

Oxford project to develop free software for green computing

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Computers that never sleep waste energy.

Oxford University is pioneering an energy saving research project for green computing, which is likely to have wide-reaching benefits for further and higher educational institutions across the UK.

Oxford researchers are aiming to develop software which is easy to download and free of charge, to make networked computers more energy-efficient and thereby reduce carbon emissions. The software will eventually be available from the project website.

Since the 1990s energy-saving technology has been available, including 'standby' and 'hibernate' modes that automatically switch off computers not in use. The problem is that many IT specialists working in offices

and workplaces across the UK are not making use of these features. An 18-month pilot scheme to enable Oxford University's own departments and colleges adopt greener computing practices will provide a test-bed for energy saving technology across all operating systems.

The researchers will monitor not only the reduction in energy usage, but will also measure its success in cutting costs. In UK businesses and institutions it is estimated that up to 50 per cent of work computers are permanently switched on. There are 168 hours in a week; the Oxford research team points out that most workplace computers are only used for a fraction of that time, typically no more than 40 hours a week.

Researcher Daniel Curtis, from Oxford University's Environmental Change Institute, said: 'No-one sits at their computer for 168 hours a week. When a computer is switched on, its power demand remains pretty much constant – regardless of whether its user is surfing the net, word-processing, or at home in bed. We are developing a system that will mean that computers only need to be switched on when actually in use. This may sound like a 'no-brainer' – just use the off-button – but the process is not always so simple. We aim to develop a means for managing computer power, which will inconvenience neither the end-user nor the staff manning the IT departments'.

'With our package, we anticipate an average reduction in energy consumption of around 50 percent in the University's stock of computers and a reduction in carbon emissions of up to 1,500 tonnes per year. An additional benefit will be cost savings – notwithstanding anticipated hikes in energy prices, we expect to save the University around £250,000 per year. We hope that, by making the software free and available to download, other UK educational institutions, and indeed any organisation that manages ICT systems, will take the opportunity to use it and significantly reduce carbon emissions.'

The scheme has been endorsed by technology leaders in the field of green IT. Juergen Heidegger, Director of ICT Infrastructure Products at Fujitsu Siemens Computers, said: ‘Reducing power consumption within the office is critical to improving the carbon footprints of millions of businesses. Accelerating the cultural change to get into an energy saving mindset at work is critical, but people are only human so supporting them with hardware such as zero watt monitors and software that can improve energy efficiency will offer businesses reassurance that green policies are being followed, reducing emissions and improving the bottom line.’

The project will be launched on 19 March at a conference entitled ‘Towards Low Carbon ICT’ at Oxford University’s Saïd Business School. Specialists from universities and businesses throughout the UK will attend the conference to share expertise on how the educational sector can reduce the environmental impact of its ICT infrastructures.

The project director Howard Noble, from Oxford University’s Computing Services, said: ‘This project is an important part of the jigsaw in terms of building efficient ICT systems across the University. The Low Carbon ICT conference will help the project team and delegates gain a better understanding of the wider range of issues associated with getting the most out of existing infrastructure, and building and maintaining efficient desktop and data centre systems for the future.’

The technical architect of the project Dr David Wallom, from the Oxford e-Research Centre, explained the underlying system: ‘Current power management capabilities are limited to decisions on whether the system is being used, either locally or remotely. Within a research organisation such as Oxford University, computers can often be used in very non-traditional ways, making the basis on the decision to take a machine into the standby state much more complicated. The advanced

system we are developing will remove this barrier: allowing the user, their departmental IT officer and the University, greater flexibility and control in running an energy-saving system.’

Source: Oxford University

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