



KPMG GLOBAL SUSTAINABILITY SERVICES™

Sustainable Insight

Your quarterly insight into sustainability

Managing your Carbon Footprint
March 2008



The new climate reality: managing your Carbon Footprint

Many companies have now visibly committed to reducing their 'carbon footprint' as part of their environmental policy. But amid the noise, it can be difficult to know where to start. Our latest Sustainable Insight offers some guidance for companies that are undertaking climate change initiatives. This includes energy reduction, switching to renewables as well as using offsets as part of a climate change strategy. We also draw on some best practise examples to serve as inspiration for organizations that wish to step up their efforts.

"An effective and credible climate strategy needs to plan for the reduction of both the company's own emissions as well as mitigating the wider impact of the company's value chain."

Climate changes your business

Climate change no longer needs an introduction. It is now widely regarded as one of the most serious challenges the world faces, with consequences that go far beyond its effects on the environment. An increasing number of people, governments and companies now realize that it is time for action. Businesses, also, are now confronted with the implications of climate change and acknowledge both the risks and opportunities. Consequently, businesses are taking the topic more seriously.

With the explosion of media attention a lot of companies currently feel compelled to make public statements about the importance of climate change. We are seeing a myriad of responses ranging from public statements about energy reduction initiatives and carbon offsetting schemes to 'green' advertising. And although many companies are sincere in their ambitions, some still struggle to

understand their own direct emissions, let alone the wider impact of their business on climate change.

Chain reaction

At KPMG, we believe that understanding your carbon footprint is fundamental to any carbon management strategy. A 'carbon footprint' should not be limited to in-house operations, but must also address the wider value chain which includes 'indirect' emissions from both 'upstream' (with suppliers) and 'downstream' (with clients and customers) sources.

Leading companies are focusing their attention where the greatest impact can be made and are involving employees, suppliers and clients in climate change initiatives. Companies, such as McDonald's, Philips and Boots, use – life-cycle – approaches to judge how they can optimize the impact on the chain as a whole.

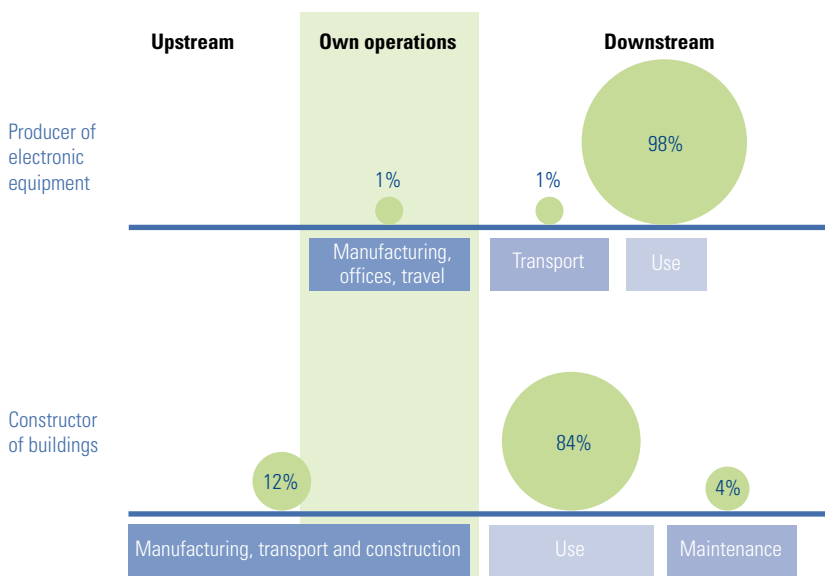


These 'upstream' or 'downstream' reductions may outweigh a company's own emissions several times. For example, a television manufacturer's direct emissions impact will be at the factory level. Yet its biggest impact is actually 'downstream' among its customers, due to emissions from television

usage – accounting for over 90% of the emissions in the value chain (see Box 1). In a similar vein, the downstream impact in the construction sector relates to the use and maintenance of buildings, representing 88% of the total Greenhouse Gas (GHG) emissions in the value chain.

The food industry offers an example of the 'upstream' effect as the predominant climate impact is in upstream emissions from the livestock of farmers. Meanwhile companies in the service sector will feel the upstream impact through air travel and purchased electricity – accounting for 50% of their emissions.

Box 1: Examples of the carbon footprints of the electronics and construction sectors



Mapping your journey

The key to a successful climate strategy is first to understand your company's footprint and then make strategic choices that will lead to a reduction. A company's response should involve three key elements that run across the entire value chain:

- a reduction of energy;
- a switch to non-fossil fuels, and
- offsetting carbon emissions.

How to reduce your carbon footprint

The most commonly accepted and applied standard used among companies for quantifying emissions is the Greenhouse Gas Protocol (GHG Protocol) – a partnership between the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI). Companies use scope 1 and 2 to ascertain their emissions related to primary energy consumption.

Scope 1 emissions occur from sources that are owned or controlled by a company; scope 2 GHG emissions are those that are generated by another party for the production of electricity that is purchased and consumed by the company.

However, the main challenge for companies is to quantify the potential up- and downstream emissions beyond their own direct emissions.

These indirect emissions can vary in ease of quantification (scope 3 of the GHG Protocol applies to indirect emissions). For example, it is relatively easy to calculate the emissions of a lease car fleet, while calculating air travel emissions can pose difficulties due to a lack of reliable data. Similarly, quantifying the impact of distribution, product use or raw materials production can also be challenging. Companies need to work closely with their suppliers and customers to gain valuable insight into these indirect emissions. This can also be a useful starting point for joint action on footprint reduction.

A good example of collaborative working is the 'Energy Efficiency in Buildings' (EEB) project of the WBCSD – an initiative to push for "zero net energy construction" worldwide. Ten companies estimated their emissions across the construction value chain,

from raw material production through to use and ongoing maintenance. The goal of the project is to offer a quantitative overview of what can be achieved economically to reduce energy demand and emissions in buildings over the next two decades.

Three key steps to reduction

Step One: Reduce energy consumption

The reduction of energy and fuel consumption is a key component of a carbon reduction strategy. It leads to long-term efficiency and adds credibility among stakeholders by showing ownership for improving a company's efficiency at source. It is often also highly visible internally and, so, key for engaging employees and raising awareness.

A quick win for implementing a company's climate strategy is to reduce energy consumption within a company's own facilities. This may require an initial investment. However, technical adaptations – such as using more energy-efficient lighting – can result in significant reductions. For example, switching to energy-efficient lighting can easily have a 10-20% emission reduction and also reduce a company's energy bill.

A bigger challenge for companies is to influence – and change – employee behaviour. This may include encouraging more use of teleconferencing, public transport, or adapting driving styles to be more 'green' through driver incentive programmes, re-training drivers and performance monitoring. Ongoing communication and a continuous effort to raise awareness of new practises are needed – while promoting the benefits of changing behaviour. Companies, like express delivery and mail company TNT and media company Sky, use incentives such as offering money to employees to buy low-emission cars.



Upstream, among suppliers, companies can initiate reductions by reviewing energy or material use. Innovations in packaging can help reduce emissions, for example, but companies should also consider reviewing process methodologies within their sector, such as developing new construction methods that require less steel or concrete to benefit the construction sector.

For example, global retailer Wal-Mart, is currently undertaking a project with the Carbon Disclosure Project, to measure the amount of energy used to create products throughout its supply chain, including the procurement, manufacturing and distribution process. The company is running a pilot among a group of its suppliers to determine the overall environmental impact of products and look for innovative ways to make the entire process more energy efficient.

Overall energy reduction is quickly gaining momentum, but is often limited to the own operations and direct emissions. However there is still plenty of scope for innovation among companies and their clients and customers.

Step Two: Replace fossil fuels with renewable energy

Many companies shift to renewable energy sources to reduce their own emissions at source. Companies can switch to 'green' energy sources at offices spaces, factories and retail outlets. But many may be challenged if renewable sources are not available everywhere around the world.

Companies like HSBC bank and telecom company, Swisscom, have chosen to install their own solar panels. These initiatives have formed a good base for powerful communication, boosting enthusiasm and awareness among employees. The companies also

have control over the origin of their sustainable sources.

Visible public initiatives involving renewable energy include 'eco-store' concepts by large supermarket chains like M&S and Sainsbury's. M&S, as part of its £200 million 'Plan A' sustainability initiative opened its first 'eco-store' in late 2007. It is a store powered by renewable energy sources and includes a green procurement policy; water saving technologies and more efficient lighting, refrigeration and air con technologies. Sainsbury's eco-store opened before the Millennium and includes on-site renewable sources such as wind turbines.

The growing demand of companies to replace fossil fuels with renewable energy is increasingly being felt down the supply chain as leading multinationals implement procurement policies that include renewable sourcing. This is particularly obvious where large companies have made public commitments to reduce their carbon footprint. For example, HSBC now sources power only from 'green' suppliers as part its environment goals set in 2004. While telecoms giant BT has pledged to reduce its 1996 footprint by 80% by 2016, which involves improvements on energy efficiency. It aims to reduce emissions within its data centres by using 100% renewable energy as well as lowering emissions from its fleet through the using of bio-fuels (among other tactics).

Step Three: Offset your emissions

Carbon offsetting is a mechanism for compensating emissions produced by an organization by funding an equivalent CO2 saving elsewhere.

In theory, this enables anyone to mitigate the impact of their carbon footprint by supporting projects that reduce CO2 emissions – these tend to be projects in areas



of energy efficiency, renewable energy, sequestration and biomass. Offsetting, therefore, is a fundamental principle that underpins market-based climate change solutions as it allows companies to meet their emissions reduction targets while channelling funds to where the most cost-effective reductions can be achieved.

Offsetting aims to reduce those emissions that are external to the organization's operations, rather than a means to reduce an organization's own direct emissions – it is not a "quick fix" for companies.

Box 2: Climate Change: the international picture

The Kyoto Protocol in 1997 paved the way for cap and trade mechanisms to help address the changes of climate change through Clean Development Mechanism (CDM), where developed countries can meet their targets by investing in reducing emissions in developing countries. However, without US and Australian support, it did not come into force until Russia ratified the Protocol in 2005.

At Bali in 2007, 192 nations at the UN Climate Change Conference agreed the need for “deep cuts in global emissions” and to develop new market mechanisms to incentivise reductions, tackle deforestation (excluded from Kyoto) and encourage innovation when Kyoto ends in 2012. A target was set for agreeing the new mechanism at the UN Climate Change Conference in Copenhagen in 2009.

Box 3: Offsetting – Friend or Foe?



KPMG’s January 2008 publication emphasises the importance of offsetting in tackling climate change. “For some, [carbon offsetting] may be part of a holistic approach to cutting emissions. For others it can be viewed as a quick fix which itself can be of dubious worth ... Offsetting should only be part – and most probably the last part – of a coherent carbon management strategy.”

Some experts recommend that offsetting should be the final part of a carbon management strategy to compensate for remaining areas where reduction is difficult to achieve. Others state that paying for carbon offsets creates a financial incentive to reduce emissions and should, therefore, form part of the core strategy. Despite differing opinions, both approaches conclude that offsetting must not replace internal direct reductions.

A meaningful climate change strategy should also reinforce the value of using market mechanisms to tackle climate change, rather than disregarding them. But it is important to secure a high quality source of offsets and consciously choose from a whole range of possible investments, such as reforestation, wind power, hydropower or fuel switching.

There are three ways in which companies can purchase emissions ‘credits’ to offset their emissions via the markets:

- Regulated market: companies can purchase Certified Emissions Reductions (CERs) through the UN ‘Clean Development Mechanism’ (CDM) which validates and measures the benefits of each investment project. This is an expensive option but ensures that emission reductions satisfy stringent criteria.
- Voluntary markets: Offsetting through the voluntary market avoids UN administration fees but can also be risky due to a lack of validation procedures and controls. However, the voluntary market offers a broader selection of smaller investment projects that are unlikely to gain CDM approval. These types of projects are also perceived to have higher sustainable, community development benefits. Carbon credits in this market are often referred to as ‘Verified Emissions Reductions’ (VERs), although there is no standard verification criterion.

Both the regulated and voluntary markets have been criticized for a failure to account for wider social and environmental benefits. This has resulted in a number of additional standards such as the Voluntary Carbon Standard (VCS), the ISO Carbon Standard and the Gold Standard (for more information, also see KPMG’s publication ‘Offsetting – Friend or Foe?’).

- Direct investment: Companies may also choose to buy offsets directly from the developer of an emissions reduction project, sometimes with the aim of achieving CDM status or other standards. In these cases, it is critical to stipulate criteria at the outset of projects to limit the risks associated with purchasing or developing carbon credits. Air France KLM and HSBC for example, use direct funding to ensure that it has control over the projects and to avoid concerns over the integrity of the voluntary market.

Box 4: Climate Changes Your Business

KPMG's March 2008 publication analyzes the response to climate change across 18 industry sectors. The report offers some of the most comprehensive analysis of its kind to date. Its findings show that six major industry sectors are in danger from climate change risks. Even sectors deemed to be in the "safe area" are insufficiently prepared for the new risks faced by climate change. These risks include physical, regulatory and reputational risks as well as the emerging risk of litigation. The report can be downloaded at www.kpmg.nl/sustainability from April 2, 2008.



Conclusion

The assessment and mitigation of an organization's carbon footprint is a serious undertaking that requires investment resources and time. It is now becoming critical for most companies to have a comprehensive and meaningful carbon reduction strategy – this applies to both large visible companies, in response to their stakeholders, and to smaller companies that may be part of the supply chain.

Some key elements need to be considered when reviewing your carbon footprint:

1. Companies must have a full understanding, in quantifiable terms, of both their upstream and downstream emissions before they start to implement a response.

2. Companies should consider following three steps when devising a carbon reduction strategy: reduce energy consumption; switch to non-fossil fuels, and offset carbon emissions.
3. Companies should consider engaging their key stakeholders in their carbon reduction strategy, including employees, suppliers and customers.

Currently we see a lot of good practises emerging that can be adapted to other businesses. At this stage the greatest challenge faced by organizations is to change the mindset and behaviour of employees, suppliers or customers. Those companies that understand such a challenge exists – and are willing to invest in a carbon reduction strategy – are the companies best able to shape an appropriate business response and seize the opportunities along the way.

Glossary and abbreviations of 'climate change' terms

Carbon Disclosure Project	A not-for-profit organization focussed on the implications for shareholder value and commercial operations presented by climate change.
Carbon footprint	The total amount of GHG emitted due to operations (individual or organization). Scope can include direct and indirect emissions.
Carbon neutral	Where the total life-cycle of an individual, business, product or process makes no net contribution of GHG to the atmosphere.
Carbon offsetting	The process of reducing the net GHG emissions of an individual or organization, either by their own actions, or through a carbon-offset provider.
Certified Emissions Reductions (CERs)	A unit of GHG reductions that has been generated and certified under Article 12 of the Kyoto Protocol, the Clean Development Mechanism (CDM).
Clean Development Mechanism (CDM)	A mechanism of the Kyoto Protocol for reducing emissions through implementing projects in developing countries. The CDM aims to address the sustainable development needs of the host country, and to increase the opportunities available to reduce emissions.
Climate change	Long term global changes to the earth's climate caused by man-made GHG emissions.
CO ₂ e	The equivalent amount of carbon dioxide that would produce the same greenhouse effect of any combination of GHGs.
Direct emissions	GHG emissions produced by an individual or organisation.
Emission reductions	Emissions reduced by reducing consumption, or the use of less polluting alternatives such as renewable energy.
Energy efficiency	The amount of energy (including renewables) consumed per unit (e.g. employee; GDP; profit; amount of goods, services)
Greenhouse Gas (GHG)	Gases responsible for retaining a portion of the sun's energy within the atmosphere thereby contributing to global climate change when concentrations are increased.
Indirect emissions	GHG emission produced in the process of delivering products and services consumed by a business and organisation, or caused by its products and services. Often split into electricity and other indirect emissions.
Regulated markets	Carbon markets established under the Kyoto protocol to permit the trading of Certified Emissions Reductions (CERs) through the United Nations 'Clean Development Mechanism' (CDM).
Renewable energy	Energy generated from resources that are unlimited, rapidly replenished or naturally renewable such as wind, water, sun, wave, biomass and refuse, and not from the combustion of fossil fuels.
UN Climate Change Conference	The 13th annual Conference of Parties (COP13) of the UN and Meeting of Parties (MOP) to the Kyoto Protocol, hosted by the Government of Indonesia in Bali, with over 180 countries represented aimed at agreeing a roadmap to succeed the Kyoto Protocol.
Verified Emissions Reductions (VERs)	Any unit of GHG generated outside of the Kyoto Protocol for use in the voluntary carbon markets. There are numerous sets of criteria against which VERs are "verified" that affect the market price.
Voluntary Carbon Standard (VCS)	The VCS aims to provide a robust, global standard for voluntary offset projects so that carbon offsets that businesses and consumers buy can be trusted and have real environmental benefits. Established by the International Emissions Trading Association (IETA), WBCSD and the Climate Group.
Voluntary markets	Carbon markets established outside of the Kyoto Protocol. They have less bureaucracy and administration fees but are less well regulated.

About KPMG Global Sustainability Services™

KPMG Global Sustainability Services™ (GSS) provides Corporate Responsibility (CR) related services to help businesses and organizations better understand, improve and report on their environmental, social and ethical performance.

KPMG GSS™ practises have over 300 professional staff working in 35+ countries worldwide supported by the wider KPMG network with over 100,000 professionals in 150 countries. Our rapid growth in the last two years reflects the growing demand for services in this field.

We employ professionals with expertise in the services we deliver, expertise that is maintained through participation in international initiatives in sustainability and through developing solutions with clients.

We have been influential in driving forward the sustainability agenda through our tri-annual International Survey on Corporate Responsibility Reporting and other publications. We also work with leading sustainability organizations such as the World Business Council for Sustainable Development (WBCSD), Global Reporting Initiative (GRI), and standard setting bodies (AccountAbility).

We work within KPMG multi-disciplinary teams with backgrounds in business risk, compliance, finance, tax, audit and certification.

We work closely with KPMG's global sector-specific centers of excellence and have extensive in-house knowledge and experience in various industries.

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More information

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