



# Climate Change

A clearer view

KPMG LLP (UK)



Providing insight and strategies to help organisations understand and manage the business implications of climate change



# Chairman's foreword

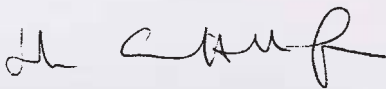
Over the years, KPMG has established a strong record of environmental management. But we know from our own experience and from working with clients, that planning the best action to combat climate change is far from simple. Like me, you may have found yourself asking: where on earth do I start?

The first problem is getting to grips with the facts. Scientists seem to largely agree that climate change is real and that human activity is a significant cause of global warming. That much is clear.

But politicians across the globe are struggling to reach a coherent position in response to the science. As a result, policy making and regulation is inconsistent and it's difficult to predict how they will develop in the years ahead.

This poses a problem for business. How can we plan our own response? How, for instance, can we make sensible decisions about the merits of one low carbon strategy over another?

Yet companies must act – to protect their own growth, to meet the expectations of their investors, customers employees and protect the environment. Climate change can no longer be seen as an environmental problem, it is a key economic issue that needs to be dealt with accordingly.



**John Griffith-Jones, UK Chairman and Senior Partner KPMG LLP (UK)**

# Introduction

Business is under pressure to play a lead role in tackling climate change. If companies take action now it will allow the realisation of significant efficiency gains and cost savings.

Recent research by KPMG in the UK indicates that many have only just begun to think through the implications of climate change for their own corporate strategies and most would welcome better guidance – from politicians and their business advisors – on how to plan ahead. 86 percent of business leaders interviewed did not have a strategy in place for responding to climate change.

One of the main problems is finding clear and simple information about climate change. There's a welter of opinions, facts, suppositions, forecasts and projections and some are highly contradictory.

At a time of considerable uncertainty, we hope that this series of white papers from KPMG's Carbon Advisory Group will provide some food for thought and insights to help you in developing and implementing appropriate responses.

In that spirit, the purpose of this first paper is to set the scene by providing, in one place, some of the important information that will help you understand the current debate on climate change and where the policy makers are up to in devising ways to tackle global warming through legislation, regulation and taxation.

Subsequent White Papers in this series will look in greater detail at some of the ways in which businesses can respond. Above all they will demonstrate that taking the right action can help businesses improve their performance so that they can continue to grow in a sustainable way.

**Richard Sharman, Lead Partner  
KPMG's Carbon Advisory Group**

## Upcoming White Papers in this series will look at:

- Offsetting
- Carbon Efficient Supply Chain
- Regulation
- Measurement
- Tax issues and implications
- Accounting for Carbon

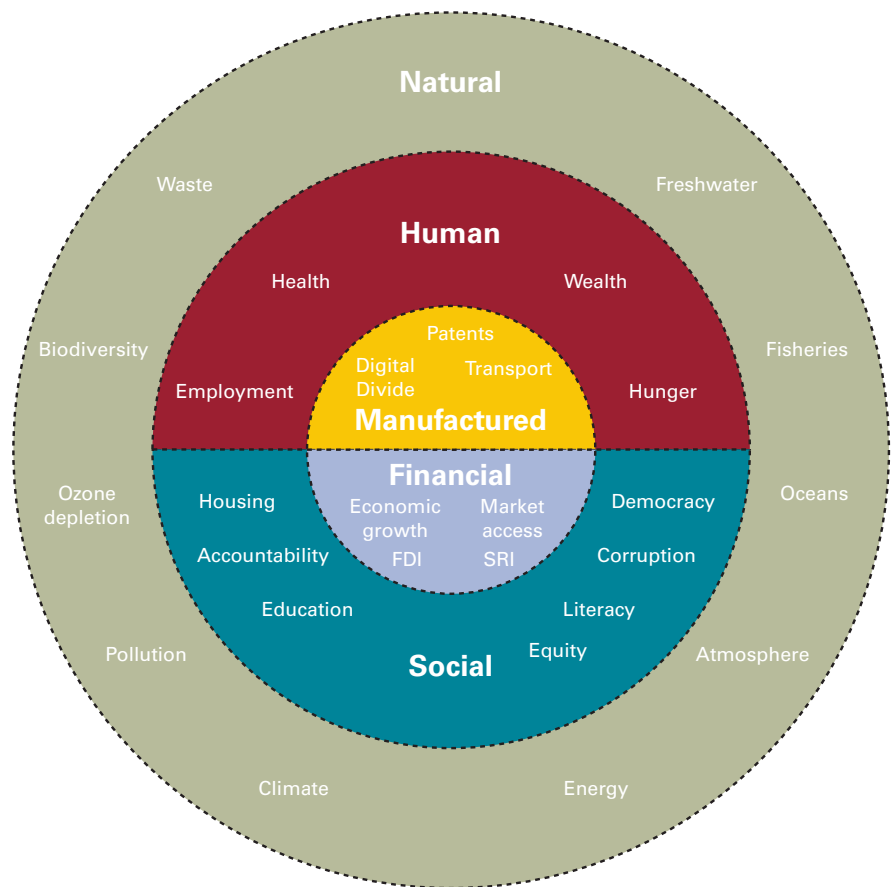


# Seeing sustainable development in the round

Climate Change is forcing organisations to look at growth in a more holistic way. It is important to understand that we can only sustain economic growth for the benefit of society if we understand and take into account a wider range of impacts, risks and potential benefits.

If sustainable cost savings and financial benefit are to be realised here people need to understand the bigger picture and slow down the rate of consumption.

The message is pretty stark: If we don't slow down the rate of consumption we will not be able to preserve our quality of life in a sustainable way.



Source: Forum for the Future – Five Capitals Model

## Sustainability – key facts

**Population:** 6 billion rising to 9 billion by 2050 – tripling in the developing world; little change in developed countries.

**Consumption:** 20 percent of the world's population account for 86 percent of total private consumption.

**Standards of living:** In 2002, 1.2 billion people earned less than \$1 a day; 2.5 billion earned less than \$2.

**GDP:** Since 1975 per capita gross domestic product has grown 280 percent in Asia and dropped 17 percent in Africa.

**Water:** By 2050, 54 countries will be short of water

**Electricity:** Demand for electricity will be four times higher in 2050 than in 2002

**Energy:** By 2050 the world will need to generate GDP using only half the energy used in 2002, but energy use has grown in the last 30 years by 20 percent.

**Carbon:** To minimise the impacts of global temperature increases, it is necessary to limit CO<sub>2</sub> concentrations to between 450ppm and 550ppm. This should limit the temperature increase to 2°C above pre-industrial levels. Currently we are at around 430ppm.<sup>1</sup>

**Costs:** The Stern report, commissioned by the UK Government, estimated the cost of stabilising CO<sub>2</sub> at 500-550ppm can be limited to 1 percent of Global GDP by 2050. It said the cost of doing nothing could be 20 percent of Global GDP.<sup>2</sup>

<sup>1</sup> European Environment Agency, Atmospheric greenhouse gas concentrations (CSI 013) Assessment draft Nov 2006.

<sup>2</sup> Stern Review on the economics of climate change. 2006

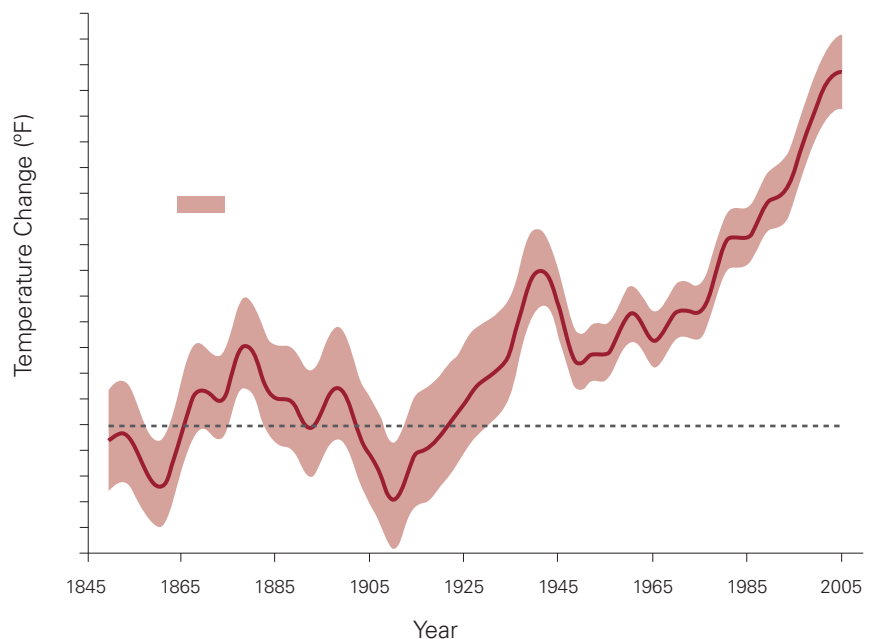


# What is the science saying?

In the ongoing debate over climate change there is, increasingly, a great deal of agreement between scientists on the nature of the problem, its causes and its likely effects. Here are some of the main points of consensus:

- In 2007, the 3,000 scientists on the Intergovernmental Panel on Climate Change (IPCC) said it was 90 percent probable that the 'effect of human activity [on the climate] since 1750 has been one of warming'
- Human activities such as burning fossil fuels are causing an increase in the atmospheric concentration of greenhouse gases (GHGs)
- The six main greenhouse gases are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride
- According to the IPCC, warming of the climate system is unequivocal. The temperature of the earth's surface rose by  $>0.7^{\circ}\text{C}$  in the last century. By 2100 best estimates indicate a rise of between  $1.8^{\circ}\text{C}$  and  $4.0^{\circ}\text{C}$ , based on a range of different economic and technological grown scenarios<sup>3</sup>
- Likely consequences of climate change include: flooding, droughts, sea level rises, food shortages, loss of tropical forests and the spread of disease.

Global Surface Temperature Trends 1850-2005



Source: Brohan, P., J.J. Kennedy, I. Harris, S.F.B. Trett, and P.D. Jones. 2006. *Uncertainty estimates in regional and global observed temperature changes: a new dataset from 1850*, Journal of Geophysical Research 111: D12106, doi: 10.1029/2003JA009974.

## Arguments against the science

Climate change is good for us – for instance, some forms of agriculture benefit from higher temperatures.

There's evidence that the climate has experienced bigger swings from hot to cold and cold to hot in the past.

Climate change is being caused by the sun's rays carbon emissions are the result not the cause of increased temperatures.

No-one can say exactly how much human activity is contributing to climate change and, anyway, climate science in general is very uncertain

<sup>3</sup> IPCC Fourth Assessment Report. Working Group 1 Report "The Physical Science Basis": Feb 2007

# Policies to tackle climate change

Action to tackle climate change is underway at a global level, regionally, nationally and locally. But agreement is not always universal. In December 2007 governments will meet in Bali for an important United Nations conference to try to agree action on climate from 2012 onwards. Here's where things stand at the moment:

## Global action

**The Kyoto Protocol** sets legally binding targets for the reduction of the six main greenhouse gasses on all those Annex 1 countries that have ratified the Treaty (Annex 1 countries comprise the worlds developed nations and economies in transition). The overall target is to cut Annex 1 country emissions by 5.25 percent from 1990 levels between 2008 and 2012. The EU has agreed to an 8 percent target. The USA and Australia are the only two Annex 1 countries not to have ratified the Treaty.

Under the Treaty, there are three 'flexible mechanisms', which aim to help achieve these cuts at least cost:

- **Joint Implementation – an Annex 1 country invests in a project to reduce greenhouse gases in another Annex 1 country to generate so called Emissions Reduction Units(ERUs)**
- **Clean Development Mechanism – an Annex 1 country invests in an emission reduction project in a developing nation to generate**

**Certified Emission Reductions (CERs).** These are called Removal Units (RMUs) if the investment is in agriculture and forestry practices that sequester carbon

- **Emissions Trading – an Annex 1 country can sell its own emission rights under the Treaty (Assigned Amount Units, AAUs) directly to another Annex 1 country.**

Options for post-Kyoto are the subject of much debate. In early September, the APEC countries agreed an "aspirational goal" to increase energy efficiency by a quarter by 2030. This and other ideas will be debated at the annual international meeting of Kyoto parties in December 2007.

## European Action

In March 2007 EU leaders endorsed proposals to reduce greenhouse gas emissions by at least 20 percent by 2020. The EU strategy includes a number of important threads.

The Emissions Trading Scheme (ETS) is the centrepiece. It covers:

- 11,500 energy intensive installations accounting for 2.2 billion tonnes of CO<sub>2</sub> emissions or some 44.7 percent of total emissions in the 25 EU states
- Two phases initially: 2005 – 2007 and 2008 – 2012. Further five year phases are expected to be added.

The EU ETS is a "Cap and Trade" scheme. Emission 'allowances' are given to each installation and operators are obliged to either keep emissions below the permitted level or buy allowances from other participants who have undershot their own cap.

The airline industry is not part of the scheme yet, but will be in 2011.

The Energy Performance of Buildings Directive is another key thread, requiring Energy Performance Certificates to be provided to new buyers and tenants of domestic, commercial and public buildings, and minimum standards for new buildings and major refurbishments from January 2006.

### Carbon Markets – key statistics

- 26.4 billion tonnes of CO<sub>2</sub> is emitted globally each year (2000-2005), mostly via burning coal, oil and gas for energy<sup>4</sup>
- US\$29.8 billion traded in 2006; forecast US\$2 trillion by 2012<sup>5</sup>
- Market for low-carbon energy products is likely to be worth US\$500 billion per year by 2050<sup>6</sup>



<sup>4</sup> Washington DC: World Resources Institute, 2005

<sup>5</sup> State and Trends of the Global Carbon Market, The World Bank, 2007

<sup>6</sup> Stern Review on the economics of climate change. 2006

The EU is also drafting legislative proposals for binding targets to increase the share of renewable energy to 20 percent by 2020 and to include a 10 percent share of biofuels in petrol and diesel by 2020. The Commission is also considering mandatory enforcement of the long-standing voluntary target on emissions from new cars and vans of 120gCO<sub>2</sub>/km.

## UK action

The UK Government is currently consulting on its Climate Change Bill and proposals to create a long-term framework for reducing emissions. It has set the following targets:

- 20 percent reduction by 2012
- 26 – 32 percent by 2020
- 60 percent by 2050.

HM Treasury is weighing up the use of market pricing and tax to achieve the required cuts.

## What's next?

The Climate Change Levy and Agreements are currently subject to review by the House of Commons Environmental Audit Committee and National Audit Office. The success of the CCAs is being challenged, and this review could pave the way for radical changes to this area of UK policy.

The recent Energy White Paper – “Meeting the Energy Challenge” – sets out the Government’s international and domestic energy strategy. It paves the way for regulation and support including:

- The Carbon Reduction Commitment, which will be a mandatory trading scheme for organisations above a certain electricity consumption threshold
- Widespread introduction of ‘smart metering’
- Support for low carbon technology
- Strengthening the renewables obligations and introducing a Renewable Transport Fuel Obligation
- Development of carbon capture and storage technology.

Many companies are trying to anticipate targets to avoid the pressure of tighter emissions regulation in the future.

The UK government is also establishing a pioneering Code of Practice for consumer offsetting to help try and build some market integrity. This is due to be operational in the autumn of 2007.

## US action

The current Congress has seen the introduction of more than 125 bills, resolutions, and amendments specifically addressing climate change, many calling for cap and trade emissions trading. However, it is at the State level where the lead is being taken on developing policies that may provide models for future national efforts. Some examples include:

- The Chicago Climate Exchange is a voluntary legally binding trading scheme for businesses and public sector organisations
- The Western Climate Initiative covering 6 western states of the US and Canada, have committed to a reduction of 15 percent below 2005 levels using multi-sector market-based mechanisms
- The Regional Greenhouse Gas Initiative, which covers nine North Eastern and Mid-Atlantic states, and will introduce a cap and trade programme for electricity generators.



# The business response

Companies can choose one of two routes in meeting current and likely changes in climate regulation – Compliance or Competitive Advantage. The first is a minimum response. The second promises benefits in terms of operating efficiency and reputation but requires a shift in thinking.

None of this is easy. Regulation and legislation remain relatively untested in this area. Carbon reporting remains in its early stages and there are a range of, sometimes conflicting, protocols and standards that companies can use.

At KPMG we see four key ways in which businesses can work to meet their climate change obligations whilst at the same time reducing cost and maintaining a profitable business model.



Source: *Is your business ready for life in the low carbon economy?* KPMG LLP (UK) September 07

**“Climate change will remain a permanent and powerful force shaping the economic landscape. The businesses that prosper will be those that recognise its importance and inexorability.”**

**Lehman Brothers, report on the implications of climate change for business and financial markets, January 2007**

## Further reading

To learn more about the climate change debate you may be interested in some further reading

**Is your business ready for life in the low-carbon economy?** KPMG LLP (UK), September 2007

**Climate Change Business Leaders Survey** KPMG LLP (UK), June 2007

**An inconvenient truth** Al Gore, 2006, Rodale Books

**The Business of Climate Change II** Lehman Brothers, September 2007

**CDP5 report** Carbon Disclosure Project, September 2007

# Other KPMG Thought Leadership

As the climate change debate continues and the impact of increasing carbon emissions becomes more evident, it is essential for companies to understand the risks and opportunities and more importantly to know how to manage those risks. KPMG's original thinking can help lead the way in addressing those areas of concern and can provide insight into some of the key questions that businesses may be asking.

To receive electronic copies or additional information about any of the documents below please e-mail [ukfmrasmktg@kpmg.co.uk](mailto:ukfmrasmktg@kpmg.co.uk), log on to [www.kpmg.co.uk](http://www.kpmg.co.uk) or contact your local KPMG office



## Is your business ready for life in the low carbon economy?

An introduction to the range of different issues facing companies and a brief look at how these can be approached in order to reap economic benefit.



## Climate Change Business Leaders Survey

A Survey of senior executives from the FTSE350 and equivalent private companies, to find out how the business leaders of today are responding to the issues and challenges surrounding climate change.



# Our commitment to the environment

KPMG are dedicated to managing and reducing their impact on the environment.



KPMG has been awarded a coveted 'Big Tick' for the positive impact our CSR programmes have in the community and the environment by Business in the Community (BITC).



With a score of more than 95 percent, KPMG has been awarded this top tier recognition for ongoing commitment to responsible business practices; the Firm has also achieved Platinum status in the Environment indices, which form part of the overall Index.



KPMG has been named once again as a 'Top 100' firm in the Business in the Community annual Corporate Responsibility Index. KPMG was one of the most improved companies, increasing its ranking from 60th in 2006 to 28th position in 2007, receiving an overall score of 94 percent.

KPMG were recognised for 'Outstanding Performance' in the environmental arena, scoring 100 percent

**Contact us:**

**Richard Sharman**

Lead Partner  
richard.mas.sharman@kpmg.co.uk  
+44 (0) 20 7311 8228

**Adrian Wilcox**

Carbon Audits and Accounting  
adrian.wilcox@kpmg.co.uk  
+44 (0) 20 7694 5165

**Frank Sangster**

Environmental Tax and Incentives  
frank.sangster@kpmg.co.uk  
+44 (0) 20 7311 2448

**Rob Cormie**

Corporate Finance  
rob.cormie@kpmg.co.uk  
+44 (0) 20 7311 4606

**Andrew Cox**

M&A Transaction Support  
andrew.f.cox@kpmg.co.uk  
+44 (0) 20 7311 4817

**Tim Jones**

Carbon Efficient Supply Chain  
timothy.jones@kpmg.co.uk  
+44 (0) 20 7311 2657

**Trevor Wiles**

Trading and Offsetting Investigations  
trevor.wiles@kpmg.co.uk  
+44 (0) 20 7311 3785

**Jonathan Coltman**

Restructuring  
jonathan.coltman@kpmg.co.uk  
+44 (0) 20 7694 3747

**Naseem Walker**

Carbon Management  
naseem.walker@kpmg.co.uk  
+44 (0) 20 7694 4274

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