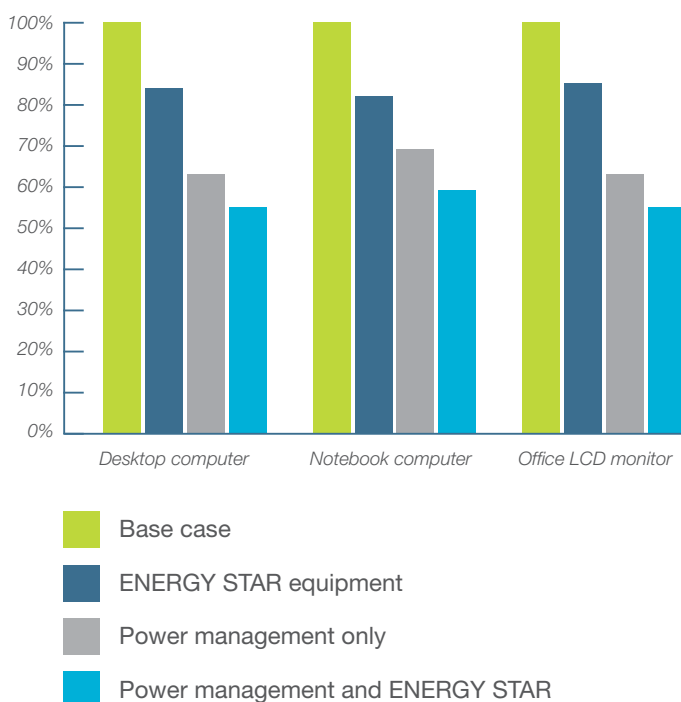
One company with 10,000 PCs costed the benefits of tackling its equipment energy use. With an annual energy spend of \$6 million, they estimated they could save 20% of their power – 8.5 gigawatt hours per year, worth \$1.2 million – by enabling power management features on all computers and getting staff to switch off equipment and computers at night.

Enable power management

Even without replacing all your computers and printers in one hit, there are ways to make existing equipment run as efficiently as ENERGY STAR products. Enabling 'power management' features will set the machine to revert to sleep mode when not used for a period, saving energy automatically. This cuts the electricity use of an average computer by around 50%.

However, this won't happen by itself - most machines need the power management features to be specifically enabled. You can either ask the equipment supplier how to do this, or download the right software for your office equipment. You can find power management tools at www.climatesaverscomputing.org/tools/applications. There may be issues to consider with IT security or network settings, so talk to your IT supplier or consultant first.

Office equipment - energy use



From the good ideas file

Do an after-hours walk around and leave a chocolate fish on the keyboard of every employee who's remembered to turn off their monitor. Send an email around letting the team know the success rate. If you have multiple sites, compare how each performed to create some healthy competition.

Cut out phantom power

Whenever they're plugged in – even while switched off – computers and other equipment use a small amount of energy (called 'phantom' power). So switching equipment off at the wall, or unplugging it, saves the most energy. Particularly before holidays it's a good idea to do an office walk-through and make sure everything is unplugged.



In the kitchen

The same energy-saving advice applies in the work kitchen or tea room as it does at home. When replacing kitchen white ware, look for the energy rating label that enables an easy comparison between different models' energy use. Again, the ENERGY STAR mark denotes the most efficient models available.

Ensure kitchen appliances are in good running order to remain energy efficient. The recommended fridge temperature for food safety is between 2°C and 4°C while freezers should be at -15°C to -18°C. Door seals should be working well, and the fridge and freezer should be regularly defrosted.

Make sure dishwashers run on the economy cycle and encourage staff to use them only when full. Vending machines and water coolers should be switched off overnight and at weekends and holidays. Over the long summer break it's a good idea to clean out, defrost and unplug fridges.

Action checklist: office equipment

	Make specific people responsible for switching off shared equipment such as printers, photocopiers and kitchen appliances
	Use posters and stickers around the office and pop-up reminders on monitors to remind staff to switch off at the end of the day
	Encourage staff to switch off monitors if they will be away from their desk for ten minutes or more
	Enable automatic power management on all business computers. Find out how, and download the tools to do it, at www.climatesaverscomputing.org/tools/applications/
	Encourage staff to unplug or switch off computers and other equipment at the wall over weekends and holidays. Plugging computers into a single power strip will make this easier
	Consider plug-in time switches if there are several pieces of equipment grouped together
	Make it a company policy to buy only ENERGY STAR equipment and appliances – this will ensure you get the most efficient models available
	When upgrading, consider switching to laptops with docking stations rather than conventional desktop computers
	If using desktop computers, opt for the most efficient flat screen (LCD) monitors
	Enable power management on imaging equipment such as printers and photocopiers
	Set fax machines to revert to standby mode after 15 minutes of idling
	Ensure equipment is regularly maintained to operate at maximum efficiency
	Encourage staff to print in booklet format or at least, double sided
	Use printer modes that eliminate unnecessary printing by requiring staff to go to the printer to complete the print job
	Try to place energy-intensive equipment like photocopiers and printers in a separate naturally ventilated room, on the coolest side of the building
	Avoid placing the fridge next to a heat source, or in direct sunlight. Leave space around the back for air to circulate
	Encourage staff to be energy-efficient in the kitchen - such as not leaving fridge doors open, not wasting hot water, and only using dishwashers when there is a full load

For more information

Browse the full list of ENERGY STAR business products at www.eeca.govt.nz/suppliers-and-partners/energy-star-partners/energy-star-product-categories

See www.climatesaverscomputing.org for more information on saving energy in the office.