The Inquiry into the 2006 Pre-Budget Report – Investing in Britain's Potential: Building our long-term future.

The British Cement Association Memorandum to the Environment Audit Committee

January 2007

EXECUTIVE SUMMARY

1. The British Cement Association (BCA) welcomes the Stern Review of the Economics of Climate Change and the introduction of forward-looking approaches to environmental and other measures. It is vital, however, that the Government learns from and acts upon the experience gained from its own current policies, and those of the European Union, in reviewing its climate change programme.

2. While the BCA supports the broad conclusion of the Stern Review that action to tackle climate change should not be delayed, there is a danger that the regulatory impact of resulting policy instruments developed directly from the Review, without further qualification, may have a substantial adverse influence on specific industry sectors, such as cement.

3. To date, industry has been the primary focus for measures designed to tackle climate change. This base needs to be broadened to include transport and the domestic sectors. BCA would recommend that the aviation sector operate within a separate or ring-fenced emissions trading system.

4. While the UK cement industry has made a significant reduction in emissions since 1990 (by around 28%) there are technical limits to the amount of abatement that can be made in the future. Industries should not be expected to reduce emissions beyond their abatement potential. Further CO_2 reduction will, however, require a regulatory environment that encourages greater long term certainty for capital investment strategies in new plants and technology.

5. The cement industry has begun to investigate the opportunity for Carbon Capture and Storage, but believes the Government should do more collaborative research to investigate CCS options for industrial emitters of CO_2.

6. BCA would like to see an open and unbiased domestic market in biomass to facilitate the replacement of traditional fossil fuels in all sectors.

7. While BCA welcome the setting of a clear target for 'zero carbon homes', further clarification of the definition of its usage in the Pre-Budget Report is required. BCA believes that the definition should be based on a whole building performance of a home, which, *inter alia*, takes into account its design life and thermal mass properties.

8. Currently, all BCA member companies report their environmental performance through ISO 14000, EMAS and other initiatives. Any additional requirement to report should take account of these initiatives and not require separate measuring and reporting regimes.

INTRODUCTION

1. The British Cement Association is the trade and research organisation that represents the interests of the United Kingdom 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, CEMEX, and Lafarge Cement UK) 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. The UK cement industry is committed to sustainable development with the launch of its strategy in November 2005, an important component of which is the development of a carbon profile that will make a substantial contribution towards the Government's target reduction of emissions by 60% or more by 2050.

The main ways in which the cement industry can help tackle climate change are by:

- Reducing direct emissions from cement kilns, as well as from related activities such as transport;
- Further improving its energy efficiency so as to reduce indirect emissions from electricity use;
- Working with the design and construction industry to promote low carbon long-life dwellings, offices and other buildings that can adapt to a changing climate through the effective use of cement and concrete.

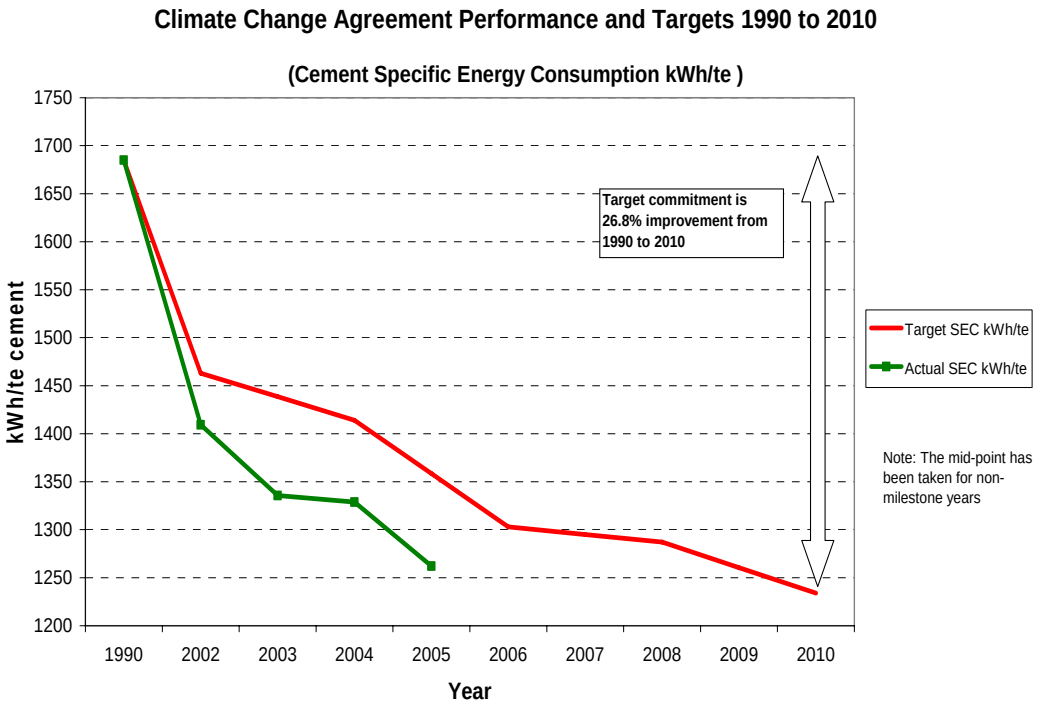
To deliver this approach will, however, require the following:

- A recognition of the importance to UK infrastructure of cement as the essential ingredient in concrete without which no house, school, hospital, bridge or road would be built;
- A coherent Government strategy for investment in sustainable construction;
- Greater Government support for investment in energy efficiency and in resources for the acceleration of the deployment of innovative technologies, such as carbon capture and storage;
- Tax reforms that contribute towards tackling greenhouse gas emissions whilst safeguarding national competitiveness. Action should be balanced across all sectors of the economy;
- A regulatory environment that encourages greater certainty for capital investment strategies in new plants and technology;
- A regulatory environment that allows the cement industry to maximise the use of waste as fuels. This will avoid emissions from landfill and incineration and contribute to the minimisation of non-renewable fossil fuel resources. A key element is the removal of the extra-statutory Substitute Fuels Protocol (SFP), whose provisions are now covered by EU legislation. Its retention adds unnecessary costs to the industry and administrative burden to the industry and the Environment Agency. Furthermore, it places

the cement industry at a competitive disadvantage to other users of waste derived fuels;

- The proper accounting of innovative passive heating and cooling technologies in building regulations and the code for sustainable homes.

3. Energy represents an increasing proportion of the variable cost of cement manufacture (>35% to 40%). 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. The industry has achieved a 25% improvement in its energy efficiency since 1990 and is on track to deliver an improvement of 26.8% by 2010 against a base year of 1990.



4. The cement industry supports the principle of emissions trading. It has been one of the sectors in the vanguard of those addressing the challenges posed by climate change and the need to secure a more sustainable future for all. Globally, the 10 leading cement companies have established the Cement Sustainability Initiative (CSI) through the auspices of the World Business Council for Sustainable Development. Through their parent companies, Lafarge Cement UK, Castle Cement, and CEMEX are committed to carbon reductions through the CSI. In addition, Buxton Lime Industries has undertaken to adopt the commitments within the WBCSD CSI.

SPECIFIC INQUIRY QUESTIONS

5. How the recommendations and implications of the Stern Review have been - or should be - translated into Treasury policy

5.1 The British Cement Association (BCA) welcomes the Stern Review of the Economics of Climate Change and the introduction of forward-looking

approaches to environmental and other measures. It is vital, however, that the Government learns and acts upon the experience gained from its own current policies, and those of the European Union, in reviewing its climate change programme.

5.2 Having reviewed the Report, the BCA has identified specific areas that do not reflect the technical or economic issues associated with the manufacture of cement in the UK and Europe, viz.

- The difficulty of the industry to pass on its costs;
- The threat of imports of cement and clinker and associated transport emissions of CO_2;
- The large CO_2 emissions per unit of production/profit;
- The impact of energy costs;
- The impact of electricity cost rises.

5.3 The following points should be reflected in the translation of the Stern Review into both Treasury and wider Government policy:

- The Climate Change Agreement 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". These two trading schemes are incompatible, place burden on industry, and generate carbon credits that require unnecessary double accounting arrangements.

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

- The UK should continue to take the 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 CO_2 market will ensure that there is a level playing field and ensure all citizens contribute to address a global problem.

- Until the achievement 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.

- BCA supports the view of EU Enterprise Commissioner, Gunter Verheugen, who stated that Europe must create a special framework for energy-intensive industries, such as cement, exposed to international competition[1]. EU

[1] Letter from EU Enterprise Commissioner, Gunter Verheugen, to Commission President, Jose Manuel Barroso, dated 21 November 2006, setting out a 10 point blueprint for reconciling and "binding together" policies for environmental sustainability, competitiveness and energy security.

competitiveness and the global environment will both suffer if policies simply encourage such firms to relocate to other world regions. Cement will always be needed, thus the question is one of where it will be produced. It is preferable that it is manufactured in a country with a carbon constrained economy and close to its market.

5.4 In a report of the complexity of the Stern Review, the industry accepts the difficulty in assessing data from many different sources in order to give a fully accurate representation of each industry/sectors considered, and this is so for cement manufacture. Whilst this does not in any way negate the broad conclusion that is drawn in the Review that action to tackle climate change should not be delayed, there is a danger that the regulatory impact of resulting policy instruments developed directly from the Review, without further qualification, may have a substantial adverse influence on specific industry sectors, such as cement.

5.5 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)[2]. 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.

5.6 Consequently there is a real risk for displacement of manufacture from the UK and EU to non-carbon constrained economies. Not only does this displacement counteract EU climate change polices by transferring manufacture and emissions; it makes the problem worse by increasing the emissions from the transport of material. CEMBUREAU (the EU cement association) estimates that the extra emissions from seaborne transport of imported cement are about 10 - 20% of the total emissions of CO_2 per tonne of product.

5.7 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.

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.

5.8 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. The aim would be to create uniform emissions reduction targets for individual sectors on a worldwide basis. For example, the UK cement sector has, at present, a different emissions reduction target than the cement sectors in other EU member states. This lack of parity has an impact on competitiveness.

[2] http://www.climnet.org/EUenergy/ratification/calendar.htm

6. The tax and incentive regime for biofuels

6.1 At national level BCA would like to see an open and unbiased market in biomass to facilitate the replacement of traditional fossil fuels in all sectors. One means of facilitating the uptake of biomass fuels would be to incentivise the growth of energy crops in the agricultural sector. BCA supports the recommendations of the Royal Commission on Environmental Pollution study on the use of biomass for heat and power production[3]. Furthermore, the use of non-bio waste as fuels could be expanded with a provision that creates a zero carbon consideration for both bio and non-bio waste derived alternative fuels (on the basis of CO_2 emissions deferred from incineration processes and also emissions of Methane deferred from landfill operations). Waste derived fuel use is regarded as carbon neutral under the UK Climate Change Agreements, but under the EU ETS only biomass is considered carbon neutral. BCA therefore urge the Government to pursue carbon neutral status for non-bio waste derived fuels in the EU ETS.

6.2 In the UK, the power generation sector has been set increasing targets of up to 10% renewables by 2010 by the Renewables Obligation. Renewable Obligation Certificates can be sold by the renewables generator either with, or separately from, the electricity generated. The incentives and penalties associated with the Renewables Obligation offer restrictions to the use of renewables to the power generation sector. As such those industries that have the technical ability to use biomass fuels, such as the cement industry, are constrained from doing so by the influences and distortions of the biomass fuel market by the Renewable Obligation Certificates.

7. Taxation of aviation, including its VAT-status

7.1 The BCA believes that with the planned inclusion into legislation of the Government's target of a 60% reduction in CO_2 emissions on 1990 levels by 2050, all sources of carbon emissions must be addressed at an early stage. The ability for sectors, such as aviation, to pass through the potential cost of allowances to consumers is much greater than industries that operate in an internationally competitive commodity business such as cement. BCA therefore believes that this ability to pass through cost would lead to an increase in the price of carbon allowances and consequently the burden of UK CO_2 reduction would continue to fall upon a small number of heavy industrial sectors. As such, we would recommend that the aviation sector operate within a separate or ring-fenced emissions trading system.

8. The effectiveness of the regulatory and incentive policies to reduce carbon

[3] Biomass – as a renewable energy source. Royal Commission on Environmental Pollution. Special Report Launched 11 May 2004

emissions from new and existing buildings, and the extent to which they are joined up with the Barker Review of Land Use Planning

8.1 While BCA welcome the setting of a clear target for 'zero carbon homes', further clarification of the definition of its usage in the Pre-Budget Report is required. BCA believes that the definition should be based on a whole building performance of a home, which, *inter alia*, takes into account its design life and thermal mass properties (the ability of a material to absorb and retain heat). Rigorous accounting of innovative passive heating and cooling technologies in building regulations and the Code for Sustainable Homes will be a critical element in reducing the carbon footprint of residential properties.

8.2 New homes represent less than 1% of the existing UK housing stock. The big wins in terms of carbon savings are in the existing housing stock, which is typically four times less energy efficient than housing built in accordance with the existing building regulations. Improving the existing housing stock by 1% each year, would save more energy than making the entire housing new build zero carbon. Separately, there is a need to reduce VAT to 5% on all energy saving construction products in order to encourage uptake by the public.

8.3 Realisation of the government's own policies for maximising spatial use could be achieved through the utilisation of basements. Increased use of basements would not only help alleviate the housing density issue, but would much improve land utilisation thereby relieving pressure on land availability. Building below ground rather than up means more housing space can be provided without requiring additional land. A further advantage of basements is that they are energy efficient thereby meeting the demand for high-density sustainable communities as well as the requirements for greater adaptability in housing to cater for changes in lifestyle. Basements can be built both on flood plains and contaminated land and thus are very much a part of the housing solution.

9. Support for low-carbon energy and energy efficiency programmes, including microgeneration and Carbon Capture and Storage

9.1 The UK cement industry is committed to the development of a path of carbon dioxide reduction[1] and is collaborating with the International Energy Agency in its project to determine the practicalities of applying Carbon Capture and Storage (CCS) to cement manufacture. To date, the industry's energy efficiency improvements/ CO_2 reductions have been achieved by conventional methods such as on-going programmes of equipment and plant improvements, and the replacement of old kilns with new, state-of-the-art plant. Between 1990 and 2005, the industry reduced its carbon dioxide emissions by 25% through energy efficiency improvements, and Dti has recognized that the scope for further reductions is quite limited. Consequently, CCS presents one of the few opportunities to make further reductions, and the industry is currently exploring the feasibility of applying this technique.

9.2 BCA is a member of the Carbon Capture and Storage Association (CCSA), as it believes that the industry has an important role to play in the development of CCS. BCA believes that CCS is an important part of the future solution to tackling climate change and that getting the regulatory framework right from the outset is critical.

9.3 At present, research and development into CCS is dominated by the Electricity Supply Industry (ESI) and oil companies. However, the ~25% concentration of CO_2 in the off-gas from a cement kiln is substantially higher than the 15-18% in power generation, and as a consequence the efficiency of capture is potentially much higher.

9.4 60% of the industry's CO_2 emissions are process emissions (derived from the decomposition of limestone). On today's technology very few new improvements can be made to drive out carbon emissions from the production process. BCA therefore urges Government support for collaborative research with the industry to investigate CCS options for industrial emitters, such as the cement industry. 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.

9.5 There is further 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 3ºC[4].

9.6 However, uptake of this technology would benefit from greater recognition within government initiatives such as the Code for Sustainable Homes and the Building Regulations; recent revisions to Part L1 of the Building Regulations, which deals with conservation of fuel and power in dwellings, have largely failed to credit the use of thermal mass and much more will need to be done to realize the full potential of this simple but effective technology.

9.7 Traditional masonry built houses and larger buildings incorporating concrete elements provide a high 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

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[4] Building Research Establishment. Information paper IP6/01. Modelling the performance of thermal mass. N Barnard, P Concannon, Denice Jaunzens. April 2001. 12 pp.
[5] Energy Consumption Guide 19. Energy Use in Offices. Best Practice Programme. 2003
[6] Science in Parliament Vol 63 No.4 Autumn 2006
[7] Climate Change Scenarios for the United Kingdom. The UKCIP02 Briefing Report. April 2002

195. This is particularly important given the recent findings of research undertaken by Arup, 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[6]. Predicted changes in the UK climate, indicate that average annual temperatures are likely to increase by 2ºC to 3.5ºC this century[7]. 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 CO_2 emissions.

9.8 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. The setting of benchmarks in the built environment based on whole life performance should be a priority. The same principles should be extended to local government.

10. Companies' environmental reporting requirements, following the abolition of the proposed Operating and Financial Reviews last year

10.1 All BCA members have ISO 14001 and the majority have EMAS (Eco-Management Audit System). However, the benefits of accreditations such as these are often not fully taken into account in legislation and regulatory effort.

10.2 In addition to the above, all BCA members report against the World Business Council for Sustainable Development's Cement Sustainability Initiative (WBCSD CSI), as well as issue company Sustainable Development Reports. Most of these use Global Reporting Initiative Criteria. Any additional requirement to report should take account of these initiatives and not require separate measuring and reporting regimes.

11. Any other aspects of environmental tax and incentive policy

11.1 The BCA urges the Treasury to bring forward a package of financial and regulatory measures that encourage all parts of the economy to play its part in tackling climate change. Hitherto, the focus has been placed on industry, but the transport and domestic sectors also have a role to play. The Treasury should, however, take care to balance the action that needs to be taken against the potential harm to UK industry competitiveness. If the Climate Change Levy is to be retained, a 100% rebate for energy intensive industries that are part of the EU Emissions Trading Scheme with strict emission reduction targets would help protect and encourage investment and jobs here in the UK.

11.2 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% CO_2 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 CO_2. In addition, BCA notes that carbon dioxide emissions from the UK cement industry are already more than 28% below the 1990 level[8]. 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 CO_2 emissions are not necessary.

11.3 Although the UK cement industry has made a 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 report[9] 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 to biomass, which is a long way from happening due to legislative and market barriers.

12. Comments on any other aspect of the Pre-Budget Report and associated documents which are relevant

12.1 Defra, Dti, DCLG 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 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.

It is hoped that the Office of Climate Change will elucidate coherent UK and international policies. However, at present the remit of this office is unclear and BCA would welcome further information.

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8 28% reduction in absolute carbon dioxide emissions between 1990 and 2005

9 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