Energy Management in Tourism:
development of a comprehensive Carbon Footprint methodology and toolset

What will we do?

The project started in December 2007 with the aim of continuing the development of a practical and robust method for understanding carbon footprints and tailoring it to the tourist sector. Information is needed by organisations so that they can effectively target reductions in energy consumption and carbon emissions in their supply chains providing environmental and economic benefits. Tourism is a major economic sector in NW England, and contains many small businesses with limited resources for carrying out analysis. An appropriate methodology and toolset has to be employable by organisations of all sizes, from the small tourism provider requiring a simple, believable, user-friendly tool that provides straight forward output to larger organisations with the requirement and capacity for more detailed analysis.

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George Nesbet

Existing methodologies lack the usability and transparent validity that is required for widespread organisational use. This project is a proof of concept which will use an existing prototype footprinting model to show economic robustness and realism and validate statistical methods of presenting estimates of variability and confidence. A tool will be developed and demonstrated for the tourism sector. Once completed a larger research proposal will be written to fund parameterisation and software development to create a freestanding system for widespread release.

http://www.blackpool4me.com/Blackpool4Me/YourPhotos.htm

Why tourism?

Each year 18 million people visit England's Northwest, contributing almost £6 billion to the region's economy. The region has a variety of attractions ranging from vibrant cities, through traditional seaside resorts to dramatic natural landscapes and scenery. The sector is supported by a complex series of independent suppliers providing accommodation, transport, food and entertainment.

NWDA recognises the importance of the sector and has a strategy for developing tourism in the region. It addresses issues of sustainability and aims to provide world-class visitor information services. Knowledge and understanding of the relative impact of leisure activities is invaluable not only in improving management and reducing emissions from workers in the sector but also in educating tourists.


In the longer term, people's decisions are likely to be influenced by their carbon budget and the tourist sector can use information pro-actively to encourage its growth in the region.

The project will develop prototype models that will be demonstrated to tourist suppliers in Blackpool and the Lake District. Their input will be used to identify the most effective approach to influence their strategies for energy management and encourage a high profile presentation of energy and carbon costs of different activities. The information will demonstrate the benefits of local rather than overseas breaks and will compare different activities.
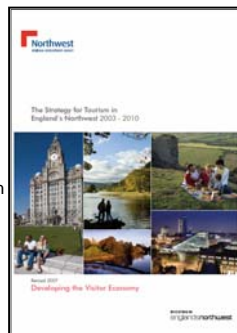
What is a Carbon Footprint?

Carbon footprints measure the greenhouse gas emissions (expressed as units of carbon or carbon dioxide) produced by our activities; most of the emissions are derived by our use of energy. They should include both direct and indirect sources derived through Life Cycle Assessment (LCA). The measurements have a number of uses; they are set as binding targets (e.g. in the Kyoto Protocol), they can identify areas to improve efficiency and be used in decision making; the overall aim is to reduce emissions and protect the environment from climate change.
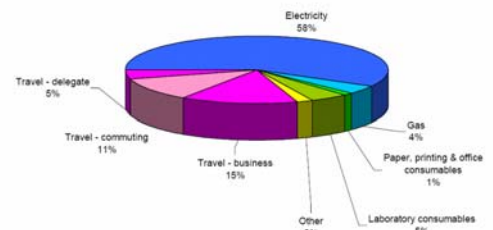

The carbon footprint of the Lancaster Environment Centre

Bottom Up or Top Down?

Footprints can be calculated by either summing the impacts and emissions of each activity to identify total carbon footprint (as done by Walkers on their Cheese and Onion crisps) or by partitioning the total known emissions by country, by sector or even by individual. Both approaches have their own strengths and weaknesses. The bottom up approach is much more process related and is easier to use to provide detailed targeted guidance on emissions reductions, but elements are commonly omitted or may be double accounted. As a consequence, the overall objective may not be met.

Within the project we are attempting to generate a hybrid model that uses the national statistics describing activities and emissions, so that it is comprehensive in describing Emissions but links through to established LCA to provide qualifying information that can be used to advise people on strategies, behaviour and lifestyle.

An example of a bottom-up approach
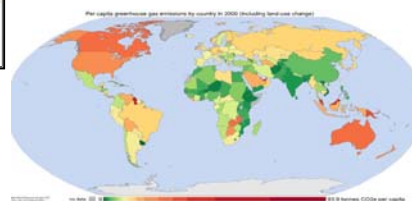
A data source for top-down analysis

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