



Queen Margaret University
EDINBURGH

Queen Margaret University Climate Change Action Plan 2017-2022

Approved July 2018

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Foreword

Queen Margaret University is a place of ideas and influence, qualities that will be invaluable in tackling the unprecedented challenges that climate change poses. The transition to low carbon societies is likely to be the defining global challenge of the 21st century. The world's nations recognised the necessity for action in signing the Paris Agreement in 2015. The United Nations has linked climate change to economic and social sustainability through its 17 Sustainable Development Goals. It is incumbent on all of us, organisations and individuals, to play our part. This action plan is part of our commitment to do so.

Queen Margaret University (QMU) made its first major contribution to climate change action with the move to a new sustainably engineered campus in 2007. In itself this reduced our annual carbon emissions by 38%. Underlining our holistic approach to sustainability, a Climate Change Action Plan (CCAP) has been in place since 2010-2015. This new plan seeks to build and improve on previous accomplishments with the ambition to reduce annual carbon emissions by a further 12% by 2022 from the new 2015/16 baseline.

Being environmentally friendly is not just a moral and social issue, it also makes sense from economic and compliance perspectives. Imported fossil fuels are prone to fluctuate in price and the emissions that are associated with burning them for energy are subject to increasing taxation. In contrast, renewable energy can be generated that will eventually provide 'free' electricity after payback of any initial investment. Environmental legislation is continuously being produced, for instance laws on recycling rates and reducing landfill waste. QMU wants to play its part and remain ahead of the game through anticipating legislation aimed at environmental action, and doing more.

The move to a low carbon future in which resources are used more sustainably is likely to be the defining global transition of the 21st century. As the negative effects of climate change become increasingly widespread and alarming, it is important for a modern, forward thinking institution such as QMU to be part of the solution, rather than the problem. One of our 7 values is that we are 'Committed to all forms of sustainability'.

As an institute of learning QMU recognises its potential to have a wider influence; through helping educate and engage students on one of the most prominent threats facing humanity. We aspire to give our graduates the knowledge and skills to tackle the challenges and opportunities of this age and the next, including climate change.

This plan outlines Queen Margaret University's targets and ambitions over the next five year period, which aim to help the University become a truly sustainable institution.

Professor Petra Wend

Principal and Vice Chancellor

Queen Margaret University

July 2018

Executive Summary

Queen Margaret University recognises the range of potential climate change impacts that will influence our environment globally and locally. As an original signatory to the University Climate Change Commitment for Scotland (UCCCfS), QMU embraces its role in contributing to delivery of significant change through reductions in our own carbon emissions, influencing understanding and behaviour change in our staff and students, and undertaking and disseminating relevant teaching and research. We need to both mitigate further climate change, and adapt to changes already in motion. This Climate Change Action Plan 2017 – 2022 sets out our aspirations for both.

The plan sets out 7 key areas of activity for the University. These are:

- Energy consumption – we will act to reduce emissions;
- Waste and recycling – we will educate to increase recycling rates;
- Water consumption – we will improve metering and act on the data;
- Travel and transport – we will shrink our carbon footprint and encourage active travel;
- Engagement & education – we will enhance climate change awareness and activity;
- Procurement – we will develop a toolkit to ensure sustainable practice;
- Adaptation – we will formalise a programme of risk assessment.

To achieve the aims, the University recognises the need for leadership and accountability. Overarching aspects of the University's sustainability activity, including climate change, fall within the remit of the Sustainability Committee, which reports directly to Executive Board.. The Sustainability Committee will make an annual progress and activity report to the Executive Board, and progress will be monitored by the University Court through review of KPIs and through the Outcome Agreement process.

Queen Margaret University recognises the need to go beyond mandatory reporting duties. For climate change action to work most effectively, all the university's stakeholders must be invested in tackling the causes of climate change and adapting to its effects. To move beyond compliance, into a position of leadership, the University will continue to take the necessary steps to educate and engage staff, students, and wider stakeholders. This plan is an important part of that dialogue, and over its lifetime, there will be regular, user-friendly updates published on all action relating to climate change.

Context and Drivers for Climate Change Action Plan

The impacts of climate change

The unprecedented rate of temperature rise over the last 50 years due predominately to increased greenhouse gases in the atmosphere from emissions from human activity present a global threat. The Paris Agreement put forward proposals to limit the rise to 2° C during this century but irrespective of this action there will be significant consequences as a result of this increase.

This combined with increased public awareness is leading to greater action to limit the effect of climate change. Changes must be effected in two forms: mitigation, in order to limit emissions; and adaptation, in order to prosper in the new environment that will inevitably take shape.

What climate change means for Queen Margaret University

The University recognises the potential range of climate change impacts that will influence our environment globally and locally. As a signatory to the University Climate Change Commitment for Scotland (UCCCfS) since its inception, QMU embraces the role that it has in contributing to delivery of real significant change through reductions in their own carbon emissions, influencing understanding and behaviour change in our staff and students and undertaking and disseminating relevant teaching and research.

Our plan

In implementing the climate change action plan and delivering carbon reduction, the University recognises the need to adopt a holistic approach to economic, social and environmental sustainability. We aim to achieve this through: developing resilience and adaptability in staff and students; through building coherent strategies and identifying synergies across all university operations; and through ensuring the impact is beneficial to our broad range of stakeholders.

Our CCAP sets out the measures we will implement to deliver tangible, measurable and achievable outcomes which contribute to achieving the ambitions and vision of the Scottish Government in its Climate Change Plan. Reporting and monitoring the progress of the CCAP will align with the Scottish Funding Council Outcome Agreement guidance.

The CCAP outlines the objectives of the University over the next 5 years and how it intends to implement and measure these. Progress will be tracked through annual monitoring and reporting.

Leadership & Governance

QMU is governed by the University Court. The governance framework of the University is prescribed by statutory instrument (the Queen Margaret University, Edinburgh (Scotland) Order of Council 2007).

Executive responsibility

Overarching aspects of the University's sustainability activity, including climate change, fall within the remit of the Sustainability Committee, which reports directly to the Executive Board. The Executive Board provides advice to the Principal and Vice-Chancellor, who is accountable to the University Court.

The Director of Operations & Finance is the Executive Member with responsibility for Sustainability and associated operational areas including Estates, Finance, Procurement, IT and HR.

Operational responsibility

Activity is principally directed through the Campus Services Directorate which has responsibility for Estates and Facilities and Information Learning Services (including IT). Procurement responsibility sits under Finance and is effected via partnership with University of Edinburgh Procurement Services, whose guiding principles in relation to ethical and sustainable procurement have been adopted.

Estates & Facilities operation areas include energy efficiency and utilities management, waste management and recycling, travel and transport, landscape & biodiversity.

The Estates & Facilities Division has responsibility for the delivery of objectives set out in the Campus & Commercial Services Operational Plan. These are measured through a series of performance management measures which include specific KPIs related to carbon, energy and waste management. The Operational Plan is subject to annual review.

Academic responsibility

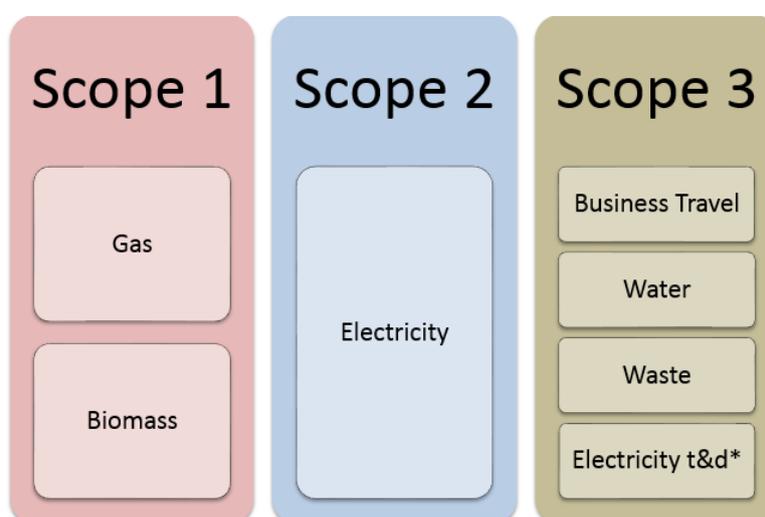
Academic activity related to teaching, learning and research is governed by Senate. Programme development, validation and reviews include assessment of sustainability within course content. When relevant, papers from the Sustainability Committee are put to the Senate for discussion.

Baseline Emissions and Future Projections

In this Climate Change Action Plan, a revised baseline has been adopted using data collected from the academic year 2015/16 when the boundary of the University estate was expanded to include the residential student accommodation. The revised baseline will be utilised to monitor and verify progress against the plan objectives.

Emissions by scope

Greenhouse gas emissions can be grouped in three different scopes that show how they are related to the University's operation. Briefly, they are differentiated by the amount of direct greenhouse gas emissions resulting, and by the degree of control the organisation has over them.



(*t&d refers to losses during transmission and distribution of electricity)

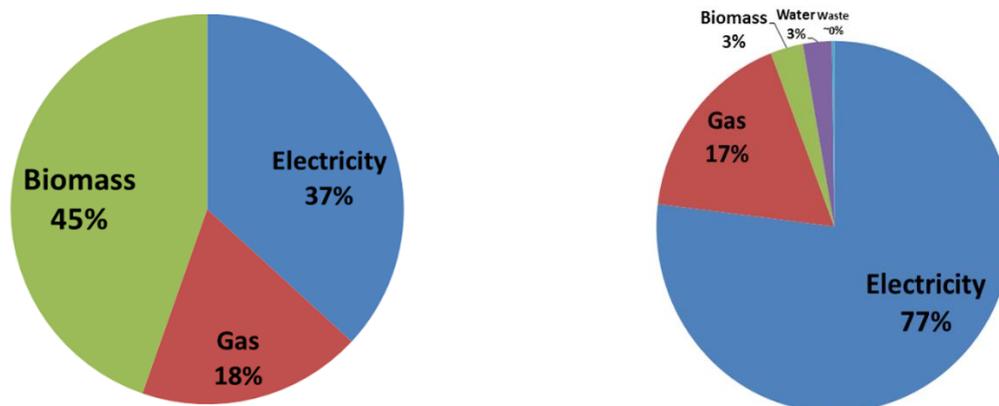
Figure 1: Emissions by scope

Baseline consumption and emissions - 2015/16

The figures below present the verified and publicly available data for the 2015/16 academic year for Queen Margaret University:

| Source | Energy (kWh) | Carbon Emissions (tCO ₂ e) |
|-----------------|-------------------|---------------------------------------|
| Electricity (A) | 3,140,282 | 1,294 |
| Electricity (R) | 1,136,840 | 468 |
| Gas (A) | 1,067,552 | 196 |
| Gas (R) | 1,076,852 | 198 |
| Biomass (A) | 2,434,929 | 32 |
| Biomass (R) | 2,745,771 | 36 |
| Total | 11,602,226 | 2,224 |

Table 1 – Energy consumption for Electricity, Gas and Biomass split between Academic (A) and Residential (R) buildings for the last 3 years along with resultant carbon emissions.



Energy Consumption (kWh) by Fuel Source

Carbon Emissions (tCO₂E) by Source

Figure 2: Baseline energy consumption and carbon emissions

The single largest energy source for the University is the biomass wood chip fuel utilised in the district energy centre used to provide heat across the campus. The wood chip is sourced locally to minimise additional energy consumption in transportation and utilises low value wood harvest residues contributing to the overall low carbon energy profile of the University.

Future development

Queen Margaret University continues to set out an ambitious growth strategy which seeks to attract increased student numbers to taught undergraduate and postgraduate courses, as well as expanding research and commercialisation. This expansion may impact on the University carbon footprint in a number of ways – intensification of use of the existing estate (evenings, weekends) but will also offer opportunities for more sustainable options such as distance learning, online and collaborative partnerships.

No significant campus development is anticipated during the period covered by this plan. The planning phase of a commercial hub development as part of Edinburgh Innovation Park is projected to start in 2021, ultimately extending to 15,192m², and for which the University is likely only to hold ground leases.

Every effort will be made in the design of any prospective campus expansion to build sustainably and for long-term endurance through embedding principles within development or design briefs.

Business as Usual – Projected Emissions

In arriving at a business as usual projection, account has been taken of trend data for the last 3 years for both residential and academic buildings, as well as grid decarbonisation factors. The projection is that by the end of this plan's period, emissions would be forecast to decrease by circa 5% from 2,224 tCO₂e (2015/16) to 2,111 tCO₂e (2021/22), even if no further carbon reduction measures were implemented (See Figure 3).

Sectoral comparison

As part of measuring our success and progress against objectives it is important to compare with our sector peers, while recognising that the relocation to the current campus in 2007 was fundamental in the transition to creating a low carbon university.

We will continue to utilise the formal mechanisms which exist to facilitate measurement via:

- Scottish Government Public Bodies Climate Change Reporting
- Higher Education Statistics Agency Estates Management Record (HESA EMR)
- AUDE / EAUC Green Scorecard

As a result of our space efficiency and increased utilisation intensity, the preferred comparators for the University are:

- emissions per £1m turnover
- emissions per staff / student.

Targets

Over the period of this plan, the University aims to reduce total carbon emissions by 12%, measured from the baseline year (excluding any campus growth as described above and below). This will be achieved through a number of initiatives set out in detail below.

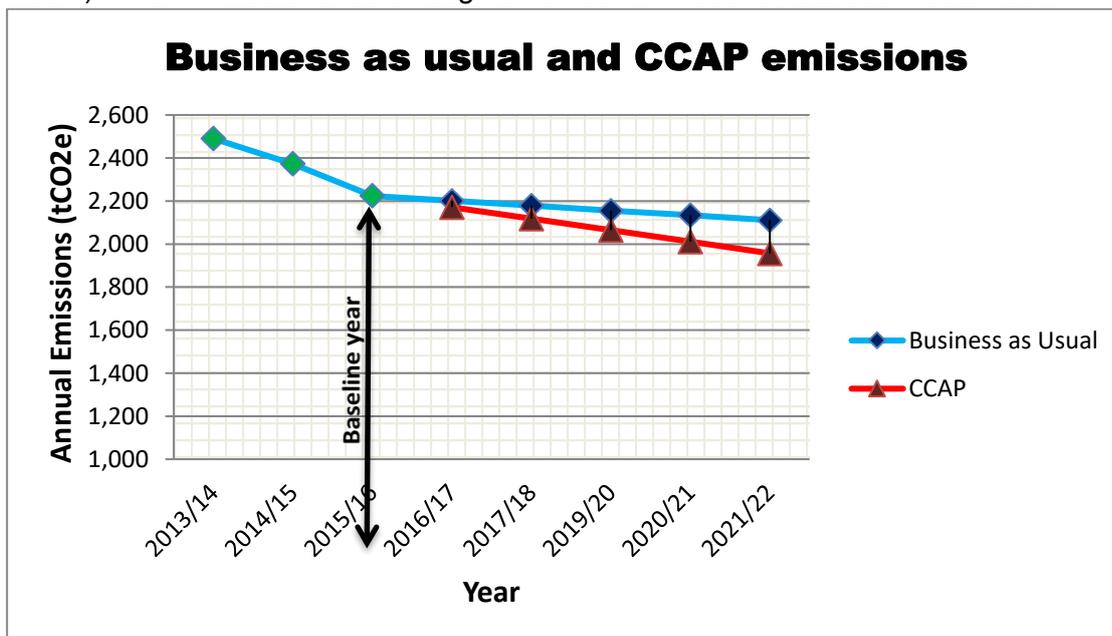


Figure 3 – Showing emissions projections for business as usual and CCAP implementation (for energy reduction initiatives only). Green markers show recorded emissions, blue markers illustrate projected for business as usual case, and red markers are targets based on CCAP implementation.

It should be noted that if the estate is developed and/or the campus sees an intensification of use - for example, growth in on-campus student numbers of circa 20% over the period of the

plan - then this target may not remain feasible. Queen Margaret University has therefore set a target per student in addition to per m² taking account of these projected increases.

These targets will partly depend on successful implementation of a number of key projects (described in the next section), which inevitably entail financial or technical risks that may delay or deter Queen Margaret University's from realising its targets. It is therefore pragmatic to set targets which account for low, medium and high project impact scenarios. This will enable the relevant progress monitoring of the CCAP annually and assess where adjustments to actions may be required.

| Target measure/achievement | Low Impact (tCO₂e) | Mid Impact (tCO₂e) | High Impact(tCO₂e) |
|--|--------------------------------------|--------------------------------------|--------------------------------------|
| Absolute Target | 8% | 12% | 16% |
| Total emissions | 2046.08 | 1957.12 | 1868.16 |
| Per m² (kgCO₂e) | 45.07 | 43.11 | 41.15 |
| Per student (tCO₂e) | 500 | 480 | 460 |

Table 2 – showing targets for the Queen Margaret University's reduction in emissions (by 2021/2022 and from a 2015/16 baseline) as a result of reduced energy consumption.

Climate Change Action Areas

Queen Margaret University has identified the following 7 key areas that require sustained action to reach the objectives of the CCAP. For each area an indicative list of projects and measures is included in Appendix C that further details the aims and plans below.

| Action area | Current areas demonstrating sustainability leadership | Actions for improvement in life of current plan |
|-------------|---|--|
| A | Energy consumption | Execute large and small projects to reduce emissions |
| B | Waste and recycling | Educate to increase recycling rates |
| C | Water consumption | Improve metering and act on data gathered |
| D | Travel and transport | Shrink carbon footprint of business travel; increase rates of active travel |
| E | Engagement & education | Host events to raise awareness; enhance presence of environmental sustainability in taught curricula and research activity |
| F | Procurement | Develop a sustainable procurement toolkit |
| G | Adaptation | Formalise a plan for adaptation risk assessment |

Table 3 – Summary of action plan areas

Link to the United Nations Sustainable Development Goals

Following the success of the Millennium Development Goals, the UN General Assembly accepted 17 measurable Sustainable Development Goals (SDGs). These goals are aimed to be fulfilled by the year 2030 and range from reducing poverty and gender inequality to climate action and clean energy. Scotland was one of the first nations to commit to the goals, showing leadership towards reducing inequalities within Scotland's borders and beyond.

Next to the title of all the climate change action areas below, numbers are printed in brackets to map against relevant Sustainable Development Goals shown below.



A) Energy consumption (electricity, gas and biomass) (7, 8, 9, 11, 12)

Energy consumption

| | |
|------------------|---|
| Action | Maintain register of potential energy reduction projects; implement projects where business case is established and funding is obtained |
| Objective | Reduce energy use |
| Measure | Reduced electricity and other energy consumption |

To meet our climate change targets and obligations, this is by far the most important area for action. 97% of the University's total emissions are associated with energy consumption. As previously mentioned, the campus is relatively new and designed as a low carbon building. As a result, reducing the carbon footprint by further significant amounts is unquestionably a challenge. Incremental improvements may be achieved both through minor adjustments that improve efficiency and by way of innovative projects.

The project list reflects this: it contains three large scale projects - building energy management system (BEMS) controls in the residential buildings, photovoltaic (PV) installation on the residential buildings and replacing the existing heat only biomass boiler with a combined heat and power (CHP) unit alongside many smaller energy related projects. A number of these small projects are iterative from the previous CCAP and reflect good energy management practice of continuous review. The energy projects list will be reviewed periodically to ensure that opportunities to embed the objectives within business as usual activities are maximised. The energy project list will be the primary route to achieving further targeted carbon emission reductions.

Looking beyond the scope of this five year plan, Queen Margaret University aims to play its part in Scotland's overreaching commitment to become carbon neutral. Through investing in micro-generation, energy storage and improving the efficiency of energy generation and distribution QMU aims to remain at the forefront of these innovations.

B) Waste and recycling (11, 12)

Waste and recycling

| | |
|------------------|---|
| Action | Implement updated waste and recycling management strategy |
| Objective | Reduce energy use; promote understanding and influence positive behaviour change |
| Measures | Reduced waste volumes; increased proportion of recycled waste; introduce food waste recycling to residences |

With a campus including residential buildings that accommodate 800 bed spaces and an academic building open 24 hours on 7 days of the week, Queen Margaret University has intense usage, and one side effect of this is significant volumes of waste. QMU already provides for selective waste facilities and currently sends no waste to landfill. Yet in the 2015/16 baseline

year, a significant proportion of our waste (67%) was designated as general waste and directed through a waste for heat treatment stream. Even though it has a lower environmental impact in comparison to sending general waste to landfill, recycling is a more sustainable practice. In conjunction with education to reduce waste production, improving the recycling rate is a key objective over the next five years. Despite the fact that only a tiny proportion (5 tons out of 2456, less than 1%) of the University's total CO₂ emissions originate from waste disposal, it is an area that underlines the organisation's continued efforts to be more resource efficient and move towards a circular economy.

Queen Margaret University has suitable facilities to collect segregated waste and is appropriately aligned with the further sorting process that takes place offsite through our supply chain. The emphasis in this area must be focused on education, as improvements such as clear labelling and relevant info-graphics for display are already facilitated. There are plans for an awareness campaign advocating the need to reduce, reuse and recycle (in that order of priority). A particular target group may be students who stay in the residential buildings on campus, and are therefore both contributing to and are affected by the onsite waste management.

C) Water consumption (6, 11, 12)

Water consumption

| | |
|-------------------|---|
| Action | Monitor water usage and develop usage reduction project |
| Objectives | Improve data collection; reduce water usage |
| Measures | Reduction in water consumption |

While often overlooked with regard to environmental impact, providing a large estate with clean water is an energy intensive process that contributed 60tCO₂e in the 2015/16 baseline year. The main action point in this area is to improve meter reading throughout the campus allowing identification of any unnecessary or undesirable water loss. Once it is possible to monitor water usage accurately throughout the whole of the Musselburgh campus, implementing methods for reduction of consumption may be considered including the potential for substitution with grey / recycled water. A contractor has been commissioned to undertake a study of all existing meters on campus and verify the quality of data currently available. The project list in this area for action is likely to be developed further, especially if the improved meter reading reveals inefficiencies.

D) Travel and transport (owned vehicles, business travel and commuting) (9, 11)

Business travel

| | |
|-------------------|--|
| Action | Implementation of staff business travel emissions monitoring |
| Objectives | Establish baseline (2019) and develop action plan (2020) |
| Measures | Reduction in staff business travel emissions from baseline |

There are two main areas of focus when sustainability in business travel is considered.

Firstly, a carbon footprint should be calculated for travel by air. Flying tends to be associated with high greenhouse gas emissions. Queen Margaret University will set a baseline in order to identify the scale of this source, and if necessary, begin a process of engagement and reduction.

In addition, the University will invest in efforts to reduce its grey fleet, with the final goal of accommodating a pool of low carbon vehicles used for local business travel. It may be noted that the requirement for business travel is already limited where alternative means of communication is facilitated such as conference calls and online forums.

Staff and student commuting

| | |
|-------------------|---|
| Action | Implementation of Green Travel Strategy Plan (2016-2020) |
| Objectives | Reduce single occupancy car use; increase active travel including cycling and walking |
| Measures | Evidence of incremental modal shift |

This is an area where Queen Margaret University can pride itself on a strong progress in recent years. Our campus is well-placed to offer sustainable travel choices. Musselburgh train station is immediately adjacent and there are regular bus services stopping on site. Public transport is consequently the most prevalent way to get to the University with 50% of all journeys to campus taken either by bus or train.

As public transport connections are already well-established, active travel is the most promising method for further reducing single occupancy car use, which is the overreaching goal for staff and student commuting. Queen Margaret University was presented with both Cycle Friendly Employer and Cycle Friendly Campus (with distinction) awards by Cycling Scotland in 2016, demonstrating a firm commitment to active travel. This commitment is reflected in the University's new flagship active travel project, 'Cycle Connections', which began in 2016 and is currently managed by the university's long-term transport consultant, SWECO. An initiative may also be launched to increase the student body's involvement in transport discussions through members of the Students' Union.

Queen Margaret University will also endeavour to ease the transition to electric vehicles as smoothly as possible by increasing the provision of charging points on campus. The allocation of parking permits will be reviewed regularly to ensure that only those least able to take advantage of sustainable travel options may acquire a permit, and that the tariff for permits discourage use of high emission vehicles.

The final focus in this area is to investigate and implement a method of reporting on emissions as a result of Staff and Student commuting. This Scope 3 emission source has not been calculated within the baseline year.

E) Engagement and education (1, 3, 4, 5)

Engagement

| | |
|-------------------|--|
| Action | Host workshop series |
| Objectives | Raise University and community awareness of climate change |
| Measures | Number of workshops and attendees delivered |

Climate change is widely regarded to be one of the most significant challenges facing the world today. As an institute of learning, the Queen Margaret University recognises its duty to educate students on this global issue facing future generations and future leaders.

To implement the plan and raise awareness of sustainability challenges more generally, it is important to engage widely with stakeholders. In view of this, a series of workshops will be provided by the University for staff, students and the wider community, covering the United Nations' 17 sustainable development goals (SDGs). The workshops will be organised by the Sustainability Committee.

Throughout the campus, the Estates and Facilities Division will ensure the provision of signage/infographics promoting and supporting the environmental benefits as part of their project-based delivery.

Among other outreach and awareness raising activities, Queen Margaret University offers sustainability campus tours and other initiatives during Climate Week (in September each year) to promote awareness and understanding of how we are addressing climate change, and will continue to support this in future years. The University also hosts the Scottish office of the Environmental Association for University and Colleges (EAUC) on campus.

Education

| | |
|-------------------|--|
| Actions | Audit of climate change related learning, teaching and research activities; further embedding of sustainability concepts in learning, teaching and research activities |
| Objectives | Establish baseline and develop action plan |
| Measures | Audit results; degree of increased relevant curricular presence and research activities |

Previous sampling indicates that climate change and sustainability concepts are present in curricula across both Schools and within all centres of research and KE at the University. A number of our taught degrees reference climate change specifically, and some of our most significant research takes in its social, economic and environmental costs.

This plan proposes an audit take place from which a baseline of relevant activity can be drawn, and improvements measured. This would also allow the University to report such activity with greater accuracy.

In parallel, a plan of actions to raise awareness and encourage greater incorporation of climate change and sustainability concepts will be developed. These may span everything from staff development sessions to quality assurance process changes (for example, enhancing the presence of sustainability and climate change discussions in module/programme validation and review).

F) Procurement (12, 16, 17)

Procurement

| | |
|-------------------|---|
| Action | Develop a sustainable procurement toolkit |
| Objectives | Ensure sustainable thinking is applied to all procurement decisions |
| Measures | Sustainable procurement audit |

Responsibility for procurement belongs to the Finance department and is delivered in partnership with University of Edinburgh (UoE) Procurement Services, following the UoE's guiding principles in relation to ethical and sustainable procurement. This involves procuring goods and services in ways that maximise efficiency and effectiveness at the same time as limiting social and environmental risks. Within the life of this plan we will develop a toolkit to ensure that sustainability is considered in all stages of procurement. This should include post-purchase audit to monitor adherence.

G) Adaptation: ensuring resilience to climate change (3,4,7,8,9,11,13,15)

Adaptation

| | |
|------------------|---|
| Action | Formalise a risk assessment plan; carry out assessments |
| Objective | Gain understanding of the risks to inform necessary adaptations |
| Measure | Reduced electricity consumption |

In the last half century, the rate of global climate has already changed significantly. Further changes are inevitable even if internationally agreed measures to limit climate change are implemented immediately.

Consequently, along with action aimed at decelerating and reversing climate change (mitigation), further efforts will be needed, adjusted to the changing environment (adaptation). While this is likely to cause disruption to business as usual, it should be recognised that in adapting to climate change, there are not only challenges, but there may be opportunities as well.

Summarised below are various respects in which the changing climate may have an impact in Scotland and the University:

- Summers will become drier and hotter. There will be more heat waves and an increased demand for water while less may be available. Even if the University's water consumption levels remain constant, our use of recycled rainwater may come under strain. Ambient temperatures within University buildings may rise, and sensitive areas such as the IT server farms may be at risk.
- Winters will become wetter and milder. This may in turn increase the growing season and improve food production. There should also be a lower requirement for heating. This is directly relevant to our energy consumption and patterns of demand.
- The occurrence of extreme weather events is likely to increase. With increased concentrated rainfall, particularly throughout during the winter months, there will be an increased risk of flooding. This will potentially cause property damage and disrupt transport links. An increasing number of storms will pose the risk of damaging properties. As has been experienced already, extreme and erratic weather patterns have the potential to disrupt the core business of the University.
- A longer term effect is the continuing rise of sea levels that may necessitate major new infrastructure or relocation from coastal areas. This is not a direct threat to the University; however pressure may be put on surrounding land should flight occur from nearby coastal areas.
- Animal and plant life is often highly responsive to minor temperature changes, causing some species to flourish and others to decline. As a campus with designed-in biodiversity, this would be a loss to the University and its surrounding ecosystem.

While outside the scope of this plan, it should be noted that all these potential effects of climate change are at least equally applicable to our transnational partners and students across the globe.

Addressing the risks

The proposal in this plan is to formalise regular risk assessments to assess the hazards posed by climate change. This will allow the University to make better informed decisions to address the risks identified above, in light of existing and possible future measures under each heading:

Heat and drought: Ambient temperatures in University buildings are controlled by a combination of mechanical and material passive design features, meaning the building adjusts itself to varying temperatures. Among the few areas of the campus with air conditioning are our IT server rooms, and this will operate to control temperature in these sensitive areas as it does now, albeit with greater energy consumption.

There is only so much the University can do to mitigate lack of rain. However our Sustainable Urban Drainage System (SUDS), described further below, optimises the re-use of rainwater on campus. Minimisation of water use is then designed in to our water services across the University.

Flooding: The University was built with a drainage system that takes account of flood risk. SUDS captures rainwater draining from roofs and paved areas, and retains the water on site instead of allowing downstream flooding. Some on campus areas such as the university car park are laid with permeable pavements, which supplement the SUDS.

Extreme weather events: On its current site, the University has proved itself resilient in maintaining core business as far as possible in the face of extreme and erratic weather events. When core business is no longer possible and with the health and safety of staff and students paramount, executive decisions have been and will continue to be taken temporarily to close the Musselburgh campus. Students and staff can remain connected via our remote working IT systems. The increased use of online teaching and learning will help further to mitigate the disruptive effects of extreme weather.

Rising sea levels: The University does not own the land around the Musselburgh campus. In the event that coastal flooding creates pressure it may necessitate major new infrastructure.

Threats to biodiversity: As it did when designing lands on and around our campus, in the face of changing climate, the University can seek advice on the best ways to protect and enhance its biodiverse aspects. This may involve, for instance, introducing new species of flora and fauna more suited to changed environmental conditions.

Monitoring and Reporting

To achieve our CCAP outcomes and to ensure that objectives remain current and relevant to our operations they will be subject to periodic review through formal monitoring and reporting. The cycle will be aligned to feed into mandatory and other regulatory annual returns and an annual report will be submitted by the Sustainability Committee to the Executive Board, and progress will be monitored by the University Court through review of KPIs and through the Outcome Agreement process.

Monitoring

The progress of our plan will be monitored against key metrics in each of the areas for action. In some cases this will be through independently reviewed empirical data and in others it will be through review of qualitative achievements and milestones.

Reporting

As part of the Climate Change (2009) Scotland Act, there is a requirement for public bodies, including universities, to complete an annual report¹. This report is referenced in QMU's Outcome Agreement with the Scottish Funding Council, and was first completed on a voluntary basis in 2014/15 and on a mandatory basis from 2015/16, the baseline year for this plan. The report submitted by Queen Margaret University and all other members of the 'major players' list can be found on the Keep Scotland Beautiful website. In it, the University publishes data outlining the emissions related to the bulk of its operation, but also action related to adaptation and examples of wider influence. The University also submits an annual Estates Management Return (EMR) which includes a section on emissions data.

To align with the external reporting cycle, it is proposed that an annual report is made by the Sustainability Committee to Executive Board in autumn each year.

Moving from compliance to leadership

Queen Margaret University recognises a need to take action beyond simply fulfilling mandatory reporting duties. For climate change action to work most effectively, all the university's occupants and stakeholders need to be invested in the cause. While there may be growing recognition for action on climate change, it is important to maintain and build momentum over the long-term. To move beyond compliance, into a position of leadership, Queen Margaret University will continue to take the necessary steps in educating and engaging with staff and students. Over the course of this Climate Change Action Plan's lifetime, there will be regular, user-friendly updates published on all action relating to climate change.

¹ The Public Bodies Climate Change Duties Report. Among other things, the Act requires 'public bodies' (including universities) to contribute to carbon emission reduction targets; contribute to climate change adaptation, and to act sustainably.