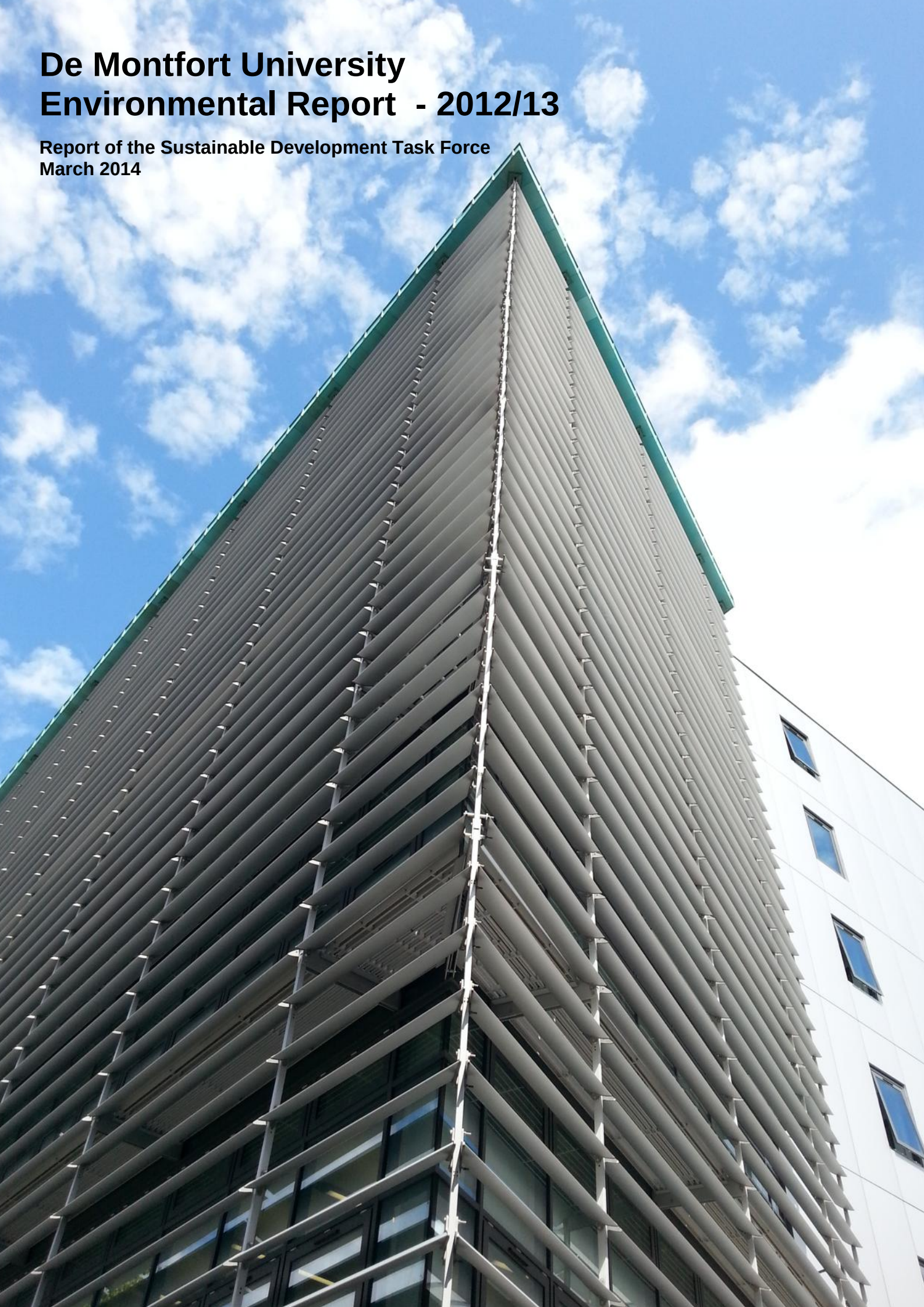
De Montfort University Environmental Report - 2012/13

Report of the Sustainable Development Task Force
March 2014



Introduction

De Montfort University's (DMU) Environmental Policy was revised and adopted by the Executive Board in January 2012.

The policy sets out the university's overarching commitments to environmental management and the steps it will take to reduce its environmental impact and improve its environmental performance. This commitment was further strengthened through the inclusion of sustainability as one of the university's six key themes.

The policy includes commitments across a range of environmental issues including education for sustainable development, climate change and engaging with staff and students on environmental issues.

The policy provides the structure within which targets and actions plans can be developed and implemented to meet the commitments of the policy and thereby improve environmental performance.

The aim of this report is to provide information on the progress against these overarching commitments for the period of 2012/13.

The report covers environmental policy and performance for the academic year 2012/13. This report is part of the annual reporting framework around environmental and sustainability issues at DMU and covers many of the sustainability related aims within the university's Strategic Plan.

The report covers performance at DMU in the following areas:-

- Energy and water
- Waste and recycling
- Staff and student travel
- Business travel
- Carbon emissions
- Sustainable procurement
- Staff and student engagement
- Biodiversity
- Sustainable construction
- Education for sustainable development

Each section contains relevant data on environmental performance for 2012/13 with a compendium of data in the final section of the report.

Comments and feedback on this report can be sent to the report's lead author Karl Letten, Environmental & Sustainability Officer at DMU (kletten@dmu.ac.uk).

Sustainable Development Task Force

The Sustainable Development Task Force comprises faculty and departmental heads, Estates personnel, researchers and representatives from the student union (DSU) and was created in October 2007.

The aim of the Sustainable Development Task Force is to oversee the implementation of the university's Sustainability Strategy. This strategy covers five keys areas of:-

- Teaching
- Research
- Built environment
- Health and well-being and
- Community engagement

Information about the university's Sustainability Strategy can be found on its website http://www.dmu.ac.uk/about-dmu/sustainability/sustainability-strategy.aspx

The Sustainable Development Task Force members are:-

Professor Paul Fleming (Chair) - Director of Sustainable Development
Professor Andy Collop - Pro Vice Chancellor
Dr Christine Nightingale - Head of Equality & Diversity, People & Organisational Development
Dr Ahmad Taki - Associate Head, Leicester School of Architecture
David Carrott - Director of Estates and Commercial Services
Dr Hobina Rajakaruna - Senior Lecturer, Faculty of Technology
Karl Letten - Environmental & Sustainability Officer, Estates & Commercial Services
Dr Leticia Ozawa-Meida - Research Fellow, Institute of Energy & Sustainable Development
Mark Ireland - Programme Administrator, Faculty of Health & Life Sciences
Michelle David - Senior Lecturer Accounting, Faculty of Business & Law
Pete Norman - Head of IT Operations, Information Technology Media Services
Dr Raymond Kent - Director, Research Business Innovation
Dr Richard Bull - Principal Lecturer, Institute of Energy & Sustainable Development
Ross Tarbard - Internal Communications Officer. Communications Directorate
Sarah Lister - Vice President Welfare, De Montfort Students Union
Tracey Lee-Adams - Faculty Manager, Faculty of Business & Law

Energy

Energy use across the campus increased in 2012/13 for the first time in three years. The downward trend in energy consumption was interrupted by an extremely cold winter which saw greater demand for heating in buildings. This has resulted in increases in gas and electricity use for 2012/13, a situation that has been experienced across the HE sector.

Gas consumption increased by 23% and electricity use increased by 10% compared to the previous year of 2011/12. This is also the first reporting year when the new Queen Elizabeth II Diamond Jubilee Leisure Centre has been fully open. The new building provides an exciting new facility for staff, students and the local community but has increased gas consumption across the campus by approximately 10%. Leisure centres with swimming pools are traditionally large users of energy which is required to heat the pool and large users of water.

Recent energy related projects have included the installation of photovoltaic panels (PV) to generate electricity which were installed at the end of 2012/13. The total installation will provide the university with over 90,000 kWh of electricity each year, enough for 27 homes, and save thousands of pounds in energy costs. The installations will also reduce the university's carbon footprint by around 50 tonnes per year. The panels have been installed on Hugh Aston, Gateway House and Edith Murphy buildings. As part of the installation a display board has been placed in each reception area which shows how much electricity is currently being generated and how much has been generated since the panels were installed.

The photovoltaics join a suite of other renewable energy technologies, which include biomass heating, solar thermal water heating and ground and air source heat pumps that contribute to the university's energy needs. The renewable energy technologies are also used as a learning resource to demonstrate to students the different technologies that exist.

The amount of energy generated from renewable sources on campus is 211 megawatt hours (MWh) for 2012/13. The recent installation of the PV panels at the end of 2012/13 will help to increase energy generation from renewables in the next few years. For example PV panels in Hugh Aston will generate approximately 3% of the buildings electricity use.

Future plans and projects for reducing energy use are detailed within the university's Carbon Management Plan and include the installation of PC switch off software and investigating the installation of further renewable energy technologies.

Water Use

Water use on campus has risen in 2012/13 when compared to 2011/12.

The increase in water consumption is due to changes to DMU buildings including the introduction of the new Queen Elizabeth II Diamond Jubilee Leisure Centre which provides an exciting new facility to staff, students and the local community. The facility includes a gym, sports hall and a 25 metre swimming pool.

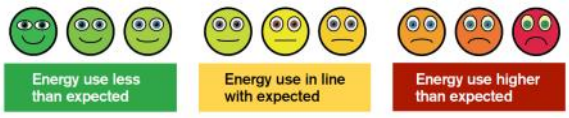
Consumption of water for 2012/13 is comparable with 2011/12 when figures for the leisure centre are removed. This suggests that water consumption has remained relatively constant from 2011/12 to 2012/13 apart from the introduction of new buildings.

Communicating Energy and Water Consumption at DMU with Smartspaces

During 2012/13 DMU was also part of the smartspaces project which has the potential to save up to 10% of energy use in 25 public buildings across the city of Leicester – including local schools and leisure centres.

Electricity, gas and water consumption will be electronically monitored in 20 council buildings as well as five buildings on the DMU campus. This information will then be illustrated via easy -to-understand illustrations on a new website www.smartspaces.dmu.ac.uk

Good performance is reflected as a happy, green face. Poor performance is reflected as a sad, red face. Yellow faces represent neutral performance.



Building users will then be encouraged to find ways to reduce their energy wastage and get their usage back in the green. Leicester is one of 11 pilot sites across 8 European countries aiming to save energy through visualising and communicating energy use.

The system has been developed in consultation with staff and students at DMU and staff at Leicester City Council. The pilot phase of the project will run until November 2014.

Waste and Recycling

Our performance in relation to waste and recycling shows positive results with a continual drop in the amount of waste sent to landfill.

The amount of waste that is recycled is still high and has been increasing for the past three years. The range of materials that can be recycled at DMU continues to expand. This has recently been expanded to include spectacles following a suggestion from a member of staff and there are now facilities to recycle textiles on the campus. The recycling facilities have also been extended to include the food court area of the campus centre although this is experiencing some problems with contamination. The figures provided at the back of this report for non residential estate are calculated from figures and reports from our waste and recycling contractors.

The university continues to make good use of the Estates and Commercial Services furniture store whereby unwanted furniture is reused and re-homed to extend its useful life. The furniture store has re-used over 10 tonnes of furniture that would otherwise be disposed of. This reduces waste but also reduces costs.

The waste that is generated and collected from the DMU owned halls of residence is collected by Leicester City Council and their waste contractor team. Unfortunately as a result we are unable to obtain figures from the city council in relation to the amount of waste that is generated or the amount of waste that is recycled.

As a result of the lack of accurate data for the halls of residence figures in relation to residential properties are based on estimates using national datasets. The national datasets are produced by the Department for Environment, Food and Rural Affairs (Defra) and show the average amount of waste per person and the amount of waste recycled per person for England. This calculation methodology is in line with the recent guidance from the Higher Education Funding Council for England (HEFCE) on measuring carbon emissions from waste for residential properties.

Staff & Student Travel

Progress continues to be made in encouraging staff and students to adopt more environmentally friendly forms of commuting to DMU. The headline target of maintaining single occupancy commuting car journeys amongst staff below 45% was not met but the figure for 2012/13 is symptomatic of the fluctuations within the annual survey results. The survey figures suggest that single occupancy car use for students is at 10% which is the lowest level since records began.

Data in relation to commuting patterns is collected through the annual travel survey which provides a snapshot of commuting behaviours amongst both staff and students at DMU. The results of the 2013 survey show increases amongst those staff who walk/run to work. The results for cyclists is slightly lower than last year but are still way above the national average figure of 3% for cyclists.

Staff and student are encouraged to use public transport through the negotiation of discounts with local and national operators and through the work of SmartGo Leicester which has representatives from the two universities, High Cross and other large employers in the city.

Staff and students are encouraged to use walking and cycling through the use of promotional items such as high visibility clothing, secure cycle parking, cycle lock loans, puncture repairs kits and the provision of changing and shower facilities across the campus.

The implementation of future initiatives and measures to reduce single occupancy car journeys is dictated by the University's Travel Plan which is reviewed on an annual basis and implemented by the Travel Plan Group which is chaired by the Transport Co-ordinator.

Business Travel

The figures for business travel which are shown towards the end of this report have been calculated using the procurement spend value in each of the categories listed below.

The figures reported as tonnes of greenhouse gas emissions (tCO_2e) show that emissions from national rail travel have stayed relatively constant over the three year reporting period while international rail travel has increased.

The area of the largest increase in emissions is from air travel which has continued to increase over the past three years. This increase is in both short haul and long haul travel.

This is no doubt a reflection on the university's increased global reach and the focus on recruiting more international students as set out in the university's International Strategy which seeks to double the number of international (non EU) students between 2010 and 2014. While this increase is dramatic the contribution of air travel to the university total carbon footprint is small at approximately 10%.

Fuel used in DMU owned vehicles has increased very slightly in 2012/13 compared to the previous year.

This is expected to reduce following the acquisition of an electric vehicle by Estates & Commercial Services. The introduction of this vehicle has been so successful that a second electric vehicle has been procured.

Carbon emissions

DMU has taken a comprehensive approach to measuring and reporting its carbon (greenhouse gas) emissions as set out in its Carbon Management Plan. The plan sets a carbon reduction target of 43% by 2020 based on 2005 levels for emissions from energy use and DMU owned vehicles (known as scope 1 & 2 sources). This equates to a reduction of emissions to 7,511 tonnes CO_2 by 2020.

The university has also agreed interim reduction targets for 2012/13 and 2017/18. The carbon emissions for 2012/13 were below the first interim reduction target for 2012.

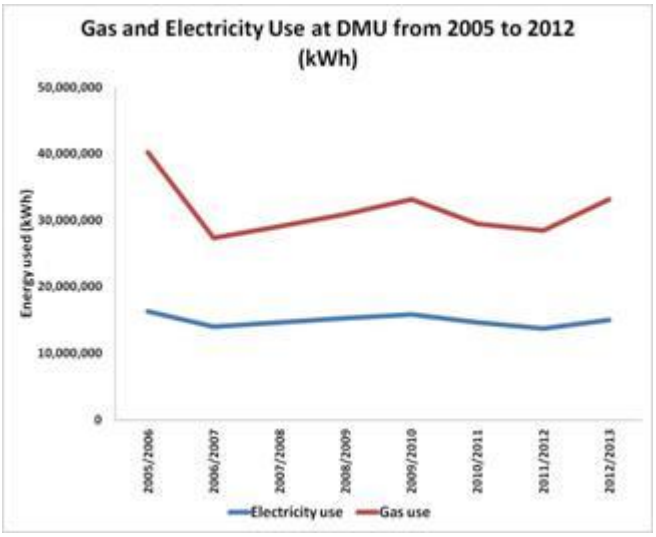
The university also measures and reports emissions from water use, waste production, international and UK based student travel, staff and student commuting, business travel and emissions from procurement activities. These emission sources are collectively known as scope 3 sources and represent approximately 75% of the university total carbon footprint.

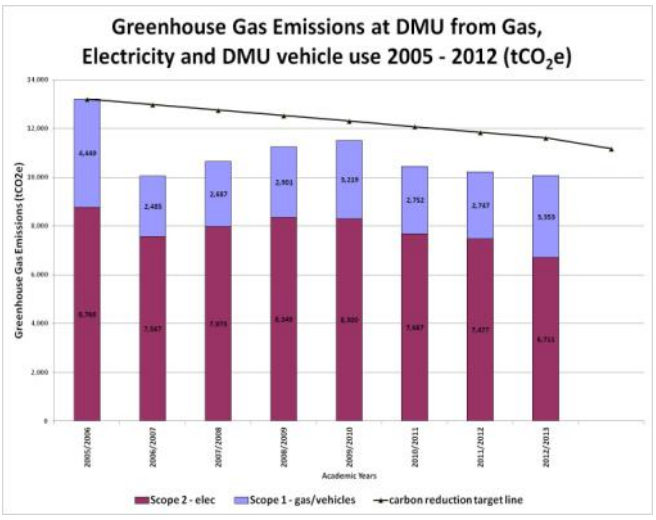
As previously stated in this report energy use had been reducing in previous years but has increased in 2012/13 due in part to the extremely cold winter. This increase in energy consumption as a result of the cold weather is not reflected in the carbon emissions for 2012/13. These emissions are slightly lower than 2011/12.

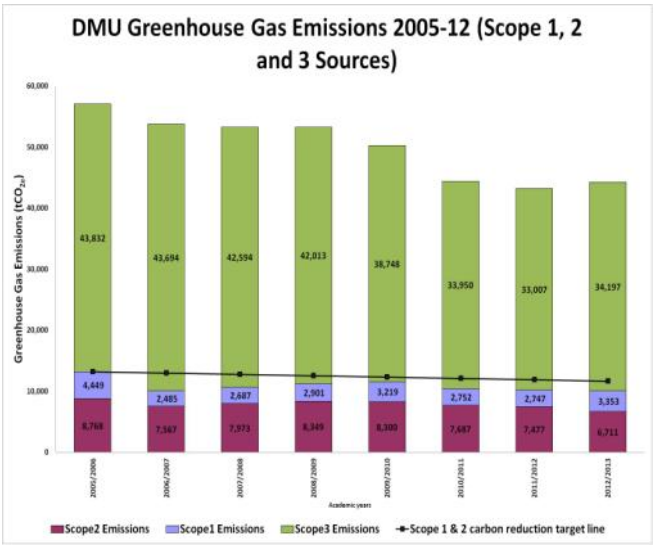
This decrease is due to a decrease in the carbon intensity of electricity supplied through the national grid. Grid electricity comes from a number of different energy sources such as gas, oil, coal and renewables. The different mix of fuels contributes to the carbon intensity of the electricity supplied.

Overall the university's total carbon emissions have increased in 2012/13 with increases in emissions from scope 1 & 2 sources (primarily energy use) and emissions from scope 3 sources. Within those scope 3 sources emissions have risen slightly from business travel and from procurement. The procurement related emissions are as a result of increased expenditure on information and communications technologies which has resulted in increased emissions from this procurement related area.

Future developments in this area include the development and agreement of scope 3 reduction targets for the institutions. Work is currently taking place to establish some emission scenarios for the different scope 3 sources to ensure that carbon reduction targets take into account potential forthcoming changes in emissions.







Sustainable Procurement

Sustainable procurement has been included in the major contracts and agreements that the university makes. Through mechanisms such as Pre Qualification Questionnaire (PQQ) and contract specification stipulations have been made to ensure that contractors working on behalf of the university have high environmental credentials and that they use products and services which have a lower impact upon the environment where possible.

The university has a sustainable procurement policy which sets out what it aims to achieve through activities including contracts specifications and through working with suppliers.

The university is a Fairtrade University which is a standard awarded by the Fairtrade Foundation where universities can demonstrate that certain criteria have been met. These criteria include selling Fairtrade products through its outlets and providing fairtrade products for its management meetings. The university works closely with its catering contractor, Chartwells, to promote Fairtrade and Fairtrade products including ensuring that all tea and coffee provided by Chartwells for catered meetings and events is Fairtrade by default.

Sustainable procurement is also evident in the provision of food at DMU. The university's catering contractor Chartwells, has been proactive in the area of sustainable food procurement. The organisation uses Fairtrade tea and coffee in its catering provision as standard, ensures its fish is from sustainable sources, procures free range fresh eggs, purchases 'Red Tractor' meat from UK farms and uses seasonal vegetables in its menus. This work is supported by the university's Sustainable Food Policy.

Sustainable procurement is an essential part of the university's work on sustainable construction. The sourcing of products is a key element of the Building Research Establishment Environmental Assessment Method (BREEAM) process which assesses buildings on their environmental and ecological credentials. The university aims for the Excellence standard in its buildings where possible.

Where possible the university ensures that its contractors source products which have been produced in a sustainable way and have a low environmental impact and the university encourages its suppliers to adopt sustainable practices such as environmental management systems.

Staff and Student engagement

Staff and student engagement is an important issue in relation to environmental issues. Without this important element the work that has been undertaken to provide the structure for positive environmental behaviours to take place i.e. providing a recycling scheme, these actions may not take place.

DMU runs two staff and student environmental engagement projects in the shape of Green Impact (GI) and Student Switch Off (SSO) for staff and students respectively. Both projects are supported nationally by the NUS but delivered within DMU by the Estates and Commercial Services Directorate.

GI is a scheme to encourage greener habits in the workplace by providing a competitive element to environmental issues. Teams across DMU are encouraged to complete a series of simple environmental activities which are individually scored.

Depending on the number of activities completed and points scored teams are awarded Bronze, Bronze +, Silver or Gold awards. The teams are then awarded their prizes at a special awards ceremony.

Students at DMU are trained as either Green Impact Project Assistants (GIPAs) to assist the staff teams in implementing their environmental activities or as environmental auditors who audit each GI team to check that the environmental activities have been completed to the required standard.

In 2012/13 there were 12 Green Impact teams taking part in the project with 2 GIPAs supporting two of those teams. The provision of GIPAs for Green Impact will be increased for 2013/14.

Green Impact is also being implemented at the Leicestershire charity LOROS by students from the Faculty of Business & Law BusinessWorks programme.

This is the first year that BusinessWorks students have worked with LOROS on the programme and it is anticipated that this will continue to 2013/14.

The DSU have also taken part in Green Impact Students Union and have successfully achieved the Silver standard.

SSO encourages students to save energy in halls through the use of incentives and social media. Students in DMU halls are encouraged to save energy through simple energy saving tips sent via email. Students who then post pictures of themselves doing these energy saving tips on a specially created Facebook page can win prizes.

The SSO project currently runs in Bede and New Wharf halls. The Estates and Commercially Services Directorate are currently in contact with private hall providers to encourage them to take part in 2013/14.

Biodiversity

The university recently adopted a Biodiversity Policy which seeks to improve existing wildlife habitats and create new habitats where possible. The Estates and Commercial Services Directorate manage the existing green space across the campus and seek to apply sustainability principles where possible.

Currently green waste is composted or chipped and re-used on site as a mulch to suppress weeds.

A phase 2 habitat survey has been completed to highlight any areas of the campus that need managing to enhance biodiversity and nesting boxes have been erected on a number of buildings to encourage Peregrine Falcons to nest.

Biodiversity is addressed for new developments through the adoption of the Building Research Establishment Environmental Assessment Method (BREEAM) rating for buildings.

Part of the BREEAM assessment includes ecology and looks to ensure that this is included as part of new developments. The new Fletcher development aims to achieve BREEAM Excellent.

Sustainable Construction

Sustainable construction at DMU is mainly guided by the university's energy policy which states that in new build and refurbishment projects, the Estates Department will implement the design that provides the most beneficial life cycle costs and which aspire to obtaining an outstanding standard in the BREEAM (Building Research Establishment Environmental Assessment Method) rating system taking all material factors and constraints into account. Recent new building projects such as Hugh Aston have achieved the highest BREEAM rating available at the time of construction.

BREEAM sets the standard for best practice in sustainable building design, construction and operation. The BREEAM has become one of the most comprehensive and widely recognised measures of a building's environmental performance. It encourages designers, clients and others to think about low carbon and low impact design, minimising the energy demands created by a building before considering energy efficiency and low carbon technologies.

A BREEAM assessment uses recognised measures of performance, which are set against established benchmarks. These measures of performance are used to evaluate a building's specification, design, construction and use. The assessment criteria range from energy to ecology. They include aspects related to energy and water use, the internal environment of the building (health and well-being), pollution, transport, materials, waste, ecology and the management processes of erecting and managing the building.

Refurbishment projects also include environmental and sustainability measures. The recent refurbishment of Edith Murphy included improved insulation, new glazed windows and the installation of air source heat pumps. This has reduced energy use within the building by over 25%.

The new Queen Elizabeth II Leisure Centre also contains a series of environmental measures including natural ventilation, high levels of insulation and the provision of air source heat pumps.

Education for Sustainable Development

'Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development' – UNESCO

DMU has already made a series of commitments in relation to Education for Sustainable Development through its Strategic Plan, its Environmental Policy and in its University Teaching, Learning Assessment Strategy (ULTAS).

To further strengthen this commitment the university joined the Green Academy programme run by the Higher Education Academy (HEA) in February 2013. The Green Academy programme supports institutions that wish to enhance education for sustainable development within their organisations.

DMU was one of only 10 higher education institutions (HEIs) to take part in the second Green Academy programme. The Green Academy team at DMU consisted of representatives from Faculty of Technology, Academic Quality, De Montfort Students Union and Estates & Commercial Services.

The Green Academy team at DMU developed an implementation plan which was structured around five work packages, to be delivered within the current ULTAS timeframe (2012-2015) and comprised of the following aims:

- An on-line module on 'leadership for a global environment' that all students can study utilising MOOC (massive on-line open source course) principles.
- An increase in formal curriculum around sustainable development
- A University-wide certificate for students around 'leadership for a global environment' that will recognize the completion of the on-line module PLUS practical activities, for example, volunteering, being an environmental champion and working with international students.

The DMU Green Academy team will continue to implement the three year plan and will provide updates on progress through the Sustainable Development Task Force on a regular basis.

The aim of the Green Academy programme is to build upon the areas of good practice at DMU on education for sustainable development. Sustainability already features in architectural design, engineering and within fashion and textiles. There is also a very strong post graduate study into sustainable development through Masters degrees including Climate Change and Sustainable Development; Energy and Sustainable Building Design; Environmental Quality Management and Architecture and Sustainability.

Monitoring of the extent to which Education for Sustainable Development is currently being implemented across DMU is achieved through a search of course and modules descriptions which is completed by colleagues in Academic Quality. The search using a list of key environmental and sustainability words to highlight where sustainability and environmental issues are being covered in the syllabus.

The search criteria used the key words of 'environmental', 'corporate social responsibility', 'globalisation', 'ethical', 'fair trade', 'climate change', 'carbon', 'social', 'exclusion', 'equality' or 'diversity' in the learning outcomes. For the most recent year of 2012/13 a more comprehensive search took place. A total of 146 programmes (out of 642 – so 22%) were found to contain one of more of the key words (with 8222 students enrolled on these programmes). The search also highlighted 86 specific modules (out of 4906) that contained one or more of these keywords in their learning outcomes (with 2076 students enrolled on these modules).

Environmental Performance 2012/2013

The following are a series of environmental performance indicators for 2012/13. The data is the majority of cases is shown for 2012/13 and the proceeding three years. Where graphs have been used to represent the data the time period covers eight years.

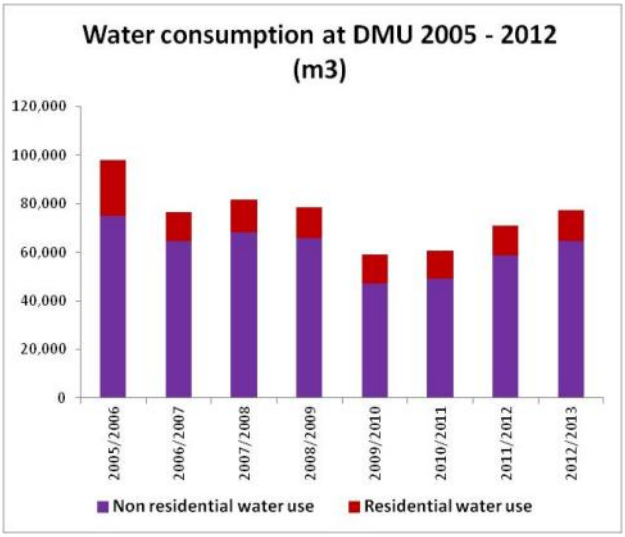
The first data table provides some general information about DMU to offer some context for the environmental performance figures. For example if the gross internal area of the university were to increase or decrease dramatically from one year to the next this may have an effect upon energy use and carbon emissions. In a similar way an increase in students may have an effect on waste production and recycling rates.

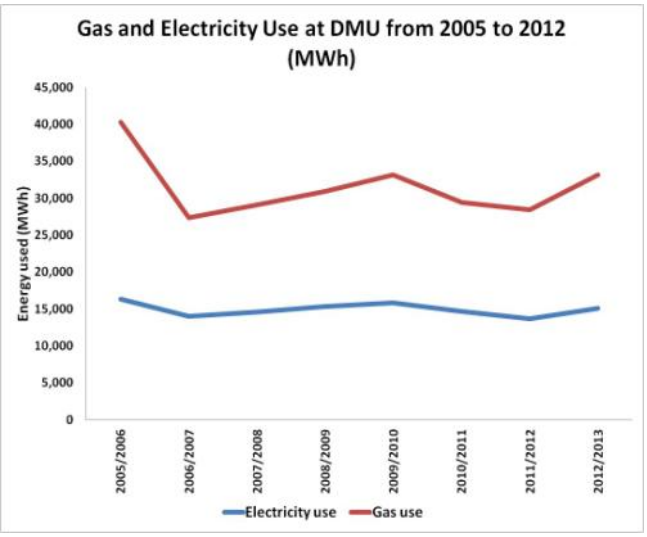
General

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Income/Turnover	£149.88M	£149.43M	£146.99M	£152.66M
Student numbers	22,457	22,411	22,192	20,473
Staff numbers	3,350	3,083	2,950	2,871
Gross Internal Area (GIA) (m^2)	167,583	157,713	151,669	163,224

Energy

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Energy use (MWh)	33,135	29,452	28,489	33,209
Electricity use (MWh)	15,820	14,652	13,713	15,064
Gas use (MWh)	17,315	14,800	14,776	18,145
Water use (m^3)	58,977	60,565	71,131	77,256
Energy generated from renewables - heat only (MWh)	149	379	223	211
Fuel used in DMU vehicles (litres)	4,772	4,399	4,408	5025
Residential & non residential GIA with Display Energy Certificate rating A - C	44,339	68,566	79,220	86,695
% residential & non residential GIA with Display Energy Certificate rating A - C	26%	43%	52%	57%

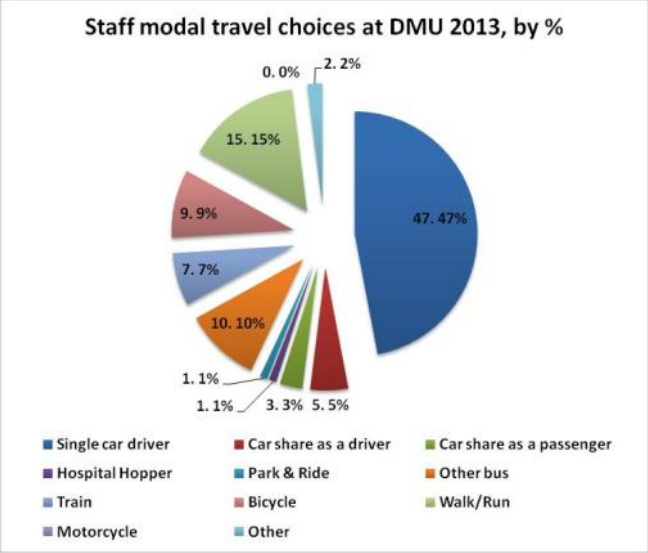


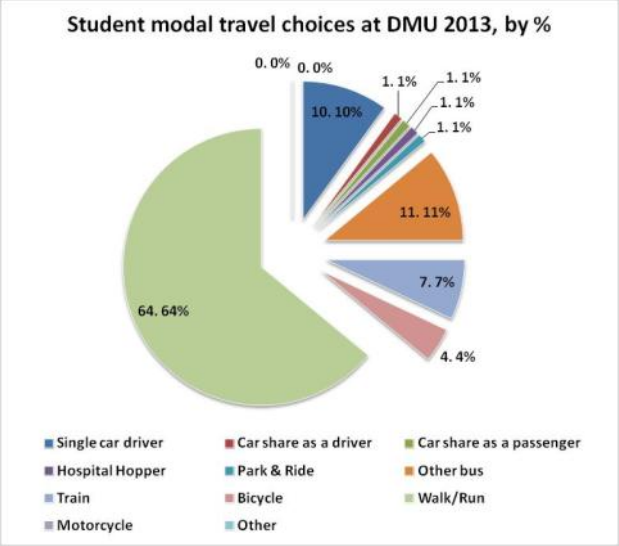


Environmental Performance 2012/2013

Transport

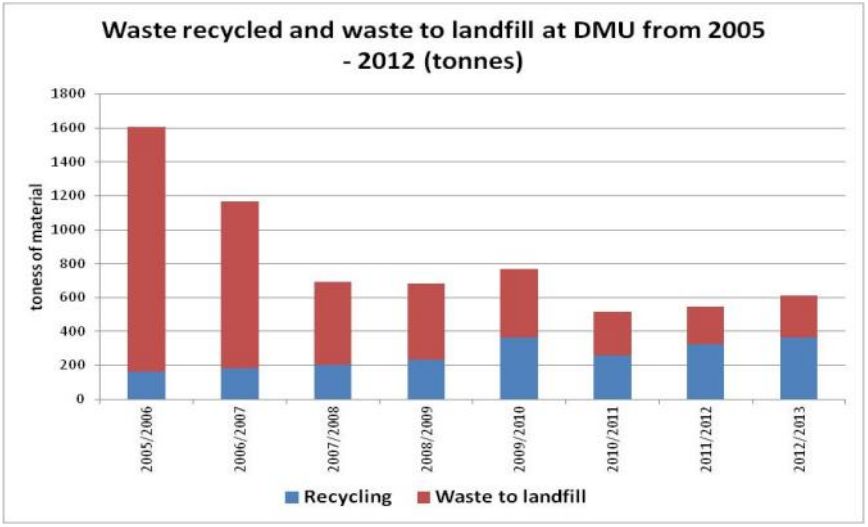
Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
% Single occupancy car use (staff)	47%	45%	42%	47%
% Single occupancy car use (students)	13%	13%	15%	10%
% Staff travel by public transport	21%	20%	20%	19%
% Staff travel by cycling	9%	9%	11%	9%
% Staff travel by walking/running	13%	13%	14%	15%





Waste and Recycling

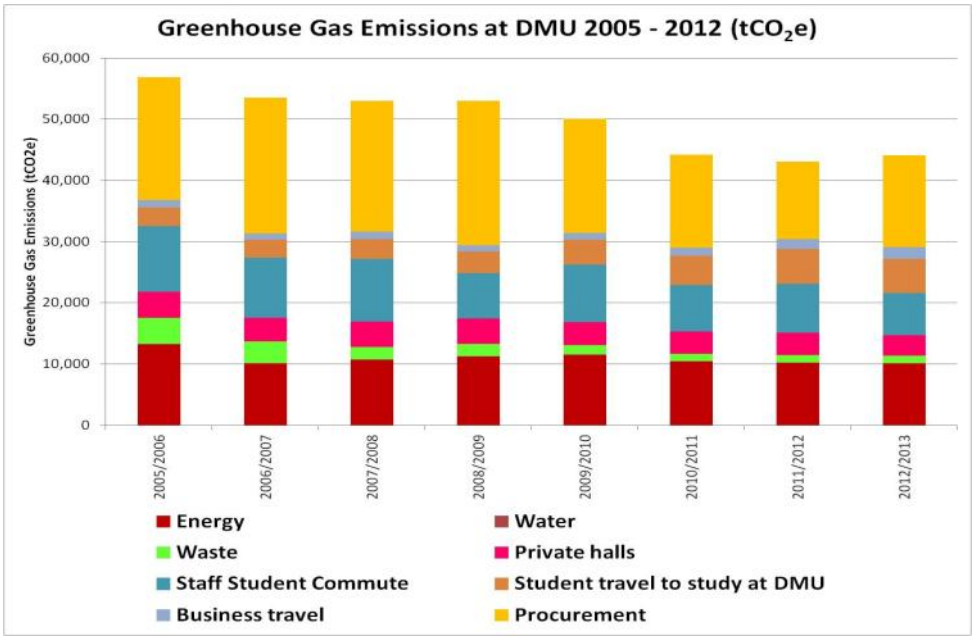
Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Total Waste produced - non residential (tonnes)	809	634	663	612
Waste recycled - non residential (tonnes)	363	257	326	366
Waste to landfill - non residential (tonnes)	447	378	337	246
Total Waste produced - residential (tonnes)	234	234	234	234
Waste recycled - residential (tonnes)	56	56	56	56
Waste to landfill -residential (tonnes)	177	177	177	177



Environmental Performance 2012/2013

Greenhouse Gas Emissions

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Emissions from energy & DMU owned vehicles(scope 1 & 2) (tCO_2e)	11,519	10,439	10,224	10,064
Emissions from staff & student commute (scope 3) (tCO_2e)	9,412	7,556	8,120	6,919
Emissions business travel (scope 3) (tCO_2e)	1,088	1,250	1,620	1,935
Emissions from waste & water (scope 3) (tCO_2e)	1,523	1,186	1,174	1,222
Emissions from international & UK student travel (scope 3) (tCO_2e)	4,032	4,789	5,588	5,525
Emissions from procurement activities (tCO_2e)	18,596	15,180	12,662	14,981
Emissions from all scope 3 sources (tCO_2e)	38,609	33,807	33,065	34,197
Total Emissions - scope 1, 2 & 3 sources (tCO_2e)	50,128	44,246	43,289	44,261



Business Travel

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Air travel (tCO_2e)	745	908	1,249	1.603
Rail travel (tCO_2e)	203	200	187	156
Maritime (tCO_2e)	0	0	0	0
Road travel (tCO_2e)	140	143	184	176

Education for Sustainable Development

Indicators/Metrics	2010/11	2011/12	2012/13
Number of modules with sustainability key words	99	105	86

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