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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 21<sup>st</sup>

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



## **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;

**Leadership &**

## **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.

Greenhouse gas emissions can be grouped in three different scopes that show how they are relate Briefly, they are differentiated by the amount of direct

Energy Consumption (kWh) by Fuel Source

Carbon Emissions (tCO<sub>2</sub>E) 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.

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 15,192m<sup>2</sup>, 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**



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:

plan - then this target may not remain feasible. Queen Margaret University has therefore set a target per student in addition to

## Climate Change

(7, 8, 9, 11, 12

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 <sup>2</sup> emissions originate from waste disposal, it is an area that underlines the organis <sup>2</sup> 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



Queen Margaret University will also endeavour to ease the

|                   |   |
|-------------------|---|
| <b>Actions</b>    | Audit of climate change related learning, teaching and research activities;<br>further embedding of sustainability concepts in learning, teaching and research activities |
| <b>Objectives</b> | Establish baseline and develop action plan  |
| <b>Measures</b>   |   |



(3,4,7,8,9,11,13,15)

|                  |   |
|------------------|---|
| <b>Action</b>    | Formalise a risk assessment plan; carry out assessments |
| <b>Objective</b> |   |

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