Document Control

Current Version	Change made	Written by	Approved by	Date
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Draft 2	Incorporating comments from SH, KL and DO	Paul Eccleshare		20/09/2018
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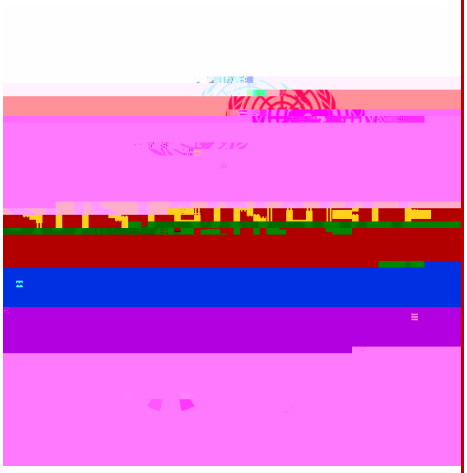
Introduction

De Montfort University (DMU) operates and maintains a range of buildings in the heart of Leicester City, providing an educational, working and living space for around 26,000 students and approximately 2,200 members of staff. Meeting their needs with regard to heating, hot water, lighting, computing, cooling, cooking, etc. requires a large amount of energy. The benefits o

Section 1 - Strategic Framework

Internationally - The United Nations Sustainable Development Goals



The United Nations (UN) Sustainable Development Goals (SDGs) were launched in 2015 and are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Altogether there are 17 SDGs, each of which has a number of targets that need to be achieved for the Goal to have been met. Implementation of the goals, described as 'localisation', is the responsibility of member countries and their institutions. To support each goal they must reflect its targets in their own legislation, strategies and policies. The two goals most pertinent to DMU's energy use are SDGs 7 and 13.

SDG7 – Affordable and Clean Energy

The five targets developed for this SDG aim to:

Ensure that there is universal access to affordable, reliable and modern energy services.
Increase substantially the share of renewable energy in the global energy mix.
Double the rate of improvement in energy efficiency.
Facilitate access to clean energy research and technology and promote investment in energy infrastructure and clean energy technology.
Supply modern and sustainable energy services for all developing countries.

What is DMU doing?

DMU already contributes to this SDG by procuring most of its electricity from renewable sources, generating some of its own electricity from photovoltaic (Solar) arrays and generating renewable heat using ground and air source heat pumps and biomass heating. DMU invests annually in energy efficiency and its Institute of Energy and Sustainable Development (IESD) provides world class teaching and research on sustainable energy technologies in both developed and developing countries.

SDG13 – Climate Action

The five targets developed for this SDG focus on developing resilience and capacity to manage the impacts of climate change on communities, particularly those in developing countries. This includes education and awareness raising and a commitment to ensure that by 2020 £100 billion is being mobilised annually to assist with carbon mitigation in developing countries.

What is DMU doing? DMU is already contributing towards this goal. Through the Environment Policy DMU has made a commitment to embed Education for Sustainable Development (ESD) into teaching, learning and research. In addition, the university's Institute for Energy and Sustainable Development

Figure 1 – Carbon emissions from energy use 2005 – 2016 (tCO

Section 2 - Campus Energy Trends

Time of Day Tariffs

The cost of electricity to DMU is increasingly inflated by “non-energy costs”. These are costs associated with maintaining and developing

Benchmarking - DMU against other Higher Education providers.

HESA statistics

Figure 6 below shows the results of a benchmarking exercise using data from the Higher Education Statistics Agency Ltd (HESA), which annually receives mandatory data from all HE providers in England. Figure 6 below compares DMU's energy use intensity for its non-residential buildings against other English universities. It can be seen that DMU has consistently maintained its operation using approximately 30%

AUDE – Sustainability Leadership Scorecar

Table 2 – Heating temperature set points by area type (CIBSE Guide A – table 1.5).

Area type	Temperature set point range (°C)
Classrooms Lecture Theatres Laboratories Corridors Galleries Toilets	19 -21
Offices	21 -23
Workshops	16 -19
Libraries	22 - 23

Management of Portable Heaters

Server Room Cooling

There are many small server rooms around the campus that have mechanical cooling systems associated with their location. It had been agreed between ITMS and Estates that the set point for these units is to be 24°C. Wherever possible server rooms are to be located in spaces with outside walls to enable free-cooling to be easily achieved, which may be backed up by mechanical cooling when the external air temperature is in excess b

lifetime of the building whichever is shorter, based on the UKCP18 climate change probability scenarios.[2] Simple, robust passive strategies are to be employed wherever possible. Overly complex strategies and systems should be avoided.

The design team must consider the integration of low or zero carbon (LZC) energy technologies as part of the building's M&E strategy. The financial lifecycle benefits of these technologies must be stated considering the energy and carbon cost savings that DMU could benefit from. Where opportunities for LZCs exist but fall outside of the scope of the project the Energy Manager should be notified of these

The Energy Hierarchy

The energy hierarchy set out in figure 7 below sets out how DMU will seek to manage its energy needs. This design philosophy should be considered as part of all capital projects associated with building systems or fabric undertaken by the university. This approach will guide DMU to making the best choices to reduce energy costs, mitigate supply risks and reduce carbon emissions.

Figure 7 – The Energy Hierarchy

Energy Saving

DMU will seek to minimise energy wastage across its campus by ensuring things that are not needed are not used, i.e. lights, ventilation and heating are turned off when not being used.

Energy Efficiency

DMU will work to ensure that the energy that it consumes is used as efficiently as possible. A classic example of this is LED lighting, which will provide the same function as fluorescent lighting but for

Leicester Media School - Bede Island building. These interventions, deployed in July 2017, have resulted in a financial saving of nearly 25% (£11,300) over one year. In purely energy cost terms this represents a six-year payback on investment. However cost savings have also been made in reduced maintenance costs and reduced carbon emission tax costs. Additional benefits were also achieved by providing a much better working environment for staff and students as the new lighting provided a highly visible uplift to the building's interior. This reflects a typical investment and outcome from energy saving initiatives funded from the budget.

Figure 8 – Accumulative energy cost difference per month Aug 2016 – Jul 2018 for Leicester Media School – Bede Island.

DMU will make an annual revenue allocation of £250,000 per annum to enable specific investment into energy efficiency projects to be made by the Energy Manager. This funding can be allocated to energy saving projects that form part of Carbon Management Plan or energy saving works that are incorporated into other capital projects.

In addition, DMU will explore and, where appropriate, utilise external funding opportunities where this will allow an increased level of activity to reduce energy with no o

Section 4 - Responsibility for the Energy Policy

Role of the Executive Board / Operational Leadership Group

Approval of the Energy Policy.
Include energy cost / consumption and carbon management considerations in strategic decisions made by the DMU.
Ensure that sufficient resources are available to implement this Policy.

All building users shall be responsible for:

- Maintaining a healthy internal environment within the building by operating windows, blinds, etc. as appropriate.
- Ensuring that radiators are not blocked with furniture, clothing etc.
  Turning off lights and other equipment when they are not required.
- Reporting any faults and areas where there is over or under heating to the Estates Helpdesk (x6366/ estateshelpdesk@dmu.ac.uk).
- Wearing suitable clothing for the prevailing weather conditions.
- Operating the use of authorised portable / temporary heating and cooling equipment to ensure that it is operated efficiently and not operated when unnecessary.

Responsibility of the Estates & Facilities Directorate.

Extending or shortening the heating season as determined by weather conditions. Decisions shall lie with the Energy Manager and the Director of Estates and Facilities.
Adjusting excessive or insufficient space heating temperatures. Responsibility will rest with the Head of Maintenance and the Energy Manager.
Creating and reviewing the Energy Policy. This will be undertaken by the Energy Manager and the Head of Estates Management / Associate Director of Estates, supported by Estates Heads of Service.
Investigating complaints will lie with the Head of Maintenance, supported by the Energy Manager, who shall respond and provide feedback within five working days.
Monitoring and controlling temperatures using engineered solutions via the Building Management Systems (BEMS).
Maintaining the energy and water Automatic Monitoring & Targeting (aM&T) system to monitor usage and expenditure against budgets, targets and benchmarks. This will be carried out by the Energy Manager and the databases will be used to provide such reports as are required by Faculties, Departments and Directorates to manage energy and water usage and to comply with legislation.

Section 5 - Energy Procurement

The Energy Manager and the Procurement Category Manager for Estates will annually review the performance of the DMU's procurement approach to energy and, if necessary, make recommendations to the Head of Procurement and the Director of Estates and Facilities as to any changes that should be considered. DMU will work to ensure that the energy supply contracts provide value for money and reduce the financial risks of exposure to a volatile wholesale energy market. DMU will also procure energy in line with the emerging Flexible Framework procurement strategy.

Sustainable Energy

DMU will work to secure the commitment from our suppliers to provide the university with electricity generated from renewable sources. This will help support the development of more renewable electricity generation facilities. To ensure the electricity is from genuine sources of renewable electricity it will be backed by a certified accreditation scheme such as the Renewable Energy Guarantees of Origin (REGOs) scheme administered by Ofgem. Any additional cost for renewable energy must be affordable.

Appendix 1 – Energy and sustainability notification of works form.

Name of project	
Project Manager / Maintenance officer	
Phone Number (including prefix)	
Project name	
Affected building and areas	
Description of works (please provide as much detail about energy systems / sustainability impacts of the project as possible) Consider:- Energy efficiency and reducing carbon emissions. Enhance occupant comfort, experience and productivity. Designing for long life, low environmental impact, low maintenance, and flexibility Reducing construction waste End of life recycling. Reducing water consumption. Increasing biodiversity. Promoting and supporting sustainable travel modes.	
Start date	
Duration of works (in weeks)	
Project Budget	

Version number:

Created by:

Date created: