



Climate Strategy Review
Boundary for Target Setting and Reporting.

Document Details	Name	Date
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Revised	Kevin Houston	18/12/15
Final	Kevin Houston	08/01/2016

Title: Recommendation Report

Client: University of Edinburgh

Date: 08 January 2016

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Table of Contents

EXECUTIVE SUMMARY.....	5
1 Introduction.....	6
2 A Review of international best practice in carbon reporting.....	6
3 Gap Analysis of current carbon reporting and systems at the University of Edinburgh.....	13
4 A REVIEW OF LESSONS LEARNT TO DATE ON THE UOE'S 2010 TO 2020 CLIMATE ACTION PLAN.....	15
5. RECOMMENDATIONS TO IMPROVE CARBON REPORTING AT THE UNIVERSITY OF EDINBURGH.....	19
5.1 Measuring emissions	20
5.2 Carbon reduction	25
5.3 Reporting and verification.....	26
5.4 Strategy.....	27
5.5 Stakeholder engagement.....	28

Appendices

Appendix A Summary of Recommended Actions

Appendix B Chart showing proposed organisational & operational boundary

Appendix C Glossary

Executive Summary

The Court of the University of Edinburgh adopted a climate action plan (2010 to 2020) on 24 May 2010.

This plan set ambitious targets for absolute carbon emission reductions across the University Estate . The targets set were to achieve a 29% reduction in the University’s carbon emissions by 2020 with an interim target of 20% by 2015 . All against a base year of 2007.

The latest carbon footprint data for the academic year 2013 /14 shows that rather than reducing its emissions by an average of 3% per annum the University has been *increasing* its emissions each year of the plan apart from 2011/12.

year	2010/11 tCO ₂ e	2011/12	2012/13	2013/14
Scope 1&2 Emissions	85265	82971	84921	85776
vs yr ago	7%	(-3%)	2%	1%

So today there is now a substantial gap between the University’s stated ambition on GHG emissions and its actual results. This represents a reputational risk for the University . The Social Responsibility and Sustainability Department is now leading an initiative to review the current climate action plan and to come up with a revised climate change strategy by early 2016.

Carbon Masters has been commissioned to assist in this process by providing technical support in developing recommendations on aspects of the organisational and operational boundary to be chosen for future carbon accounting and reporting , what base year should be used and how should targets be set going forward. The work consisted of:

Provision of a review of international best practice in carbon reporting

Carrying out a gap analysis of current carbon reporting requirements and processes at the University of Edinburgh and developing recommendations to improve carbon reporting and establish a boundary for target setting at the University of Edinburgh.

Provision a review of lessons learned of the University of Edinburgh’s Climate Action Plan 2010-20 , through semi-structured interviews with key stakeholders to influence the revised Climate Strategy.

The best practice review revealed that in terms of carbon accounting there are number of areas where current practices can be improved the major one being that the University should now adopt the practice of reporting its carbon emission results using an Internationally recognised carbon accounting standard- The Greenhouse Gas protocol.

The lessons learned exercise carried out by semi-structured interviews with 18 stakeholders across the University highlighted positive learnings from the CAP plan to date but also areas for improvement. The biggest challenge ahead is how to establish the right targets measured against an appropriate base year and a set of appropriate emissions sources. Critical beyond target setting will be develop a carbon reduction plan that incorporates the necessary investments required to deliver meaningful carbon reductions going forward. This is particularly challenging given the University's current and future development plans, its rapid growth in student numbers and the nature of its estate containing very many old and hard to heat buildings.

However what is clear from the stakeholder interviews is that no one disputes that the University was right in making the commitment it did to reduce its climate impact and that it now needs to redouble its efforts in doing so going forward.

Introduction

The University is undertaking a Climate strategy review and commissioned Carbon Masters to provide technical support to assist with the review process during 2015/16. This support consisted of the following:

Provision of a review of international best practice in carbon reporting

Carrying out a gap analysis of current carbon reporting requirements and processes at the University of Edinburgh and developing recommendations to improve carbon reporting and establish a boundary for target setting at the University of Edinburgh.

Provision a review of lessons learned of the University of Edinburgh's Climate Action Plan 2010-20 through semi-structured interviews with key stakeholders to influence the revised Climate Strategy.

Provide assistance with the University's carbon footprint reporting for 2014/15 through utilising the Carbon Guru carbon accounting platform.

This report lays details the results of the work on points 1 to 3 above.

2 A Review of international best practice in carbon reporting.

To best gauge what constitutes international best practice in carbon reporting Carbon Masters has looked at 3 main publicly available carbon reporting benchmarking sources and used the criteria used by these organisations to derive a composite of best practices. In addition CM reviewed specific examples of companies who have scored consistently highly in these benchmarking exercises. The 3 sources chosen were as follows:

- 1 Annual Carbon Disclosure Project (CDP) Criteria to make the "A" list of companies.**
- 2 Dow Jones sustainability Index**
- 3 An annual review of carbon reporting performance among FTSE 100 companies carried out by Carbon Clear.**

1. Annual Carbon Disclosure Project(CDP) (2015 report)

Each year companies that participate in CDP's climate change program are scored against two parallel assessment schemes: **performance and disclosure.**

Performance

The performance score assesses the level of action, as reported by the company, on climate change mitigation, adaptation and transparency. A high performance score signals that a company is **measuring, verifying and managing** its carbon footprint, for example by **setting and meeting carbon reduction targets and implementing programs to reduce emissions in both its direct operations and supply chain.**

Disclosure

The disclosure score assesses the completeness and quality of a company's response. A high disclosure score signals that a company provided comprehensive information about the measurement and management of its carbon footprint, its climate change strategy and risk management processes and outcomes. The highest scoring companies for performance and/ or disclosure enter the A List (Performance band A) and / or the Climate Disclosure Leadership Index (CDLI).

What are the A List and CDLI criteria?

To enter the A List, a company must:

Make its response **public**

Attain a performance score greater than 85

Score maximum performance points on question 12.1a (**absolute emissions performance**) for GHG reductions due to emission reduction actions over the **past year 4% or above in 2015)**

Disclose gross global Scope 1 and Scope 2 figures

Score maximum performance points **for verification of Scope 1 and Scope 2 emissions (having 70% or more of their emissions verified)**

To enter the CD Leadership index CDLI a company must:

Make its response **public** .Achieve a disclosure score within the top 10% of the total regional sample population

Example of A list company SKY plc

Sky plc is consistently rated highly in both the CDP reporting index as well as in the FTSE100 carbon reporting performance developed by Carbon Clear.

Their Environmental report covering their group carbon emissions is available at

<https://corporate.sky.com/documents/bigger-picture/supplementary%20information/additional-environment-data.pdf>

It is a model of clarity and transparency with respect to carbon measurement reporting and verification

The key Carbon Emission reduction targets (intensity reductions vs turnover) and progress against these targets are detailed below:

1.50% reduction in gross CO₂e emissions relative to revenue (tonnes/£million) by 2020 versus a 2008/09 baseline.

2. Increase energy efficiency by an average of 20% across all buildings by setting energy performance targets by 2020 versus a 2012/13 baseline.

3. Sky-owned sites to obtain 20% of their energy consumption from owned or controlled renewables by 2020 versus a 2008/09 baseline.

4. Increase in fleet fuel efficiency by 15% by 2020 versus a 2011/12 baseline.

5. Reduce CO₂e emissions from travel per full-time equivalent (FTE) employee by 20% by 2020 versus a 2008/09 baseline.

6. Achieve zero waste to landfill at our main offices by 2020.

7. Maintain a recycling rate of 65% across Sky.

8. Recycling 100% of food waste at our main offices by composting and anaerobic digestion methods.

9. Maintaining the efficient use of water at our sites in line with good practice +/- 1m³ from 10m³ /FTE.

10. Emissions are reported annually in tons of carbon dioxide equivalents (tCO₂e)

11. They measure their CO₂e emissions according to the Greenhouse Gas Protocol, the global standard for reporting greenhouse gas emissions.

12. Their total gross CO₂e emissions include all direct Greenhouse Gas emissions; and their net emissions include the energy that they do not procure from a renewable energy source. Net emissions are those remaining after deducting the renewable energy procured from a renewable energy tariff with Scottish and Southern Energy Group. Scottish and Southern retain, on their behalf, the Levy Exemption Certificates and Renewable Energy Guarantee of Origin (REGOs).

13 In addition, they offset total gross emissions through the purchase of Voluntary Carbon Standard offsets.

14. CO₂e emissions data is **independently assured by Deloitte LLP.**

15. Historical data is recalculated each year in line with the latest guidelines to Defra/DECC's Greenhouse Gas Conversion Factors for Company Reporting and restated accordingly

2 Dow Jones Sustainability index.

While this index covers a far broader set of criteria than just environmental measurements e.g. Corporate governance, Risk & Crisis Management, Supply chain management, tax strategy it also includes a section on Environmental & Social reporting and a specific set of questions on eco-efficiency. It is included here because it claims to have an awareness level amongst investors and the broader general public greater than any other sustainability index and is often quoted in the media.

The Eco efficiency questions ask applicants to report on their:

- Fiscal performance vs targets on Scope 1 all direct emissions in CO₂e,

Scope 2 indirect emissions and the following scope 3 emissions sources Water , Waste as well as their energy consumption and costs.

For each question there are sub-questions relating to data consistency i.e if the figures **are externally verified, if they are disclosed publicly** .

Example of Leading company in the DJSI Unilever

Unilever scores highly on both the DJSI and the CDP A list . Its overall sustainability strategy is part of its sustainable living plan. Launched in 2010, the Unilever Sustainable Living Plan (USLP) is their blueprint for sustainable growth. The USLP vision is to double the business and halve the environmental impact of their brands and increasing their positive social impact. It sets out three big, ambitious goals. Underpinning these goals are nine commitments supported by targets spanning their social and environmental performance. Reducing their environmental impact is one of the three key goals

REDUCING ENVIRONMENTAL IMPACT

The specific goals and progress against them is shown below

GREENHOUSE GASES

Halve the greenhouse gas impact of their products across the lifecycle by 2020.

(Unilever's GHG impact per consumer use has increased by 4 % since)

WATER Halve the water associated with the consumer use of their products by 2020.

(Our water impact per consumer use has reduced by 2% since 2010)

WASTE Halve the waste associated with the disposal of their products by 2020.

(Our waste impact per consumer use has reduced by 12% since 2010)

SUSTAINABLE SOURCING By 2020 Unilever will source 100% of our agricultural raw materials sustainably.

(55% of agricultural raw materials sustainably sources by end 2014)

Nutrition, Water and Greenhouse Gases commitments, and Health and Hygiene targets for handwashing and safe drinking water, **are independently assured by PwC.**

The latest update can be accessed here :

https://www.unilever.com/Images/uslp-unilever-sustainable-living-plan-scaling-for-impact-summary-of-progress-2014_tcm244-424809_en.pdf

3 Carbon reporting performance of the FTSE 100 (Carbon Clear 2015)

This annual report based only on publicly available data has been published by Carbon Clear (Carbon Management consultancy) for the last 5 years .

They use 64 different criteria across 4 broad themes to rank / score companies in the FTSE 100 . These are:

3.1 Measurement, reporting and verification focused on the rigour of a company's basic carbon reporting, including the disclosure of carbon footprint data and its calculation methodology.

Compliance with recognized standards (such as the GHG Protocol, ISO 14064); inclusion of **multi category Scope 3 emissions in measurement and reporting**, and; **external auditing** of carbon footprint data. Companies were also ranked depending on how many years they have provided carbon data and if this is disclosed in a timely manner to be useful to stakeholders.

3.2 Strategy considered whether companies' have:

Set carbon reduction targets

Have a reduction plan in place

If there is evidence of a person or team responsible for carbon management;

If there has been an assessment of the future climate change risks and opportunities;

If resilience and adaptation of their supply chain to climate change risks has been acknowledged,

If the company considers investment decisions regarding fossil fuels.

3.3. Carbon reduction

If the company provides analysis against historical data and if either absolute or relative carbon reductions have been demonstrated.

In addition to historic reductions, progress towards targets and plans to achieve them are also scored.

Also looks at companies' energy efficiency, staff behavioural change initiatives, and type of energy consumption or generation. The research also examined whether companies develop low-carbon products and if companies buy carbon offsets.

3.4. Engagement with stakeholders is key to both achieving carbon reductions and to gaining commercial benefits from a low-carbon approach. Stakeholders include consumers, the supply chain, investors, government and the wider community.

This section scores companies on their efforts to connect with each of these stakeholder groups to collectively deal with sustainability issues. The extent of internal and external engagement is considered, for example if a company is successfully influencing stakeholder behaviour, rather than simply providing them with information. Any external recognition through the achievement of credible certificates and awards is given credit.

Key focus areas for 2015

1 Material Risks

For 2015 greater scrutiny has been placed on how companies assess the **material risks of climate change to their business and supply chain**, what strategies they have in place **for adapting to these risks and** their ability to identify any opportunities. This rewards those companies that are actually acting on the risks and opportunities they've identified and generating tangible value through the process.

2 Scope 3 / Value Chain

The criteria for reporting Scope 3 emissions has tightened, with particular focus on GHG Protocol Category 3 (fuel and energy related emissions) as they believe this is a category that all companies should be calculating and reporting to be completely transparent in their disclosure of carbon emissions.

3 Year on Year Reductions

The criteria was changed in 2015 such that year-on-year emissions reductions were taken into account, as well as reductions in line with a target.

Example of Leading company in FTSE 100 BT

BT score highly in both the FTSE 100 Carbon reporting performance index as well as being on the CDP A list. They have a company wide initiative called Net Good the goal of which is to help their customers reduce their emissions by three times the end to end carbon impact of their own business.

Below is how Carbon Clear described their performance in 2014

“BT has demonstrated game changing leadership credentials through a rigorous and far reaching carbon management strategy that is communicated both internally and externally.

In terms of strategy:

BT gained the top score in this year’s research for their all-encompassing climate change risk assessment. BT’s science based approach to target setting helps them to determine the level of GHG emission reduction necessary within the business’s scope to combat climate change. The Climate Stabilisation Intensity (CSI) methodology was developed in house by BT and is used as a guideline for ambitious carbon reduction targets. BT determined that emissions intensity must be reduced to 80% below their 1996/97 baseline, a target that was met in 2014, ahead of their 2020 deadline. BT look like they are set to continue with a robust emissions reduction plan. In addition, currently BT is the only company in the FTSE 100 that has disclosed that they have science based targets.

BT’s carbon management strategy, The Net Good Programme, is extensive and detailed. The company aims to help customers reduce carbon emissions by at least three times the end to end carbon impact of their business. BT have stated that they will do this by helping customers reduce CO2 emissions through products and services, from systems that manage the energy use in buildings to video conferencing helps reduce the need for air travel. For BT, communication technology can be used to reduce the pressure on resources and cut carbon emissions. At the same time BT have stated they will continue to reduce their own end to end carbon impact, managing emissions from day to day business operations and “all of the carbon emissions from our supply chain – our suppliers, their suppliers, their suppliers’ suppliers...”

BT’s numerous technological innovations and behavioural changes really made an impact in this year’s research. The Designing Our Tomorrow initiative sees product life cycle assessments carried out at the design stage to ensure energy and emissions impacts are considered at the beginning of the project. BT have once again proven themselves to be committed to managing

their carbon impacts and reporting these transparently and rigorously. A well-deserved top place for a best practice leader.”

Details of the Net good programme can be found here :

<http://www.btplc.com/betterfuture/netgood/>

4.Composite of Best practice in Carbon Reporting

Below is a composite table showing an amalgam of the best practice criteria taken from the 3 chosen carbon reporting indices.

Area	Leading companies in carbon reporting:-
Measuring , reporting and verification	<ul style="list-style-type: none"> -- Are compliant with Internationally recognized standards (e.g GHGP) Disclose Carbon footprint data Publicly - Have their carbon footprint independently verified(Minimum coverage 70% of total emissions) - Measure and report multi category Scope 3 emissions
Strategy	<ul style="list-style-type: none"> - Set Carbon reduction targets for both absolute and relative emissions - Have a plan in place to reduce emissions in both direct operations and supply chain - Have a person or a team in place responsible for Carbon Management - Assess future impacts ,material risks and opportunities from climate change - Have a resilience and adaptation assessment of their operations including supply chain to climate change risks If the company considers investment decisions regarding fossil fuels.
Carbon Reduction	<ul style="list-style-type: none"> -Provide a historical analysis on both absolute and relative emissions -Progress towards targets is made available as well as year on year comparisons

	- Covers energy efficiency, staff behavioural changes, type of energy consumption or generation -
Engagement with stakeholders	Have recognised internal and external stakeholder engagement plans in place with an assessment of the degree of influence they are having on each

3.0 Gap Analysis of current carbon reporting and systems at the University of Edinburgh

The table below shows a comparison between the above best practice criteria and the current status of the University of Edinburgh’s current carbon reporting.

Area	Leading companies	Current status of UOE reporting performance	Comment
Measuring, Reporting & Verification			
	Are compliant with Internationally recognized standards (e.g GHGP) Disclose Carbon footprint data Publicly - Have their carbon footprint independently verified(Minimum coverage 70% of total emissions) - Measure and report multi category Scope	Not Compliant Compliant Not Compliant	Do not measure or report Fugitive emissions Not done annually

	3 emissions	Compliant	Waste, Water, Business Travel Staff and student commuting
Strategy	- Set Carbon reduction targets for both absolute and relative emissions	Compliant	Cap sets absolute emission target. Intensity KPIs measured but not targetted
	Have a person or a team in place responsible for Carbon Management	Compliant	
	Assess future material risks and opportunities from Climate Change Have a resilience/adaptation assessment of their operation (incl supply chain	Not compliant Not compliant	
Carbon Reduction	Provide a historical analysis of absolute and relative emissions	Compliant	
	Progress towards targets is made available as well as year on year comparisons	Semi Compliant	Progress vs targets not done systematically
	Covers energy efficiency as well as		

	behaviour change, energy consumption /generation	Semi compliant	Not done systematically
Engagement with Stakeholders	Have recognised internal and external stakeholder engagement plans in place with an assessment of the degree of influence they are having on each	Not compliant	No evidence of any engagement plan with external/ internal stakeholders

The gap analysis has revealed that against the 12 best practice criteria the UOE is currently compliant with just 5(42%) The areas of non compliance will form the basis of the recommendations for improvement in section 5.

4.0 A REVIEW OF LESSONS LEARNT TO DATE ON THE UOE'S 2010 TO 2020 CLIMATE ACTION PLAN

To capture lessons learnt to date on the Climate action plan as series of semi -structured interviews was carried out with the below list of internal stakeholders (those highlighted to be interviewed for the purposes of the Climate Action Plan lessons learned review):

Matthew Brander, Senior Research Fellow, Business School

Simon Shackley, Lecturer in Carbon Policy, School of Geosciences

Dave Reay, Chair in Carbon Management & Education, Assistant Principal, Global Environment & Society

Dave Gorman, Director, Social Responsibility and Sustainability

Matthew Lawson, Programme Manager, Social Responsibility and Sustainability

Dougie Williams, Energy Systems Manager, Estates

David Jack, Energy Manager, Estates

David Barratt, Engineering Operations Manager, Estates

David Somervell, Sustainability Advisor

Geoff Turnbull, Assistant Director

George Sked, Assistant Director of Procurement

Fleur Ruckley, Waste and Environment Manager

Emma Crowther, Transport Manager

Gbenga Ibikunle, Director of MSc in Carbon Finance, Business School

Andy Kerr, Executive Director, Edinburgh Centre on Carbon Innovation

Chris Litwiniuk, Project Coordinator, Social Responsibility and Sustainability

Urte Macikene Vice President (Services) EUSA

Pauline Jones, Head of Strategic Performance and Research Policy, Governance and Strategic Planning

Lessons learned.

The vast majority of those interviewed thought that developing a climate action plan was

- a) The right thing to do
- b) Had produced some positive outcomes and
- c) Was something the University was right to show leadership on.

However in agreeing an absolute emission reduction target, (29% reduction in emissions vs a 2007/2008 baseline) which the university has to date failed to achieve, insufficient attention was paid to:

- How this was to be achieved against the significant growth of the University over the intervening period in terms of student numbers, the mergers with other Institutions in Edinburgh and the significant building development programme that the University has embarked upon. This includes very energy intensive developments like Archer , Flow wave etc as well as new laboratories , and other buildings across the estate.

Given that this growth is likely to continue for the foreseeable future most stakeholders could not see how the University was likely to achieve an absolute emission reduction by 2020 given its current emission trend to date (unless significant investments were made in alternative energies)

The positives achieved were :

- It has created a dialogue between many parts of the University on arguably one of the most pressing issues of our time. It is also in an area that of Climate change that the University has some world class research expertise across several of its schools and colleges.
- It has led to the appointment of a Director of Social Responsibility and Sustainability and the appointment of a Climate policy officer.
- The Switch off campaign and many of the activities organised by the Edinburgh Transition Initiative did begin to raise a greater awareness of climate change across the University .

- The energy efficiency programme was regarded as a success in identifying many projects that have been implemented across various buildings which have achieved positive results .
- The University has been a UK leader in developing co- generation and tri -generation across the estate via the installation of several CHP units .

Areas for further work going forward

i) Role of Renewables

There was very little focus in the current CAP on the role of renewables in reducing carbon emissions. The best practice review on companies reporting carbon emission reductions has revealed that implementing renewable technologies plays a large part in their ability to achieve absolute emission reductions.

Unilever has already implemented renewable technologies in all its European plants and plans to extend that to all its plants world wide .

St Andrews University has now achieved planning permission to build its own wind farm near its campus which will contribute to achieving its goal of carbon neutrality.

Ulster University has **installed** an 800 kW wind turbine its the Coleraine Campus in 2008. It produces approximately 1.6 GWh of renewable electricity each year amounting to 23% of the electricity used on the campus.

ii) Decarbonizing our energy supply

Back in 2007/8 when the CAP was being developed it was a wide spread assumption that the UK government would take active steps to decarbonize the electricity grid. Progress on this has been far slower than anticipated leading some stakeholders to urge that the University should take steps to decarbonize its energy supply now and not be dependent on the Government to do this . This is already happening to a certain extent with the introduction of electric vehicles as part of the University fleet but transport emissions are not the largest part of the UOE's footprint , electricity & gas consumption are .

iii) Seeking Co- investment partners in large scale investments in renewables

In this context some stakeholders have also suggested that the University should seek partners to co- invest in large scale renewable projects that would substantially reduce the UOE's carbon footprint. Given the excellent provenance of the UOE having been an established organisation for the last 400 years and in all likelihood will still be around in another 400 years should make it relatively easy to find investment partners who would be willing to co- invest with the University in large scale renewable investments across the campus. However it was recognized that this would require a change in the current mindset with in the University.

iv) Seeking project partners across the City

This was also applicable to the notion of the UOE seeking more direct involvement across the City of Edinburgh for example with the City Council on developing projects on a city wide basis that reduces its collective carbon impact e.g building a large scale biogas plant in say Easter Bush that would take food and organic waste from across the city and generate biogas that could either generate electricity or power a CHP unit .

v) Reducing the reputational risk that currently exists for the University

There was a consensus among stakeholders that the current situation whereby the University has made major public commitments on carbon emission reduction that it is signally failing to meet presents a reputational risk. Some stakeholders feel concerned that they are within their own areas of responsibility trying to do the right thing but find it frustrating that the University is failing badly in this area.

v) Setting the right targets going forward

In this context most stakeholders feel strongly that trying to achieve an absolute emission reduction going forward is extremely challenging given the UOE's future development plans and that the UOE should focus on relative emission reductions going forward . However moving away from a commitment for absolute reductions also presents a reputational risk .

Another suggestion was to adopt the approach that China is taking with regard to its climate change commitments i.e. they have chosen eschew absolute emission reductions until a determined date in the future (in china's case 2030) but to set aggressive relative emission reduction targets between now and then.

In any event most stakeholders thought that it will be important that whatever target is set going forward that a detailed plan is put in place that can deliver it and that the appropriate resources (human and capital) are made available and that this has the full support of the senior management within the University.

It was also suggested that what is required is a revised climate change strategy rather than a CAP 2 . A climate change strategy document would lay out the objectives the UOE wishes to pursue with respect to climate change and how these are integrated into the UOE's overall strategic plan . A CAP 2 would be an update on the existing Climate action plan .The benefit of this approach is that an overarching climate change strategy can then be incorporated into the Sustainability strategy ,Estates strategy , the Transport strategy, the sustainable procurement strategy and the ICT strategy . This will also remove the perception that the current CAP is a stand alone initiative by one department rather than something that has to be adopted by all departments , college heads and the wider University body.

5.0 RECOMMENDATIONS TO IMPROVE CARBON REPORTING AT THE UNIVERSITY OF EDINBURGH.

1. Recommendations:

A revised climate change strategy should incorporate the following:

5.1 Measuring emissions

- Base its Carbon accounting and reporting on the Internationally recognized carbon accounting standard ,The Green House Gas Protocol Corporate standard.
- Redefine its organisational and operational boundaries in line with the GHGP
- Establish a de-minimus rule
- Establish a revised base year for GHG emissions and a policy to cover recalculations of the base year emissions going forward.

5.2 Carbon reduction

- Set emission reduction targets against the revised base year emissions out to 2025 with an interim target of 2020.
- Develop a clear carbon reduction implementation plan to deliver the above targets with the necessary associated human and capital resources authorized by the UOE senior management.

5.3 Verification & reporting

- Measure and report its GHG emissions and progress against its targets publicly once a year.
- Have its GHG assessment independently verified.

5.4 Strategy

- Carry out a climate change impact assessment every 3 years which would report on the global impact of the University's research and teaching activities in relation to climate change impacts.
- Carry out a resilience " assessment " on the material risks and opportunities of future climate change on both the University's infrastructure and its core functions (operating model) leading to the development and implementation of an adaptation plan.

5.5 Stakeholder engagement

Develop a stakeholder engagement plan that raises awareness of and commitment to the climate change strategy across the University.

5.1 Measuring emissions.

Revising the base year emissions.

The current climate action plan Annexe 3 describes the methodology used to calculate the baseline emissions for 2007/8 . This methodology is not aligned with any international standard for Green house Gas accounting .

The methodology used produced a base year GHG emissions estimate of 114,000 tCO_{2e} made up of 76,000tCO_{2e} from the energy use in buildings , 34,000tCO_{2e} for transport and 3,700tCO_{2e} from waste and water .

While the emissions for energy from buildings was based on actual data , the emissions within Transport included **an estimate** of emissions relating to staff and student business travel , staff and student commuting emissions based on the staff and student travel survey and **an estimate** of student travel to study. The UOE did not begin measuring its business travel emissions until 2012/13.

There is therefore a discrepancy between the Carbon Footprint measurement based on actuals that is in the Carbon Guru software tool used by the UOE for its carbon footprint calculations since 2007/8 and that shown in the CAP as its base year emissions .

The 2007/8 base year Carbon footprint is calculated at 83571tCO_{2e} and covers energy used in buildings , fuel in university owned vehicles , waste, water , and staff and student commuting but excludes staff and student business travel , and student travel to the University . This gap totals 30,429tCO_{2e}.

Therefore there is a need to:

Base UOE Carbon accounting and reporting on the Internationally recognized carbon accounting standard ,The Green House Gas Protocol Corporate standard.

Redefine its organisational and operational boundaries in line with the GHGP

Establish a revised base year for GHG emissions and a policy to cover recalculations of the base year emissions going forward.

5.1.1 Base UOE Carbon accounting and reporting on the Internationally recognized carbon accounting standard ,The Green House Gas Protocol Corporate standard.

Our recommendation is that OUE should follow the GreenHouse Protocol which has now become the de facto standard for carbon accounting. This protocol lays out guidance and methodologies to establish a base year and both develop an organizational boundary and an operational boundary.

Rationale

Almost all carbon reporting frameworks are now built around the Greenhouse Gas (GHG) Protocol developed by the World Business Council for Sustainable Development and the World Resources Institute. The UK Government Defra guidance, Global Reporting Initiative, the Carbon Disclosure Project and reporting guidance and the recent Reporting on Climate Change Duties for public bodies (Scotland) are all built on the GHG Protocol methodology.

5.1.2 Redefine its organisational and operational boundaries in line with the GHGP

Organisational boundary

For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share and the control approaches. We are recommending that UOE adopts the Control approach .

Under the control approach, a company accounts for 100 percent of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control. Control can be defined in either financial or operational terms. When using the control approach to consolidate GHG emissions, companies shall choose between either the operational control or financial control criteria.

Our recommendation is that the OUE follow the **operational approach** as it best fits the UOE operating model

Rationale

Operational Control. A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

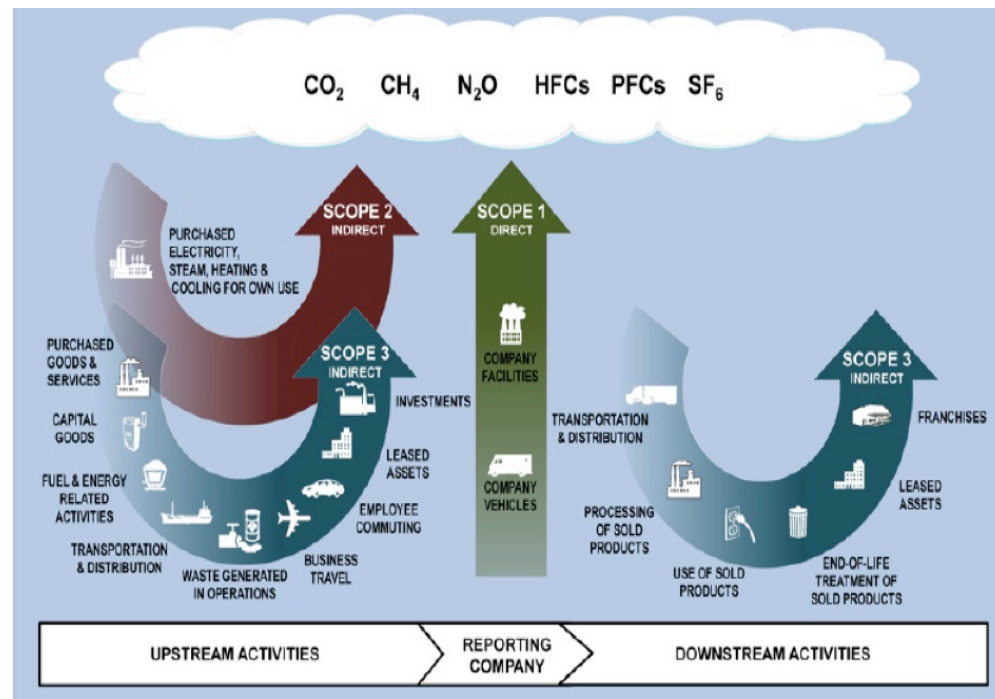
Taking this approach then sets the boundary for UOE carbon reporting . It covers the following :

All 5 campuses, International offices, owned accommodation services and its Farms as the University has operational control over these entities .

Operational boundary

Again the operational boundary is laid out by the GHGP. It defines emission sources under three different scopes as detailed in the diagram below.

Figure 1 Greenhouse Gas Protocol Emissions Scopes



To be compliant with the GHGP it is mandatory to measure all Scope 1 and Scope 2 emissions.

Scope 1 emissions include gas consumption as well as fuel used in University vehicles. It also includes Fugitive emissions (emissions from refrigeration) which the UOE does not currently measure or report. This means that Fugitive emissions should be measured and if greater than the de minimus rule be reported.

Scope 2 includes purchased electricity

Under the corporate standard scope 3 emissions are voluntary.

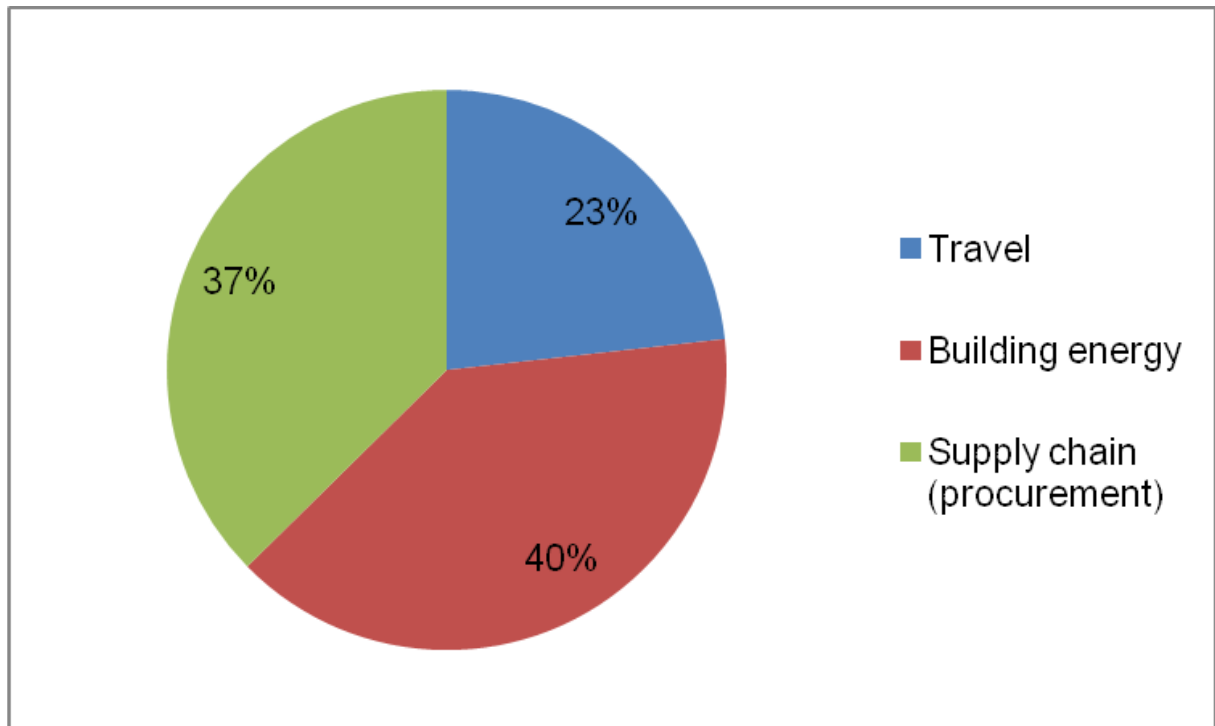
However we recommend that the UOE continues to measure and report Water, Waste, Business travel, staff and student commuting.

In addition we recommend that the UOE begins to measure and report two further scope 3 emissions sources. These are Procurement of goods and services with a specific focus on procurement of capital goods and ICT.

Rationale.

While not mandatory under the GHGP corporate standard Scope 3 emissions are an important part of any organisations' GHG impact so it is recommended that organisations make the effort to include scope 3 emissions within their GHG inventory.

A report to HEFCE prepared by Arup/CenSA and De Montford University in 2012 showed that Scope 3 emissions could constitute some 60% of a HE institutions carbon footprint as shown in the table below



The overall footprint results above taken from the report show that the largest sectors are building energy and the embodied emissions associated with supply-chain (procurement). Within supply-chain (procurement), construction is the largest sub-sector category in terms of CO₂ emissions, accounting for around a third of supply-chain (procurement) emissions. The second largest sector is ICT.

Given the UOE's extensive and current building development programme and its increasing student numbers these two categories are likely also to be the two largest components of the UOE's supply chain procurement footprint.

The methodology for measuring these supply chain procurement emissions has been developed by Arup and uses a consumption based approach to derive carbon emissions.

This uses an environmentally extended input-output (EEIO) model combining carbon intensity data with a breakdown of bottom-up expenditure data to produce overall carbon emissions calculations. Full details of the methodology can be found in Annexe 3 of the Arup ,CenSA,De Montford University report (2012)

5.1.3 Establishing a De Minimus rule. We recommend that the university establish a de minimus rule for GHG reporting and that this be set at 1%. This means that any emission source that contributes less than 1% of the total carbon footprint can be excluded .(circa 1200 tCO₂e)

Rationale.

The purpose here is to exclude small emission sources from the GHG inventory so as to reduce the time and effort required in the data collection process for measurement and reporting. So for example the emissions from International offices and or Fugitive emissions may well be lower than the de minimus rule in which case they can be excluded from the GHG inventory.

5.1.4

Establish a revised base year for GHG emissions and a policy to cover recalculations of the base year emissions going forward.

The current base year in the CAP (2010 to 2020) has as its base year 2007. This is based on the UK Government's climate change committee report to the Scottish Government in February 2010. However both the UK government and the Scottish Government and the HEFCE guidance to HE sector on Carbon management (2010) all use 1990 as the base year. HEFCE allow for the fact that the data availability in 1990 was not very robust for many HE Institutions it therefore recommended that in those cases using 2006 could be used as the base year. In addition the Cap plan establishes the base year of 2007 for all emission scopes despite the fact as discussed earlier that the travel emissions had only estimates for business travel and International student travel and did not start capturing business travel data until 2012/13.

Our recommendation is to still use 2007/8 as the base year but for scope 1& 2 emissions only. This is in line with HEFCE guidance and robust data already exists for 2007/8 scope 1&2 emission sources.

For scope 3 emissions which are harder to measure accurately we recommend that UOE uses 2012 / 13 as the revised base year as these then include more accurate data for business travel

..

Emission sources	Base year	Base year emissions tCO ₂ e
Scope 1& 2	2007/8	74515
Scope 3	2012/13	23442

We also recommend that the UOE establish a base year restatement policy whereby the base year emission can be recalculated. This should be done where the organisational boundary undergoes a significant change (via merger or acquisition) or where there is a change in operational boundary (emission sources added etc). To note growth via new buildings is not a reason to recalculate the base year.

Applying this policy will therefore require a recalculation of the 2007/8 base year Scope 1&2 emissions to:

- Include the emissions caused by the acquisition of Edinburgh Art college in 2011/12
- Include emissions from Farms

-Include F gases (if not ruled out by the de minimus rule)

Include International offices (if not ruled out by de minimus rule)

Recalculation of scope 3 emissions will be necessary to :

Add supply chain procurement and ICT emissions (from the 2012/13 HEFCE submission)

5.2 Set emission reduction targets against the revised base year emissions out to 2025 with an interim target of 2020.

As regards target setting the current Cap set a target of an absolute emission reduction of 29% vs a 2007 base year with an interim target of 20% by 2015.

The UOE has not managed to achieve either the interim target and is far behind being able to achieve the 2020 target based on its current emissions.

One option we considered is to withdraw the commitment on absolute emissions and to focus on relative emission reductions versus a set of KPI's i.e student enrollment , academic space in sq meters or revenue. Indeed this is the option favoured by most stakeholders interviewed.

However dropping the commitment to absolute emission reductions 5 years into a 10 year plan is

- Not without reputational risk for the University

- Will distance UOE from other Universities in Scotland, most other public sector organisations in Scotland and the UK all of whom are still making absolute carbon emission reduction commitments .

We therefore recommend that the targets set are still based on absolute emission reductions but they are set over a longer time frame i.e. out to 2025 with an interim target of 2020

In addition we recommend setting targets now just for scope 1& 2 emissions and to leave establishing targets for scope 3 emissions until 2020

Rationale

Scope 1&2 emissions are under the UOE direct control and comprise 78% of the UOE's current footprint

Scope 3 emissions are harder to measure and to influence and UOE should use the time between now and 2020 to implement carbon reduction solutions that tackle the major part of their footprint (Scopes 1&2) and to learn how to influence and reduce their scope 3 emissions before committing to a reduction on those emission sources.

Emission sources	Base year	Base year emissions tCO ₂ e(unrevised)	Actuals 2013/14 tCO ₂ e	Target 2020 (29%)	Target 2025 (40%)	Target 2050 (80%)
Scope 1& 2	2007/8	74515	85257	52906	44709	15649
Scope 3	20012/13	23442	23859	TBC	TBC	TBC

5.2.1 Develop a clear carbon reduction implementation plan to deliver the above targets with the necessary associated human and capital resources authorized by the UOE senior management

Whatever targets are set it will be imperative that a clear carbon reduction plan is put in place with the full agreement by senior management. Given the scale of the challenge the UOE will need to make significant investments in carbon reduction technologies in order to make progress against its targets.

We suggest that carbon reductions can be achieved via the following:

Campus Rationalisation and Development – the replacement or upgrading of ageing building stock with energy and space-efficient developments.

Carbon reduction projects: - e.g. renewable energy installations, lighting upgrades, heating controls improvements etc.

Operational efficiencies: -e.g. space utilization, use of paper, sustainable procurement (construction) management of staff business travel, IT equipment procurement & running etc.

5.3 Verification & Reporting

We recommend that the UOE has their annual Carbon footprint report to be independently verified in line with best practice

Reporting

The table below is our current understanding on the reporting requirements for the UOE

Report to	• Frequency	• Comments
Carbon Reduction Scheme	• Annually	• Only Emissions from Energy in CO ₂ e
EU ETS	• Annually	• CO ₂ only from energy generation
Sustainability report	• Annually	• Full Carbon Footprint
Scottish Government	• Annually	• Full Carbon footprint
HEFC	• Annually	• Full Carbon footprint
UOE Financial report	• Annually	• Full Carbon footprint

Reporting systems

Currently individual departments generate the activity data for their respective carbon emissions in their responsibility area i.e energy , waste , business travel , fuel in co vehicles. Etc This is then uploaded to the Carbon Guru software platform which then produces a final carbon footprint report.

In future we would recommend that Carbon Guru is used more extensively by department members . Firstly given the increased reporting requirements now placed on the University its

important that there is one reliable source of carbon data for the university for use with multiple stakeholders and secondly to ensure the University footprint is reported consistently and transparently using a common set of updated emission factors to the different stakeholder bodies.

5.4 Strategy

We recommend that the UOE carry out a **climate change impact assessment** every 3 years which would report on the global impact of the University's research and teaching activities in relation to climate change impacts. This is in line with best practice.

The objective would be to develop a narrative/ report that seeks to describe what the global impact of the University activities in research and teaching are in relation to climate change impacts i.e. in what way are the activities of the University as a research and teaching institution having a climate impact over and above what it is doing on the narrower area of its direct emissions.

So for example it could show case the Flow wave investment that the University has made in the context of how this will foster innovation in the development of marine wave technology to produce clean renewable electricity or how the University's development of taught master programmes in all aspects of carbon management, carbon finance, renewable energy systems, and environmental sustainability is equipping their undergraduate and postgraduate students with the skills to have an impact on the climate as they join the workforce.

This is not to preclude the reporting of its emission performance but to put it into perspective alongside the many other activities that the University is doing that impacts the climate. To reduce the risk that it becomes self-serving or "green wash" the report could be sent to say the WWF Scotland for their feedback/critique.

Companies that are rated highly for carbon reporting and reduction frame their GHG emission plans in a broader context. Unilever for example make it part of a wider sustainable living plan that impacts all their business as a manufacturer of food products. BT frame their efforts on GHG on how they are helping their customers reduce their emissions by the provision of BT products and services i.e. by showing how their products and services can enable their clients to reduce emissions.

Material risk assessment

We also recommend that the UOE carry out a resilience exercise to assess the material risks and opportunities that could impact the university due to a changing climate. This is again in line with best practice. This would be on two levels.

Firstly an exercise that looks what the impact of future climate change will have on the UOE's infrastructure and from that what adaptation plans does the UOE need to put in place to build the resilience of that infrastructure

Secondly what is the impact of climate change going to be on the UOE's operating strategy?

e.g The UOE has a strategy of attracting larger numbers of International students from places in the world that are likely to be deeply impacted by future climate change. What impact will that have on International students coming to the University?

There is some anecdotal evidence from the business school that the recent decrease of stock prices on the Chinese stock markets resulted in some Chinese students not showing up as planned.

5.5 Stakeholder engagement

We recommend that the UOE develop a stakeholder engagement plan that raises awareness of and commitment to the climate change strategy across the University.

This is in line with best practice and is a necessary part in building wider commitment to the goals of the climate change strategy across the wider University community. There is a perception (based on the stakeholder interview) that the current CAP is just another initiative from a University department rather than something that impacts them directly and requires them to take some level of personal responsibility to achieve it. By identifying both internal and external stakeholders and developing a plan to engage them in the implementation of a revised climate change strategy these shortcomings with the current CAP can be overcome.

- Appendix A Summary of Recommended Actions

• Recommended Action
• Adopt the Green House Protocol as the reporting protocol for all carbon reporting
• Add Farms to the organizational boundary
• Add Intl offices to the organisational boundary
• Add Fugitive emissions to scope 1 operational boundary
• Establish de minimus rule
• Add International student flights to operational boundary
• Add procurement of capital goods to operational boundary
• Add procurement of ICT to operational boundary
• Establish restatement policy for base year emissions
• Restate base year emissions for scope 1,2,3
• Keep 2007/8 as the base year but only for scopes 1 & 2
• Establish 2012/13 as base year for scope 3 emissions
• Set targets for scope 1& 2 emissions to 2025 with an interim target for 2020
• Set targets on selected scope 3 emissions only in 2020
• Have Carbon footprint independently verified
• Make Carbon Guru single source for carbon reporting data
• Carry out a global impact assessment every 3 years
• Carry out a periodic resilience assessment of future impacts of climate change and develop an adaptation plan

Exclusions :

**Boundary of wider influence.
(Measure and Report ONLY)**

De minimus emissions <1% of total emissions

- 1. Leased assets
- 2 inbound third party deliveries
- 3 Outbound third party deliveries
- 4 Hotel accommodation
- 5 Investments

Procurement of third party goods and services.

- 1. Capital Goods
- 2. ICT

Commuting

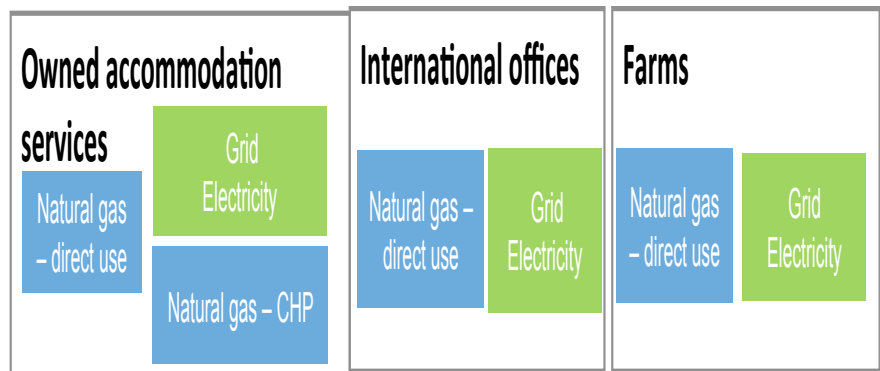
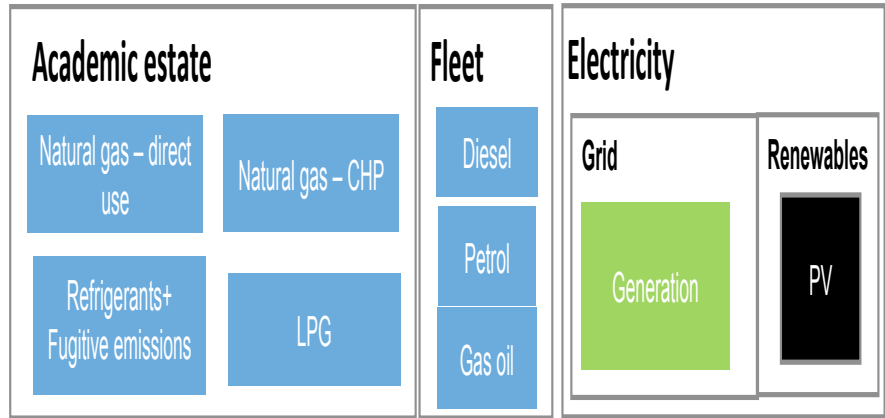
Student term-time Staff

International students Travel

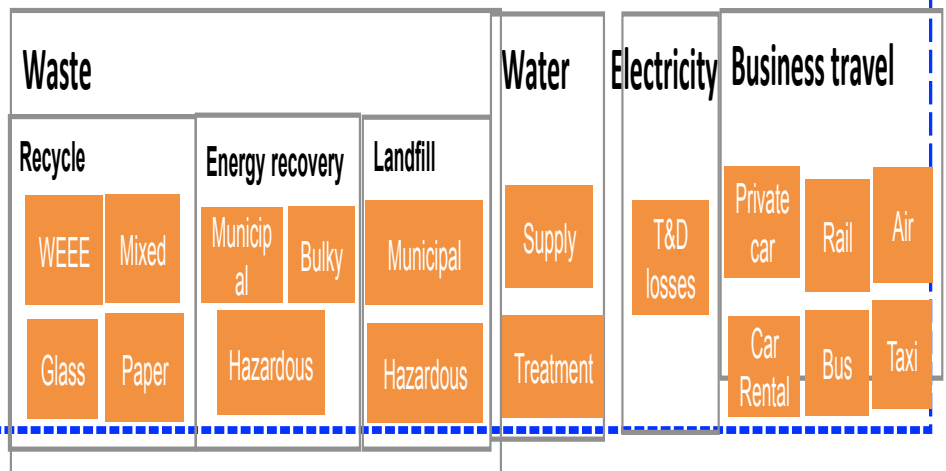
To and from home country to UOE

Climate Change Plan Organisational boundary: Based on Operational Control

Measure, Report, Verify and Target



Scope 3 Academic Estate, Accommodation services, Intl offices, Farms



-----= Scope 1&2,3 boundary
Measure report verify and target-

-----=Scope 3 boundary
Measure and report ONLY



. **Organisational Boundary:** All 5 campuses, international offices , owned accommodation Services & Farms

Operational Boundary

Blue line Scope 1 2 , 3 emissions Measure , report , verify and set targets vs a 2007/8 & 2012/13 base year respectively.

Gas , LPG , Fuel , Fugitive gases, purchased electricity., waste , water , business travel, distribution and transportation losses for electricity

Red line Scope 3 emissions Measure and report only vs 2012/13 base year staff and student commuting , supply chain procurement (capital goods and ICT) Intl student travelAppendix C Glossary

Glossary of terms

1.CAP: Climate Action Plan 2010 to 2020

<http://www.ed.ac.uk/files/imports/fileManager/UoE-CAP-2010.pdf>

2.CDP. Carbon Disclosure project

<https://www.cdp.net/CDPResults/CDP-global-climate-change-report-2015.pdf>

3.DJSI Dow Jones Sustainability index

<http://www.sustainability-indices.com/review/industry-group-leaders-2015.jsp>

4. Carbon Reporting performance of FTSE 100 by Carbon Clear

http://www.carbon-clear.com/files/FTSE_100_Report_2015.pdf 5.

GHGP: Green House Protocol Corporate Standard .

Carbon Accounting standard developed by World Resources Institute (WRI) and The World Business Council for Sustainable Development (WBCSD)

<http://www.wri.org/publication/greenhouse-gas-protocol>

HEFC: Higher Education Funding Council 6.Report to HEFCE by ARUP ,CenSA and De Montford University

<http://www.hefce.ac.uk/pubs/rereports/Year/2012/scope3carbon/Title,92283,en.html>