Cutting the Internet's carbon footprint - University of Leeds

General

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But in the meantime, its consumption of electricity, which currently stands at 3% to 5% of the global supply, is increasing exponentially.

Interdisciplinary research being undertaken by the Universities of Leeds and Cambridge has received a major boost through a £5.9m, five- year EPSRC Programme Grant award to address this issue of enabling growth of ICT networks while at

the same time reducing energy consumption.

The vision of the 'INTelligent Energy awaRE NETworks' (INTERNET) project is to reduce the carbon footprint of ICT networks by at least an order of magnitude - along with a corresponding reduction in non-renewable energy consumption. This will enable comparable growth beyond the current energy barrier.

Professor Jaafar Elmirghani, the project's lead investigator, said: "The funding will offer us the stability and flexibility needed to address the major challenges associated with energy utilisation in telecommunication networks. I am delighted that we have been recognised in this way."

Energy efficient processes are increasingly key priorities for ICT companies with attention being paid to both ecological and economic drivers. Although in some cases the use of ICT can be beneficial to the environment - for example by reducing journeys and introducing more efficient business processes - countries are becoming increasingly aware of the large growth in energy consumption of telecommunications companies.

"The predicted future growth in the number of connected devices, and of the bandwidth of the Internet of an order of magnitude or two, is not practical if it leads to a corresponding growth in energy consumption. Regulations may therefore come soon, particularly if governments worldwide enforce moves towards carbon neutrality," Professor Elmirghani said.

"The INTERNET project is therefore of great importance in seeking to establish the current limits on ICT performance due to known environmental concerns and then developing new ICT techniques to provide enhanced performance. In particular, substantial advances can be achieved through the innovative use of renewable sources," he added.

The collaborative project will draw together leading research in three key areas: optical networks (led by Professor Elmirghani at the University of Leeds), optimization of internet and Web protocols and services (led by Professor Jon Crowcroft at the

University of Cambridge) and optical routing and data communications (led by Professor Richard Penty and Professor Ian White at the University of Cambridge).

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