

University of Leeds - Environmental Management System

This is the University of Leeds' Environmental Management System. It is a key component of the University's Environmental Policy that was approved by the Vice Chancellor and Senate in 2006. It has been developed in order to identify, prioritise and implement initiatives that will deliver more sustainable ways of conducting the University's activities. It also promotes city and regional initiatives that will provide more sustainable choices and benefits for University staff and students.

The University has adopted the Environmental Management System and all staff are encouraged to participate in its initiatives to achieve success.

John Fisher
Deputy Vice-Chancellor
Chair of University of Leeds Sustainable Development Steering Committee

Contents

1	Introduction.....	3
1.1	Background.....	3
2	Objectives.....	4
2.1	Environmental Policy	4
2.2	Benefits.....	4
2.3	DfES/HEFCE - A Sustainable Development Action for Education and Skills	5
2.4	Climate change.....	5
2.5	Carbon Dioxide Emissions.....	7
2.6	EU Emissions Trading Directive.....	7
2.7	Priorities for the University	7
3	Environmental Management System	8
3.1	Meet legislative and regulatory requirements and agreements	9
3.2	Management and review of activities and operations	9
3.3	Continuous environmental improvement and performance targets.....	10
3.4	Influencing suppliers and contractors.....	11
3.5	Environmental management training programmes.....	11
3.6	Transport plan.....	11
3.7	Toxic materials usage, waste minimisation and prevention of releases of pollutants	12
4	International Standard ISO 14001	12
5	Financial Requirements.....	13
6	Environmental Pollution Control.....	13
6.1	Monitoring.....	13
6.2	Fuel storage facilities	14
7	Building Design and Refurbishment.....	14
7.1	EC Directive on the energy performance of buildings.....	15
7.2	Whole life costing.....	15
7.3	New building design standards - environmental and carbon saving targets	16
8	Training	16
9	Programme.....	16
	Appendix 1 Environmental Strategy and Implementation Plan	17
	Appendix 2 University of Leeds - Environmental Policy	19
	Appendix 3 Terms of Reference for Environmental Co-ordinators.....	20
	Appendix 4 Environmental Management Structure.....	21

1 Introduction

1.1 Background

The University adopted an Environmental Policy in 28 November 2001 following approval by Senate. The Policy is summarised in the Vice-Chancellor's statement given in full in Appendix 2 and states:

We will conduct our own activities and operations to reflect best environmental practice, implement an environmental management system to pursue sustainability and continuous improvement and seek innovative ways of meeting environmental objectives.

The University has, for many years, been aware of the importance of delivering environmental improvements and already has a number of initiatives in place which have reduced the impact on the campus and the community. These initiatives have included:

- Reducing water consumption
- Segregation and recycling of waste
- Management of car parking
- Grounds maintenance and biodiversity

The UK Government has commenced a sustainable development programme and each government department is producing an action plan. The DfES has begun a consultation programme and will issue its first guidance in autumn 2003 as part of the HEFCE funding announcement. The main areas likely to affect and influence the HE sector include:

- establishing policies, targets and programmes for environmental and sustainable improvement for universities;
- delivering specific research programmes and projects linked to for example the renewable energy and sustainable transport sectors;
- ensuring the availability of and promoting awareness of sustainable development modules within appropriate curriculum parameters; and
- share best practice towards the achievement of these objectives

For these reasons the University now wishes to give greater impetus to its environmental policies, by enhancing its existing and bringing in new policies with a more strategic and co-ordinated approach to their development, management and publicity. These new policies will include:

- Compliance with new legislation, including the EC Directives *The energy performance of buildings* and *Waste electrical and electronic equipment (WEEE)*
- Purchasing goods and services in a sustainable manner
- Reducing energy consumption
- Development of a university transport plan
- Working with DfES and HEFCE to develop sustainability into University teaching and research programmes

This report provides details of the Environmental Management System (EMS) that is required to achieve the objectives of the University's Environmental Policy. The EMS will be the focus of all relevant University activities that have environmental effects; the summary of the University's environmental performance; will begin the programme to deliver a culture that embraces environmental best practice; and will set and monitor targets for environment improvement.

2 Objectives

2.1 Environmental Policy

The objectives of the University's Environmental Policy may be summarised as:

- to contribute to the national commitment to sustainable development by reducing or minimising the effects of its operations on the environment; and
- to provide a framework for delivering new environmental opportunities for teaching and research.

These include compliance with legislative and regulatory requirements and agreements. Purchase and use of resources and wastes/emissions will be reviewed and programmes developed, prioritised, approved and implemented to support continuous environmental improvement. A Transport Plan for business and commuter travel has been developed and is being implemented. These initiatives will build on existing good practices and, wherever possible, be in partnership with the University's suppliers and service providers.

Furthermore the raising of awareness and integration of environmental management into training programmes will be an important part of creating an environmental culture within the University. Reporting on the University's progress and successes will be carried out internally to Boards and Committees and by the intranet, and externally via reports and the University's website.

2.2 Benefits

The EMS will set out a framework of initiatives to deliver environmental benefits. These will deliver a combination of financial benefits, improvements in quality of service and provision of new research and teaching material. So the adoption of the EMS will improve the performance of the University and reduce its environmental impacts both at local and global levels. In developing programmes and projects all related costs and benefits will be identified in order for the University to effectively manage its environmental policy and show how this integrates with its core activities.

Thinking globally and acting locally also delivers benefits to employees. Improving building insulation can help in reducing temperature changes in summer and winter, reduce noise levels from outside traffic and improve working conditions. Changing from single car driving from home to work will reduce levels of pollutants and improve air quality. Both will deliver global improvements with reductions in carbon dioxide emissions, therefore providing a 'win – win' situation. So improving employee working conditions as part of the programme will ensure the focus and balance are correct.

Resources from University departments will be utilised as appropriate in order to make use of expertise, assist in the promotion of the EMS objectives and help to achieve successes in the programmes. Individual projects arising from the programmes will provide additional opportunities for teaching and research.

The EMS will establish an environmental culture built on good management of its assets. It will measure and monitor existing performance, create and develop initiatives, prioritise these on effect and benefit, provide training for its staff and close the loop by reassessing its improved performance. The EMS will build on projects and programmes that have been successful elsewhere and that have direct relevance and benefit to the University.

2.3 DfES/HEFCE - A Sustainable Development Action for Education and Skills

In February 2003, the Government set out its Sustainable Development Education Strategy 'Learning to Last'. In response to this the DfES has commenced consultation on sustainable development action for education and skills at a sounding board meeting held on 30 June 2003. The DfES has a significant impact on the social and economic aspects of sustainable development through its core business of raising educational standards and improving skills, including education for sustainable development. The DfES has stated:

"The purpose of this plan is to provide a coherent and integrated account of the actions we will take as a department and with our partners to achieve a step-change in awareness and behaviours."

"We will encourage and support all publicly-funded educational establishments to help them operate to the highest environmental standards."

The Department has asked the Higher Education Funding Council for England (HEFCE) to develop a sustainability strategy for the HE sector. This will be specifically raised in the Department's grant settlement letter to be issued late 2003.

The University has stated it welcomes the broad thrust of the emerging thinking, supports the principles of such a programme and wishes to participate fully in the development of any policies and programmes. It is pleased to see that there is a high level of commitment from Government and all of the stakeholders present at the meeting to develop a practical programme of measures that will deliver environmental and sustainable benefits – the following main areas will benefit the HE sector:

- establishing policies, targets and programmes for environmental and sustainable improvement for universities;
- delivering specific research programmes and projects linked to, for example the renewable energy and sustainable transport sectors;
- ensuring the availability of and promoting awareness of sustainable development modules within appropriate curriculum parameters; and
- sharing best practice towards the achievement of these objectives.

Clearly there are many issues that remain to be clarified, for example:

1. How will performance be measured? This University already participates in external environmental auditing and benchmarking and the public reporting of that performance in relation to the regional HE and other business sectors.
2. How will funding arrangements for sustainable development initiatives be arranged and how will investment flexibility be maintained?
3. To what extent will a sustainable development teaching element be required?
4. To what extent and by what mechanism might HEFCE wish to encourage the sustainable development agenda within a research context?

The emergence of this Government initiative confirms the importance of developing and implementing the EMS at this University.

2.4 Climate Change

One of the first objectives of the EMS will be to prioritise the University's environmental targets. As well as its internal business objectives it will adopt all relevant external environment drivers, especially where European, UK and regional targets are in place. These include, for example, regional transport initiatives and measures to combat global climate change effects. Programmes to tackle Climate

Change will be one of the highest priority items. On 24 October 2000 in his speech to the Green Alliance – CBI conference on the environment the Prime Minister said:

‘...the greatest threat to our environment today is climate change. The Royal Commission on Environmental Pollution has said that the UK will have to cut the CO₂ we produce by 60 per cent by 2050 if we are to slow down the pace of change. If there is one immediate issue that threatens global disaster, it is the changes in our atmosphere’.

DEFRA Secretary Margaret Beckett said in the launch of the 2003 Energy White Paper (Cm 5761):

‘In future, our energy policy will have as one of its principal goals the reduction of carbon emissions. We have accepted the recommendation of the Royal Commission on Environmental Pollution that we need to cut carbon emissions by 60% by around the middle of this century if we are to make our contribution to avoiding the worst effects of climate change.

‘At home, this White Paper makes clear that energy efficiency is crucial, highly cost-effective, and can deliver big carbon savings across the economy. In fact, we expect to achieve about half of the extra carbon savings we need by 2020 through this route. We are aiming roughly to double the rate of energy efficiency improvement seen over the last 30 years, which is broadly in line with what the Government’s Performance and Innovation Unit recommended in their Energy Review.

‘We are announcing a range of practical policies which can deliver energy efficiency, and which should give real certainty to the energy efficiency industry that the Government is serious about this issue. In the summer, we intend to convene a Better Buildings Summit to focus on how we can improve the use of energy in buildings.

‘Combined Heat and Power is also very important, and we are restating our commitment to achieving a target of 10,000Mwe of CHP capacity by 2010, with the help of some further measures. We are under no illusions that the CHP industry has been having a very difficult time, and I want to emphasise that the Government does take these difficulties seriously and will continue to work with the industry to identify solutions to them in order to achieve our 2010 CHP target.’

These are clear messages about energy efficiency and energy saving targets and are of direct relevance to the University. The transition to a low carbon economy will result in increases in energy costs to the University if no action is taken on existing usage. This is due to the newer renewable energy technologies *at present* being more costly than fossil fired plant, although the costs are falling as installed capacity increases and good performance achieved.

In the UK an obligation has been placed on all electricity suppliers to source increasing amounts of electricity from renewables. This rises from 3% in 2002-03 to 10.4% in 2010-11 and costs will be passed on to customers. However green electricity is exempt from the Climate Change Levy. Reducing the University’s energy consumption will help to offset increases in electricity supplied both from the Generating Station Complex combined heat & power plant (GSC) and from the grid.

Furthermore new business and research opportunities could arise by the University’s active participation in this transition, as knowledge and business/research partnerships are sought by organisations seeking assistance in mitigating climate change effects.

2.5 Carbon Dioxide Emissions

Annual UK emissions of carbon dioxide total some 152 million tonnes. The main contributors are power stations (23%), road transport (21%), industry (24%) and residential (14%) – their historical and predicted annual emissions in millions tonnes carbon are summarised in table 1.

Main CO₂ Sources	1990	1995	2000	2005	2010	2015	2020
Power stations	54.1	44.1	34.4	32.6	33.1	34.5	35.6
Residential	21.5	21.7	22.0	22.2	22.7	23.3	23.8
Industry	35.3	34.3	36.3	36.3	36.1	36.1	36.3
Road transport	29.8	30.2	32.4	34.9	37.3	39.8	42.2
Other (refineries, land use change, services, other transport)	27.3	26.4	27.1	27.2	27.1	27.0	27.0
Totals	168.0	156.7	152.2	153.2	156.3	160.7	164.9

Table 1 UK CO₂ emissions by source 1990 to 2020, MtC

A decline in emissions from power stations has been achieved due to the switch of primary fuels from coal to gas, with renewables beginning to become established. Industrial and residential uses remain broadly unchanged, whereas transport is predicted to increase and from 2005 becomes the main contributor of CO₂ emissions in the UK.

2.6 EU Emissions Trading Directive

The EU Emissions Trading Directive was agreed in July 2003 and will commence January 1st 2005. Each installation covered by the scheme will have to hold a greenhouse gas emissions trading permit and the UK allocation of permits has to be in place early 2004. DEFRA has provided details of participation which includes large energy users and operators of power stations with site thermal capacities of 20MW_{th} and above. The University's energy purchase from the GSC means the GSC operator will participate in the scheme. However it will be essential for the University's energy management programme to interface with the Directive to ensure:

- any changes in energy consumption or requirements of the Directive are fully understood and managed
- there are no breaches of the Directive.

2.7 Priorities for the University

The main targeting for the University will incorporate programmes where its activities impact on the climate change sector, including:

- Building audits to provide better insulation, reductions in heating/cooling and improvements in building working environment.
- Asset audits to purchase/replace inefficient equipment and achieve reductions in electricity usage.
- The purchase and generation of energy from renewable energy sources.

- A Transport Plan to encourage CO₂ reductions by switching to cleaner fuels, reducing vehicle usage and promoting more sustainable methods of transport, both for University and for private vehicles.

One other main environmental objective relates to the management of the University's waste. In 2003 the University collected 1625 tonnes of waste from the Leeds campus and recycled 268 tonnes, 16% of the total. Waste audits are carried out quarterly to ensure compliance with the policy and to identify new recycling initiatives. Tougher European and UK targets on recycling are being adopted, with 25% and 30% to be recycled by 2005 and 2010 respectively. The Landfill Directive requires the amount of biodegradable municipal waste going to landfill to be reduced to 75% of the 1995 amounts produced by 2010, 50% by 2013 and 35% by 2020. Furthermore, landfill taxes are increasing in the UK, with a further annual rise of £1 to £15 from 1 April 2004. In mainland Europe landfill tax rates are as high as £65, plus costs for segregation and pre-treatment of waste streams, so there are likely to be further increases in costs as more stringent legislation and harmonisation measures are accelerated. The effects on the University's future costs for waste disposal would be substantial, so waste minimisation will deliver short-term savings and recycling programmes will deliver significant medium-term savings.

3 Environmental Management System

A key to achieving the University's environmental objectives and developing best practice is to establish a management structure within the University that takes ownership of the Environmental Management System, develops initiatives, co-ordinates activities, manages projects and regularly reports on progress. It will be instrumental in creating a culture of environmental awareness and responsibility and in delivering a programme of benefits to the University. Although the overall management of the EMS will be the responsibility of the Environmental Officer, the initiatives will be developed with and by faculties, departments and services.

Initiatives that deliver improved environmental performance will, in many cases, deliver other benefits. These can include financial savings, increased operational efficiency and improved performance of assets. This will help to change the University culture to deliver environmental improvements as a 'good business, research and learning case'.

The University has in place a number of procedures and programmes that address environmental objectives, for example energy management, water management, waste recycling, and these have delivered significant environmental benefits. However it will be necessary to assign new environmental responsibilities to faculties, departments and service providers. Some of these are already in place, but may require strengthening, in particular to promote environmental initiatives in departments and the exchange of best practice. The EMS will build upon these and develop new initiatives to ensure that best practice is in place and implemented throughout the University. It will address all of the key areas of environmental performance and proposals for these are given below. Furthermore the EMS will report on the progress achieved in this area, for example in formal reporting procedures in the University and ongoing initiatives via the intranet and Reporter. The pace of environmental legislation and potential effects on the University requires the current environmental awareness and co-ordination to be increased and the programme to be accelerated. This requires ownership and responsibility to be embraced by each faculty, department and service.

Environmental Co-ordinators have been established in Faculties and other appropriate University services as a practical way to begin this programme. Approval

was given for this at the Faculty Management Co-ordinating Committee meeting on 17 July 2003. These roles have been advertised for staff to apply and their responsibilities include:

- Liaison with the University's Environmental Officer to act as a focus within each department for co-ordinating environmental issues
- Promotion of awareness on environmental issues
- Development and assistance in new initiatives in conjunction with other services e.g. energy saving, water audits, environmental building systems, green transport, waste management, environmental website.

The detailed roles of the Co-ordinators have been drawn up and agreed to ensure their work will be effective and their lines of communication clear. Terms of Reference for the Co-ordinators are given in Appendix 3. Fifteen Co-ordinators have been appointed by mid February 2004 and the remaining appointments are planned to be made by May 2004.

3.1 Meet legislative and regulatory requirements and agreements

A review of all existing environmental regulatory requirements and agreements affecting the University will be carried out by the Environmental Officer. A central register of these will be established together with departments and persons responsible for their compliance.

New environmental legislative requirements, e.g. the EC Directive on the Energy Performance of Buildings adopted in December 2002, will be assessed as to their effects on the University. Programmes, including any funding opportunities, will be developed as a response to the legislative requirements and will be monitored to ensure compliance is achieved within stipulated timescales.

3.2 Management and review of activities and operations

A new management structure will be established in the University to manage each of the key environmental activities. The existing Environmental Steering Group (ESG) will have overall responsibility for environmental monitoring and each activity group will report to the ESG. A Transport Policy Review Group has been in operation for a number of years. New groups will be established for; Sustainable Buildings & Utilities, Waste Management & Recycling and Sustainable Purchasing. The management structure of these groups is given in Appendix 4.

Each group will carry out reviews of the University's activities in order to identify, understand and evaluate all the direct and indirect environmental aspects and effects, develop action plans & priorities, submit financial budgets, set targets and monitor progress. All potential impacts and likelihood of occurrence will be assessed using risk assessment methodologies. As part of the reviews improvements in efficiency and reductions in energy and resource consumption will be identified. These will include but not be limited to energy (electricity, heating and cooling), water, waste management & recycling, new building designs and transport. A series of Best Practice Procedures will be developed to guide future University activities so that they adopt appropriate environmental measures. Terms of reference have been drawn up for the groups and membership is currently being established. The groups are planned to be operational early 2004.

Purchasing and procurement policies will be examined to achieve environmental benefits and any financial implications identified. These will include:

- computer equipment; energy ratings in operation and standby modes;
- photocopiers & printers; double sided copying as a default, cartridge recycling;
- paper purchase; types, low chemical usage in manufacture and sustainable sources

As well as instigating energy efficiency programmes the installation and use of renewable energy technologies will also be examined in the University's estate.

European and UK policies and financial programmes are in place to promote renewables at megawatt utility scale, and for individual buildings and complexes at kilowatt to hundreds of kilowatt scale. These technologies will include:

- solar energy (e.g. photovoltaics, passive solar) on buildings to produce heat and/or electricity
- individual wind turbines and/or wind clusters to produce electricity
- biomass to produce heat and/or electricity
- micro hydroelectric generation from streams and rivers

The existing estate, building stock and energy supply & heating plant will be examined to ascertain the suitability for renewables. For example gas or oil fired boilers coming to the end of their life could be replaced by biomass fuelled plant. Part of the fuel requirements would come from energy crops grown on land owned by the University. The energy crops would in turn provide excellent biodiversity and be an integral part of the University's gardens and sports grounds maintenance sustainability programme.

3.3 Continuous environmental improvement and performance targets

Target setting and measurement of environmental performance will be developed for each programme. Targets will be set that reflect all relevant environmental legislation and University requirements. The Environmental Steering Committee will set responsibilities for reporting and monitoring of environmental performance.

Organisations worldwide are being evaluated by potential clients, stakeholders, researchers and investors on their environmental performance. In the UK an annual survey is carried out on major companies and universities by Business in the Community, an organisation set up by the Prince of Wales in 1982 to encourage companies across the UK to improve their impact on society. The Index of Environmental Engagement survey measures environmental policies, targets for improvement and successes, by region and by type. The University entered this in 2002 and was placed in the middle of its class and in its regional ranking. Its policies received good scores but one area identified as a weakness and required implementation was its EMS, with target setting a high priority. The University will report annually - this will be an important measure of demonstrating its achievements in environmental performance. Internal reporting will be to the University's Environmental Steering Committee and will be publicised on the intranet.

The benefits of the University being accredited to ISO 14001 or EMAS will be examined. This will require all of the University's environmental procedures and systems to be formally established and measured, reported and audited in accordance with the standard.

In order to ensure that its effectiveness and applicability is maintained the University's EMS will be reviewed by the ESG annually and will be updated as necessary.

3.4 Influencing suppliers and contractors

In addition to the internal improvements sought by the University, it is important to ensure suppliers and contractors understand, support and participate in our environmental policies. Increasing numbers of companies adopt environmental policies and programmes and their performance in this area will be an important measure the University will use to determine their suitability for providing goods and services. Furthermore ongoing dialogues with suppliers and contractors will assist in sharing and transferring their best environmental practice into our culture.

Initiatives will include minimising and recycling packaging and waste; modifying systems to reduce usage of materials; purchasing equipment with lower levels of power usage; procuring goods from sustainable sources; turning substances traditionally considered as 'wastes' into products; and using environmental whole life cycle costing in purchasing policies.

3.5 Environmental management training programmes

In order to disseminate and achieve success in the University's environmental policy and targets, high quality communication and training programmes will need to be established. There will be specific training requirements for the Environmental Co-ordinators and key faculty, departmental and services staff whose jobs have significant environmental impacts, as well as broader awareness of overall environmental responsibilities. All new members of staff will receive a summary of the University's environmental requirements as part of their induction training. The training will ensure that all employees and students understand the direct and indirect environmental impacts within and arising from their activities, and appreciate the importance of demonstrating compliance with the environmental policy.

3.6 Transport plan

Transport is an area that has major environmental effects on all University staff and students. A Transport Plan has been developed and adopted by the University in May 2003 to promote sustainable initiatives for the operation of its vehicles, its travel policies and for travel from home to work. The development of this plan has utilised University skills and also regional programmes and expertise to ensure that initiatives of a wider nature will deliver further benefits. Some of these will be able to be achieved in a relatively short timescale, e.g. the Metrocard discount travel scheme for staff, whereas benefits from others such as the Leeds Supertram will be gained in the medium term.

A more co-ordinated approach will be provided in the development, management and publicity of existing and new initiatives. A new post of Transport Co-ordinator has been approved and an appointment was made in October 2003.

Existing practices will be examined to categorise and adopt transport carbon reduction targets. Some programmes will involve neighbouring organisations such as the Government Office Integrated Transport Team, LMU and LCC to enable services to be implemented in a holistic manner.

3.7 Toxic materials usage, waste minimisation and prevention of releases of pollutants

The University policy is to avoid the use of toxic materials where such use is not essential for teaching or research purposes, and to minimise waste generated, as well as preventing releases of pollutants. A chemical swap shop has been set up to manage and minimise the quantities of otherwise unused chemicals.

4 International Standard ISO 14001

ISO 14001 specifies requirements for organisations to formulate a policy and objectives taking into account legislative requirements and information about significant environmental impacts. ISO 14001 is applicable to organisations that wish to:

- a) implement, maintain and improve an environmental management system;
- b) assure itself of its conformance with its stated environmental policy;
- c) demonstrate such conformance to others;
- d) seek certification/registration of its environmental management system by an external organisation;
- e) make a self-determination and self-declaration of conformance with ISO 14001

The EMS model for ISO 14001 is summarised in figure1.



The Standard enables organisations to establish and assess the effectiveness of procedures to set an environmental policy and objectives, and demonstrate conformance to others. With a certifiable EMS in place (rather than a non-certifiable guideline that provides generic assistance) the University would be able to demonstrate internally and externally to interested parties that its environmental objectives, targets and monitoring programmes are in place.

The applicability of the Standard to the University will be examined, including its integration with EMS and other management requirements, to consider its role in achieving the University's environmental goals.

5 Financial Requirements

The adoption and management of the EMS will promote programmes and individual projects. These will address the policy requirements and will require investment of resources, including staff, external consultants, measurement & reporting systems and capital assets. Funding will be provided for initial external surveys to establish baselines and efficiency improvements. In order to ensure good management practices are established, individual programmes and initiatives will be costed and the likely benefits, both financial and non-financial, will be identified. This will enable priorities and ranking of projects to be achieved and funding allocated to the initiatives.

Examples of successful environmental programmes which have been carried by other organisations are where:

- the financial benefits are allocated between all of the project stakeholders;
- expenditure is prioritised, to reward participation and to encourage and finance further initiatives;
- funding has been sought from a combination of internal and external providers; and
- initial funding, linked to targets, is made available to start the programmes.

The University will develop its environmental programmes centred on these principles.

6 Environmental Pollution Control

6.1 Monitoring

The University has responsibilities to manage and monitor its activities that relate to pollution control, including emissions to air, water and land. These are carried out by various sections within the University, in conjunction with its contractors:

Table 2 Environmental Monitoring

Category	Activity	Licensing Authority	Management responsibility
Air	Energy generation (GSC)	Environment Agency	Energy contractor
Water	Discharge to sewer	Yorkshire Water	Mechanical Services, Estates
Land	Asbestos	H& SE for monitoring removal EA for transportation and disposal to landfill	Maintenance & operations, Estates
	General waste	Environment Agency	Cleaning services, Estates
	Clinical waste	Environment Agency	Safety advisory services
	Chemical/biological waste	Environment Agency	Safety advisory services
	Electrical & electronic waste (WEEE)	Environment Agency	Cleaning services, Estates
	Recycling of toner cartridges, oils, metals		Estate services
	Contractors waste	Environment Agency	Contractors

6.2 Fuel storage facilities

Over the past three years the University has reduced its number of liquid fuel storage facilities. The remaining storage tanks are at Bretton (underground kerosene), Barden Grange (diesel) and the University farm (diesel). These are in regular use and any problems with the overground tanks would be reported to the Maintenance & Operations section. The underground tanks at Bretton are double skinned and have alarm systems if any discharges occur into the outer tank.

7 Building Design and Refurbishment

The University is a major user of energy, predominately for heating and electrical services in its buildings and site infrastructure. Annual consumption in the financial year 2001/02 was 53,735 MWh electricity, 70,523 MWh steam and 20,124 MWh gas, with a total expenditure of £4,961 million. Summaries of the increases in energy usage and costs is given in tables 3,4 & 5.

Table 3 Electricity costs and consumption

	Costs £					Units MWh				
	1998/99 (Aug - Jul)	1999/00	2000/01	2001/02	2002/03	1998/99 (Aug - Jul)	1999/00	2000/01	2001/02	2002/03
Electricity										
Main precinct	770,004	869,211	1,383,130	1,306,704	1,309,272	38,797	40,415	40,532	40,503	42,052
Old Med School & Alg Firth Bldg	43,185	50,692	83,933	79,333	68,101	2,182	2,360	2,470	2,463	2,184
General	125,137	158,604	143,037	123,849	130,000	1,608	1,899	1,797	1,777	1,850
Worsley	132,226	157,305	218,948	291,220	314,927	6,832	7,345	7,710	8,992	10,184
Totals	1,070,552	1,235,812	1,829,048	1,801,106	1,822,300	49,419	52,019	52,509	53,735	56,270
% change		15.4	48.0	-1.5	1.2		5.3	0.9	2.3	4.7
% change 1998/99 base		15.4	70.9	68.2	70.2		5.3	6.3	8.7	13.9
Steam										
Worsley	406,540	398,726	453,721	464,570	506,791		13,426	15,211	13,728	15,598
Main precinct	1,108,350	1,292,179	2,110,608	1,872,087	1,874,907		55,078	60,737	56,772	57,110
Totals	1,514,890	1,690,905	2,564,329	2,336,657	2,381,698	62,989	68,505	75,948	70,500	72,708
% change		11.6	51.7	-8.9	1.9		8.8	10.9	-7.2	3.1
% change 1998/99 base		11.6	69.3	54.2	57.2		8.8	20.6	11.9	15.4
Overall totals	2,585,442	2,926,717	4,393,377	4,137,763	4,203,998	112,408	120,524	128,457	124,235	128,978
overall % change		13.2	50.1	-5.8	1.6		7.2	6.6	-3.3	3.8
% change 1998/99 base		13.2	69.9	60.0	62.6		7.2	14.3	10.5	14.7

Table 4 Energy costs

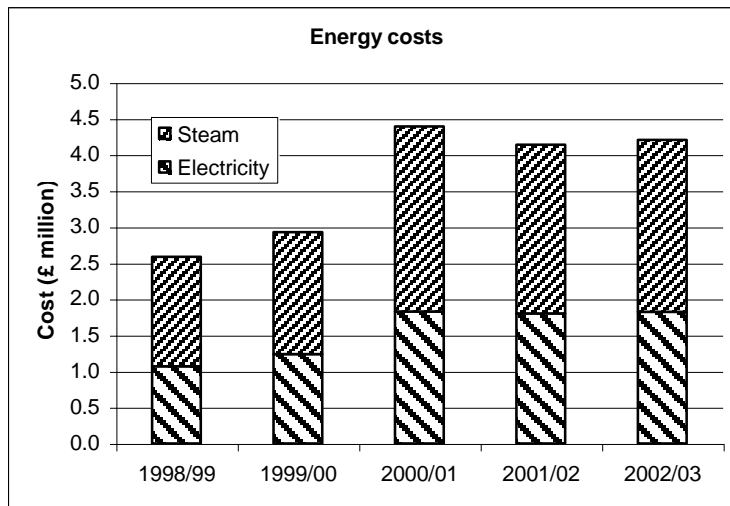
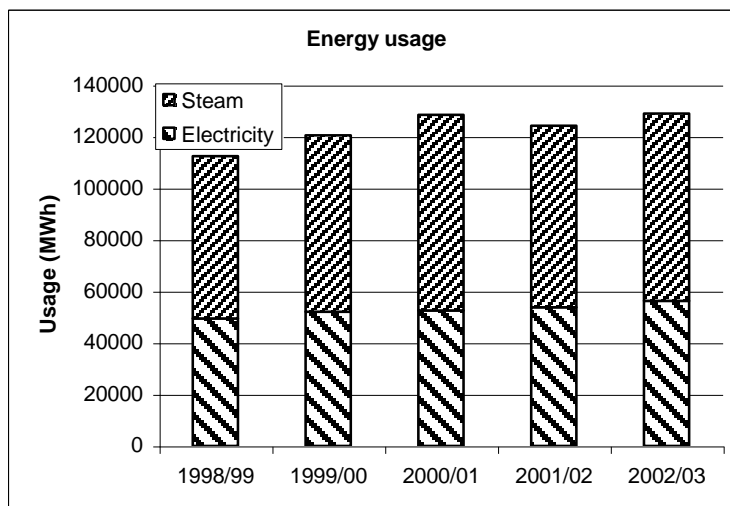


Table 5 Energy usage



7.1 EC Directive on the energy performance of buildings

Some 40% of the primary energy consumption in Europe is associated with heating and cooling of buildings and installed equipment that requires energy for its operation. The EC Directive on the energy performance of buildings has been adopted to reduce the unit consumption of energy. It requires all new building construction and refurbishments above 1000 m² floor area to deliver lower unit energy consumption and to have energy performance certificates. The requirements of the Directive will be examined and incorporated within new and existing building programmes.

7.2 Whole life costing

The concept of whole life costing will be examined and incorporated within University procurement policies and building designs. The principal objectives in this work will be to achieve both environmental and financial benefits in the University's operational performance.

7.3 New building design standards - environmental and carbon saving targets

European and UK legislation is requiring more stringent environmental targets including energy efficiency, low electricity & heating usage, low water usage, low waste production and high recycling of consumables. The University will examine existing design standards and contracts with its consultants, architects and its framework agreements to ensure compliance, incorporate best practice and replicate the initiatives in its existing buildings.

8 Training

A needs based training programme will be developed for Environmental Co-ordinators and staff who have environmental responsibilities including:

- purchasing (environmental issues in the supply chain)
- facilities management (utilities conservation)
- communications (environmental internal communications)
- human resources (integrating environment into staff training)
- information technology (environmental issues in equipment specification)
- transport (fleet managers)
- finance (environmental data collection, reporting investment criteria)
- waste management (environmental issues in segregation and recycling)
- research and development (new product development)
- audit (auditing systems related to environmental management)
- building design and refurbishment (whole life costing and energy efficiency)
- energy savings/reductions

The training will be a combination of on job and off job to meet departmental and individual requirements.

9 Monitoring and reporting programme

The Environmental Steering Group will monitor progress achieved by the environmental subgroups including approving targets and assessment of individual initiatives in terms of feasibility, time-scale, delivery responsibility, costs and funding services. Annual programmes will be submitted by the subgroups to ESG for approval.

An annual environmental report will be produced by the EMG and included within the University's annual report.

The programme for implementing the main aspects of the EMS in 2004 is given in Appendix 1.

Appendix 1 Environmental Strategy and Implementation Plan

Environmental Strategy and Implementation Plan			
Task	Description	Programme Start Date	Completion
Environmental Legislation	To monitor and ensure compliance with environmental legislation, including emissions to atmosphere and water, waste disposal etc.	Jan 2003	Ongoing
Environmental co-ordinators	Advertise, interview and appoint	Oct 2003	Mar 2004
Target-setting, reporting and audits	Statistical results to be reported regularly to EMT and others. Environmental reports to be presented to the Environmental Steering Group and subgroups.	Sep 2003	Ongoing
Educational Role	To initiate an educational role and Action Plan to comply with DfES and HEFCE requirements	Dec 2003	As DfES & HEFCE
Environmental Learning Culture	To foster an environmental learning culture at the University of Leeds. To disseminate ideas for good practice and ensure these follow through into positive, targeted and monitored actions. To liaise with external and internal organisations as appropriate, e.g. Leeds City Council, the University of Leeds School of the Environment.	January 2003	Ongoing
Transport Policy	Management of University of Leeds Transport Plan, including promotion of alternative transportation to cars, e.g., cycling and walking, lobby for improved public transport.	Sep 2003	Ongoing

Energy	Review of existing energy policies and activities with the Electrical Services and Energy Manager to reduce energy consumption. Charge faculties for electricity usage.	Sep 2003 Aug 2004	Ongoing
	Commence programme with the Carbon Trust for energy monitoring and surveys. To ensure that energy consumption, reduction targets and actual reductions achieved are monitored and reported on, including accurate reporting of costs, savings and pay-back periods.	March 2004	Ongoing
	Organise and implement an Energy Awareness Campaign. Target audience to include: University departments staff, students and Estate Services staff.	May 2004	Ongoing
Waste & Recycling	Review all aspects of every type of waste stream including: handling, storage, disposal and waste minimisation.	April 2003	Ongoing
	To undertake Waste Audits in conjunction with the Cleaning Services Manager, and others, and take action to improve waste minimisation and recycling opportunities.	May 2004	Quarterly audits
	Review of existing policy, items currently recycled and suggestions for expansion of recycling activities.	April 2004	Ongoing
Buildings	Development of sustainable, 'green' policies and activities in all aspects of buildings – from new building capital project proposals to maintenance and other service provision and day-to-day activities.	Apr 2004	Oct 2004
	To establish a programme and undertake Environmental Audits of buildings and departments in all aspects of the external and internal environment. To report on findings and negotiate Action Plans with relevant persons for implementation.	Apr 2004	Ongoing
Procurement	To review current procurement policies and practices in conjunction with the Procurement Officer to create a joint Green Procurement Plan.	Jun 2003	May 2004

Environmental Policy

The University of Leeds is responsible for the provision of higher education to over 25,000 students and for the promotion of scholarship through its international class research activity. In carrying out these services this University will contribute to the national commitment to sustainable development.

We will conduct our own activities and operations to reflect best environmental practice, implement an environmental management system to pursue sustainability and continuous improvement and seek innovative ways of meeting environmental objectives. These include:

- To meet and, where appropriate exceed all relevant UK, European and international legislative and regulatory requirements and agreements;
- To review all our activities and operations in order to identify, understand and evaluate all the direct and indirect environmental aspects and effects, and prioritise action to address them;
- To support continuous environmental improvement by establishing demanding but achievable and measurable environmental performance targets that are reviewed and externally reported annually;
- To reduce energy and resource consumption by promoting effective and efficient reduction methods consistent with best practice;
- To influence our suppliers and contractors to ensure that goods and services procured support the environmental policy and, in turn, that all suppliers and contractors progressively improve their own environmental performance;
- To raise awareness and ensure that all employees and students know their overall environmental responsibilities, understand the direct and indirect environmental impacts within and arising from their activities, and appreciate the importance of demonstrating compliance with the environmental policy;
- To integrate environmental management into training programmes for personnel whose jobs have significant environmental impacts;
- To develop and implement green transport plans for business and commuter travel;
- To avoid the use of toxic materials where such use is not essential for teaching or research purposes, and to minimise waste generated, as well as preventing releases of pollutants;
- To ensure good management practices by reviewing them regularly, to verify their effectiveness and validity in achieving environmental objectives.

Professor Sir A G Wilson
Vice-Chancellor

As approved by Senate 28 November 2001

Appendix 3 Terms of Reference for Environmental Co-ordinators

The Head of each Faculty will be responsible for the following functions, the operation of which will be assigned to an Environmental Co-ordinator.

1. Be fully familiar with the University's Environmental Policy and any specific Faculty environmental responsibilities.
2. Provide advice to members of the Faculty on environmental matters within their competence and in particular advising the Dean on the formulation and revision of departmental environmental protocols and procedures.
3. Ensure that adequate environmental records are maintained as required by relevant statutory provisions or by University or Faculty environmental procedures.
4. Refer promptly to the Dean or the University Environmental Officer any environmental problems which they become aware of which cannot be resolved locally on a time scale commensurate with the issue.
5. Liaise with University Services such as Estate Services (Cleaning Services and Energy) and Purchasing to participate in environmental initiatives.
6. Identify environmental opportunities for research and teaching.
7. Disseminate environmental information from the Environmental Officer to appropriate members of Faculty staff and students.
8. Ensure that environmental matters are effectively presented as part of the induction of new members of the Faculty.
9. Identify members of the Faculty who might benefit from attending relevant environmental training provided by the University.

University of Leeds

ENVIRONMENTAL MANAGEMENT STRUCTURE

