DISCUSSION PAPER

Climate Change Adaptation

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ACCA held the fourth in its series of 'Friday Forums' on 4 September 2009 on climate change adaptation.

The event was chaired by Mark Goldthorpe, project officer (business) of the UK Climate Impacts Programme (UKCIP), which provides tools and resources to help organisations assess how climate change might affect them, so that they can prepare for its impacts. The speakers were:

- **Dr Richenda Connell, founder and chief technical officer of Acclimatise, an organisation which advises businesses with large fixed assets and complex supply chains, as well as their investors, on how to make their strategies, processes, and assets resilient against climate change**
- **Shanti Majithia, energy and climate strategy manager, National Grid; Shanti is a fellow of the Royal Statistical Society, and his responsibilities at National Grid include taking forward the agenda for climate change adaptation.**

The key points raised at the event are summarised in this paper.

CLIMATE CHANGE ADAPTATION

INTRODUCTION

Mark Goldthorpe explained that the climate change debate is gathering real pace as rapidly developing scientific understanding leads to a greater appreciation, and acknowledgement, of the possible effects of climate change on every aspect of human life. Developing the debate further, in March 2009 leading experts gathered at the Climate Change International Scientific Congress in Copenhagen, one of the main meetings held in the run up to COP15, the UN Congress on Climate Change (in December 2009) and the next 'Kyoto' in terms of setting global climate change targets. At the March Congress, six key messages emerged.

- Greenhouse gas (GHG) emissions are already near the upper limit of the range of scenarios projected in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007).

- The disruptive effects of climate change will be difficult to cope with – in particular, the oft-quoted (and now apparently inevitable) 2°C rise above pre-industrial temperature levels will cause significant problems across many areas.

- There is a real need, therefore, for a long-term strategy, both for rapid, sustained and effective carbon reductions and for adaptations to the unavoidable impacts of climate change.

- Climate change will affect people differently around the world, and across the generations, as any mitigation undertaken now will not start to reap benefits until around the 2040s onwards. Strategies need to take inevitable climate change into account as well as the differing geographical impacts.

- Inaction in response to climate change is inexcusable, as tools for making resilient decisions in the face of climate change uncertainties do exist.

- Of prime importance, now, is the need to address the risks posed by inevitable climate change and develop strategies to realise the opportunities.

Regarding this last point, a very significant constraint, especially for business, is the usability of knowledge generated by climate change scientists, whose findings are often hard to comprehend fully or difficult to apply in more specific contexts. Defra (the Department for Environment, Food and Rural Affairs) recently launched new climate change projections (UKCP09), showing the range of possible changes to climate in the UK over this century. These help meet the needs of stakeholders, providing greater detail and allowing users to interrogate the information in ways that support making decisions about adaptation. The UK Climate Impacts Programme (UKCIP) has been intimately involved in the development of the projections, having been funded by Defra since 1997 to help UK decision-makers understand the probable impacts of climate change and the opportunities for adaptation – and it is on adaptation that this report focuses.

CLIMATE CHANGE ADAPTATION – KEY DRIVERS

In the opinion of speaker Dr Richenda Connell, of Acclimatise, climate change adaptation has, to date, been largely neglected; in the past, 'adaptation' has been regarded by some almost as a 'dirty word' when compared with mitigation, as it implies that business can accept and cope with climate change impacts without addressing the mitigation agenda. Given the inevitability of climate change, however, adaptation is now becoming seen as an important issue, and businesses are often driven to consider the issues seriously by the actions of key stakeholders – rather than by the physical manifestations of climate change itself.

Although businesses are now 'waking up' to the fact that they have to plan for a changing future, an underlying issue is that decisions can no longer be based only on historical records of climate conditions but must also take account of possible scenarios of future climate conditions. This approach is difficult for many involved in long-term planning, but is essential, especially for those organisations building and managing large fixed assets designed to last for decades, or needing to adapt complex supply chains spanning many regions and populations.

Physical drivers

Many businesses still do not fully appreciate the fact that climate change is already happening, or understand the potential risks of its effects on their performance. These risks are many and varied, and include changing market demand; asset deterioration; reduced output, productivity and efficiency; increased risk of resource-focused community conflict; and environmental damage and consequent litigation risk.

In particular, few in the business community appreciate the real damage that will be caused by even small increases in temperature, which will affect the supply of water, energy and food. Such a rise will also lead to rapid changes in the 'return periods' for climatic events (such as major flooding or heatwaves), which have proved very expensive in the past. The hot summer of 2003, for example, cost EU agriculture an estimated €13 billion, but was considered an exceptional event with a very long 'return period' of 1 in 500 years. By 2040, such hot summers may be considered normal, ie they are expected to occur in one in every two years, and will bring costs to businesses unless they adapt.

Multiple small effects – as well as these widespread 'one-off events' – will also combine to cause many phenomena with wide-ranging outcomes. One outcome of specific interest to accountants will be the increased wear and tear on assets, some of which will have their useful lifetimes shortened considerably unless actions are taken (for instance, assets sited in vulnerable coastal regions, where rise in sea level and coastal erosion are predicted). Furthermore, international accounting standards require a company to recognise decommissioning liabilities (which are treated as additions to debt) as soon as the decommissioning obligation is created, normally at the time the facility is constructed. We can find little evidence that companies are assessing and reporting the impacts of changing climatic conditions on the decommissioning costs for their existing and planned assets. If this is correct then it is possible that companies may be underestimating their future debt liabilities and failing to meet reporting obligations.

These physical drivers clearly show that contingency planning is no longer sufficient when a rare event becomes commonplace, and that mitigation will have no effect on these major impacts in the next couple of decades. Adaptation is therefore essential.

Regulatory, financial and legal drivers

Alongside the physical effects of climate change, regulatory, financial, and legal issues are equally relevant for many businesses, especially those yet to experience any serious climate-related problems. Regulation in the UK stems from the UK Climate Change Act (the first act of its kind in the world), which gives government the right to ask organisations how they are preparing for climate change, and there will be further regulation to come, both from the EU and the UK.

Financial drivers come primarily from institutional investors and banks. Many investor networks are now asking for better disclosure of preparation for climate change, which is increasingly seen as an investor-relations issue. As part of this disclosure, governance of climate change risks is coming under closer scrutiny, and investors also want to see practical evidence that companies are managing risk effectively. The banking sector has been particularly transformative. For example, the EBRD (European Bank for Reconstruction and Development) has recently launched a 12-month assignment to develop methods for understanding climate risks, and the probable impacts of their realisation on its operations, so that projects seeking EBRD funding can be made resilient to climate change where appropriate. This, of course, will mean that organisations approaching the bank for finance will need to consider climate risks. In fact, a number of other important banks, including Barclays, are now starting to consider the risks posed by climate change to their investments, and we can expect that over time they may follow the example of the EBRD.

The insurance sector must also be acknowledged as one of the earliest to talk about the climate change issue, and is a particularly powerful voice. Insurance premiums, for example, have risen in the Gulf of Mexico over the last year owing to a bad hurricane season, with the result that some oil and gas companies have resorted to self-insurance.

Legal drivers are also now contributing to the argument for adaptability, as climate change starts to be redefined as 'reasonably foreseeable'. Professional advisers – including consultants, designers, engineers, and architects – now have a duty to consider climate change impacts when giving advice to their clients, and accrued liability may be one of the issues emerging as climate changes start to have real effect. The 'reasonable foreseeability' of climate change also means that company directors have a fiduciary responsibility to consider it.

Why is adaptation so important?

As already mentioned, many drivers now exist that are persuading businesses to consider climate-change adaptation, and there are real benefits for those that manage to adapt successfully. Adaptation offers the chance to deal with climate risks in a planned, proactive and cost-effective manner, rather than reactively, event by event. As a result, returns to lenders and investors are better safeguarded, while environmental, social and reputational risks are avoided. Properly formulated adaptation strategies can also help improve the adaptive capacity of the local communities in which a business operates. But the bottom line is that proactive adaptation can save money. The World Bank and US Geological Survey have estimated that worldwide economic losses caused by the natural disasters in the 1990s could have been reduced by $280 billion if $40 billion had been invested in preventative measures.

Businesses must now build climate resilience into their planning. It will require hard work and investment by the private sector, but getting it right represents a more secure business future. For the early movers, there will be significant business opportunities.

CASE STUDY: NATIONAL GRID

National Grid is an international electricity and gas company, and one of the largest investor-owned energy companies in the world. It owns the high-voltage electricity transmission network in England and Wales, and operates the system across Great Britain, also owning Britain's high-pressure gas-transmission system. National Grid also distributes electricity and gas in the US, and is the largest power producer in New York State.

Energy companies are at the forefront of climate change adaptation. Energy is essential to society, and energy needs will undoubtedly continue to grow; energy production is, however, particularly vulnerable to the effects of climate change and it is in the energy sector where these effects will be felt first.

Shanti Majithia, National Grid's energy and climate strategy manager, described the way his organisation has developed an adaptation strategy, based on scenarios (developed with The Met Office) that predict the energy needs and climatic constraints operating over the next 10 to 50 years. In order to develop scenarios that were relevant and usable, Shanti stressed the importance of linking scientific data to business planning so that the information provided could reveal the level of detail required. For example, many climate change estimates apply to regions of England and are of little use when National Grid needs information on individual cities.

By presenting a detailed analysis of National Grid's blueprint for adaptation, Shanti also showed the inherent complexity involved when dealing with so many different challenges at once – such as protecting assets from climate damage, bringing new sources of energy on stream, and changing the behaviours of end users. A key challenge is to manage the degree of uncertainty embodied in the data generated, in order to assess the likelihood of possible outcomes, achieve an appropriate level of regional detail, and thereby plan more effectively for extreme events.

The resulting action plan combines mitigation and adaptation. Mitigation is being achieved through greater use of renewables, greater energy efficiency, and by lowering emissions. Adaptation is achieved by generating a more accurate appreciation of climate patterns, and of patterns of supply and demand. One aim is to create practical, predictive tools that can estimate the impact of the worst types of weather condition on National Grid's business: tools that can be used by the investment planning team.

Throughout this entire strategic planning process, knowledge transfer is essential, and Shanti described how information is presented to National Grid's climate change team, and then shared between different departments within the organisation. This ensures that different teams have knowledge that is meaningful for their work and that is regularly updated, which is highly relevant because the previous 30 years' data are now considered of little use, although they are taken into account when looking 10 years ahead. The ultimate aim is to produce a readiness assessment that outlines the impact of future change on National Grid, and a full analysis of National Grid's own impact on climate change.

KEY DISCUSSION POINTS

A summary of the key discussion points resulting from the Q&A session is given below.

Engineers are often crucial in translating climate change strategies into practical actions – should contracts, therefore, be awarded only to firms whose engineers can demonstrate adaptive capabilities?

Engineers are the key to 'cracking' the adaptation of large fixed assets, but to date their response to the issue has been variable. The engineering profession has always based its decisions on long records of observed measurements – including climate data, rather than on models of the future, and has struggled, more than most professions, to break out of this historical approach. Professional engineering bodies have an important role to play in changing this mindset, but pressure from clients, especially regarding asset specifications and contracts, will also be important.

As an example, National Grid already embeds climate change adaptation into its procurement guidelines, undertakes life cycle reviews, and holds seminars for its asset managers and procurers as part of a knowledge-transfer exercise, bringing climate adaptation into the procurement process.

Regarding adaptation, should businesses plan for success or plan to fail? In other words, plan to adapt successfully to the effects of climate change, or aim to mitigate the effect of disasters as much as possible?

This is a much-debated issue, and the answer must be to aim for a balance, but a balance informed by a better understanding of the timescales underpinning the climate change debate.

Currently, business focus is on mitigation, and much legislation is also based on mitigation strategies. Mitigation is essential if we are to avoid the worst effects of climate change from mid-21st century onwards. But with climate change already built into the system, today's mitigation activities – valuable as they are – will begin to take effect only after about 2040, a timeframe way beyond the forward planning of most organisations. The impacts of climate change, however, are already affecting business and these impacts will intensify no matter how much mitigation may have been implemented, and so adaptation action is essential as well.

Knowledge transfer plays a crucial role here, as it is apparent that many within the business community (and society at large) still do not really understand the issues, or cannot access information in a way that is relevant to them. There is a tendency to believe (or hope) that scientists will find a 'silver bullet' capable of resolving climate change issues, just as the banning of CFCs has helped to reverse some of the damage to the ozone layer. But given the complex nature of climate change, and the fact that so much change is already taking place, this will simply not happen. Knowledge transfer brings a much better understanding of the issues and thereby enables everyone both to mitigate and adapt to the changes that will come.

Should climate risk disclosure become a mandatory reporting requirement?

Government bodies, such as DEFRA, are beginning to review reporting guidelines and existing disclosure instruments to assess whether they provide sufficient hooks to report climate risks properly. A redefinition of existing requirements can also be useful – the Companies Act, for example, asks that reports include an analysis of 'forward-looking risks', of which climate change is now definitely one. As these and other guidelines were written before climate change was such an important issue, however, there is a real need to review these instruments to make sure climate risk is reported properly and that companies understand that it is an issue on which they should be reporting, so that it can become a properly understood mandatory requirement.

When considering mitigation strategies, how should businesses consider the effects of India and China upon climate change?

The emissions produced by India and China have been much reported and cannot be ignored, but there is a massive equity issue when we consider how much GHG we and others in the developed world have emitted – and continue to emit.

This question is also part of the debate about how to mitigate climate change without curtailing development, especially in the world's poorest regions. India's stated objectives, for example, are to develop the nation so as to raise the population out of poverty, without repeating the mistakes made by other countries. Both China and India are now closely involved in climate change debates and – in contrast to their role at Kyoto – will take an active part in the COP 15 negotiations. We should therefore not ignore the impacts resulting from the rapid economic growth of India and China, and watch carefully to see what is promised and what is delivered, but neither should we use their emissions as an excuse not to implement our own adaptation or mitigation strategies.

ABOUT ACCA

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