



ILLUSTRATION: Jacey

**SPECIAL
REPORT**

ELECTRIC SHOCK!

PC Pro starts its Switch IT Off campaign by showing you how to shave hundreds off your electricity bill

We can guess what you're thinking: 'Save hundreds of pounds per year? You're taking the proverbial.' But it's true. Follow the advice in this feature – and it really is ridiculously easy to follow – and you'll not only save money, but also help to ensure a greener planet.

Once you start adding up the figures, it quickly becomes clear how much money we all waste every day. Your inkjet printer, which spends 99 per cent of its time doing nothing, will cost you about £35 in electricity over its lifetime. As our tests show, a TV in standby mode demands up to 14W: that's £12 wasted per year if you leave it on standby overnight.

But the killer is the PC itself: if you leave it on overnight it will quickly consume 1kWh of energy, meaning you're needlessly spending more than £35 per year. And don't think that putting it into standby will help: we found one PC that consumed 78W in this mode, only reducing the wastage to about £25.

We haven't just grabbed these figures out of thin air. Over a 24-hour cycle, we've analysed the power consumption of a multitude of PCs, notebooks, printers and screens – both new and old. We've also turned our attention to the living room, to see how much TVs contribute to the annual electricity bill.

But the cost of IT is our main concern, and we've discovered that a typical home setup for a *PC Pro* reader (two PCs, one 19in CRT, one TFT and a shared inkjet) will cost nearly £250 per year alone. Even if you switch to standby, the cost is likely to be well over £100. If you don't believe us, try testing your systems yourself: you can tally

up how much electricity each portion of your PC uses by buying a £20 wattage and current meter from www.machine.mart.co.uk and plugging it into each plug socket.

Where things become truly frightening is in offices. It seems that in almost every office we visit the PCs are left on overnight, with printers, monitors and other peripherals going into standby mode at best: quite often, we see screensavers whirring away all night. Our conservative calculations suggest that a 50-person business could shave £5,000 off its annual electricity bill by implementing a switch-it-off policy.

Even this might not be enough to change your current power usage, but we all have a responsibility to use energy wisely. It's too easy to think that your one-minute effort won't make any difference, but if every *PC Pro* reader switched off their PC then we'd instantly cut power demands by 15MW: 50 per cent more than the capacity of a small-to-medium power station.

That's why we're beginning a nationwide campaign this month entitled 'Switch IT Off'. We're encouraging system integrators to offer the OneClick power strip with their PCs, and we've teamed up with Eizo and Fujitsu Siemens to provide even more of an incentive. Turn to p151 and you'll see that if you do your bit to save energy – and tell us about it – your name will be entered into our prize draw.

So read on to discover how much each aspect of your PC setup is costing you annually and, more important still, exactly how you can reclaim that lost money.

CONTRIBUTORS Nick Ross, David Fearon, Tim Danton, Paul Trotter

Desktop PCs

PCs are power guzzlers. But just one simple tweak could reduce standby power consumption by up to a factor of four

More speed means more power. Although things are gradually changing, the simple fact is that modern PCs – especially high-end rigs – routinely come fitted with 450W power supplies. This doesn't mean that they always consume 450W – the power rating is the maximum the supply is able to give if required – but you may have noticed processor manufacturers recommending a minimum 350W supply. It's unfortunate but true that, as far as PC power consumption is concerned, we've been going backwards, not forwards, over the last decade. Hard disks, graphics cards and, in particular, CPUs (*see Processor power consumption, opposite*) have all been steadily consuming more power. But if you pay a little more attention to the issue, you can reap definite financial rewards.

WHEN BEING GOOD ISN'T GOOD

The power consumed by a PC varies from minute to minute. There are simple factors such as whether the optical drive is spinning or has been powered down, but the main variation comes from the processor utilisation. This has serious implications. Over the past few years, for instance, the concept of Internet grid computing has become hugely popular. The first grid scheme to hit the headlines, back in 1999, was the SETI@home project, which processes and analyses the huge quantities of data collected by the SETI (search for extra-terrestrial intelligence) organisation. SETI@home and other worthy causes, including protein-folding calculations for cancer research, use 'spare' CPU cycles when the user's computer is idle and the screensaver is running (or optionally run all the time in the background).

Unfortunately, while looking for aliens and, in particular, cures for cancer are admirable pursuits, the idea of spare CPU cycles only applies in one sense. In terms of energy, they're not spare at all, since the amount of power required by a modern processor is proportional to how hard it's working. And we're not talking about a couple of watts here either. We tested a 3GHz Pentium 4 system and found that its power consumption while idle was around 110W. But then we started up

SETI@home and watched the consumption increase by an enormous 90W as the CPU, chipset and RAM subsystems swung into saturation from the intensity of the calculations.

So even if you leave your PC on and idle all the time – although that's bad enough in terms of energy conservation – it's even worse if you set it to churn through hefty calculations. This is coupled with the



A simple BIOS tweak dropped the power consumption on our Shuttle machine by 23W.

competitive aspect that has emerged in grid computing, with teams of users competing to 'win' and be at the top of the computing league table. So not only has it led to more energy being used in computers that would have been left on anyway, but more computers have been left on that would otherwise have been turned off in order to accumulate number-crunching points.

THE SECRETS OF STANDBY

So, when you're not using your PC during the day – if you're in a meeting, for instance – you should set it up to go into power-saving standby mode after a sensible time-out period of about 20 minutes. This is easy enough: just go into Control Panel and double-click Power Options to set it up.

However, it isn't quite as simple as that if you want maximum power savings. By default, many PC motherboards come configured in their most compatible state. In other words, the manufacturers – quite rightly – ship the board ready to work with older peripherals and operating systems. But this can have a devastating effect on power consumption.

Most motherboards these days can enter one of two power-saving states, defined by the ACPI (Advanced Configuration and Power Interface) specification. The first of these, called the S1 state, puts the computer into a 'hot standby'. To quote the ACPI specification, all the hardware 'maintains context'; in other words, it remains powered up. This is a 'safe' standby state, since legacy hardware that doesn't properly support ACPI should have no problems – it remains powered. The S3 state, however, is a deeper sleep state requiring more thorough hardware and software support. In S3, the PC's memory remains powered – so that you can restart exactly where you left off without having to reload Windows or any of the applications and documents you were working on – but almost the whole of the rest of the system is powered off.

This may not seem terribly important until you look at the figures. Since S1

State	Shuttle SFF (Athlon XP2100+)	High-end custom system (Pentium 4 3GHz)	Fujitsu Siemens E620
If left running SETI@home	£400	£876	£315
Normal use* then S1 standby	£142	£278	N/A
Normal use* then S3 standby	£94	£132	£90
Normal use* then switched off	£79	£115	£75
Potential saving over 5yrs	£320	£760	£315

*Assumes eight hours a day, five days a week and the rest of the time on standby/off.



Maximum 'Switch IT Off' saving — £760



Processor power consumption

maintains power to almost all the system and does little more than stop the processor, a PC standing by in this state can still consume a huge amount of power. One of the Pentium 4 systems we tested, which consumed around 110W in normal operation when idle, still consumed 78W in S1 standby mode. That's more than the power of a lightbulb for absolutely no useful purpose and would cost you £45 a year if you put the computer in standby rather than switching it off altogether.

The minimum sleep state the PC is allowed to enter is set via the BIOS. There's nothing complicated about it. With almost every motherboard it's simply a question of popping into the setup interface by pressing the Delete key when the system is starting up, then navigating to the Power Management Setup menu and changing the ACPI Suspend Type option from S1 to S3.

That one simple tweak in the BIOS allowed our test Pentium 4 PC to enter the S3 standby mode and made a huge difference. The 78W power consumption dropped to just 8.5W – almost a 90 per cent decrease. Your £45 now becomes about £7.50, a far more attractive figure. Trying the same trick on the Shuttle small-form-factor PCs in the *PC Pro* office led to a drop in power consumption in standby from 30W to 7W. In

Over the past decade, as CPUs have increased in speed, power consumption has increased too. This has happened for three main reasons: the huge increase in the number of transistors on a chip (each one consumes power, so the more of them you have the more power you need); the increased frequency (most of the power consumed by CMOS transistors is consumed when they're switching – the more they switch the greater the average power consumption); and leakage current due to transistors becoming so small (meaning they're never fully switched off and remain in a limbo, partially switched state consuming power).

In 1995, a 486DX2-66 processor – a high-end part at the time – required 6W; so little that it didn't even need a heatsink. A decade later and the current desktop processors from Intel and AMD can pump out over 100W and have been requiring ever larger and more elaborate cooling methods.



Cool'n'Quiet technology reduces clock speed when demand for computing power is low.

But sanity is prevailing. With the release of the Athlon 64, AMD initiated the Cool'n'Quiet system, enabling CPUs to reduce their voltage and clock speed when demand for computing power is low. And with the release of the new Model 660 Pentium 4, Intel has finally bowed to pressure too, with the range supporting SpeedStep, a similar system to Cool'n'Quiet that up until now has featured only in its mobile processors. Also, for perhaps the first time in its history, Intel has announced that a new processor will consume less power than its predecessor. The new dual-core Itanium high-end server processor

(codenamed Montecito) will consume 100W – 30W less than the part it replaces. Intel estimates that the power-saving measures incorporated into the new line of parts will save nearly

\$100,000 a year in energy costs for every 500 servers a company deploys. See p33 for more on the new Intel parts.

fact, every PC we tried it on gave at least a 70 per cent saving in power consumption just by taking this one simple measure.

AND IF I TURN IT OFF?

A little-known fact about modern PCs is that it's actually very difficult to turn them off completely. Select 'Turn Off Computer' from the Windows Shutdown screen, wait for it to do its stuff and you'd think that would be it. But no. Even when the computer appears to be off, it's still consuming power. The only way to stop this is to switch off the supply at the mains socket or, if your computer's power supply has one, flip the power switch on the power supply itself (where the mains is connected at the back). The main front-panel power switch on all modern PCs is in fact a 'soft' switch. The ATX power supply specification requires that all ATX supplies – as used in every modern PC – have a 5V standby supply that's never switched off as long as mains power is connected. Pressing the front-panel power button doesn't connect or disconnect the power, it simply tells the motherboard – which was never fully asleep – to signal the power supply to wake up and start

supplying mains power to the board. All this is because things like Wake-on-LAN require the system to be able to turn itself on and off. But the upshot is that modern boards consume anything up to around 7W when 'switched off', so a PC that's simply sitting there doing nothing could still cost you £6 a year if it's connected to the mains. So the message is clear: when you're not using the PC, it makes sense to first shut it down via Windows (to make sure your data and system settings are saved correctly) and then switch it off completely at the mains socket.

COMPONENT LIFE – IS IT AFFECTED?

A common notion propagated over the years is that switching your system off can reduce its life, due to the stress caused by the power-cycling process. However, there's very little evidence for this. Hard disks, for instance, are usually rated for around 10,000 spin up/spin down cycles. And the reduced overall wear on bearings of both the hard disk and system fans will, if anything, increase their lifespan.

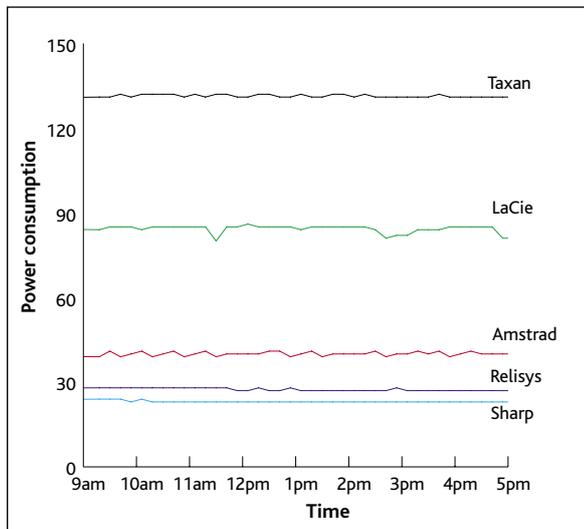
THE WORLD'S BEST FIREWALL

There's another benefit to switching off your PC when it isn't in use. The longer it's switched on, the more chance there is of a hacker compromising the system. In fact, switching a PC off is the only 100 per cent infallible way of protecting it against remote intruders.

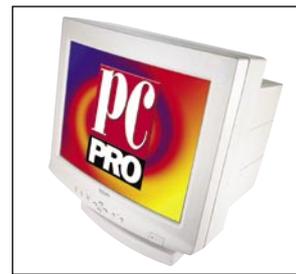


Setting the power standby mode is quick and easy, and could save you money.

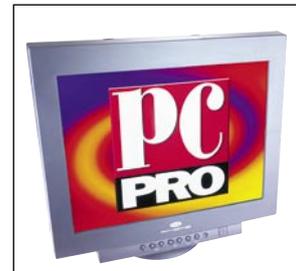
Monitors



Anyone with an older CRT would be wise to take note: the power consumption on the Taxan monitor we tested was around 130W, and in standby it dropped to 4W. We got similar results from other older CRTs. Contrast that with LaCie's newer CRT, which consumed 85W in operation and 1W in standby, and it shows attention to power consumption can save you money. TFT monitors are far less power hungry, both when they're turned on and when in standby. The Relisys draws practically no power when in standby mode, and only 28W when in use. The money you save in power could even pay for the monitor over five years.



Taxan Ergovision 2160.



LaCie electron22blueIV.



Relisys TL795-RU.

PAY AND DISPLAY

Computer monitors (especially old ones) have historically been very power hungry and a major cause of environmental damage.

The early CRT-based monitors were much smaller than today's displays and drew relatively little power. But their overall power efficiency was alarmingly poor and they were constructed from cheap and highly toxic materials that would typically end up in landfills by the skip load.

We dug out one such CRT, a 14in Amstrad model. It only uses 40W of electricity when operating – around half that of many of today's CRTs. However, it didn't have a standby mode as such, so when the computer shut down it would continue sucking 20W of power – four or five times more than newer monitors.

Fortunately, monitors like this are no longer the norm, and many environmentally friendly standards have come into place since the early 1990s. The most notable of these are Energy Star and TCO. Energy Star is a US government-backed initiative that started in 1992 as a voluntary scheme promoting energy-efficient products to reduce greenhouse gas emissions. Typically, the standard requires a device to have a power-saving mode that reduces working power consumption by at least 60 per cent.

The Swedish TCO standards, which also limit the use of toxic materials and heavy metals, among other things, are updated every few years and put an increasing focus on power efficiency with every revision.

We doubt any readers are still using a monitor from the era of our Amstrad model, but there will be many still using five-year-old-CRTs both at home and in the office. And there are several reasons for replacing these displays: most obvious is ridding your desk of the bulky CRT.

Considering that real-estate values can exceed £100 per square foot, a TFT replacement has a smaller footprint and represents a considerable saving. CRTs also generate a great deal more heat, putting pressure on air-conditioning units.

But just as important is the fact that CRTs usually draw 4-5W of electricity when in standby – and they typically won't be turned off overnight or at the weekend. This can add up, and if you have an office with lots of CRT monitors it can become costly.

LaCie takes credit this month for getting its A-Listed monitor (see p138) to draw only 1W in standby, but most people will simply choose to replace their CRT with a TFT. To find out how much can be saved, we tested the five monitors in the table below.

	Amstrad 14in	Taxan Ergovision	LaCie electron 22blueIV	Relisys TL795-RU	Sharp LL172G-B
Power cost over 5yrs	£110*	£150	£90	£30	£25
'Switch IT Off' saving	£65*	£12	£5	£0	£0



Maximum 'Switch IT Off' saving – £125**

* Amstrad is only included for a comparison with legacy technology. ** Based on upgrading a five-year old CRT monitor with a TFT monitor.

SAVE WITH AN UPGRADE

Electricity and CO₂ savings were calculated under the assumption that each monitor would be in use for eight hours a day and in standby mode for the rest of the time

If you still use a pre-1990s CRT, you can save yourself £65 over five years by simply turning it off. However, more CRT monitors will have a power consumption similar to our Taxan Ergovision 2160, and owners should realise that their monitor costs more than £150 in electricity over five years (equating to almost three-quarters of a ton of CO₂ emissions – see p150).

Conversely, the Relisys TL795-RU, which recently won a Best Value award (see issue 126, p138), draws negligible power when in standby mode and only 28W when in use. This gives a running cost of only £6 per year.

The five-year saving in electricity you could make by simply replacing your CRT with the TL795-RU (which costs £139 exc VAT from Savastore.com if you quote code 10280563) is almost enough to pay for the upgrade.

So not only do you get a more desirable monitor and a large part of your desk back, you can save money and save the environment over half a ton in CO₂ emissions over five years. If you run an office that uses multiple monitors, you'll save even more.



Printers

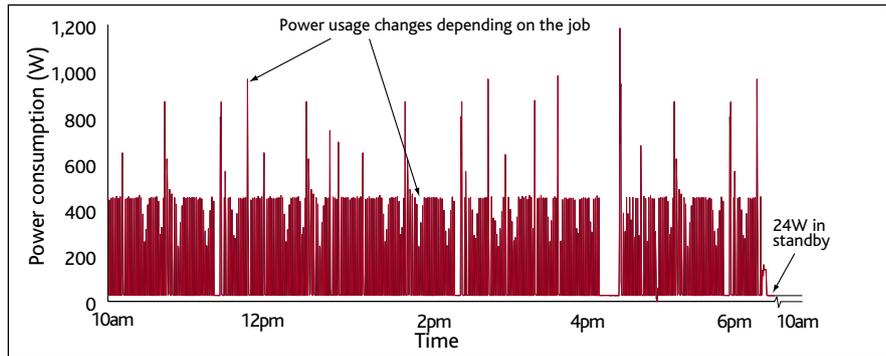


LASER PRINTERS

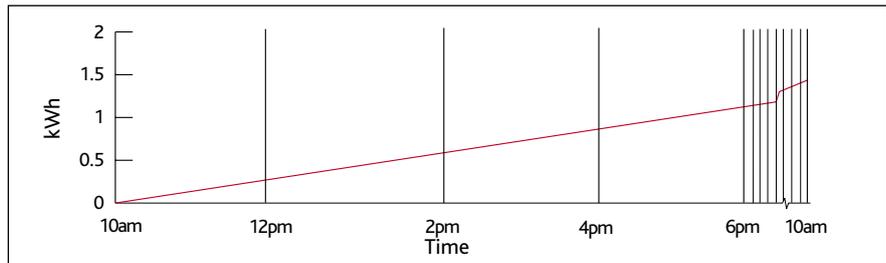
Every medium-to-large office will have at least one large laser printer, and typically it will be left switched on all the time. However, a large laser can draw quite a bit of power when in standby mode, and the cost of this adds up significantly.

To find exactly how much, we measured the electricity used during a day in the life of an HP LaserJet 8150. Individual wattage readings were logged every 20 seconds for 24 hours.

When it's printing, the LaserJet's power drain can be anything from 400W to



HP's LaserJet 8150 draws about 24W when idle and over 400W in use. Here we plot it over 24 hours.



From 10am to 6pm, power usage creeps up. However, considerable energy is wasted overnight.

1,200W, depending on the job. When it's idle, the printer draws a relatively low 24W. However, this soon adds up. Our tests showed that during an eight-hour working day, the printer uses about 1.1kWh of energy. When left on overnight, but printing absolutely nothing, it uses up another half

a kWh. If it was left on over the weekend, the power usage would be even more of an issue.

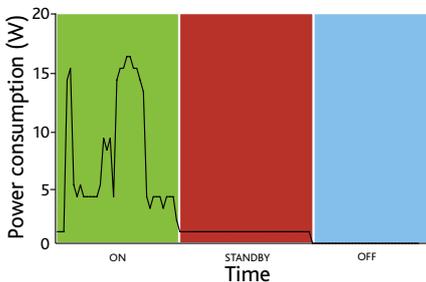
If you don't switch off the power switch, this idle time adds up to 140kWh, which costs about £15 over a year. While the price may be negligible to large companies, cumulatively it can add up for companies with a number of printers.

However, by far the biggest saving would be in the amount of CO₂ saved from entering the atmosphere through just a couple of seconds' effort. We calculated that switching off the LaserJet overnight could cut emissions by an astonishing 490kg over five years.

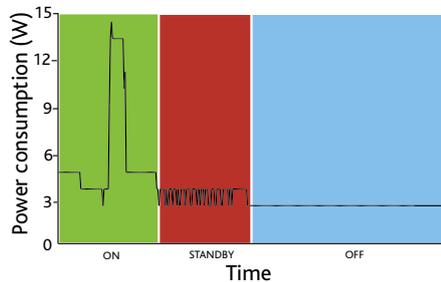


Epson's R800 can be unplugged when not in use.

HP's PhotoSmart 8150 must stay plugged in to keep its nozzles clear.



In standby mode, the Epson R800 draws 1W. Turn it off and it draws practically nothing.



The HP PhotoSmart 8150 draws around 5W in standby mode. Turn it 'off' and it still draws 3W.

INKJET PRINTERS

When testing the total cost of ownership of an inkjet, most people will think of the long-term cost of the consumables. But should people also consider the long-term power consumption when buying a new product?

We used Epson's Micro Piezo-based R800 and HP's PhotoSmart 8150, which uses thermal technology. The difference is that the R800 can be left unplugged, while the 8150 must be plugged in to protect the nozzles.

The R800 impressively drops power to just 1W when idling, so it costs under £1 a year to leave running all day long. However, it still pumps out 6kg of CO₂ emissions. Turning it off or using the OneClick power strip (see p151) will eliminate this.

The 8150 has two 'off' modes. When left idling, it draws 8W, which will cost £7 per year while emitting 49kg of CO₂.

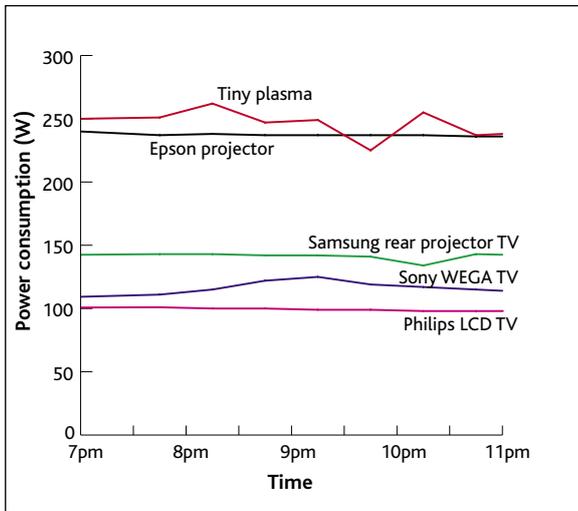
If you press 'power off', however, this drops to £3 and 23kg of CO₂ emissions per year (there's still some power drain when it's plugged in).

	HP LaserJet 8150	Epson R800	HP PhotoSmart 8150
Power cost over 5yrs	£225	£5	£35
'Switch IT Off' saving	£70	£2	£20



Maximum 'Switch IT Off' saving — £70

Consumer electronics



Power usage among these consumer electronics devices varies wildly. Epson's projector draws an average of 237W, but this drops to virtually zero in standby. Sony's WEGA TV and Philips's LCD TV also revert to practically zero power usage in standby, and they were also the two lowest-consuming devices when turned on. Samsung's rear-projection TV consumed 142W in operation, but watch out for the standby power usage, 3W: turning this off when you're not using it will save you money over time. You can also make savings on the plasma; it's power hungry when on, and also consumes 2W in standby.



Epson dreamio EMP-TW200H home-cinema projector. www.projectorpoint.co.uk



Philips 37PF9986 37in LCD TV. www.digital-point.co.uk



Samsung SP50L7HXX 50in rear-projection TV. www.johnlewis.com



Tiny PS-42D8 42in plasma screen. <http://homecinema.tiny.com>



Sony KD32-DX200 32in widescreen WEGA TV. www.johnlewis.com

AN OVERNIGHT SENSATION

While it isn't the norm for *PC Pro* to cover consumer electronics products, the 'Switch IT Off' campaign encouraged us to digress slightly: if ever there was a product people associate with high power costs it's the TV. You've probably heard the claim that it uses more power when left on standby overnight than it does during an entire evening's viewing. We decided to test this theory.

First, we measured the energy usage of several TVs that were made ten to 20 years ago. Power usage was similar for most of them: they drew just less than 100W when on and 14W in standby. The high standby power usage can add up significantly: the energy costs over five years are £51 if you leave it in standby for 20 hours per day and never turn off the TV at the mains socket.

More worrying is the fact that over this time you'll release almost one-and-a-half tons of CO₂. Simply turning off the TV properly will save the environment 316kg of CO₂ emissions. And while we've dispelled the myth that leaving a TV in standby overnight costs a fortune, you can still save a fair amount of money by switching it off.

ZERO OR HERO

With so many different technologies available for the home, we tested the latest crop of widescreen TVs to see how much power they use. We were prepared to

shudder, but were pleasantly surprised.

We were gratified to see that Sony's modern widescreen WEGA TV and Philips' LCD TV automatically revert to practically zero power usage when in standby mode. However, the upfront prices varied wildly. Despite its bulk, Sony's TV is the cheapest at £849, while Philips' 37in LCD TV costs a whopping £2,569. The best value goes to Tiny's 42in plasma. With plasmas now offering a 30,000-hour lifespan, it's reasonably priced at £999. However, the costs may follow later with high demands on electricity and, consequently, CO₂ emissions.

Epson's projector and Samsung's rear-projection TV are different. Both require high-powered bulbs and fans to operate, so they use a great deal more power. However, if you're using Epson's projector, you don't have to worry about turning it off at night, as it draws virtually no current. Samsung's TV draws 3W in standby, but this costs just £18 over a five-year period.

Using the Samsung or the Epson for four hours per day will cost about £200 and £300 respectively over five years. Add to this the costs of replacement bulbs, and the price creeps up.

We were impressed by the new generation of TVs. If you splash out on one, you can ease the blow by knowing you're doing the world a favour. If you're sticking with an older model, switch it off.

	Old TV	Epson projector	Tiny plasma screen	Samsung rear-projection TV	Sony WEGA TV	Philips LCD TV
Power cost over 5yrs	£121	£315	£90	£207	£153	£126
'Switch IT Off' saving	£51	£0	£9	£18	£0	£0



Maximum 'Switch IT Off' saving — £51



Save the planet

Switch your equipment off overnight and you won't just be helping yourself, you'll be helping the planet

A recent report in the *New Scientist** summarised some of the frightening statistics regarding the amount of pollution – and, in particular, the greenhouse gas carbon dioxide (CO₂) – the developed and developing worlds are producing.

Artificial human activity is resulting in an extra 7 billion tons of CO₂ being pumped into the air every year. This will continue to swirl around in the atmosphere for more than 100 years, and in doing so will trap more and more of the Sun's infrared energy, resulting in an increase in the Earth's average surface temperature: the greenhouse effect.

In the pre-industrial age, the natural level of CO₂ in the atmosphere was around 280ppm (parts per million). In 2004, that level had increased by over 35 per cent to 379ppm. Most current models that predict serious climate change are based on computational models presupposing a level of over 550ppm. If the current trend continues, this level will be reached in the second half of the century and surpassed soon after.

Most of the CO₂ being released into the atmosphere arises not from homes and businesses, but from industry. Industrial production processes are hugely energy-intensive and account for most of the world's energy consumption. But that doesn't mean non-industrial business and home users can shrug their shoulders and wait for a technological fix to the problem. The Department of Trade and Industry estimates that for every kilowatt-hour (kWh) of electricity consumed in this country, around 620g of CO₂ is released into the atmosphere as a direct result. How? From the fossil-fuel power stations – both coal- and gas-fired –

that provide power to the national grid (the 620g figure is calculated based on the average mix of electricity generation from fossil-fuel plants, nuclear generation and renewable sources). It might sound strange, but every time you plug a mains appliance into the wall you're directly responsible for increased environmental CO₂ emissions. If you switch it off, that emission rate is cut to zero. And if you pay attention to your usage habits and conserve energy where possible, you can drastically reduce the amount of atmospheric CO₂ you're responsible for generating.

THE MATHS

A kilowatt-hour – often referred to simply as a 'unit' of energy on your fuel bills – may not be a very intuitive notion, but it is, in fact, a very simple idea. Every electrical and electronic device in your home consumes power. Some devices consume a large amount of power but for short periods. A kettle typically consumes around 3kW for a few minutes at a time. A computer or a light bulb consumes less energy per second (energy consumed per second is the definition of power) but is switched on over longer periods, so it may consume more energy in total than your kettle.

The kilowatt-hour is a measure of the total energy consumed by an appliance: it's simply the number of kW it chews through, multiplied by the time it chews for. So a 3kW kettle that's used for six minutes a day uses a total of 3kW x 0.1hrs = 0.3kWh. A computer that consumes only 0.1kW (or 100W) but is left on for ten hours a day uses 0.1kW x 10hrs = 1kWh. Based on an average unit electricity price of 10p per kWh, that means our hypothetical computer costs 10p per day, whereas the kettle costs only 3p. And

remember that for each kilowatt-hour consumed, around 620g of CO₂ gets dumped into the atmosphere. According to our real-world testing, a Pentium 4 PC left on all the time crunching through SETI@home work units is directly responsible for placing almost a ton of greenhouse gas into the atmosphere every year.

BEYOND POWER

But that's not the half of it. The enormous complexity of a modern PC results in the use and disposal of untold quantities of potentially hazardous chemicals, vast amounts of water and various nasties such as toxic heavy metals (lead being the prime suspect). There are measures in place to curb this consumption and pollution, however. The European Parliament's WEEE (Waste Electrical and Electronic Equipment) directive, published in 2003, is the first step. It comes into force for EU member states on 13 August 2005 and aims to reduce the total volume of electrical waste, which in turn will reduce the amount of potentially hazardous materials entering the environment. In addition, the RoHS (the Restriction of Hazardous Substances in Electrical and Electronic Equipment) directive, which comes into force on 1 July 2006, aims to inhibit the use of exactly the kinds of bad chemicals that industrial electronics manufacturing can generate. The key point of both WEEE and RoHS is that it places the onus for environmental responsibility on the producers of the equipment: manufacturers must finance the collection, treatment and recycling of their products. We'll cover the difficulties of recycling and the problem with waste products in future issues of *PC Pro*.

*Source: *New Scientist*, 9 October 2004

Monitors

	Amstrad 14in	Taxan Ergovision	LaCie electron 22blueIV	Relisys TL795-RU	Sharp LL172G-B
CO ₂ emissions (kg) over 5yrs	670	920	550	180	150
'Switch IT Off' saving (kg)	415	72	20	0	0

Printers

HP LaserJet 8150	Epson R800	HP PhotoSmart 8150
1,585	30	245
490	30	130

Consumer displays

	Old TV	Epson projector	Tiny plasma	Samsung rear projector	Sony WEGA TV	Philips LCD TV
CO ₂ emissions (kg) over 5yrs	749	1,926	576	1,278	918	810
'Switch IT Off' saving (kg)	316	0	81	126	0	0

PCs

Shuttle SFF PC	High-end PC	Fujitsu Siemens PC
2,471	5,431	2,444
1,979	4,719	2,056



Switch IT Off

Put our advice into practice and you could walk away with an environmentally friendly prize from Fujitsu Siemens or Eizo

Everyone knows they should back up their PC, but few people do. And we've a sneaking suspicion that everyone knows they should switch off their PCs and peripherals more often too. But with all those buttons to press, how many of us actually get round to doing it? Far too often, the PC is left humming away all day and all night. So too are the various peripherals attached to it.

However, we're realistic about this. Even if your PC and peripherals are plugged into one power strip, how often are you going to bend down to floor level, poke around under the desk and switch it all off at the socket? The answer for most people is never. But there is an easier way.

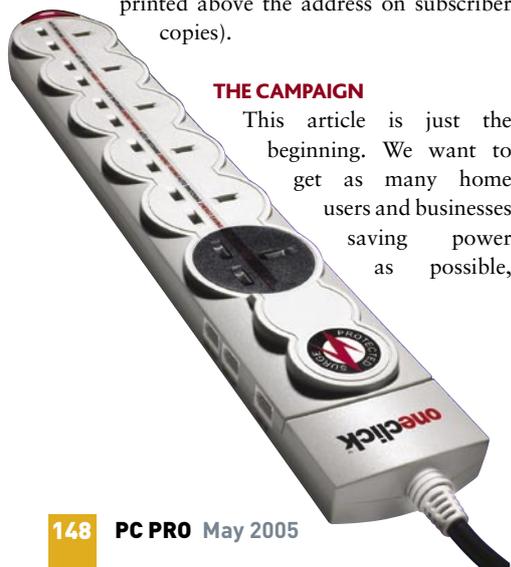
We've teamed up with OneClick Technologies to offer *PC Pro* subscribers the OneClick Intelligent Mains Panel for £25 including VAT, postage and packaging – this is a £5 saving over the normal cost. (And just in case you're suspicious, no, we don't take a cut!)

The OneClick Intelligent Mains Panel is a six-way power strip that contains one master socket (the black one in the picture below). You plug your PC or your notebook into this socket, and the Mains Panel will automatically detect when it's switched off and then cut power to the remaining five sockets. Naturally, there's built-in surge protection too.

Other devices similar to this are available, but we chose the Intelligent Mains Panel as it has been endorsed by the Energy Saving Trust. If you want to take advantage of this offer, go to www.oneclickpower.co.uk, click on the Shop link, click on PC Pro and enter your subs info password (as printed above the address on subscriber copies).

THE CAMPAIGN

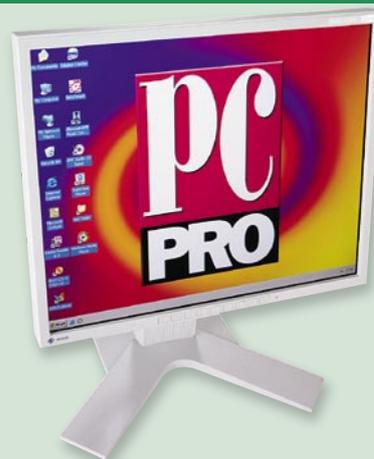
This article is just the beginning. We want to get as many home users and businesses saving power as possible,



Prizes up for grabs

EIZO FLEXSCAN L568

This 17in TFT won a *PC Pro* Recommended award due to its stunning image quality, but it's also environmentally friendly. Drawing less than 2W when in standby mode, and only 40W when switched on, it also complies with TCO 03 – the most stringent environmental and ergonomic standard for computer equipment. We have one to give away each month for the next five months.



FUJITSU SIEMENS SCENIC E300

With stunning generosity, Fujitsu Siemens is giving one environmentally friendly reader a Scenic 'Green PC' each month for the next five months. Complete with a 15in TFT, this 2.8GHz Pentium 4 machine is built using minimal chemicals and is based around a motherboard with less than 3g of lead, as opposed to 12g in most motherboards. And at the end of its life, it's recycled. Visit www.fujitsu-siemens.com/recycling

which is why we've teamed up with two companies that are committed to conserving energy and protecting the environment. Fujitsu Siemens and Eizo are offering prizes to those people who are taking active steps to reduce the power consumption of their computers and peripherals.

We don't care how small these steps are. If it means you don't plug your printer in all the time, let us know. If you switch off your monitor at night, we want to hear about it. Even if it just means you no longer keep your spare PC running all the time, send us an email.

We'd like to hear from businesses too. Whether you look after the IT system for a company of five or 500, we want to know if you've started to cut your energy costs. If you encounter problems, we're interested to hear how you solved them. If you've implemented an energy-saving

plan for your company, send us the details.

To contact us, send an email to campaign@pcpro.co.uk. Please put either 'Home' or 'Business' in the subject line. On the 1st of each month, we'll draw a name out of the hat for our prizes. And the sooner you enter, the greater the chance you'll have to win, as this prize draw will carry on for six months and every person who emails will be entered into every draw.

Over the next five issues, we'll keep you updated via a special 'Switch IT Off' campaign page in the magazine. Every month, you'll be able to track the efforts of *PC Pro* readers and the wider IT industry to cut power costs and, consequently, help to ease computing's environmental burden. ■



Email us at: campaign@pcpro.co.uk

PC Pro will not use your details for marketing purposes.