



JISC Project Plan

Overview of Project

1. Background

It is estimated the ICT industry globally consumes about 6-10% of the world's energy resources and is responsible for 2-3% of greenhouse gas emissions, similar to the aviation industry (Gartner, Inc., 2007; St. Arnaud, 2009a, b).

As part of the regulatory environment in the UK (Climate Change Act 2008; UK Low Carbon Transition Plan, 2009) a key performance target for the Higher Education Funding Council for England (HEFCE) is to comply with the requirement to reduce carbon emissions in the HE sector by 34% by 2020 and 80% by 2050 (against 1990 levels).

Sustainable, or green, ICT is considered to be an area where short- to medium-term interventions can be cost-effective through efficiency savings in energy use, as well as reductions in carbon emissions.

Current estimates of energy use and carbon emissions in the UK HE sector are based on an innovative pilot study at one university but these estimates would benefit from regional inputs. In addition, the experience of the Scottish Funding Council's Sustainable ICT in Scottish Further & Higher Education project has shown that the combination of carbon footprinting, development of action plans to tackle ICT generated carbon, and involvement in workshops and mutual support activities can help institutions make significant impacts on their ICT related energy use.

2. Aims and Objectives

This project has two main aims:

1. To assess the current state of Green ICT issues in London Higher Education Institutions (HEIs), possibly with the Sustainable ICT Maturity Model (SIMM) or another classification system. A key emphasis will include obtaining baseline data on energy use and carbon emissions using the SustelT Energy and Carbon Footprinting tool.
2. Raise awareness of Green ICT issues and assist member institutions in developing or accelerating sustainable ICT policies to comply with HE sector guidelines and national legislation. This will be achieved through facilitating discussions, workshops and networking, as well as publication of data and case studies.

Specific objectives are:

1. Landscape study of Green ICT in London drawing on London Higher's membership of over 40 HEFCE-funded universities and higher education colleges within the Government Region.
2. Compile a comprehensive register of Green ICT processes in relevant categories, such as procurement procedures; deployment and operations (including sub-categories for alternative computing [thin clients, cloud computing, outsourcing, virtualisation]); data centres; printing/imagery, etc.
3. Collection of statistics from our 40+ members to estimate individual - HEI and total regional energy use and carbon emissions using the SustelT Energy and Carbon Footprinting toolkit.

4. Generation of case studies to illustrate best practice in specific topics, both in standard print format and as multimedia (e.g. video clips for websites and blog postings).
5. Parallel work will aim to explore other sectors in London for examples of best practice and opportunities for synergistic action which would benefit London HEIs and could include:
 - Green ICT in schools and further education colleges
 - regional sustainability initiatives, e.g. Mayor of London's Office, Greater London Authority, London Development Agency, Commission for a Sustainable London 2012, Thames Gateway Institute for Sustainability
 - commercial/private organisations – 25% of the UK1000 companies with large R&D investment are based in London and are facing, or have faced, similar issues to HEIs on Green ICT.

3. Overall Approach

The open study will begin with a consultation of London Higher members and will aim to identify key issues of concern regarding Green ICT in the region and information on the participation of individual HEIs in relevant projects.

The project will bring together HEI representatives at academic level with three, and possibly more sub-groups, depending on initial consultations.

These sub-groups may include:

- Estates, Finance, HR and ICT experts – help compile estimates of energy usage and feasibility or barriers to adoption of, for example, central data servers, building design, remote working etc.
- Small specialist HEIs – determine if smaller HEIs are more flexible and more amenable for centralised servers and other Green ICT measures, as well as opportunities for working with larger HEIs
- Library and Information Services – potential involvement of the M25 Consortium of Academic Libraries with 59 HEI, museum and other libraries within the M25.

Preliminary contacts made by the Environmental Association for Universities and Colleges (EAUC) project "ICT Energy and Carbon Management" will be invited to join the main Advisory group and sub-groups.

For classification schemes on progress in Green ICT, collaboration will be sought with the developers of the Sustainable ICT Maturity Model (SIMM; Phipps, 2010), as this model aims to provide a qualitative assessment of institutional Green ICT with six elements (e.g. Organisational Culture; Estates/Facilities).

There may also be possible integration of classification schemes with the "first steps, making connections, joined up actions, radical change" continuum described as a model for progress on institutional change (James and Hopkinson, 2009).

The project will integrate with the JISC "Greening IT programme" and will work closely with the JISC-funded "ICT Energy and Carbon Management" study being managed by the Environmental Association for Universities and Colleges (EAUC), working with HEIs in the Yorks & Humberside and the South Wales and South West regions.

Funding to develop work identified by this project will be sought from relevant sources such as the Leadership, Governance and Management Fund (HEFCE).

Through HEI and London Higher contacts (e.g. School-HE links in London project; our Olympic Games division, PODIUM), work on Green ICT in non-HE sectors will also be explored for examples of best practice or collaborations which could benefit London HEIs.

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Success of the project will depend on:

- cooperation between HEIs to participate in Advisory groups and sub-groups - but this is a normal feature for all London Higher projects
- sufficient data for classification schemes
- sufficient data from all (or representative) HEIs for regional estimates of energy use

4. Project Outputs

Deliverables

Baseline data on energy use and carbon emissions in ICT using SustelT carbon footprint toolkit; Progress on Green ICT through HEI Case Studies; Attitudes to and institutional embedding of Green ICT from Classification Models (e.g. SIMM) and Events (workshops, seminar); Options for future support and development work identified in Reports (published summary report, web-based technical reports, web-based project final report, web-based progress reports).

Knowledge and other outputs

Case studies on websites; blog postings by project manager at regular intervals, reports, information and links on London Higher project website; presentations to government regional bodies and local authorities where possible.

5. Project Outcomes

- Raising awareness of Green ICT and baseline data on energy use to help inform policy development within individual London HEIs to comply with HE sector requirements and government legislation.
- Funding sources for follow-on research projects will be identified with JISC support.
- Development of networks between HEIs with similar concerns on joint strategies for Green ICT leading to mutual support between HEIs that will enable more rapid uptake of Green ICT opportunities, as well as possible collaboration with non-HE contacts.
- Learning outputs will be disseminated to London regional bodies (Mayor's Office, LDA, GLA) and across other Regional Development Agencies.

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
London Higher members (40+ HEFCE-funded HEIs in London region)	outcomes related to awareness, baseline data, carbon reduction compliance	high
London local government and regional bodies – Greater London Authority, London Development Agency, Mayor of London's Office	project may overlap with initiatives in sectors outside of HE	medium
Other bodies including 2012 Olympics - Commission for a Sustainable London 2012, Thames Gateway Institute for Sustainability.	as above	medium
Academic libraries and museums – M25 Consortium	findings and case studies could help with new projects	medium
FE colleges - Association of Colleges, London Region	could provide examples of best practice	medium
Private/ commercial organisations	could provide examples of best practice	low

7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing	1	1	1	London Higher to assign staff cover
Organisational	2	3	5	Organisation and membership of main advisory panel and sub-groups : London Higher staff to resolve any issues
Technical	3	3	9	Data for energy use and classification schemes may not be forthcoming from all HEIs – JISC and London Higher to discuss and resolve if this occurs with more than 50% of HEIs
External suppliers	1	1	1	Not considered to be an issue
Legal	2	4	8	Some HEIs may be reluctant to provide relevant information – attempt to resolve through discussions with JISC and HEFCE on importance of the study in providing accurate baseline data

Lack of interest by London HEIs	1	3	3	Not likely but can be managed by London Higher through organisation of Advisory groups
Some HEIs may not be able to provide information within the project time limit due to lack of resources	2	4	8	Accept possibility and extrapolate missing information from closest comparators where necessary in model fitting
Overall conclusions may indicate poor progress, coordination and planning on Green ICT by London's HEIs	3	3	9	Short-term financial climate may preclude medium- to long-term ICT planning at some HEIs, but useful to identify this as appropriate support can be flagged up for funding bodies
Research findings may be politically sensitive or misrepresented in public media	3	3	9	Advisory Panel to oversee briefings and delivery of messages to media outlets in liaison with JISC Communications and Marketing team
Data collection on energy usage may be incomplete through complexity of inter-relationships, insufficient manpower or technological resources	4	4	16	Accept but still possible to obtain approximate totals through extrapolation for missing data; also beneficial in highlighting areas for further work

8. Standards

Not applicable.

9. Technical Development

Project will follow guidelines for Carbon Footprinting tool and this is not expected to require further technical development.

Classification schemes on Green ICT progress will be made in discussions with model developers and academic, experts (e.g. James and Hopkinson, 2009; Phipps, 2010).

10. Intellectual Property Rights

There are not expected to be any IPR issues for data collection as these should be in the public domain (e.g. publicly funded HEIs, capital equipment, building provisions, staffing levels).

However, there may be background IPR which London Higher is unaware of and which needs to be identified in preliminary discussions with HEIs and JISC.

Learning materials developed in the project will be made available to JISC.

Any new classification schemes produced through the project which may be considered to involve IPR will be discussed by London Higher, JISC Programme Managers and JISC Legal Information Services to decide how best to guard the IPR.

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Involvement of private/commercial organisations in the project (e.g. resolving issues on centralised data servers, use of cloud computing services) will involve clarification of IPR prior to detailed discussions taking place.

Project Resources

11. Project Partners

Partners will be drawn from the 40+ London Higher member HEIs for the main advisory panel and sub-groups.

Discussions to be held with various representatives from London regional bodies, FE colleges, schools, academic libraries and non-HE commercial sectors.

12. Project Management

London Higher will organise membership of main advisory panel and three or more sub-groups drawn from the 40+ HEFCE-funded HEIs in London Region. Decisions and issues raised by the panel and sub-groups from meetings and correspondence will be discussed in updates to the JISC Programme Manager (RNB).

Collaborative discussions held by London Higher's project manager (PS) with stakeholders will be related to advisory groups and RB.

Project management time by PS is estimated at 93 days.

PS will provide contact details of advisory group members once they have been finalised (within two months of project start date).

13. Programme Support

Support and guidance required on key issues in Green ICT which should be the focus of information collection, and secondary issues where information is not crucial, but nonetheless, desirable.

Detailed Project Planning

15. Workpackages

Phase	Item	Time (months)									
		1	2	3	4	5	6	7	8	9	10
Preparation and Consultations	partner meetings (JISC, LH, etc.)	■									
	project brief	■									
	Set up Advisory panel and sub-groups	■									
	Agree workplans with JISC and HEIs		■								
	Web pages		■								
Data Collection	Advisory Panel and sub-group meetings			■		■		■		■	
	Data collection for SustelIT tool				■	■	■				
	Identify case studies						■	■	■		
	Analyse and summarise data							■	■		
	Consult with other sectors (e.g. FE)		■								
	Draft recommendations e.g. classifications								■		
	Workshops to test recommendations									■	■
Dissemination	Promotional resources on web pages									■	■
	Summary statistics on ICT in London								■	■	
	Seminar to identify further work								■	■	
	Draw up case studies								■	■	
	Produce summary and technical reports										■

16. Evaluation Plan

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
Feb. 2011	Energy usage and carbon emission data	Sufficient data for SustelT model; sufficient numbers of returns from London HEIs;	Observation/discussion with Programme Manager	Complete success if 40 or more data returns; high if ≥ 30 ; good if ≥ 20 .
Feb. 2011	Classification of London HEIs in progress on Green ICT by use or modification of existing schemes	Action on Green ICT at strategic and policy levels of HEIs	Observation/Peer review by external academic contacts	Visualise Green ICT progress in London's HE sector for policy makers
May 2011	Summative evaluation	Project impact	Programme Manager/peer review	Baseline energy data collected; adoption of Green ICT concepts by HEIs

17. Quality Plan

Output	Project preparation				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Before data collection	Documents	JISC /London Higher review	feedback	PS/RNB	
Before data collection	Membership of advisory panel and sub-groups	JISC /London Higher review	feedback	PS	
Output	Data Collection				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Before material is published	compliance with SustelT model requirements	Peer review and test	Feedback and results	PS/co-authors	
Before material is published	Classification schemes	Peer review and test	Feedback and results	PS/co-authors	
Output	Reports				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)

Before material is published	accurate data, content and logical summaries	Peer review	Feedback	PS/co-authors	
Before material is published	easy to understand, grammatically correct	Peer review	Feedback	PS/co-authors	
Output	Web-based materials				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Before material is published	accurate, easy to understand	Peer review	Feedback	PS/co-authors	web standards for video clips (JISC to advise)

18. Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
Nov. 2010	Report on consultations with non-HE sectors	London's HE sector	raise awareness to London's HE sector	Green ICT issues outside HE
Feb. 2011	Summary of energy use data	UK HE sector	raise awareness and inform HE sector	data on energy use
	Classification schemes on Green ICT progress	UK HE sector	raise awareness and inform HE sector	need for self-assessment and baseline data
March 2011	Reports on two workshops testing data and classifications	UK HE sector	engage HEIs and test data and classifications	comparison of London HE to rest of UK
March 2011	Promotional resources on web pages	UK HE and non-HE sectors/stakeholders	inform stakeholders	progress on Green ICT in London
April 2011	Report on seminar	UK HE sector	engage with HEIs to identify further work	breadth of Green ICT options
April 2011	Report on ICT in London's HE sector	UK HE and non-HE sectors	promote London's HE	progress on Green ICT in London
April 2011	Case studies on websites and as report	UK HE and non-HE sectors	awareness and promote	progress on Green ICT in London
May 2011	Final project report	UK HE and non-HE sectors	inform and promote	progress on Green ICT in London

19. Exit and Sustainability Plans

Project Outputs	Action for Take-up & Embedding	Action for Exit
Reports	Accessible from project websites	Make documents available on websites
Case studies	Accessible from project websites	Make documents available on websites

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
Energy use	Useful to HE sector	promotion by London Higher and JISC	promotion strategies
Classification schemes	Useful to HE sector	promotion by London Higher and JISC	promotion strategies

References

- Gartner, Inc. (2007). Gartner Estimates ICT Industry Accounts for 2 Percent of Global CO2 Emissions. <http://www.gartner.com/it/page.jsp?id=503867>, accessed 10 May 2010.
- James, P. and Hopkinson, L. (2009). Sustainable ICT in further and higher education. Final report, January 2009, www.susteit.org.uk.
- Phipps, S. (2010). Squaring the circle of sustainable ICT. Draft issued for review, February 2010. University of Hertfordshire.
- St. Arnaud, B. (2009a). ICT and global warming: opportunities for innovation and economic growth. Draft discussion document, http://docs.google.com/Doc?id=dgbgjrc2_2767dxbdvcf, accessed 2 March, 2010.
- St. Arnaud, B. (2009b). ICT and climate changes benefits to Canada, <http://www.slideshare.net/bstarn/ocri-cleantech>, accessed 10 May 2010.

Appendixes

Appendix A. Project Budget

Appendix B. Workpackages