

Further information:

- ▶ Reports, case studies and presentations from meetings at: www.londonhigher.ac.uk/grilh.html

Other resources:

- ▶ Green ICT project blog: grilh.blogspot.com
- ▶ JISC Greening ICT: www.jisc.ac.uk/whatwedo/programmes/greeningict.aspx
- ▶ Higher Education Environmental Performance Improvement: www.goodcampus.org
- ▶ SUSTE-TECH, Greening ICT: www.eauc.org.uk/greening_ict_with_jisc

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Green ICT in London HEIs



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**Baseline study of sustainable ICT in London
universities and higher education colleges**

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Global energy use and greenhouse gas emissions

Information and Communications Technology (ICT) is estimated to consume about 6-10% of the world's energy resources and is also responsible for 2-3% of worldwide greenhouse gas emissions, which is similar to the aviation industry.

As part of the regulatory environment in the UK, the higher education (HE) sector must reduce carbon emissions by 34% by 2020 and 80% by 2050 (against 1990 levels). ICT in HE institutions (HEIs) is considered to be an area where simple interventions can quickly produce savings in energy use and reductions in carbon emissions.

Background and methods

In June 2010 London Higher was commissioned by JISC to explore sustainable (or Green) ICT in HEIs in London. The main aims of the 10 month study were to obtain data on energy consumption and carbon emissions using the SusteIT Energy and Carbon Footprinting toolkit; categorise progress by London HEIs in Green ICT; generate case studies to illustrate best practices, and raise awareness of Green ICT issues.

The work was done in parallel with similar studies outside London in the SUSTE-TECH project managed by the Environmental Association of Universities and Colleges (EAUC).

An informal network was established with staff working in Estates, Facilities, Energy Management and Sustainability representing almost half of London's 42 publicly-funded HEIs.

Energy use and carbon emissions

Detailed carbon footprinting toolkit returns were obtained from 12 London HEIs, making up almost a third of London's public HE sector. Energy consumption in HEIs was highest in the use of PCs, followed by data centres, printing and computing networks.

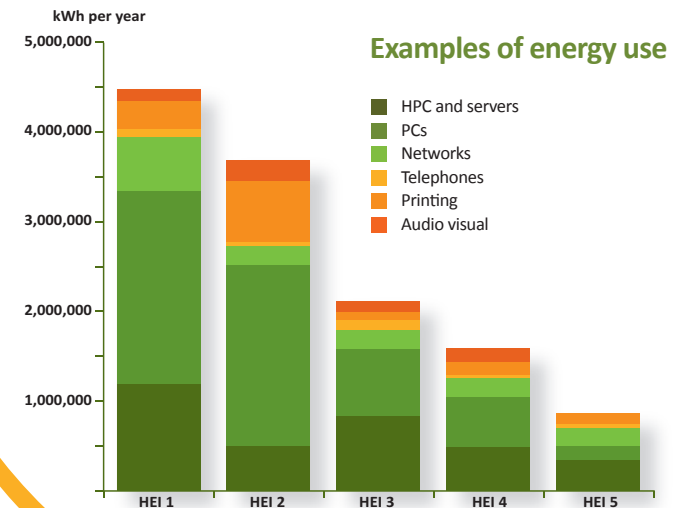
Totals from carbon footprinting data were extrapolated to produce estimates for all of the HEIs in London. Overall London HEIs:

- ▶ have an energy use of 170 million kWh per year
- ▶ pay annual electricity costs of about £20.4 million
- ▶ contribute 91 kilotonnes each year in CO₂ emissions.

Carbon emissions by London HEIs are estimated to:

- ▶ form 32% of emissions by the UK HE sector
- ▶ equal 10% of emissions from the London Borough of Hackney
- ▶ provide 0.2% of emissions by the Greater London Authority.

It should be remembered that data limitations for the summaries above include, for example, incomplete results from some HEIs with multiple campus locations, nearly all of the toolkit returns used default values for energy consumption at constant output, and not all devices (e.g. printers, laptops) may have been included in the carbon toolkit returns.



Discussions with London HEIs

Semi-structured interviews were conducted at 18 HEIs to find out how Green ICT is being implemented in a variety of institutions.

Key findings from interviews were that energy saving measures are largely focused on PCs, printing services and data centres. For example, many HEIs are introducing programmes to power down computers and monitors when they are not in use.

Multi-function devices are replacing standalone printers and scanners. Wastage, in terms of paper consumption and toners, is reduced through secure printing services ("follow me" functionality) to release print jobs.

Several HEIs are upgrading servers, rationalising numbers of data centres, and starting to experiment with increased temperature and humidity settings inside server rooms (approaching 25°C and 50% relative humidity) which can lead to large savings in electricity costs.

Finally, a number of HEIs are also beginning to provide students and staff with cloud-based email services.

Summary

The project has helped JISC by presenting the first ever carbon footprinting data involving HEIs in London. Both individual and regional estimates will help provide a more accurate profile of energy use and carbon emissions at a national level for the HE sector, in conjunction with similar work being coordinated by JISC and EAUC.

For those HEIs who completed carbon toolkit returns, the exercise helped identify areas of ICT operations where energy savings can be made quickly, assisting institutions with their carbon reduction and environmental management strategies.