

Low Cost Tips to Reduce Your Computing Footprint



technology
earthcare

There is much you can do to - at little or no cost - to minimise the environmental impact (and cost) of your computing activities.

Saving Power

Around half of the total cost of a PC is in the power it will use, and around half of that is wasted.

- 1 Enable power management. Choose a preset scheme, or choose settings that suit the way you work (e.g., if you often leave the PC for short periods, disable hibernation and set a short sleep time). Note that
 - Restarting after turning off the hard disks is almost instantaneous.
 - Restarting after going into sleep mode is quite quick, and sleep mode saves more than turning off the hard disks.
 - Restarting after hibernation is slower, but still much faster than restarting after turning off, and saves as much power.
- 2 If hibernation is not enabled on your PC, enable it.
- 3 If possible, set the On/Off switch function to hibernate, and use it if leaving your PC for an hour or more (despite the myth, turning your PC off and on does it no harm: the less a PC is on, the longer it will last, and the less power it will use).
- 4 Don't use a screen saver - LCD screens don't need one, and it saves no power. Select the option to "Turn off the display".
- 5 If you have a version of Windows prior to Vista, download Verdiem Edison software, which extends Windows power management. Edison is free.
- 6 Turn off your PC at night **at the wall** (it uses between 10 & 20W whilst "turned off"). Also turn off the monitor, speakers, routers, printers, etc. They all consume power even when idle.
- 7 Optimise the power savings settings on your printers, monitors, router etc (if they have adjustments, of course)
- 8 If you forget to turn off some or all of your PCs or other devices, invest in power timers.
- 9 If you need some devices warmed up and functioning before people are in to turn them on manually, automate the start-up.

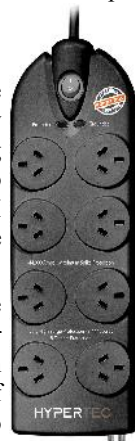


Other Power Matters

The most commonly replaced PC component is the power supply, the part most subject to mains supply problems. Surges and spikes (e.g., from lightning strikes) can pass through your power supply to damage other components: motherboards and RAM are common, but even Hard Disks (i.e., your files) are not unknown.

The best protection is a high quality surge & spike filter. These are not the modified double adaptors or power boards sold by many retail stores, but high performance electrical filters able to handle surges of over 5kV and 100MA. And when they have blown to protect your PC, they let you know you are no longer protected. Better still, they cost around \$40 - \$50 for 6- or 8-way devices.

The most commonly replaced laptop components are batteries. They should last for 2-3 years, but their life is shortened if not periodically discharged. So run your laptop on battery at least once



a month, and, whenever the system is run on battery, run it until the battery is fully discharged.

Printing

To minimise paper usage, minimise printing (use electronic documents such as PDFs instead). Set duplex printing as your printer's default; for large documents, you can also print multiple pages per sheet.

If you cannot print duplex, reuse the single-sided printed paper, even adding a recycled paper tray if your printer has the facility.

Of course, this begs the question: what sort of printer should I buy? Sadly, this has no simple answer.

Laser printers are more expensive to buy and use more power, but produce far less waste. Look for one where the drum is a separate, long-life unit, and not replaced with every toner refill.

Inkjet printers are cheap to buy and use little power; however, the ink cartridges can cost far more than the printer over its life. If you can, calculate the Total Cost of Ownership over five years - it can vary enormously.

Printer manufacturers cannot void the printer warranty simply because you use non-genuine cartridges. However, they **can** void the warranty if the damage is caused by the cartridge. Refilled cartridges range from very good to very poor, so buy from a supplier who guarantees the printer against any possibility of damage. And once the cartridge is empty, recycle it: either through the PlanetArk bin at the Post Office for remanufacturing into other plastic items, or back to your refilled cartridge supplier for reuse.

Consolidate devices

Rather than a separate printer, fax, photocopier and scanner, consider a "multi-function printer" that does all these jobs; the cost and resource use for one item is considerably less than all four.

However, if you intend to leave your fax machine on so that you receive faxes sent at night, compare the standby power consumption with that of a standalone fax.

It is also possible to buy communication hubs that combine the features of an ADSL and 3G modem, a router and switch, a WiFi access point, a VoIP adapter and DECT Phone hub, a USB printer and media and network storage server - all in one package and with just one power adapter, often including advanced power management features as well.

Optimise usage practices

Rarely does putting new software on an old PC make it faster - and if your PC was "low spec" to start with, an upgrade can make it appear much slower still - and hasten its replacement. So make sure that when you buy a PC, you consider what you will use it for, and buy accordingly - and then don't expect that it will perform more intensive applications well. If you're considering an upgrade make sure that you'll use the additional features - if not, say no.



Cleaning Your Computer

If your computer is on the floor (especially in a desk footwell), put it on the desk - fans inside computers make them excellent vacuum cleaners. Check the inside of your case every 12 months.

- 1 Remove the cover.
- 2 Check for dust, especially on circuit-boards, around fans, and heat sinks. If excessive:
 - a) Unplug your system from power and other connections.
 - b) Using clean, dry compressed air, blow the dust out of the computer.
 - c) Use a (very) slightly damp cloth and clean the dust on the bottom of the case; avoid any electrical contacts.



or otherwise surplus, consider sending it to a charity for refurbishment. If there is no option but to discard it, then don't send it to landfill, but to proper e-waste recovery.

And there's more

Of course, there's much more that you can do, but sadly, most of these things will cost money.

In replacing old computers, monitors, printers and other computer-related products, you can of course insist that what you buy is as efficient as possible. But how do you know?

One way is to check the product against the Green Certifications and Regulations on the inside front cover of this brochure. Not all of these are required in Australia, but as many of the component that can be purchased in Australia are also sold into the markets in which these regulations *do* apply, the products are available. Look for as many areas of compliance as possible.

However, it may be hard (e.g., at a department store) to find any information about Certifications and Regulatory compliance - it is not, yet, a major retail selling point. It will be just as hard, for most products, to find specifications about power consumption, waste generated, etc.

Without trying to turn this "how to" brochure into an advertisement, this is where companies like us come in - we've done the research, and we can give you the information you need. We also have access to products that are not available from normal retail outlets, and can design and build computers expressly for your requirements.

Recycling

Recycled paper is fine for most printers and print jobs, at a similar price to non-recycled paper of similar quality. After printing, recycle your paper, or shred it and add it to the compost bin.

And make sure that you buy ink and toner cartridges in recycled and recyclable packaging.

E-Waste

To minimise e-waste, maximise the life of your hardware. Look for ways to make productive use of old computers - although consider too the cost of the power. If the PC is functional but slow



Green IT Certifications and What They Mean

(And what we do about them.)

Note: These are the common Green IT Certifications and Regulations; it is not a complete list.

Climate Savers Computing Initiative

The Climate Savers Computing Initiative is a group of conservationists, businesses and consumers that promotes improvements to computer power efficiency and computer standby power. Their aim is to halve global computer emissions of CO₂. (We are a member.)

Energy Star

Energy Star is an international standard for power-efficient office equipment. It aims to cut energy use by enabling 'sleep' mode when devices are unused or reducing power in 'standby' mode. (Where available, we sell only Energy Star certified products).

80PLUS

Typical ATX power supplies are 65% efficient at moderate loads, and much less at low loads (e.g., standby). 80PLUS certifies power supply efficiency at 20%, 50% & 100% load; 80PLUS is 80%+, 80PLUS Bronze: 82%+, 80PLUS Silver: 85%+, 80PLUS Gold: 87%+ and 80PLUS Platinum: 90%+. (All ATX power supplies we sell are 80PLUS Bronze certified).



Energy-related Products and Energy-using Products

The ErP and EuP directives of the EU specify maximum power use when a device is "off". Version 1.0 requires <1W, Version 2.0 (mandatory from 2013, but available now) requires <0.5W. (Where available, we sell only ErP/EuP compliant products).

Reduction of Hazardous Substances

The RoHS directive of the EU aims to cut use of 6 unsafe materials: Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls, and Polybrominated diphenyl ether. (Where available, we sell only RoHS complaint products).

EPEAT

EPEAT is an electronics registry that independently verifies 23 mandatory criteria and 28 optional criteria relating to production, design, materials, energy use and recycling. (Where available, we sell only EPEAT certified products).

Waste Electrical and Electronic Equipment

The EU WEEE directive requires the maker of electrical goods to be responsible for their disposal. (No such system currently operates in Australia; however, where practical, we sell WEEE complaint products).

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