

1.1 Background

An Environmental Management System is a framework for assessing and managing environmental and sustainability impacts. It provides a commitment to achieving improved sustainability performance and legal compliance and will help to embed sustainability within the University's operations. The guiding principle of an EMS is "continual environmental improvement".

In the early 1990's, the University committed itself to the principle and practice of environmental protection and sustainable development as a signatory of the COPERNICUS Charter. It also set up an Environmental Responsibility Committee (ERC) to deal with emerging environmental issues, to establish a baseline review of the University's environmental performance and to monitor the way in which the University managed its responsibilities under new environmental legislation e.g. the Environmental Protection Act 1990. This committee reported upwards to University Court via the Finance and Estates Committee (which later became the Finance and Resources Committee).

In 1995, the ERC commissioned an Environmental Review conducted by two post graduate students (Simon Tribe and Tertia Waters). The scope of this review included the use of energy, purchasing policy, transport initiatives, the use of the Grounds, ordinary waste and hazardous waste. Each of these environmental areas was analysed and recommendations made. Many of the recommendations made were put into practice.

In 2000, the University signed up to the Scottish Network for Sustainability (SUNS) which sought to identify and share best practice on sustainability within Scottish HEI's. Simultaneously, a further environmental baseline review was conducted as a precursor to the implementation of an Environmental Management System. The software tool used for this was developed by Strathclyde University (Web EMS) and enabled a full baseline review to be undertaken. The results of the review were presented to the ERC.

A review of the function of the University's Health and Safety Committee and the ERC took place in 2004 and a proposal to merge the two committees was endorsed later in 2004. The new Committee became the Safety, Health and Environment Committee.

In 2007, the University made a statement on its commitment to sustainable development through the launch of a University Sustainability Policy, and in 2009 a set of sustainability objectives (2009-2012) were endorsed. In addition to this, in 2009 the University signed up to a Carbon Management programme, setting clear targets to reduce energy consumption and reduce the University's CO₂ footprint. As a part of this programme, the University also signed up to the Universities and Colleges Climate Change for Scotland initiative (UCCCfS) and, in 2010, was also awarded the Carbon Trust Standard (CTS).

Work has also been undertaken to embed the principles of sustainability amongst the staff and students at the University and numerous initiatives to save energy have been implemented e.g. the student inter-hall energy saving competition, work with Going Carbon Neutral Stirling to encourage students to sign up to carbon cutter pledges, the establishment of a Green Champions network, and the on-going work to identify and implement energy saving projects as part of the Carbon management Plan. It is within the context of managing all these lines of work to improve the University's sustainability performance that it was felt appropriate to re-launch the Environmental Management System. Following consultation by

the SHE committee in 2010 the IEMA Acorn scheme for implementing a phased approach to an EMS was adopted

1.2 Site History

The decision that Scotland's first new university for four hundred years should be sited at Stirling was announced on 17th July 1964 and would occupy land between Stirling city centre and Bridge of Allan known as Airthrey Estate.

A description of the history of the Estate prior to the University is found in 'The University of Stirling; Beginnings and Today'; R.G Bomont; 1995. The following paragraphs taken from this book describe Airthrey Estate prior to the development of the University:

"The Airthrey estate as it exists today owes much to the improvement works undertaken by the Haldane and Abercrombie families. Robert Haldane built Airthrey Castle in 1791 to a design by Robert Adam and devoted much time over a ten year period in beautifying the estate, transplanting many full grown trees and excavating the loch covering some 23 acres which still adorns the estate".

"In 1798 Robert Haldane sold the estate to neighbouring proprietor Sir Robert Abercromby who, with the assistance of Thomas White.....continued its enhancement".

"Lord Abercromby sold the estate in 1889 to Donald Graham....who added a large extension to Airthrey Castle and further improved the grounds by planting trees, ornamenting the island and adding a bridge over the loch".

"In 1939 the estate was purchased by the Local health Authority for hospital purposes and in 1947 on the establishment of the National Health Service, ownership passed to the Secretary of State for Scotland. Throughout this period Airthrey Estate itself remained largely untouched and unspoiled...."

The first of the University buildings to be built was Pathfoot which was opened on 18 September 1968 and would accommodate 164 undergraduate students and 31 postgraduate students. Planning and development work continued throughout 1968 which included the student residences, MacRobert Arts centre and staff housing. Further development in the early 1970's saw the building of Cottrell building, the library and the central atrium area.

1.3 Organisational Structure

The University is structured into 9 'service' areas and 7 Schools:

Service areas:

- Development and External Affairs
- Deputy Secretary
- Estates and Campus Services
- Commercial Operations

- Finance
- Human Resources and Organisational Development
- Information Services
- Research and Enterprise
- Sports Development Service

Schools:

- Applied Social Science
- Arts and Humanities
- Education
- Stirling Management School
- Natural Sciences
- Nursing Midwifery and Health
- Sport

The University has approximately 9,000 students and 1,600 staff

1.4 Drivers for EMS implementation

There are a number of drivers for implementation. These are:

- To provide assurance of environmental performance to key stakeholders, in particular enhancing the University's reputation and promoting sustainability in the curriculum.
- To support the overall aims of the University's Carbon Management programme to reduce energy consumption, reduce the Carbon footprint and also save money in key activity areas.
- To formalise the overall approach to environmental management and help meet many of the specific aims of the University's sustainability objectives.
- To provide a systematic approach to environmental management that engages the organisation at all levels.
- To audit and provide assurance of the University's compliance with environmental legislation and regulation

1.5 Barriers against EMS implementation

There are also a number of barriers to implementation that need to be considered. These are:

- Implementation can be costly, depending on the EMS tools utilised and the route adopted to achieve the EMS standard.
- Implementation can be very time consuming, especially for the designated individual who will manage the EMS.
- There are further costs associated with training, consultancy assistance, external auditors for verification and technical costs associated with monitoring impacts.
- An EMS standard can take a considerable time to implement and achieve certification (5 – 10 years)

1.6 EMS organisation

A number of groups and networks have been established for the promotion of aspects of sustainability. Rather than create a further team for EMS implementation, it was felt more beneficial to incorporate the management of the EMS amongst the existing groups, in particular the Carbon Management implementation team and Green Champion network.

The organisation chart below details those involved with EMS implementation.

The Remit of the Safety, Health and Environment Committee:

- To consider all issues relating to the management and implementation of Safety, Health and Environment and to advise the University Court thereon;
- To develop objectives and actions necessary to ensure compliance and continual improvement in Safety, Health and Environmental performance.

The Carbon Management Core Team: (Head of OR&ES, Director of Estates and Campus Services, Director of Property Management, Energy Manager)

- Consider all issues related to Environmental Management and Carbon reduction
- Provide professional opinion and expertise to guide the implementation of the EMS and Carbon Management Plan

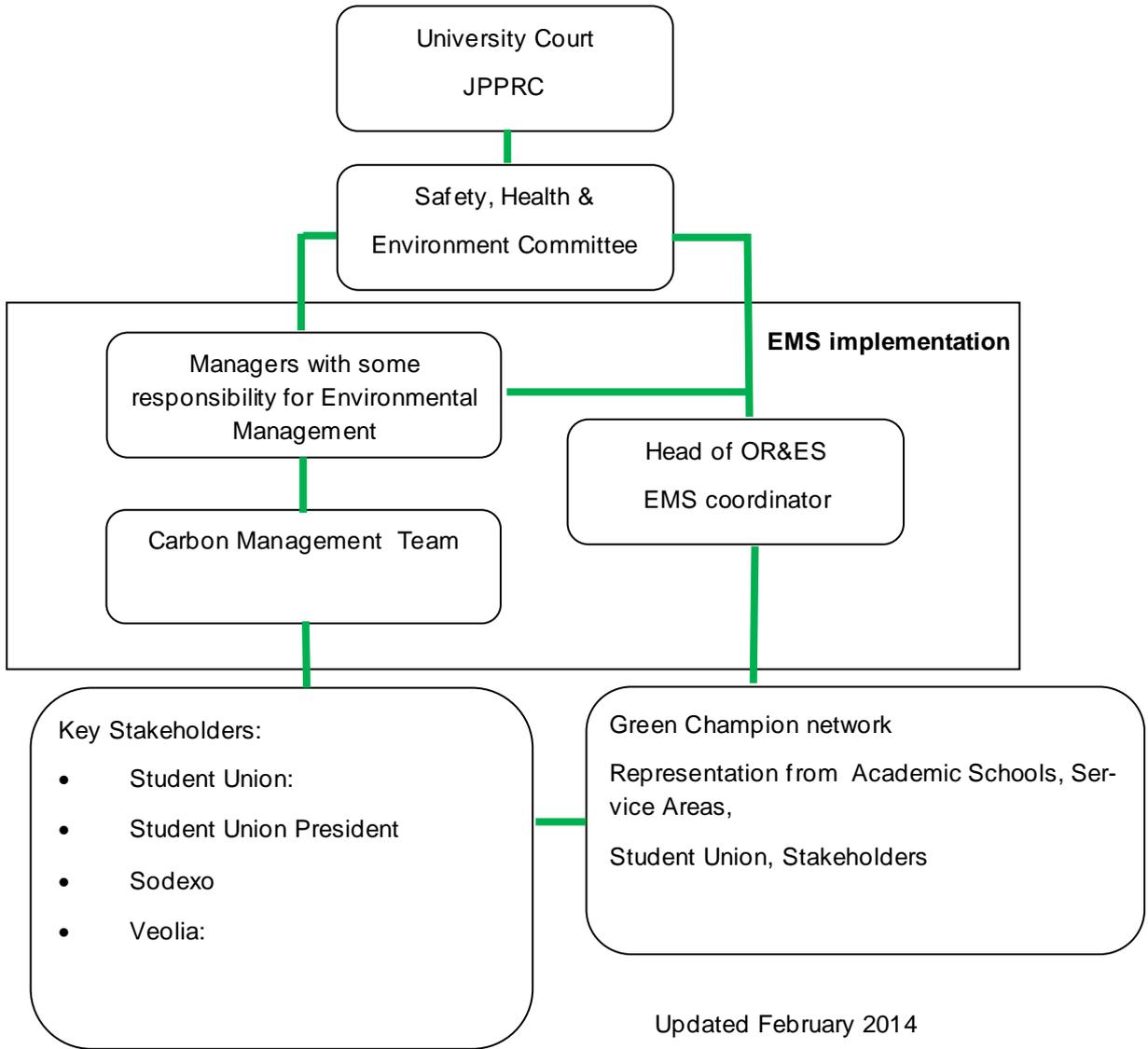
The Head of OR&ES:

- Coordinate the implementation of the EMS
- Lead the Carbon Champions network
- Identify, plan and deliver information and training on environmental matters

Role of the Green Champions:

- Promote and encourage support for initiatives to reduce energy consumption/ carbon emissions within the School/ Service area
- Take an active role in the implementation of the Environmental Management System, in particular by helping to identify and evaluate environmental aspects and impacts.
- Act as the focus for communicating green awareness issues within the School/ Service area and provide feedback on School/ Service area opinions/ new energy saving projects at review meetings.
- Undertake periodic monitoring within the School/ Service area on the use of/ change towards green initiatives and provide feedback to review meetings.

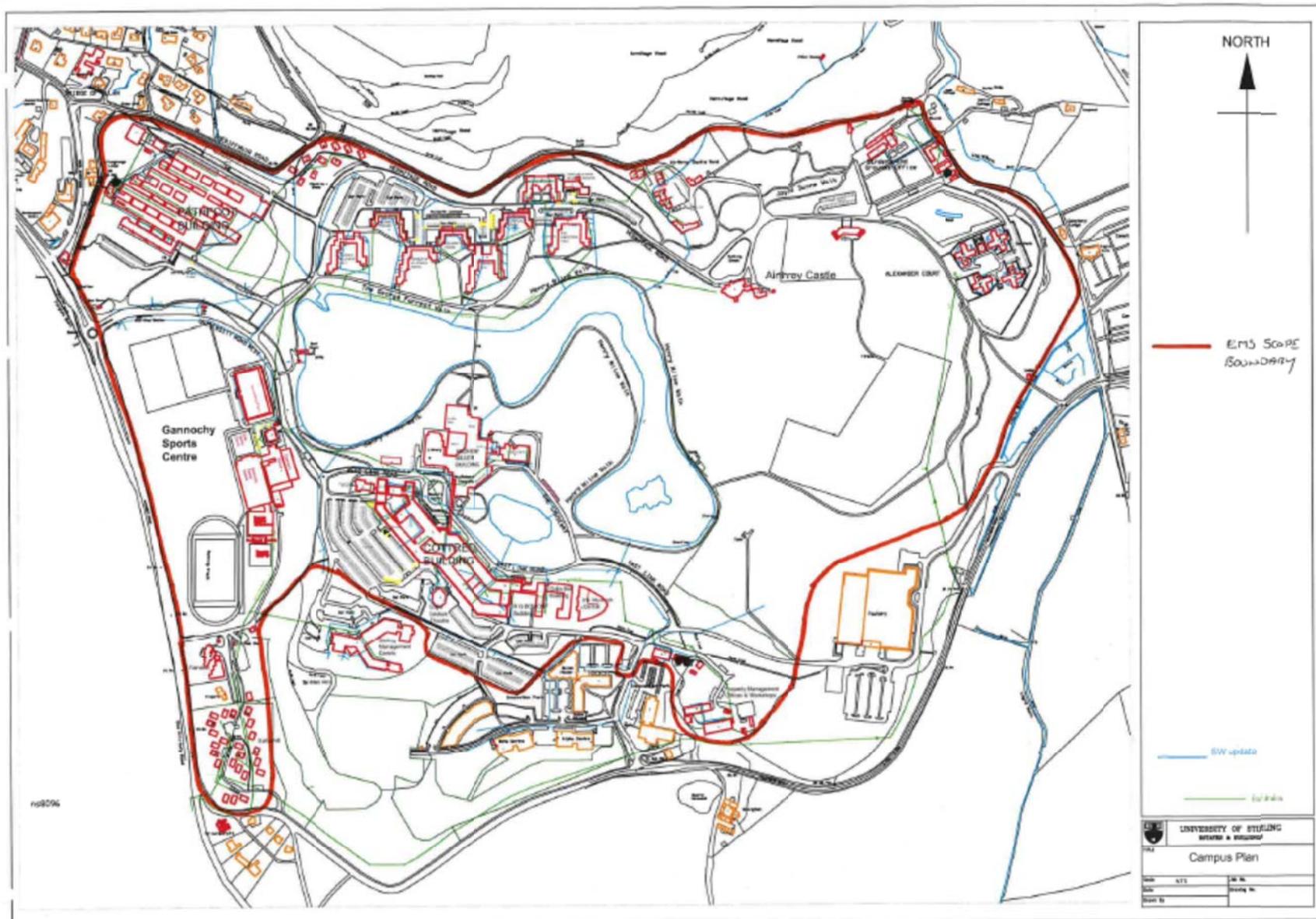
EMS organisation diagram



1.7 Scope of the baseline assessment

The baseline assessment to identify and evaluate environmental aspects and impacts includes all University activities where they are undertaken on the campus estates but excludes the Stirling Management Centre, MacRobert Arts Centre and Stirling University Innovation Park. The assessment also excludes the activities of tenants where they operate within University buildings, although these tenants are expected to cooperate with the University's sustainability policy. The scope of the EMS does not include Highland or Western Isles Campuses

The map shows the geographical boundary of the estate and the parts of the estate that are excluded from the scope the assessment.



1.8 Initial aspects register

An environmental aspects register for aspects arising from the activities and operations of the University (within the scope of the EMS) that have an impact on the environment has been compiled and based on knowledge of the activities undertaken within the service areas and schools. Where necessary, clarification on the detail of some aspects was achieved through discussion with Green Champions and School Managers.

The register aims to capture information on:

- the identified environmental aspects
- the activities associated with the aspects
- the impact of the aspects (with an impact and probability score)
- the condition under which the aspects arise (Normal, Abnormal, Emergency)
- the controls and policies in place
- the applicable legislation
- the significance of the aspect
- opportunities for continual improvement/ objectives and target

Procedure: Identifying initial environmental aspects (v.1)

The EMS coordinator will review all the known activities and operations occurring at the University which may impact on the environment (within the scope of the EMS). These are collated into the initial aspects register.

An indication is made on the potential impact of the aspect (impact score 1 to 3 and a probability score 0.0 – 1.0), whether it occurs under Normal, Abnormal or Emergency conditions, and the control and policies known to be in place.

The list is then discussed by the Carbon Management Team and the Green Champions group and any amendments made.

When identifying aspects, reference is made to the BS8555 Acorn Scheme Workbook phases 1-3 section 1.2.4 and 1.2.5

Procedure: Identifying applicable legislation for the environmental aspects (v.1)

The EMS coordinator will review each environmental aspect and identify the key legal requirements relevant to the aspect.

The list of legislation is discussed and reviewed by the Carbon management Team and the Green Champions group and any amendments made.

When identifying applicable legislation for the environmental aspects, reference is made to the BS8555 Acorn Scheme Workbook phases 1-3 section 1.2.6.

1.9 Opportunities for improvement

Procedure: Identifying opportunities for improvement

The EMS coordinator will discuss the aspects register with the Carbon Management Team and the Green Champions group to identify where improvements can be made.

Opportunities for improvement are recorded in the notes taken from the Carbon Management Team meetings and the Green Champions group meetings. Actions are also recorded in the notes from these meetings (see <http://www.she.stir.ac.uk/env-carbon-management/index.php>)

Actions are implemented as specific issues to be resolved and are passed to the relevant person who can deal with these. Some actions become potential carbon reduction projects and undergo an evaluation process (see Carbon Management plan section 7.5) to assess the viability of the project, whether resources are available (if required), and to indicate an estimated implementation timescale.

1.10 Training and communication

Communication on environmental matters is made via the Carbon Management Team, the Green Champions group, The EMS coordinator and the Safety, Health and Environment Committee (see remit of these groups section 1.8)

Specific communications to promote environmental initiatives are made as required and can be to the whole University population or to specific groups e.g. students in halls of residence to promote the energy reduction competition; all staff to promote the Christmas lights switch off campaign; promotional posters and literature to promote waste reduction and recycling.

Information on the activity of the Carbon Management Team, the Green Champions Group and the Safety, Health and Environment Committee is posted on the website found at <http://www.she.stir.ac.uk/env-carbon-management/index.php>

Where necessary, specific training needs have been identified e.g. training on the Carbon Trust programme for the Carbon Management Team.

An interactive on line course on environmental responsibility, which provides details on the University's environmental sustainability policy etc., has been created and is available to all staff and students. This is promoted for new staff when they start work, and to all new students at enrolment (part of the induction programme) see:

http://succeed.stir.ac.uk/webapps/portal/frameset.jsp?tab_group=courses&url=%2Fwebapps%2Fblackboard%2Fexecute%2Fcontent%2Ffile%3Fcmd%3Dview%26content_id%3D_460_1%26course_id%3D_76_1%26framesetWrapped%3Dtrue

<http://www.hr-services.stir.ac.uk/training-development/online%20induction/StaffInduction.php>

1.11 Key environmental performance areas and indicators

Environmental aspects which have a potential significant impact on the environment are identified on the initial aspects register. Where possible, the impact of these aspects is measured and recorded and trends in performance monitored. These aspects are key environmental indicators.

The initial aspects register indicates where this information is located.

1.12 Collation of information

The following Key Performance Indicators have been identified based on their aspect significance.

Use of Electricity

Metrics used: Automatic meter readings for half hourly data kWhr, monitored and validated through Systems Link software. Sub meters installed in all main campus buildings that give daily consumption readings in kWhr

Operational responsibility: Energy Management Engineer located in E&CS, Property Management, Property Management Building

Records maintained: Energy Management Engineer – records kept in Systems Link software

Documented procedures and reporting: Annual reporting on electrical consumption within Estates Management Statistics (reported to HESA) February/March; Annual reporting within Carbon Reduction Commitment Energy Efficiency Scheme at the end of July.

Use of fossil fuels (oil and gas)

Metrics used: Oil – weekly meter readings in m3 and converted to kWhr, information input into Systems Link software. Gas - monthly meter readings in m3 and converted to kWhr information input into Systems Link software. Automatic half hour meters now fitted to the main and Pathfoot boilers.

Operational responsibility: Energy Management Engineer located in E&CS, Property Management, Property Management Building

Records maintained: Energy Management Engineer – records kept in Systems Link software

Documented procedures and reporting: Annual reporting on electrical consumption within Estates Management Statistics (reported to HESA) February/

March; Annual reporting within Carbon Reduction Commitment Energy Efficiency Scheme at the end of July.

Use of land

Operational maintenance and use of the University land is managed within Property Management.

The strategic management of land is documented in the Universities Campus Masterplan due for publication December 2011.

Waste

The handling of waste is managed by the E&CS Facilities division (Head of Facilities and the Cleaning and Waste Manager). The current waste contractor is Veolia. General waste is currently segregated into waste office paper, cardboard, confidential waste, plastics and cans recycle, non – recyclable waste. A waste action plan is managed by the Head of Facilities to ensure that the infrastructure supports the best option for waste recycling.

Management information on the weight and composition of the waste is provided by Veolia. Information derived from this is input into the EMS reporting data and reports submitted on an annual basis.

Catering waste

Catering waste is managed jointly by the Head of Facilities, the Cleaning and Waste Manager, the University Catering Contractor (Sodexo) and the waste contractor (Veolia). Catering waste is currently combined into the general waste stream, although the aim is to use Core Recycling to put in place infrastructure so that catering waste can be segregated and composted as a separate waste stream. This will also enable the weight of biodegradable waste to be measured.

Construction waste

Construction waste is managed within Property Management as part of the management of contractors.

Staff travel emissions

Development work is ongoing within Finance to develop an online staff expenses claim form that will enable the recording of staff travel data and emissions.

1.13 Monitoring and reporting

Environmental Management system: The EMS coordinator will monitor the progress of the EMS on a monthly basis. The EMS coordinator will update the EMS implementation plan as required and report progress to the Carbon Management Team, the Green Champions Group and the Safety, Health and Environmental Committee.

Monitoring of KPI's: KPI's will be monitored by the staff responsible for collating the data (see 1.13). On an annual basis, the KPI information will be collated by the EMS coordinator so that a report can be made on progress.

Reporting: The following reports are made on an annual basis:

OR&ES report on Safety, Business Continuity and Environmental Sustainability. This report is presented to the Safety, Health and Environment Committee, the Finance and resources Committee and the University Court. The report is placed on the University website so that all staff and students can view it. The document also becomes a public document under FOI.

University Climate Change Commitment for Scotland (UCCCfS) report produced by the EMS coordinator. This report is produced on an annual basis and includes information on progress of the Key Performance Indicators. This report is also presented to the Safety, Health and Environment Committee, the Carbon Management Team, the Green Champions Group, and is placed on the University website so that all staff and students can view it. The document also becomes a public document under FOI.

