



Carbon Management Plan Executive Summary

**A plan for reducing greenhouse gas emissions
and energy consumption**



January 2011





EXECUTIVE SUMMARY

Lancaster University's Carbon Management Plan (CMP) has been produced to provide a strategic route map, detailing how the University proposes to reduce its carbon emissions through the implementation of a range of policies, education and projects.

Introduction

Lancaster University recognises the need to reduce its energy consumption and carbon emissions. The impact of fossil fuel consumption on our environment and the resulting global warming and climate change, as well as consequential resource depletion are major issues, which as an institution we need to address. The current financial background makes it very important to reduce costs. Reductions in energy consumption will make major contributions to reducing energy costs.

Lancaster University is a leading university in terms of environmental research and teaching. This is a strong reason for the University to be ambitious in its carbon emission targets and in the projects it implements in order to achieve them. The Carbon Management Plan (CMP) recognises this, incorporating a range of projects from the conventional to cutting edge. It is critical that all types of technology are considered as the longer term carbon emission reduction targets for 2020 and 2050 will only be achieved through the deployment of all available technologies.

The University has implemented a detailed programme of carbon reduction projects, including energy efficiency measures, a nationally-recognised Travel Plan and the construction of sustainable developments including student residences to the highest environmental performance measures.

The CMP was initially developed through Lancaster University's participation in the Higher Education Carbon Management Programme. It now wishes to increase its activity towards a more energy efficient and low carbon future and the CMP sets out a framework for us to achieve this. Throughout this document 'carbon' and 'carbon emissions' are used as a shorthand for 'carbon dioxide equivalent' (CO₂e) emissions.

The principal objectives of Lancaster University's Carbon Management Plan are:

- To identify and quantify Lancaster University's carbon emissions sources.
- To provide a strategy for managing carbon emissions in the short, medium and long term and reducing energy consumption.
- To enable the development of a detailed programme of environmental management practices and projects, the implementation of which, will reduce carbon emissions.
- To increase institutional awareness of Lancaster University's carbon emissions, and their resultant climate and resource depletion impacts.

Baselines and Targets

The Higher Education Funding Council for England (HEFCE) published a carbon reduction strategy for higher education in January 2010. The strategy includes the adoption of national government targets for the higher education sector for reduction in carbon emissions of 34% by 2020 and 80% by 2050. These targets are set against the 1990UK Government baseline and comprise 'scope 1 & 2 emissions'. Scope 1 & 2 emissions are carbon emissions from electricity generation, fossil fuel consumption (for heating) and emissions from owned vehicles. HEFCE have assessed institutional greenhouse gas emissions for 2005 (more comprehensive data is available for HE sector institutions for 2005) and compared these to 1990 sector emissions, producing revised baseline emissions for individual HE institutions and sector wide targets for 2005.

Lancaster University's Scope 1 & 2 carbon emissions in 2005 were 29,131 tCO₂e. The University has set the following institutional targets (in the table opposite) in order to contribute to meeting the sector targets. The targets include 'milestone' immediate targets in 2012 and 2017 as well as the national powersource targets for 2020 and 2050.

Lancaster University Carbon Reduction Targets

The CMP indicates that Lancaster University can achieve significant reductions in carbon emissions within the next two to three years. Reductions in carbon emissions after this date are currently projected to be more limited. This is because the majority of projects within the CMP will be implemented within the next two to three years. Future editions of the CMP will incorporate new (currently undefined) projects which will contribute to additional reductions in carbon emissions between 2012 and 2020 and enable the challenging target of a 43% reduction in carbon emissions to be met by 2020.

Contributing Projects

The following projects provide the basis for the calculated carbon savings:

- Energy and utility efficiency projects
- Utility metering project
- Awareness campaigns
- Voltage reduction project
- Installation of new gas thermal boilers
- Installation of new CHP boiler
- Installation of a biomass boiler
- Wind turbine project

In order to achieve the carbon reductions set out in the CMP it is essential for all of the projects to be implemented in full. Low carbon emission projects such as the Wind Turbine Project and biomass boiler are of particular significance and will need to be successfully completed if Lancaster University is going to meet its carbon emission targets. Low carbon emission projects such as these will need to be deployed on a much greater scale by Lancaster University in order to meet the 2050 carbon emissions target and the early adoption of these technologies will be a significant step towards this.





Lancaster University Carbon Reduction Targets

	Target Years			
	2012	2017	2020	2050
Higher Education sector target for carbon reduction (%)	-12	-29	-43	-83
Lancaster University target for carbon reduction (%)	-34.9	-35.6	-43	-83
Lancaster University target for carbon reduction (tCO₂e)	19,266	18,751	16,868	5,031

Notes:

1. The baseline year for carbon reductions is 2005.
2. The Higher Education sector targets are derived from national targets for 1990 converted to equivalent targets for 2005.
3. The CMP currently calculates that carbon emissions could be reduced by -35.7% (18,707 tCO₂e) by 2020 using current planned and proposed projects. Future (as yet undefined) projects will be proposed and developed in order for Lancaster University to meet its target of reducing carbon emissions by 43% by 2020 and 83% by 2050.

CMP Carbon and Financial Savings

The CMP is projected to have the potential to save an aggregated total of £18.9 million between 2008 and 2020 and result in aggregated CO₂ savings of 135,000 tCO₂ over the same period.

CMP Governance & Reporting

Under the overall authority of the University's Vice Chancellor, responsibility for the implementation and review of the CMP will rest with the Carbon and Energy Management Team (CEMENT). The Carbon and Energy Management Team will report on the CMP through the Carbon and Environment Executive Board (CEEB), which will review carbon emissions performance against the CMP and make recommendations to University Management Advisory Group (UMAG). An annual carbon report will be produced by the Environment and Sustainability Manager.

Through the implementation of the plan, carbon management will become embedded in strategic planning of the University.

Future Projects

New projects will be developed in order to enable the University to meet its carbon reduction targets. These have not been defined at the moment, but could include the following types of project:

- Energy efficient refurbishment of plant rooms
- Virtualisation of computers
- Installation of photovoltaics
- Energy efficient refurbishment of older building stock

Scope 3 Emissions

The CMP currently covers 'Scope 1 and 2 emissions' (emissions from grid electricity, gas and oil used for site heating and emissions from the University vehicle fleet). Emissions from other sources, such as Travel and Procurement, are not covered at the moment.

CMP Review Periods

Lancaster University CMP covers the period 2009-2020. The current edition of the CMP primarily relates to projects which have been or will be implemented by 2012 (2012 being the first milestone target date set by HEFCE). The CMP will be reviewed, updated and published annually to report on progress and update on existing and new projects.

Conclusion

The University is committed to meeting the targets that have been set within the CMP. It regards the implementation of the CMP as a means to ensure continued success and improvement in carbon management through education, training and investment.

To help reduce our carbon footprint we have only printed a limited number of hard copies of the CMP. To read the full version of the Carbon Management Plan please visit:

www.lancaster.ac.uk/facilities/environment.





Contacts

If you wish to discuss any aspect of the Carbon Management Plan, please contact:

Environment and Sustainability Manager
Facilities - Operations
Lancaster University
Lancaster
LA1 4YW
Tel: 01524 593333
E-mail: facilities.helpdesk@lancaster.ac.uk
Website: www.lancaster.ac.uk/facilities

