

# **ANNUAL SUSTAINABILITY REPORT**

2013-14

This is the sixth Environmental Sustainability Report for the University of Worcester. It describes the institution's most significant environmental aspects and how these are managed and mitigated in order to fulfil our commitment to continuous environmental and sustainability improvement.

## 1. Our Commitment

The University has a long-standing commitment to act in a sustainable and environmentally responsible manner. The current Strategic Plan (2013-18) includes a commitment to make an outstanding contribution to economic, social and environmental sustainability. 'The university seeks to promote principles of sustainability in their broadest sense. Through its teaching, research and knowledge exchange activities to promote sustainable communities, services, businesses and use of physical resources. ... Sustainability is about the relationship of people with their environment.' This vision encapsulates our overarching aim to fully accept our broad responsibilities to society and develop our physical assets to provide excellent facilities and opportunities for students, staff and the wider community, but in ways which promote and champion environmental sustainability.

The University's Environmental Policy was adopted in 2007 and is reviewed and updated annually. The policy notes that while responsibility for developing procedures, raising environmental awareness and recommending best practice ultimately rests with management, good environmental practice is the responsibility of all those who attend the University. The policy's main principles are:

- to integrate environmental management into our day-to-day operations to ensure environmental issues are addressed, whilst providing a quality service to all stakeholders;
- embed inclusion of sustainability principles in the curriculum and support research in relevant areas;
- reuse resources whenever possible rather than dispose of them;
- to control, manage and reduce carbon dioxide and other greenhouse gas emissions;
- to reduce our use of natural resources and prevent pollution



## 2. Profile of the University

The University of Worcester has grown rapidly and is based on three primary sites; St John's Campus, City Campus including The Hive joint library and Riverside Campus including the Arena. St John's and City Campuses are comprised of student residences, academic and administration space. In addition to these there are a small number of satellite sites including pavilions, playing fields and halls of residence and a storage facility. A development site, University Park makes up the rest of the estate.

The University is organised into six academic institutes:

- Institute of Science and the Environment
- Institute of Humanities and Creative Arts
- Worcester Business School
- Institute of Education
- Institute of Health and Society
- Institute of Sport and Exercise Science

At the end of the 2013/14 academic year the university had around 1,000 employees and 10,000 students, the majority are based either at St John's Campus or City Campus.

### 3. Our Approach

The University established an Environment Committee, which includes student representation, in 2005, chaired by the Pro Vice Chancellor (Students). The Sustainability Management Team, headed by the Director of Environmental Sustainability acts as a focal point for all aspects of sustainability within the university and works to develop local, regional, national and international networks to further the sustainability agenda. The Director of Environmental Sustainability is a Sustainability West Midlands Green Leader and sits on a number of regional and national committees in the sustainability field.

There is a growing consensus that leaders in the 21 century will need a strong moral compass along with a fundamental understanding of sustainability if they are to succeed in a complex and fast changing world. The University of Worcester gives students and staff practical experience both within the curriculum, or department and in the many other schemes and projects on campus encouraging all to develop sustainability skills.

#### Awards and recognition

- 4<sup>th</sup> in People and Planet 'Green League' out of 143 universities;
- Short listed for Six Green Gowns in the awards 10th anniversary year for: Your Green Future, Our Place Your Space, Energize Worcester, Bike Loan, Sustainability Elective and the refurbishment of Charles Hastings building;
- Presented in Xi'an China at the Euro Asia Low Carbon Economic Forum, and invited back again to present this year.
- Staff are regular contributors at national sustainability conferences and seminars and published in social, local and national media;
- Re-accreditation of Platinum EcoCampus standard for a fourth consecutive year;
- Third sustainability debate at The Hive, Chaired by Lesley Murphy, NHS England Area Director for Arden, which was universally acclaimed as being both informative and enjoyable. <http://susthingsout.com/index.php/is-leadership-for-sustainability-possible-in-a-market-economy/>
- Worcester Students' Union received Green Impact Gold Standard.

### 4. Community

#### The Guardian People and Planet Green League

Since 2007, UW has established a national reputation in the field of sustainability and innovation, and has received numerous awards and external recognition of its success. The University has topped the University 'Green League' table achieving a first class honours classification for the last six years, and is currently 4<sup>th</sup> out of 143 universities. The Guardian Green League is a league table demonstrating the sustainability performance of Britain's universities. These stand above placements of many other and often more established Universities in the region.

Projects that earned the University the top regional accolade included supporting student extra curricula sustainability skills development, significant and innovative sustainable transport initiatives, many energy efficiency projects, and a significant new build and refurbishment program which takes derelict or un used buildings bringing them back into use and creating vibrant spaces enjoyed by users, retrofitting renewable energy and engagement and close working with students. The university has a clear vision and effective management across all aspects of sustainability including the curriculum and research.

## FairTrade

We are delighted that our FairTrade status was renewed in June 2014, and especially pleased with the acknowledgement that we had upheld and surpassed all 5 goals. Particularly pleasing were their comments on incorporating Fairtrade themes into our educational work - something that FairTrade strongly encourage, which they commented 'we excelled at'. Setting assignments around issues related to FairTrade has the potential to trigger some good discussions and raise understanding of FairTrade among students. For example, our Business Ethics Module assignment encourages students to research issues such as child labour was noted as 'especially good'.

## Food and Healthy Eating

Aramark the University caterers have successfully been accredited with the Bronze Food for Life accreditation for the dining room where 70% of food is sold on campus. Around 75% of all food sold in the dining hall is freshly prepared and great emphasis is placed on the reduction of trans fats, food additives and reducing salt and sugar intake. This is demonstrated by healthy for life campaigns and this compliments the Worcestershire Works Well campaigns which the University has now reached level 2 and is working towards level three the highest accreditation.

The recently refurbished dining room has been enthusiastically received by students and staff, and people are encouraged to segregate their food waste and recycling and in the kitchen all food waste goes into the on-site 'guzzler' a state of the art composter that breaks down food waste into water.

## Student Switch Off

This is a national behaviour change program led by the National Union of Students (NUS), encouraging responsible electricity use in students' halls of residence. Twenty nine per cent of students living in halls signed up as Eco Power Ranger to demonstrate their involvement in the Student Switch Off campaign. An additional 166 students joined the University of Worcester Student Switch Off Facebook fan page and 53 students took part in the climate quiz. Three University of Worcester students won photograph completions - winning prizes including Ben & Jerry's ice cream.

In April 2014 the NUS heard they had been successful in gaining significant European funding to develop a pan-European inter halls real-time energy dashboard approach to encouraging responsible electricity use by students in halls. The University of Worcester is one of 6 UK universities assisting with this 2 year pilot and a dashboard will be added to this program in the academic year 2014-15.

## Green Impact

Green Impact is a staff behaviour change continuous improvement program which uses students both as paid 'earn as you learn' sustainability mentors, and volunteer auditors to audit each team at the end of the year providing great employability experience. This year involved 19 departments and sports centres, nearly 400 staff were engaged in the program and 234 of which were directly involved in a Green Impact committee who completed nearly 600 combined greening actions during the year. There were a record number of nine teams achieving the coveted Gold standard this year. Nine students trained as Green Impact Project Assistants who completed IEMA approved auditor training helping with their employability. Worcester Students' Union won a Gold Standard for the second time in the national Green Impact Students' Unions programme.



## Go Green Week

Go Green Week is a weeklong series of planned activities day and evening on sustainability and themed around nature, food and healthy eating, transport, re-use and energy in February 2014. This year the organisation of this awareness raising week was led by first year sustainability students and formed part of their summative assessments. Initially a challenge for first years but over 90% of the feedback was overwhelmingly positive. Comments included 'I thoroughly enjoyed Go Green Week, which really inspired me to continue with the module next year. It grabbed my interest and enthused me to look at different areas and opened my mind to the application of the subject. Additionally I love the relation to employability and the skills I have gained and experiences to add to my CV. Thank you.' A summary of the week and videos can be found <http://www.worc.ac.uk/discover/go-green-week-event-organisers.html>

## Green Gowns Awards

The depth and breadth of our innovative work in sustainability has been recognised by being shortlisted for an unprecedented six Green Gown Awards. Green Gowns are widely recognised as the leading awards in sustainability in the tertiary education sector. It is particularly pleasing to have done so well in their 10th anniversary year and at a point when the awards have gained greater international recognition. The awards cover all aspects of educational institutions – from their teaching and research, leadership, buildings and how students can benefit the quality of life in the communities around them. The ethos of the Green Gown awards is to ensure the lessons and examples of good practice are shared and this is an excellent showcase to global institutions about the innovative work undertaken at the University of Worcester. The university are finalists in the following categories; Social Responsibility, Courses and Learning, Construction and Refurbishment, Enterprise, Facilities and Services and Worcester Students' Union in Technical Innovation.



## International Perspectives

Conference papers have been delivered on our collaborative project on student energy use in off campus houses in Xi'an China, and at the second world symposium in sustainable development in higher education where colleagues presented the Energy Student Green Fund project and on the new sustainability elective and the digital technologies used in teaching this complex and emerging subject. This year saw a group of engineering students from Worcester Polytechnic Institute (WPI) Massachusetts work on a community energy project in the Arboretum district of Worcester. WPI have projects in 30 locations worldwide and they were particularly pleased with their inaugural year at Worcester the USA academics are looking at bringing multiple groups in future years. As this project arose from a twinning visit the students' presented the results of their research to a broad audience including local councillors' members of the University Executive and Worcester City Council Housing Forum and Lord Richard Faulkner, who also arranged for the visiting students to get a tour of the House of Lords.



WPI students and Lord Faulkener



## Debate

The community were invited to attend a number of debates and talks on sustainability topics throughout the year in the regular lunchtime talks series and to a very lively debate held at The Hive on Is Leadership for Sustainability possible in a market economy? This debate is worth listening to: <http://susthingsout.com/index.php/is-leadership-for-sustainability-possible-in-a-market-economy/> Honest and courageous panel members tackled the questions raised which included present corporate and personal value systems.



## Re-use scheme

The University offers students the opportunity to donate any items they do not want to take home at the end of the year to British Heart Foundation (BHF). Every student is provided with a BHF collection sack which can be left in collection banks situated around campus. The campaign received a total of 394 donated bags, 3.152 tonnes which would have yielded the BHF charity an estimated £7,880 in revenue an increase of 88% from last year.

## Energize Worcester

The Students' Union itself has an excellent reputation within the national student movement and in the second year of the HEFCE/NUS Student Green Fund project on energy issues in the private student housing sector it is working with the University of Birmingham and the Birmingham Guild of Students where the learning from the first year of the project will be taken to see how replicable the initiative is in other institutions. This project includes working with the National Landlords Association to encourage student landlords to undertake retrofit measures to improve the thermal efficiency of their properties alongside educating and supporting students in gaining good energy habits at home.



## 5. Campus

As the threat from climate change has increased, the government has introduced legislation to ensure a reduction in the UK's emissions. The 2008 Climate Change Act committed the UK to a reduction, in carbon dioxide emissions, of at least 80% by 2050 compared to a 1990 baseline. This has led to a number of legislative measures to enforce the reduction of energy consumption and a number of policies have been put in place to assess this. For example, the University is required to obtain a Display Energy Certificate (DEC) for all buildings. The DEC gives an indication of the energy efficiency of the building based on size, energy consumption and the function of each building. New targets for new buildings and refurbishments have been set which use

these DEC ratings which are applied for each year. It is hoped this is a more accurate and effective way of ensuring energy efficiencies in our building stock. The University has two ring fenced budgets specifically for investing in energy efficiency retrofit projects on campus, Revolving Green Fund and Salix. We have invested in Solar Thermal panels in five Halls on St John Campus savings 850kWh per week or heating water for 145 showers per week.



A summary of Salix projects is shown below.

## University of Worcester

### Client Technology Focus - From fund inception

Project Type	# Projects	Loan Amount	Annual Financial Savings	Lifetime Savings (£)	Annual CO2 Savings	Lifetime CO2 Savings	Average Payback (yrs)
Boilers	4	£109,886	£23,171	£334,591	147	2,118	4.7
Lighting - Controls	4	£35,557	£10,462	£81,372	84	653	3.4
Insulation - Building Fabric	4	£26,636	£9,925	£264,493	77	2,046	2.7
Cooling	1	£20,479	£16,221	£221,897	130	1,780	1.3
Computers and IT	1	£17,467	£14,385	£43,154	115	346	1.2
Hand Driers	1	£8,261	£4,491	£18,771	35	145	1.8
LED lighting	1	£3,204	£644	£16,089	5	115	5.0
Insulation - Pipework	1	£3,138	£1,543	£30,851	11	218	2.0
<b>Grand Total</b>	<b>17</b>	<b>£224,627</b>	<b>£80,840</b>	<b>£1,011,218</b>	<b>603</b>	<b>7,422</b>	<b>2.8</b>

## Procurement

Procurement currently accounts for approximately 63% of the University's carbon footprint therefore the University has undertaken an EcoCampus project to improve reporting in this area. This will produce more accurate information and allow the University to identify carbon reduction projects and set targets.

A new working group of the Environment Committee has been established and procurement is now a standing agenda item for the committee and the procurement and sustainability staff and students look at ways to reduce and mitigate the impacts of this significant area.

## Environmental Management System

In 2007, the University was one of ten pilot institutions that signed up to EcoCampus, a national Environmental Management System (EMS) designed specifically for the higher education sector. EcoCampus provides a framework for managing the institution's environmental responsibilities efficiently in a way that is integrated into all operations and activities.



The University achieved the Bronze and Silver Awards in 2008, and Gold in November 2009. It was the first university in England to attain the Platinum Award in May 2010. In May 2014 the University achieved re-accreditation for a fourth time, and has developed a reciprocal internal auditing arrangement with other local universities, Aston and Bath Spa.

The benefits of an EMS are that it provides the University with a structured, long-term approach to managing and reducing its impact on the environment and establishing ways of continually improving its performance. The University sets annual quantitative and qualitative targets, monitors and reports publically on scopes 1, 2 and 3 emissions; and biodiversity and food.

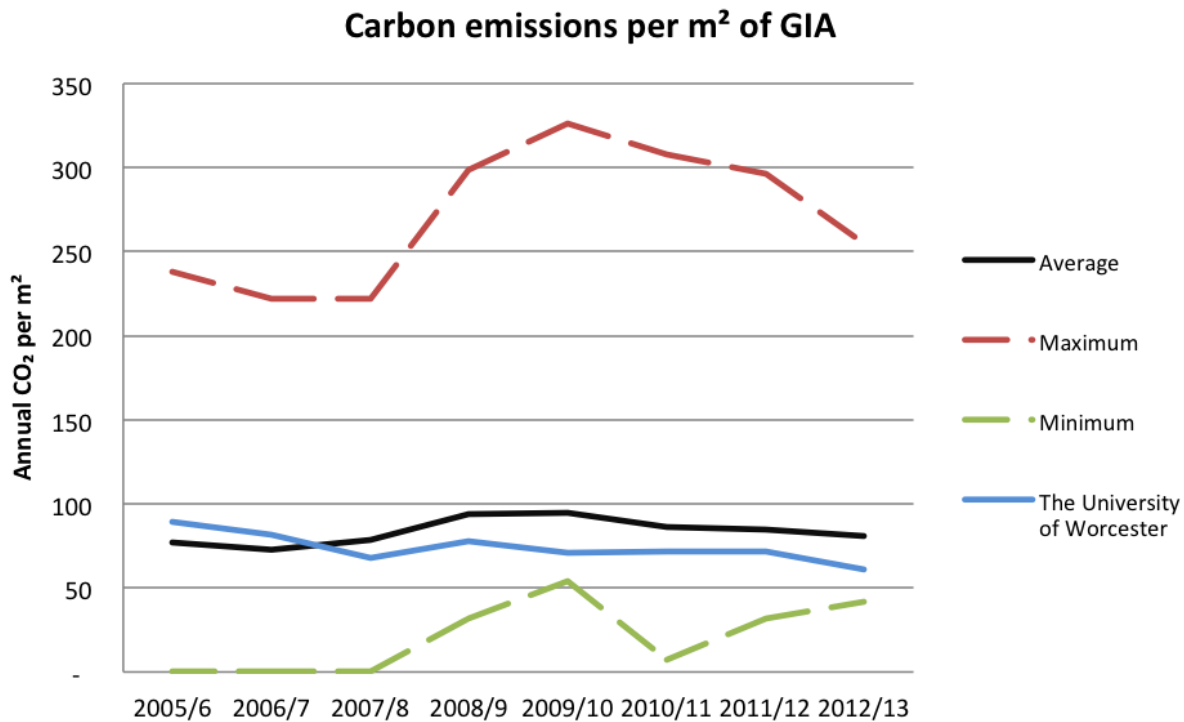
### Carbon Management

The University Board undertook a major review of its Carbon Management Strategy in April 2014. This strategy outlines:

- Drivers for reducing carbon emissions
- Details of the current carbon footprint
- Target reductions
- Strategies for reducing emissions

In 2013/14, the University produced 4,654 tonnes of carbon dioxide through scope 1 and 2 emissions and approximately 14,233 tonnes of carbon dioxide through scope 3 emissions. The University aims to reduce these emissions by 40% by 2020 and the strategy outlines how the University aims to achieve this. [http://www.worc.ac.uk/documents/Carbon\\_Management\\_Strategy\\_approved\\_23\\_April\\_2014\\_\\_\(1\)\\_\(3\).docx](http://www.worc.ac.uk/documents/Carbon_Management_Strategy_approved_23_April_2014__(1)_(3).docx)

An effective method of gaining perspective of the University’s carbon emissions is through direct comparison with other universities. The diagrams below show the annual energy carbon emissions per m2 of the GIA. The graphs show the maximum, minimum and average consumption of all Higher Education Institutions in the UK and how the University’s consumption compares.

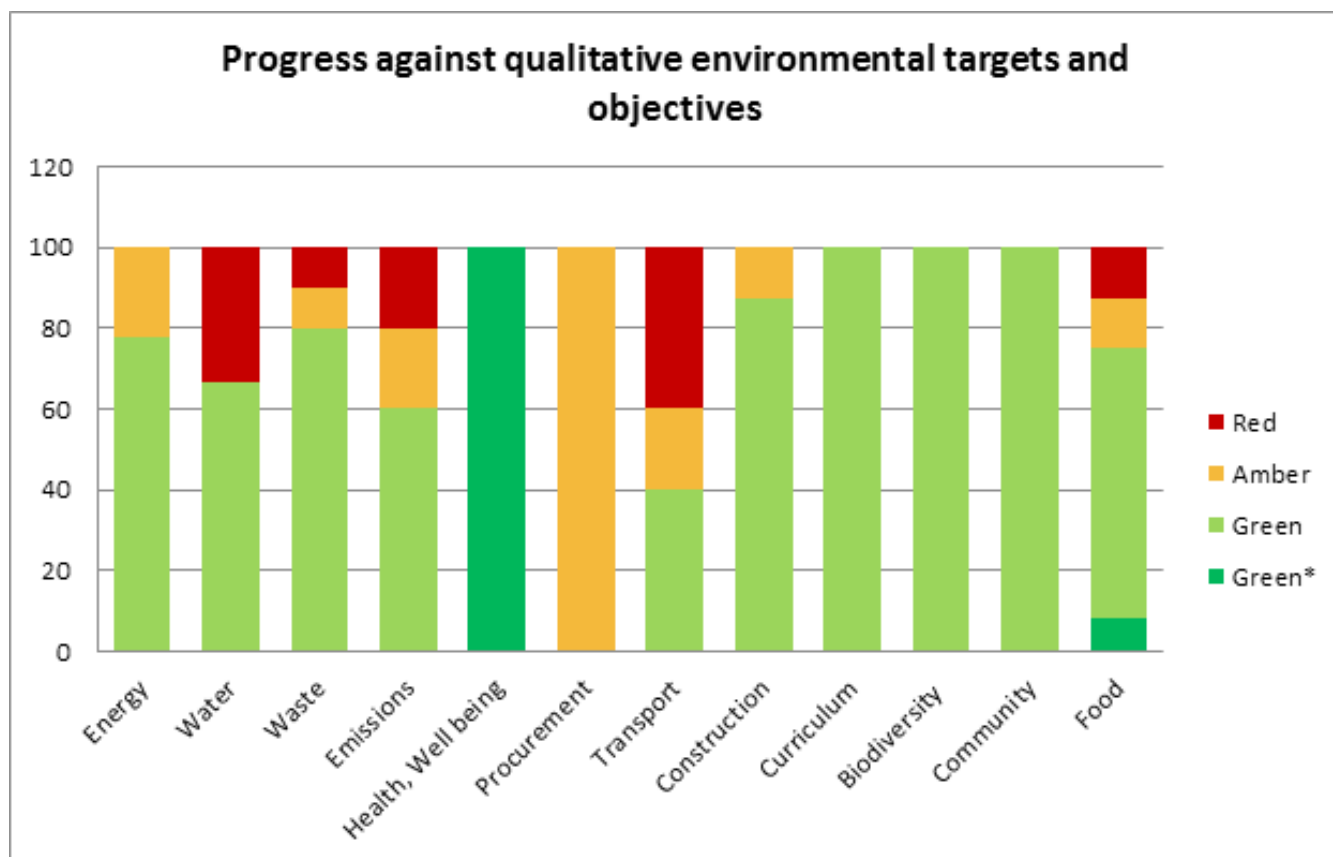


When it comes to Carbon Management, the University monitors the annual progress against qualitative and quantitative targets set. Figure 1.1 below gives a graphical representation of the qualitative target areas and percentage of targets met with Green\*, Green, Amber and Red progress levels. <sup>1</sup>

It is pleasing to report that the University continues to perform well in achieving policy and behaviour change actions and this is a very important part of our carbon reduction strategy.

<sup>1</sup> Exceeded target; met target; very close to target; and should be monitored closely; not met target, respectively.



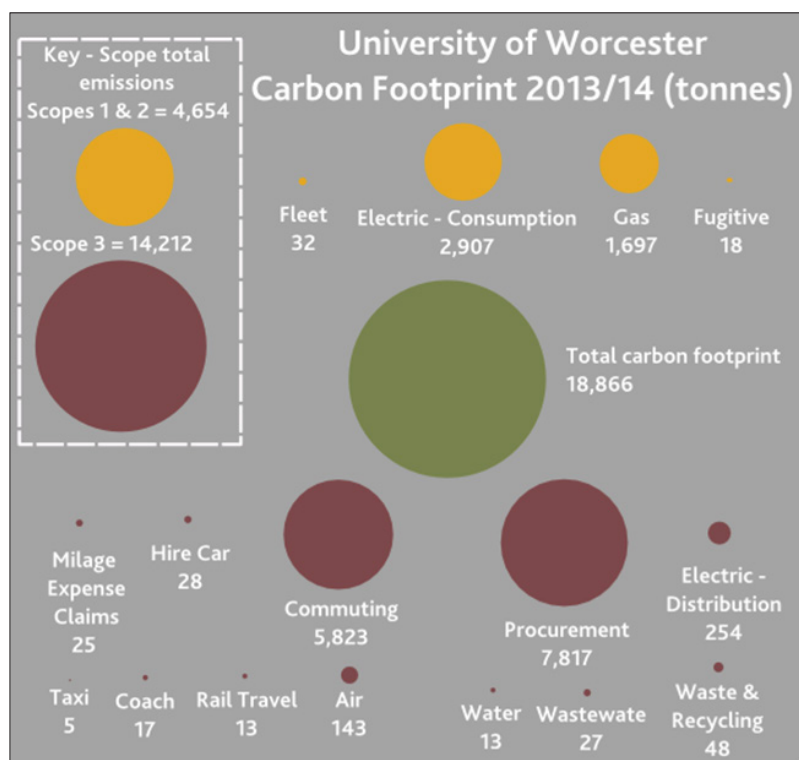


Looking at our carbon emissions reporting, the University uses standardise World Resource Institute classification of carbon emissions sources around 3 scopes, to help give consistency to organisation environmental performance reporting. Scope 1 are direct emissions from the combustion in owned boilers and vehicles (fleet), scope 2 accounts for emissions from the generation of purchased electricity consumed by the organisation, and scope 3 is all the other indirect emissions which are a consequence of the activity of the university, for example procurement and commuting. Throughout each reporting year relevant data such as utility consumption, student numbers, fleet vehicle mileage and staff/student commuting distances are gathered. Each 'fuel source' has a carbon factor – the amount of carbon per unit utilised. Carbon factors are updated regularly and issued by the Department for Environment and Rural Affairs (Defra).

The University measures and reports on carbon emissions in three ways:

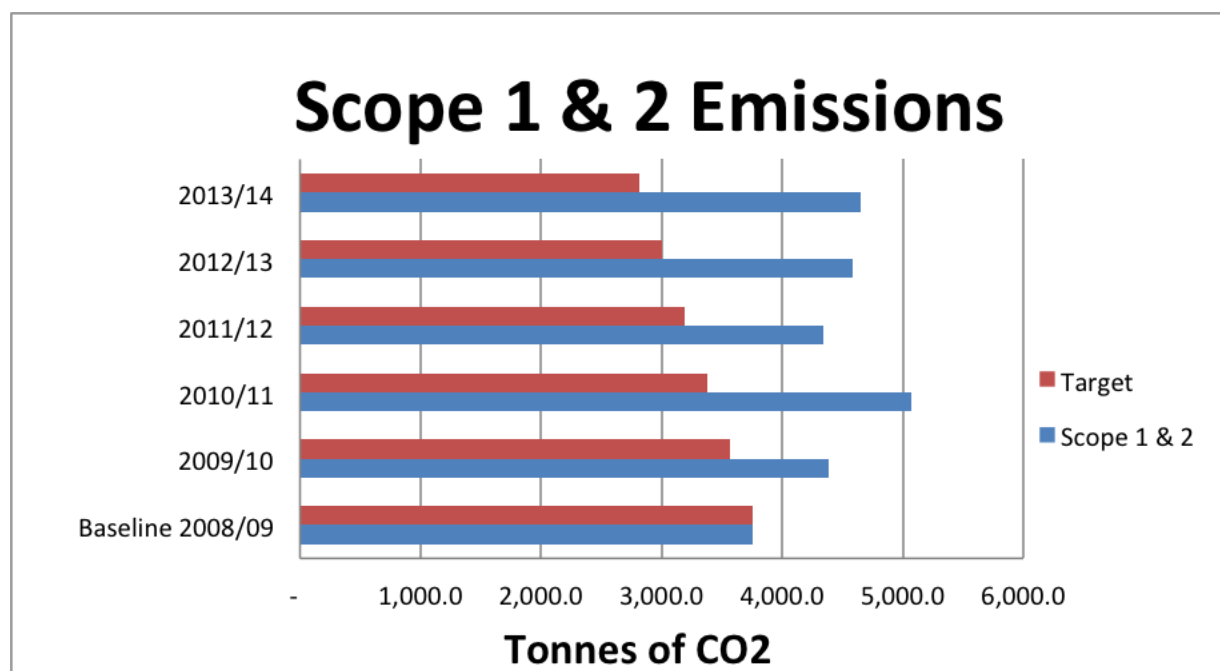
- In absolute terms
- In relation to the number of students and staff at the University
- In relation to the size of the University's estate (Gross Internal Area of buildings)

It is really pleasing to report that scope 1, 2 & 3 total GHG emissions decreased 8.18% between 2012/13 and 2013/14 despite continued growth in the estate and student and staff numbers.



*Total carbon emissions for 2103-2014 18,866 tonnes*

Scopes 1 & 2 emissions increased 1.59% during the period. Actual electricity consumed remained stable with consumption at St Johns Campus reducing by 1.75%. The new 6,000sqm Arena which has now been open for a full year increased our utility consumption. Despite stable consumption levels GHG emission resulting from electricity increased by 11% due a higher national conversion factor for electricity. Gas consumption decreased by 12% as boilers with improved efficiency levels have been installed across the estate and the heating period was noticeably milder. F gas emissions have been calculated for the first time and included in our scope 1 & 2 reporting, these are the carbon emissions arising from leaks to air conditioning equipment.



*Figure 1.2 graphically represents the progress against targets for Scope 1 & 2 emissions.*

Scope 3 emissions decreased 11% between 2012/13 and 2013/14.

Emissions resulting from commuting have decreasing by 5.2% continuing the trend towards more active travel for both students and staff. These figures are based on the methodologies using travel survey data which includes modes of travel and size of vehicle engines. GHG emissions resulting from taxi travel increased from 2.6 to 4.5 tonnes, rail travel decreased from 24.3 to 13.1 tonnes. There was a 7.26% increase in air travel during the year.

Water consumption at St Johns Campus has decreased by 9.7%, and was a direct result of water saving measures, identified in the water audit and now being phased in across all sites, including new showerheads and flow restrictors. However, GHG emissions from water increased by 1% because we now have information about water consumption for City Campus.

Waste GHG emissions increased 114% as result of two fires at our waste contractor depot who were forced to direct all recycling to landfill for a period of three months. The City Council did provide recycling collection which helped mitigate this unavoidable situation. There has been an increase in re-use especially through a BHF end of semester campaign and there has been increased in recycling and re-use of electrical equipment and scrap metals.

Procurement GHG procurement decreased 15% against the previous reporting period, this was largely a consequence of less monies being spent on building and construction procurement category.

Full information including historic emissions from 2005/6 and the detailed emissions calculations for this year and comparisons to previous years <http://www.worc.ac.uk/discover/carbon-management-and-targets%20.html>

## 6. Curriculum

Sustainability was the pilot for all the electives and it is particularly pleasing that this has been shortlisted for a Green Gown award in the courses and learning section. Judges commenting it is a 'creatively devised programme taking an enquiry based approach to delivery, involving key partners'.

The elective project provides multiple social and environmental benefits to students, staff, campus life and the broader community. These include:

- Raises awareness of the delicate interaction between social, environmental and economic sustainability and engages students in some of the key debates
- Provides students with practical skills for leading a more sustainable lifestyle
- Facilitates students learning to interact and communicate with students from disparate academic backgrounds – "Me and my peers were all studying different subjects. This definitely stimulated discussions and different considerations, which all helped to build up and enhance my point of view".
- 100% of disciplines within the University were represented via internal guest speakers
- "I was really happy to have been given such a brilliant opportunity and feel as though it could be a start to tackling my own individual impact."
- "The elective has changed my view on an individual's contribution to sustainability, showing that a change no matter how small can make a difference especially if the effort is a collective one. This message was something we aimed to advocate during Go Green Week to both the university and wider community." (Extract from student journal.)

## Learning for sustainable futures

Learning for Sustainable Futures is a joint initiative between The Education Quality Unit and the Sustainability department exploring and developing the connections between two areas of strategic importance for teaching and learning at the University:

- Through our curricula we will discuss and promote ethical practices, social responsibility, academic integrity and academic standards.
- Provide opportunities for students to learn and engage with the issue of sustainability.

The awards provide the opportunity for colleagues to carry out projects that bring pedagogic innovation into the curriculum or that extend learning support and education practice outside the formal curriculum, showing how our approach to sustainability connects with our education and learning activities. Eight projects covering all Institutes have been awarded between £2,500 and £3,000 to develop up to 2 year action inquiry projects leading to changes in curriculum and learning practice, rather than formal research processes.

Higher Education Academy seminar on The Worcester Model for embedding Sustainability in the Curriculum coincided with a visit from Steve Egan deputy chief executive HEFCE. Both events attracted praise from attendees about the innovations and breadth of work being undertaken at the University.

## Research

The Green Voices Research Group was established last year and provides a focus for the study of 'green culture', and a forum and catalyst for the discussion of broader 'green'/ecological issues. Based in the Institute of Humanities & Creative Arts at the University of Worcester, the group brings together researchers in the 'green humanities' from media and cultural studies, English, art and design, and drama through events, collaborative projects and publications. It also actively seeks to develop interdisciplinary links with scholars across the University and beyond. Due for publication in autumn 2014 are two case studies on action research projects currently underway. 'How do Limbo dancing, landlords and students' energy habits link to EfSD: a Student Green Fund case study', and 'Digital learning for sustainability: an interactive magazine for students, academics and expert practitioners' both published in Integrative Approaches to Sustainable Development at University Level: Making the Links. Berlin: Springer.

## 8. The Future

The publication of this sixth Annual Sustainability Report demonstrates a commitment to openness in reporting. Progress against challenging targets is part of the annual management review of the University's environmental management system, and the accuracy of the data collected by the department is increasing significantly. We will continue to drive improvements in performance across the institution, and aim to retain our EcoCampus Platinum status with a robust, long-term measurement and monitoring regime. EcoCampus is incorporated in all the new sites as we acquire, build and occupy them.

As it can be seen in the first five annual sustainability reports, the University of Worcester has excelled in areas of campus improvement and its work in engaging with the community. Its journey on embedding sustainability in the curriculum has begun well and it is important to continue developing this further. The University recognises the need to educate students in the importance of environmental, social and economic sustainability and we will continue to strive to be at the forefront of developments in this growing area.

Over the next academic year the sustainability web pages and [www.susthingout.com](http://www.susthingout.com) communications will continue to be revised and evaluated to ensure we are fulfilling our vision to make an outstanding contribution to economic, social and environmental sustainability through our teaching, research and knowledge exchange activities and to promote sustainable communities, services, businesses and use of physical resources.