



Environmental Management System: Energy Monitoring and Management Procedure

Approval Page

Version	Governance Group	Date Approved
1.0	Sustainability Committee	7 May 2021
2.0	Sustainability Committee	1 April 2022

Energy Monitoring and Management Procedure

Lead:	Sustainability and Energy Manager
Reviewed by:	Head of Sustainability
Approved by:	Sustainability Committee
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ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how Queen Mary, University of London (Queen Mary) manages energy used across its UK and Malta campuses as well as:

- Address the risks and opportunities associated with aspect 'energy consumption'
- Monitor energy consumption
- Minimise energy consumption
- Embed good energy management practices across all its premises
- Ensure compliance with relevant environmental legislation.

Scope

This procedure covers all electricity, gas and other fossil fuel used for heating across Queen Mary's UK and Malta Campuses.

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities).
- *Process*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Director of Estates, Facilities and Capital Development	Responsible for ensuring that there are adequate resources to support the delivery of Queen Mary's carbon reduction and decarbonisation targets and objectives. Provide oversight of Queen Mary's energy efficiency and carbon reduction performance

Role / Position	Responsibilities
Assistant Director, Engineering and Estates Management	Responsible for aligning Align Queen Mary's carbon reduction and energy efficiency objectives into all Engineering and Estates Management functions and ensuring that TM44 Air conditioning inspections are carried out by an accredited air-conditioning inspector.
Facilities and Resources Manager (Malta Campus)	Responsible for aligning Align Queen Mary's carbon reduction and energy efficiency objectives into all Engineering and Estates Management functions and ensuring that TM44 HVAC and stand-by diesel electricity generator inspections are carried out by an accredited contractor across our Malta Campus.
Head of Sustainability	Overall responsibility for overseeing energy management across Queen Mary and ensuring compliance with all relevant energy regulations. Responsible for developing Queen Mary's carbon management plan.
Assistant Director, Space and Workplace Transformation	Responsible for coordinating and submission of Queen Mary's annual Estate Management Record (EMR) to the Higher Education Statistics Agency (HESA)
Sustainability and Energy Manager	<ul style="list-style-type: none"> • Responsible for monitoring energy / carbon performance and collating data to generate DEC's and HESA reports. • Responsible for collating technical energy efficiency opportunities and risks across Queen Mary's portfolio. • Responsible for coordinating Queen Mary's energy audit programme as well as exploring non-technical approaches to reducing energy wastage.
Relevant Managers and Departments	Proactively encourage good energy practices across their Departments, Schools, Faculties and Service Areas.
Building Management System Contractor	Deliver energy efficiency via optimisation of Building Management System (BMS).

Related Documents

This procedure is linked to:

- [Queen Mary's Environmental Policy 2021](#)
- [Queen Mary's Environmental Sustainability Action Plan \(2020-23\)](#)
- [Queen Mary's Environmental Management System \(EMS\) 2022](#)
- [Queen Mary's Environmental Aspects and Impact Register 2022](#)

Procedure

Building Management System (UK Campuses)

1. Queen Mary's appointed BMS Contractor is responsible for controlling heating, ventilation air-conditioning systems (HVAC) and hot water controls via building management system.
2. The HVAC of most of Queen Mary's buildings can be controlled via the BMS; however, some of our buildings have complex control systems.
3. Majority of Queen Mary's buildings have manual controls, within individual rooms for air-conditioning, heating and lighting.
4. Some of Queen Mary's buildings are regulated automatically via the BMS, which controls the internal air temperature of either zones or individual rooms within the building according to seasonality, term times, temperature and occupancy.

Building Management System (Malta Campus)

1. Queen Mary's appointed Facilities Management Service provider is responsible for controlling heating, ventilation air-conditioning systems (HVAC) and hot water controls via building management system.
2. The HVAC is mainly controlled by the BMS. VRF's and heat pumps are controlled via a separate panel on the Mezzanine level.
3. Most buildings have manual controls, within individual rooms for air-conditioning, heating, and lighting.
4. The main building uses both Variable Refrigerant Flow (VRF) and a chiller system for heating and cooling. VRFs are mainly used in rooms to control the temperature of the specific area while the chiller system is used to control the temperatures of the whole building via the BMS.

Higher Education Statistics Agency (HESA) submissions (UK Campuses only):

1. The Sustainability and Energy Manager collates the annual electricity, fossil fuel (heating), water used, and business travel data across all Queen Mary's UK campuses. These data are part of Queen Mary's annual Estate Management Record (EMR) submissions.
2. The Sustainability and Energy Manager stores all email correspondence and HESA's reporting requirements in designated sub-folder. This evidence is available for assurance and audit purposes.
3. The Assistant Director – Space and Workplace Transformation (Estates and Facilities) is Queen Mary's primary contact for the HESA monitoring and reporting.

Energy Performance of Buildings (UK Campuses):

1. The Sustainability and Energy Manager is responsible for ensuring that all qualifying Queen Mary's buildings (with a total useful floor area over 250m² after 9 July 2015) have valid Display Energy Certificates (DECs) and have the associated advisory reports.
2. The DECs and Advisory Reports are prepared by registered consultant, who conducts the annual review of each building during the process of generating these DECs.
3. The DECs are displayed at the entrance/reception area of each building and are publicly available via relevant section of Queen Mary's Sustainability web site.
4. Energy Performance Certificates (EPCs) of all recently acquired buildings are available via relevant section of Queen Mary's web site.
5. TM44 Air conditioning inspections are carried out, by an accredited air-conditioning inspector, in accordance with the Energy Performance of Buildings Regulations. These certificates are held by the Assistant Director of Engineering and Estates Management (Estates and Facilities Directorate).

Energy Performance of Buildings (Malta Campus):

1. The Facilities and Resources Manager is responsible for developing and implementing energy efficiency in line with Queen Mary's six-year 30% carbon reduction target
2. The Facilities and Resources Manager is responsible for providing assurance that Queen Mary is compliant with all relevant energy regulations and standards

Monitoring and reporting (UK Campuses):

1. Majority of Queen Mary's buildings have smart electric meters for accurately monitoring electricity, gas and water consumption.
2. The Sustainability and Energy Manager validates energy bills against fiscal meter data and ensure that Climate Change Levy (CCL) is applied to non-residential buildings according to Climate Change Levy (General) Regulations SI 2001/838.
3. The Head of Sustainability present energy and carbon performance to the Sustainability Committee (SC) and the Finance and Investment Committee (FIC).
4. Scope 1 and 2 data are captured within Queen Mary's energy monitoring and management workbooks.

Monitoring and reporting (Malta Campus):

1. Queen Mary, Malta Campus buildings have smart electric meters for accurately monitoring electricity and water consumption.
2. The Facilities and Resources Assistant validates energy bills against fiscal meter data.

Carbon Management and Energy Efficiency Opportunities (UK Campuses)

1. Six-year 30% carbon reduction target against Queen Mary's 2018/19 baseline is one of the commitments with its Environmental Sustainability Action Plan (ESAP) 2020-23.
2. The Sustainability and Energy Manager and the Head of Sustainability in conjunction with all relevant stakeholders is responsible for identifying energy efficiency and carbon reduction opportunities and carrying out cost/benefit analysis to determine the feasibility of all identified energy efficiency and carbon reduction opportunities.
3. The Sustainability and Energy Manager is currently exploring opportunities to encourage all building users to adopt good energy efficiency opportunities.
4. The Head of Sustainability present reports to the Sustainability Community and the Finance and Investment Committee on Queen Mary's against its carbon reduction target.

Carbon Management and Energy Efficiency Opportunities (Malta Campus)

1. The Facilities and Resources Manager and the EMS Lead for Malta Campus in conjunction with all relevant stakeholders is responsible for identifying energy efficiency and carbon reduction opportunities and carrying out cost/benefit analysis to determine the feasibility of all identified energy efficiency and carbon reduction opportunities.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements the ISO 14001:2015 standard
- Budgetary pressure from increased energy consumption / wastage
- Civil and / or criminal prosecution

Departure from this procedure is addressed within **Non-Conformance, Corrective and Preventive Action Section** of Queen Mary's Environmental Management System.

Version Control

Date	Version	Lead	Due for Review:
7 May 2021	1.0	Head of Sustainability	6 May 2022
1 April 2022	2.0	Sustainability and Energy Manager	31 March 2023

EMS: Energy Monitoring and Management Procedure

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