Queen Margaret University

EDINBURGH

Universities & Colleges
Climate Commitment for Scotland

Climate Change Action Plan 2010-15

QMU.CCAP.10 Aug 2010

Foreword

We are currently experiencing the most economically, environmentally and socially challenging period in recent memory. Funding is tighter, expectations are higher and this is set against the backdrop of increasingly demanding targets such as zero waste and zero carbon. It is a challenging time, but where there are new challenges there are also opportunities.

Queen Margaret University has made a clear and unequivocal commitment to being a sustainable institution. We accept that whilst we have made great progress we still have more do and as a signatory of the Universities and Colleges Climate Change Commitment for Scotland (UCCCfS) signed on the 24th February 2009, Queen Margaret University has made a commitment to develop and deliver a number of actions that address sustainability and carbon emission management and reduction.

We also know that to deliver against the UCCCfS we need to have this commitment embedded at the very heart of our institution. Therefore we have reflected this in our mission for the university:

"…to enhance the quality of life and serve communities, through excellence and leadership in vocationally and professionally relevant education, research and consultancy, as a university which is outward looking and committed to innovation, participation and lifelong learning,"

Our values also support this commitment further:

- Development of academic excellence in service to the community
- Social responsibility towards all of the communities we serve, demonstrating respect, care, social justice, equality and fairness
- Concern for the environment and sustainable use of natural resources
- Commitment to continuous improvement in all we do

With this commitment and the expertise, skill and enthusiasm of everyone at Queen Margaret University we will move forward on embedding the UCCCfS commitment and our overall commitment to being a truly sustainable institution in all that we do.

We look forward to sharing our story, the challenges and the successes with you over the coming years.

Dr Petra Wend

Principal

Executive Summary

Queen Margaret University has established itself as a leading national and international sustainable university through demonstrating practical leadership in sustainable estate development, tackling the climate change agenda and promoting social responsibility. Its flagship 21st century estate sets benchmark standards for sustainable building within the education sector and has been instrumental in providing a base for the university to develop in the long term. It has also been crucial in supporting the engagement of students, staff, alumni and local communities in the sustainability agenda.

Climate change and financial sustainability are the two major challenges facing the university sector in the 21st century. The university addressed these in its development of its estate by adopting a holistic approach, ensuring that the building design supported efficiency in terms of operational delivery. As a result the university estate and its operations can be proved, in terms of key sustainability related indicators, to be among the most efficient in the UK. The university has received various awards and widespread recognition of its sustainable estate development.

Sustainability remains a key strategic objective for the university and is paramount within the university's Strategic Plan 2010 -2015. The senior management team have overall responsibility for delivering the Climate Change Action Plan and have developed relevant institutional sub strategies to ensure this.

The university is committed to working closely with partners from both in and out of the sector to promote the benefits of sustainable development and to fulfilling its role as a sustainability leader across Scotland and the wider UK.

The Climate Change Action Plan presented here has been produced to support the commitment made by Queen Margaret University in joining the Universities and Colleges Climate Commitment for Scotland. The commitment includes recognition of the scale and likely impacts of climate change, appreciation of the role of institutions within the sector to demonstrate leadership and provide solutions to climate change challenges, and an undertaking to reduce greenhouse gas emissions in support of national emission reduction targets.

The UK and Scottish Governments have both set targets to reduce greenhouse gas emissions, under the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009. Whilst both have agreed to an y 80% reduction (based on 1990 levels) by 2050, the UK Government has committed to an interim reduction of 34% by 2020 and the Scottish Government has committed to a 42% reduction by 2020.

The university has already made significant improvements in reducing greenhouse gas emissions as a result of its major estate rationalisation and the sustainability objectives it adhered to. Details of this are included in the Climate Change Action Plan. Current greenhouse gas emissions have been calculated at 2297.0 tCO_2e per year. The actions described within this Climate Change Action Plan are projected to reduce emissions to 1,180 tCO_2e per year, a reduction of 51.4%. The basis for carbon footprint calculations is set out in the section below. Measurements are "absolute" and not related to the areas under occupation and so not linked to any expansion plans.

Headline actions within the plan include:

A. Energy consumption and source
B. Waste reduction, recycling and responsible disposal
C. Sustainable estate development
D. Sustainable travel planning
E. Responsible procurement of goods and services
F. Provision of skills training, modules and courses
G. Community engagement and dialogue

Implementation of the plan will involve the participation of all those involved with the university: students, staff, visitors and the local community. Achievement of the targets described within the plan will not only significantly enhance the sustainability of the university's operations, but will also produce substantial financial savings associated with energy expenditure, which are described in Figure 1 below.

Figure 1: Climate Change Action Plan Investment & Savings Summary for Queen Margaret University

Timescale	Investment	Annual Savings		Lifetime Savings		Emission reduction
Year		tCO_2	£	tCO_2	£	%
0	£0	1,413.8	-£137	28.3	-£2,737	38.1%
1	£9,900	348.2	£77,304	6,157.0	£5,798,742	15.2%
2	£26,750	768.9	£113,135	15,196.0	£2,168,143	33.5%
3	£0	0.0	£0	0.0	£0	0.0%
4	£0	0.0	£0	0.0	£0	0.0%
5	£0	0.0	£0	0.0	£0	0.0%
Total	£36,650	2,530.9	£190,302	21,381.3	£7,964,149	86.7%

Introduction

Queen Margaret University is an institution providing higher education for circa 6,000 students. The Craighall Campus comprises the main Academic Building (20,962m^2), the Students Union and Sports Centre (2,700m^2) and the student halls of residence (20,579m^2).

Queen Margaret University fully recognises the significance and challenges presented by climate change, and the role and responsibility of universities and colleges in achieving progress towards national greenhouse gas emission reduction targets. These legally binding targets include UK and Scottish targets for an 80% reduction in greenhouse gas emissions by 2050, and an interim Scottish target of a 42% reduction in emissions by 2020. All emissions relate to 1990 levels. Realisation of these emission targets will involve substantial shifts in the way that society obtains and uses energy, and in the ways that we manage emissions of the full range of greenhouse gases.

The university has used innovative approaches to improving sustainability and reducing greenhouse gas emissions. Its strategy from the outset has been to go beyond worthy statements that often fail to deliver and to avoid gimmicks that often add expense. The university focus has been based upon getting the very basic things right and balancing the readily achievable cost-benefits of sustainable development with any necessary additional costs.

In terms of its estate development there was no specific additional budget set for sustainability. The approach was to deliver sustainability aspirations within typical building benchmark cost. This required a holistic approach, which focused on the adoption of a low carbon, low energy strategy, with sustainability being designed into the project from the outset. This is significant and challenges the perception that sustainability requires substantial investment and payback assessment.

We now seek to build on these achievements through the implementation of the measures described in this Climate Change Action Plan, and maintain our position as a leading organisation in the journey towards improved sustainability within the sector.

In producing this plan, and, critically, in implementing the measures described within it, we will contribute to the achievement of national greenhouse gas emission targets, secure energy cost savings for investment in the university's core activities and enhance the sustainability of the campus. Furthermore, the Climate Change Action Plan will be used to support related sustainability initiatives and the engagement of students, staff, alumni and local communities in the sustainability agenda.

This five-year climate change action plan has been produced to support the delivery of our Climate Commitment, signed on 24th February 2009. We recognise that this will require the allocation of significant time and resources but will ultimately become part of our strategic planning process.

Governance

Our strategic plan, which is approved by the University Court, is designed to ensure the future sustainability of Queen Margaret University as an independent university and to enable us to maximise our impact on society. Implicit in this is our commitment to social, economic and environmental sustainability. In terms of delivery, the requirements of the Climate Change Action Plan will be addressed through the institutional sub strategies and operational plans.

Dedicated sustainability training has been introduced for all senior managers to ensure they are fully aware of the commitments made and the context within which these are to be developed.

Regular reviews are undertaken during the course of each year to measure progress with institutional targets and this will incorporate progress measures for the Climate Change Action Plan.

The effective implementation of the Climate Change Action Plan will require significant project co-ordination within the university. The university has introduced an Environmental and Sustainability Working Group (ESWG) whose purpose is to promote, advise and support implementation of the necessary policies and procedures that Queen Margaret University is required to produce, and to ensure that the university has formalised environmental and sustainable organisational structure in place. The name and role of the ESWG is being reviewed at the time of writing this report however it will maintain a significant role in delivering against the UCCCfS plan.

The relevant governance and management structure is outlined in Figure 2 below.

Figure 2: QMU CCAP Management and Delivery Roles

Role in CCAP	Name	Position	Contact Details
CCAP Lead	To be added	Vice Principal – Resources and Development	To be added
Advisory Committee	To be added	Executive board	To be added
Practitioner / Working Group	To be added	Environmental and Sustainability Working Group	To be added
CCAP Delivery	To be added	All support and academic departments.	To be added

		Student Union	
Research Team	To be added	Environmental and Sustainability Working Group (ESWG)	To be added

Baseline Carbon Footprint

Queen Margaret University has operated an environmental policy for several years. The institution previously occupied three campuses around Edinburgh, the energy and emissions performance of which had been improved under the environmental policy and "green" campaigns.

In 2002, following strategic reviews which indicated that the existing campuses were no longer fit for purpose the university committed to consolidate all three sites and relocate to a new purpose built campus near Musselburgh designed to address the university's long term needs.

The new campus was, from the outset, designed to be as sustainable and environmentally friendly as possible. Working together with the design team who were themselves selected on basis of sustainability experience, we focused on a set of major achievements, affecting the long-term future success of the campus. These were:-

- Low carbon footprint
- Biodiversity and a quality external environment
- Indoor air quality and day lighting
- Transportation and green travel planning

A holistic approach was taken in delivering a low carbon, low energy campus which encompassed energy source as well as building design and operation. Provision for energy-efficient and low carbon technologies was made, with the buildings maximising natural ventilation and day-lighting, solar control and free cooling. The new site is supplied with heat from a Biomass Energy Centre that uses locally-sourced woodchip fuel, significantly reducing campus CO_2 emissions.

The Musselburgh campus was commissioned in 2004 and open for students in October 2007.

It is important to understand that the new campus was designed as a low carbon emission site with provision for several new sustainable technologies. In comparison with the previous estate, large energy savings have been made. Total (absolute) energy consumption has been reduced by 35.6% which is 4,668,656 kWh/yr. Emissions have been reduced by 38.1% which is 1,413,790 kg of CO2/yr.

The transfer to the new site will be treated as a separate action within this plan.

The tables below present the Base Carbon Footprints for the old and new campuses.

It should be noted that savings associated with transport, although not readily monitored or measured, are recognised as being significant. The university has made major improvements in this area having eliminated travel between sites and implemented a green travel plan which has resulted in a major reduction in single car journey commuting.

A green travel plan study was carried out as part of the relocation project to develop a new campus at Craighall. Planning permission was granted on the basis that a sustainable transport modal split would be achieved. In order to determine this, the first travel survey was done in 2005 on the three old sites. This found that 62% of staff and students came by car, 16% walked, 10% used the bus, 5% used the train, 3% cycled and 4% travelled to the campus by other means.

Travel surveys are carried out each year on the new campus and the April 2009 survey showed that 34% travelled by car, 5% car shared, 30% travelled by bus, 22% travelled by train, 5% cycled and 4% walked.

These results show that there has been a significant ongoing reduction in single person car commuting journeys.

The green travel plan and allied parking policy are updated each year as a result of these travel surveys

Business travel statistics have however not been gathered in this format but arrangements have been put in place to do so from the start of next financial year (1st August 2010).

Figure 3: Baseline Carbon – New Campus

Queen Margaret University- New Campus 2009							
Item	Units	energy consumption	Energy consumption per m2	Cost factor	Annual Cost	Emission factor	Annual CO2
Direct Emissions (Scope 1)							
Natural Gas	kWh	215,215	9	0.0369	£7,941.43	0.185	39,815
Biomass	kWh	4,211,652	178	0.017	£71,598.08	0.025	105,291
Owned Transport							
- Diesel	Litres						
- Petrol	Litres						
Imported Emissions (Scope 2)							
Electricity	kWh	4,007,235	169	0.12	£480,868.20	0.537	2,151,885

Average							
TOTAL		**8,434,102**			£560,407.72		**2,296,991**
Area=	23,662 m2						
TOTAL / m2		356			£23.68		97.08

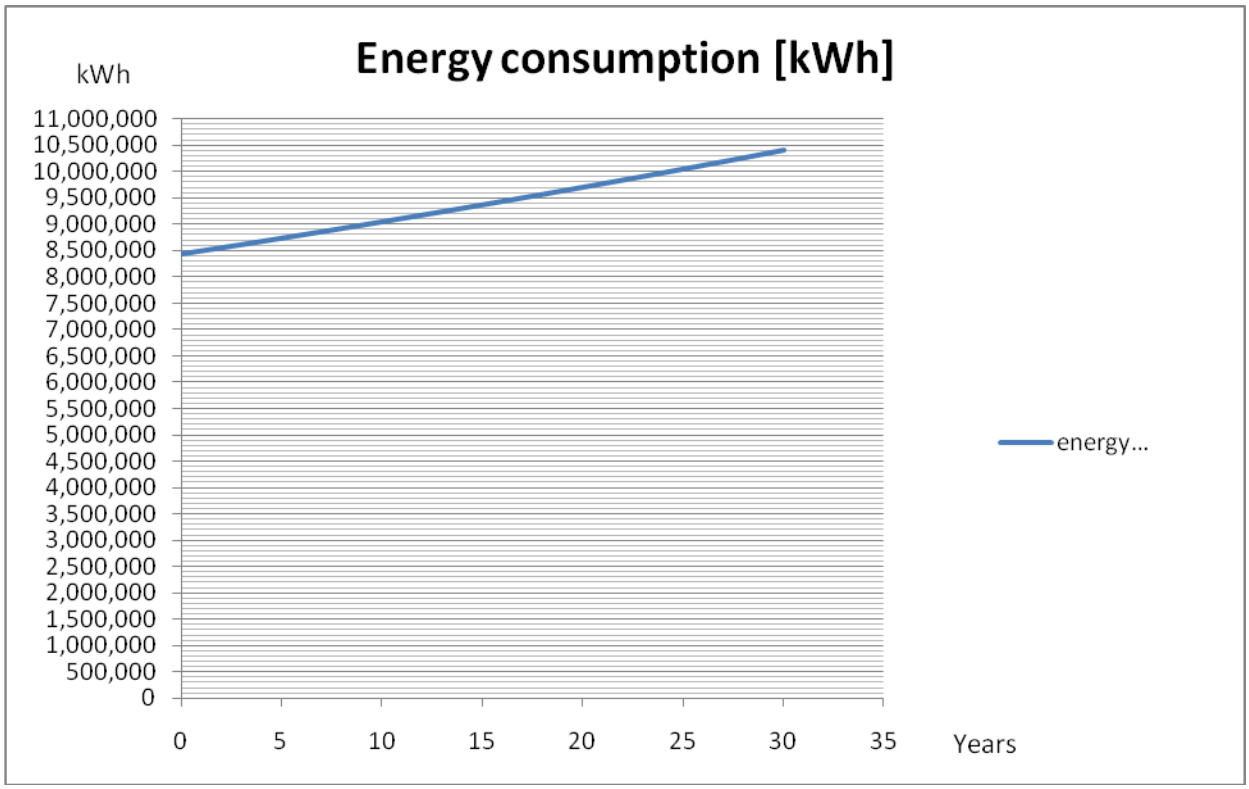
Figure 4: Baseline Carbon – Old Campus

Queen Margaret University– Old Campus 2007							
Item	Units	energy consumption	Energy consumption per m2	Cost factor	Annual Cost	Emission factor	Annual CO2
Direct Emissions (Scope 1)							
Natural Gas	kWh	9,447,160	281.2659		£172,447.28	0.185	1,747,725
Biomass	kWh						
Owned Transport							
Diesel	Litres						
Petrol	Litres						
Imported Emissions (Scope 2)							
Electricity	kWh	3,655,599	108.8364		£251,120.00	0.537	1,963,056
TOTAL		**13,102,758**			£423,567.28		**3,710,781**
Area=	33,588 m2						
TOTAL / m2		390			£12.61		110.48

Business as Usual Emissions

The graph below illustrates the trajectory of emissions predicted under a "business as usual" scenario, under which the university takes no further action to reduce emissions.

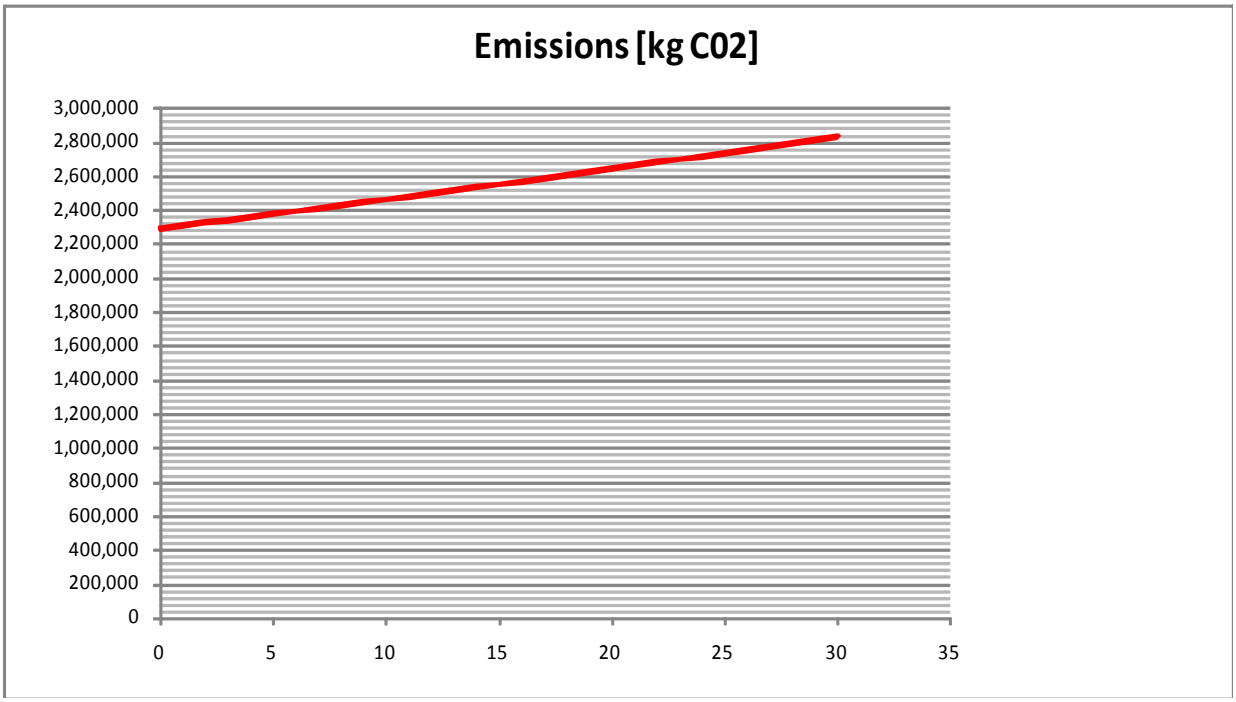
Figure 5: Energy consumption kWh



Clearly there is a steady increase in the amount of energy consumed by the university over a 35 year period in this scenario. A conservative projection would mean an increase of over 2,000,000 kWh over this period.

The graph below shows how increased of energy consumption would lead to a growth in emissions of kg of CO2.

Figure 6: Emissions kg CO2



Categories for Action

The action plan is based on the seven categories for action listed below.

A	Energy consumption and source
B	Waste reduction, recycling and responsible disposal
C	Sustainable estate development
D	Sustainable travel planning
E	Responsible procurement of goods and services
F	Provision of skills training, modules and courses
G	Community engagement and dialogue

Summary of the five-year plan, savings and targets

It is important to understand that the new campus was designed as a low carbon emission site with provision for several new sustainable technologies. In comparison with the previous estate, large energy savings have been made. Total (absolute) energy consumption has been reduced by 36% which is 4,668,656 kWh/yr. Emissions have been reduced by 38% which is 1,414 Tonnes of CO2/yr. This significant reduction has been achieved through development of a sustainable campus.

We will continue with emission reductions from our activities of 68.2% from our 2008 baseline. To do so we will deliver an absolute reduction in emissions of 15% per year in years 2010-2015.

Carbon

Figure 7: Carbon reduction measures - Planned

Timescale	Investment	Annual Savings		Lifetime Savings		Emission reduction
Year		tCO_2	£	tCO_2	£	%
0	£0	1,413.8	-£136,840	28,276	-£2,736,809	38.1%
1	£9,900	348.2	£77,304	6,157.0	£5,798,742	15.2%
2	£26,750	768.9	£113,135	15,196.0	£2,168,143	33.5%
3	£0	0.0	£0	0.0	£0	0.0%
4	£0	0.0	£0	0.0	£0	0.0%
5	£0	0.0	£0	0.0	£0	0.0%
Total	£36,650	2,530.9	£53,598	49,628.8	£5,230,077	86.7%

Non Carbon

Figure 8 :- Non Carbon reduction measures –Planned

Category	Activity	Detail
Waste	Waste reduction, recycling and responsible disposal.	Refer to detail in appendix B
Estate development	Sustainable estate Maintenance and development	Refer to Institutional Estates and Information Strategy 2010-2015
Travel Planning	Sustainable Travel planning	Refer to detail in appendix C

Procurement	Responsible Procurement of goods and Services	Refer to Institutional ethical and Environmental Procurement Strategy
Training	Provision of Skills training , modules and courses	Refer to detail in Appendix D
Community	Community engagement and dialogue	Under development

This table summarises a range of priority areas to be taken forward. Plans are either in place or under development, these areas for action will help drive and implement our sustainability strategy for QMU.

Climate Change Action Plan / GHG Emissions Mitigation

Queen Margaret University has operated an environmental policy since 2007 and all actions undertaken have been monitored and will be listed as part of CCAP.

This section will provide detailed, project –specific information about our actions, including costs, timescales and targets.

A. Energy Consumption and Source

The direct and indirect emissions associated with the university's use of energy are major contributors to the baseline emissions and will therefore be the subject of many of the measures described within the action plan. Under this category the university will focus on ongoing improvements to energy efficiency, reducing energy wastage and limiting energy consumption. All the measures implemented should have an immediate impact on CO_2 emissions.

Emission reductions will be achieved by implementing new technologies, the provision of better controls for existing systems and services, and increasing the environmental awareness of students and teaching and administration personnel.

Appendix A contains an element-by-element action plan for reducing energy consumption and carbon production. The table below summarises the actions proposed under this category. Appendix A details each individual action.

B. Waste Reduction, Recycling and Responsible Disposal

Our new campus is a benchmark for sustainable buildings. As the owner of a flagship sustainable campus we have a commitment to good environmental practice by promoting sustainability and social responsibility. The Waste Management Policy 2010 (the policy) has been developed in order to provide the university community with a clear understanding of our position within the framework of legislation and good practice.

This policy provides guidance on how to manage wastes and to ensure that all waste and recycling we produce is stored, removed, treated and disposed of according to legislative requirements and the Best Practicable Environmental Option. We expect our suppliers to uphold the same standards.

Appendix B contains the Waste Management Policy in full and gives details of its action plan to reduce landfill costs.

C. Sustainable Estate Development

The master plan for the Craighall Campus envisages further stages of development comprising a training hotel, a nursery, further extension to the academic building (10,000m^2), further expansion of student accommodation (700 bed spaces) and associated site infrastructure development, including a further increase in biomass energy capacity.

A firm timescale has not been established for further development at this at this time and it is unlikely that any significant development will take place within the five year timescale for the CCAP.

However, any further development will build on the university's achievements in building a sustainable and environmentally friendly campus. Any new buildings will continue the strategy of low carbon,low energy adopted for the phase 1 site development and target minimum C02 footprint.

D. Sustainable Travel Planning

<u>Commuting</u>

Our site is located approximately six miles from the city centre. The emissions associated with travel to and from the campus are understood and were a major influence in the selection of the new campus which is immediately adjacent to two train stations and several major bus routes.

Our Travel and Transport Policy was introduced in 2007 in advance of the move to the new single site campus. It has proved to be highly successful and has supported a major shift in modal split. Prior to the campus move, surveys indicated 60%+ of travel to the university was made by single user car journeys. This modal split has been reduced to below 35% at the new campus. Corresponding modal split increases have been recorded in terms of use of public transport. Bus services to the campus are now every seven minutes from an original schedule of 30 minutes. Similarly we have worked with the train company to put on more train services at peak travel times and are proud that our move resulted in substantial additional use of the train network . We continue to promote active travel through a range of initiatives which will include the extension of cycling routes and provision of additional facilities. See appendix C for action plan.

Business travel

It is our policy that every requirement for business travel will be rigorously analysed. We aim to reduce or eliminate travel altogether where it is feasible to do so.

Measures to reduce the impact of business travel include:

- Conferences and meetings will be held by video conferencing where this is feasible
- Where travel for business purposes is unavoidable the following means of transport will be used, in order of preference:
    1. Train
    2. Other Public Transport (bus, ferry)
    3. Shared private car
- Where possible, meetings and conferences will be scheduled only at times and dates when these modes of transport are suitable.

E. Responsible procurement of goods and services

Responsible procurement, or sustainable procurement as it is often called, is a key element in any sustainability commitment for an institution. The amount we procure, where it is procured from and who supplies it are all key considerations. The carbon footprint of the goods and services we procure along with broader considerations such as poverty alleviation or human rights issues can all be addressed through our procurement practices. We are committed to responsible procurement and will continue to promote such practices across the institution.

On a practical level, we use the services of Edinburgh University to purchase the vast majority of the goods and services we require. Edinburgh University has well-established responsible purchasing procedures and we will continue to encourage and support such practice. As part of the UCCCfS plan we will review these procedures to ensure our procurement is as sustainable as possible.

F. Provision of skills training, modules and courses

Through its primary purpose of education and research, the university has the potential to make a significant impact on global warming by equipping current and future generations with the skills necessary for tackling the economic, social and environmental impacts of climate change. The principles of sustainable development will be embedded throughout the curriculum and sustainability literacy promoted as core citizenship and employability skills.

A key issue is consistency: sustainability as an underlying theme in everything that the institution and its people do. This provides a valuable glue for a holistic approach to sustainability in the university.

The Curriculum Working Group is a subset of the Environmental and Sustainability Working Group (ESWG) with a specific remit to look at the delivery of sustainability in its widest sense across the curriculum at the university.

On 27 May 2010, the group hosted an event, *SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION: INTEGRATING TEACHING, RESEARCH, CAMPUS AND COMMUNITY,* sponsored by the Higher Education Academy to encourage the university to take a leadership role that helps to accelerate innovation for sustainability. Given that we are uniquely placed to make a distinctive contribution, the event was designed to provide space and stimulus for members of our community to identify existing activities and potential opportunities that will help the university to model, support and promote a society which is more environmentally, economically and socially sustainable.

The Musselburgh campus, with its state-of-the-art learning environment, combines with existing initiatives in the curriculum and among the student body to provide a vibrant platform for further sustainability initiatives. The aim of this event was to tease out excellent practice, to develop more strategic approaches, and to uncover synergies across academic and professional areas, so that we can reflect on the nature, strengths and limitations of our engagement with sustainability. The intention was to inform future plans and activities by enabling representatives from across the institution to meet and enjoy stimulating and inspiring discussions that generate valuable observations and new ideas.

The HE Academy Scotland sponsored the event as part of its programme of institutional support, in collaboration with its *Education for Sustainable Development* (ESD) Project. The event was designed by colleagues at the university, in partnership with Dr Colin Brooks and Dr Alex Ryan, members of the HEA ESD Project, who assisted with facilitation on the day. The output from the day will be a strategic paper which will inform the future development of the curriculum strategy. This strategy will then be taken forward by the university.

G. Community engagement and dialogue

Our commitments to the community in which we operate as well as the communities which we serve are highlighted in two of our four values. Our mission clearly states that we are seeking to 'enhance the well-being of individuals and the communities we serve'. It is with this in mind that community engagement and dialogue has been highlighted as a priority for action. As an institution we are already engaged with a whole range of stakeholders, whether this is other institutions, community and student groups as well as political bodies and network agencies such as the Environmental Association for Universities and Colleges (EAUC).

The need for greater dialogue - true two-way communications – is crucial if we are to truly become a sustainable university and continue to improve in all we do. We continue to develop our relationships with the community to ensure that we are adding value and using our influential role to best effect. As part of our UCCCfs commitment we are developing a community engagement strategy.

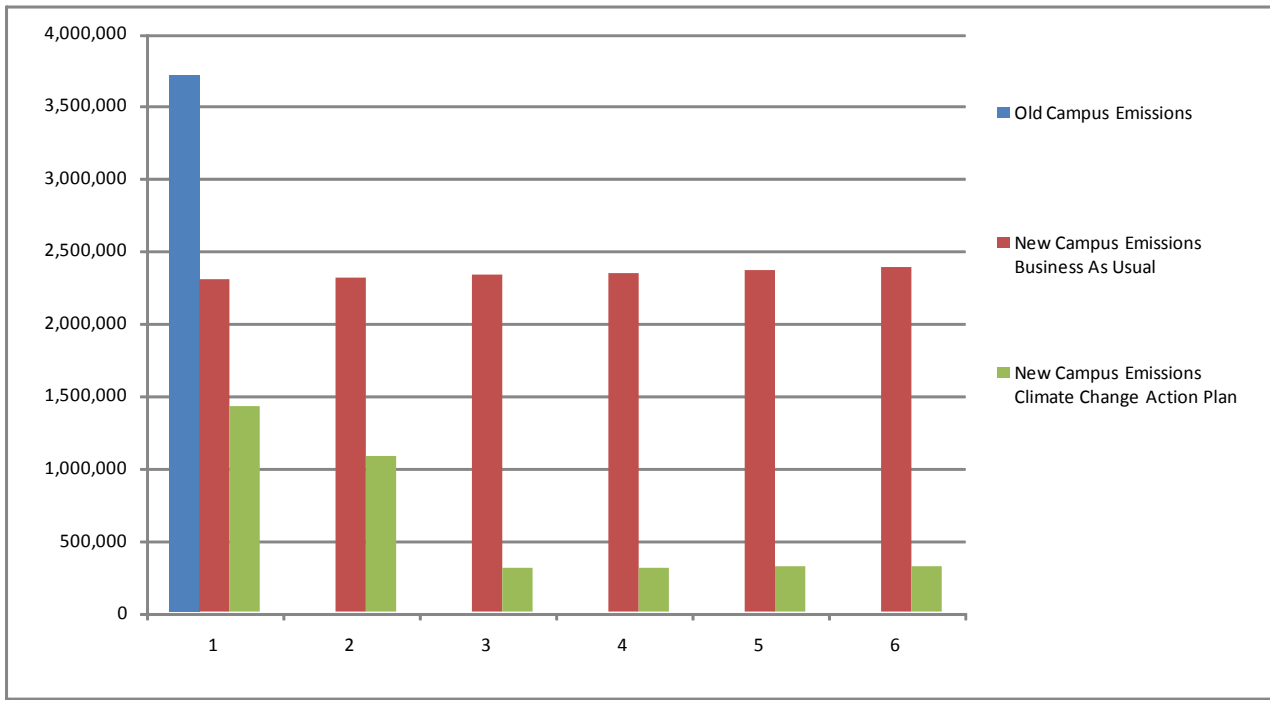
Summary

The UCCCfS plan attempts to summarise our commitment as an institution not only to reducing our impact on climate change but also our contribution and commitment to wider sustainability challenges and opportunities. This plan touches on areas of community engagement and curriculum development as well as sustainable procurement which will all contribute to the UCCCfS plan – in some areas we will go beyond it. Much of this is summarised in our Sustainability Policy which can be found at Appendix E. Our sustainability policy will be further refined to include our UCCCfS plan and develop further our action plans to deliver against UCCCfS and sustainability.

CCAP Impact on Carbon Emissions / Projected Savings

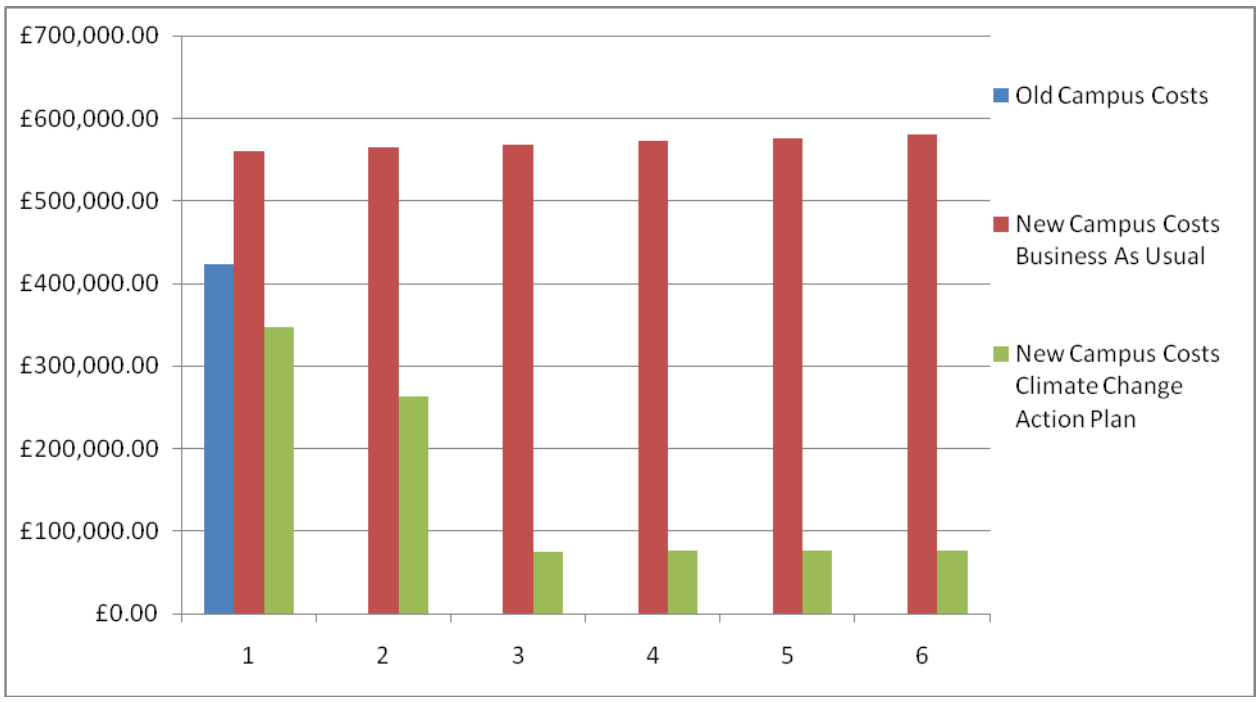
The measures described within this action plan are intended to reduce our emissions by 10,000 tCO_2e over the duration of the plan. The impact of the targeted emissions reduction is illustrated below alongside the "business as usual" scenario.

Figure 8: Carbon emissions



In addition to the reduction in greenhouse gas emissions described, the measures within the plan should produce financial savings of approximately £2,500,000 over the duration of the plan, based on present energy prices.

Figure 9: Energy Costs



Communications Strategy

Communication about this action plan, and about progress and achievements during the implementation of the plan, is vital to ensure that all stakeholders remain engaged in achieving the objectives of the plan. Over the five years of the UCCCfS plan it is important to involve all key players in its delivery but also ensure that we are communicating with other bodies both within and outside the sector, sharing the learning from the process and celebrating the successes we have along the way. We believe that leading universities have a responsibility to contribute to the collective improvement of the sector as a whole.

The main stakeholder groups involved in and affected by this plan are:

- **The student body**
- **Academic and administrative staff of the university**
- **Named individuals involved in the implementation and management of this action plan**
- **The local community**
- **Other further and higher education institutions**

Activities

We will support the implementation of the UCCCfs and Sustainability Policy through a range of activities these will include:

- Active involvement with the EAUC to promote UCCCfS nationally and internationally
- The production of articles and case studies to allow other institutions to learn from our journey
- The active participation in processes to improve the performance of the sector as a whole
- The further development and refinement of our internet site to improve the sustainability content
- University-wide campaigns and whole institution activities
- Active liaison with the local and national media

A full communications strategy is being developed as part of the implementation of the UCCCfS.

Appendices

Appendix A: CCAP Energy projects;

Appendix B: Waste Reduction, Recycling and Responsible Disposal

Appendix C : GTP action plan

Appendix D : Curriculum Working Group – Action Plan

Appendix E: Sustainability Policy

Appendix A: CCAP Energy Projects

A – Energy

Figure 10: Summary of Detailed Energy and Carbon Action plan.

Year	Project Title/ Type and Category Reference		Cost	Annual saving		Lifetime saving		Payback	Emission reduction
			£	TCO_{2e}	£	TCO_{2e}	£	yrs	%
0	A0	Transfer to the new Campus		1413.8	-136,840	28,276	-2,736,809		12.1%
1	A1	Lighting load reduction and reprogramming in Academic and SSUB Areas including revising of licensing areas	0	95.7	21,105	1,914	422,107	0.0	4.2%
1	A2	Atrium Lighting Modifications	0	12.4	2,743	248.7	54,862	0.0	0.5%
1	A3	Atrium Projection Lighting Modifications.	0	18.2	4,007	363.3	80,148	0.0	0.8%
1	A4	Office Lighting	0	19.0	4,202	381.0	84,041	0.0	0.8%
1	A5	Atrium Mood and Accent Lighting	0	42.3	9,328	845.8	186,569	0.0	1.8%
1	A6	Repair/Maintain Sewage Pumps	0	19.1	4,205	381.2	84,096	0.0	0.8%
1	A7	Re-configure use of Kitchen AHU	0	15.4	3,389	307.3	67,776	0.0	0.7%
1	A8	CT Heating Circuit Pumps Load Control	0	10.6	2,334	211.6	46,680	0.0	0.5%
1	A9	Data Room Temperature	0	10.5	2,313	0.0	0	0.0	0.5%
1	A10	Specialised Teaching Areas Fume Cupboards	0	14.6	3,214	0.0	0	0.0	0.6%
1	A11	Specialised Teaching Areas Lighting	0	5.4	1,189	0.0	0	0.0	0.2%
0	A12	Mode Lighting Union Bar Area. Performance Space	300	0.1	23	0.0	0	12.8	0.0%
1	A13	Residences Lighting	1,000	9.8	2,157	0.0	0	0.5	0.4%
2	A14	Residences Plantrooms	2,000	2.9	2,129	0.0	0	0.9	0.1%
2	A15	Plantrooms BMS	2,000	2.4	1,769	0.0	0	1.1	0.1%
2	A16	Energy Centre District Heating Pumps	0	3.8	829	0.0	0	0.0	0.2%
2	A17	Conduct staff energy awareness training	5,000	12.8	4,589	255.2	16,589	1.1	0.6%
2	A18	Monitoring and Targeting	10,000	22.1	4,221	442.4	91,776	2.4	1.0%
2	A19	Insulation of exposed valves in Academic, SUSB and Energy Centre plantrooms.	2,000	0.7	560	14.0	84,412	3.6	0.0%
2	A20	Air Tightness	0	7.8	6,243	156.2	11,192	0.0	0.3%
2	A21	External Lighting	0	20.2	4,515	404.1	124,852	0.0	0.9%
1	A22	Energy Saving Actions for IT	3,600	62.3	13,752	1,246.8	0	0.3	2.7%
1	A23	Rebalance of Heating Circuits in Academic Building	1,500	0.4	294	8.0	275,040	5.1	0.0%
1	A24	SUSB Kitchen	500	1.2	269	24.1	5,876	1.9	0.1%
2	A25	Games Hall Lighting	750	1.3	300	26.9	5,376	2.5	0.1%
2	A26	BMS Commissioning	5,000	694.9	87,980	13,897.3	6,000	0.1	30.3%
1	A27	Free Cooling	2,000	10.9	2,400	217.6	1,759,604	0.8	0.5%

1	A28	Optimisation	1,000	0.4	379	8.0	48,000	2.6	0.0%
		Category B: Waste reduction, recycling and responsible disposal	0	0.0	0	0.0	0	0.0	0.0%
	B								
		Category C: Sustainable estate development	0	0.0	0	0.0	0	0.0	0.0%
	C	Category D: Sustainable travel planning	0	0.0	0	0.0	0	0.0	0.0%
	D	Category E: Responsible procurement of goods and services	0	0.0	0	0.0	0	0.0	0.0%
	E	Category F: Provision of skills training, modules and courses	0	0.0	0	0.0	0	0.0	0.0%
	F								

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A1	Lighting load reduction and reprogramming in Academic and SSUB Areas including revising of licensing areas	0	95.7	21,105	1,913.6	422,107		0.0

Project Reference	Lighting load reduction and reprogramming in Academic and SSUB Areas including revising of licensing areas
Owner (person)	Stephen Scott
Department	Academic, SSUB
Description	To only keep on lighting that is required. Extra savings will be made. Absence detection period in Simmtronic (Academic) reduced 20min > 10min. The absence detection period was reduced globally through the Simmtronic system, enabling lighting to switch off more rapidly when areas become vacant.
Funding	Project cost: £0 N/A N/A
Resources	Simmtronic Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A2	Atrium Lighting Modifications	0	12.4	2,743	248.7	457,180		0.0

Project Reference	Atrium Lighting Modifications
Owner (person)	Stephen Scott
Department	Academic
Description	To reduce the number and amount of lighting lit on 24 hour operation. Pelmet lighting in LRC disabled. A series of slimline fluorescent tubes are installed in the pelmet within the LRC areas. Their use was judged unnecessary in achieving appropriate area lux levels. 200 x 28w tubes (5.6kW).
Funding	Project cost: £0 N/A N/A
Resources	Simmtronic Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A3	Atrium Projection Lighting Modifications.	0	18.2	4,007	363.3	667,900		0.0

Project Reference	Atrium Projection Lighting Modifications.
Owner (person)	Stephen Scott
Department	Academic
Description	To provide more decorative lighting but at lower running cost to match alternative to the bullet lighting.
Funding	Project cost: £0 N/A N/A
Resources	Simmtronic Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A4	Office Lighting	0	19.0	4,202	381.0	700,340		0.0

Project Reference	Office Lighting
Owner (person)	Stephen Scott
Department	Office
Description	To reduce unnecessarily high light levels in non-task areas.. Areas at base of legs in office side of building capped at 50% output. The reduced output was judged to provide satisfactory illumination levels. Applied on Levels 1 and 3. 36 rafts x 108W x 50%; CFL down lighters in notional open plan corridors in office side building "legs" set under photocell to maintain 200 lux. The CFL down lighters are not under dimming control, but were set within Simmtronic to maintain a minimum of 200 lux at the notional corridor area. 70 luminaries x 52W
Funding	Project cost: £0 N/A N/A
Resources	Simmtronic Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A5	Atrium Mood and Accent Lighting	0	42.3	9,328	845.8	1,554,740		0.0

Project Reference	Atrium Mood and Accent Lighting
Owner (person)	Stephen Scott
Department	Academic
Description	To maintain effective light levels at all required times and to reduce use of other luminaires when daylight available and/or areas unoccupied. Non 24h L3 atrium bullet down lighters on photocell 06:00 to 21:00, off overnight. 11 x 42W x 90hrs; Food court lights changed from full PIR control (with Security override) to PIR control of full lighting installation 06:00 to 21:00. Outside of this time, PIR activation only brings on first two white tubes per row; Atrium 400W uplighters switched from Security control to photocell control 06:00 to 21:00, off 21:00 to 06:00. Conflict photocell/time therefore all switched off - requires long-term fix. 23 x 400w; Coloured tubes at food court capped at 25%. The coloured feature fluorescent tubes in the food court were capped at 25% output. 144 tubes x 28W x 75% x 105hrs ; All office side building "legs" rafts capped at 50%. The reduced output was judged to provide satisfactory illumination levels.188 rafts x 108W x 70 hours x 25% saving (est.); Atrium feature lighting disabled. Fluorescent tubes inset within wall of atrium and pod disabled: purely feature lighting. 42 x 35W
Funding	Project cost:
	£0
	N/A
	N/A
Resources	Simmtronic
	Project will be delivered within current resources
Ensuring Success	Action completed
	N/A
Measuring Success	Electrical metering and monitoring
	Action completed
Timing	Milestones / key dates:
	- start date: 18/05/2009
	- completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A6	Repair/Maintain Sewage Pumps	0	19.1	4,205	381.2	700,800		0.0

Project Reference	Repair/Maintain Sewage Pumps
Owner (person)	Stephen Scott
Department	Utilities
Description	To reduce duty cycle of sewage pumping set and overall consumption. Sewage pump impeller released, approx 4kW reduction in demand on sewage pumps supply. Monitoring of workshop electricity consumption indicated high sewage pump electricity consumption. Blocked pump impeller found. On switching to back-up pump, consumption reduced by approximately 4kW.
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A7	Re-configure use of Kitchen AHU	0	15.4	3,389	307.3	564,800		0.0

Project Reference	Re-configure use of Kitchen AHU
Owner (person)	Stephen Scott
Department	Food Court
Description	To reduce unnecessarily high ventilation rates in Kitchen and adjacent Food Court.AHU 10 (Kitchen) restored to time control, amended to 0500-2100 Mon-Fri, staff instructed ref.cook switch. Operation of AHU 10 (Kitchen, supply) and Kitchen Extract Fan (KEF) is linked, with both responding to a "Cook/Non-Cook" speed switch in the Kitchen. Both were operating continuously, at high speed during the week and low speed over the weekend. The operation of AHU 10/KEF was restored to timeclock control 05:00-21:00 Mon-Fri, with area staff requested to use "Cook" high speed switch position as necessary (increases AHU 10 speed 50%>70% and KEF 50%>100%).
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/06/2009 - completion date: 18/06/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A8	CT Heating Circuit Pumps Load Control	0	10.6	2,334	211.6	389,000		0.0

Project Reference	CT Heating Circuit Pumps Load Control
Owner (person)	Stephen Scott
Department	Energy Centre
Description	0. CT Pumps disabled when AHU / FCU valves open < 15%, and also when EAT > 16C. East Coast Controls programmed changes in BMS to allow CT pumps to be disabled under above conditions.
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A9	Data Room Temperature	0	10.5	2,313	0.0	0		0.0

Project Reference	Data Room Temperature
Owner (person)	Stephen Scott
Department	Academic
Description	Energy saving on running costs. Better us of 'Free Cooling'
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009
Notes	

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A10	Specialised Teaching Areas Fume Cupboards	0	14.6	3,214	0.0	0		0.0

Project Reference	Specialised Teaching Areas Fume Cupboards
Owner (person)	Stephen Scott
Department	Academic
Description	Running this equipment keeps on the AHU for the whole zone. Excessive running costs.
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A11	Specialised Teaching Areas Lighting	0	5.4	1,189	0.0	0		0.0

Project Reference	Specialised Teaching Areas Lighting
Owner (person)	Stephen Scott
Department	Academic
Description	Running costs reduced, extended lamp life, lower maintenance costs
Funding	Project cost: £0 N/A N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A12	Mode Lighting Union Bar Area. Performance	300	0.1	23	0.0	0		12.8

Project Reference	Mode Lighting Union Bar Area. Performance Space
Owner (person)	Stephen Scott
Department	Academic
Description	To remove unnecessary 24 hour lighting.
Funding	Project cost: £300 Internal funding based on business case/payback criteria N/A
Resources	Simmtronic
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A13	Residences Lighting	1,000	9.8	2,157	0.0	0		0.5

Project Reference	Residences Lighting
Owner (person)	Stephen Scott
Department	Academic
Description	To reduce the number of hours lighting is lit unnecessarily
Funding	Project cost: £1,000 Internal funding based on business case/payback criteria N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A14	Residences Plantrooms	2,000	2.9	2,129	0.0	0		0.9

Project Reference	Residences Plantrooms
Owner (person)	Stephen Scott
Department	Academic
Description	To reduce the heat lost from uninsulated pipework.
Funding	Project cost: £2,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/Insulation Sub-Contractor Project will be delivered within current resources
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A15	Plantrooms BMS	2,000	2.4	1,769	0.0	0		1.1

Project Reference	Plantrooms BMS
Owner (person)	Stephen Scott
Department	Academic
Description	To achieve full control to allow for more efficient energy management.
Funding	Project cost: £2,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/ECC
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A16	Energy Centre District Heating Pumps	0	3.8	829	0.0	0		0.0

Project Reference	Energy Centre District Heating Pumps
Owner (person)	Stephen Scott
Department	Academic
Description	During summer period smaller pumps should be utilised. Lower rating
Funding	Project cost: £0 N/A N/A
Resources	Robertson FM/ECC Project will be delivered within current resources
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A17	Conduct staff energy awareness training	5,000	12.8	4,589	255.2	91,776		1.1

Project Reference	Conduct staff energy awareness training
Owner (person)	Stephen Scott
Department	Academic
Description	Training Programme to be devised and presented to increase staff awareness and incentivise good housekeeping and efficient operation.
Funding	Project cost: £5,000 Internal funding based on business case/payback criteria. Possible grant aid/loan partial funding N/A
Resources	Estates and Facilities in conjunction with Nifes and the Carbon trust
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A18	Monitoring and Targeting	10,000	22.1	4,221	442.4	84,412		2.4

Project Reference	Monitoring and Targeting
Owner (person)	Stephen Scott
Department	Academic
Description	M&T is designed to detect and diagnose the wasteful use of energy. Existing and additional metereing * where necessary) is used to record analyse and report on daily, weekly and monthly energy use. Targets can be established which represnet best-practise for each area, and deviatons from this target can be quickly detected and remediated. Enerngy saving initiatives can be accurately evaluated.
Funding	Project cost: £10,000 Internal funding based on business case/payback criteria. Possible grant aid/loan partial funding N/A
Resources	Estates and Facilities in conjunction with Nifes and the Carbon trust Project will be delivered within current resources
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical and heat metering and monitoring Measured after 1 year operation
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A19	Insulation of exposed valves in Academic,	2,000	0.7	560	14.0	11,192		3.6

Project Reference	Insulation of exposed valves in Academic, SUSB and Energy Centre plantrooms.
Owner (person)	Stephen Scott
Department	Academic
Description	Reduce heat loss from uninsulated pipework by the installation of removable jackets to vlaves and flanges.
Funding	Project cost: £2,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/Insulation Sub-Contractor
Ensuring Success	Action to be instigated N/A
Measuring Success	Heat metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 31/08/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A20	Air Tightness	0	7.8	6,243	156.2	124,852		0.0

Project Reference	Air Tightness
Owner (person)	Stephen Scott
Department	Academic
Description	Reduction in Infiltration and reduction in heat loss. To reduce the requirement of both heating and summer cooling.
Funding	Project cost: £0 Contractor Remedial expense N/A
Resources	Main Contractor Remedial Action
Ensuring Success	Action to be instigated N/A
Measuring Success	Heat metering and monitoring Measured after wrok completed
Timing	Milestones / key dates: - start date: 31/05/2010 - completion date: 31/07/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A21	External Lighting	0	20.2	4,515	404.1	90,307		0.0

Project Reference	External Lighting
Owner (person)	Stephen Scott
Department	Academic
Description	To reduce the requirement of lighting but meet the needs of all other requirements previously outlined.. External lights (building mounted) for Uni Square. The external floodlights were altered from timeclock to photocell control, to better match available light and avoid unnecessary daylight operation. 10 x 150W.
Funding	Project cost: £0 N/A N/A
Resources	Robertson FM/Electrical Sub-Contractor No Cost to QMU
Ensuring Success	Action in Progress N/A
Measuring Success	Electrical metering and monitoring When success will be measured / evaluated
Timing	Milestones / key dates: - start date:18/03/2010 - completion date: 31/12/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A22	Energy Saving Actions for IT	3,600	62.3	13,752	1,246.8	275,040		0.3

Project Reference	Energy Saving Actions for IT
Owner (person)	Stephen Scott
Department	Academic
Description	Reduce operational time out of core hours.
Funding	Project cost: £3,600 Internal funding based on business case/payback criteria N/A
Resources	None Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A23	Rebalance of Heating Circuits in Academic	1,500	0.4	294	8.0	5,876		5.1

Project Reference	Rebalance of Heating Circuits in Academic Building
Owner (person)	Stephen Scott
Department	Academic
Description	Reduce the amount of heat and energy requirement to certain areas by rebalancing water flows
Funding	Project cost: £1,500 Internal funding based on business case/payback criteria N/A
Resources	Commissioning Contractor Project will be delivered within current resources
Ensuring Success	Action completed N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A24	SUSB Kitchen	500	1.2	269	24.1	5,376		1.9

Project Reference	SUSB Kitchen
Owner (person)	Stephen Scott
Department	Academic
Description	Cut down on ventilation boost running time when unused
Funding	Project cost: £500 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM
Ensuring Success	Action to be instigated N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 31/05/2010 - completion date: 31/07/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A25	Games Hall Lighting	750	1.3	300	26.9	6,000		2.5

Project Reference	Games Hall Lighting
Owner (person)	Stephen Scott
Department	Academic
Description	Cut down on lighting on periods when unused
Funding	Project cost: £750 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/Electrical-lighting Sub-Contractor
Ensuring Success	Action undertaken N/A
Measuring Success	Electrical metering and monitoring Success will be measured / evaluated after 1 year operation
Timing	Milestones / key dates: - start date: 31/06/2010 - completion date: 31/07/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
2	A26	BMS Commissioning	5,000	694.9	87,980	13,897.3	1,759,604		0.1

Project Reference	BMS Commissioning
Owner (person)	Stephen Scott
Department	Academic
Description	To ensure plant and equipment is operating as designed utilising speed control of pumps and fans.
Funding	Project cost: £5,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/ECC
Ensuring Success	Action undertaken N/A
Measuring Success	Electrical metering and monitoring Success will be measured / evaluated after 1 year operation
Timing	Milestones / key dates: - start date: 31/06/2010 - completion date: 31/07/2010

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A27	Free Cooling	2,000	10.9	2,400	217.6	48,000		0.8

Project Reference	Free Cooling
Owner (person)	Stephen Scott
Department	Academic
Description	To ensure cooling plant is giving 'Free Cooling' when external air is below 13 degrees C. Software mod only
Funding	Project cost: £2,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/ECC
Ensuring Success	Action undertaken N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Year	Project Title/Type and Category Reference		Cost	Annual Savings		Lifetime Savings		Payback (yrs)	
				tCO_2	£	tCO_2	£		
1	A28	Optimisation	1,000	0.4	379	8.0	7,584		2.6

Project Reference	Optimisation
Owner (person)	Stephen Scott
Department	Academic
Description	BMS Controls correctly set up to prevent building ventilation wasting unnecessary energy.
Funding	Project cost: £1,000 Internal funding based on business case/payback criteria N/A
Resources	Robertson FM/ECC
Ensuring Success	Action undertaken N/A
Measuring Success	Electrical metering and monitoring Action completed
Timing	Milestones / key dates: - start date: 18/05/2009 - completion date: 18/05/2009

Appendix B: Waste Reduction, Recycling and Responsible Disposal

1. Introduction

Queen Margaret University, Edinburgh is a benchmark for sustainable buildings. As the owner of a flagship sustainable campus it has a commitment to good environmental practice by promoting sustainability and social responsibility. The Waste Management Policy 2010 (the Policy) has been developed in order to provide the University community with a clear understanding of the University's position within the framework of legislation and good practice.
This policy provides guidance on how to manage wastes and to ensure that all waste and recycling produced as a result of University-related activities, is stored, removed, treated and disposed of according to legislative requirements and the Best Practicable Environmental Option. This will include expectations on any third parties providing relevant supplies or services to the University.

10. Policy Statement

Queen Margaret University is committed to continuing our legally compliant, environmentally sound and financially controlled practice with the setting, monitoring and achievement of key targets. In particular to reducing the unnecessary use of raw materials, reuse of products and by encouraging and enabling recycling, composting or energy recovery. We will reduce landfill waste and when disposal is the only option we will dispose of materials in an environmentally responsible manner.
We recognise the impact of the transport, treatment and disposal of resources and subsequent wastes on our local and global environment, and on our carbon footprint. We are committed to reducing this impact through the continued improvement of our Recycling and Waste Management practices, good procurement practice and the promotion of sustainable behaviour amongst members of the University community.

10. Standards Expected

The University requires all staff, students, Service Providers and anyone else making use of University premises to comply with this Policy. In particular, it is expected that all members of the University community and University appointed Service Providers will adhere to the following standards:

1. Waste should be prevented or minimised wherever possible. If Waste is produced, opportunities for repair, composting and reuse should be enabled when appropriate and only then should recycling, energy recovery, incineration or landfill disposal be considered.
2. All Waste produced must be stored, carried, kept, processed, treated or disposed of in accordance with the principles of Duty of Care.

3. Waste must be securely stored in compliant and suitable containers and locations pending uplift and disposal. e.g.

• The fabric and construction of the container must be resistant to the nature of the waste (e.g. corrosive, sharps) and suitable for the storage environment.

• The container will be securely sealed to prevent accidental spillage/leakage.

• Adequate security precautions should be taken to prevent loss, theft, vandalism, or unauthorized access or scavenging of waste.

• Segregation of waste should take place to prevent mixing of incompatible materials and to allow for recycling.

• Waste collections should not prevent safe access or egress of people.

• Waste should not be stored in plant or electrical switch rooms, near to heat or ignition sources or hinder access to equipment.

• The office or functional unit holding any waste prior to collection must ensure that the waste is suitably described, inventoried, packaged and available for uplift.

10. Waste and Recycling removed from University premises must only be transported by persons or Service Providers who are authorised to do so and subsequently treated, processed or disposed of in suitably authorised and approved facilities.

10. Legislative Framework

The range of processes undertaken as part of the day-to-day activities of Queen Margaret University generates a wide spectrum of waste types. All schools, members of staff, students, the University community in general and Service Providers have a duty to comply with legislation relating to the segregation storage, transport, treatment and recording of waste.

In addition, various Technical documents produced by the UK or Scottish Government and / or the Regulator, are to be adhered to. The key pieces of legislation related to this Policy area are listed below:

• Environmental Protection Act 1990
• Environmental Protection (Duty of Care) Regulations 1991
• Landfill (Scotland) Regulations 2003
• Special Waste Amendment (Scotland) Regulations 2004
• Waste Electrical and Electronic Equipment Regulations 2005
• Waste (Scotland) Regulations 2005
• Environmental Permitting Regulations 2007
• Waste Batteries and Accumulators Regulations 2009

The key Technical guidance documentation related to this Policy are listed below:

• WM2. Technical document produced by the Environment Agency, Scottish Environment Protection Agency, and the Environment and Heritage Service to provide guidance on the assessment and classification of hazardous waste.

• Health Technical Memorandum 07-01: Safe Management of Healthcare Waste.

Good practice guidance produced by UK Department of Health / Finance and Investment Directorate / Estates and Facilities Division outlining a Best Practice framework for the management of Healthcare Wastes.

10. Organisation and Management

Responsibilities and organisational arrangements for this Policy are in line with those defined in the University Health & Safety Policy and agreed by the University Court.
The University Court has overall legal responsibility for Waste Management at the University.
The Dean of School / Head of Department is formally responsible, to the University Court for the management of Waste arising in the area of the University under their control. Deans of School / HoD's may delegate authority, but remain legally responsible – as with Health and Safety matters. Within Waste Legislation (in particular the Duty of Care), individuals also retain a responsibility for disposal of Wastes within their control.
The responsibilities and organisational arrangements for this Policy are further defined below:-

All Deans of Schools / Heads of Department are responsible for:

1. Ensuring that this Policy is disseminated within their area of responsibility.
2. Ensuring that School members are equipped to implement this Policy, including identifying training needs and ensuring training appropriate to each individual's responsibility is available and attained.
3. Ensuring that all staff, students, visitors and School/Unit only purchase goods or services from Service Providers who comply with this Policy..
4. Ensuring either that only authorised central Recycling and Waste contract services are used or ensuring they comply with current legislation and that an up to date list of all disposal contracts is sent to Depute Director of Facilities Services annually and/or when requested.
5. Non-hazardous Wastes (central Waste and Recycling contracts):

a. Ensuring that all redundant IT equipment is reused/cascaded where possible, and

b. Ensuring that non-hazardous Waste and Recycling is removed from University premises via centralised contracts.

6. Hazardous Wastes:

a. Ensuring that no hazardous wastes are disposed of through the General Waste or Recycling streams or to drains.

b. Ensuring Duty of Care compliance including appropriate segregation, inventorying, recording, describing and storage of Hazardous Wastes.

c. Nomination of 'Responsible Person(s)' to coordinate Waste disposal for any healthcare, chemical or otherwise Hazardous Wastes.

d. Informing the Facilities Officer who the nominated 'responsible person(s)' is and updating records when the 'Responsible Person(s)' changes.

7. Ensuring that Waste Management practices and procedures within the School/Unit are audited regularly and that any changes that may be required as a result of these reviews are carried into effect.

8. Encouraging staff, students and visitors to co-operate with associated campaigns, projects and initiatives.
9. Enabling the investigation of any incidents or accidents relating to Waste Management.

Depute Director of Facilities Services is responsible for:-

1. Provision of advice and guidance to the University community on Recycling and Waste Management.
2. Coordinating the procurement and provision of appropriate and authorised central Recycling and Waste contract services for use by all Schools'.
3. Auditing of centralised Recycling and Waste Management systems.
4. Maintaining a list of all Service Providers appointed to carry out Waste-related activities and ensuring that they are procured in compliance with the Sustainability Policy.
5. Ensuring that all Service Providers are advised that they must comply with the Duty of Care; that they must comply with this Policy, or, satisfy the University that their own procedures will achieve legal compliance. This will usually be done through the Facilities Contractors Code of Safe Working Practice.
6. Auditing all Recycling and Waste Management Service Providers working for the University.
7. Setting performance indicators and targets for Recycling and Waste Management.
8. Reporting to the University on progress against the performance indicators and targets.
9. Provision of appropriate training for Facilities personnel who have responsibilities for Recycling and Waste Management and assist in the specification of relevant goods or services.
10. Coordinating the gathering of, and supplying all relevant information to appropriate enforcement agencies, when information relating to Recycling and Waste Management is requested.
11. Attaining and reporting on Waste Management Permits/Licences/Exemptions as required.
12. Investigation and resolution of any incidents or accidents relating to Recycling and Waste Management.
13. Keeping up to date this Policy and any Waste Management Plans.

Facilities Officer is responsible for:-

1. Liaising with appropriate enforcement agencies.
2. Signing annual Waste Transfer Notes for central contracts on behalf of the University.
3. Compiling and holding annual Waste Transfer Notes and Special Waste Consignment Notes for centrally managed Recycling and Waste collections.
4. Overseeing the day to day delivery of centralised Recycling and Waste Management services.
5. Monitoring the performance of the Service Providers against Service Level Agreements.
6. Implementation and monitoring of centralised Recycling and Waste Management systems.
7. Compiling Recycling and Waste data and statistics to enable annual benchmarking against established performance indicators and reporting against agreed targets.
8. Maintaining a contact list of Responsible Persons as provided by Deans of Schools.

Nominated Responsible Persons are responsible for:-

1. Signing School/Unit Waste Transfer Notes and Special Waste Consignment Notes as necessary.

2. Establishing and maintaining a record keeping system in order that the movements of all Wastes can be tracked and make these records available for audit by Facilities Services.
3. Supplying information and paperwork on all Wastes disposed of, when it is requested by Facilities Services.
4. Attending appropriate training and disseminating information to other School members as appropriate.

Staff / Students / Researchers are Responsible for:

1. Completing and adhering to the Waste Disposal section within University Risk Assessment forms for all relevant activities.
2. Reusing, recycling and/or disposing of Wastes responsibly, through the appropriate stream in accordance with University policy and procedures and all legal requirements.
3. Attending appropriate training.

Service Providers are responsible for:-

1. Legal and technical compliance with all relevant statutory legislation or Scottish Government policy in relation to Waste or Recycling.
2. Arranging for the safe and compliant storage and collection of Wastes generated through their own activities on University premises or as appropriate, where acting on behalf of the University under relevant supply or service contracts.
3. Reusing, Recycling and/or disposing of Waste responsibly, in accordance with University policy and procedures, or, through a scheme approved by the University.
4. Making available to the University copies of Waste transfer notes, special Waste consignment notes and other Waste related records if required.
5. Providing service levels, activity reports/ statistics or risk analyses, as specified under service contracts or supply agreements with the University. Informing the University appointed contract manager of any risk of breach of legislation identified whilst working for the University or on our premises.

6. Integration with School Procedures and Documentation

All Schools/Units should use this documentation either in order to produce their own area specific procedures or directly in the induction and training of staff, researchers and students. Where local guidance is being produced, it must meet the standards and requirements set out in this Policy.
Waste Management procedures must be included in induction programmes and training programmes. School procurement procedures must also include relevant waste management statements. Local procedures must be up to date, clearly written, displayed in relevant areas, take account of different levels of training, knowledge and experience and be available to all relevant students, staff, researchers, visitors etc. Where Schools are large, or cover more than one site, it may be necessary for procedures to be developed by local administrative units to ensure effective management of Waste.

7. Definitions

10. Waste

Waste includes any substance or object which the holder discards or intends or is required to discard under the Waste Framework Directive and any substance which constitutes a scrap material, an effluent or other unwanted surplus arising from the application of any process or any substance or article which requires to be disposed of which has been broken, worn out, contaminated or otherwise spoiled as per the Environmental Protection Act 1990 and amendments.

10. General Waste

A form of Controlled Waste, comprising all Waste from University Schools with the exception of Hazardous Waste.

10. Recycling

The diversion of waste away from landfill or incineration and the reprocessing of those wastes either into the same product or a different one. This mainly includes non-hazardous wastes (or non-hazardous components of other wastes) such as paper, glass, plastic and scrap metal.

10. Best Practicable Environmental Option (BPEO)

The BPEO is the option for Waste disposal that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term.

10. Duty of Care

A requirement of all producers, importers, carriers and those involved in the disposal of Waste to take all reasonable steps to ensure that Waste is segregated, described, stored, transported and treated or disposed of safely.

6. Service Provider

Third parties providing works, goods or services to the University, Schools, Units or research activities, whether contracted or not. This includes contractors and providers of professional services on or off site.

7. Sustainability Action Plan

A plan for acquiring works, goods or services which must include sustainability and waste management requirements in the specification, as agreed by the University Court.

8. Hazardous Waste

This term encompasses the term Special Waste as defined by the Special Waste Regulations 1996 and the Special Waste (Scotland) Regulations 2004 and amendments. It includes waste that could, in certain circumstances, be harmful to human health or the environment in the short or long term due

to its physical, chemical or biological properties of explosive, oxidising, flammable or highly flammable, irritant, corrosive, toxic or very toxic, harmful, carcinogenic, mutagenic, infectious and ecotoxic. In Scotland, batteries, fluorescent tubes, photographic chemicals, televisions, paint, wasteoils, solvents, acids, alkaline solutions, pesticides and computer monitors are all hazardous wastes.

9. Healthcare Waste

Healthcare waste is classified under the European Waste Catalogue code, chapter 18 as wastes from diagnosis, treatment or prevention of disease in humans or animals. Healthcare premises include hospitals, nursing homes, GP surgeries and veterinary practices.

10. Animal By-Product Waste

Animal by-product (ABP) waste includes animal carcases, parts of animal carcases, products of animal origin which are not intended for human consumption and slaughterhouses. ABP waste also includes catering waste (all waste food from restaurants, catering facilities, central kitchens) although the regulations pertaining to catering wastes are less onerous than other kinds of ABP wastes and for the purposes of this Policy, they are included within the General Waste stream.

WASTE REDUCTION ACTION PLAN : 2009/10

Activity	Responsible	Timescale
Investigate number of FEL's on site and reduce if possible	SN	July 09
Monitor frequency of uplifts and reduce if possible	SN	ongoing
Site visit to waste station to ensure waste is being separated	AM/SN	June 09
Extend recycling facilities to Sports Centre and Student Union	AM/SN	August 09
Introduce large paper /cardboard skip to ensure weight of paper recycled is obtained	AM/SN	August 09
Organise with charity for Clothes bank and Book/Music bank to be placed on site	AM	Sept.09
Separate glass/ can bank to be contracted	AM/SN	Sept.09
Obtain eurocart for recycling plastics	SN	October 09
Tractor purchased to allow compost heap to be started this summer	AM/ML	Feb.10
Monitor effectiveness of compost heap and increase what is biodegraded	AM/WH/ML	Ongoing
Investigate use of compacter to increase weight of each plastic load uplifted.	SN/WH	October 10

Purchase scale to weigh confidential waste bags to gain accurate figures	SN	July 10
Introduce battery boxes for LRC / FFT	SN	June 10
Monitor monthly waste figures from all contractors to ensure reduction in waste sent to landfill	AM/SN	ongoing
Promote recycling facilities and waste management to Fresher's	AM/SN	Sept.10
Obtain and fit tap inserts to reduce water flow in all toilet facilities	SW/RL	November 10
Obtain and fit duel flush toilet siphons to reduce water flow in all toilet facilities	SW/RL	Programme start August 10

Appendix C : Green Travel Action Plan

ACTIONS ON GREEN TRAVEL PLAN : 2010

Activity	Performance Indicator	Responsible	Timescale
Continue to expand and promote GTP, including parking policy development	Annual travel survey Modal shift Reduction in parking contravention	DD/ Consultant	Ongoing (survey in April 2010)
Develop and implement strategy for QMU business travel	Reduction in travel costs Carbon footprint reduction	DD/Finance	August 2010
Promote awareness and support for GTP with external agencies and extend collaboration with key partners	Communication with all these and others:- EAUC SUSTRANS EST Carbon Trust	DD/Consultant	ongoing
Purchase and fit additional personal lockers for cyclists in Sports centre	Lockers in use	Maintenance Manager (MM)	July 10
Fit digital locks to all cycle sheds	Locks fitted	MM	August 10
Promotion of Bike to work scheme, liftshare, city car club etc for new students	Increased uptake in car share, cycles etc	DD	Sept. 10
Lobbying of appropriate parliamentary offices / Scotrail to increase train frequency	Half hourly train service introduced to /from Edinburgh	SMG/ ESWG/Consultant	ongoing
Continue to maintain a dialogue with all public transport providers, City of Edinburgh and East Lothian Councils	Inclusion in funding possibilities and collaborative projects that will benefit both the institution and the wider community	DCS/DD/ Consultant	ongoing
Pressure on Scotrail to implement car park restriction at Musselburgh Station	Car park restrictions in place	DD/Consultant	December 10

Appendix D : Curriculum Working Group – Action Plan

Action Points

Short Term

- Roundtable discussions among those with conceptual/professional interest in wellbeing/resilience, sustainable business, sustainable consumption, sustainable hospitality/tourism and global citizenship themes – including teasing out some draft learning outcomes that could be flexibly adapted across different modules/programmes, to prompt colleagues to build them in and develop activities around them.

- Conduct an audit to identify which programmes/modules contain sustainability within the curriculum content and to find out about research and knowledge exchange activity in this area.

- Linked to the audit, develop a questionnaire to ascertain the level of engagement related to sustainability within the curriculum.

- Identify where the academic strengths are, in relation to sustainability, across the institution.

- Disseminate good practice across QMU and identify ways of sharing materials and resources.

- Encourage programme teams to incorporate sustainability within their curriculum.

- Provide support for staff

- Raise the profile of sustainability within the curriculum

- Consider the development of sustainability within the curriculum in relation to student induction. The Centre for Academic Practice has initiated discussions about changing the student induction process from a short procedure to a longitudinal one incorporating sustainability as its themed topic. Students will work in groups to explore various topics related to sustainability and present their findings to staff. Thereby students will learn about sustainability issues while developing their communication, IT and research skills through their utilisation of the facilities within the campus.

Medium Term

- Agreeing a shared set of pedagogic approaches (like the 5 in the University of Gloucester framework) that apply across subjects and can be adapted to suit different 'content/topics' (as ESD is a balancing act of content and pedagogy) – discuss the kinds of assessment activities that help build these skills and competencies;

- Exploring some of the 'institution-wide' mechanisms that were suggested at the event (see notes), involving student teams from across subject areas in considering sustainability issues and scenarios from different discipline/professional viewpoints: e.g. induction activities for students and all staff (Centre for Academic Practice) and research projects;

- Creating some guidance for teams coming up to programme review, based on what was done in the School of Business, Enterprise and Management – what questions were asked, how changes were managed, and how it was developed. So much of this is about helping colleagues to see that regardless of content, it's about putting the 'sustainability' glasses on as a lens through which to look, and developing socially-critical questions about our practice and habits and how we could do things differently – helping students to stand back and consider context, effects, alternatives – unpeeling onions not adding new layers of onion! We also need to look at the size/shape of the curriculum in terms of either embedding sustainability completely, adding in sustainability modules or at least offering students across QMU opportunities to have options. This needs to be considered at undergraduate and postgraduate levels. Also, explore opportunities for wider curriculum development, building on current modules and seeking to explore appropriate accreditation for QMU students regarding co-curricula activity, in particular, volunteering, with the Students' Association. Volunteering can take place on as well as off campus – there is potential for students to work on sustainability within the university (e.g., in the estates department).

- Institution wide module at level one or at level four. If at level four, it would be important to ensure that it benefitted from the expertise which students had already gained in their particular major subject and allowed students from different disciplines to pool their knowledge and understanding. If at level one, it would be important to ensure that the ways of thinking, arguing, using evidence etc developed in the module were put to use in subsequent studies. It should be more than a taster: it should set out the ways in which QMU thinks and acts.

- Discuss how sustainability can be included within the Postgraduate Attributes.

<u>Long Term</u>

- QMU should try to build up a tradition of awarding honorary degrees to people with a high reputation for their contribution to sustainability thought and practice. Recipients shouldn't get straight off the train, into their robes and on to the platform; they should have the chance to meet and talk with students.

Appendix E : Sustainability Policy

Background

1. During the last 20 years there has been a growing realisation that the current model of global development is unsustainable, i.e. we are living beyond our means. From the loss of biodiversity, with the felling of rainforests or over over-fishing, to the negative effect our consumption patterns are having on the environment and the climate. Our way of life is placing an increasing burden on the planet. The increasing stress we put on resources and environmental systems, such as water, land and air, cannot be sustained, especially as the world's population continues to grow and we already see a world where over a billion people live on less that a dollar a day.

2. The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a good quality of life, without compromising the quality of life of future generations.

3. Unless we start to make real progress toward reconciling these contradictions, we face a future that is less certain and less secure. We need to make a decisive move toward more sustainable development. Not just because it is the right thing to do but also because it is in our own long-term best interests. It offers the best hope for the future. Whether at university, in the home or at work, we all have a part to play.

4. For the UK Governments, that goal will be pursued in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment; and a just society that promotes social inclusion, sustainable communities and personal wellbeing. This will be done in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible.

Queen Margaret University

5. Within this context, the University recognises the scale and speed of climate change and the likely effect on Scotland's people and places, impacting adversely on our economy, society and environment and acknowledges the key role it has to play in addressing these impacts.

6. The University welcomes the opportunity to harness its academic talents and expand Scotland's ability to create solutions to the challenges posed by climate change through research, knowledge transfer and the provision of skills, modules and courses.

7. As the owner of a flagship sustainable campus, the University recognises it has a foundation upon which to establish itself as a leading national and international sustainable university, demonstrating practical leadership in tackling climate change by promoting sustainability and social responsibility and by engaging its students, staff, alumni and local communities in the sustainability agenda.

8. In pursuance of its sustainability commitments, the University is a signatory and endorsee of the *Universities and Colleges Climate Commitment for Scotland*.

Institutional approach

9. Sustainability transcends all activities within an institutions and therefore the University will adopt an institution-wide approach to taking forward the sustainability agenda:

Leadership: The University's senior management team will be equipped with the skills and knowledge base necessary to lead by example. The principles of sustainability will be embedded into all corporate strategies and established improvement plans.

Campus: As the owner of a flagship sustainable estate, the University will lead on the delivery of a sustainable low carbon 21st century campus.

Learning: Through its primary purpose of education and research, the University has the potential to make a significant impact on global warming by equipping current and future generations with the skills necessary for tackling the economic, social and environmental impacts of climate change. The principles of sustainable development will be embedded throughout the curriculum and sustainability literacy promoted as a core citizenship and employability skill.

Community: Recognising the imperative for collaboration and cooperation, the University will engage with its student, staff and local communities to influence and lead on wider community and social initiatives.

Leadership

10. The University:

- recognises the need for senior management to lead by example and to demonstrate a strong commitment to delivering appropriate sustainability solutions;
- recognises the need for an adaptive learning environment and for the senior management team to encourage a culture of collective reflection on the sustainability agenda;
- acknowledges the importance of open, inclusive and effective communication and dialogue in the process of transformation towards a culture of sustainability;
- commits to embedding the principles of sustainability within the Corporate Plan and all Institutional Strategies;
- commits to reviewing the sustainability implications of its plans, policies and practices as they are developed, reviewed and renewed;
- commits to a continuation of the comprehensive consultative approach which led to the development of this policy in the future review of the policy and supporting documentation;
- recognises that appropriate internal marketing and communications are necessary to empower staff and students with an understanding that sustainability is an integral part of the University's Strategic Plan; and
- recognises that appropriate external marketing and communications are necessary to establish the University as an international leader in education for sustainable development.

Campus

11. The University:

- seeks to exceed national and international standards for environmental, social and economic sustainability and set a new benchmark in sustainable design and facilities management;
- is committed to delivering against the targets of the *Universities and Colleges Climate Commitment for Scotland* and will allocate time and resources to implement measures to reduce its overall greenhouse gas emissions through energy consumption and source, waste reduction, recycling and responsible disposal, sustainable estate development, sustainable travel planning and the responsible procurement of goods and services;
- recognises the important of the well-being of its staff and students and their vital role in helping create a more sustainable campus; and
- will work to enhance the biodiversity of its campus landscape.

Learning

12. The University:

- recognises the importance of developing sustainability-literate graduates who possess the skills and dispositions necessary for engaging with the sustainability agenda as their personal lives and as future professional decision makers;
- commits to engaging all students with sustainability concepts and issues in an appropriate context through learning;
- recognises the need for students to appreciate the interdisciplinary nature of the sustainability agenda; and
- invites all disciplines to consider how they might best embed sustainability within their curricula and utilise the learning and research opportunities provided by the campus and community sustainability initiatives.

Community

13. The University:

- is committed to corporate social responsibility through future participation in *Universities that Count*;
- recognises its role and responsibilities in advancing the sustainability agenda across East Lothian and more broadly across Scotland, the UK and internationally;
- welcomes opportunities to provide and participate in sustainability partnerships across these regions;
- seeks opportunities for national and international engagement with the sustainability agenda through collaboration with other relevant organisations and agencies.

Supporting documentation

14. The principles set out in this policy are translated into actions through an Institutional Sustainability Strategy and a Sustainability Action Plan, which has been approved by the Strategic Management Group and are subject to regular monitoring and periodic review through a process of participative consultation.

15. Further information on the University's sustainable development can be found at http://www.qmu.ac.uk/sustainability/default.htm.

Related policies and procedures

16. The Sustainability Policy can not exist in isolation. It will be dovetailed with the following University policies and strategies:
    - Learning, Teaching & Assessment;
    - Research & Knowledge Transfer;
    - Estates;
    - Marketing & Communications;
    - Information;
    - Human Resources;
    - Financial; and
    - Internationalisation;

    Sustainability will also be embedded in the University Strategic Plan