



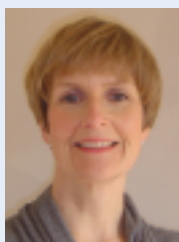
# Carbon Footprint

## IMPLICATIONS FOR COMMERCIAL PROPERTY

### Abstract

Climate change is set to be one of the biggest challenges facing mankind in the 21st Century and beyond. A major contributor to this problem is the emission of greenhouse gases produced through the burning of fossil fuels.

This paper explains what a carbon footprint is, what can be done to decrease emissions and the positive and negative consequences for businesses and their properties. The research concludes by looking at taxation implications, incentives for early compliance and a summary of likely future trends. The bibliography provides sources and websites where information can be found to develop or enhance sustainable business strategies.



#### About the author

Helen Hide-Wright is an independent freelance researcher specialising in commercial research. Prior to and after graduating with a degree in Business, Helen initially worked in the United States before returning to the UK to work at Leeds Metropolitan University where she was involved in researching, writing and producing commercial reports which were used within the banking sector to influence investment decisions. In recent years Helen has undertaken bespoke research on a variety of subjects within the commercial sector.

## Executive summary

According to the Carbon Trust, 50% of a business's emissions come from its buildings and argue that cutting emissions will also cut costs.

Legislation is already in place and is being further developed at national, EU and global levels to reduce carbon emissions. Sustainable energy sources are being developed and carbon offsetting schemes are increasing in order to mitigate the environmental impact.

Through legislation and taxation, businesses are coming under increasing pressure to act on CO<sub>2</sub>; tax incentives and penalties are in place to encourage businesses to become greener now.

In particular, research indicates positive returns when commercial properties are developed or refurbished with carbon management as a key target within the design. At the same time, clients are increasingly looking for properties which have low emissions and greater energy efficiency.

It has been recognized that a key barrier to a sustainable commercial property market is the situation whereby tenants pay the energy bills and landlords control properties. As energy costs have risen and the impact of environmental legislation in the UK intensifies, landlords and legal professionals have sought to develop products that encourage tenants and landlords to reduce the environmental impact of their buildings.

The future will bring further legislation and an increasing number of clients seeking "green" properties.

## Background

In the UK, business produces almost half of the total CO<sub>2</sub> emissions. (8) The only way to address this is for business to look at reducing their carbon footprint.

### Understanding your carbon footprint

A carbon footprint measures the amount of greenhouse gases produced through the burning of fossil fuels and the impact of our activities on the environment. (16)

The buildings sector accounts for 40% of the EU's energy usage. Buildings are responsible for 40% of UK emissions. (8) Business activities account for around 50% of emissions in the UK. (12)

The Carbon Trust estimates that 16,000 or 2% of firms account for 80% of emissions from industrial processes and business use of buildings. SMEs account for the remaining 20%. (12)

The Climate Change Act (which the UK adopted in 2008) sets a target for the UK of reducing carbon emissions to 80% below 1990 levels by 2050. (8)

The Stern report, the Treasury's comprehensive analysis of the economics of climate change, estimates that **not taking action could cost from 5 to 20% of global GDP every year, now and in the future.** In comparison, **reducing emissions could cost around 1% of global GDP each year.** (14)

The Government needs to secure the UK's energy supply and needs to meet new carbon targets through the use of new energy sources, renewables, new nuclear as well as carbon capture and storage. (11) The Renewable Energy Strategy defines how the UK aims to increase the amount of energy it gets from renewables to 15%, by 2020. (8)

### What about Offsetting?

Businesses and individuals can offset carbon emissions through various means such as investing in re-forestation projects and in renewable energy sources. Supporters of offsetting claim it has increased the rate of investment in

renewable energy sources and accelerated research and development. Critics claim that it avoids tackling the emissions of greenhouse gases. However, the Kyoto protocol has sanctioned offsetting as a way to earn carbon credits which can be traded on a marketplace. (1)

## The latest legislation and how this affects business

Whilst Copenhagen failed to produce the global agreements that many had called for, Government and the EU are continuing to develop policies to reduce carbon emissions. The Government is driving sustainability through legislation such as energy performance certificates, display energy certificates and the Carbon Reduction Commitment. (2)

**The Carbon Reduction Commitment (CRC):** comes into effect in 2010. Organisations that used more than 6,000 MWh of electricity in 2008 (roughly equating to £500k spend) have to purchase and surrender allowances each year to cover their CO<sub>2</sub> emissions. (8)

Regulation, such as the new CRC Energy Efficiency Scheme, is increasingly making it necessary for more businesses to make carbon management a core function. (13) The scheme is set up to provide financial incentives for organisations to be energy efficient by offering bonuses to those reducing energy consumption and penalties for those which do not. (10) Corporate reputations will be put on the line, as firms' carbon reduction performance will be rated in a public league table. (9)

**Display Energy Certificates (DECs)** for all new homes and commercial buildings, were launched on 1st October 2008 and they apply to public buildings larger than 1,000 sq m. Under the new plans they would be extended to any public buildings larger than 250 sq m. The UK government's current target date by when all new commercial buildings being built should be zero carbon is 2019. (6)

RICS (Royal Institution of Chartered Surveyors) in Brussels says that although 22 of the 27 EU member states had fully implemented the directive in November 2008, most had practical problems. The main obstacles have been the lack of skilled workforce with regards to construction and retrofitting, and the certification. (6)

### What is a Zero Carbon building and how can it be achieved without offsetting?

A zero carbon building is one that uses zero net energy consumption or has zero carbon emissions (1). Typically this is achieved by the use of renewable energy sources such as wind turbines, solar panels, ground source energy coupled with energy efficiency within the building. This option is only open to certain businesses i.e. non-manufacturing, low energy users, the rest would have to achieve this through offsetting.

### Complying with the CRC

For businesses which must comply with the CRC, this splits into 2 distinct groups; those required to participate fully in the scheme, and those required to make a disclosure about their energy use. For the purposes of the scheme, these are termed "participants" and "information declarers." (10)

**Participants:** The highest parent organisation will be legally responsible for participating in the scheme and reporting the energy use of all its subsidiaries. Subsidiaries with 25% of their emissions covered by a Climate Change Agreement are temporarily exempt from the scheme. If, after exemptions, the remaining organisation consumes less than 1,000MWh then the entire organisation is exempt. (10)

**Information Declarers:** If an organisation consumed less than 6,000MWh of electricity during 2008 through all

half-hourly meters, it is required to submit an information disclosure to the Environment Agency, detailing total electricity consumption. Failure to do so would incur a fixed fine of £1,000. (10)

### What future legislation is planned?

The EU is considering extending the scope of DEC's for all new homes and commercial buildings, and bringing in new penalties for non-compliance.

The extension of DEC's is a significant change to the EU directive, but there are other ambitious targets:

1. By 2019, all new buildings must produce at least as much renewable energy as they consume.
2. EU member states are to set interim targets for the proportion of new buildings that would be zero carbon by 2015.
3. Energy performance of buildings is to be upgraded to meet minimum requirements if the refurbishment is on more than 25% of the buildings square footage, or the building's total value.
4. The EU wants a common methodology to calculate the energy performance of buildings by 31st March 2010.
5. Smart meters would need to be installed in all new buildings and all those undergoing major renovation.
6. A provision for member states to draw up national action plans by 30th June 2011 setting out financial instruments for improving energy efficiency, and a call to propose additional new financial instruments. (6)

### What are the incentives and implications for reducing your footprint?

The **Climate Change Levy** came into effect in 2001 and is a charge on energy usage for business and the public sector. To help energy-intensive organizations, the Government has negotiated Climate Change Agreements (CCAs) in some sectors. These agreements give organisations an 80% discount from the Climate Change Levy, as long as they reach additional CO<sub>2</sub> reduction targets. (8)

Investing in energy efficient new plant and machinery could qualify for an enhanced capital allowance. The Allowance (also called a 100% first-year allowance) allows you to obtain tax relief on the whole cost of the purchase in the tax year it was made. They are also available for businesses that invest in water saving equipment and on new cars with low carbon dioxide emissions. (15)

If a business is energy intensive, it can receive an 80% reduction on the Climate Change Levy by signing a CCA. It then has to agree to meet set energy efficiency targets. In addition, businesses that practise green policies may be eligible for certain tax breaks or a loan. (15)

SMEs can apply for interest free loans of £5,000 to £100,000 from the Carbon Trust to replace or upgrade existing equipment and appliances with more energy efficient versions or install energy saving products such as insulation (15)

### Further benefits

Having a policy to reduce carbon footprint can differentiate companies from the competition as increasing numbers of businesses are looking for a declared interest in this issue. (1) Leadership in your sector or supply chain with lower carbon products and services will enhance your reputation. In turn, increasing numbers of clients/consumers are making choices based on a company's environmental credentials. (8) A recent

CBI member survey also showed that 84% of respondents had adopted emissions reduction measures over and above regulatory requirements, because there is a solid business case to do so. (13)

In February 2009, a report by the Institutional Investors Group on Climate Change stated that buildings with higher sustainability ratings would maintain their value better than those that are unsustainable. The body's Property Working Group, which represents a combined value of £3.78bn of property globally under management, says occupiers would increasingly reject properties they see as socially or environmentally unacceptable. A survey released in the US in March 2009 by RICS, has shown clear evidence that office buildings with significant eco-credentials attract better yields. (2)

### How buildings are rated for efficiency

Traditionally property owners have relied on rating systems such as BREEAM (18) or US system LEED (19). However, they have been criticised for focusing too much on building materials rather than how a property is used. (2)

In 2009, Axa Real Estate set up a system in the UK called Green Rating. It assesses the energy efficiency of a building by looking at the building materials and the waste generated by the building. The system was launched in Europe in 2009 and is expected to be extended to the US and Japan during 2010. (2)

### What are Green Leases?

Green leases are a method of promoting a company's brand and attracting environment conscious clients. Green Leases encourage landlords to have their buildings "rated" for energy efficiency. Once a tenant is found, the lease will detail the aims of usage in order to retain or even improve this rating during the period of the lease. Both the landlord and tenant will operate the building in accordance with prevailing government policy on energy conservation. (17)

It has been argued that where tenants pay the energy bills and landlords control properties this has been a key barrier to a sustainable commercial property market. However, as energy costs have risen and the impact of environmental legislation in the UK intensifies, landlords and legal professionals have sought to develop products that encourage tenants and landlords to reduce the environmental impact of their buildings. (3)

### Alternative sources of energy

The government plans to provide 25% of energy consumed in the UK from offshore wind farms by 2020, which would help it exceed a legally binding target of 15% by the same year. The Crown says it generates 6% of total UK renewable energy. (5) In the meantime nuclear power is firmly back on the agenda.

On 24th June 2009, the Department for Energy and Climate Change published a report, *A Prevailing Wind: Advancing Offshore Wind Development*. The report says the growth in offshore wind could create 70,000 jobs and generate £8bn a year for the government. In order to achieve this, the Carbon Trust has estimated a total investment of £75bn would be required. (5)

### Practicalities – what to do to comply

Specialist companies are available to audit usage and make recommendations upon changing consumption, reducing consumption and offsetting your corporate carbon footprint for commercial users. (16) Accurate data about energy use is useful to help property owners identify the areas where properties can be improved. (2)

Businesses can initially turn to The Carbon Trust, a government-funded independent company, for advice on how to cut carbon emissions. It offers a building



design service to develop low carbon solutions. The Carbon Trust can offer free or subsidised consultancy throughout a project – depending on its size and potential carbon saving. For major building and renovation projects the Trust can offer strategic advice including: site selection, energy strategy, including sharing energy with neighbours and the use of renewables, architectural design, including building orientation, passive design and material selection. (8)

### Monitoring energy usage

Companies should have already gathered data on their 2008 energy use. Even organisations that are not obliged to participate in the Carbon Reduction Commitment will still have to provide data on energy use. The government is requesting information from companies whose energy use is between 3,000 and 6,000 megawatt hours a year, so it can monitor their consumption and include them in the scheme if they exceed the threshold. (7)

### What energy certificates and accreditations are available?

- **The Carbon Trust Footprinting Company** demonstrates whether a business is reducing the carbon emissions of its product and **The Carbon Trust Standard** is awarded to organisations that measure, manage and reduce their carbon footprint. (8)
- **ISO 14001 Environmental Management Standards:** Specifies a set of environmental management requirements for environmental management systems. It is designed to help organisations to protect the environment to prevent pollution and to improve their environmental performance.
- **Energy certificates** measure a building's energy performance and can help better performing buildings to attract a premium, thereby increasing the business case for energy efficiency. The Government is due to announce on 2010 Building Regulations following consultations.

Building Regulations were revised in 2006 to comply with the EU directive on the energy performance of buildings. (8) The revisions to Part L of the Building Regulations set maximum carbon dioxide emissions for whole buildings. The regulations apply both to the construction of new buildings and renovation of existing buildings (with a total surface area of over 1,000 m<sup>2</sup>). For new buildings, Part L reduces carbon emissions by 25% from 2002 standards, which already reduced emissions by 15%. The net reduction of 40% from pre-2002 is often used as an indicator of improvement. (8)

- **Asset certificates ("Energy Performance Certificates"):** Measure the intrinsic energy performance of the building based on its design. They have to be renewed every 10 years and must be shown at the point of sale, lease and lease renewal. (8)
- **Operating Certificates ("Display Energy Certificates,"):** Measure the building's actual performance based on metered energy usage. They are renewed annually and apply to public sector buildings with a usable floor area greater than 1,000m<sup>2</sup>. They must be displayed publicly. (8)

### Conclusion

Buildings are a big contributor to greenhouse gases; therefore the political pressure to either reduce this or pay highly for its consequences is significant. It will be exacerbated by challenges with the supply of energy and the likelihood that the UK will have to pay more for its supplies than other countries. (4)

The government must work with businesses and consumers towards a sustainable low carbon economy. (11) More than half of the emissions that need to be saved by 2020 are through energy efficiency. These measures are also cost-effective, saving businesses and households money in the long-run in terms of reduced energy costs and the increased value of buildings. (13) In conjunction with further legislation, higher energy prices and greater consumer awareness, this creates a powerful case for more businesses to make considerable energy savings in the future and cut emissions.

### About the sponsor - Port@l

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