



EXECUTIVE SUMMARY

1. Significant carbon dioxide reduction has already been delivered in the UK cement industry and with its carbon strategy the UK cement industry is aiming for further savings. However, further CO₂ reduction will only be made with the correct regulatory and market frameworks where new investment is not penalised or hampered.
2. The lessons from domestic instruments and the EU ETS suggest that the correct framework is emissions trading rather than taxation. Consequently, the cement industry would like to see the removal of the double regulation presented by the climate change agreement/climate change levy to remain with a single measure based on emissions trading. In doing so the UK would represent a model of efficient climate change regulation that could be used in communication with international partners.
3. Internationally every effort should be made to avoid transferring production, and therefore emissions, overseas. Transitional arrangements could be put in place in the interim toward a global trading system.
4. Industries should not be expected to reduce emissions beyond their abatement potential. Additionally, product life cycles and whole building performance should be taken into account when designing schemes and setting targets.
5. International clean development mechanisms could be supplemented using domestic project mechanisms.
6. Further efforts are needed to engage countries with large emissions to reduce their impact on the global climate. Moreover, initiatives such as AP6 should be more comparable with the Kyoto protocol.

International Climate Change policy and the UK Cement industry

1. The UK Cement Industry. The British Cement Association is the trade and research organisation that represents the interests of the United Kingdom's cement industry in its relations with Her Majesty's Government, the European Union and relevant organisations in the United Kingdom. The members of the BCA (Buxton Lime Industries, Castle Cement, Lafarge Cement UK and CEMEX UK Cement) are the major domestic manufacturers of Portland Cement producing over 90% of the cement sold in the UK. Additionally, BCA supplies services concerning climate change issues to Quinn Cement.
2. Energy represents an increasing proportion of the variable costs of cement manufacture (>35%) and it is therefore a primary concern of the industry to take all cost effective measures to improve energy efficiency and thereby reduce its emissions of carbon dioxide.
3. The cement industry supports the principle of emissions trading. Through their parent companies, Lafarge Cement UK, Castle Cement, and CEMEX are committed

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to carbon reductions through the World Business Council for Sustainable Development Cement Sustainability Initiative, (WBCSD CSI). In addition, Buxton Lime Industries has undertaken to adopt the commitments within the WBCSD CSI.

4. Specific Inquiry Questions

4.1. What role should the UK Government play in driving international action on climate change? How effective a leader has the UK Government been?

4.2. To date, the United Kingdom has demonstrated leadership through the development of the UK CCL and ETS schemes and this has resulted in a range of benefits from carbon dioxide reductions to new experiences in climate change policies such as the establishment of a trading registry. However, there are still lessons to be learned:

4.3. The UK ETS and EU ETS are directed towards the same goals and provide a clear example of the "double banking", contrary to the EU and UK aim of "Better Regulation". This was highlighted by BCA in its response to the Hampton and Davison enquiries. These two trading schemes are incompatible, place burden on industry, and generate carbon credits that require unnecessary double accounting arrangements. The advent of the Energy Performance Commitment could further add complexities in an already complex legislative framework

4.4. In order that the UK is a model for other member states the overlapping climate change policy measures need to be reviewed and rationalised.

4.5. The UK should also take a lead in developing a global trading scheme. International agreement to ensure that UK industry is not unduly affected by the European regional approach is therefore necessary for industries that are subject to international competition such as cement. A global CO₂ market will ensure that there is a level playing field and ensure all citizens contribute to address a global problem.

4.6. Until the arrival of a global scheme the UK should protect the interests of the UK economy by advocating EU border tax adjustments on products arriving from non-carbon constrained economies. Border tax adjustment will propagate the transition to a global trading system more quickly in a field of environmental action where speed of action is vitally important. Border tax adjustment will also minimise the amount of 'carbon leakage' as production shifts to other countries from the UK.

5. Could climate change policy be better led or more effectively co-ordinated across Government departments in the UK?

5.1. Defra, Dti, ODPM and HM Treasury have all contributed to the development and implementation of climate change measures. Co-ordination between them, let alone the implementation of holistic and complimentary policies has proved elusive to date. Energy policy, building regulations, waste and climate change policies and environmental taxation currently each reside in a different



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government department. In order that further steps towards a more sustainable future can be made it is imperative that public policy is overseen, co-ordinated and guided from one point, rather than been scattered through a variety of government departments, each with differing agendas and priorities.

5.2. A coherent UK international policy seems a remote possibility while there is a clear lack of “joined-up” policy within the UK. It is hoped that the Office of Climate Change will elucidate such policies. However, at present the remit of this office is unclear and BCA would welcome further information.

6. How important are Kyoto’s binding GHG targets in driving technological innovation and the development of carbon markets? Could Kyoto-style national caps on emissions be usefully supplemented or even replaced by other forms of targets?

6.1. The UK has enough targets and goals and these could be rationalised. Importantly, the 2006 UK energy review recognised that the UK is well on target to meet its Kyoto commitment and as such does not need to take radical decisions to meet its international commitment. To ensure equity with cement industry colleagues in mainland Europe BCA urges UK Government to replace the aspirational goal of -20% CO₂ by 2010 with the UK Kyoto agreed improvement of 12.5%. Alternatively, Government’s aspirations could be modified to meet a 20% goal by 2012, consistent with Kyoto, and incorporating reduction in all greenhouse gases not just CO₂. In addition, BCA notes that carbon dioxide emissions from the UK cement industry are already more than 28% below the 1990 level¹. In accordance with the Climate Change Agreements the industry has already committed to meeting targets on fuel efficiency and waste derived fuel use, thereby demonstrating the cement industry’s commitment to climate change and waste recovery targets and illustrating that further caps on CO₂ emissions are not necessary.

6.2. Although the UK cement industry has made significant reduction in emissions since 1990 there are technical limits to the amount of abatement that can be made in the future. The FES-Carbon Consortium report² concerning the carbon dioxide abatement potential of certain sectors correctly identifies the limited potential for carbon dioxide in the cement sector. The cost curves in this report state that cost effective emissions savings are in the range of 0.3% to 0.5%. All technical potential savings are only a fraction greater. This is mainly because around 60% of cement industry emissions originates from the raw materials rather than the fuels. Consequently, some of the emission is essentially fixed by the laws of chemistry and thus places a limit on abatement even if all kiln fuel was switched

¹ 28% reduction in absolute carbon dioxide emissions between 1990 and 2005

² Industrial Sector Carbon Dioxide, A report for the Department for Environment, Food and Rural Affairs Produced by Future Energy Solutions and the Carbon Consortium, July 2005



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to biomass, which is a long way from happening due to legislative and market barriers.

7. Are current mechanisms for supporting technology innovation and transfer under the Convention and Kyoto adequate? What role has the Clean Development Mechanism played in the development and deployment of low carbon technologies in the developing world? How can further progress be secured?

7.1. BCA has limited experience concerning CDM as much of this work is coordinated via the international parent companies of the BCA member companies. However, BCA does believe that the use of project mechanisms should be extended to domestic projects. An example of this is the replacement of fossil fuel by alternative waste derived fuels in the cement industry. The cement industry already makes a valuable contribution³ to UK waste management although benefits could be expedited by replacing fossil fuels and diverting more waste away from landfill and incineration (which are not in the EU ETS) and do not provide valuable products in their disposal operations. The cement industry utilises the heat energy from waste fuels and does not create any waste ash for disposal. However, the critical criterion in favour of using waste derived fuels in the cement industry is that it avoids unnecessary emissions from landfill and incineration activities.

8. How can the Convention and Phase II of Kyoto better support the integration of climate protection measures with the poverty reduction and sustainable development goals of developing countries? To what extent could a focus on adaptation, energy access and security issues in international climate policy promote more concerted action by such countries?

8.1. All countries and all industries will need to adapt to climate change. The cement industry has good potential for the development of low carbon technologies but will need Governmental assistance. There is a role for government in supporting research to accelerate the development of new carbon abatement technologies, whether in research institutions or private industry. The cement industry is committed to a clear path of carbon dioxide reduction⁴ and has begun to investigate the opportunity for Carbon Capture and Storage (CCS). At present research into CCS is dominated by the Electricity Supply Industry (ESI) and oil companies. As one of the largest single point emitters of carbon dioxide with a

³ Thermal substitution was over 14% in 2005

⁴ Working Towards Sustainability – a report from the UK cement industry on its progress towards sustainability



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higher carbon dioxide concentration in the exhaust gasses than other industries the cement industry provides an ideal opportunity for CCS research. Government should do more collaborative research to investigate CCS options for industrial emitters such as the cement industry and not concentrate its research funding on the ESI and oil sectors. The value of this work would be to ensure that the UK becomes a world leader in CCS. This would allow the export of technologies and knowledge to assist developing countries adapt to climate change.

8.2. In addition to encouraging the use of novel technologies such as CCS and promoting a greater use of renewable and waste derived energy sources, there is still plenty of scope for the Government to capitalise on energy saving improvements in buildings, especially in the field of thermal mass. Thermal mass is a term used to describe the ability of a material to absorb and retain heat. It can be used to good effect in the fabric of a building by allowing it to absorb excess heat gains during the day and subsequently releasing them at night with the aid of natural or mechanical ventilation, this is particularly relevant in a warming climate. This process has the effect of moderating the temperature swing within the building and lowering the peak temperatures experienced during the summer by approximately 3°C⁵.

8.3. Traditional masonry built houses and larger buildings incorporating concrete elements provide a high a level of thermal mass and perform particularly well. For example, the energy consumption of a naturally ventilated high thermal mass office is typically about half that associated with a modern, good practice air conditioned office such as Building Type Three described in Econ 196. This is particularly important given the recent findings of research undertaken by Arup and commissioned by DTI, which highlights the key role that thermal mass is set to play in minimising overheating and helping avoid air conditioning as climate change drives up temperatures. Predicted changes in the UK climate, indicate that average annual temperatures are likely to increase by 2°C to 3.5°C this century⁷. This will result in warmer summers and increase the demand for energy intensive air conditioning systems. To counter this, the exploitation of thermal mass in building design could make a useful contribution in preventing growth in this area. As the operation of buildings account for a large proportion of UK energy use, even a small improvement in this sector will translate into significant savings in both energy and CO₂ emissions.

8.4. As the largest procurer of construction industry services, Government is in a privileged position to set the benchmark for sustainable construction projects for schools, hospitals, other public buildings, as well as transport infrastructure projects. Setting benchmarks in the built environment that can be exported to developing nations will signal the UK as a leader in climate change issues. These too should not be short term solutions, but look to the longer term and be based

⁵ Building Research Establishment. Information paper IP6/01. Modelling the performance of thermal mass. N Barnard, P Concannon, Denise Jaunzens. April 2001. 12 pp.

⁶ Energy Consumption Guide 19. Energy Use in Offices. Best Practice Programme. 2003

⁷ Climate Change Scenarios for the United Kingdom. The UKCIP02 Briefing Report. April 2002



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on whole life performance not just initial or lowest cost. The same principles should be extended to local government.

9. What contribution has Kyoto made in terms of securing a fair, comprehensive and environmentally effective global climate protection regime? What are the merits of alternative approaches and frameworks and how feasible are they?

9.1. To date a total of 168 countries and other governmental entities have ratified the Kyoto agreement (representing over 61.6% of emissions from Annex I countries)⁸. However, notable exceptions include the United States and Australia. Whereas other countries, like India and China, which have ratified the protocol, are not required to reduce carbon emissions under the present agreement despite their large emission potential.

9.2. Consequently there is scope for alternative measures such as global sectoral agreements because the displacement of manufacture from the UK and EU to non-carbon constrained economies is a real possibility. Not only does this displacement counteract EU climate change policies by transferring manufacture and emissions; it makes the problem worse by increasing the emissions from the transport of material.

9.3. The UK cement industry is mainly owned by large multinational companies and key investment decisions in the cement industry are generally taken outside of the UK. If the supply of cement from developing countries is not subject to the same pressures to address climate change as the UK then investment (and emissions) will be displaced.

9.4. The irony is that the UK and EU could meet its climate change targets by the displacement of industry overseas. To address this UK government should not base its climate change policies on UK emissions alone. Rather it also should consider the emissions generated from imported products consumed in the UK.

9.5. To address global competitiveness issues whilst at the same time addressing climate change the UK Government should, in conjunction with industry, investigate the potential for global sectoral agreements.

10. What have international and regional initiatives outside the Kyoto protocol, such as the Asia-Pacific Partnership and the Gleneagles Dialogue, achieved to date? What contribution should such initiatives be expected to make towards the development of climate policy in the short, medium and long term?

⁸ <http://www.climnet.org/EUenergy/ratification/calendar.htm>



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- 10.1. The Asia Pacific Partnership on Clean Development and Climate agreement between the six Asia-Pacific nations⁹ has only had a relatively short existence (since January 2006) and thus criticism at this stage is probably premature. However, the agreement allows the AP6 countries to set their goals for reducing greenhouse gas emissions individually, but without any enforcement. Consequently it is unlikely to compliment the Kyoto Protocol to any significant level and is likely to result in political symbolism rather than carbon dioxide reductions.
- 10.2. The potential inaction of the AP6 countries is extremely significant in global terms. The AP6 member countries account for around 50% of the world's greenhouse gas emissions, and 61 percent of the world's cement manufacture¹⁰. It is thus important to engage with these countries and perhaps use the AP6 as a stepping stone to binding targets.
- 10.3. Again the the Gleneagles Dialogue, is important because it involves countries that are not as committed as the UK to climate change. However, the lack of emissions targets brings into question its effectiveness.
- 10.4. The Gleneagles dialogue does recognise the importance of some issues that are relevant to the cement sector. The Gleneagles Plan of Action importantly recognises the role of carbon capture and storage for energy intensive users and also recognises the importance the buildings can play in the reduction of carbon dioxide from individuals and households. Consequently the UK advocacy in these areas of the action plan should include the comments made here concerning research into CCS for non-ESI sectors and the recognition of whole life environmental performance of buildings.

⁹ Australia, China, India, Japan, South Korea, and the United States

¹⁰ <http://www.asiapacificpartnership.org/>