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Environmental Audit
Committee

The International Challenge of Climate Change: UK Leadership in the G8 & EU

Fourth Report of Session 2004–05

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written evidence*

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The Environmental Audit Committee

The Environmental Audit Committee is appointed by the House of Commons to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development; to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

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References

In the footnotes of this Report, references to oral evidence are indicated by 'Q' followed by the question number. References to written evidence are indicated by page number as in 'Ev12'. number HC *-II

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Conclusions and recommendations

Climate Change and emissions forecasts

1. While some scientific uncertainties still remain in relation to some aspects of the global warming process, the time for querying the science is long past. Nor should policy makers still hope that science can come up with a definitive “safe limit” to global warming. Governments must act as a matter of urgency and on an unprecedented scale: a Marshall plan for climate change is now required. (Paragraph 13)
2. The world will, in the absence of urgent and strenuous mitigation actions in the next 20 years, almost certainly experience a temperature rise of between about 0.5°C and 2°C by 2050. The fact that the tipping point for the irreversible melting of the Greenland ice sheet is now thought to fall well within this range is a matter of extreme concern. Indeed, in the light of such findings Sir David King has suggested that the UK’s 60% carbon reduction target which the UK Government has set for 2050 may need to be increased to 80%. (Paragraph 14)
3. We would like to pay tribute to the Government Chief Scientist, Sir David King, for all his efforts to communicate, in both national and international fora, the seriousness of the threat which global warming poses. He has displayed courage and commitment in not only highlighting the scale of potential impacts, but also in emphasising to policy makers the need for urgent action. (Paragraph 15)
4. The energy demand scenarios of the International Energy Agency, the US DoE, and major oil companies predict that the rate of emissions will actually increase to 2030 and beyond. By contrast, environmental scientists emphasise the need to stabilise emissions by 2030 or earlier and thereafter reduce them if catastrophic climate change impacts are to be avoided. Given the yawning chasm between these two scenarios and the scale of future investments in power generation, it is essential that governments take all possible steps to ensure that such investment are oriented towards the development of low-carbon approaches. (Paragraph 21)

The EU Emissions Trading System

5. Phase 1 of the EU ETS has rightly been described as a “race to the bottom” in terms of the target caps set by individual member states. As a result, there is little prospect that it will yield any significant carbon reductions and this is reflected in the low price at which carbon is trading. Far tougher targets will need to be set in Phase 2 of the scheme and should be based on agreeing an overall cap for the EU. Indeed, it is only the existence of the Kyoto targets which will provide the driver for this process. This demonstrates the importance of such absolute targets within a post-2012 framework. (Paragraph 30)
6. In Phase 1, not all aspects of implementation were precisely defined. There are therefore differences between arrangements in individual member states—including the extent to which auctioning of permits is used, and the size of any new entrants’

reserve. The UK should work to ensure that there is greater harmonisation and consistency in the way in which Phase 2 of the scheme is implemented. (Paragraph 32)

7. It is widely accepted that UK power generators are likely to make substantial windfall profits from the EU ETS amounting to £500 million a year or more. We regard this as unacceptable and particularly ironic in view of the complaints from the power sector over the targets set for them under the UK National Allocation Plan. The Government must take steps to address this issue by promoting the greater use of auctioning of emissions permits for the power generation sector in Phase 2, or by ensuring that windfall profits are re-invested in renewable and low-carbon technologies. (Paragraph 35)
8. In attempting to revise upwards its emissions cap for Phase 1 after the EU deadline had passed, the UK Government has become embroiled in a damaging legal argument with the European Commission and is in danger of wantonly squandering its reputation for leadership on climate change. We find the UK position particularly surprising since the cost of the disputed amount—some £33 million a year over the three year period of Phase 1—would be borne by the power generating sector and pales into insignificance beside the £500 million a year in windfall profits they are likely to earn from the scheme. (Paragraph 40)
9. The difficulties the DTI has experienced in providing reliable energy forecasts are reflected in the sheer scale of the upward revisions to the emissions cap in the UK NAP during 2004. Such difficulties undermine the very concept of “business-as-usual” (BAU) as a reliable basis on which to set targets and we therefore favour the adoption of absolute targets wherever possible. (Paragraph 43)
10. The concept of Domestic Tradable Quotas provides a possible mechanism which could prove effective in bringing about behavioural change in the transport sector, and we would urge the Government to give serious consideration to introducing such a policy which could be more palatable than further increases in carbon-related taxation. (Paragraph 45)
11. We are sceptical of the desirability of incorporating other greenhouse gases and sectors within Phase 2 of the EU ETS. We are also concerned that this may destabilise carbon-trading markets and undermine investment at precisely the time when far more stringent targets need to be set. The UK government should therefore work to ensure that there are minimal significant changes to the shape and scope of the scheme, and that non-carbon greenhouse gases are addressed through regulation rather than trading. (Paragraph 46)
12. We see no possibility of the UK Government achieving its objective of incorporating aviation in Phase 2 of the EU ETS, and we continue to think that a mixture of other policies—including the scope for taxation and emissions charging—should be pursued. (Paragraph 48)
13. We would support the inclusion of aviation within a rigorous emissions trading system only on the basis that our concerns over allocations and global warming impacts were addressed. In such circumstances we accept that, as there is currently

no possibility of achieving significant reductions in aviation emissions, emissions trading would act on aviation as a demand management tool and this would be reflected in very considerable increases in the price of air travel. If the Government is really concerned about the impacts on social equity, it should explore other avenues to address this—including, for example, the concept of Domestic Tradable Quotas. (Paragraph 52)

14. Emissions trading can provide an effective means for reducing carbon emissions but only in the context of a strong regulatory and legal framework within which absolute caps and tough compliance penalties can be enforced. Such a framework exists within the EU. Not only does the EU ETS contain within itself sufficiently draconian penalties, but also member states cannot simply walk away if the going gets tough because of the complex web of economic, regulatory and legal ties which bind them together. However, no such framework exists at an international level and we see little willingness on the part of national governments to put one in place. (Paragraph 53)
15. In the final analysis, emissions trading will only work effectively if it results in an increase in the price of energy for industry, business and even domestic consumers. Only then will the necessary incentives to prompt behavioural change and investment in low-carbon technologies arise. Moreover, if technological improvements cannot deliver sufficient emission reductions, “cap and trade” systems will result in large price increases and will therefore become demand management policy instruments rationing activity in certain areas. (Paragraph 56)

The UNFCCC and the Kyoto Protocol

16. There is a widespread consensus that the targets set in the Kyoto Protocol are weak, and that far more challenging targets will need to be set in subsequent commitment periods. Yet the difficulties facing many developed nations in achieving even their Kyoto targets reflect the intricate dependence of modern economies on energy and the consequent need for far greater priority to be accorded by governments to mainstreaming environmental objectives. (Paragraph 62)
17. We believe it would be entirely inappropriate for the UK Government to sell any surplus Kyoto credits. Instead, it should ensure that it incorporates within Phase 2 of the EU ETS a far more challenging emissions cap based on the need to achieve its domestic carbon reduction target. (Paragraph 66)
18. We note the concerns raised over the impact of the CDM—in particular, the slow rate of project approval, the kinds of projects being approved, and the difficulties involved in assessing savings against business-as-usual forecasts. We are also concerned that many less developed countries will not have the expertise and resources to partake in the CDM, and capacity building therefore remains a major issue. (Paragraph 70)

A post-2012 Framework

19. The challenge of climate change is so great that action is required on all fronts if we are to achieve the scale of emission reductions required. We therefore endorse the broad swathe of proposals suggested by the International Climate Change Task Force. Indeed, we have ourselves emphasised key aspects of those proposals in previous reports—in particular, the need for large increases in government support for renewables and for energy efficiency, and the need to embed environmental and sustainable development objectives in key organisations both nationally and internationally. (Paragraph 74)
20. We do not believe, however, that complementary policies alone will be sufficient. And we are particularly concerned at the continuing reliance which the US and to a lesser extent the UK appear to place on technological development and the removal of market barriers as the main way of combating climate change—as reflected in the Prime Minister’s recent speech at Davos. (Paragraph 75)
21. It seems to us that much of the discussion on the future of the Kyoto Protocol fails to address a central question—namely, the basis on which targets should be set for developed and rapidly developing economies. The failure to confront this issue more directly is likely to give rise to a similar process of political bartering which was involved in the original Kyoto negotiations. In such circumstances, we have no confidence that far more demanding targets will in fact be set, and if such targets are to be agreed it seems to us inescapable that they must be based on an agreed set of criteria. (Paragraph 78)
22. Any framework which involves radical emission reductions would in practice resemble the Contraction and Convergence approach advocated by the Global Commons Institute. Indeed, in terms of domestic policy aims, the UK Government has already implicitly accepted this approach in adopting the 60% carbon reduction target for 2050; and it is therefore inconsistent not to adopt such an approach internationally. We do not see any credible alternative and none was suggested in evidence to our inquiry. We therefore recommend that the UK Government should formally adopt and promote Contraction and Convergence as the basis for future international agreements to reduce emissions. (Paragraph 86)

UK Government objectives for 2005

23. We appreciate the role the FCO is playing in relation to climate change. But, given the overriding importance of this issue and the priority accorded to it by the Prime Minister, it is disappointing that there is no mention of either climate change or global warming in its latest PSA. Indeed, the PSA does not contain any clear environmental objective or target of any kind—in marked contrast to the priority accorded to terrorism and security objectives. (Paragraph 92)
24. The agenda the UK is expecting to take forward during its presidency of the EU is set out in the recent command paper “The Prospects for the EU in 2005”. We are disappointed that this had so little to say on the subject of climate change, and that by contrast other issues appear to receive far greater priority. As with the FCO’s

PSA, the low priority accorded to this issue does not appear to reflect the claims made by the Prime Minister. (Paragraph 94)

25. We entirely endorse the view of the RSPB that a key task of the UK presidency should be to review progress towards meeting its emission reduction targets and initiate processes and policies to address the shortfall. We have also raised elsewhere in this report other issues which the UK could usefully pursue, particularly in relation to the further development of the EU ETS. (Paragraph 95)
26. We would urge the Government not to see its role during 2005 as being simply to broker international discussion. It should rather provide leadership by promoting specific objectives and targets. In that light we would make the following recommendations: (Paragraph 101)
 - The UK Government should commit itself to Contraction and Convergence as the framework within which future international agreements to tackle climate change are negotiated; and it should actively seek to engage support for this position during 2005 in advance of the next Conference of the Parties.
 - Within the UNFCCC negotiating framework, the UK should press for a review of the adequacy of the commitments in the Convention, and focus its efforts on the need to agree more challenging absolute emission reduction targets within a post-2012 agreement.
 - The UK should also actively pursue these objectives within the context of Commonwealth institutions where it could aim to promote a consensus with key nations such as India and Australia.
 - In the context of the G8, the UK could pursue a broader range of complementary policies, including the need for greater coordinated effort low-carbon research, the scope for developing forms of international taxation, and in particular the need to embed environmental objectives more firmly within a range of international organisations.
27. We take issue with the Prime Minister's view, expressed in his recent speech at Davos, that science and technology provide the means to tackle climate change. Whilst we understand the desire to adopt such an approach in an effort to bring the US Government on board, it is simply not credible to suggest that the scale of the reductions which are required can possibly be achieved without significant behavioural change. In focussing on science and technology, the Government is creating the appearance of activity around the problem of Climate Change whilst evading the harder national and international political decisions which must be made if there is to be any solution. (Paragraph 102)
28. In our view the challenge of climate change is now so serious that it demands a degree of political commitment which is virtually unprecedented. Whether the political leaders of the world are up to the task remains to be seen. Leadership on this issue calls for something more than pragmatism or posturing. It requires qualities of courage, determination and inspiration which are rare in peacetime. In according priority to climate change, the Prime Minister has set himself and his Government a mighty challenge and we must hope they rise to it. (Paragraph 103)

Introduction

“The prize is precious—to bequeath to all our children a world as rich in life and opportunity as the one we inherited. But time is short. Action is required now if we are to win the battle against climate change.”

[International Climate Change Taskforce, January 2005]

1. The impacts of mankind’s global assault on the Earth’s ecosystems are becoming ever more apparent. Biodiversity and species loss continues unabated, while anthropogenic global warming threatens to wreak catastrophic changes upon not only the natural world but on human civilisation itself. Despite our aspirations, we cannot in fact bequeath to our children a world as rich in life and opportunity as the one we inherited. Our task now is to try to limit the extent to which it will become impoverished.

2. Many of the previous inquiries which the Environmental Audit Committee (EAC) has conducted have addressed issues relating to climate change. We have published various reports on the UK’s energy strategy, on aviation policy and its impacts on global warming, and on the use of fiscal instruments to promote energy efficiency and renewable energy. We have regularly assessed progress against the targets which the Government has set for carbon and greenhouse gas reductions, and for energy efficiency and renewable energy. We have also highlighted the need to embed low-carbon objectives in a wide range of other policy areas—in building new houses, for example—and have emphasised the underlying importance of behavioural change and increased public understanding.¹

3. This year, however, presents a unique opportunity for the UK to provide leadership internationally on the issue of climate change, as it will hold simultaneously both the presidency of the EU and the chair of the G8. Climate change is in any case an issue which can only be adequately addressed in an international context. Moreover, the long-awaited ratification of the Kyoto Protocol might provide the necessary impetus to begin negotiations on what might succeed it after 2012.² In recognition of these opportunities and indeed of the overriding threat posed by climate change, the Prime Minister has himself made this issue one of the UK’s two key priorities for 2005.³

4. For these reasons, the Environmental Audit Committee decided to examine the issue of tackling climate change internationally, including the possible nature of a post-2012 agreement and the objectives which the UK should pursue in both the G8 and the EU during 2005. We also looked at the role that emissions trading might play, and in particular what might be learned from implementing the first international example of such a system—the EU Emissions Trading System.

1 See, for example, the EAC’s Tenth report of 2003-04, *Budget 2004 and Energy*, HC 490 (August 2004); the First Report of 2004-05, *Housing: Building a Sustainable Future*, HC 135 (January 2005); and the Fifth Report of 2004-05, *Environmental Education: a follow-up to Learning the Sustainability Lesson*, HC 84 (forthcoming). All the EAC’s reports are available on its website at: http://www.parliament.uk/parliamentary_committees/environmental_audit_committee.cfm

2 The Kyoto Protocol of 1997 came into force on 16 February 2005 and includes specific emission reduction targets which developed countries should meet by 2012. The Protocol is discussed in more detail in paragraphs 57ff below.

3 See, for example, the Prime Minister’s speech at the World Economic Forum in Davos on 26 January 2005

5. We received some thirty written memoranda. We also took oral evidence from twelve organisations or individuals, as well as from the Parliamentary Under-Secretary of State at the Foreign and Commonwealth Office (FCO), Mr Bill Rammell, together with officials from the FCO and DEFRA. We are grateful to all those who have contributed to our inquiry. Our inquiry has run in parallel with that being conducted by the Environment, Food and Rural Affairs Select Committee on Climate Change, though the primary focus of each is somewhat different. We trust that both reports will therefore complement each other.

Climate Change and emissions forecasts

The impacts of global warming

6. There is now an overwhelming consensus among the scientific community that global warming largely results from anthropogenic factors—in particular, the combustion of fossil fuels on a massive scale, and huge changes in land-use which have increased greenhouse gas emissions still further. Over the last million years or more, atmospheric concentrations of carbon dioxide have ranged between 180 parts per million (ppm) during the ice ages and 280ppm in interglacial periods. Yet in the space of a few hundred years since the industrial revolution, they have soared to 379ppm and are currently rising at 3ppm a year.⁴

7. As the Government Chief Scientist, Sir David King, has pointed out, it has long been known theoretically that increases in emissions of greenhouse gases would result in a rise in temperature. Research has now demonstrated a very close historical correlation between atmospheric carbon levels and temperature over the last 750,000 years. It has also revealed that temperatures have in fact risen recently, by 0.6 °C since 1900 in the world as a whole, and 0.9 °C in Europe.⁵ The Intergovernmental Panel on Climate Change (IPCC), in its Third Assessment Report (2001) assessment, has estimated that if emissions continue to rise on a ‘business-as-usual’ basis, atmospheric concentrations of carbon dioxide could rise to between 490 and 1250ppm by the end of the century, leading to an increase in global temperatures of between 1.3 °C and 5.8 °C.⁶

8. We are already experiencing the effects of global warming. The ten hottest years on record have occurred since 1991 and the European heat wave of 2003 which caused 30,000 premature deaths and costs of \$14 billion provides a foretaste of what is to come. Across the world, research has revealed that ice caps and glaciers are melting at unprecedented rates, while the combined impact of global warming and land use changes has resulted in a 40% loss of biodiversity in the last 35 years.⁷ Ecological studies over the last twelve months

4 National Oceanic and Atmospheric Administration data. See also Sir David King’s Zukerman lecture (October 2002) at <http://www.ost.gov.uk/policy/issues/#climate> and his Greenpeace business lecture presentation (October 2004) at http://www.ost.gov.uk/about_ost/csa.htm. The text of the Greenpeace business lecture can be found on the Greenpeace website at www.greenpeace.org.uk

5 Ibid

6 IPCC Third Assessment Report, *Climate Change 2001: The Scientific Basis*, 2001

7 Sir David King, Greenpeace business lecture (October 2004); WWF, *The Living Planet Report 2004*

have also highlighted a variety of specific threats such as the extinction of many land animals and the destruction of the Great Barrier Reef.⁸

9. But the future potential impacts of global temperature rises of several degrees or more are awesome. It is seldom realised, for example, that the transition from the last ice age to the warm period we have experienced for the last 10,000 years was accompanied by a rise in the sea level of more than 100 metres. We do not know what the total impact of man-made global warming is likely to be in terms of sea level rises. But recent research suggests that a local temperature rise of 2.7°C (equivalent to a global rise of 1.5°C) might cause the irreversible melting of the Greenland ice sheet and could lead to a rise of 7 metres in the sea level.⁹ The collapse of the West-Antarctic ice sheet could double that. Even a rise in sea levels of several metres over the next few hundred years would cause huge impacts—and not only on remote island states: as Sir David King has pointed out, many of the world's capital cities would be badly affected or destroyed.¹⁰

10. Other possible impacts could be equally catastrophic. These include, for example, the cessation of the ThermoHaline Conveyor (dramatised hyperbolically in the recent film *The Day after Tomorrow*), the destruction of the Amazon rainforest, and alterations in the Monsoon and El Niño cycles. Climate change will also have particularly adverse impacts on Africa which may render the achievement of the Millennium Development Goals impossible.¹¹ Indeed, if carbon concentrations do in fact rise to 1000ppm, we would be into uncharted territory: the last time such levels were experienced was 50 million years ago when the world was a radically different place and the most habitable areas were the poles.¹²

11. Until recently, the most authoritative assessment of climate change impacts was the IPCC Third Assessment Report of 2001. On the basis of this work various organisations have argued that, if we are to avoid the worst impacts of climate change, we should aim to limit the global temperature increase to 2°C and that this would require us to stabilise carbon dioxide levels at 550 ppm. However, since then considerable further research has been carried out. In February 2005, the UK Government held an international scientific conference at the Hadley Centre in Exeter to examine climate change issues.¹³ The evidence presented at that conference suggests that the impacts of global warming may be more serious and imminent than expected, and that we may have even less time than

8 Thomas et al., *Extinction risk from climate change*, Nature (January 2004). See also WWF, *Implications of Climate Change for Australia's Great Barrier Reef*, February 2004

9 The timescale over which this would occur might be 1,000 years or more, but it is likely that it would give rise to significant sea level rises within only two hundred years. Recent evidence suggests that arctic ice is melting quicker than previously thought

10 Sir David King, Greenpeace business lecture (October 2004). See also Hadley Centre conference (below)

11 NEF and IIED, *Up in Smoke*, October 2004

12 Oral evidence given by Sir David King to the EAC, March 2004. See EAC's Tenth Report of 2003-04, *Budget 2004 and Energy*, HC 490, Ev 24 (Q96)

13 Hadley Centre international scientific conference in Exeter, *Avoiding Dangerous Climate Change*, February 2005. The conference papers can be found at <http://www.stabilisation2005.com/index.html>

previously thought to stabilise and then reduce emissions if we are to avoid potentially catastrophic consequences.¹⁴ The draft conference outcome paper noted, for example, that:

- *A number of new impacts were identified that are potentially disturbing. One example is the recent change that is occurring in the acidity of the ocean. This is likely to reduce the capacity to remove CO₂ from the atmosphere and affect the entire marine food chain.*
- *In general, surveys of the literature suggest increasing damage if the globe warms from about 1 to 3°C. Serious risk of large scale, irreversible system disruption, such as changes to the thermohaline circulation, reversal of the land carbon sink and possible destabilisation of the Antarctic ice sheets is more likely above 3°C. Such levels are well within the range of climate change projections for the century.*
- *Limiting warming to a 2°C increase with a relatively high certainty requires the equivalent concentration of CO₂ to stay below 400 ppm. If action to reduce emissions is delayed by 20 years, rates of emission reduction may need to be 3 to 7 times greater to meet the same temperature target.*

12. The overall message, therefore, emerging from the Hadley Centre conference was that the situation may be rather worse than depicted in the IPCC 2001 assessment, and that stabilisation at lower levels of carbon than previously thought might be required to avert potentially catastrophic impacts. This was certainly reflected in the doom-laden reporting of the conference by the media¹⁵—a message reinforced only a few weeks later when further research on ocean warming was published which received extensive national coverage.¹⁶

13. While some scientific uncertainties still remain in relation to some aspects of the global warming process, the time for querying the science is long past. Nor should policy makers still hope that science can come up with a definitive “safe limit” to global warming. Governments must act as a matter of urgency and on an unprecedented scale: a Marshall plan for climate change is now required.

14. The world will, in the absence of urgent and strenuous mitigation actions in the next 20 years, almost certainly experience a temperature rise of between about 0.5°C and 2°C by 2050.¹⁷ The fact that the tipping point for the irreversible melting of the Greenland ice sheet is now thought to fall well within this range is a matter of extreme concern. Indeed, in the light of such findings Sir David King has suggested that the

14 Presentations and the draft conference outcome paper can be found at:<http://www.stabilisation2005.com/index.html>

15 eg The Guardian, *Climate Conference hears degree of danger*, 3 February 2005. A particular downbeat assessment was written by Michael McCarthy, *Slouching towards disaster*, in the Catholic journal *The Tablet* (February 2004). A text of the latter can be found on the GCI website at <http://www.gci.org.uk/articles/Tablet.pdf>

16 eg the front-page story in The Independent, *The final proof: global warming is a man-made disaster*, 19 February 2005. The reporting was based on a study by the Scripps Institution of Oceanography. See press release at http://scrippsnews.ucsd.edu/article_detail.cfm?article_num=666

17 Hadley Centre Conference, draft conference outcome paper. This estimate is based on International Energy Agency forecasts for emissions which are discussed further below

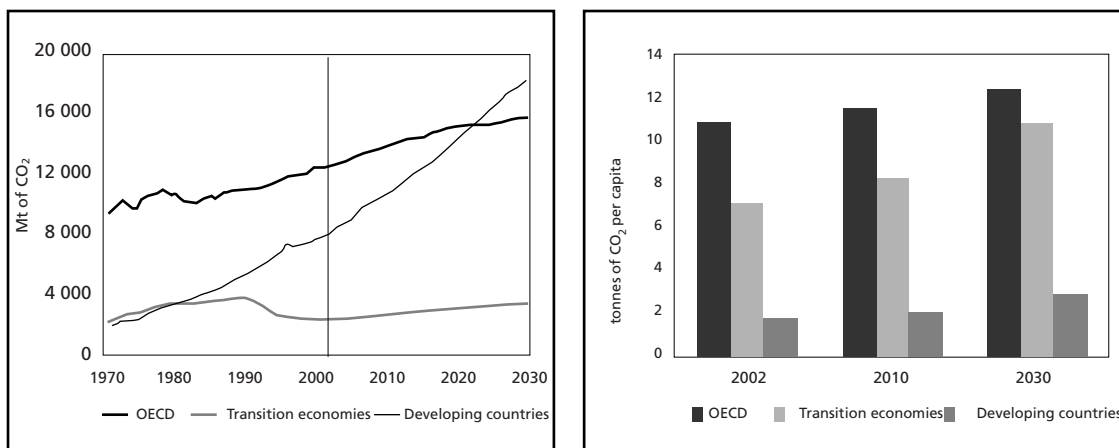
UK's 60% carbon reduction target which the UK Government has set for 2050 may need to be increased to 80%.¹⁸

15. We would like to pay tribute to the Government Chief Scientist, Sir David King, for all his efforts to communicate, in both national and international fora, the seriousness of the threat which global warming poses. He has displayed courage and commitment in not only highlighting the scale of potential impacts, but also in emphasising to policy makers the need for urgent action.

Emissions forecasts

16. The latest forecasts from both the International Energy Agency (IEA) and the US Department of Energy (US DoE) predict that global emissions of greenhouse gases will increase by over 60% from 2002 to 2030 (from 24 billion tonnes of carbon dioxide a year in 2002 to 38 billion tonnes in 2030).¹⁹ Indeed, the rate of increase is forecast to be greater than that we have experienced since 1970. Even on the basis of the “alternative policy scenario” which the IEA calculated—which takes account of increased environmental action by governments—emissions are still forecast to increase by 33% to 32 billion tonnes a year by 2030.

17. It is likely that carbon emissions from the developing world will overtake the developed world by 2020 or soon after and that 70% of the overall increase in emissions will be from developing countries, with China alone accounting for a quarter of it. However, even by 2030 emissions in developed countries will still be rising while, on a per capita basis, they will remain many times higher than those in developing countries as the following graphs from the IEA's *World Energy Outlook 2004* demonstrate.



Source: IEA *World Energy Outlook 2004*

18 Evidence given before the Environment, Food and Rural Affairs Committee by Sir David King, 8 November 2004

19 International Energy Agency, *World Energy Outlook 2004* (November 2004). US Department of Energy, *International Energy Outlook* (April 2004). There are slight differences between these estimates: what is more striking is the extent to which they agree. The information in the following paragraphs is based mainly on the IEA forecasts

18. It is also worth noting that, in terms of sectoral distribution, power generation will account for half the overall forecast increase in emissions, and transport a further quarter. Indeed, the IEA estimate that \$10 trillion investment in electricity generation will be required over the next 25 years, with a further \$3 trillion in oil. A considerable part of this investment will be in fossil fuel generating capacity the operating life of which might be expected to last for several decades. We therefore find such forecasts deeply disturbing because of the ongoing commitment to maintaining high levels of emissions which they embody. Indeed, in giving evidence to us, Shell UK made it clear that they would be focussing for decades to come on exploiting the remaining reserves of oil and gas, including the huge potential of the Athabasca tar sands in Canada.²⁰

19. By contrast with these forecasts, the latest scientific research suggests that the objective, endorsed by the Prime Minister, of trying to contain global warming to a maximum of 2 °C will require emissions to be stabilised at an even lower level than previously thought.²¹ There are considerable scientific uncertainties involved at various stages, but recent research by the Hadley Centre and others suggests that, even to stabilise atmospheric concentrations at 550ppm, emissions would need to peak within the next 20 years and then fall to 11 billion tonnes of carbon dioxide a year by 2100 and 3.7 billion tonnes a year by 2200.²² These levels represent less than 30% and 10% respectively of the IEA forecast for emissions in 2030.

20. Carbon levels are already 379 ppm and are rising by 3ppm a year. Given the inertia in the system and the likelihood that the international community will fail to halt the inexorable rise in emissions in the next two decades, the current political and economic reality is that it will prove very difficult to achieve the 2 °C limit. Yet any failure to do so is likely to incur far greater costs on the global economy in the longer term, together with the necessity for far more stringent carbon reduction measures. If action to reduce emissions is delayed by 20 years, rates of emission reduction may need to be many times greater to meet the same temperature target.²³

21. The energy demand scenarios of the International Energy Agency, the US DoE, and major oil companies predict that the rate of emissions will actually increase to 2030 and beyond. By contrast, environmental scientists emphasise the need to stabilise emissions by 2030 or earlier and thereafter reduce them if catastrophic climate change impacts are to be avoided. Given the yawning chasm between these two scenarios and the scale of future investments in power generation, it is essential that governments take all possible steps to ensure that such investment are oriented towards the development of low-carbon approaches.

20 QQ257-258

21 See paragraphs 11-12 above

22 Hadley Centre conference, draft conference outcomes paper. See also Hadley Centre, *Stabilising climate to avoid dangerous climate change*, January 2005

23 Ibid.

The EU Emissions Trading System

The concept of emissions trading

22. The primary responsibility for tackling climate change must lie with governments. Only they can provide the long-term policy direction within which industry can plan for investment. They have various tools at their disposal, of which regulation has proved to date by far the most effective means of delivering environmental improvements. Recently, however, attention has focussed on trading systems as a way of ensuring both certainty in terms of delivering target improvements and economic efficiency in the way those improvements are delivered.

23. The basic concept underpinning emissions trading is relatively simple. An emissions “cap” is determined, this being the level to which emissions must fall over a certain period of time. The cap is then shared out among the participating entities either by basing entitlement on each participant’s current share of the market (“grandfathering”) or by a process of auctioning. By the end of the period, participants must reduce their emissions to equal their allocations—or else pay a financial penalty depending on the extent of the shortfall. However, trading in allocations is also allowed: those participants which are able to reduce their emissions below their targets may sell any spare allocations to those which cannot reach their target.

24. Emissions trading has some significant attractions as in theory it maximises economic efficiency for each participant and guarantees certainty of environmental outcome.²⁴ While it has been applied within individual countries before,²⁵ the European Union Emissions Trading Scheme (EU ETS) is the first example of a supra-national ETS. We therefore decided to investigate the lessons which could be learned so far from implementing the EU ETS, both for its own sake and for any implications they might have for the role of emissions trading in a post-2012 framework.

25. The EU Emissions Trading System (ETS) formally commenced on 1 January 2005. Phase 1 of the scheme will run from that date to 31 December 2007. Phase 2 will cover a period of five years, from 1 January 2008 to 31 December 2012 (the same period over which Kyoto signatories are required to have met their target reductions). The scheme is based on trading between companies.²⁶ It covers only carbon dioxide emissions, not emissions of other greenhouse gases, and—at least in Phase 1—it only covers fixed ground-based industrial installations such as power generators, cement and paper manufacturers etc. As it therefore excludes other major sectors such as domestic housing and transport, it covers less than 50% of the EU’s total greenhouse gas emissions.

24 In this respect, it differs significantly with taxes, where the additional financial cost is fixed but the environmental outcome cannot be determined

25 The US sulphur trading scheme, introduced from 1990 is often held up as a particularly successful example in which substantial reductions in emissions were achieved far more cheaply than had been predicted. However, some of the evidence presented to us contradicted such claims. See Q99

26 More strictly, individual point sources of emissions. See FoE’s comments on this at Ev 69

Phase 1 allocations and targets

26. In implementing the EU ETS, no overall EU-wide emissions cap or target was set: member states were free to set their own national caps for Phase 1, though in doing so they were supposed to have regard to their Kyoto commitments. Member states were therefore required to draw up National Allocation Plans (NAPs) which set out their target level of emissions at the end of Phase 1 and the basis on which these emissions would be allocated to different industrial sectors.

27. In both the written and oral evidence we received, many organisations argued that allocations for Phase 1 of the scheme right across Europe have been very unchallenging and were largely based on allocating sufficient allowances to cover “business-as-usual” projections. The RSPB, for example, described the process as a “race to the bottom” because of the way states had sought to protect the short-term competitiveness of their own economies.²⁷ Indeed, the following table demonstrates that relatively few countries have set target reductions of more than 3%, even when they are very far from achieving their Kyoto target; while Portugal and the Netherlands have actually set caps above their business-as-usual forecasts. Even the UK NAP formally submitted in April 2004 was based on a mere 0.7% reduction, and it was only an upward revision of its BAU forecast which appears to make it a little more testing.

**EU 15 National Allocation Plans:
Comparative effort against business-as-usual**

Country	Cap relative to BAU in NAP	Distance from Kyoto target in 2001
Denmark	-15.0%	+11.4%
Luxembourg	-8.8%	-28.8%
Austria	-6.0%	+16.8%
Spain	-6.0%	+23.8%
UK revised approach (November 2004)	-5.2%	-5.2%
Ireland	-3.0%	+23.9%
Finland	-3.0%	+4.7%
France	-1.7%	+0.4%
UK original approach (April 2004)	-0.7%	-5.2%
Germany	0.0%	-6.8%
Portugal	+1.6%	+21.6%
Netherlands	+3.0%	+7.4%
Belgium	Not available	+10.5%
Italy	Not available	+10.7%
Sweden	Not available	-5.5%
Greece	Not submitted	+9.8%

Source: DEFRA, *EU Emissions Trading Scheme consultation document, 11 November 2004*

Note: The “distance from Kyoto target in 2001” is assessed as the distance from a linear progression towards the Kyoto target. A negative figure means that a country has reduced its emissions to below the linear progression, and is therefore on course to meet the target.

28. Importantly, the view that the Phase 1 targets are very unchallenging was shared not only by environmental organisations but by financial institutions involved in the fledgling carbon trading market. James Cameron (Climate Change Capital), Louis Redshaw and Paul Dawson (Barclays Capital), and Charles Donovan (Enviros) all suggested that it had resulted in a lower price of carbon than was desirable. In their view, the price may be insufficient to create a liquid market and prompt investment in low-carbon technologies, as the targets could easily be reached by a limited amount of fuel switching: too much was being left to Phase 2.²⁸

29. An analysis which Enviros conducted in August 2004 of allowance price projections graphically illustrates this.²⁹ It shows that carbon will remain at its current price of about \$7 a tonne (or lower) to the end of Phase 1, but may then rise sharply in Phase 2 to over \$30 a tonne (mid-range value). Indeed, it is quite clear from the evidence presented to us that it is only the existence of the Kyoto targets which will force member states to set more demanding targets for Phase 2. There would appear to be little point in having an ETS unless it achieves significant absolute cuts in carbon emissions, and it is unfortunate that Phase 1 has set such an undemanding pace.

30. Phase 1 of the EU ETS has rightly been described as a “race to the bottom” in terms of the target caps set by individual member states. As a result, there is little prospect that it will yield any significant carbon reductions and this is reflected in the low price at which carbon is trading. Far tougher targets will need to be set in Phase 2 of the scheme and should be based on agreeing an overall cap for the EU. Indeed, it is only the existence of the Kyoto targets which will provide the driver for this process. This demonstrates the importance of such absolute targets within a post-2012 framework.

31. In Phase 1, not all aspects of implementation were precisely defined and there is therefore considerable flexibility in the way member states have interpreted some aspects of the scheme. For example, most emissions have to be allocated on a “grandfathering” basis (ie based on the share of emissions which individual sectors and companies have emitted in the past). But the scheme does allow member states to auction up to 5% of allocations (10% in Phase 2), and different states have taken a variety of approaches to this issue. Other differences in the way member states have implemented regulations include the treatment of new entrants, the definition of new plant etc. In giving evidence to us, both Barclays Capital and Climate Change Capital made it quite clear that these technical aspects were of considerable importance to market traders, and they argued the need for more harmonisation in Phase 2.³⁰

32. In Phase 1, not all aspects of implementation were precisely defined. There are therefore differences between arrangements in individual member states—including the extent to which auctioning of permits is used, and the size of any new entrants’ reserve. The UK should work to ensure that there is greater harmonisation and consistency in the way in which Phase 2 of the scheme is implemented.

28 Ev127ff, 157ff

29 Enviros, *European Emissions Trading Scheme Executive Briefing Two*, August 2004

30 Ev121, Ev215, Q391. See also Ev73, Ev76, Ev82, Ev259, and Q266

Windfall profits for power generators

33. We also noted that the use of grandfathering as a means to allocate emissions permits is likely to result in substantial windfall profits for power generators throughout the EU. The potential for such profits has been known for some time, though the issue has received surprisingly little attention in the UK.³¹ The Enviro briefing paper of August 2004 provided a range of estimates for the extra revenues that might be generated—1.3 to 3.6 billion Euros in 2006, and 14 to 30 billion Euros in 2010. It also pointed out that profits are likely to be particularly large in the UK due to the de-regulated nature of the market here.

34. Witnesses confirmed to us that UK power generators are likely to maximise the financial benefits they might gain from the EU ETS, and the extra revenue which they may enjoy may be well in excess of £500 million a year.³² There would be a peculiar irony here as the UK power generation sector is the one sector for which slightly tougher targets have been set in the UK NAP—and indeed there have been vociferous complaints on this score from both power generators and other organisations such as the CBI and the EEF. We raised the issue with John Healey MP, the Economic Secretary of the Treasury. He confirmed that the Treasury was aware of it but he did not consider that any Government action was required.³³

35. It is widely accepted that UK power generators are likely to make substantial windfall profits from the EU ETS amounting to £500 million a year or more. We regard this as unacceptable and particularly ironic in view of the complaints from the power sector over the targets set for them under the UK National Allocation Plan. The Government must take steps to address this issue by promoting the greater use of auctioning of emissions permits for the power generation sector in Phase 2, or by ensuring that windfall profits are re-invested in renewable and low-carbon technologies.

'Business-as-usual' and the UK NAP

36. National Allocation Plans have to be approved by the European Commission and Member States were required to submit their draft NAPs by 31 March 2004. Only a few states managed to meet this deadline. The UK issued a draft NAP for public consultation in January 2004 and subsequently formally submitted a revised version to the Commission on 30 April. On 7 July, the Commission announced it would accept the UK plan subject to the provision of further information on a number of minor issues. However, the UK subsequently published a revised plan in November 2004, increasing the total emission allocation by 20 million tonnes of carbon dioxide (to 756 million tonnes) on the basis that its previous provisional forecasts of emissions over the period had been understated.

31 The issue was raised in a consultancy report to DEFRA, DTI and OFGEM in 2003. See Ilex Energy Consulting, *The implications of the EU ETS for the power sector*, September 2003. The US Pew Centre also commented on it in early 2004.

32 QQ310-312, Ev 156, QQ378-386

33 Oral evidence taken before the Environmental Audit Committee on 9 February 2004. Cf Q584

37. The Commission has refused to consider the revised UK plan, not only because it was submitted after the deadline for any revisions but also because it has already approved the earlier draft NAP and cannot accept any subsequent upward revision of emissions. On 11 March 2005, the Government announced that, in order to enable UK business covered by the EU ETS to start participating fully, it intended to issue allowances as soon as possible; and that it would do this on the basis of the April 2004 submission. But at the same time it announced that it will be launching legal proceedings against the Commission.³⁴

38. In considering this issue it is interesting to note the way in which, during 2004, the UK government successively increased the emissions cap it set itself in its National Allocation Plan. The cap rose from 714 million tonnes of carbon dioxide in its first consultation version (January 2004), to 736 million tonnes in the formal submission to the Commission (April 2004), and finally to 756 million tonnes in the revised November NAP. In addition, the UK has adopted a particularly cautious approach by setting aside (within this overall cap) a surprisingly large reserve for new entrants to the market.³⁵

39. These increases in the UK cap partly reflect the strength of industry lobbying and the “race to the bottom” which the RSPB described. Throughout 2004, some trade organisations such as the Confederation of British Industry argued for a more lenient cap on the grounds that it would otherwise damage the competitiveness of the UK. They also raised wider concerns about the effect of the scheme on the competitiveness of the EU. However, a recent report from the International Energy Agency (IEA) suggests that the impact of the EU ETS on international competitiveness will be relatively small and manageable for most sectors.³⁶ This is supported by other reports, such as that carried out by Oxera for the Carbon Trust.³⁷ Indeed, it is interesting that the Carbon Trust has publicly criticised the Government for upwardly revising its carbon target.³⁸

40. In attempting to revise upwards its emissions cap for Phase 1 after the EU deadline had passed, the UK Government has become embroiled in a damaging legal argument with the European Commission and is in danger of wantonly squandering its reputation for leadership on climate change. We find the UK position particularly surprising since the cost of the disputed amount—some £33 million a year over the three year period of Phase 1³⁹—would be borne by the power generating sector and pales into insignificance beside the £500 million a year in windfall profits they are likely to earn from the scheme.

34 DEFRA press release, *UK announces next steps on EU Emissions Trading Scheme*, 11 March 2005

35 The reserve accounted for 7.7% of allocations. See The Ends Report, *Smoke and mirrors as UK revises allocation plan*, November 2004

36 European Commission, *European Competitiveness Report 2004*, November 2004

37 Oxera, *CO2 emissions trading: how will it affect UK industry?*, July 2004. See also the Carbon Trust’s own report, based on Oxera’s modelling, *The European Emissions Trading Scheme: implications for industrial competitiveness*, June 2004

38 The Ends Report, *Carbon Trust hits out over revised emissions allocation*, December 2004

39 Given the rate that CO2 is currently trading at (less than 7 Euros a tonne), the value of the disputed amount (20 million tonnes of carbon dioxide) would be in the order of 140 million Euros. As this is over a three year period, it amounts to about £33 million a year

41. The other reason why the Government revised the UK emissions cap upwards during 2004 was because the DTI were so late in updating their earlier energy forecast,⁴⁰ and were therefore unable to produce in time reliable estimates of future UK energy projections. This is unfortunate as it has affected other aspects of the Government's strategy such as the robustness of the Energy Efficiency Implementation Plan published in April 2004. Indeed, we commented extensively on this issue in our report last year on the Budget, *Budget 2004 and Energy*, and highlighted the need for far better and more timely monitoring of the impacts of policy instruments.⁴¹

42. In this context, however, what is of interest to us is that the DTI could have got it so wrong. The November 2004 emissions limit of 756 million tonnes is 42 million tonnes greater than the limit suggested in the initial consultation document of January 2004. This represents an increase of 6%. Moreover, various UK industry sectors are currently exempted from participating in the EU ETS on the grounds that they are facing equally challenging targets under their existing Climate Change Agreements. Yet we have previously noted that most of these agreements are based on relative efficiency targets rather than absolute targets, and we therefore question—given the difficulties the DTI has experienced in providing energy forecasts—how reliable and meaningful are the targets which they contain. We welcome the Government's commitment, in response to a previous recommendation of ours, to reporting on these agreements in a more transparent way and we await progress in this area.⁴²

43. The difficulties the DTI has experienced in providing reliable energy forecasts are reflected in the sheer scale of the upward revisions to the emissions cap in the UK NAP during 2004. Such difficulties undermine the very concept of “business-as-usual” (BAU) as a reliable basis on which to set targets and we therefore favour the adoption of absolute targets wherever possible.

Extending Phase 2 to include other sectors and gases

44. Phase 1 of the EU ETS covers only carbon dioxide and applies only to fixed industrial sources of emissions. It therefore excludes other key sectors—such as transport and the domestic sector—which between them account for nearly half of all carbon emissions. The coverage of Phase 2 has not as yet been finalised, and there were significant differences of view in the evidence we received as to the merits of incorporating other sectors and gases within it.

45. With regard to greenhouse gases other than carbon dioxide, given their very high carbon equivalence factors, we have concerns over the extent to which a relatively small number of high-value projects could increase investment uncertainty and detract from efforts to move to a truly low-carbon economy. Indeed, we agree strongly with the view expressed to us by Charles Donovan of EnviroS—that regulation, rather than trading,

40 EP68, December 2000

41 Op. cit.

42 EAC, Fifth Special Report of 2003-04, *Government Response to the Committee's Tenth Report, Session 2003-04, on Budget 2004 and Energy*, HC 1183, recommendation 19

might provide a better approach to reducing them.⁴³ In coming to this conclusion, we were very much aware of similar arguments over the Clean Development Mechanism, a topic we discuss below. Similarly, while we can understand the attractiveness of incorporating the road transport sector, it was unclear to us from the evidence we took whether this would in fact be feasible, given the current shortage of non-carbon sources of fuel. **The concept of Domestic Tradable Quotas provides a possible mechanism which could prove effective in bringing about behavioural change in the transport sector, and we would urge the Government to give serious consideration to introducing such a policy which could be more palatable than further increases in carbon-related taxation.**

46. **We are sceptical of the desirability of incorporating other greenhouse gases and sectors within Phase 2 of the EU ETS. We are also concerned that this may destabilise carbon-trading markets and undermine investment at precisely the time when far more stringent targets need to be set. The UK government should therefore work to ensure that there are minimal significant changes to the shape and scope of the scheme, and that non-carbon greenhouse gases are addressed through regulation rather than trading.**

Aviation

47. Aviation represents a particularly important source of carbon emissions in view of the wider impacts it has on global warming and the rate at which these are increasing. As a Committee, we have reported some four times on this topic in the last two years and we have demonstrated that the forecast growth in aviation will make it totally impossible for the UK to achieve its 60% carbon reduction target for 2050.⁴⁴ In the evidence presented to us on this inquiry, various organisations—including British Airways, the British Airports Authority, and Shell—favoured including aviation in the EU ETS.⁴⁵

48. The Government is committed to incorporating aviation within Phase 2 of the EU ETS. Indeed, this constitutes its only policy for tackling the escalating environmental impacts of aviation. However, the current EU agenda on aviation reflects the fact that other member states consider that taxes or charges represent at least as effective a basis on which to proceed. In the context of our regular Pre-Budget and Budget inquiries, we questioned the Economic Secretary closely on this point, and he was unable to give us any assurance that a consensus could be reached in time.⁴⁶ **We see no possibility of the UK Government achieving its objective of incorporating aviation in Phase 2 of the EU ETS, and we continue to think that a mixture of other policies—including the scope for taxation and emissions charging—should be pursued.**

49. Other considerations also need to be taken into account if aviation is ultimately incorporated within the EU ETS. As is well known, in addition to carbon dioxide, aviation

43 Q421

44 EAC's final short report in this series contains full references. See the Eleventh Report of 2003-04, *Aviation: Sustainability and the Government's Second Response*, HC 1063

45 Ev 94, 104, Q279

46 Oral evidence from John Healey MP taken before the Environmental Audit Committee on 9 February 2004

emissions include water vapour and Nox—both of which are thought to contribute to global warming. Indeed, in calculating aviation emissions, the Treasury itself has used a factor of 2.5 to reflect this, and some recent evidence suggests that the appropriate factor might be significantly larger. We strongly believe that, if aviation were to be included in the ETS, it should be only on the basis of accounting for all its global warming impacts and not simply on the basis of its carbon emissions.

50. There are also significant problems in relation to determining an appropriate allocation of allowances for aviation. In their evidence to us, British Airways argue for an allocation which would reflect the forecast growth of the industry.⁴⁷ But, as we have seen, emission caps for Phase 2 and subsequent phases will need to be far tighter, and other industrial sectors will face real challenges in making the cuts which will be necessary. The concept of adding at each stage a bundle of significant extra allowances to facilitate the growth of aviation would simply undermine the integrity of the whole scheme and weaken the targets.

51. What is essentially at stake here is the basis on which aviation would take part in the EU ETS. Our view is that it cannot continue to be treated as a special case indefinitely, and any attempt to ring-fence aviation in some way and construct some kind of restricted trading portal with the rest of the market would be futile. But if aviation is to be incorporated on an equal basis with other sectors, even if some allowance were to be made for several years' growth, the profile of allocations would need to stabilise and subsequently reduce along with other sectors. As we have already graphically shown, if we are to stand any chance of achieving carbon reductions of 60% or more, it is self-evident that the growth of aviation cannot increase to the extent forecast. Any assumptions regarding the future growth of aviation for the sake of calculating allowances should be based on the need to clearly limit them both in quantity and duration. Moreover, the Government should consider the effectiveness of carbon neutrality schemes as a short-term measure to offset the environmental impacts of aviation emissions.

52. We would support the inclusion of aviation within a rigorous emissions trading system only on the basis that our concerns over allocations and global warming impacts were addressed. In such circumstances we accept that, as there is currently no possibility of achieving significant reductions in aviation emissions, emissions trading would act on aviation as a demand management tool and this would be reflected in very considerable increases in the price of air travel. If the Government is really concerned about the impacts on social equity, it should explore other avenues to address this—including, for example, the concept of Domestic Tradable Quotas.

Wider issues

53. Emissions trading can provide an effective means for reducing carbon emissions but only in the context of a strong regulatory and legal framework within which absolute caps and tough compliance penalties can be enforced. Such a framework exists within the EU. Not only does the EU ETS contain within itself sufficiently draconian

penalties, but also member states cannot simply walk away if the going gets tough because of the complex web of economic, regulatory and legal ties which bind them together. However, no such framework exists at an international level and we see little willingness on the part of national governments to put one in place.

54. However, the EU ETS does not currently represent a comprehensive solution to emissions reductions, as it only covers half the total carbon emissions of member states. As the RSPB has pointed out, this can sometimes make it difficult to assess EU ETS targets against Kyoto targets as one member state may, for example, place more reliance than another on reducing transport or domestic emissions and may therefore wish to set a less challenging ETS target.⁴⁸ Moreover, the targets set for the EU ETS are still relatively short term and undemanding. They may therefore fail to provide an adequate framework within which industry can invest in low-carbon technologies. Some of the organisations which gave evidence to us called for targets to be set at least 10 years in advance.⁴⁹

55. In addition, it is obvious to us that, if a truly liquid market in carbon does arise, there will be considerable overheads involved in emissions trading. Not only will there be the costs of operating the system itself—the need to allocate, track and verify emission permits and trades; but there will also be the costs individual companies bear in participating meaningfully in the market and maximising the financial benefit to themselves. Indeed, it was for that very reason that Lord Marshall, in his 1998 report on UK domestic energy policy, argued that emissions trading would only be appropriate for larger companies and that other policy instruments were needed for SMEs and other sectors.⁵⁰

56. **In the final analysis, emissions trading will only work effectively if it results in an increase in the price of energy for industry, business and even domestic consumers. Only then will the necessary incentives to prompt behavioural change and investment in low-carbon technologies arise. Moreover, if technological improvements cannot deliver sufficient emission reductions, “cap and trade” systems will result in large price increases and will therefore become demand management policy instruments rationing activity in certain areas.**

The UNFCCC and the Kyoto Protocol

The impact of the Protocol

57. The United Nations Framework Convention on Climate Change (UNFCCC), signed in 1992, represents a landmark in the battle against climate change. The Preamble to the Convention acknowledged the significant contribution human activities were making to global warming, and Article 2 set out the overall objective of the Convention as follows:

48 Q22

49 Ev113, Ev149 etc

50 *Economic Instruments and the Business Use of Energy*, November 1998

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

58. In signing the Convention, all countries of the world have therefore already committed themselves to the overall objective of stabilising carbon emissions at a level which will not give rise to dangerous anthropogenic climate change—though this level has never, and perhaps can never, be precisely defined. The Convention introduced the concept of “common but differentiated responsibilities” under which developed states (which were primarily responsible for global warming) should take action first. It also set up a process—the annual Conference of the Parties (COP) and its working groups—by which to pursue the overall objective, and it was this process which in turn led to the Kyoto Protocol.

59. The Kyoto Protocol, agreed at COP3 in 1997, developed further the concept of common but differentiated responsibilities by requiring developed nations to demonstrate their commitment to emission reductions by taking on binding targets. These targets must be achieved as an average over the ‘first commitment period’ of 2008–2012. However, in order to show early action, signatories must have already made demonstrable progress towards meeting their commitments by 2005, and must submit a progress report on this matter by 1 January 2006.⁵¹ The Protocol requires Parties to begin negotiations on a second commitment period (to follow on after 2012) by the end of 2005, but does not specify in any respect the form any further agreement should take.

60. Not all aspects of the Protocol were defined in 1997, and it was left to subsequent rounds of negotiation to develop certain aspects such as the detailed rules governing the three “flexible mechanisms”—Emissions Trading, Joint Implementation, and the Clean Development Mechanism.⁵² In addition, the Protocol itself could only enter into force when ratified by enough countries to account for at least 55% of all developed country emissions. Although some 140 countries had already ratified the Protocol, the withdrawal of the US from the Protocol in 2001 resulted in ratification subsequently depending entirely on Russia. As is now well known, the approval of the Protocol by the Russian Duma in November 2004 finally led to the Kyoto Protocol becoming a legal reality on 16th February 2005—over 7 years after it was negotiated.

61. As witnesses to our inquiry affirmed, the Kyoto targets were set on the basis of political bartering rather than any transparent and agreed criteria.⁵³ Moreover, unlike the strong

51 This is in addition to the regular monitoring reports which developed countries are required to submit to the Kyoto Secretariat

52 Joint Implementation and the Clean Development Mechanism are closely related policy instruments. The CDM allows Annex 1 countries to claim emission reduction credits for low-carbon investment projects carried out in developing countries; while Joint Implementation allows them to claim such credits for projects carried out in other Annex 1 countries

53 QQ8-9

regulatory framework within the EU, the Protocol did not contain any penalties or mechanisms to enforce compliance. While a compliance regime was subsequently agreed with the adoption of the Marrakesh Accords, it is clear from the performance of developed countries against their targets that these are not a credible deterrent.⁵⁴ If all individual member states were to achieve their targets, emissions in developed countries would be cut by 5.2%. However, emissions in many developed states have risen, even those which have ratified the Protocol and are facing significant absolute reduction targets (eg Canada, Japan). And where there have been significant reductions, this has generally been due to economic factors (eg Eastern Europe and the former Soviet Union) or to one-off gains from fuel-switching (eg Germany and the UK). Our analysis of UNFCCC data shows that the total emissions of developed countries in 2000 were over 8% above the 1990 baseline, while forecasts indicate that by 2010 they might be as much as 17% higher. The table opposite sets this out.

54 The compliance system consists of a Compliance Committee which has both an advisory and enforcement role. If a Party fails to meet its emissions target, it must make up the difference in the second commitment period, plus a penalty of 30%. It must also develop a compliance action plan, and its eligibility to sell under emissions trading will be suspended.

Performance against Kyoto targets

Party	Baseline emissions 1990	Actual Emissions 2000		Forecast emissions 2010 ("with measures")		Kyoto Protocol target 2008-2012	
	GHG MtCO ₂ e	GHG MtCO ₂ e	% change	GHG MtCO ₂ e	% change	GHG MtCO ₂ e	% change
Australia	427	507	18.7	541	26.5	461	8
Austria	77	80	3.1	86	11.2	67	-13
Belgium	145	158	9.3	171	18.5	134	-7.5
Bulgaria**	157	77	-50.7	134	-14.8	145	-8
Canada	607	726	19.6	770	26.8	571	-6
Croatia**	32	29	-9.5	38	18.9	30	-5
Czech Republic**	192	148	-23.1	128	-33.2	177	-8
Estonia**	44	20	-54.6	19	-56.6	40	-8
European Community	4,216	4,068	-3.5	4,189	-0.6	3,878	-8
Finland	77	74	-4.1	90	16.6	77	0
France	549	537	-2.2	583	6.0	549	0
Germany	1,223	991	-18.9	812	-33.6	966	-21
Greece	105	130	24.0	147	40.3	131	25
Hungary**	84	59	-29.6	66	-22.0	79	-6
Italy	521	547	5.1	540	3.7	487	-6.5
Japan	1,247	1,386	11.2	1,317	5.7	1,172	-6
Latvia**	31	11	-65.6	13	-58.8	29	-8
Liechtenstein	0	0	0.0	0	0.0	0	-8
Netherlands	217	242	11.5	256	18.0	204	-6
New Zealand	73	77	5.2	88	20.4	73	0
Norway	52	55	6.3	63	21.6	52	1
Poland**	463	370	-20.1	394	-14.9	435	-6
Russian Federation**	2,360	1,510	-36.0	2,098	-11.1	2,360	0
Slovakia**	73	49	-32.6	53	-27.1	67	-8
Slovenia**	20	21	2.8	22	9.8	19	-8
Spain	209	285	36.5	307	47.1	240	15
Sweden	71	69	-1.7	71	0.5	73	4
Switzerland	53	53	-0.9	53	-1.0	49	-8
United Kingdom	743	649	-12.6	631	-15.1	650	-12.5
United States	6,131	7,001	14.2	8,115	32.4	5,702	-7
Total	15,982	15,863	-0.7	17,606	10.2	15,040	-5.9
excluding USA	9,852	8,862	-10.0	9,491	-3.7	9,338	-5.2
excluding EE/FSU	12,526	13,569	8.3	14,641	16.9	11,659	-6.9

Source: EAC analysis of UNFCCC data (FCCC/SBI/2003/7/Add.3)

Notes:

1. Emission figures are for the basket of 6 greenhouse gases (GHG) and are denominated in carbon dioxide (not carbon). The percentage change figures relate to performance against the baseline. Totals exclude the European Community (which reports separately) in order to avoid double counting. EE/FSU refers to economies in transition (**)
2. The UNFCCC data is based on an analysis carried out of the Third National Communications which were required to be submitted by Parties to the Kyoto Protocol by 30 November 2001. As a number of Parties had not submitted their Communications before the UNFCCC compiled this data in 2003, the above table does not contain a complete list of those Parties which have taken on binding emissions targets.
3. Inventory data for subsequent years is also available but it is not complete and contains some significant differences in baseline and outturn figures for certain Parties. Analysis of it for those Parties included in the above table in any case reveals very similar results.

62. **There is a widespread consensus that the targets set in the Kyoto Protocol are weak, and that far more challenging targets will need to be set in subsequent commitment periods. Yet the difficulties facing many developed nations in achieving even their Kyoto targets reflect the intricate dependence of modern economies on energy and the consequent need for far greater priority to be accorded by governments to mainstreaming environmental objectives.**

Kyoto trading

63. The Kyoto Protocol provides for the possibility of emissions trading as one mechanism by which developed countries can meet their targets. Compared with the EU ETS there are a number of important differences:

- Kyoto trading is based on inter-country, rather than inter-company trading. It will therefore consist of bilateral deals between sovereign states.
- The Kyoto targets apply to national emissions, rather than emissions from particular sectors. As it is more comprehensive, therefore, trading can theoretically contribute to a certainty of outcome which is absent from the EU system.
- Kyoto trading is on the basis of the basket of 6 greenhouse gases, rather than carbon dioxide alone.

64. Given the difficulties of meeting their domestic targets, various developed countries are expected to purchase surplus emission credits from Russia and former Eastern European states where their economic downturn since the 1990 baseline year has resulted in surplus “hot air” credits which they are free to sell. However, the amount of credits which will be available is unclear as forecasts suggest a rising profile of emissions particularly within Eastern Europe to 2010.⁵⁵

65. Such one-off inter-governmental trades introduce another level of uncertainty into the EU ETS. We would regard it as unacceptable for member states to rely extensively on hot air credits to meet their national targets, though we accept that some degree of political compromise may be involved here—particularly in view of the part played by Russia in ratifying the Protocol. These trades could usefully be accompanied by commitments to invest the proceeds in low-carbon projects—providing an informal alternative to Joint Implementation.

66. The UK is likely to exceed significantly its Kyoto target, even on the basis of the latest forecasts. The Government will therefore be in a position to sell surplus credits, and this might bring in significant extra revenue. However, the UK’s performance to date largely reflects emission reductions achieved before 1997, and the Government is way off course in terms of meeting its domestic carbon reduction target (a 20% reduction by 2010). **We believe it would be entirely inappropriate for the UK Government to sell any surplus Kyoto credits. Instead, it should ensure that it incorporates within Phase 2 of the EU**

55 Cf. IEA, *World Energy Outlook 2004*

ETS a far more challenging emissions cap based on the need to achieve its domestic carbon reduction target.

The Clean Development Mechanism

67. The Clean Development Mechanism (CDM) was incorporated within the Kyoto Protocol as a means of promoting low-carbon investment in less-developed and developing countries while enabling sponsoring countries to claim the emissions credits. A number of environmental organisations expressed considerable concerns about the CDM. In particular, in its memorandum submitted jointly with the SinksWatch and the Carbon Trade Watch, the CornerHouse provided a detailed critique which raised a number of interesting issues including the difficulty of assessing relative savings against a business-as-usual forecast and the fact that the CDM was leading to the wrong kind of investment.⁵⁶ More generally, environmental organisations argued that, to the extent that the CDM allows sponsoring countries to achieve their targets without cutting their own emissions, it weakens the rigour of the Protocol and the targets it contains; and that investment assistance should have been kept entirely separate.⁵⁷

68. By contrast, James Cameron of Climate Change Capital set out a rather different vision of the CDM, informed at least partly by his own involvement in drawing up the legal texts. He acknowledged that the CDM was not working properly: far too few projects were actually being approved because the bureaucratic criteria for demonstrating additionally had become so stringent. What he had originally envisaged was a wealth of investment flowing from developed to developing countries, and large numbers of projects undertaken. He accepted that the concept of letting many flowers bloom would, on occasion, lead to some errors: but that was inevitable and was a price worth paying in return for the potential benefits.⁵⁸

69. We have considerable sympathy for this viewpoint, but we were also struck by an apparent inconsistency. On the one hand, Climate Change Capital—and indeed Barclays Capital—argued strongly for the rigorous implementation of emissions trading within the EU—emphasising the need for stringent absolute targets and the necessity of not linking to other less rigorous emissions trading schemes, such as the proposed Canadian scheme which is to be based on relative rather than absolute targets.⁵⁹ On the other hand, they strongly supported the use of the Clean Development Mechanism as a method of promoting the development of low-carbon economies in developing countries—despite the fact that CDM projects often rely on the concept of relative emissions reductions set on the basis of BAU forecasts.

70. In the absence of more objective and detailed evidence on the nature of the investment taking place, it is difficult to come to any definitive conclusion on the overall effectiveness

56 Ev 58ff

57 Ev3, Ev 58 etc

58 Q330 ff

59 Ev 126

of the Clean Development Mechanism. **We note the concerns raised over the impact of the CDM—in particular, the slow rate of project approval, the kinds of projects being approved, and the difficulties involved in assessing savings against business-as-usual forecasts.**⁶⁰ The UK might wish to promote discussion on whether different criteria might usefully be applied to different classes of projects (including a distinction between projects to reduce carbon and those to reduce other greenhouse gases)—particularly if the scale of future investment increases significantly. **We are also concerned that many less developed countries will not have the expertise and resources to partake in the CDM, and capacity building therefore remains a major issue.**

A post-2012 framework

71. Academic discussion of future emission-reduction policies has spawned a wealth of different proposals. A recent Pew Centre Report, for example, has listed some 44 different approaches.⁶¹ The discussion has now taken on a new political urgency in the light of the ratification of the Kyoto Protocol and in particular the latest scientific evidence on the impacts of Climate Change. The Protocol requires Parties to begin negotiations on a second commitment period (to follow on after 2012) by the end of 2005, but does not specify in any respect the form any further agreement should take. COP 10 in Buenos Aires initiated discussion on this topic, and—while radically different ideas were put forward—the meeting at least resulted in an agreement to take forward discussions during 2005.

72. We received a wide variety of suggestions over the nature of a post-2012 agreement. Many organisations argued for a Kyoto-plus approach, based closely on the present approach but with more challenging absolute emission targets set for developed countries and perhaps for at least some key rapidly developing countries. Others argued along more radical lines either for a coherent framework which would embrace all nations or for a more flexible multi-faceted approach which put greater reliance on technical and behavioural development. Behind many of these arguments lies the issue of how to bring the US on board, and this generally accounted for significant differences in approach.

The need for complementary action

73. In our view, the threat posed by Climate Change is so huge and potentially catastrophic that action on all fronts is required. Indeed, at the November 2004 Berlin conference on climate change, organised by the UK Government as part of its preparations for chairing the G8 in 2005, the Director of the Tyndall Institute, John Schellnhuber, argued that it is possible for developed countries to make emission reductions of 60% or so by 2050—but only by using to the full all possible policy instruments at our disposal.⁶² In his evidence to us, Professor Rayner spoke compellingly about the need for a multi-faceted approach involving far greater levels of investment in technology and the need to generate carbon

60 These concerns were acknowledged by the FCO and DEFRA. See QQ 589-592

61 Pew Centre for Global Climate Change, *Efforts beyond 2012: a survey of approaches*, December 2004

62 The conference took place on 3 November 2004. The EAC was formally represented by Mr Colin Challen MP

awareness at all levels of society.⁶³ Since then, the International Climate Change Task Force has published its interim report and recommended a broad swathe of proposals on similar lines.⁶⁴

74. The challenge of climate change is so great that action is required on all fronts if we are to achieve the scale of emission reductions required. We therefore endorse the broad swathe of proposals suggested by the International Climate Change Task Force. Indeed, we have ourselves emphasised key aspects of those proposals in previous reports—in particular, the need for large increases in government support for renewables and for energy efficiency, and the need to embed environmental and sustainable development objectives in key organisations both nationally and internationally.

75. We do not believe, however, that complementary policies alone will be sufficient. And we are particularly concerned at the continuing reliance which the US and to a lesser extent the UK appear to place on technological development and the removal of market barriers as the main way of combating climate change—as reflected in the Prime Minister’s recent speech at Davos.

The second commitment period

76. As we have already seen, the success of the EU ETS entirely depends on the existence of the Kyoto burden sharing targets which member states face: it is only the existence of these absolute emissions targets which will drive forward the scheme in Phase 2. This highlights the central importance of such targets in combating climate change, and of the need to incorporate them in a successor treaty when Kyoto expires in 2012.

77. There has been much discussion of the nature of such an agreement, and attention has increasingly focussed on ‘multi-stage’ approaches. Indeed, this was one of the central recommendations of the recent report from the International Climate Change Taskforce. Such approaches rely on acknowledging the “differentiated responsibilities” facing less-developed and developing countries by categorising them in different groups which face progressively more demanding objectives and targets. Absolute emissions reduction targets would only apply to developed countries: relative targets might apply to the next group of countries, while other groups might be offered substantial development assistance as targets would be inappropriate.

78. It seems to us that much of the discussion on the future of the Kyoto Protocol fails to address a central question—namely, the basis on which targets should be set for developed and rapidly developing economies. The failure to confront this issue more directly is likely to give rise to a similar process of political bartering which was involved in the original Kyoto negotiations. In such circumstances, we have no confidence that far more demanding targets will in fact be set, and if such targets are to be agreed it seems to us inescapable that they must be based on an agreed set of criteria.

63 Ev 142 ff

64 International Climate Change Taskforce, *Meeting the Climate Challenge*, January 2004

International competitiveness and per capita emissions

79. Moreover, it is quite clear that governments in developed countries are failing to take more radical action to address the climate change challenge due to competitiveness fears, and in particular the threat which they perceive is posed by China and India. The UK Government has regularly highlighted such concerns as a reason for keeping energy prices low and failing to increase fuel duties. In passing the Byrd-Hagel resolution, the United States has gone further by preventing ratification of any international climate change treaty which does not include targets for developing countries.⁶⁵

80. The competitiveness issue is one which we are considering in more detail in the context of our current work on the Treasury's environmental tax policies. But a number of relevant points need to be made here. There may be costs associated with taking action to tackle Climate Change, but failure to take action is likely to result in far greater long-term costs to individuals, industry and the economy as a whole. Moreover, as the WWF and the Environmental Industries Commission have argued, some sectors of industry and trade groups such as the Confederation of British Industry (CBI) have regularly exaggerated the financial costs of environmental regulations.⁶⁶ Indeed, higher standards of regulation can promote the development of environmental technologies and generate their own additional economic rewards—and in this respect the UK is already losing out to other countries. While we would not deny that countries such as China and India will indeed provide strong competition and will inevitably gain a far greater market share of world trade, we would see this as an inevitable process of economic redistribution which we need to embrace rather than fight against. We therefore disagree profoundly with the competitive and protectionist attitude displayed by the CBI in its evidence to us.⁶⁷

81. Moreover, although developing countries will overtake the developed world in terms of total emissions by 2020 or soon after, the differences in terms of per capita emissions will remain vast. The table opposite demonstrates that emissions in China will rise to only 4.6 tonnes of CO₂ per person by 2025, as against 23.4 tonnes in the US and 11 tonnes in the UK.

65 The Byrd-Hagel resolution was passed by the US Senate in July 1997 with a majority of 95-0. It expressed the view of the Senate that the US should not become a signatory to any international agreement on limiting greenhouse gases unless developing countries also took on emissions targets

66 WWF, *Cry Wolf*, April 2004. See also oral evidence from the Environmental Industries Commission taken before the EAC on 26 January 2005

67 Ev 175ff

Region/Country	Emissions (MtCO ₂)		Population (millions)		Per capita emissions (tonnes)	
	2001	2025	2001	2025	2001	2025
Industrialized Countries						
North America	6,613	9,659	417	514	15.9	18.8
United States	5,692	8,142	286	348	19.9	23.4
Canada	569	830	31	36	18.4	23.1
Mexico	352	687	100	130	3.5	5.3
Western Europe	3,465	4,022	391	397	8.9	10.1
United Kingdom	563	692	59	63	9.5	11.0
France	396	412	60	64	6.6	6.4
Germany	819	969	82	82	10.0	11.8
Italy.	445	540	57	53	7.8	10.2
Netherlands	248	286	16	17	15.5	16.8
Other Western Europe	994	1,123	117	117	8.5	9.6
Industrialized Asia	1,556	1,962	150	151	10.4	13.0
Japan	1,158	1,356	127	123	9.1	11.0
Australia/New Zealand	398	605	23	28	17.3	21.6
Total Industrialized	11,634	15,643	959	1,061	12.1	14.7
EE/FSU						
Former Soviet Union	2,399	3,393	289	272	8.3	12.5
Russia	1,614	2,186	145	124	11.1	17.6
Other FSU	785	1,207	144	148	5.5	8.2
Eastern Europe	748	920	121	115	6.2	8.0
Total EE/FSU	3,148	4,313	410	387	7.7	11.1
Developing Countries						
Developing Asia.	6,012	11,801	3,288	4,168	1.8	2.8
China	3,050	6,666	1,285	1,445	2.4	4.6
India.	917	1,834	1,033	1,369	0.9	1.3
South Korea.	443	720	47	50	9.4	14.4
Other Asia	1,602	2,581	923	1,304	1.7	2.0
Middle East	1,299	2,110	247	375	5.3	5.6
Turkey	184	340	69	89	2.7	3.8
Other Middle East	1,115	1,770	178	286	6.3	6.2
Africa .	843	1,413	814	1,292	1.0	1.1
Central and South America	964	1,845	428	557	2.3	3.3
Brazil	347	720	174	216	2.0	3.3
Other Central/South America	617	1,125	254	341	2.4	3.3
Total Developing	9,118	17,168	4,777	6,392	1.9	2.7
Total World	23,899	37,124	6,145	7,841	3.9	4.7

Source: US DoE and EAC analysis

82. It is particularly interesting to consider these figures in relation to the scale of the emissions reductions required. We noted above that emissions will need to peak in the next two decades and then fall to 11,000 million tonnes of CO₂ by 2100. Yet on the basis of the likely population in 2025 that figure would imply a world per capita emission level of 1.4 tonnes per person. Of all the countries and regions in the table only Africa and India are likely to remain below that level by 2025: all other countries would be above it and would need to reduce their emissions if the target is to be met.

Contraction and Convergence

83. Such calculations provide an interesting and important perspective on the context in which negotiations on a post-2012 framework should take place. The Global Commons Institute (GCI) has been promoting the concept of equal per capita emission allocations since its foundation in 1990, and it has coined the term “Contraction and Convergence” (C&C) to describe its approach. C&C involves two distinct stages—firstly defining the level to which global emissions need to be reduced to avoid dangerous climate change, and secondly allocating this level of emissions to countries on an equal per capita basis.

84. The C&C model put forward by the GCI does not in itself define the mechanisms by which emission reductions are to be achieved—whether through emissions trading, international taxes, or regulatory approaches. Nor does it stipulate the actual level at which emissions should be stabilised, or indeed the timescales over which the targets should be set. It does, however, graphically illustrate the consequences of varying these parameters, and provides a useful framework within which to set targets and frame policy responses. The real strength of the model, however, arises from the manner in which the concept of equity underpins it.

85. Given the scale of the reductions which are needed, there is now a growing awareness of the need for a ‘full-term’ framework such as the one C&C provides. Indeed, it is difficult to argue with the fundamental principle of equal per capita allocations, and various witnesses—including the Under-Secretary of State of the Foreign Office and the Director-General of the CBI—acknowledged the viability of the model.⁶⁸ This is also reflected in the joint memorandum submitted by DEFRA and the FCO,⁶⁹ and in the recent report from the International Climate Change Taskforce which explicitly accepted that equal per capita emissions allowances should form the basis for a long-term solution.⁷⁰ While, in their memorandum to us, Barclays Capital set out a vision of an all-embracing international ETS involving 60 year targets determined by a C&C approach.⁷¹

86. Any framework which involves radical emission reductions would in practice resemble the Contraction and Convergence approach advocated by the Global Commons Institute. Indeed, in terms of domestic policy aims, the UK Government has already implicitly accepted this approach in adopting the 60% carbon reduction target for 2050; and it is therefore inconsistent not to adopt such an approach internationally. We do not see any credible alternative and none was suggested in evidence to our inquiry. We therefore recommend that the UK Government should formally adopt and promote Contraction and Convergence as the basis for future international agreements to reduce emissions.

68 Q554, QQ481-482

69 Ev 190

70 International Climate Change Taskforce, *Meeting the Climate Challenge*, January 2005

71 Ev 148ff

UK Government objectives for 2005

Departmental objectives and the EU

87. The Prime Minister has on several occasions acknowledged that Climate Change constitutes the most serious threat facing mankind. Earlier this year at Davos, he underlined this by stating that *“This year offers a unique set of opportunities. I am committed to using the UK’s G8 and EU presidencies to try to make a breakthrough on Africa and climate change.”*⁷²

88. An important and recurring aspect of our work is to audit the performance of all Government departments in terms of the progress they are making on sustainable development. One of the key issues which has concerned us in this respect is the extent to which environmental objectives have been mainstreamed within departmental business plans, Public Service Agreements (PSAs), and spending reviews. In this context, we were interested to examine the FCO’s PSA to see to what extent it reflected the overriding priority which the Prime Minister has accorded to the issue of climate change.

89. We were disappointed to find that the FCO PSA did not contain any reference to either climate change or global warming. Indeed, of the 9 objectives it sets out, five of them related entirely to terrorism and security issues,⁷³ while three related to the promotion of economic growth, the security of UK and global energy supplies, and the regulation of consular services.⁷⁴ Only one objective appeared at all relevant, but both targets it contained related social rather than environmental objectives.⁷⁵

90. We questioned the Under-Secretary of State closely as to why there was not a single reference to climate change and global warming in the FCO’s new PSA. He suggested that the objective relating to security of supply included such considerations even though this was not obviously apparent. But he did acknowledge that the PSA did not in fact reflect the priority which was accorded to this issue and he went on to assure us that climate change was indeed a high priority within the FCO.⁷⁶

91. We appreciate that the FCO is indeed significantly involved in climate change issues. Indeed, in November 2004 it hosted a conference on Climate Change at the British Embassy in Berlin at which our Committee was represented. It also plays an important role in taking forward some of the WSSD partnership agreements. Moreover, it has very recently released a Sustainable Development Strategy which sets out its approach to these issues more fully. We have only had a limited opportunity to examine the Strategy in detail, but we welcome the fact that—in the context of the security of UK and global energy supplies (Objective 7 of the PSA)—it does reflect concerns over Climate Change and the

72 His speech is available at:<http://www.number-10.gov.uk/output/Page7006.asp>

73 Objectives 1 – 4 and objective 8

74 Objectives 5, 7, 9

75 Objective 5: “Sustainable development, underpinned by democracy, good governance and human rights”

76 QQ533-534

need to promote renewable energy. However, the challenge of climate change goes far wider than this, and we remain disappointed that it is not accorded a higher priority within the department's PSA.

92. We appreciate the role the FCO is playing in relation to climate change. But, given the overriding importance of this issue and the priority accorded to it by the Prime Minister, it is disappointing that there is no mention of either climate change or global warming in its latest PSA. Indeed, the PSA does not contain any clear environmental objective or target of any kind—in marked contrast to the priority accorded to terrorism and security objectives.

93. We also looked at the agenda which the UK Government anticipates taking forward during the second half of 2005, when the UK will also hold the presidency of the EU. The recent Command Paper, *The Prospects for the EU in 2005*, covers the whole spectrum of business that the EU is likely to undertake during the course of the year.⁷⁷ However, climate change is only briefly referred to in paragraphs 4 and 44 and the Paper places considerable emphasis on other priorities. For example, 'breaking down barriers to free trade' is a recurring theme, and paragraph 28 states that "*regulatory reform in the EU is a top Government priority.*" It is also worth quoting the second and third paragraphs of the Foreign Secretary's forward, so as to reflect the priorities evinced in the whole document.

For the UK, our Presidency in the second half of the year offers us a key opportunity to help shape the EU's agenda and lead the Union from the front. It means that we will be able to look for progress on the UK Presidency themes of security, prosperity and sustainability. These include: removing barriers to the free movement of workers, goods, capital and especially services; making progress on the EU's climate change targets; ensuring that overly burdensome legislation is simplified; and addressing terrorism, regional instability and conflict.

2005 will also be a crucial year for EU and international efforts to reduce global poverty. We will pay particular attention to the challenges facing Africa, through both our EU Presidency and our role as President of the G8 group of leading industrialised nations – a position we will hold for the whole of 2005. We will also continue to work closely with European and other partners to ensure that the countries affected by December's tsunami receive the necessary assistance.

94. The agenda the UK is expecting to take forward during its presidency of the EU is set out in the recent command paper "The Prospects for the EU in 2005". We are disappointed that this had so little to say on the subject of climate change, and that by contrast other issues appear to receive far greater priority. As with the FCO's PSA, the low priority accorded to this issue does not appear to reflect the claims made by the Prime Minister.

95. The evidence presented to us showed that the EU has achieved only a 2.9% reduction in greenhouse gas emissions, and that it is not on course to meet its Kyoto target of 8% let

77 Cm 6450, February 2005

alone its domestic target of a 21% cut.⁷⁸ **We entirely endorse the view of the RSPB that a key task of the UK presidency should be to review progress towards meeting its emission reduction targets and initiate processes and policies to address the shortfall. We have also raised elsewhere in this report other issues which the UK could usefully pursue, particularly in relation to the further development of the EU ETS.**

International priorities

96. The UK will hold the 2005 G8 annual Summit at Gleneagles in early July, though this will be preceded by a number of ministerial meetings (eg of Finance, Employment, Environment, and Justice ministers). The Government has set out three broad aims for climate change in the G8 in 2005:

- *Building a solid foundation on the science. We need to further explore the relationships between greenhouse gas emissions and the associated level of climate change;*
- *Reaching agreement on how to speed up the science, development of technology and other measures necessary to meet the threat;*
- *Engage countries outside the G8 who have growing energy needs, such as China and India, both on how these needs can be met sustainably and how they can adapt to the impacts which are unavoidable.⁷⁹*

97. While we do not disagree with these objectives in themselves, we find them dismally unambitious in relation to the scale of the challenge posed by Climate Change and the need to promote a consensus on a post-2012 framework. The end of 2005 may prove to be crucially important as this agenda will be taken forward not only in COP 11 but also in the first Members of the Protocol summit (MOP1), the latter constituting a legally distinct forum for those states which have ratified the Kyoto protocol.

98. We are particularly concerned that the Government remains preoccupied with both the science of climate change and the scope for technological solutions. The science is no longer in serious doubt, and, while we welcome further scientific discussion of climate change, we find it disappointing that the Government should have held up the Hadley Centre conference as one of its three key objectives for 2005. With regard to technology, the Prime Minister stated at Davos:

Political leaders worry they are being asked to take unacceptable falls in economic growth and living standards to tackle climate change. My view is that if we put forward, as a solution to climate change, something which involves drastic cuts in growth or standards of living, it matters not how justified it is, it simply won't be agreed to. But fortunately that need not be the case. Science and technology cannot alone

78 Ev 7

79 More information about the Summit can be found at www.g8.gov.uk

provide the answer. But they certainly provide the means to ensure that we can reduce greenhouse gas emissions without damaging our economy

99. We are profoundly concerned with the attitude this displays. While we accept that technology may indeed have an important part to play, it has yet to demonstrate that it can actually reduce environmental impacts as it has also given rise to significant additional energy demands. Moreover, it is clear to us that the scale of the cuts which are required cannot be achieved without significant behavioural change on the part of industry and the public. In focussing on these two areas of science and technology, the Government is creating the appearance of activity around the problem of Climate Change whilst evading the harder national and international political decisions which must be made if there is to be any solution.

100. As we have highlighted above the challenge is so great that action on all fronts is required. For example, the Government could do much more to explore the scope for further international coordination on regulatory and fiscal approaches. There has been much discussion recently of the Tobin tax as a method of raising substantial sums of money which could be utilised to finance social and environmental objectives.⁸⁰ Indeed, there may well be some degree of international support for such taxes, as the French President's recent speech at Davos revealed.⁸¹ Then again, even something as basic in the regulatory sphere as the introduction of a maximum standby power consumption level for electronic devices would result in substantial energy savings. Given the need for significant change in both investment and consumer behaviour, we see no reason why such initiatives should not be used to complement other approaches such as emissions trading or further regulation.

101. We would urge the Government not to see its role during 2005 as being simply to broker international discussion. It should rather provide leadership by promoting specific objectives and targets. In that light we would make the following recommendations:

- **The UK Government should commit itself to Contraction and Convergence as the framework within which future international agreements to tackle climate change are negotiated; and it should actively seek to engage support for this position during 2005 in advance of the next Conference of the Parties.**
- **Within the UNFCCC negotiating framework, the UK should press for a review of the adequacy of the commitments in the Convention, and focus its efforts on the need to agree more challenging absolute emission reduction targets within a post-2012 agreement.**

80 James Tobin was an American economist who, during the 1970s, proposed a very small tax on international currency transactions in order to reduce the instability which these were thought to create. In recent years, interest in the Tobin tax has shifted to its revenue raising potential. See the New Economics Foundation and War on Want publication, *The Robin Hood Tax*, 2003

81 The Guardian, *The silent tsunamis of Africa: Global taxation could finance the fight against world poverty*, 2 March 2005, written by the French Ambassador

- The UK should also actively pursue these objectives within the context of Commonwealth institutions where it could aim to promote a consensus with key nations such as India and Australia.
- In the context of the G8, the UK could pursue a broader range of complementary policies, including the need for greater coordinated effort low-carbon research, the scope for developing forms of international taxation, and in particular the need to embed environmental objectives more firmly within a range of international organisations.

102. We take issue with the Prime Minister's view, expressed in his recent speech at Davos, that science and technology provide the means to tackle climate change. Whilst we understand the desire to adopt such an approach in an effort to bring the US Government on board, it is simply not credible to suggest that the scale of the reductions which are required can possibly be achieved without significant behavioural change. In focussing on science and technology, the Government is creating the appearance of activity around the problem of Climate Change whilst evading the harder national and international political decisions which must be made if there is to be any solution.

103. In our view the challenge of climate change is now so serious that it demands a degree of political commitment which is virtually unprecedented. Whether the political leaders of the world are up to the task remains to be seen. Leadership on this issue calls for something more than pragmatism or posturing. It requires qualities of courage, determination and inspiration which are rare in peacetime. In according priority to climate change, the Prime Minister has set himself and his Government a mighty challenge and we must hope they rise to it.

Formal minutes

16 March 2005

Members present:

Mr Peter Ainsworth, in the Chair

Mr Gregory Barker
Mr Colin Challen
Mr David Chaytor
Sue Doughty

Mr John McWilliam
Mr Malcolm Savidge
Mr Simon Thomas
Joan Walley

The Committee deliberated.

Draft Report (The International Challenge of Climate Change: UK Leadership in the G8 and EU), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 103 read and agreed to.

Resolved, That the Report be the Fourth Report of the Committee to the House.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That The Chairman do make the Report to the House.

Ordered, that the provisions of Standing Order No.134 (select committees (reports)) be applied to the Report.

The Committee further deliberated.

[Adjourned till Tuesday 22 March 2005 at 3pm.]

Witnesses

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Head of Environment Policy, The Royal Society for the Protection of Birds. Ev8

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Mr Aubrey Meyer, Global Commons Institute. Ev39

Ms Heidi Bachram, Researcher, and **Mr Adam Ma'anit**, Researcher,
Transnational Institute, Carbon Trade Watch. Ev64

Miss Bryony Worthington, Senior Climate and Energy Campaigner,
Friends of the Earth. Ev87

Wednesday 8 December 2004

Mr Andrew Sentence, Chief Economist and Head of Environment Affairs,
British Airways. Ev95

Mr Mike Toms, Group Planning and Regulatory Affairs Director, **Mr
Stephen Hardwick**, Director of Group Public Affairs, and **Mr Matthew
Gorman**, Group Sustainability Manager, BAA plc. Ev108

Mr James Smith, Chairman, **Mr David Hone**, Group Climate Change
Adviser, and **Mr Garth Edward**, Trading Manager, Environmental
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Wednesday 15 December 2004

Mr James Cameron, Founder and Board Member, Climate Change
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Professor Steve Rayner, James Martin Professor of Science and
Civilization, and Director, James Martin Institute, University of Oxford. Ev142

Wednesday 12 January 2005

Mr Paul Dawson, Director Environmental Regulation, and **Mr Louis
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Donovan**, Commercial Manager of the Climate Change Policy Group of
Enviros Consulting Ltd Ev157

Wednesday 19 January 2005

Sir Digby Jones, Director-General and, **Mr Michael Roberts**, Director, Business Environment, CBI.

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Tuesday 9 February 2005

Mr Bill Rammell MP, Parliamentary Under-Secretary of State, and **Ms Valerie Caton**, Head of Climate Change and Energy Group, Foreign and Commonwealth Office and **Mr Henry Derwent**, Director, Climate, Energy and Environmental Risk, Department for Environment, Food and Rural Affairs.

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Oral evidence

Taken before the Environmental Audit Committee

on Wednesday 17 November 2004

Members present:

Mr Peter Ainsworth, in the Chair

Gregory Barker
Mr Colin Challen
Mr David Chaytor

Mrs Helen Clark
Mr Mark Francois
Mr Simon Thomas

Memorandum from the Royal Society for the Protection of Birds (RSPB)

EXECUTIVE SUMMARY

The RSPB considers that an international cap and trade scheme is feasible and, anyway, already exists in the form of the Kyoto Protocol's Trading scheme. This scheme is deficient in a number of ways, including the way in which its caps were set, its limited number of participants and its compliance and enforcement mechanism. However, it can be improved and the alternatives all look less promising in terms of their potential effectiveness.

However, although we consider that the existing Kyoto Protocol trading scheme should form part of a post-2012 agreement, we do not consider that the emissions trading system should form the framework for negotiating any future agreement. In our opinion, to focus on emissions trading during the UK's chairmanship of the G8 would be a mistake. It is too technical and specific.

The imperative for the G8 should be simply to start the international negotiations on the international climate change regime post-2012, and these negotiations should begin with no preconditions regarding organising principles, such as contraction and convergence, or delivery mechanisms, such as emissions trading. To be effective in the longer term, the G8 must focus on restarting the negotiations and not be distracted by side issues. The G8 and rapidly industrialising developing countries should together initiate the review of the adequacy of the commitments in the Climate Change Convention.

A key task for the UK's Presidency of the EU should be to review its progress towards meeting its emission reduction targets. The review should initiate a process for ensuring that existing EU policies and measures are fully implemented in member states, strengthening those measures and developing new ones.

INTRODUCTION

1. The RSPB is Europe's largest wildlife charity with over one million members. We manage one of the largest conservation estates in the UK with 182 nature reserves, covering more than 126,846 hectares. The RSPB is part of the BirdLife International partnership, a global alliance of independent national conservation organisations working in more than 100 countries worldwide.

2. We consider that human-induced climate change poses the biggest long-term threat to global biodiversity. A recent paper in *Nature* indicates that in a sample region covering about 20% of the Earth's land surface "15 to 37% of species in our sample of regions and taxa will be 'committed to extinction' as a result of mid-range climate warming scenarios for 2050."¹

3. To avoid such a catastrophe, greenhouse gas emissions need to be cut hard and rapidly. We therefore support policies and measures which reduce the anthropogenic greenhouse gas emissions that cause climate change. We particularly favour emissions trading schemes as economically efficient means of reducing emissions and are thus supportive of the overall objective of this inquiry: to assess the feasibility of such schemes as framework for negotiating a "post-Kyoto" agreement or, as we would put it, a post-2012 agreement.²

¹ Chris D Thomas *et al*, Extinction risk from climate change, *Nature*, 8 January 2004.

² We are concerned that the phrase "post Kyoto" implies the abandonment of the Kyoto Protocol, whereas post 2012 implies nothing more than that the nature of the international climate regime after the Protocol's first commitment period that still needs to be negotiated.

4. We were actively involved in the development of both the Kyoto Protocol and EU emissions trading schemes and thus have practical experience of cap and trade schemes, including compliance assessment and enforcement. We consider that emissions trading can be at the core of a post-2012 climate regime. Indeed, it is already the main emission reduction delivery mechanism in the Protocol, although the current system is not perfect and could be improved.

5. However, we consider that to focus on emissions trading during the UK's chairmanship of the G8 would be a mistake. The imperative is to start the international negotiations on the climate regime post-2012, and these negotiations should begin with no preconditions regarding organising principles, such as contraction and convergence, or delivery mechanisms, such as emissions trading.

6. The international climate change process has been stalled for some years now, partly because major developing countries considered that major developed countries, including the EU and Japan, were attempting to impose preconditions on the post-2012 negotiations. We should not repeat this mistake. Neither should we make our main objective the linking of differing trading schemes, such as linking the EU scheme with the prospective Japanese and US state level schemes. Whilst this may be worthwhile, it is certainly not a solution to the problem of climate change because it is insufficiently comprehensive in the scope of emissions it would include. As an aim for the G8, it would be a tacit confession that we had given up hope of an all-inclusive, global climate regime.

INTERNATIONAL EMISSIONS TRADING SCHEME

7. The RSPB believes that an international emissions trading scheme is feasible, although there are several factors that make it hard for a global regime to be as effective as a national one, many of which are highlighted by the deficiencies in the Kyoto Protocol's trading regime. In this section we discuss, in turn, the key features that an ideal emissions trading regime should possess, how an international regime might fall short of the ideal and how such deficiencies might be corrected, if at all.

The cap and how to set it

8. The magnitude of the cap determines the environmental effectiveness of any cap and trade regime, assuming that compliance can be enforced. It should ideally be set at a level that will solve, or at least begin to solve, the environmental problem it is intended to address. A significant cap is also needed to drive trading, for if the cap is set too low, none of the participants will need to trade. In addition, the cap should ideally be set independently of the participants, who might seek to dilute it, and at a single level for all.

9. Whilst it is possible, at least in theory, to meet all of these criteria if national governments are setting targets for their own organisations, it is much more difficult to meet all of them in an international scheme. Indeed, even national caps can be set at far lower levels than the scale of the environmental problem would ideally dictate, as recent experience of setting National Allocation Plans (NAPs) in the EU Emissions Trading Scheme (EU ETS) has shown. Also, instead of setting a single, overall cap, the NAPs set different caps for different industry sectors, with the UK, for example, allowing business-as-usual in all sectors other than electricity generation (because that is not subject to international competition).

10. Internationally, however, it is inherently more difficult to set a significant cap, in large part because governments are likely to be both the target-setters and the participants, as in the Kyoto system. In such circumstances, there is always likely to be a race to the bottom in terms of setting caps, as each participant attempts to avoid being placed at what it considers to be a competitive disadvantage compared to the others. In the Kyoto trading scheme, the caps were set in a sort of bidding process in which the USA and its negotiating bloc (JUSCANNZ) started by proposing a zero cap (from 1990 levels by 2010) and the EU started by proposing a 15% cap. In the end, most major emitters ended up taking caps of 7 or 8%.³ This is not an ideal way of arriving at a cap, or rather caps, particularly as some countries took advantage of the process by giving themselves significant emission increases, such as Australia with 10% increase and Russia, which took a target of zero when its emissions had fallen dramatically since the baseline year of 1990. However, it is hard to think of a politically realistic alternative to this type of process.

11. There are alternatives to a Kyoto-type process but none appear either promising in terms of approaching the ideal or, indeed, practical from a political standpoint. For example, it would, in theory, be possible to establish a global trading scheme in which an international regime regulated firms directly, but this would be very hard to achieve in practice, both because there would be many participants to regulate and because governments would be reluctant to allow an international body to regulate their industry. Even within the EU, the ETS leaves cap setting up to member states via their NAPs, largely for the latter reason.

12. Another option might be to link existing trading schemes or add new schemes to an existing one. The EU ETS might, for example, be linked to the prospective Japanese scheme and to the prospective West and East coast American/Canadian schemes. In terms of cap setting, the disadvantage with this approach is that

³ JUSCANNZ was the name for the negotiating bloc made up of Japan, the USA, Canada, Australia, Norway and New Zealand. Norway has now left the Group but Russia has now joined and it is now known as the Umbrella Group.

caps are likely to be set on a completely different basis under the different schemes. Whilst a Kyoto-type process of cap setting has its deficiencies, a process in which different schemes set different caps independently of each other is likely to be even worse.

13. A number of organising principles have been suggested as frameworks for setting caps, such as contraction and convergence. Whilst such schemes are usually fair, equitable and would address the climate change problem if applied, it is hard to see major emitting countries locking themselves into tight, long-term emission limitation frameworks. Under Presidents Bush senior, Clinton and Bush junior, the USA, for example, has shown no inclination at all to do so. For the USA, and most other large emitters, the reduction target they take, if any, has been an uncomfortable and sometimes nonsensical balance between mitigation costs and the environmental imperative to cut emissions. This is unlikely to change because, even if more nations begin to balance mitigation costs against damage and adaptation costs, the mitigation costs are always likely to be taken more seriously because they have to be borne in the short-term and are easier to estimate.

14. On balance, therefore, the Climate Change Convention and Kyoto Protocol cap setting processes are probably as good as we are likely to get. They are, anyway, the only ones that we realistically have. Other alternatives are likely to lead to outcomes that are even further from the ideal and there is currently no global forum in which to negotiate them.

Participation

15. Cap and trade schemes clearly achieve greater emissions reductions if they include more participants (emitters). Economic efficiencies are also likely to be greater if participation is maximised. An ideal cap and trade scheme would include all sources of emissions.

16. In practice, no trading scheme is likely to include all emissions for two main reasons. Firstly, there are considerable technical and administrative difficulties in including many small emissions sources, such as motor vehicles. Allocating emissions allowances to any nation's vehicle fleet and then monitoring them would obviously be impractical. There are alternatives to allocating to individual sources, in particular, it is possible to allocate "upstream". In the extreme case, this would entail allocating at the point of fossil fuel extraction from the ground or import to a particular country, thereby capturing all fossil fuel emissions. One difficulty with this approach is that the allocation is to fuel, rather than emissions, and that the fuel will be used for a variety of purposes that yield significantly different levels of emissions. The other difficulty from a political point of view is that because an upstream allocation would encompass all fossil fuel emissions it would be hard to exclude any activities, as governments invariably wish to do. For example, domestic fuels would be included and their price would thus tend to rise, perhaps impeding social policies.

17. A key advantage of the Kyoto Protocol's emissions trading scheme is that it avoids this problem completely, by allocating emissions to countries and not directly to sources. This not only potentially allows all emissions to be included in the scheme but also limits the number of participants to manageable proportions, ie the number of nations in the World. Although the Protocol has disadvantages in terms of cap setting, it is almost ideal in encompassing all emissions, although only if all countries participate.

18. However, the second main difficulty with having an all-inclusive international system is that developing countries do not have caps under the Climate Change Convention and its Kyoto Protocol. We discuss this problem in detail in the following section on the UK Chairmanship of the G8.

Leakage

19. Linked to the question of participation is the question of leakage from the cap, which occurs when emission reduction credits from project-based mechanisms in uncapped players are allowed to be interchangeable with emission allowances issued to capped participants in an emissions trading scheme. The ideal is to have no credits from uncapped participants because they "inflate" the cap, making the target less stringent for the capped players. Also, to have any benefit at all, credits from uncapped players must clearly demonstrate that they arise from activities that would not have occurred otherwise—which is intrinsically very difficult to demonstrate.

20. Yet almost all trading schemes allow credits from uncapped players. The UK trading scheme does, the Kyoto Protocol does and the EU ETS does, by allowing the use of Kyoto project credits from uncapped, developing countries via the Protocol's Clean Development Mechanism (CDM). Proponents of project-based mechanisms in developing countries argue that they provide a means of financing carbon limitation projects in poorer countries which would not have occurred otherwise and which offer cheaper credits than could be obtained at home.

21. This may be true but, on the other hand, not only does allowing such credits mean that developed countries cut their emissions less than they would otherwise do but it sets a very bad example to developing countries. It perpetuates the dubious assumption that reducing emissions is expensive and to many developing countries it seems as though, having been largely responsible for creating the climate mess, the developed countries are now paying the developing ones to clear it up for them.

Compliance and enforcement

22. A difficulty with all international regimes is that it is almost impossible to enforce compliance. Indeed, just assessing compliance can be hard in any emissions control agreement, both because of technical difficulties in estimating some emissions and because of the fact that in all agreements countries report on themselves. However, the Kyoto Protocol has a basically sound reporting and review process. It conducts in-depth country reviews where reviewers actually visit countries, similar to some arms control agreements. It is probably as close to the ideal as one is likely to get in an international agreement.

23. Enforcement, however, is intrinsically hard in any international agreement. The reasons for this are obvious: international agreements are not like national laws, backed up by courts and police forces to enforce them. They are basically contracts between states, into which states enter voluntarily and from which they can withdraw. There is ultimately no way of enforcing them other than by extreme measures, such as invasion or trade sanctions.⁴ It is possible to impose fines but if these are set too high, states will either not pay them, or withdraw from the treaty or both.

24. Most “enforcement” in most international agreements, consists of shaming recalcitrant states. This can be effective, as when Russia was found to be in non-compliance with the Montreal Protocol and Russia found the experience of having to say “sorry” deeply humiliating. Indeed, some Russian’s cite it as one of the reasons for their caution about ratifying the Kyoto Protocol.

25. The Kyoto Protocol’s compliance group, which negotiated its compliance procedures, investigated the subject of enforcement over a period of several years. Two potentially practical means of enforcement were proposed, both of which addressed the question of how to penalise non-compliance automatically, without having to retrospectively enforce it, which is impractical. The first proposal came from the USA and involved obligatory borrowing of credits from future commitment periods and the second, from the EU, involved a so-called commitment period reserve.⁵

26. The US idea made use of the fact that the Kyoto Protocol sets up emission budgets for each country in each so-called commitment period, within which it must keep if it is to achieve its target. Under the US compliance scheme, if a country exceeded its budget it would have had the number of tons of carbon that it was out of compliance subtracted from the budget in its next commitment period. This could have worked except that negotiations on the targets and budgets for the second commitment period would begin before the end of the first period, when countries would have a fair idea of how much they were likely to be out of compliance. If they thought that they would be in non-compliance, they could thus negotiate their second period target to take of the amount that would need to be borrowed from it. To work, the procedure would thus have to borrow from the next commitment period but one. However, this would mean that compliance was being penalised at least five years in arrears which raising the question of whether it was really fair.

27. The EU enforcement idea involved a levy on all transfers of allowances (Assigned Amount Units). The proceeds would accumulate in a central fund until the end of the commitment period when they would be returned to compliant states and withheld from non-compliant ones. Although this would clearly only be effective if non-compliant parties traded significantly, it was assumed that they would do so in an attempt to stay in compliance and so the cash that they had paid out as a levy would be significant.⁶ A more important difficulty with the concept was that it was, in effect, an international tax. Finance ministries worldwide tend to strongly dislike international taxes over which they have no control and so the original proposal foundered, although it persisted in a much-modified form.

28. As far as we know, no other potentially viable means of enforcing non-compliance in international emissions trading schemes have been proposed. (We do not count the EU scheme as international.)

Alternatives to an International Emissions Trading Scheme

29. The RSPB believes there are alternatives to an international emissions trading scheme, but they are unlikely to be as effective. The idea of having a trading scheme under the Kyoto Protocol was mainly a US idea, backed strongly by Canada and Australia. The EU originally saw the regimes mainly as a target setting mechanism and a means of coordinating policies and measures internationally. Their idea was that many mitigation policies could potentially affect competitiveness if not coordinated with other nations, which may be true but it was always difficult to envisage precisely what form coordination would take.

⁴ Agreements that regulate trade can, and do, initiate or approve of sanctions. CITES, for example, banned international trade in all wildlife products with both Italy and Thailand in 1992, until they complied with treaty provisions on domestic enforcement.

⁵ There is still a commitment period reserve in the ancillary agreements under the Kyoto Protocol but it is not the same as that originally proposed by the EU, although it metamorphosed from it.

⁶ It was proposed that the levy that was withheld might go towards funding emission limitation projects in developing countries.

Approach and objectives to climate change during UK presidency of G8 and EU in 2005

UK chairmanship of the G8

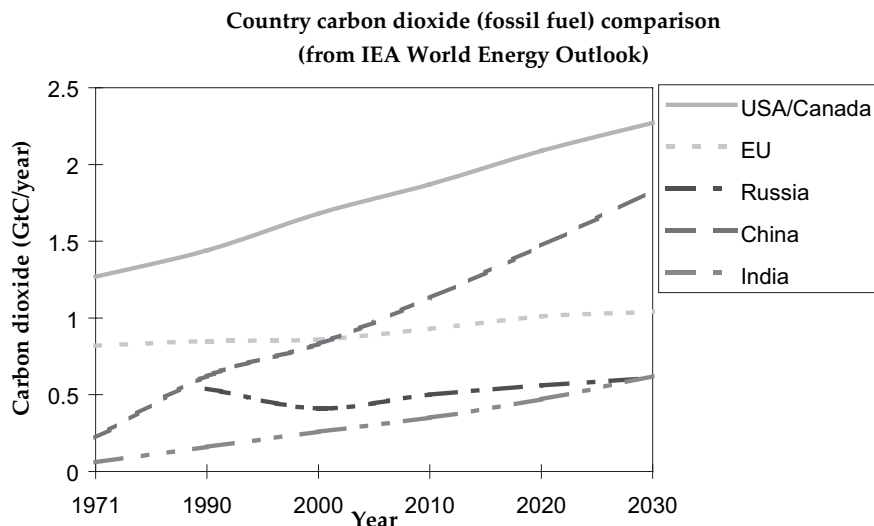
30. The Prime Minister has already announced that his priorities for the G8 will be climate change and Africa. We strongly support this choice but are concerned that the G8 agenda will fill up with numerous worthwhile but ultimately less important matters, diverting attention from the big issue.

31. On climate change, by far the biggest single issue is starting international talks on how to limit emissions after 2012, the end of the Kyoto Protocol's first commitment period. To be effective in the longer term, the G8 must focus on this matter and not be distracted by side issues, such as a further renewables conference with voluntary targets, linking emission trading schemes, encouraging biofuels as part of WTO and CAP reform, and a host of other worthy but less important matters.

32. To make progress on tackling climate change a binding international agreement to cut emissions is essential. Without such an agreement, countries will always pull back from making substantial emission cuts because of fears of loss of competitiveness, as we have recently seen in the race to the bottom by EU countries in setting targets for the EU ETS. Also, even to begin to stabilize atmospheric concentrations of greenhouse gases, and hence limit global temperature rise, all countries need to constrain their emissions, certainly the larger emitters, as mentioned earlier.

Political background

33. Involving all countries in a global agreement may be essential but it will be hard to achieve, as is shown by experience of the Kyoto Protocol. Not only has the USA left the Protocol but none of the developing countries, including the rapidly industrialising ones, have commitments to limit their emissions. Ethically, it is right to say (as the UN Climate Change Convention does) that developed countries have a historical responsibility for causing the problem of climate change and that they should take the lead in clearing it up. However, this does not solve the practical problem of limiting climate change, as is indicated by the figure below. If developed country emissions are not cut hard and developing country emissions at least constrained, climate change will continue indefinitely and catastrophically.



34. In the USA the Bush Administration has been denounced for pulling out of Kyoto, but it is sometimes forgotten that even if the President asked the Senate to ratify the agreement then the Senate would probably refuse. The Byrd-Hagel Senate Resolution of 1997 clearly stated, just prior to the Kyoto meeting which led to the Protocol, that the Senate would not ratify a treaty on climate change that did not include "meaningful participation" by at least some, more developed, developing countries. The Senate passed the resolution by a vote of 95 to 0. The issue of rapidly industrialising country participation is therefore not simply a practical matter of reducing emissions but it is of key importance in achieving US engagement in any agreement.

35. Moreover, since 1997, the USA has done very little to limit its emissions and they have continued to climb steeply under both the Clinton and Bush Administrations. It is thus arguable whether it is now possible for the USA to achieve its Kyoto targets, and any US administration, and probably any Senate too, would argue that it is not.

36. It is also extremely unlikely that any developing country will take on legally binding emission reductions in the near future. All of the major, rapidly industrialising countries are parties to the Kyoto Protocol, under which they have no obligations to limit emissions, certainly before 2012. Moreover, the developing country negotiating bloc (the G77 and China) firmly adheres to the position that developed countries should take the lead in reducing emissions.

37. Until 2012, the end of the first Kyoto Commitment period, the prospects of either the USA or major developing countries agreeing to limit their emissions under an international treaty are therefore slim. It has been argued that an agreement other than Kyoto might be set up, in the form of a “coalition of the willing”, but this has a number of serious disadvantages. It could potentially undermine both the Protocol and, more importantly, its parent convention, the UN Framework Convention on Climate Change (UNFCCC) to which almost all countries belong, including the USA. Also, a coalition of the willing is, by its nature, likely to achieve little more than its members would do anyway. It is the unwilling that need to be persuaded into agreement.

38. For the post 2012 period, however, the prospects of agreement look better. Most US politicians from both parties now accept that climate change is a serious problem, as is shown by the climate-related measures being taken by Governor Pataki in New York State, Governor Schwarzeneger in California and by Senator McCain (Republican, Arizona) and Senator Lieberman (Democrat, Connecticut) who tabled the “Climate Stewardship Act” that narrowly failed to pass through the Senate by 43 to 55 votes in October 2003. (McCain and Lieberman will resubmit the Bill.)

39. Rapidly industrialising countries, especially China, also take climate change increasingly seriously. Qin Dahe, head of China’s Meteorological Administration, recently told the Chinese Academy of Sciences that “global warming brought about [an] unbearable, irreversible and sustained effect to the Chinese economic and social development.”⁷

Initiating post-2012 negotiations

40. The G8 meeting in 2005 is an almost ideal time to initiate talks about action on climate change post-2012. That date is still a long way off in terms of the typical governmental timescale of four or five years and so even wary governments may be willing to start talks as long as there are no preconditions about commitments. A climate-skeptical US Administration and major developing country governments that fear taking on emission reduction targets could, at a high level, agree to start talks.

41. The high level commitment is, however, important because, without it, executive officials are likely remain mired in their present, “do nothing” positions as they have for three or four years now. It is also vital that the UK Chair of the G8 engages not only the G8 members but also major developing countries in any G8 decision. A G8 resolution without the active involvement of at least some major developing countries is likely to raise suspicion and antagonism. One idea is to hold a “G10” or ideally “G12” meeting of the G8 leaders together with those from China, India, Brazil and South Africa

42. A G8 and developing country decision should not be complex. At its most basic, it need only call upon the parties to the UNFCCC (to which all G8 members and all major developing countries belong) to conduct a review of the adequacy of the commitments in the Convention. The Convention specifically provides for such a review. Indeed, it is overdue. Article 4.2.d. of the Convention says that it “shall take place no later than 31 December 1998”. The review, even if based only slightly in reality, should conclude that the commitments in the Convention are inadequate and act accordingly to take corrective action. (The first review of the adequacy of commitments in 1994 concluded that the commitments were inadequate and led directly to the process that concluded with the Kyoto Protocol. It would be inconsistent to conclude that the commitments were adequate now when they were not in 1994.)

43. It is particularly important that no attempt should be made by the G8 to impose preconditions on the negotiations, especially in the form of organising principles, such as “contraction and convergence”. These should emerge during negotiations, not before them, and preferably from developing countries rather than the G8. The only guiding principle that should be employed is one that is already agreed as the ultimate objective of the Convention which is:

... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

⁷ “Scientist suggests to set up national policy on climate change”, People’s Daily Online, 7 June 2004.

44. At present, it seems unlikely that this globally agreed objective will be met. As may be seen from the figure on emission projections for major countries, stabilisation of atmospheric concentrations at any level at all is clearly not going to occur without significant global cuts in emissions. According to the Intergovernmental Panel on Climate Change:

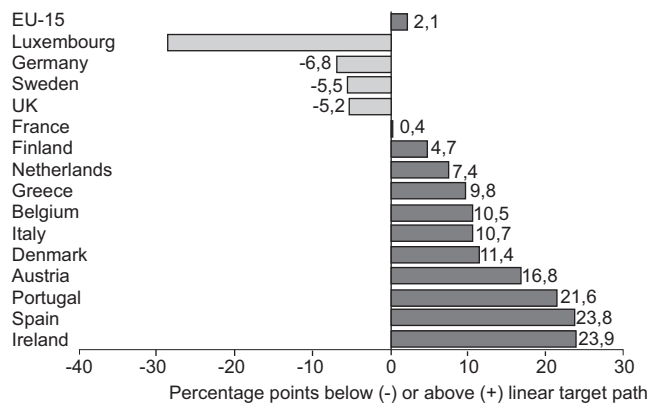
“natural systems can be especially vulnerable to climate change and some will be irreversibly damaged or lost”, and

[there will be] “a general reduction in crop yields in most tropic, sub-tropical and mid-latitude regions.”

UK presidency of the EU

45. The latest available data for 2002 shows that the EU 15 has achieved only a 2.9% reduction in greenhouse gas emissions from 1990 levels. As a result, the EU is not on course to meet its Kyoto target of 8% by 2010, let alone a 21% target, and clearly needs to do much more if it is to achieve it, both by strengthening existing policies and measures and introducing new ones. The figure below, from the European Environmental Agency, shows how well, or badly, the EU 15 countries were performing in attaining their burden-sharing targets in 2001.⁸

Distance-to-target (burden-sharing targets) for EU Member States in 2001, based on domestic policies and measures alone



46. A key task for the UK’s Presidency of the EU is thus to review its progress towards meeting its emission reduction targets and initiate a process for ensuring that existing EU policies and measures are fully implemented in member states, strengthening those measures and developing new ones.

47. The UK will have strong legal grounds for conducting a thorough review of policies and measures during the Presidency. By 2005, the developed country parties to the Kyoto Protocol are obliged to have made “demonstrable progress” in achieving their commitments under the protocol. A review of both implementation and of the adequacy of policies and measures is clearly essential in demonstrating progress, or not. (The EU inserted the “demonstrable progress” text (Article 3.2) into the Protocol and so it is particularly important that the EU shows leadership in implementing it.)

48. Measures that require strengthening and adding to at the EU level are similar, or in some case the same, as those at UK level. In particular, a key task will be to ensure that methods used in drawing up National Allocation Plans for the EU ETS are far better harmonised, firmly set cap so as to ensure that competitiveness concerns are minimised and more challenging NAPs are set for the second phase of the scheme. (The Emissions Trading Directive already allows for such harmonisation.)

49. As at home, the UK should also do much more to restrict transport-related emissions during its presidency of the EU. The UK should work to put in place an EU-wide emissions charge on aviation and set in train a process for opting aviation emissions into the EU ETS. They should also strive to put in place an EU-wide well-to-wheel carbon tax on all road vehicle fuels.

⁸ Greenhouse gas emission trends and projections in Europe 2003, European Environment Agency, 2003.

CONTRIBUTIONS BY INDIVIDUAL UK GOVERNMENT DEPARTMENTS

50. DEFRA has the most expertise in this area, on both the science and policy, and should thus take the lead on any national or international initiative. The FCO, DTI and DfID also have valuable experience and expertise to bring in specific areas and should thus be part of any DEFRA-led team. HMT have paid increasing attention to the use of economic instruments for environmental purposes in recent years and thus have a role to play, although they may lack much relevant experience internationally. DfT would benefit greatly by participating in work led by others.

51. DEFRA, DTI, DfID and the FCO should have sufficient experience of working together on climate change to deliver a coherent UK agenda to which HTM could contribute in some areas.

October 2004

Witnesses: **Mr John Lanchbery**, Head of Climate Change Policy, and **Dr Paul Jefferiss**, Head of Environment Policy, The Royal Society for the Protection of Birds, examined.

Q1 Chairman: Good afternoon. Thank you very much for coming and thank you for your memorandum. I am very much afraid that we are going to be interrupted by divisions and there is going to be one quite shortly and I believe another one at 4 o'clock. I am sorry about that. If you bear with us we will try and work round it, but it may cause some disruption. Can I begin by asking you about the Kyoto process and your understanding of where things have got to and, in particular, how you feel the Annex 1 countries, the developed countries, are performing in terms of the target of at least a 5% cut in emissions?

Mr Lanchbery: Not very well generally speaking. The EU, according to the assessment of the European Environment Agency, is going to miss its target if it continues the way it is going at the moment. The Japanese are having an awful amount of trouble hitting their target. They have not put in place many domestic measures. Canada was always going to have a very hard task meeting its target. Australia and the United States have backed out. So the only countries that will hit their targets with absolute assurance, outside those blocs, are the Central and Eastern European countries whose emissions dropped considerably of course post 1989–90. Having said that, a couple of countries are on track. The UK is on track not with our 20% carbon dioxide emission reduction target but with our general greenhouse gas one. Germany is also on track, well on target, as are a couple of other smaller countries like Luxembourg but, generally speaking, no, we are not doing very well.

Q2 Chairman: These statistics that you are quoting are they the result of formal analysis or are they a bit of hearsay?

Mr Lanchbery: Fortunately, one of the very, very good things about the Climate Change Convention and Kyoto Protocol is that they require states to report in great detail on their emissions so they are states' figures not ours.

Q3 Chairman: Is anyone actually making an official forecast as to what the outcome will be for the Annex 1 countries?

Mr Lanchbery: Yes, the most authoritative are probably the International Energy Agency's forecasts. Again, they think we will miss. There is also the European Environment Agency of course

for Europe as a whole and they think we will miss, not by a huge margin in the case of the EU, but nevertheless they think we will probably miss our target.

Q4 Chairman: Can we just turn to the Annex 2 position and if you could remind us of the scale of Annex 2 emissions relative to the Annex 1 emissions it would be helpful.

Mr Lanchbery: Annex 2, do you mean developing countries?

Q5 Chairman: Yes.

Mr Lanchbery: Developing countries do not have any commitments whatsoever to reduce emissions.

Q6 Chairman: Do we know what their emissions are?

Mr Lanchbery: Reasonably. They have to report—some have, some have not. Again, the International Energy Agency does good estimates for the large countries like China, India, South Africa and Brazil. Most large developing countries have now reported so we have got a pretty good idea. Some of their reports are not terribly good but from the big countries, again like the Indias and Chinas—actually India has not reported—the figures are quite good.

Dr Jefferiss: Do you know roughly what percentage of global emissions are accounted for by Annex 2? Is it around 30 to 40?

Mr Lanchbery: I do not know right now. It is going to go up rapidly. Chinese emissions are about the same as the EU's at the moment. India's emissions are about the same as Russia's or heading up that way.

Q7 Chairman: What impact would the likely failure of the developed world to hit its targets have on the post-2012 negotiations?

Mr Lanchbery: Having said all that, I should add that we can still hit the target. The EU is not a long way off so if we pull out a few stops we can still do it, but it will have two main effects. The first one is of course that we are not going to get very far in addressing global warming but the big single effect will be on the developing countries who have always said that the developed countries should take the lead. If we do not clearly take the lead they are going to argue, "Why should we bother? You are primarily responsible for the problem historically and you

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have done nothing. You are telling us it is really quite easy but you have not done anything so why should we do anything?" That is the biggest single effect and it will also help the present US administration who will say, "You said you would do lots of stuff and you have not."

Dr Jefferiss: Yes, I think it risks creating the impression that it is difficult to the point of impossibility to create a truly global emissions reduction system, which we firmly believe it is not but should we fail to meet our targets by the amounts projected there is a risk that it will reinforce that perception.

Q8 Chairman: To what extent if we do fail will it be the fault of the targets rather than anything else? What was the science behind setting the targets at the level they are?

Mr Lanchbery: They are horse-traded.

Q9 Chairman: It is horse-trading science rather than analytical?

Mr Lanchbery: The European Union went to Kyoto with the position that targets should be minus 15%, the United States went into Kyoto with the position it should be zero, it should just be stabilisation, and they argued their way together to roughly half way between the two, with most developed countries following the two main blocs. The Canadian position, for example, was always that they should take one point less than the United States. That is why I said the Canadian target is tough for them because they assumed that the United States would take a zero target and in fact they took minus seven which left Canada with minus six which is quite hard for Canada. It was all done by horse-trading.

Q10 Chairman: What happened with Australia?

Mr Lanchbery: They pulled off a very good deal for themselves!

Q11 Chairman: How did they manage that though? How did they do that?

Mr Lanchbery: I do not know. You would have to ask Mr Prescott because he was in the bargaining room. I do not know.

Dr Jefferiss: I would say that they were not set scientifically, they were set through a combination of politics and economics working together, and I think if we fail to meet even those scientifically inadequate targets that were set, it will not be as a result of the economic challenges being impossible to overcome because, if anything, the evidence produced by organisations such as the Carbon Trust, for example, suggest that the costs of meeting these targets are actually lower than anticipated and in some cases might actually yield net economic benefit, but the failure will have been political and driven by a fear of economic cost and loss of competitiveness. I think it is because the ultimate cause of failure, if we do fail, will have been political that the risk of the future perception that the challenge is insurmountable will be on the one hand that much greater but in fact not a substantive fear because politics can always change.

Chairman: We had better break now, I am afraid, and we will get back to you in a minute.

The Committee suspended from 3.32 pm to 3.40 pm for a division in the House.

Q12 Chairman: Can I refer you to the passage in your memorandum when you talk about the two possible penalty arrangements that were discussed, one was the US proposal and one was the EU one, and you said that neither of them was entirely satisfactory. What happened in the end? Is there any kind of penalty system?

Mr Lanchbery: No, not really. Basically you shame people. There is the rump of the European proposal left in there. The European proposal was to have a levy on all transfers of credits essentially and then if you were in compliance you got your tax money back and if you were not they kept it, but the problem with it was that basically finance ministries throughout the world did not really like the idea of some sort of international tax so they got it binned. So it is mainly a question of shaming countries. However, that works very well for some countries. One of the reasons why they did not have penalties was because Russia did not want them and Russia did not want them because it felt it had been humiliated in the Montreal Protocol process where they were called in for non-compliance and although there was no penalty they felt shamed by it. So it does work.

Q13 Chairman: That is good, that is encouraging. What difference do you think in practical terms will the ratification of Kyoto mean?

Mr Lanchbery: It means it will come into operation. Until now it has just been a hypothetical agreement but it is now an operational agreement, so all of the commitments in it which are binding about targets now become legally binding in international law. So do all the commitments about reports for example, because they are not optional commitments on reporting, and a lot of other things that say "you shall do this". It means that the whole thing is operationalised.

Dr Jefferiss: Practically it is operational; symbolically it gives enormous impetus to developing the next stage of the process, the post-2012 stage.

Q14 Chairman: So you expect to see new national emissions trading schemes sprouting up around the place?

Mr Lanchbery: Some, yes. Several countries are discussing it. The Japanese are discussing it, the Canadians are discussing it, indeed the Americans are discussing it, in different fora, so there is a potentially very likely East Coast states' emissions trading scheme in the US. There is talk with the new Schwarzenegger administration in California of having a trading scheme with California, Washington, Oregon and British Columbia. There was recently a Bill before the Congress, the McCain-Lieberman Bill, for having a US national trading scheme completely independent of the

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administration. McCain, who is one of the senators for Arizona, and Lieberman, who is from one of the New England states, proposed the Bill, which only narrowly failed to go through. It was defeated in Senate by 55 votes to 43, I think it was. They are going to put the Bill forward again so if that goes through then the United States will have a trading scheme even if they are not party to Kyoto.

Q15 Mrs Clark: I would like to take us on to the EU Emissions Trading Scheme/trading system, *et cetera*, which obviously is coming into force on 1 January 2005, so pretty soon actually. To what extent would you regard it as a model for a fully international trading system? Is that relevant?

Mr Lanchbery: Under Kyoto there already is one, ironically proposed by the United States of course. The two are different though. The Kyoto one is an inter-country trading scheme so because Kyoto places obligations on states or governments, it is a trading regime between governments, whereas the EU emissions trading scheme is a trading scheme amongst firms, amongst businesses. So it is different in that respect but I think it is quite a good model. Its framework is pretty good and it has a strong compliance regime, partly because it is governments regulating firms rather than nation states trying to regulate each other.

Q16 Mrs Clark: If all the countries were signed up, presumably you would prefer the Kyoto model?

Mr Lanchbery: Yes, because it is global, but there is nothing to say you could not have sub-regional schemes like the EU one within the Kyoto regime.

Q17 Mrs Clark: But it is an add-on, it is a bit of a second best, it is what we will take because that is what we have got?

Dr Jefferiss: I would make a distinction purely on the geo-political scale of the two things. Where it is geographically and politically feasible to regulate trading amongst small entities, namely companies, then that is a perfectly efficient and viable option. However, on a global scale I do not think it is politically viable to do that.

Mr Lanchbery: The EU scheme should be effective within the EU. It is a well set up scheme. We may not agree with the allocations but it is basically a well set up scheme.

Dr Jefferiss: The cap setting process was also quite significantly flawed, certainly for the first phase. It is difficult to know what process other than the political one that has been gone through could replace it, but it has led to a race to the bottom that is clearly not going to yield much in the way of emissions reductions at all since the emissions are relative to business as usual, which can obviously be reprojected upwards as we have just seen in the UK.

Q18 Mrs Clark: Okay, we have talked about targets earlier on and in fact the National Allocation Plans have received a bit of a slating in terms of the targets being a bit feeble and not tough enough. What is your view on that? Is that

something that we have just got to grin and bear in the first phase of the scheme just to get the scheme going in the first place and hope that at some point there can be add-ons and it can be improved?

Mr Lanchbery: They are feeble and they are deliberately feeble—

Q19 Mrs Clark:—Deliberately feeble?

Mr Lanchbery:—Partly because all the countries had a fear of losing competitiveness vis-à-vis the other countries in the scheme so they all set slack targets.

Q20 Mrs Clark: So what is the point of it?

Mr Lanchbery: What Paul just referred to as racing to the bottom.

Q21 Mrs Clark: If you start off with low expectations or virtually no expectations surely the whole scheme is going to breed contempt?

Dr Jefferiss: I think that is a problem. There are two or three fundamental problems. The first is that there was not a cap set for the EU as a whole. Secondly, it was left up to individual member countries—

Q22 Mrs Clark: Which is what I was going to come on to.

Dr Jefferiss:—To define their own national caps on the basis of consistency with their burden-sharing agreement but not actually congruent with their burden-sharing agreement, and “consistency with” is very hard to define since some of the emissions reductions in each country will come from non-traded sectors, and the argument will always be made that the balance that is not being achieved under the trading scheme will be achieved outside the trading scheme, which is very hard to prove one way or another. I think you are quite right, it does undermine the credibility of the EU system, which is particularly troubling at a time when the EU and the UK are claiming international leadership on climate change mitigation and when we stand on the threshold of an historic opportunity to show that leadership in the form of the UK’s leadership of the EU and G8. Having said all that, we do not think all is lost. On the contrary, if we regard this as a lost opportunity but also an opportunity to learn, a learning experience, we can use the opportunity of the EU Presidency and the G8 Presidency to set the stage for the second phase of the EU trading scheme.

Q23 Mrs Clark: I was going to come on to that, that was my next point actually. You are saying “we can use” and “we should do” *et cetera* but how do we do that? It seems to me that what we have had on a lot of this is good sound bytes, warm words—to use a pun if you like—but nothing really radical in terms of political will. Is there going to be that political will?

Mr Lanchbery: It is not for us to judge what the political will will be but there should be.

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Q24 Mrs Clark: What can the EU do?

Mr Lanchbery: Firstly, the Emissions Trading Directive does make allowance for harmonising methodologies. In other words, states should get together and agree targets between them. They already have the agreed so-called burden sharing targets. It would be far better if the states got together and said, "Right, our targets are going to be this," amongst haggling with each other, otherwise they are again going to set a sloppy set of targets. The other thing is at the moment they do a "business as usual" projection, as Paul said, and then they take a certain amount of carbon off the end of it, when what they should be doing is taking their emissions at an historical date and subtracting carbon from that and not from a projection because you can always re-do your projections, as Paul mentioned. Now that they have worked out some firm figures for individual installations, the next time they should say, "Okay, your cut from that installation will be this . . ." never mind what the projections are, and do it on that basis.

Q25 Mrs Clark: And what is Tony Blair's role in this? We have got the Presidency, *et cetera*, *et cetera*, coming up. Is it a matter of making a noble sound byte speech beforehand or is it a matter of actually putting this to the top of agenda in the Presidency and saying, as you have just said, "We are going to do this. We are going to do that." Can you see him doing it?

Dr Jefferiss: I can see him doing it.

Q26 Mrs Clark: You can?

Dr Jefferiss: I certainly think he has the opportunity and political space to do it and I can even see him doing it. The space is created by the fact that under Kyoto there is a requirement to review progress towards targets at this point, so the UK, Tony Blair within the context of the EU Presidency, could use 2005 as the opportunity to do that. As John says, the ETS itself has a provision for harmonisation, so I think there really are the mechanics and the politics in place to allow him to undertake a very stringent review of progress in 2005 with a view to setting the 2008–12 period of the ETS with a harmonised stricter NAP.

Q27 Mrs Clark: I am sure he has indeed got the freedom and ability to do that, everybody can change, but is it a question of the left hand not knowing what the right hand is doing when we regard the fact that the UK actually relaxed allocations in the final NAP. How can you square actions with words, because I am having a problem with it?

Dr Jefferiss: I agree, it does give you cause for concern given that emissions projections under this reallocation for the 2005 to 2007 business as usual projections have gone sharply upwards, but from 2007 to 2010 those projections are indicated to move sharply downwards again. The Government is on record both in the Energy White Paper and in the press release associated with the

announcement for the projections that the Emissions Trading Scheme is the central plank of their climate strategy, and I think they in a sense have backed themselves into a corner where we would all like to see them, which is that there will be no alternative but to ensure that the second phase Emission Trading Scheme is much more stringent than the first—because there is no alternative at present that we are aware of.

Q28 Mrs Clark: Finally, what about competition, do you think competitiveness has anything to do with the relaxation of the allocations?

Mr Lanchbery: No I do not.

Q29 Mrs Clark: You do not?

Mr Lanchbery: The Carbon Trust did an excellent study of the effects of competitiveness and it came to the conclusion that at the sort of price carbon is likely to be traded for the competitiveness effects are trivial and anyway they only took the emission reductions from the power sector and the power sector is not subject to international competition, it is purely domestic. Our power system does not compete with the French, the German, the Italian or other power systems. The only effect it would have would be a very small rise in electricity prices which would have some impact, a few per cent, on some very energy intensive sectors, so the competitiveness argument does not really wash. Just to touch on your previous question, there is an excellent little graph, if you have a suspicious mind about the latest allocations against the revised energy projections, from the DTI on its web site, and it is interesting that projections—

Q30 Mrs Clark: Have we got copies of that?

Mr Lanchbery: Yes, I can give you some later.

Q31 Mrs Clark: Thank you.

Mr Lanchbery: The projections for the traded sector for 2005 are all up and for all other sectors outside the traded sector they are all down compared to what they were before, which if you have a suspicious mind is interesting!

Dr Jefferiss: But I think that there is a difference in saying that analysis would suggest that competitiveness considerations should not be material to these decisions because, as the Carbon Trust has shown, they are not likely to have adverse effects on many sectors at all. Whether or not competitiveness considerations have had an effect these sectors, I am sure you would reach a different conclusion.

Q32 Mr Chaytor: Are there any compliance mechanisms for failure to reach the targets?

Mr Lanchbery: In the ETS, yes, and they are quite stringent.

Q33 Mr Chaytor: What are they? I do not understand how they work.

Mr Lanchbery: The penalty is laid down in the Directive and the penalty in the first phase is 40 euros a tonne and in the second phase 100 euros a

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tonne. Given that trade is happening at about six to eight euros a tonne at the moment that is a fairly big penalty.

Q34 Mr Chaytor: So you think that is heavy enough to have the right incentives?

Mr Lanchbery: I think so, certainly in the second phase. It is a huge penalty. It is more than 10 times what the going rate for carbon is, so it should work.

Q35 Mr Chaytor: In the second phase there is this debate about whether aviation should be included from 2008. This Committee has recommended this and the Government is considering that. What is your view on that? Do you think the system can generate sufficient credits to accommodate the introduction of aviation into phase two?

Mr Lanchbery: Yes, we favour it, but there are a number of technical questions about opting aviation in. It is to do with how you allocate emissions. So in theory, yes, you could opt them in but you have to work out who is responsible for the emissions from an aircraft going from, say, London to Berlin. Logically you could say that perhaps you should allocate emissions to the point of sale of the fuel but you have to work all that nitty-gritty stuff out which may take a little while, but we agree.

Dr Jefferiss: In principle, we support it. In practice we think the obstacles can be overcome.

Q36 Mr Chaytor: Right, but as the years go by and if the European aviation industry develops, particularly with its short-haul programmes in Europe, will there be sufficient emission credits in the system still to enable aviation to be part of that?

Dr Jefferiss: I suppose it would depend on the level at which you set the allocations. At present I would have thought there would be more than enough. If the reduction target were much more strict then obviously credits would be at a much higher premium. So I think it really all depends on what level the target is set.

Q37 Mr Chaytor: Can I step back a bit to phase one. When the cap was set for phase one there was no relationship between the Kyoto targets and ETS allocations?

Mr Lanchbery: There was a relationship. You were obliged under the Directive to set your allocation in a way that was consistent, as Paul said, with your burden-sharing target in the EU.

Q38 Mr Chaytor: But this concept was not defined, was it?

Mr Lanchbery: No because what it meant and the way the Commission interpreted it is that if you chose to take all your reductions in, say, the transport sector or the residential sector then you did not have to do anything whatsoever on power stations or other heavy industry, so you had a choice, and if you could prove to the Commission that you were in fact making all your emissions reductions elsewhere then you did not have to do anything in the traded sector.

Dr Jefferiss: Can I add, one of the most serious problems, I think, of the weak first phase of the ETS, apart from undermining credibility and so on and making the second phase more difficult, is that it results in a very low credit price which means that the market for credit trading does not develop as aggressively or as fast as it could and we do not gain the market efficiencies that we could have gained and we do not learn in the ways we could have learned about how market trading and credits work.

Q39 Mr Chaytor: Some countries have said that they want to achieve almost half their emissions reduction targets through the CDM. Is that realistic and what is your general view of the role of the Clean Development Mechanism?

Mr Lanchbery: You are probably referring specifically to the Netherlands. That is certainly one of their aims and it always has been, to be fair to them. We are very concerned about the effect of CER (certified emissions reductions) because of the Clean Development Mechanism coming into the Trading Scheme. They were always a peculiar thing in the Kyoto Protocol. They were good in the sense they enabled money flows and technology flows to go to developing countries but they were bad in that they formed what was known as a "leak" from the cap and the same was even more true of the EU scheme, so what you are doing by allowing an infinite flow of those credits in is that you are not achieving emission reductions in the European Union, you may be achieving them in South Africa but you are not achieving them in the European Union.

Q40 Mr Chaytor: You argue that you are achieving less in the European Union?

Mr Lanchbery: Yes. We argued as the UK for a cap on the amount of about 1% or so.

Dr Jefferiss: We argued that the CDM should be a mechanism within Kyoto trading and that it should not be linked at all to the Emissions Trading System in Europe or that if it was then the percentage that should be allowable should be capped. In the event neither of our recommendations was accepted.

Chairman: I fear that we need to break again.

The Committee suspended from 4.02 pm to 4.09 pm for a division in the House.

Chairman: Colin Challen?

Q41 Mr Challen: I was just thinking of Winston Churchill's comment that democracy is a bad way of organising society but all the other alternatives are worse. Picking up from your submission, is that your view about emissions trading systems?

Mr Lanchbery: Yes, it probably is. A lot of claims are made for emissions trading, for example that it provides certainty. No, it does not provide certainty unless you have got an absolutely rock-crushing compliance regime, and there are always bound to be a few things that do not work very well depending on the players, so we have highlighted the EU scheme deficiency which is setting the cap. That is

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also a deficiency in the Kyoto Protocol one. I do not know of an example of an ideal trading scheme and you can almost never have one. I think the only one I can think of was the old BP one and that was within the company and it had the God-like figure of the chief executive in charge of it and he could say whatever he liked to make it a perfect scheme, but apart from that I cannot think of a "perfect" scheme. So I think we have to live with imperfections. Assuming you have got penalties and stringent targets it is more certain of delivering than a typical tax where there is a considerable amount of uncertainty as to what it delivers. I think you are right, it is the best thing we have got at the moment.

Q42 Mr Challen: Your submission does say that no pre-conditions regarding organising principles such as contraction and convergence or delivery mechanisms such as emissions trading should be at the start of these negotiations. That does beg the question what should be at the start of negotiations post-2012?

Dr Jefferiss: Agreement generally on the way forward but, specifically, targets.

Mr Lanchbery: I think that remark was made in the context of just getting the negotiations started. One of the difficulties there is, quite apart from the United States which we have talked about, is getting the developing countries to commit to anything at all and getting them involved, so initially the focus should really be on just getting the people around the table which at the moment has not proved possible.

Q43 Mr Challen: You mean the key players around the table, the absent friends?

Mr Lanchbery: Yes, like China. They have not participated at all, they have refused to discuss it.

Q44 Mr Challen: If we were to take that tack would we not be back at square one? Why can we not build on the albeit very modest success of Kyoto and say, look, we started with 10% down the road or 2% down the road and there are more and more people?

Mr Lanchbery: I think we can with countries like India and China. They are already party to the Kyoto Protocol so they do not fundamentally disagree with it; they just do not want big commitments for them. They agree with the principles in it. The point we were trying to make was the first thing we want to do is get everybody around the table which we have not got at the moment on discussions on what happens post-2012. I suppose the second point is that it would better if the United Kingdom or Germany or the EU as a whole or any developed country did not come up with a solution. It would be better if one of the big developing countries proposed a solution. If they come up with contraction and convergence or whatever it is, then fine, but it would be nice and much more diplomatic if the solution came from them.

Q45 Mr Challen: I am taken by this notion that Australia did very well at Kyoto and had permission to emit more and yet they have not signed up to it. I

guess you have got Australia and the United States and one or two other countries (no longer Russia) in a coalition of the unwilling and perhaps if that coalition was reduced and especially with a major Western economy saying, "We have seen how Kyoto is working. We have not done badly by it," if they had been a fully participating member then perhaps we can peel off and build on Kyoto in that way and isolate the United States, and by their isolation perhaps then seek to bring them in. It seems to me we are being driven by the United States in so many ways. Going back to an almost square one position is dangerous.

Mr Lanchbery: It was not meant to imply a condemnation of Kyoto at all. I am sorry, if it was read that way that was not what was intended. We are very pro-Kyoto. We were just saying for the next round we should have no pre-conditions. One of the pre-conditions is that you should use the Kyoto process.

Dr Jefferiss: I think we took that as read and made that assumption. It is no criticism of Kyoto, no criticism of trading, and no criticism of contraction and convergence. It is just that given the extreme political sensitivities at both ends of the spectrum, from the US on the one side and developing countries on the other, negotiations with as few preconceptions as possible seemed the most likely to happen to possibly make some progress. Having said all that, we would hope that Kyoto would form the basis of the way forward. It is likely that trading would be the mechanism. Contraction and convergence is less clear but I hope that clarifies what we were saying.

Q46 Mr Challen: I think it does to a certain extent. Perhaps I will come back to contraction and convergence. Just remaining on emissions trading per se, do you think it is a possible strength of them that they could allow or even encourage many different policy mechanisms to appear (a market-driven approach) or is it a weakness that we are maybe putting too many eggs in one basket and that is what is obscuring all the other possible routes?

Mr Lanchbery: It is a possibility. Before Kyoto the European Union as a whole were very keen on emissions trading. It has caused problems in some countries, notably Germany, where they have had very good deals with their business people which they are reluctant to give up, hence the number of conditions in the EU Emissions Trading Scheme so again that is another one of the reasons for not having too many preconditions on it. China and India really do not want it. India has some very basic problems with trading because they consider it as issuing permits to pollute. We would not think of it that way but that is the way their representatives had thought of it. It may be a complete non-starter with India. Again, we should not try to force it on people if that is not what they want.

Dr Jefferiss: I think while you may be right that it has the effect of marginalising other options which may actually be more effective, our judgment would be that experience suggests that for all its flaws it is the most politically acceptable of the various options

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and that it is important particularly to bring the US in because although the US is not essential in a global context without the US, a trading scheme would be weaker, and obviously our global efforts to reduce emissions would be significantly impaired. I think it also seems to be the most politically acceptable option to business and again that must be a material consideration because even if there are technically better options if they are anathema and unacceptable to US and to business, then however good they are they are not going to yield results either. Finally, emissions trading schemes have been shown to work. The SO₂ trading scheme in the United States has worked and it has revealed all sorts of interesting bits of information such as the fact that early projections of costs are likely to be gross over-estimates. So I think there are various reasons why trading is beneficial.

Q47 Mr Challen: Given what you have just said, the Kyoto Protocol is largely about the national targets and countries joining. How about large businesses, multi-nationals, or whoever, becoming direct participants in their own right? Is that an idea that you consider worthy?

Dr Jefferiss: As we indicated earlier, while it might technically be possible we think politically it would be unacceptable because it is unlikely, particularly in the case of the United States, that they would accept a situation in which some supra-national body, an international body, were to regulate trading amongst companies that included US-based companies whereas national allocations which they can control are obviously more politically acceptable.

Mr Lanchbery: I think it would probably go down badly with most countries but the Kyoto Protocol and the Climate Change Convention are United Nations conventions so they automatically run on participation only by governments, so it would require quite a major revision to the way the UN operates to allow companies in.

Q48 Mr Challen: As we know, climate change is not a concept, it is a proven fact, but it is still very difficult to communicate, and recent surveys have demonstrated that the general public all think that perhaps it is important but in their own lives it does not really have much impact and talking about contraction and convergence is quite difficult. Other things like carbon taxation are quite easy to communicate, although usually without any positive advantage to elected politicians. Do you see any sort of role for national systems that we could introduce within the UK? I am thinking specifically of domestic tradeable quotas, which I imagine you will be aware of. Do you think there is a way there in which we could get the wider public on board and actually address one of the objection or concerns we have in the submissions that you cannot apply Kyoto to motor vehicles, for example? Each government, would you agree, should look at how they can get their public on board directly rather than simply saying this is an objective for our policy makers in Whitehall?

Mr Lanchbery: It is an appealing concept. It was mooted some time ago. I remember having a meeting with the European Commissioner at which it was mooted. I think it is a matter of practicality really though. Although most well-educated people again would be okay with it and you could see them using their carbon credit, it might be difficult for an elderly person to take any advantage of it. I can see the appeal of it, I just wonder about the practicality of it.

Dr Jefferiss: It is an interesting question. Getting the public on board and using fiscal instruments to do that are not necessarily the same thing and your natural response is to think fiscal instruments doing anything is likely to alienate the public, but I think probably of all the mechanisms available the notion of per capita allowances that can be traded electronically through a credit card system—and I know the Tyndall Centre for Climate Change Research has done some investigation of this—is quite appealing if it is technically feasible because as well as being economically efficient it is also socially progressive in that a person who does not have many means and does not travel very much at least has an asset that they can sell to an affluent person who does wish to travel more. It has some social progressivity about it, too. It is quite an appealing way. There are obviously other fiscal measures, taxation in particular, and we would all be in favour of a variety of fiscal measures for achieving different purposes, so we argue, for example, for a well-to-wheel carbon tax on vehicle fuels.

Q49 Mr Challen: Do you think that without such measures as that—and that is music to my ears on DTQs by the way—we could achieve any more stringent or radical post-Kyoto targets because, after all, the domestic sector in this country contributes about 40% of our emissions.

Dr Jefferiss: I think that there are other policy mechanisms for driving reductions in the non-industrial sector. It is really a question of whether the Government will have the political will to implement them. Certainly, as you indicated, energy efficiency measures in the domestic sector in particular could achieve significant cuts but the fear, naturally, is a political one and the fuel poor in particular will be adversely affected. Our response to that would be that it would be much more politically expedient and effective to tackle fuel poverty head on and remove that as an obstacle to introducing a rational taxation system for energy or for carbon use. I think it is really a question of not whether there are other policy influences but whether there is the political will to deploy them. The same with fuel duty on transport fuel.

Q50 Mr Francois: Realistically, are only the larger countries likely to be able to take advantage of emissions trading? To what extent will the less developed countries be able to take advantage? They do not have the mechanisms to allow them to take advantage of the Clean Development Mechanism let

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alone the opportunities that are offered by wider international emissions trading as a whole. What is your view?

Mr Lanchbery: I do not think you would really be asking poorer countries to join in. You are right, it is a complicated mechanism, and it would be grossly unfair to ask a country like Bali or somewhere like that to join in such a regime. They presently do not have the resources and they do not have many emissions either. So we are only really thinking about the very biggest, rapidly industrialising developing countries that have large emissions and whose emissions are growing rapidly and bringing in those who know precisely what they are doing. China knows they have a huge air pollution problem already. They are very concerned about cutting acid rain emissions and have already been doing stuff on that. India, again, knows precisely what it is doing. The last time I went to Delhi I was very impressed because Delhi used to be hugely polluted and they decided they were going to cut all the pollution in Delhi. So they converted everything including the auto rickshaws, the tuk-tuks, to liquid petroleum gas, and they can do that quite well by themselves, they know what they are doing. It is those sorts of countries you are looking at, not poor developing countries.

Q51 Mr Francois: Turning from countries to organisations, some organisations have argued that they should not be taxed twice effectively for the same emissions. If you take the example of the aviation industry, they argue that if they were to be included in an EU Emissions Trading Scheme that the surrogate Air Passenger Duty should be scrapped. What do you say to that?

Mr Lanchbery: If it was placed on them primarily for climate change purposes then, yes. It is not at all clear with some of these things what the duty was imposed for, but certainly, yes, if it was imposed for that purpose it should be removed.

Dr Jefferiss: It is ironic to get the aviation industry accusing the Government of charging it once let alone twice!

Q52 Mr Francois: The Government has announced that sites participating in the EU ETS might be able to opt out from their climate change agreements. Do you think that an approach such as that would be justified?

Mr Lanchbery: Yes, they are allowed to do that under the Directive as long as they achieve the equivalent effort somewhere else, so if under their Climate Change Agreement they over-achieve what they would have done under the trading scheme then they can be exempted under the Directive. That seems fair enough. It seems a rather round about way of doing it but if that is what they are doing, it is fair enough if they are achieving the same result.

Mr Francois: That is helpful, thank you.

Q53 Mr Thomas: I think we already know how difficult the USA finds any idea of a national target for themselves that they must be bound into at an international level. Looking ahead past Kyoto to the

future, are there any initiatives coming out of the US at the moment that could be pointing the way to the future. On emissions trading you mentioned California earlier on and the seaboard there coming together. Could you say a little bit more about those sort of initiatives and also what the NGOs are asking for in America? Where are they pressing for now?

Mr Lanchbery: The big national one in America, the federal one is the McCain-Lieberman Bill, which I mentioned earlier, which they will resubmit. It is interesting in the United States because climate change is not actually a party political issue at all. People tend to think because Mr Bush is a Republican that all Republicans are anti-climate change, and that is clearly not the case. Schwarzenegger is very keen on doing something in California, Petaki is very keen on doing something in New York and Senator McCain from Arizona who is not a particularly left-wing "Pinko", is also a Republican and thinking of doing something nationally. It is not a Republican party issue in that sense. The McCain-Lieberman Bill is the big initiative and they only lost by 43–55, so that is eight votes in the Senate.

Q54 Mr Thomas: That is an achieving bill not a national allocation bill.

Mr Lanchbery: No, that covers all installations in the United States, more than 10,000 mega tonnes of carbon dioxide. It also includes transport fuels with equivalent emissions. So it is quite all-encompassing but it would be a trading scheme, you are right, and you would have credits and you would trade. The cap is a bit weak. The cap proposed nationwide was to stay at 2000 levels by 2010, so it is lower than the one in the EU Emissions Trading Scheme or elsewhere but nevertheless it is quite ambitious. It is quite a complicated scheme.

Dr Jefferiss: The other thing I would mention is that in the 1990s I was the Energy Programme Director of the Union of Concerned Scientists in the United States and I was always surprised at the lack of knowledge in Europe of the degree to which at state level there was a hive of activity on sustainable energy policies, so there are a number of states with what we call the renewable obligation and what over there is called the renewable portfolio standard. There are states that have what they call a system benefits charge which is like the Non-Fossil Fuel Levy to support various types of system benefits. There are various state tax and subsidies schemes for renewables and sustainable energy. As I say, they are quite extensive and some of them seem to have been quite effective, including in Mr Bush's home state of Texas where wind power is doing reasonably well. If you are interested, the Union of Concerned Scientists has a full tabulated analysis of activity at a state level as well as inter-state activities such as the North East Trading Scheme and activities in California and the West Coast. So we can provide details of where to access that if you would be interested.

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Q55 Chairman: That would be helpful.

Mr Lanchbery: Just a little additional bit. One of the problems with the present administration is the word Kyoto and that comes from a previous Senate Bill which was passed just before Kyoto, which the Senate passed by a complete majority of 95–0, the Byrd-Hagel Resolution, and that said there should be meaningful participation by developing countries and the Clinton administration did not negotiate such a treaty so the Senate was almost bound to not like it when it came through. Again, it is not a straightforward Bush does not like it, Clinton did like it, sort of thing with the treaty. The Senate always did not like the treaty which did not bring in at least some rapidly developing countries, so the two issues are linked.

Q56 Mr Thomas: They are indeed and I wanted to ask about that because the two major countries are India and China, who have also had difficulties with national targets and, as you correctly pointed out, it was Clinton who first failed to get this through the Senate not George Bush. Do you have any information about what is happening in India and China in an analogous way to what is happening in the USA, something that is moving there that at least if they had not been bound into something like Kyoto when we come to review and when we come to look at the future they will be able to be part of that process?

Mr Lanchbery: Various senior Chinese officials—not their head of government but senior officials—have said that climate change is a big problem for them and that they ought to do something about it. They have not been terribly specific but they are increasingly looking to solutions at home, especially ones that solve their acid rain problem, which is huge. They would be particularly keen to look for alternatives to coal or at least carbon sequestration because they have massive pollution problems, particularly in Beijing. India is probably thinking of doing less although India has a number of programmes. They have a big wind power programme, for example, so it is not as if they are doing nothing domestically. They, too, have big pollution problems. One hit the papers fairly recently around Agra which they had to clean up. So it is not as though they are doing absolutely nothing; they are just not participating internationally as much as they might. Having said that, the UK keeps visiting China, and Defra officials are always going there. Mrs Beckett is just back from China.

Q57 Mr Thomas: Finally then, the Government's attitude. We have heard an awful lot from the Prime Minister down on the opportunities of the G8 and climate change because climate change and Africa are the two main foci for the Presidency of the G8. Has the Government worked with you and the NGO community? In advance, for example, of

Johannesburg there was a great deal of stakeholder involvement and building a consensus around these issues. Has that happened at all in this context? Are you engaged in the Government's thinking? You seem to be quite well informed about it.

Dr Jefferiss: Not on the scale of the run up to Johannesburg but in a quieter and less public way they have engaged, I think, with key voluntary sector stakeholders, for example inviting us to meetings with key officials to discuss both the G8 Presidency and the EU Presidency. Defra ran a workshop that was run by the Institute for European Environmental Policy and the Green Alliance to look at specifically what the voluntary sector community thought of the EU Presidency as an opportunity for climate and other environmental issues. There have been a number of meetings with officials on G8 opportunities, so I would say a number of key stakeholders have been invited to comment.

Mr Lanchbery: Upwards to Number 10 and Mr Blair has talked to our chief executives.

Q58 Mr Thomas: So you would be quietly confident about the way that is going in terms of your engagement?

Dr Jefferiss: In terms of our opportunity to comment; whether our comments have been taken on board or—

Q59 Mr Thomas:—We will find out next year.

Mr Lanchbery: We have been given the opportunity.

Q60 Mr Thomas: We will see whether our comments have been taken on board as well.

Dr Jefferiss: I hope so.

Mr Lanchbery: One brief comment on climate change and Africa. We have been working with the development groups on that and the development groups are increasingly worried about the effect of climate change on the poorest countries. We have got a brochure which we might leave behind which was produced with people like Christian Aid, et cetera, on the effect of climate change on the Millennium Development Goals. They are quite closely linked.

Dr Jefferiss: That is an important message that we would want to send, particularly to the Treasury and DFID, both of whom have concentrated primarily on poverty elimination globally, which is obviously crucially important as a priority, but just to take careful note that unless climate change is addressed as an equally pressing international priority it will be difficult to the point of impossible to eliminate poverty globally and poverty will be exacerbated by climate change.

Q61 Chairman: I think that exhausts our questions. You have given very helpful answers. Thank you once again for coming.

Mr Lanchbery: Thank you very much.

Wednesday 1 December 2004

Members present:

Mr Peter Ainsworth, in the Chair

Mr Colin Challen
Sue Doughty
Paul Flynn

Mr John McWilliam
Mr Malcolm Savidge
Joan Walley

Memorandum submitted by The Global Commons Institute

1. INTRODUCTION

1.1 GCI welcomes these hearings by the Environmental Audit Committee [EAC] of the UK House of Commons into, “The International Challenge of Climate Change, UK Leadership in the G-8 and the EU.” We also welcome that the EAC recognise the “Contraction and Convergence” [C&C] concept as a frame of reference for investigating how this challenge might be met. For 15 years we have developed this as “honest concept-language”. We hope this Inquiry will uphold and clarify this record.

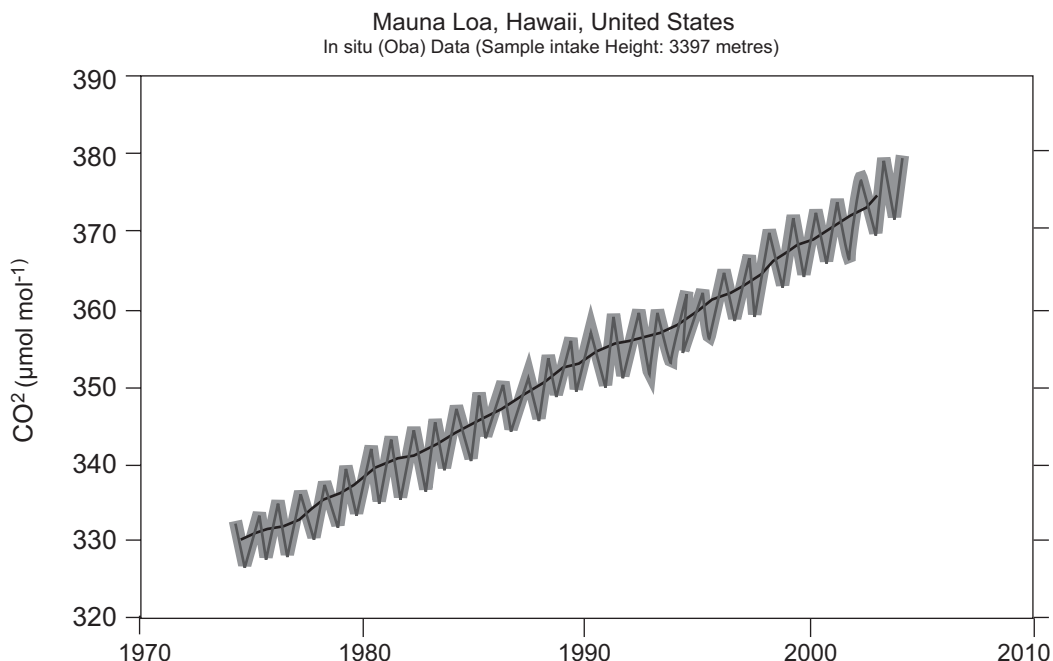
2. CONTEXT

UK Leadership on Climate Change in the EU and G-8 Presidencies

2.1 The Royal Commission on Environmental Pollution’s [RCEP] 22nd Report dated June 2000 concludes the first chapter with these words:

2.2 “The world is now faced with a radical challenge of a totally new kind, which requires an urgent response. The longer the response is deferred, the more painful the consequences will be.” Later it says, “the present concentration of carbon dioxide in the atmosphere, about 370 ppmv, is well outside the range recorded in the last half million years . . . There is no precedent in recent geological history to help us understand precisely what consequences will follow.”

2.3 In the five years since its report, effective action has not been taken and emissions and concentrations have steadily increased. Carbon dioxide concentration in the atmosphere increased at the rate of 1.5 ppmv in the 1990s. It increased 2.1 ppmv in 2001, 2.5 ppmv in 2002 and an unprecedented 3.01 ppmv in 2003. This touches 380 ppmv or 40% above pre-industrial concentration level. We do not know yet whether this accelerating rise indicates a start to runaway global warming. However, Dr Ralph Keeling of NOAA’s atmosphere monitoring station at Mauna Loa has said this year, “if you want to know what positive feedback looks like, it will look like this.”



2.4 Key Message to UK Government: Adopt C&C

2.5 The RCEP looked at “prospects for an effective global response” and concluded with the single recommendation:

“The Government should press for a future global climate agreement based on the contraction and convergence approach, combined with international trading in emission permits. Together, these offer the best long-term prospect of securing equity, economy and international consensus.”

2.6 The UNFCCC Secretariat says achieving the Convention’s objective “inevitably requires ‘contraction and convergence’.”

2.7 The UK Government should now adopt the recommendation of the Royal Commission. It should make it clear, prior to its presidency of the EU and G8, that the Government supports Contraction and Convergence; and during its presidency, the UK Government should pursue all means by which C&C will be adopted and implemented internationally.

3. OBJECTIVE

“Changing the Maths We Live By”

3.1 A briefing on “Contraction & Convergence” [C&C] is published this December in the journal *“Engineering Sustainability”*. It is closely based on the briefing that follows.

3.2 The journal is published by the prestigious Institute of Chemical Engineers [ICE] in London. They suggest that C&C, “could prove to be the ultimate sustainability initiative.”

3.3 Seeing the maths of C&C as, “an antidote to the expanding, diverging and climate-changing nature of global economic development,” they describe C&C as, “an ambitious yet widely supported plan to harmonise global greenhouse gas emissions to a safe and sustainable level per person within the next few decades.”

3.4 Making an unexpected inter-disciplinary link, ICE also note that in July 2004 C&C, “received divine backing from the Church of England.” This was helpful to the mission of the incumbent UK Prime Minister, a religious man who recognises changing climate’s threat to civilisation. Mr Blair has correctly said that the cost of preventing climate change is less than the cost of failing to prevent it.

3.5 At the time the ICE journal went to press, I was interviewed by the internationally read industry news-service Argus Emissions. *Inter alia* they asked me, “what would your advice to President Bush be on climate change issues?”

3.6 Thinking about the inter-disciplinary link, I remembered the story told by the Archbishop of the Church of England, Rowan Williams, about the religious right in the US. It is said they were behind the recent re-election of George Bush.

3.7 They noted Rowan’s speech in support of C&C “Changing the Myths We Live By” and told him, “Archbishop, you lack faith in God: if God wants to change the climate, he will change it.”

3.8 This challenge to “Divine Support” exercised me more than the support itself, so I replied to Argus, “Mr Bush is a self-declared man of God. He does nothing to hinder climate change, and has been effectively positioned as its agent. So I advise candour in his relationship with God about the prospect of more people dying as a result of unfettered climate change than in the entire history of human conflict.”

3.9 It seems that a “Twilight of the Gods” looms at the G-8 in 2005. The two top chairs—Mr Blair’s and Mr Bush’s—appear for the moment to be the seats of Divine Support for clearly opposite views of climate change. Mr Bush’s view is that it is God’s will to change the climate; this is the “let go and let god” position that says whatever the costs, there are greater benefits. The other is the “God helps those who help themselves” position. This says it is not against God’s will to avoid that cost whatever the effort required, as unless we make this effort, the climate changes we force will force unbearable changes on us and our children.

3.10 Such is the tension that UK avoidance is already being mooted. A relevant government website now refers to a preparatory meeting for the G-8 in March 2005 at which, “Discussion . . . will not centre on targets for limiting carbon emissions, but on the business case for the adoption of lower carbon technology in countries with the biggest energy needs.”

3.11 This memo is intended to help focus the light shed by the Environmental Audit Committee on the dilemma that grips Mr Blair, Mr Bush, their G-8 colleagues and indeed all of us.

3.12 Pursuing the impossible dream of infinite growth is expansion and divergence and death by damages. “Changing the Myths We Live By”, means “Changing the Maths” to renewables and a low carbon economy in a C&C framework, the ultimate sustainability initiative.

4. ROLE OF CONTRACTION & CONVERGENCE

“Honest Concept-Language”; *Basic to Changing the Maths we Live by* *“Protecting the Integrity of the Contraction & Convergence Argument”*

4.1 In EAC’s “Sustainable Development Strategy” report [No 13, November 2004] they identify climate change as, “the greatest challenge the world now faces”. Focusing on the issue of global CO₂ emissions rising out of control, they note, “potentially catastrophic results” if humanity continues to ignore the environmental limits to economic development activities. EAC also recognises the concept-discourse of “Sustainable Development” as the over-arching framework within which human activity should now take place. Noting that the language of “sustainable development” is, “ambiguous and complex” EAC also say, “there is an urgent need to promote a deeper understanding of sustainable development and to incorporate it within all aspects of policy making.”

4.2 Crucially, EAC further recognises a deeper and really fundamental problem. As terms are coined and taken into common everyday usage, EAC is correctly concerned about how these initially meaningful terms can become debased when Governments and other parties use them indiscriminately to describe what they were doing anyway. They cite, for example, how the term “sustainable development” now proliferates in departmental formulations such as “sustainable transport”, “sustainable communities”, and even “sustainable growth”. EAC suggests that such attempts to lend what it calls “ethical credibility” to existing programmes are, “a cause for serious concern” and potentially even “facetious”.

4.3 We agree. The opportunistic, euphemistic and even oxymoronic use of concept language, especially when trade-offs between basic survival rights and economic wrongs are linked to rates of environmental change, is counter-productive. In the already fraught international negotiating conditions to avert dangerous rates of climate change, many people are already dying as a result of the associated impacts. Consequently converting concept language into oxymorons and euphemisms to disguise unresolved ideological conflicts over economic and other forms of future growth, makes yet more difficult the possibility of coming to the constitutional terms of sustainable development—indeed of security and survival—at all.

4.4 The cost of failing to avert dangerous rates of climate change is inestimable. But the prospect of paying this is increasing, as with the growth of population, the economy and the resultant greenhouse gas pollution, we generate trends of climate change faster than we respond to restrain them. In this context, the growing use of the “Contraction and Convergence” [C&C] concept and language is welcome. However, the ambiguity and misuse of this concept-language, raises a cost to the concept.

4.5 On the one-hand intelligent peer-reviewed reports from the Intergovernmental Panel on Climate Change [IPCC] observe that, “C&C takes the rights-based-approach to its logical conclusion”. The secretariat to the UN Framework Convention on Climate Change [UNFCCC] has underlined the logic saying that, “stabilisation [the objective of the UNFCCC] inevitably requires ‘contraction and convergence’.” The Archbishop of Canterbury recently underscored the reflexive nature of the logic of C&C saying that, “This kind of thinking appears utopian only if we refuse to contemplate the alternatives honestly.” He pressed the Government to give global leadership with C&C at the forthcoming G-8. The Royal Commission on Environmental Pollution has also pressed this C&C leadership point on the UK Government since 2000. These are important messages that reflect the value of the “honest-language” capital invested in C&C. They reflect the causal intent coherently structured in the principles of the global C&C framework and methodology.

4.6 At the same time, debasing the language capital of C&C, we now have advisors to and operatives in the British government simultaneously pressing views of C&C that not only contradict the model, they also contradict each other. In one set of arguments C&C is merely seen as the “outcome”, rather than the cause, of what we will all be doing in further quasi-random Kyoto-style negotiations.

4.7 In another, C&C faces the problem of being described by British civil servants as, “a mathematical inevitability if we are to avoid dangerous climate change” whilst also being a “theory” the “calculations [of which] we just didn’t understand.” Disturbing on the diplomatic front is the situation where C&C is now wrongly described by some civil servants as both “lacking support in Developing Countries” yet also “supported, [in India for example] but for the wrong reasons” [see next section].

4.8 Yet the Government wrote to GCI undertaking to “protect the integrity of the [C&C] argument” and source GCI.

4.9 The intent with C&C has always been to integrate, simplify and—crucially—“quantify” key issues relating energy and environmental limits to political structure built on rational principle. This enables inclusive, full-term practice and process to be guided before and during the fact by agreement to stability, as is required by the UNFCCC.

4.10 C&C is as much input as outcome; it is “cause” before it is “effect”. As such it has significant support around the world which should be nurtured rather than squandered by the debasement of its language or its methods. Clearly the cognitive and diplomatic effort required to guide the climate negotiations must be driven by the goal of the UNFCCC and a coherent framework for “sustainable development”, not contradictions and oxymorons.

4.11 This is a core message that we wish to establish in the C&C inquiry with EAC members. C&C concept-capital does not compromise prosperity. It under-writes it by subordinating future economic growth to global environmental security. The G-8 is an opportunity to establish C&C as the basis of the necessary framework.

5. KEY STRATEGIC ISSUES AND QUESTIONS

5.1 Is there a consensus on the need to reduce emissions and on the level of carbon in the atmosphere which we must not exceed?

- (a) In a word; “yes”. If the word “consensus” is defined by gross majority of people concerned, the answer is noisy but increasingly “yes”. If “consensus” is defined by majority of relevant informed “experts”, the answer is a clear signal from the recognition of the need as defined. In other words, there is an overwhelming “yes”. If “consensus” is defined by all relevant “experts” including noisy ones from the minority of the so-called “contrarian experts”, the signal to noise ratio becomes noisier again and this is distorted further when the media promote adversarial debate between experts from both sides one-to-one.

5.2 Is that enough to prompt a commensurate response from politicians and business/industry?

- (a) Notwithstanding detail in the first answer, the answer is a clear yes. Moreover, this response has begun. However, it is proceeding much too slowly as taking account of what we do know from the science about rates of changes, we know that time is not on our side.

5.3 Will free market approaches (including drivers such as the price of fossil fuels, and technical innovation) adequately address the need to limit carbon emissions?

- (a) No, as prices are an effect before they are a cause. They are rising in response to oil and gas scarcity, but as it is plentiful, coal consumption will rise in response. This will not only drive the aggregate price of fossil down again, it will drive emissions up faster as the carbon intensity of coal is twice that of gas, with oil halfway between the two. When emissions should be falling globally at least 2% a year, they are rising at 2% a year. Global damages from atmospheric accumulation of emissions, albeit from a lower base, are rising at three to four times the rate of the emissions increase. The market is to a large extent the amplifier of this, so markets cannot lead us out of this crisis. However unfashionable it may be, to remain constructively relevant, markets must be understood as “framework-based markets” directed by government to work within to the reality of environmental limits.

5.4 What role should governments play?

- (a) As a path integral, growth is becoming un-economic as it is increasingly asymmetric and damaging. Governments should now stop being driven by this blind, formless and over-riding goal of growth. Sustainable development is much more about personal and community development, than it is about remote economic development and increasingly disembodied financial growth. “Money doesn’t create value, life does.” A failure to restrain uneconomic growth simply destroys development.
- (b) For “governance” to work at any level, from local to global, it needs to be primarily grounded in constitutional frameworks that recognise environmental limits in the commons, with resource conservation and personally equal rights in resource consumption patterns that impact on the commons. This is increasingly about the impact of energy consumption on the global commons. [See details under Expansion and Divergence].
- (c) Facing the scale of losses implied by climate change, it is time to stock-take and recognise overconsumption and “over-shoot” and their potentially fatal implications. WWF’s “Living Planet Index” is an excellent example of this. [See reference] Either we make changes or the climate changes we force will force unbearable changes on us.
- (d) So we need to reframe at a more fundamental level and change the epistemology of development and politics. With over-shoot, the evolution of capital and labour has reached the “constitutional crunch-moment”. Governments must speak to this. The imperative now is to adjust the dialectical politics, the blue and the red positions, to the over-riding green imperative, the constitutional politics of pre-distribution under limits. The historical process where private shares [blue equity] are traded in the market, mitigated by redistributive social justice [red equity], has increasingly blinded capital development and industrial relations about the need to preserve the collateral of the geo/biological resource base upon which we jointly and severally depend for survival [green equity].
- (e) This survival/equity synthesis is the “white-light” of a new understanding. With this, we may yet respond to the key feedback of climate change itself and avoid accelerating resource-depletion and market-failure into the security nightmare of social conflict and ecosystem collapse.
- (f) As with the pre-distributive sequence of cap-and-trade, markets and prices, by definition, are more effect than cause. They cannot and will not lead change. They can follow the signals from strong political leadership. In a phrase; Governments cap and markets trade.

- (g) To signal this cognitive change, Government must in the light of it:
- (i) Openly accept that climate change is a deepening crisis that requires private economic aspiration and public development policy now to be governed by an absolute and collective commitment to achieve the objective of the United Nations Framework Convention on Climate Change (UNFCCC) as soon as possible. This, by design, is stabilisation of the rising concentration of greenhouse gas in the atmosphere at a level low enough to prevent dangerous interference with and potentially runaway disequilibrium in the climate system.
 - (ii) Because of the above, educate and internationally lead and canvass for the agreement necessary for the establishment and implementation of global Contraction and Convergence C&C procedures [see elsewhere for details of C&C].
 - (iii) Nationally lead, educate and legislate for conservation behaviour, introducing energy demand-management in the form of the Personal Equal Carbon Quota Scheme personally traded in the private sector, as led in the recent Private Members Bill. Also, within this model, invoke the precedent of rationing and war-bonds. Centrally rebalance public/private investment in non-fossil fuel technology development, deployment with increasing the reliance on decentralised conservation, solar systems, co/generation and distribution networks and the reuse and renewal possible with biological energy and transport systems.

5.5 To what extent are international agreements and mechanisms needed to limit carbon emissions?

- (a) The need for international—indeed global—agreement on the need to limit and reduce carbon emissions is absolute. This doesn't mean that sub-global efforts should wait until global agreement is reached. However, it does mean constantly reaffirming the need for, and working for, an international, intergovernmental agreement and a model of what it is.

5.6 If international agreements are needed, what shape and form should they take?

- (a) In respect of carbon emissions, the overall agreement needed is “Contraction and Convergence” (C&C) [See definition statement for details].

5.7 How would they relate to the Kyoto protocol the EU Emissions Trading Scheme?

- (a) The parent of the existing agreements cited here is the United Nations Framework Convention on Climate Change (UNFCCC) signed in Rio in 1992 and subsequently ratified into force. The secretariat of these UNFCCC negotiations has now and for more than a year, taken the position that achieving the objective of the Convention “inevitably requires “contraction and convergence”. So the question is better answered by recognising that the cited schemes need to explain their relevance to C&C and the UNFCCC.
- (b) It is worth quoting the RCEP 22nd Report item 4.47 recommendation: “Continued, vigorous debate is needed, within and between nations, on the best basis for an agreement to follow the Kyoto Protocol. Our view is that an effective, enduring and equitable climate protocol will eventually require emission quotas to be allocated to nations on a simple and equitable per capita basis. There will have to be a comprehensive system of monitoring emissions to ensure the quotas are complied with.”

5.8 In particular, to what extent would an international emissions trading system offer the most effective opportunity for reducing global emissions? Could other (bespoke) approaches offer better and more targeted solutions?

- (a) Trading on the basis of equal emission rights provides the incentive for all countries to reduce emissions. Industrial countries will wish to reduce emissions in order to need fewer emission coupons. Poor countries will wish to keep their emissions low so that they have more coupons to sell. Incentive is more effective than any other measure.
- (b) But trading carbon entitlements per se will not be effective in reducing carbon emissions globally. Without non fossil-fuel energy alternatives in play, this market would be a reluctant and futile negative-sum game and not gain private sector traction.
- (c) And even with the gradual uptake of non-fossil-fuel alternatives, present emissions-trading arrangements are “cost-effective” in a very doubtful sense. “Under-achievement” on fossil fuel mitigation is frequently re-presented as “over-commitment” and so caps are relaxed. However, to minimise damage costs, the imperative of global decarbonisation is very pressing. So “overachievement” [which reveals a tradable surplus] should if anything be reframed as “undercommitment” and “over-entitlement”. C&C is intended to legitimate the entitlement of underconsuming third parties. Ironically, while these are often too remote to register their claim, they are also periodically wrongly accused of not supporting C&C.
- (d) As things are still without global structure, carbon-trading is often described as “picking low hanging fruit”. In system terms, it is more chaotic than stochastic. In process terms, it is more like “carpet-bagging” and “carbitrage” than meaningfully “cost-effective” as it depends on a range of faulty premises to demonstrate “positive-achievement”.

- (i) We need but don't yet have and accountable, globally inclusive "framework-based market" such as C&C within which to measure effective rates of change indexed to achieving the objective of the UNFCCC. The absence of this makes all parties even more vulnerable through third party exclusion.
- (ii) It is error to make fossil carbon [hydro-carbon] stocks and biological carbon [carbohydrate] flows commensurate. It compounds error when the social costs and benefits of using these across societies, whose dependence on and vulnerability to stocks and flows of these two forms of carbon, varies greatly. For example, tokenistic products claiming "carbon-neutrality" have appeared in the market where it is claimed that fossil carbon burning is "biologically off-set" by tree-growing.
- (iii) These mitigation "benefits" between high-emitting first and second parties are not indexed to the mortality, damage and adaptation costs that the "under-achievement" imposes on vulnerable and frequently low-emitting third parties. Sadly, these third party costs are already rising and are an unethical negative cost, or subsidy, to the trades of reluctant and tokenistic first and second party under-achievers.
- (iv) Together, under-commitments, errors of commensuration, trading these blind to third-party damage costs are suggested as part of a viable "a market-based framework". In reality, this institutionalises error and constitutes avoidance. It further dissipates the political will to break our fossil fuel dependence and—with suicidal undertones—commits us to increasingly fraught and possibly hopeless adaptation challenges.

5.9 Could an international emissions system come about in a voluntary (unstructured) manner?

- (a) Not a traded one. This requires "self-capping" and would result in the persistent failure of undercommitment as the desire to profit from trade would result in a market of "under-committed" sellers with no buyers.

5.10 Or would it require a more structured and regulated approach (as reflected in the EU ETS)?

- (a) The real question here is how we compare the difference between no structure and some structure in a regional scheme, with the difference between some regional structure and the internationally inclusive structure necessary to solve the global problem. The answer is that some structure is better than no structure, but some structure is not enough and only some-structure is futile.
- (b) A full-term global structure is pre-requisite to survival.

5.11 What downsides are there to emissions trading? In particular, will countries/companies simply walk away when the going gets tough?

- (a) Trading like taxes, as we presently understand them, are at-the-margins with reflexively marginal expectations of change. The new situation shows that the changes that are coming at us are anything but marginal and that there's nowhere for companies and countries to walk away to. It used to be that, "while some do sink, most boats do rise on the tide". Now that "we're all in the same boat", fighting for resources will sink it for all. Faced with this prisoner's dilemma, auctioning resources can help, but subject to the requirement for a coherent and constitutional rationing system like C&C. Emissions cap-and-trade should be understood in this light and the realisation that, "you can't trade what you don't own."
- (b) GCI believes that companies prefer long-term stability and would welcome the opportunity to demonstrate collective social responsibility by taking up the global standard of "C&C compliance" and defending this global basis of capping and trading to the UNFCCC.

5.12 How certain can we be that these will deliver the absolute reductions in emissions required?

- (a) We can be sure the absolute reductions are required, we can be sure that trading and taxes alone will not deliver. That said, "C&C Compliance" and what we should think of as the C&C Roadmap-and-Trade, however visionary, is still less improbable than eco-taxes the make-it-up-as-you-go-along cap-and-trade-casino that Kyoto presently hunches on the back of the often forgotten UNFCCC.

5.13 To what extent should any such scheme (an international ETS or some other form of post-Kyoto agreement) be seen as a way of channelling low-carbon technology investment from developed countries into least developed and developing countries (eg through mechanisms such as the Clean Development Mechanism)?

- (a) To pay the considerable opportunity-cost that raised greenhouse gas concentration in the atmosphere represents to Developing Countries [sometimes referred to as "historic responsibilities" or "ecological debt"] this needs to be—and is—a core structural feature of the C&C proposal. It embeds the coherent negotiating property of being able to accelerate the rate of convergence to equality of tradable permits relative to the rate of contraction [see reference]. This, in other words, potentially increases climate-purchasing power in Developing Countries. This will enable them to initiate non-hydro-carbon development. It will also stimulate the markets for this.

- (b) The notion circulated still at the “Developed” end of the global argument, that this understanding of C&C is not supported in Developing Countries is not supported by the evidence. The contrary is true and the evidence is considerable. [see annex 3 & 4] [not printed].

5.14 Would least developed and developing countries be able to adequately exploit an international scheme (ETS or whatever), or would a lack of skills and resources prevent them from doing so? (Capacity building issue)

- (a) There is of course a so-called “capacity-building” issue here. But Developing Countries have not been spared structural adjustment at the hands of the IMF. They have had to develop the capacity to face the almost impossible demand to make their export-led growth also keep their public services going in the face of private commodity prices adversely determined in Chicago, with international currency speculation at the expense of the soft currencies, not to mention external debt service alongside a US trade-deficit that is now accumulated at over four trillion dollars, underwritten as the US say by their Pacific fleet.
- (b) So it is wholly disingenuous of parties here in the UK to suggest that Emissions Trading is “too difficult” for Developing Countries to deal with precisely at the moment that the C&C Road-map structurally recognises that because of the “ecological debt” they have rights to the majority share of a key global resource in what is obviously a seller’s bull-market.
- (c) These are some of the issues tied up with why DEFRA, [rather than DFID], disingenuously argues that Developing Countries either don’t support C&C, or when they do it is “for the wrong reasons”.
- (d) The thing that is apparently, still after fifteen years, “too difficult” for “experts” advising and bureaucrats organising the over-consuming Developed Countries, is to accept that “equity is the price of survival”. C&C is supported by many Developing Countries precisely because the C&C formulation of environmental limits and equal rights enables us all to come to the constitutional terms of global governance necessary for survival. For advisors here to tactically ignore this while revising the risks downwards and developing country incapacity and disinterest upwards, is dishonest folly and should be debated openly.

5.15 What priorities on Climate Change should the UK pursue prior to and during its presidencies of the EU and G8 in 2005? To what extent should the primary focus be on a post-Kyoto framework? Are there any other short or medium-term issues which should be part of the UK agenda? If so, what?

- (a) Speak the truth and take the consequences. If our leaders aren’t sure what to do, they should say so.
- (b) The apex need is for leadership and no bluffing. In principle this is “leadership by idea”. This means articulating a coherent full-term global strategy to avoid dangerous rates of climate change. This means C&C as means and ends—C&C as both cause and effect, as both stock and flow—must be clearly laid out emphasising the structural feature that convergence can and should be accelerated relative to contraction, rather than contraction delayed relative to the rate of convergence. This means energy reform and energy-backed currency-reform.
- (c) African countries will propose this to the G-8 through the Africa Commission at DFID. Following this lead, however difficult, the UK government should amplify it at the G-8 stabilising the short and medium term process by addressing the full-term imperative.
- (d) However difficult, this is preferable to remaining collectively trapped in the confusion of the uneconomic growth rates of change in which we continue to generate the climate problem faster than we organise the global C&C solution. Nothing more, or less, than full-term C&C agreement enables all of us and our descendants to become first parties to a comprehensive and constitutional agreement to survive. We should be truthful about this.

30 November 2004

Annex 1

CONTRACTION AND CONVERGENCE DEFINITION STATEMENT

The Global Commons Institute [GCI] was founded in 1990.[1] This was in response to the mainstreaming of global climate change as a political issue. Realising the enormity of the climate crisis, we devised a founding statement on the principle of “Equity and Survival”. [2]

In November 1990, the United Nations began to create the Framework on Climate Convention [UNFCCC]. GCI contributed to this and in June 1992 the Convention was agreed at the Earth Summit in Rio.[3] Its objective was defined as stabilizing the rising greenhouse gas [GHG] concentration of the global atmosphere at a non-dangerous level. [See Annex 2 paragraph 2] Its principles of equity and precaution were established in international law. [See Annex 2 paragraph 2] Climate scientists had showed that a deep overall contraction of GHG emissions from human sources is prerequisite to achieving the objective of the UNFCCC. In 1995 negotiations to achieve this contraction began administered by the specially created UNFCCC secretariat.

Between 1992 and 1995 and at the request of the Intergovernmental Panel on Climate Change [IPCC], GCI contributed analysis highlighting the worsening asymmetry, or “Expansion and Divergence” [E&D] of global economic development.[4] It became clear the global majority most damaged by climate changes were already impoverished by the economic structures of those who were also now causing the damaging GHG emissions. [See paragraphs 6.32–6.42]

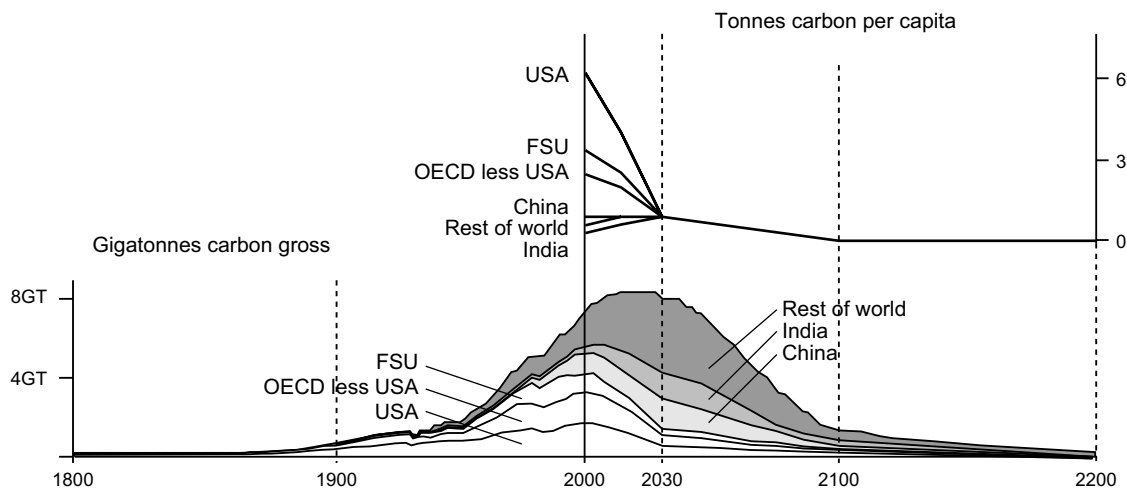
To create a sustainable basis on which to resolve this inequity, GCI also developed the “Contraction and Convergence” (C&C) model of future emissions.[5,6,7] In 1995 the model was introduced by the Indian Government [See paragraph Annex 4 paragraph 1] and it was subsequently adopted and tabled by the Africa Group of Nations in August 1997. [See Annex 4 paragraph 3]

Negotiations for the Kyoto Protocol to the UNFCCC ran from 1995 until 1997. In December 1997 and shortly before they withdrew from these negotiations, the USA stated, “C&C contains elements for the next agreement that we may ultimately all seek to engage in.”[8]

Since then C&C has been widely referenced in the debate about achieving the objective of the UNFCCC. In 2000 C&C was the first recommendation of the UK Royal Commission on Environmental Pollution in its proposals to government.[9] In December 2003 C&C was adopted by the German Government’s Advisory Council on Global Change in its recommendations.[10] In 2003 the secretariat of the UNFCCC said the objective of the UNFCCC, “inevitably requires “Contraction and Convergence”.”[11] The Latin America Division of the World Bank in Washington DC said, “C&C leaves a lasting, positive and visionary impression with us.”[12] In 2004 the Archbishop of Canterbury took the position that, “C&C thinking appears utopian only if we refuse to contemplate the alternatives honestly.”[13] In 2002, the UK Government accepted GCI authorship of the definition statement of C&C, recognising the need, “to protect the integrity of the argument.”[14]

This statement follows and is available in thirteen languages.[15] It has been acknowledged by the House of Commons Environmental Audit Committee and in part in the UN’s forthcoming “Millennium Assessment.” In 2005, the UK Government will host the next G-8 summit. The Government has already committed this event to dealing strategically with the problems of Africa and Climate Change. Numerous civil society and faith groups are now actively lobbying the Government to have C&C adopted as the constitutional basis for avoiding dangerous future climate change.

Contraction and Convergence Definition Statement



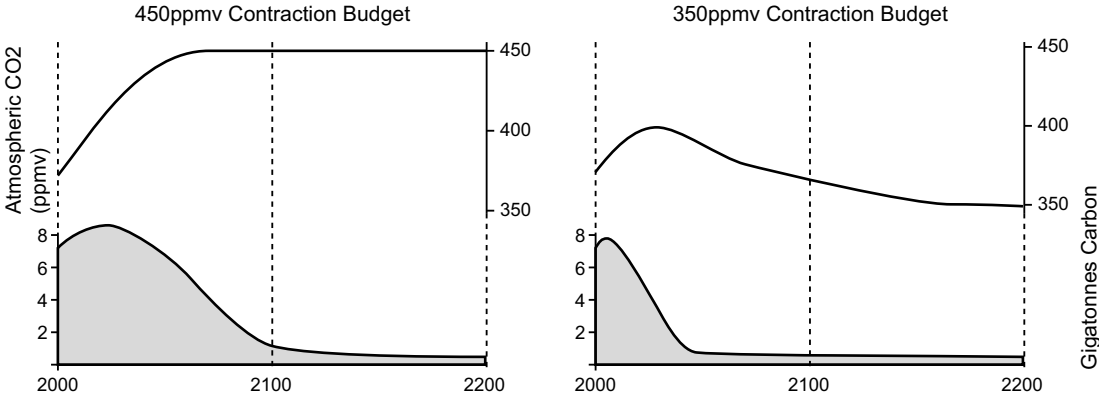
This example shows rates of C&C negotiated as regions.
This example is for a 450ppmv Contraction Budget, converging by 2030.

Source: GCI 2004

1. “Contraction and Convergence” (C&C) is the science-based, global climate-policy framework, proposed to the United Nations since 1990 by the Global Commons Institute (GCI).
2. The objective of safe and stable greenhouse gas concentrations in the atmosphere and the principles of precaution and equity, as already agreed in the “United Nations Framework Convention of Climate Change” (UNFCCC), provide the formal calculating basis of the C&C framework that proposes:

- A full-term contraction budget for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe, following IPCC WG1 carbon cycle modelling. (See Image Three—GCI sees higher than 450 parts per million by volume [ppmv] CO₂ equivalent as “not-safe”).

Negotiating Rates of Contraction

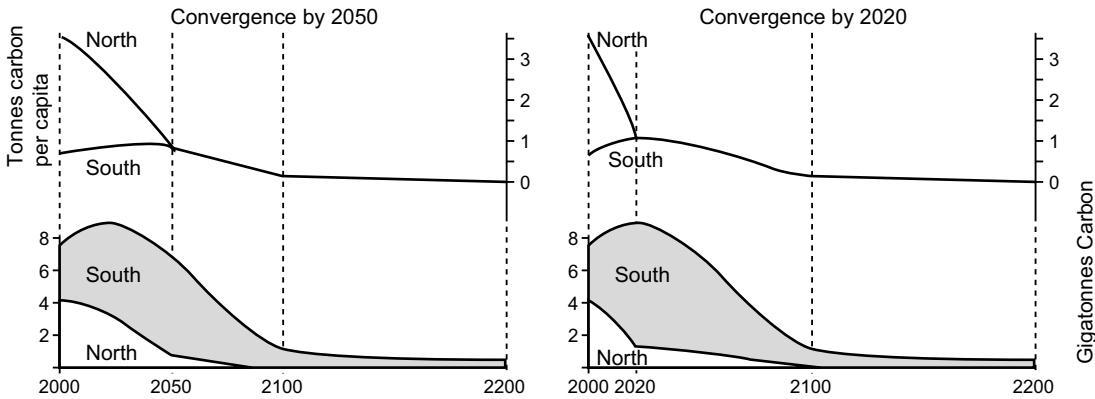


Annual Carbon emissions contract over time to a sustainable level. This is the Contraction Event .
 The choice of a safe CO₂ stabilisation level determines the total tonnage of carbon to be burnt during the contraction event.
 Two examples of CO₂ stabilisation levels are shown above with their corresponding contraction budgets.

Source: GCI 2004

- The international sharing of this budget as “entitlements” results from a negotiable rate of linear convergence to equal shares per person globally by an agreed date within the timeline of the full-term contraction/concentration agreement. (GCI suggests [a] between the years 2020 and 2050, or around a third of the way into a 100 year budget, for example, for convergence to complete (see Image Four) and [b] that a population base-year in the C&C schedule is agreed).

Negotiating Rates of Convergence



Per capita emissions around the world converge on equality by a negotiated Convergence Date .
 Two examples of convergence are shown here, each within a 450ppmv contraction budget.

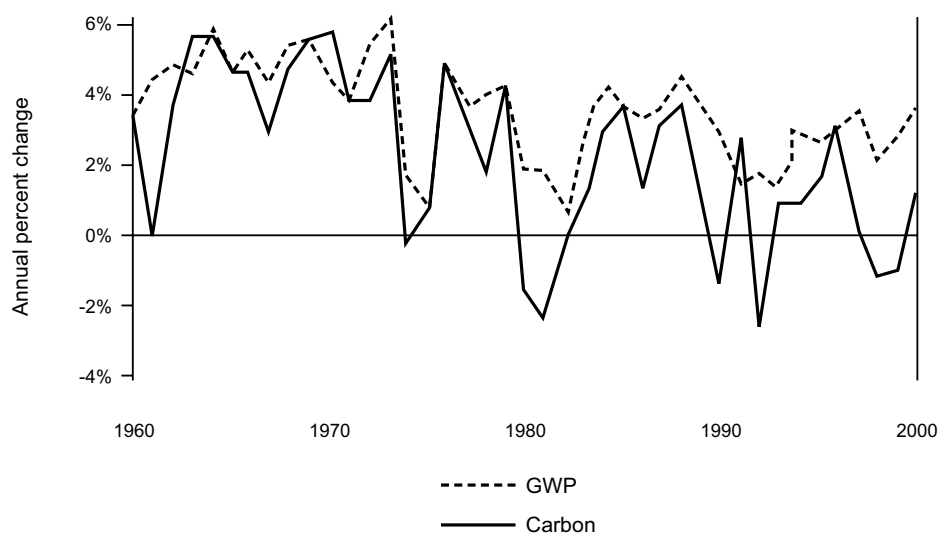
Source: GCI 2004

- Negotiations for this at the UNFCCC should occur principally between regions of the world, leaving negotiations between countries primarily within their respective regions, such as the European Union, the Africa Union, the US, etc (See Image Two).
- The inter-regional, inter-national and intra-national tradability of these entitlements in an appropriate currency such as International Energy Backed Currency Units [EBCUs][16] should be encouraged.
- Scientific understanding of the relationship between an emissions-free economy and concentrations develops, so rates of C&C can evolve under periodic revision.

3. Presently, the global community continues to generate dangerous climate change faster than it organises to avoid it. The international diplomatic challenge is to reverse this. The purpose of C&C is to make this possible. It enables scenarios for safe climate to be calculated and shared by negotiation so that policies and measures can be internationally organised at rates that avoid dangerous global climate change.

4. GHG emissions have so far been closely correlated with economic performance (See Image Five). To date, this growth of economies and emissions has been mostly in the industrialised countries, creating recently a global pattern of increasingly uneconomic expansion and divergence [E&D], environmental imbalance and international insecurity (See Image Six).

GWP, Carbon Lockstep



Year to year percentage change of Gross World Product GWP (measured in US\$) and global carbon emissions.

Source: GCI 2004

5. The C&C answer to this is full-term and constitutional, rather than short-term and stochastic. It addresses inertial argument about “historic responsibilities” for rising concentrations recognising this as a development opportunity cost to newly industrialising countries. C&C enables an international pre-distribution of these tradable and therefore valuable future entitlements to emit GHGs to result from a rate of convergence that is deliberately accelerated relative to the global rate of contraction agreed.

6. The UK’s Royal Commission on Environmental Pollution[17] and the German Advisory Council on Global Change[18] both make their recommendations to governments in terms of formal C&C. Many individual and institutional statements supporting C&C are now on record.[19, 20] The Africa Group of Nations formally proposed it to the UNFCCC in 1997.[21] It was agreed in principle at COP-3 Kyoto 1997. [22] C&C conforms to the requirements of the Byrd Hagel Resolution of the US Senate of that year[23] and the European Parliament passed a resolution in favour of C&C in 1998.[24]

7. This synthesis of C&C can redress the increasingly dangerous trend imbalances of global climate Change. Built on global rights, resource conservation and sustainable systems, a stable C&C system is now needed to guide the economy to a safe and equitable future for all. It builds on the gains and promises of the UN Convention[25] and establishes an approach that is compelling enough to galvanise urgent international support and action, with or without the Kyoto Protocol entering into force.

References:

- [1] <http://www.gci.org.uk>
 [2] <http://www.gci.org.uk/signon/OrigStatement2.pdf>
 [3] <http://unfccc.de>
 [4] <http://www.gci.org.uk/articles/Nairob3b.pdf>
 [5] <http://www.gci.org.uk/model/dl.html>
 [6] [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)
 [7] http://www.gci.org.uk/images/C&C_Bubbles.pdf
 [8] http://www.gci.org.uk/temp/COP3_Transcript.pdf
 [9] <http://www.rcep.org.uk/pdf/recommend.pdf>
 [10] http://www.gci.org.uk/Endorsements/WBGU_Summary.pdf
 [11] http://www.gci.org.uk/slideshow/C&C_UNFCCC.pdf
 [12] <http://www.gci.org.uk/correspondence/Vergara.pdf>
 [13] <http://www.gci.org.uk/speeches/Williams.pdf>
 [14] http://www.gci.org.uk/correspondence/C&C_Letters_Integrity_of_Argument_and_EAC.pdf
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 [19] http://www.gci.org.uk/archive/Mega_Doc_1989_2004.pdf
 [20] <http://www.gci.org.uk/consolidation/Sasakawa.pdf>
 [21] <http://www.gci.org.uk/papers/zew.pdf> [appendix c p16]
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 [25] http://www.gci.org.uk/consolidation/UNFCC&C_A_Brief_History_to1998.pdf

DOUBLE JEOPARDY: ASYMETRIC GROWTH AND CLIMATE DAMAGES

The charts in image five are stacked one above the other on the same horizontal time axis [1800–2200]. This helps to compare some of what is known about existing rates of system change with an underlying assumption in favour of a C&C arrangement being put in place.

A new feature shown is the rate of economic damages from increasingly “unnatural disasters” (measured as “uninsured economic losses” by Munich Re) now rising at 7% per annum, twice the rate of global growth. Another is the devastating and worsening economic asymmetry of “Expansion and Divergence” (E&D). This shows a persistent pattern of increasingly dysfunctional economic growth. One third of population have 94% of global purchasing power and cause 90% of GHG pollution; [“debtors”]. The other two thirds, live on less than 40% of the average global per capita income, have 6% of global purchasing power and a 10% share of GHG pollution; [“creditors”].

To escape poverty, it is creditors who embody the greatest impulse for future economic growth and claim on future GHG emissions. But this group also has the greatest vulnerability to damages from climate changes.

Most institutions now acknowledge that atmospheric GHG stabilization, “inevitably requires Contraction and Convergence”. However, some responses to C&C, see it merely as “an outcome” of continued economic growth with only tentative acknowledgement of the damages and little comprehension of E&D.

While C&C is not primarily about “re”-distribution, it is about a “pre”-distribution of future tradable and valuable permits to emit GHGs. Its purpose is to resolve the devastating economic and ecological imbalance of climate change. GCI’s recommendation to policy-makers at the United Nations is for the adoption of C&C globally for ecological and economic recovery as soon as possible.

A 3% per annum exponent in the path integral of growth is starkly asymmetric and unsustainable. Adhering to economic prognosis based on this is a measure of an increasingly dangerous economic “growth illusion”.

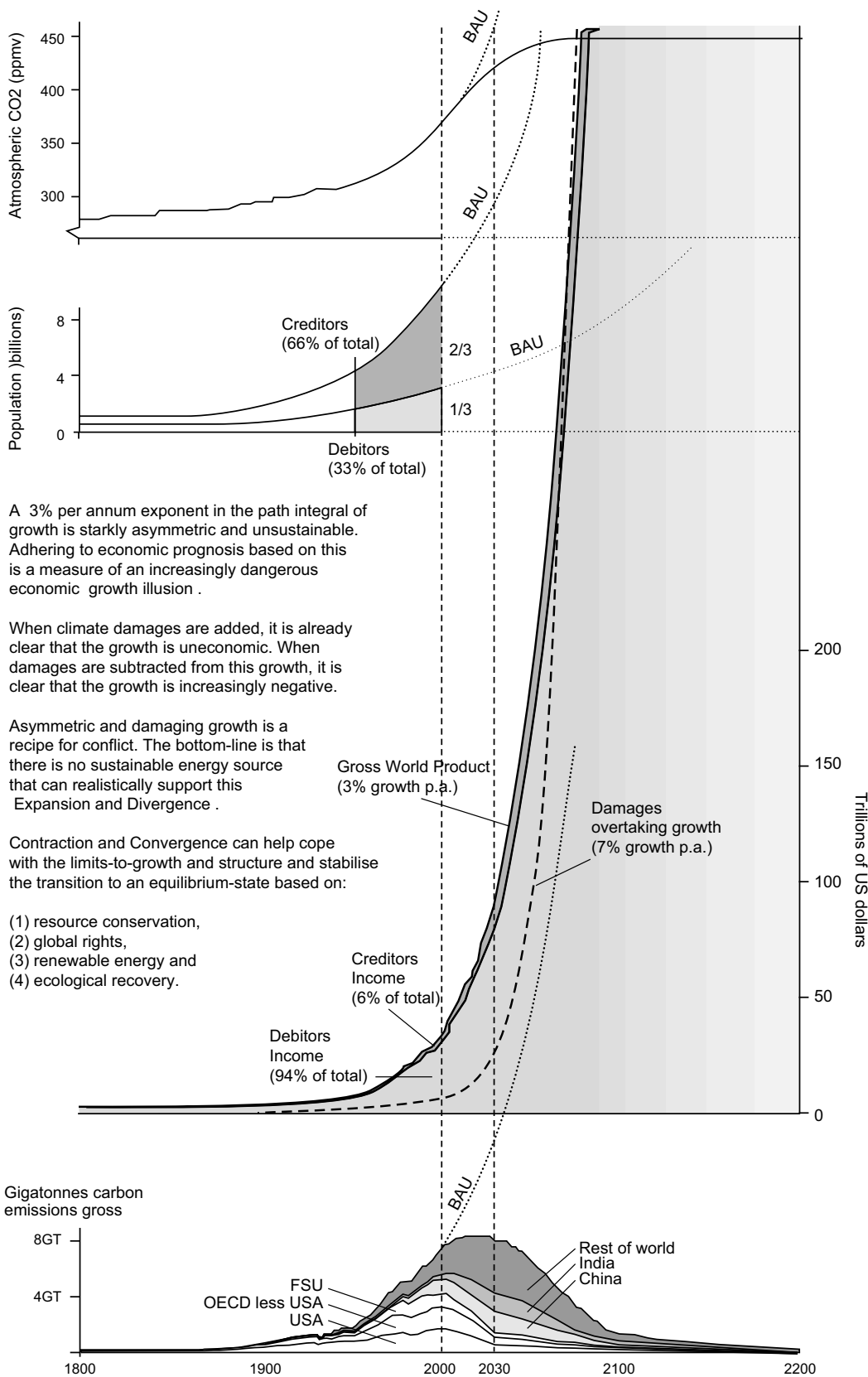
When climate damages are added, it is already clear that the growth is uneconomic. When damages are subtracted from this growth, it is clear that the growth is increasingly negative.

Asymmetric and damaging growth is a recipe for conflict. The bottom-line is that there is no sustainable energy source that can realistically support this “Expansion and Divergence”.

“Contraction and Convergence” can help cope with the limits-to-growth and structure and stabilise the transition to an equilibrium-state based on resource conservation, global rights, renewable energy and ecological recovery.

Asymmetric Growth and Climate Damages

□ Double Jeopardy □



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When climate damages are added, it is already clear that the growth is uneconomic. When damages are subtracted from this growth, it is clear that the growth is increasingly negative.

Asymmetric and damaging growth is a recipe for conflict. The bottom-line is that there is no sustainable energy source that can realistically support this Expansion and Divergence.

Contraction and Convergence can help cope with the limits-to-growth and structure and stabilise the transition to an equilibrium-state based on:

- (1) resource conservation,
- (2) global rights,
- (3) renewable energy and
- (4) ecological recovery.

Sustainable Development, C&C and the UN Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change

1. 1990: IPCC FIRST ASSESSMENT REPORT [FAR]

In 1990 the first Assessment Report of the IPCC was published. It established the need for the “Contraction” of Greenhouse Gases emissions [GHGs]. This was the recognition that cuts in the emissions of GHGs in the order of 60–80% would be needed to halt the rise of their concentrations in the atmosphere. This was the basis of the UNFCCC.

2. 1992: UN FRAMEWORK CONVENTION ON CLIMATE CHANGE [UNFCCC]

The necessity for the Convention.

Parties to the UNFCCC, “acknowledge that change in the Earth’s climate and its adverse effects are a common concern of humankind.” They are, “concerned that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and humankind” (Preamble).

The Convention’s objective

... “is to achieve . . . stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” (Article 2) In other words, greenhouse emissions have to contract.

The Principle of Global Equity

The Parties “should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity.” (Article 3.1). They note that, “the largest share of historical and current global emissions of greenhouse gases has originated in developed countries and that per capita emissions in developing countries are still relatively low” (Preamble). They therefore conclude “that in accordance with their common but differentiated responsibilities and respective capabilities the developed country Parties must take the lead in combating climate change and the adverse effects thereof” (Article 3.1), while, “the share of global emissions originating in developing countries will grow to meet their social and development needs,” (Article 3.3).” In short, the Convention covers Convergence and a system of emissions allocation.

The Precautionary Principle

The Parties, “should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures . . . (Article 3.3).

Achieving global efficiency

Taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at lowest possible cost.” (Article 3.3) This clause points to the global trading of emissions rights. More generally, the point to note here is that the idea of a framework based on precaution and equity had been established, with efficiency introduced in a subsidiary role purely to assist it.

3. 1995: IPCC SECOND ASSESSMENT REPORT [SAR]

Monetary valuation should not obscure the human consequences of anthropogenic climate change damages, because the value of life has meaning beyond monetary value. It should be noted that the Rio Declaration and Agenda 21 call for human beings to remain at the centre of sustainable development.

4. 1995: UNFCCC FIRST CONFERENCE OF THE PARTIES COP-1

“. . . [India] equity should guide the route to global ecological recovery. Policy Instruments such as ‘Tradable Emissions Quotas’, ‘Carbon Taxes’ and ‘Joint Implementation’ may well serve to make matters worse unless they are properly referenced to targets and time-tables for equitable emissions reductions overall. This means devising and implementing a programme for convergence at equitable and sustainable par values for consumption on a per capita basis globally.”

5. 1997: UNFCCC THIRD CONFERENCE OF THE PARTIES COP-3

“... [The Africa Group] support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after ‘entitlements’ that is the proposal by the delegation of India, the following wording. After ‘entitlements, the global ceiling date and time for Contraction and Convergence of global emissions. Because we do think that you cannot talk about trading if there are not entitlements. Also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity ...’

... [the USA] ‘It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in ...’ www.gci.org.uk/temp/COP3—Transcript.pdf”

6. 2000: IPCC THIRD ASSESSMENT REPORT [TAR]

“A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence.”

Annex 3

The IPCC Fourth Assessment Report [AR4]

Published for the IPCC by Munasinghe Institute for Development (MIND) Colombo, Sri Lanka March 2003—CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT—VIEW FROM THE DEVELOPING WORLD [Kirit Parikh Chairman, Integrated Research & Action for Development New Delhi]

“The Rich are delaying action, but delay is free riding. The difference between the likely emissions of OECD countries, even if Kyoto Protocol is fully implemented, and what would have been under the FCCC understanding will exceed India’s emissions of CO₂ over the next 40 years.”

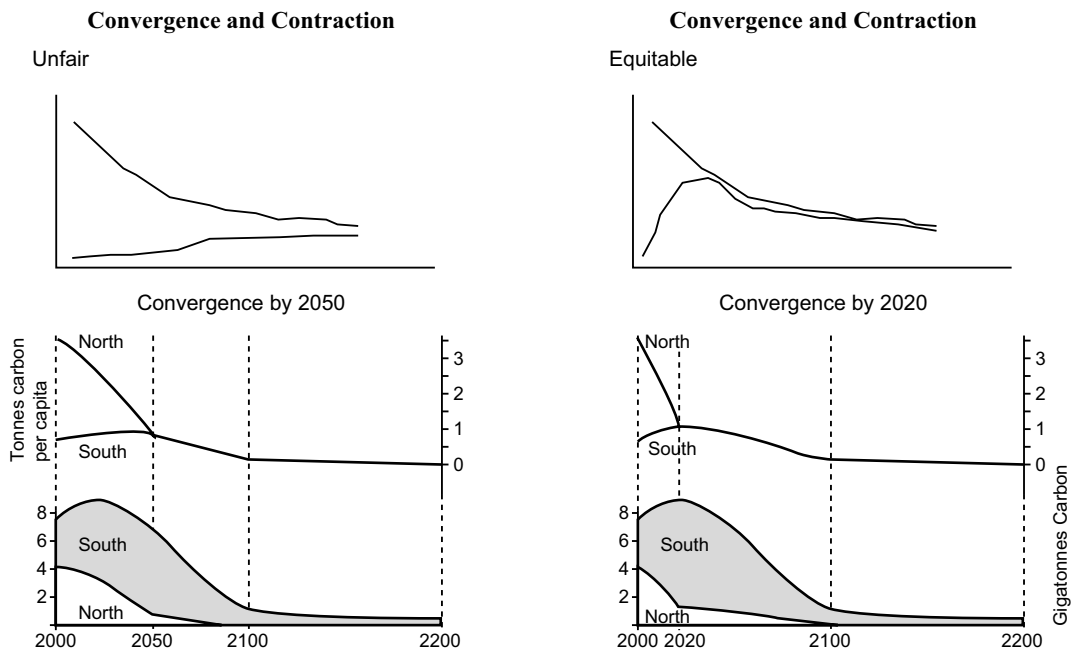
“Adaptation should not be an excuse for avoiding mitigation. “You adapt, I would not mitigate,” is not acceptable.”

“Convergence and contraction in an equitable way should mean developing countries should have the right to converge to the level of per capita emissions of developed countries (DCs) world any time and then to contract together, not that LDCs converge and DCs contract to a sustainable level.”

“An equitable solution is obvious: Tradable emission quotas over a long time horizon in terms of tonne-years of carbon in the atmosphere which are equitably distributed, within specified range that narrows as knowledge firms up, can endogenise many of the problems.”

Here, an Indian expert to IPCC at an event to which the Indian Prime Minister contributed, sets a keynote message for an IPCC plenary in preparation for the 4th Assessment. It clearly emulates GCI’s convergence accelerated relative to the contraction rate in order to take C&C - as he puts it - from being unfair to being equitable .

This is perhaps why UK officials at DEFRA say that India (and other countries) supports C&C for the wrong reasons .



INDIA-UK Joint Declaration—London; 20 September 2004

Prime Ministers Manmohan Singh and Tony Blair in London; their statement just avoids the issue.

Sustainable Development

“Both our countries recognize that co-operation is essential to deliver the progressive global agenda set by the Johannesburg World Summit on Sustainable Development and the Millennium Declaration. We will initiate regular high-level dialogue to share experiences on how we can overcome social, economic and environmental challenges, and bring real quality of life improvements for people in both our countries and around the world.

Climate change and broader issues of sustainable energy security are high on our respective agendas.

Climate change will be a central theme of the UK’s Presidencies of the G-8 and EU next year.

We will promote effective co-operation in our responses to climate change, including by building on the successful joint work that has already been carried out by the UK and India on climate change impacts and modelling.

To this end, we will establish a structured dialogue to exchange views and information and take forward any bilateral co-operation projects.”

Annex 4

References

1. GOVERNMENTS

1.1 *Indian Environment Minister, Kamal Nath, COP 1, April 1995*

“... equity should guide the route to global ecological recovery. Policy Instruments such as ‘Tradable Emissions Quotas’, ‘Carbon Taxes’ and ‘Joint Implementation’ may well serve to make matters worse unless they are properly referenced to targets and time-tables for equitable emissions reductions overall. This means devising and implementing a programme for convergence at equitable and sustainable par values for consumption on a per capita basis globally.”

1.2 *Chinese State Councillor Climate Change & Population, Dr Song Jian, October 1997*

“When we ask the opinions of people from all circles, many people, in particular the scientists think that the emissions control standard should be formulated on a per capita basis. According to the UN Charter, everybody is born equal, and has inalienable rights to enjoy modern technological civilization.”

1.3 *The Africa Group, August 1997*

“As we negotiate the reduction of GHG, the countries of Africa believe that there should be certain principles that need to be clearly defined.

There must be limits on all GHGs if the danger to our climate is to be averted. The IPCC scientific assessment report provides us with the basis for global consensus on such limits.

A globally agreed ceiling of GHG emissions can only be achieved by adopting the principle of per capita emissions rights that fully take into account the reality of population growth and the principle of differentiation.

Achievement of a safe limit to global GHG emissions can be achieved by reducing the emissions of Annex One while at the same time ensuring that there is controlled growth of future emissions from Non-Annex One countries, reflecting our legitimate right to sustainable economic growth. We strongly believe that this will take us along a path to responsible climate management that allows us to reach our goal of defining a mutually agreed point of convergence and sustainable development. Such a convergence Mr Chairman must ensure that we maintain a global ceiling on emissions to prevent dangerous interference with the climate system.

When we look at time frames, we believe that insufficient commitment by Annex One countries will only result in delaying our influence on the climate system. If this course is maintained, then we will all suffer and the burden will be even greater for humanity in general. The burden for any future mitigation efforts on those of who have not been historically and currently responsible for creating the problem will be greater.

Mr Chairman, we must focus our attention on the most appropriate, reasonable and acceptable time frame for action. There is an over-riding pre-requisite. The time frame cannot be too far away into the future if we are to avoid at all costs the dangers that global climate change poses. The current scientific evidence

indicates that Africa faces decline in water resources, agricultural production and economic performance. It is therefore for this reason that we wish to register the seriousness with which we view the effective implementation of the Convention and future agreements emanating from it.”

1.4 *The Africa Group, COP-3 Kyoto, 3 am 10 December 1997*

www.gci.org.uk/temp/COP3_Transcript.pdf

“ . . . we do support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after “entitlements” that is the proposal by the delegation of India, the following wording; after “entitlements, the global ceiling date and time for Contraction and Convergence of global emissions. Because we do think that you cannot talk about trading if there are not entitlements. Also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity . . . ”

1.5 *Non-Aligned Movement, Heads of Government Conference, (NAM), September 1998*

In August and September the NAM held a heads of Government conference in South Africa. Combining the logic of “Contraction and Convergence” with the trade Article 17 of the Kyoto Protocol (KP), the NAM agreed the following statement:

“Emission trading for implementation of (ghg reduction/limitation) commitments can only commence after issues relating to the principles, modalities, etc of such trading, including the initial allocations of emissions entitlements on an equitable basis to all countries has been agreed upon by the Parties to the Framework Convention on Climate Change.”

1.6 *Indian Prime Minister, Shri Atal Bihari Vajpayee, October, COP-8, 2002*

“First, our per capita Green House Gas emissions are only a fraction of the world average, and an order of magnitude below that of many developed countries. This situation will not change for several decades to come. We do not believe that the ethos of democracy can support any norm other than equal per capita rights to global environmental resources.”

1.7 *Kenyan Minister for Planning and National Development, Anyang Nyong’o, April 2004*

“It is now apparent that the world has to urgently agree to a more equitable method of reducing greenhouse gas emissions based on per capita emission rights allocations. This brings me to the concept of Contraction and Convergence. This concept embodies the principles of precaution (contraction of greenhouse emissions) and of equity (convergence at to equal share per head through a globally agreed date) in the reduction of greenhouse gas emissions between industrialized countries and developing countries.”

The world must go an extra mile to avoid climate change, as it is cheaper than adapting to the damages. This in no way under estimates what the Kyoto Protocol aims to achieve from the flexible mechanisms. Kyoto should continue but due to the increasing and unbearable negative impacts of climate change on developing country economies, in particular Africa, the world must begin to evaluate other globally equitable approaches.

The concept of Contraction and Convergence therefore needs to be assessed and evaluated by the United Nations Framework Convention on Climate Change particularly, its Subsidiary Body for Scientific and Technical Advice or the Intergovernmental Panel on Climate Change. I am certain that our Ministers for Environment here present will see the need to bring this agenda very urgently to the attention of the Climate Change Secretariat.”

1.8 *Kenya, Director General of the ruling NARC, Alex K Muriithi, April 2004*

“Avoiding dangerous rates of climate-change from fossil fuel dependency must be strategically guaranteed with appropriate structural adjustment of the international system.”

“The Contraction and Convergence” (C&C) scheme presented by the Africa Group at COP-3 in Kyoto, is the basis of this.”

“Combined with international currency arrangements, C&C determined carbon shares create an inclusive global standard for sustainable resource use.”

“The full rent for the use of the environmental and atmospheric space of Developing Countries, can be paid by the Developed Countries helping the world move from uneconomic growth to sustainable development for all,”

1.9 *Indian Minister of Food Processing Industries, Shri S K Sahay, October 2004*

“We have to find an acceptable and equitable way to reduce emissions that involves every society but recognizes differentiated responsibilities. I suggest that the way forward should be based on the fundamental principles of equity incorporated in the proposals known as ‘Contraction and Convergence.’

In this increasingly interdependent world, there is no reason to suggest that any individual in any country should have a lesser right to see prosperity or comfort involving green house gas emissions than any other. On what basis is it acceptable that an American or European should have a greater right to consume the World’s precious resources than an Indian, an African or indeed any other human being?

Thus, if the principle of ‘Contraction and Convergence’ is acceptable, then it may be possible to develop a system of carbon trading that would allow those already over dependent on the use of environmentally damaging energy to plan their emissions reduction more slowly by transferring renewable energy technologies to those countries presently less dependent on the carbon emissions.”

1.10 *USA, COP-3 Kyoto, 3 am 10 December 1997*

www.gci.org.uk/temp/COP3—Transcript.pdf

“. . . It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in . . .”

1.11 *European Parliament, 1998*

“. . . calls on the Commission & Member States to take the lead in brokering an agreement on a set of common principles & negotiating framework beyond BA based on:

agreement to have a worldwide binding limit on global emissions consistent with a maximum atmospheric concentration of 550 ppmv CO₂ equivalent;

initial distribution of emissions rights according to the Kyoto targets;

progressive convergence towards an equitable distribution of emissions rights on a per capita basis by an agreed date in the next century;

across-the-board reductions in emissions rights thereafter in order to achieve the reduction recommended by the Intergovernmental Panel on Climate Change (IPCC);

an agreement to have a quantitative ceiling on the use of flexibility mechanisms that will ensure that the majority of emission reductions are met domestically in accordance with the spirit of articles 6, 12 and 17 of the Kyoto protocol; in this context trading must be subject to proper monitoring, reporting and enforcement; and

an adequately financed mechanism for promoting technology transfer from Annex 1 to non-Annex 1 countries.”

1.12 *Danish Environment Minister, Svend Auken, April 1999*

“The approach of ‘Contraction and Convergence’ is precisely such an idea. It secures a regime that would allow all nations to join efforts to protect our global commons from being over-exploited, without the risk that any country would be deprived of its fair long-term share of the common environmental emission space. And it allows for consistent and efficient management of the global emissions that would enable us to strive for constraining global interference with the climate below fixed ceilings”

1.13 *Swedish Minister of the Environment, Kjell Larsson, September 2000*

“On the issue of equity, Sweden strives for a global convergence, meaning that the long term objective of the international community should be a per capita emissions target equal for all countries. The work towards sustainability embraces the right for the poorest countries to continue their development and requires that the developed world contribute to this. In other words the industrialised countries must reduce their emissions in order to enable the least developed countries to develop.”

1.14 *Belgian Minister of the Environment, Olivier Delouze, COP6 November 2000*

“We are conscious that in the end, we will have to inevitably evolve towards a more equitable partition between the north and south, of the capacity of our common atmosphere to support green house gases, by a gradual convergence of the levels of emissions on a per capita basis.”

1.15 *French President, Jaques Chirac, COP6, November 2000*

“Since 1992, we have fallen too far behind in the fight against global warming. We cannot afford any further delay. That is why, I can confirm to you here, Europe is resolved to act and has mobilized to fight the greenhouse effect. Europe calls upon the other industrialized countries to join with it in this fight. And Europe proposes to the developing countries to join it in a partnership for sustainable development.

Let us start thinking about the post-Kyoto period without further ado. Tomorrow, it will be up to us to set forth the rights and duties of each, and for a long time to come. In order to move forward while respecting individual differences and special circumstances, France proposes that we set as our ultimate objective the convergence of per capita emissions. This principle would durably ensure the effectiveness, equity and solidarity of our efforts.”

1.16 *Netherlands Environment Minister, Jan Pronk, Chairman of COP-6, July 2000*

www.earthtimes.org/jul/environmentthekyotoprotocoljul25_00.htm

“... Suggestions have been made for commitments for those developing countries in the period after 2012 in terms of increased energy or greenhouse gas efficiency. In other words: not an absolute cap, but a relative efficiency improvement in the production structure of developing countries. This strategy would imply that developing countries gradually start participating, as they achieve a certain level of economic development. That is a reasonable and realistic option. However, it can be argued that such gradual participation would only lead to a slow decline of global emissions, even if current industrialized countries would drastically decrease their emissions. As a result global average temperature increase would significantly exceed the 2 degrees centigrade limit that could be seen as the maximum tolerable for our planet.

There are alternatives for this scenario. Some developing countries have argued for an allowance of equal emissions per capita. This would be the most equitable way to determine the contribution of countries to the global effort. If we agree to equal per capita emissions allowances for all countries by 2030 in such a way that global emissions allow us to stay below the 2 degrees global temperature increase (equivalent to about 450 ppmv CO₂), then the assigned amounts for Annex B countries would be drastically reduced. However, due to the fact that all countries would have assigned amounts, maximum use of global emissions trading would strongly reduce the cost of compliance. So, in such a scenario, industrialized countries would have to do more, but it would be cheaper and easier . . .”

1.17 *Sweden's 3rd national communication on Climate Change, 2001*

“Emissions should ultimately converge towards a common international target, expressed as emissions per inhabitant.11” 11 Gov. Bill 1996/97:84, p 74.

2. PUBLICATIONS

2.1 *Corner House, Briefing No 3—Climate and Equity, December 1997*

www.thecornerhouse.org.uk/briefing/03climate.html

“Trading emissions only have a place if they are set in the discipline of contraction and convergence.”

2.2 *Financial Times, 30 November 2001*

“Many politicians—and businesses making long-term investment plans—would prefer to agree on some overarching principles that would determine future emissions targets. For some policymakers, the answer is ‘contraction and convergence’.”

2.3 *ENDS, Blair leadership claim on climate change March 2003*

“... the RCEP said, future global climate agreements should be based on the so-called ‘contraction and convergence’ approach, under which national emission allocations converge towards a uniform per capita figure. The Government has accepted the RCEP’s 60% figure—but not the underlying logic.”

2.4 *New Scientist, December 2003*

“For the past two weeks, representatives from around the world have been in Milan, Italy, for COP9, the ninth annual meeting of signatories to the 1992 Framework Convention on Climate Change. Many of them now privately admit that C&C is what we have been waiting for.”

2.5 *ICE, Proceedings of the Institution of Civil Engineers, Paper 13982, December 2004*

“Contraction and convergence” is an ambitious yet widely supported plan to harmonise global greenhouse gas emissions to a safe and sustainable level.”

2.6 *Reason Online, Ronald Bailey, 3 November 2004*

“While the climate talks in Buenos Aires will deal with the minutiae of implementing the Kyoto Protocol, they will also turn to considering what the next steps might be. And there will have to be next steps, because even when fully implemented the Kyoto Protocol will have next to no effect on any actual global warming trends. My bet is that negotiations will start to consider contraction and convergence”.

3. INDIVIDUALS

3.1 *Raul Estrada, Chair Kyoto Negotiations, February 2000*

“Long before the end of the Framework Convention negotiation, the Global Commons Institute has presented a proposal on “Contraction and Convergence”, aimed to reach equality in emissions per capita. We all in this room know the GCI model where contraction is achieved after all governments, for precautionary reasons, collectively agree to be bound by a target of global GHG emissions, making it possible to calculate the diminishing amount of greenhouse gases that the world can release each year in the coming century, subject to annual scientific and political review. The convergence part of the proposal means that each year’s global emissions budget gets shared out among the nations of the world so that every country converges on the same allocation per inhabitant by an agreed date.”

3.2 *Sir John Houghton, Former Chair IPCC Working Group One, 26 April 2003*

“Admiration is frequently expressed, regarding the elegance and simple logic of Contraction and Convergence and it has been widely supported by policy makers as a basis that should underlie the next stage of policy formulation.”

3.3 *Lord Bishop of Leicester, November 2003*

www.publications.parliament.uk/pa/ld199900/ldhansrd/pdvn/lds04/text/40209-10.htm#40209-10_head0

“Contraction and convergence, therefore, is a simple yet radical solution, and one that I suggest we should be brave enough to support.”

3.4 *Lord Bishop of Hereford, 9 February 2004*

www.publications.parliament.uk/pa/ld199697/ldhansrd/pdvn/lds03/text/31127-05.htm

“Contraction and Convergence meets every single objection raised by the United States to Kyoto.”

3.5 *Michael Meacher MP, Former Minister for the Environment, December 2003*

“The best proposal so far is the “Contraction and Convergence” from the Global Commons Institute and Globe Parliamentarians.”

3.6 *George Monbiot, Manifesto for a New World Order, ISBN: 1565849086, 2003*

“Contraction & Convergence . . . “the only just and sustainable means of tackling climate change”

3.7 *Myron Ebell, CEI reports on COP-9, 12 December 2003*

www.globalwarming.org/cop9/cop9e.htm

“This so-called ‘Contraction and Convergence’ approach appeals to both unreconstructed communists and to human rights absolutists. It has a certain moral force for those lost souls who have completely lost their bearings in the world. So it ought to be the winner in these darkening times.”

3.8 *Dick Lindzen, After a good meal at “A New Global Vision” Conference, Pisa, July 2004*

“If you really have to stabilise concentrations, a 60% contraction of emissions would be necessary. As for the convergence requirement that follows from this, well I have no faith in the ability of humanity to organise anything like this.”

4. ORGANISATIONS

4.1 *Africa Group, Mrs Rungano Karimanzira, Chair, February 1998*

“The approach of contraction and convergence presents a new economic development paradigm for the 20 first century and beyond.”

4.2 *European Parliament Resolution, October 1998*

“. . . a set of common principles will have to be based on agreement to have a worldwide binding limit on global emissions consistent with a maximum atmospheric concentration with progressive convergence towards an equitable distribution of emissions rights on a per capita basis by an agreed date with across-the-board reductions in emissions rights thereafter.”

4.3 *Royal Society on Environmental Pollution, Sir Tom Blundell; Chairman, June 2000*

www.rcep.org.uk/newenergy.htm

“The government should press for a future global climate agreement based on the ‘Contraction and Convergence’ approach, combined with international trading in emission permits. These offer the best long-term prospect of securing equity, economy and international consensus.”

4.4 *UK Chartered Insurance Institute, Report on Global Climate Change, March 2001*

“The most realistic way to bring about the required reduction in ghg emissions (which will have the combined effect of reducing the damage imposed on the insurance industry and encouraging the transition to renewable energy) is that proposed in the concept of Contraction and Convergence.”

4.5 *IPCC WG3, Third Policy Assessment, Chapter 1, Section 3.2, 2001*

“A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence.”

4.6 *Green Party, October 2001*

“The Green party of England and Wales strongly endorses the GCI/GLOBE campaign for Contraction and Convergence as the key ingredient in a global political solution to the problem of Climate Change.”

4.7 *New Economics Foundation, Ed Mayo, Director, October 2002*

“We regard Contraction and Convergence as no less than the logical starting point for any sustainable future.”

4.8 *Performance and Innovation Unit, The Energy Review, February 2002*

www.number-10.gov.uk/su/energy/TheEnergyReview.PDF

“The RCEP suggested that a 60% reduction for the UK by 2050 would be needed within a contraction and convergence agreement”

4.9 *UNEP Finance Initiatives, 7 October 2002*

www.unepfi.net/cc/ceobriefing_ccwg_unepfi.pdf

“For the long-term, policy makers should reach consensus on a global framework for climate stability based on the principles of precaution and equity such as Contraction and Convergence which would aim to achieve equal per capita emissions for all nations by an agreed date.”

4.10 UNFCCC, Secretariat, COP-9, 4 December 2003

www.gci.org.uk/slideshow/C&C_UNFCCC.pdf

“Stabilization inevitably requires ‘contraction and convergence’.”

4.11 World Council of Churches, David Hallman, Programme Coordinator, October 2003

www.wcc-coe.org/wcc/what/jpc/moscow2003.html

“A fair distribution, establishing the concept of per capita emission rights for all countries, as proposed in the ‘Contraction and Convergence’ scheme.”

4.12 Climate Network Africa, Grace Akumu, Director, 28 April 2003

“Many governments around the world have accepted the concept of Contraction and Convergence as the only equitable response mechanism to the threat of climate change.”

4.13 UK Environment Agency, Sir John Harman; Chairman, 9 December 2003

www.gci.org.uk/correspondence/EnvAgency.pdf

“I support the concept of ‘Contraction and Convergence’, as does the Environment Agency.”

4.14 World Nuclear Association, John Ritch, President, December 2003

<http://world-nuclear.org/dgspeeches/wiltonpark2003.htm>

“I not only support the C&C concept, I find it inconceivable that we will avert climate catastrophe without a regime built on some variation of this approach. In the debate about climate change, an impression has been created that the problem is too daunting and complex to prevent. Contraction and Convergence provides a way forward that is both fair and feasible.”

4.15 FEASTA, Richard Douthwaite

“... to say—as a growing number of people now do—that the right to emit carbon dioxide should be considered a human right and that emissions permits should therefore be issued to all humankind on an equal basis. ‘Contraction and Convergence’, a surprisingly flexible plan is based on this idea.”

4.16 WBGU, German Advisory Council on Global Change, Dr John Schelnhuber; Climate Protection Strategies for the 21 Century: Kyoto and beyond, November 2003

www.wbgu.de/wbgu_sn2003_engl.pdf

“... WBGU recommends emission rights be allocated according to the ‘Contraction and Convergence’ approach.”

4.17 IPPR, Tony Grayling, Associate Director and Head of Sustainability, September 2003

“The Prime Minister has already expressed his desire to create a global deal or ‘climate covenant’ between North and South on the issue of climate change. IPPR’s belief is that the Contraction and Convergence framework for global climate policy is the practical application of this aspiration.”

4.18 Zululand Environmental Alliance (ZEAL), Prof James M Phelps, Chairman, 30 April 2003

“Without equity considerations as devised in Contraction and Convergence, the Climate Change Convention and the Kyoto Protocol will remain un-implementable and leave all people on earth facing the devastating effects of climate change.”

4.19 The Australia Institute, Dr Clive Hamilton, 29 April 2003

“The idea of ‘Contraction and Convergence’ is destined to be one of the most important principles governing international relations in the 21st century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world.”

4.20 DEFRA, *The Scientific Case for Setting a Long-Term Emission Reduction Target*, 2003

www.defra.gov.uk/environment/climatechange/ewpscience/ewp—targetscience.pdf

“Methodology: The framework of this study builds on the RCEP work which uses a convergence and contraction methodology. Whilst prescribed per capita emissions are retained, the flexibility is such that these are only a tool to constrain total emissions and this should not be considered a typical contraction and convergence (C&C)* approach (although any mechanism which brings all emissions to a level lower than today’s will have an element of C&C).”

“Contraction and convergence is an international policy framework for dealing with global climate change developed by the London-based Global Commons Institute.”

4.21 WWF, *Living Planet Report*, November 2004

www.panda.org/downloads/general/lpr2004.pdf

“Contraction & Convergence (C&C) as proposed by Aubrey Meyer from the Global Commons Institute (Meyer 2001) provides a simple framework for globally allocating the right to emit carbon in a way that is consistent with the physical constraints of the biosphere.”

4.22 GLA, *Green light to clean power—The Mayor’s Energy Strategy*, February 2004

www.london.gov.uk/mayor/strategies/energy/docs/energy_strategy04.pdf

“The recommendations of the Royal Commission on Environmental Pollution are based on a contraction and convergence scenario in which global emissions converge in 2050, and atmospheric CO₂ concentration is stabilised at 550ppm by 2100. The Mayor believes that all national and regional emissions reduction targets, including those proposed in this strategy, must be seen as part of this long-term process. The Government’s support for the commission’s recommendations for a 60% reduction in emissions by 2050 implies an acceptance of the contraction and convergence scenario that produced the recommendation. The Mayor encourages the Government to acknowledge this.

Policy 2 The Mayor supports the principle of contraction and convergence as a long-term international policy objective.

The contraction and convergence proposal was developed by the Global Commons Institute, London. Details of its origins, methodology, and support are available online at <http://www.gci.org.uk>.”

4.23 Archbishop of Canterbury Dr Rowan Williams, 5 July 2004

www.gci.org.uk/speeches/Williams.pdf

“This kind of thinking [C&C] appears utopian only if we refuse to contemplate the alternatives honestly”

“The Prime Minister has already declared that his international priorities as chair of the G-8 in 2005 will include climate change and the future of Africa; Contraction and Convergence addresses both of these.”

4.24 Scottish Environment Protection Agency, *Report No SEPA 69/04*, 12 October 2004

www.sepa.org.uk/pdf/board/agency/2004/papers/1210/6904.pdf

“It is essential that the EU facilitates the exporting and uptake of energy efficient technologies to developing nations, to ensure that the growth of emissions from these countries is minimised and consistent with the principles of Contraction and Convergence.”

4.25 Liberal Democrats, *Charles Kennedy*, 16 November 2004

www.gci.org.uk/speeches/Kennedy_C&C_Speech.pdf

“If Tony Blair is really serious in making his mark in these areas, the greatest single achievement for the UK’s G8 presidency in combating climate change would be securing agreement among G8 nations, including the United States, that the way forward will be based on this principle of contraction and convergence.”

Note: All references without a web-link can be found in the GCI Archive Document under their respective dates. www.gci.org.uk/Archive/MegaDoc_19.pdf

30 November 2004

Witness: **Mr Aubrey Meyer**, Global Commons Institute, examined.

Q62 Chairman: Good Afternoon. Welcome Mr Meyer; sorry about the slightly late start. Am I right in thinking that you have a few introductory remarks you would like to make to the Committee?
Mr Meyer: Yes, please.

Q63 Chairman: Please go ahead.

Mr Meyer: Thank you. Good afternoon. I have three brief points to make. The first is to thank you for existing. This is a really important Committee as I see it. The second is, especially for your recent report on sustainable development, which is excellent and finally, the opportunity of this hearing and report itself. Climate change is so serious, that it subsumes all areas of policy making. What this means is this: committees with a focus on developing climate policy, my own principle, subsume the agendas of committees that have not yet acquired this focus of policy making. I am thinking of normally senior partners perhaps such as Defence, Security, Treasury and so on. In other words, what I am saying is, EAC, the Environmental Audit Committee, is far more important than is popularly perceived. The final point to say is that C&C, which is essentially why I feel I am here, is a rational full-term framework—and I am stressing the word full term and I am hoping that you are finding that in evidence you have had from government institutions in Whitehall—and to make this slightly pre-emptive point that it is not just feasible, I say that it is inevitable the moment we realise the seriousness of the predicament that we are actually in with climate change. In respect of leadership on whatever occasion it may be, soon or late, leadership is defined by C&C compliance. Thank you.

Q64 Chairman: Thank you. Just to make it clear for the record, C&C is contraction and convergence, which is an ideal which you yourself developed and, if I may say in the light of your very nice words about our Committee, congratulations to you for coming up with an interesting and original idea and having the tenacity to continue to pursue it, so that it has now gained credibility in many different parts of the world as one option. Can we just explore this a little bit further? Whilst I think most of us here would agree that contraction and convergence is a logical proposition and a very interesting idea, it is, as well as those things, a mechanism for achieving the sort of outcome that we want. Or is it just an idea?

Mr Meyer: Well first let me say thank you for your kind remarks. Second, let me say, yes, it is both the means and in a sense the ends of the situation that we are trying the deal with and it certainly is an idea. As I think Michael Meacher, one of your former members, said, an incredibly powerful idea towards which we are moving inexorably.

Q65 Chairman: What I think we are trying to explore is how you actually see it developing in practice. The idea is a sound and logical idea, there is no question about that, but how does it get implemented?

Mr Meyer: Well, the answer that I will give would apply no less to any other putative approach to solving climate change. The problems of

implementation of even the Kyoto Protocol, let alone the climate convention are almost apparently insuperable. We are in deep difficulty of not strictly speaking being Kyoto compliant. If I remind you that many of the features of the Kyoto Protocol, such as the reduced targets, the inclusion of flexibility mechanisms, CDM and especially emissions trading are there at the behest of the Americans who are no longer part of the arrangement. They are continuing to rehearse their objection as of the last 15 years that unless everybody is involved, they are not. So in respect of the problems of C&C implementation, obviously they are very considerable, but I would say they are no more considerable than anything else and in some measure, not so considerable as everything else for the simple reason that actually being logical is in fact relevant to the basis of the politics we now have to construct. The fault, if you like, amongst the competition is that it is what I would generically classify as guess-work in comparison with the contraction and convergence framework.

Q66 Chairman: OK. I am sorry to harp on about it, but I am still looking for ways in which this thing can be delivered. There are various different options open to governments. There is the emissions trading idea, which is gaining currency, there is the possibility of taxing, international taxation to ensure compliance with an agenda, there are all sorts of regulatory opportunities. Does your idea depend on any one of those or on mix and match or is an emissions trading scheme an essential part of achieving contraction and convergence?

Mr Meyer: I see all of those things that you have described, taxation, emissions trading and various institutional and technological developments, as being integral to C&C. I would go further than that and I would say that by definition each and every one of those things has a fundamental C&C dependency. What do I mean by that? The objective of the convention has been clearly agreed since 1992 as stabilising greenhouse gas concentrations in the atmosphere at a level which is non-dangerous. We are already internationally legally committed to achieving that objective; I cannot believe that we are only committed to hoping that we achieve it because not to achieve it in effect is to go to a kind of extinction event. The secretariat to the convention itself has said, a little loosely I grant you, that achieving the objective of a convention depends, by definition, I think the words were “inevitably requires contraction and convergence”. So the issue is not whether it is contraction and convergence or not, the issue is much more about the question of how we actually, as you were saying, get that in place. It specifically requires therefore not being seen to be in opposition to these apparently alternative contending positions. It is revealing that they are in effect subsumed within the total full-term description of what the solution actually is in respect of this crucial, crucial, crucial issue of sharing the use of the global commons in the form of the atmosphere. The trading, by definition, depends on these arrangements. You cannot trade if you have

not capped. You cannot trade if you have not established ownership; so capping and ownership are crucially inter-dependent here. Doing this rationally, other than making it up on the hoof as you go along, is, I would say, fundamentally a pre-requisite to success.

Q67 Chairman: Can you have a successful C&C programme without trading? That is another way of asking the question.

Mr Meyer: That is a more interesting question. The way that I would answer that is as follows: I cannot see a solution to climate change without C&C and I cannot see a successful trade regime existing without C&C. I recognise that in the various appetites for and against emissions trading, some people are completely for it, some people are completely against it and there is a vast and complex grey area in between those two things. C&C in effect embraces both positions. It is saying to the people who are opposed to trade, "You will need these arrangements regardless of whether you support trading or not" and to the trading people "You will need a full-term framework focused on the successful outcome in order for the trade to be meaningful". The only thing that we are really disposed to negotiate about here is the rates at which contraction and convergence actually unfold. So C&C is not pushing trade any more than it is hindering trade: it is trying to service all the positions as a sort of meta-position. Reconciliation lies here.

Q68 Chairman: You used the term "full-term solution" a couple of times already this afternoon. Just for the record, could you explain what you mean by that?

Mr Meyer: Yes, I am happy to do that. The convention's objective is stable concentrations in the atmosphere. What we have known with a reasonable degree of accuracy since the IPCC's first assessment report was published in 1990, is that different levels of stable concentrations in the future are associated with different integrals of fossil fuel emissions into the future and that whenever the IPCC science group, in the time since then until now, have portrayed those carbon integrals, they have done them in effect as budgets in a contraction curve. They are by definition getting less over time, because that is what is required to stabilise the atmosphere. In so far as we can contemplate a situation in the future where concentrations have become stable, the end of the emissions profile will be the full-term completion of a carbon contraction process globally. So "full term" specifically means that this is not just open-ended hoping and guessing and praying for as long as we have time to draw breath, it specifically means recognising an end point now, stable at, for arguments sake, 450 parts per million CO₂ and working back from that end point now and counting out crucially the carbon contraction process from then until now, or from now until then if you like, and crucially applying international convergence procedures proposing it as a constitutional basis on which to reconcile all the

parties to the convention, in other words all the nations of the world, in what is a UN full-term constitutional rights based agreement to share what is safe that is left to consume.

Q69 Mr Challen: With C&C there is a timescale over which incremental changes will be made to various countries' carbon emissions and during the early stages of that timescale, is it not possible that developing countries which have at the moment very low emissions could be permitted to increase their emissions? We are not talking about a system where everybody starts off where they are and reduces: we are talking about a convergent process. Does that not possibly legitimise developing countries actually using whatever means they like to generate energy to perhaps increase, albeit maybe slightly, carbon emissions?

Mr Meyer: I can you answer you slightly indirectly here. I think what legitimates this process is recognising that, in principle, the equal rights to the use of the commons globally, the atmosphere, is the only conceivable basis on which you could expect to construct political consent, consistent with solving the problem. In respect of the specific point you make about legitimising or allowing or appearing to be permissive towards, I would say, future developing country emissions, in so far as C&C expressly permits or admits emissions trading, what C&C in principle is forecasting is a totality of emissions distributed as permits to emit, which, should parties decide to do this, are tradable. So it is crucially distributing entitlements, equal entitlements to emit. That does not, by definition, obligate anybody to emit consistent with the volume of their entitlements; that is a crucial point. In respect of how the game actually plays out, the trading will be a function of the capping, not the other way around. C&C in effect pre-emptively establishes a stable basis on which to unfold this programme into the future. In respect of the very, very real problem of impending developing country emissions, the US, and frankly others, have quite rightly pointed out repeatedly that even if the US, which is 25% of annual emissions in any one year, even if they were unilaterally to take their emissions to zero, this would not protect us against dangerous rates of climate change. So they have, for 15 years, repeatedly said that all countries need to be involved, specifically, obviously, with an eye on India and China. India and China, when they were confronted with the proposition of emissions trading at the Kyoto negotiations in 1997, did not reject emissions trading. What they and the Africa group formally said was "If you want emissions trading, we want a contraction and convergence based allocation of this asset which is being created. That is the only basis on which we can see this actually being supported by everybody". I do not believe they substantially have changed that position. I have evidence with me today of the fact that at least two of those are specifically coming back with exactly that same agenda point now.

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Q70 Mr Challen: Just to put this in a different way, in the sense that politicians tend to look at things, we had before us some time ago, a former secretary of state for international development who had publicly expressed on a number of occasions that we were in no position to tell developing countries how to go about pursuing the wider use of energy in their countries and if that meant that they would have a fossil fuel burning power station, we should not be thrusting down their throats our green solutions to try to keep their emissions down to what we would like them to be in an ideal world. Could people perhaps use C&C as an argument? Perhaps they will not have fully comprehended C&C but perhaps they could still point to it and say that actually this legitimises that approach as expressed by that much lamented former secretary of state for international development.

Mr Meyer: I believe you are talking about Clare Short.

Q71 Mr Challen: I was not going to mention any names.

Mr Meyer: When, before the Labour Party came to power in 1997, we went to see her on the eve of her appointment to the position that she held nobly for a very long time, we made the C&C argument to her and her staff. I remember her response to this. She lit up with an expression of absolute delight and started explaining it to her staff. I was delighted she was doing this. She said "Ah, you see this is the green synthesis". She in no sense was discouraging C&C. Can I ask you please, if you have copies of the evidence that we submitted with you at the moment, to look there at an image which I specially put it in with this kind of questioning in mind. It is on page 17. This is in annex 3 and this is an extract from an inter-governmental document preparing for IPCC's fourth assessment report, which is due to be published possibly in 2007. This is an event which took place in Colombo in the middle of last year, it was attended by the Indian Prime Minister who spoke at it and he was immediately followed by a man whose name is listed here as Kirit Parikh. In the formal output from that meeting, and bear in mind this is a full inter-governmental meeting, this is not just an Indian-only event, he expressly drew attention to contraction and convergence in the graphs. Those are his graphs on the right-hand side of page 17 at the top. He called it unfair convergence and contraction and "equitable" contraction and convergence. You will see from the words on the left and the point that he is making visually, if contraction and convergence were just a sort of slow process on the never-never where countries theoretically gradually came together over time as a result of God knows what, he would regard that as unfair. On the other side of the argument, he is saying that it is fair if developing countries, in principle, have the rights to emit at the same levels as developed countries. He drew those pictures by hand. If in fact you actually model it out, if you do all the full arithmetic, which is what the C&C model has intended always to do, you will see explicitly what that means. In my judgment this draws

attention to the most important feature of C&C in the negotiating context, which is that you can contemplate the notion of convergence being accelerated relative to the rate of contraction, precisely because these are entitlements which are tradable rather than emissions *per se*. So we can accommodate developing country complaints about historic responsibilities, but still within an envelope of future consumption which makes it possible, to some extent, as it were to buy ourselves out of that particular bit of the difficulty.

Q72 Mr Challen: I want to move on swiftly, so a couple of questions on the clean development mechanism. Do you have a view on whether that mechanism, providing for development assistance, should have been kept out of Kyoto?

Mr Meyer: Yes, I do.

Q73 Mr Challen: Why do you take that view?

Mr Meyer: It was originally proposed once again I think by the Brazilians in this case, who called it the clean development fund, people have forgotten this. At the last moment, once again courtesy of the Americans, they adroitly converted it into a mechanism as opposed to a fund. This may or may not have been a good thing, but it was seen at the time as part of Kyoto; they have since withdrawn and everybody else has bought this possibly malformed baby. The difficulty here is that in addition to being, as it were, inadequate, its inadequacy has been imported into the bounded conditions of Kyoto compliance. So you can in effect import almost limitless, I am not saying that it is going to be done like this, but theoretically it can be done, you can import almost an infinite amount of credit into Kyoto to relax once again these already inadequate targets that people are working to. I am not saying that it should not be done: clean development is next to Godliness, I am sure that it is. However, to make this into international law and a basis on which we are going to solve climate change, I think is reaching beyond reality.

Q74 Mr Challen: Do you think that developing countries would have the capacity to get actual benefit from the CDM? Is that going to be a big issue? It usually is in other global contexts.

Mr Meyer: They are being pretty heavily pressured to accept all sorts of conditionalities that go with these programmes and that is probably par for the course no matter what is actually going to happen. The key point here is, in relation to the prior point that you raised in these graphs, whether in principle developing countries have the capacity to deal with C&C. I think it is somewhat inappropriate to suggest that they do not have the desire, let alone the capacity, to see the obvious benefits which C&C confers on everybody, but obviously starting with them.

Q75 Mr Challen: Does it create any problems in the path of introducing C&C on a global scale? We still have a lot of convincing to do, obviously, but does it create any problems for C&C if we have lots of other

things developing? Kyoto is an obvious example, but also possibly bilateral agreements which often happen. It happened with the WTO free trade agreements when America forged ahead with its agenda by using the bilateral route rather than always being terribly helpful at a global level and therefore you do not end up with a global fair trade system. Could that also be the fate of C&C if we go down a bilateral path?

Mr Meyer: Well, I am going to be bullish and say no. They are not commensurable. The previous agendas of trade and debt and all the rest of it did not, by definition, have to be solved. It was not a threat to human destiny if world trade remained unfair or developing countries remained permanently indebted or even bankrupt. I do not think there is a bunch of bleeding hearts in the IMF going to have a sort of religious conversion if those things happen. They did not even get worried when Argentina went bust. The point about climate change is that it is potentially an extinction event if we fail to avoid it. The problem that the people you are holding up with alternative ideas actually have, is that you are somehow, by virtue of some kind of accident, going to aggregate a path integral which is consistent with C&C without it. Take the example of Kyoto, talking now about the so-called second budget period. I believe some people gave evidence to you only the other day during the course of which they said they were going into these negotiations, or everybody was going into these negotiations, with no pre-conceptions whatsoever about where this process was actually going to go. I mean, I have been attentive to your advice in printed form to avoid intemperate language, but I would suggest that this is inviting a suicide pact. To walk blindfold into this future is completely irresponsible; let us put it in temperate language like that.

Q76 Mr McWilliam: That puts me in mind of a verse from Dylan Thomas. We tend to accept equal per capita distribution of emission rights within a society and we accept economic inequality in other respects: income, wages, things like that. Why should things be any different internationally?

Mr Meyer: It is the same answer again, is it not? If the imperative is to deliver justice, I am all for it, but I do not see it happening. If the imperative is to deliver survival and this is the means to it, then I think it gains traction. I will tell you this for the record. I have had a long and friendly relationship with many of the American negotiators over the last 15 years and prior to Kyoto they asked me to do two things. One was to go and persuade the Chinese to accept contraction and convergence, which in effect we did, but that is a long story. The second point was to ask whether I honestly think we can ever reduce these negotiations to the two fundamentals, in other words the rate at which we contract and the rate at which we converge. I said yes. He said "But Aubrey, think of the precedent that would create for other situations." I said to him that it applies to carbon emissions; how far this actually goes is dependent on all sorts of things and I will not give you the exact example that I quoted to him at the extreme end of

not wanting to share things equally per capita. He took the point: it is inclusive. The point I am trying to make eventually here is that it is the logic of our situation. We have to come up with something more robust than this, than just trying to guess our way through with a lot of flag waving and direction. I think the phrase of the Indian minister was "dither and drift", D&D. C&C is a cure for that.

Q77 Mr McWilliam: What you are suggesting requires a major change in the kind of political outlook that we have not experienced before. As politicians, our time lines tend to be election to election. In my case, I am exempt from that; I am not even going to stand as a dog catcher. Do you not think that this is asking an awful lot of my colleagues who are not used to thinking in that way? How can we persuade them?

Mr Meyer: I do not want to make any assumptions here about how you and your colleagues think.

Q78 Mr McWilliam: I do not mean these colleagues.

Mr Meyer: It is climate change which is imposing the challenge on us. Climate change is the problem: C&C is the solution. It is generically in the area called solution. The issue depends on how much we want to do what we have been very good at for the last several, probably tens of thousands of years and that is surviving. Historically, the pattern has been the sort of genetic programming characterised by things like the *Selfish Gene*. But Richard Dawkins wrote a chapter at the end of that book, which nobody seems to have read, or few people, which is the possibility to learn by means, by "mimetic" behaviour. And he explicitly made the point all those years ago, that if learning to cooperate is what it takes to survive, we will learn to do it. This is what people learn. C&C is about that, co-operation. It supersedes the competitive effort to which I suspect you and your colleagues may be still captive. Climate change is rearranging all of that: absolutely not C&C. I would also say this: if C&C does admit emissions trading, and I think in principle, subject to these rules, it should, it in no sense precludes the continuation of what we will call competitive behaviour. On the contrary, I would it would sharpen it intensely.

Q79 Chairman: The problem is that we have been aiming at the same question now for about 20 minutes and the answer is always the same, which is that if we do not do it, we are all doomed basically and because we are all doomed if we do not do it, we will do it. That is the logic of your position.

Mr Meyer: Do you disagree with it?

Q80 Chairman: We will produce a report in due course. You will find out whether we agree or not. The trouble is that we live in a world where change is not happening. You may say that climate change is forcing the pace of change and that institutions are being challenged and everyone is going to have to do it. However nobody is doing it.

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Mr Meyer: I take your point entirely and once again I say, and you are probably going to be cross with me for answering you in this way, that the first point is the system is definitely changing. There are more and more alarming messages coming out about evidence of change and increased rates of change now than has ever been the case. The second point is that I do believe that there is a strong willingness to change within the system. The thing that has been missing is a clear road map that people can actually sign up to, where they know that the efforts they are being asked to make are not individual futile sacrifices, but are part of a larger clearer coherent scheme, in which everybody actually is involved, and everybody knows that everybody is involved, which is aimed on a successful outcome of avoiding dangerous climate change.

Q81 Chairman: C&C is the road map.

Mr Meyer: If the secretariat has said that it, by definition, requires C&C, if the IPCC, going out of its depth probably, says that, “C&C takes the rights based approach to its logical conclusion,” if you look at the evidence we have supplied for you which is only a small sample of people who are in agreement with that which is extracted from this larger book—and I have three copies here for any of you who are inclined to keep it and read it and do whatever you like—it has enormous traction. It needs to be forcibly led in the debate. That is what our Prime Minister could instruct our officials actually to do.

Q82 Chairman: How do you respond to this, which is in the Friends of the Earth evidence which we shall be discussing later on? They say “Allocation systems based . . . on pure per capita calculations are simple and elegant in their design, however they fail to take into account important political and economic realities. In a world where existing economic superpowers are quickly being caught up by rapidly developing economies, there is little appetite for creating additional redistributive effects in the global economy”. That is a statement of fact, is it not?

Mr Meyer: No, it is not. First of all, this is not about redistribution, it is about pre-distribution, which is fundamentally different. With capping and trading you have to cap before you trade. Whatever the potential redistributive impact after the fact may be, under whatever scheme it is we are talking about, that is entirely different from C&C, which is premised on pre-distribution. The second point is that both China and the United States, and India for that matter, not to mention Africa being the scar on our conscience and so on, are already drastically impacted by climate change. Whatever their economic aspirations may be, they are increasingly at the mercy of unmitigated climate change. The idea that we are all sort of going to compete to the top of the ladder and somebody is going to win here and the rest of us are just going to be second-class citizens is nonsense. The more appropriate analogy would be one which I believe Friends of the Earth have been inclined to use on other occasions and others too,

which is that when the Titanic goes down, everybody, steerage and first class, go down with it. That, in effect, is what is going on: we are all in the same boat here.

Q83 Joan Walley: May I just play devil’s advocate for a minute? You mentioned just now the importance of having some kind of a road map. Given that not just Friends of the Earth, but other bodies who have given evidence to this Committee, suggest to us that contraction and convergence allows mixed trading systems, however it would be climatically ineffective and prone to set off conflicts over land, water and other goods in local areas, just playing devil’s advocate, how would you set up some kind of a road map so that the proposals you had could actually be something that could be taken and run with by governments in terms of getting to where you see presumably your plan B, coming into play?

Mr Meyer: Thank you for the question. I shall answer it, but just let me say that I do not think your question depends on any truth in the pre-amble which was cited there. This is about equal use of the atmosphere, not sharing the world’s water or sardines or other things that people have been talking about. How do governments actually do this? This is an important part of the narrative. I remember, once again, Michael Meacher in Buenos Aires in 1998 had a moment’s pause before a session at which he was going to be a key player and he said “Tell me Aubrey, what is it you want me to do?” and I said to him “I want you to go and positively advocate C&C as the basis on which to discuss the future sharing of the limited resources”. He said “Yes, I know that, but what do you specifically want me to do in the meeting?”. We went round that loop for about 10 minutes. As I repeated it for the second time, he looked at me with complete shock and said “Good God, you really mean it”. I thought to myself “What on earth have you been meaning?”

Q84 Joan Walley: What was the reply that you gave him?

Mr Meyer: I was fairly speechless. I was polite, but I said to him “What did you think I meant?”. The lesson here is very simple. When you go into the negotiations, if you go in with one hand behind your back, with a whole basket of hidden agenda items, where you are only going to get so much because you know that so-and-so will not be giving way on other issues and you are trying to trade the WTO off against the UNFCCC and all the rest of it, and you are all secretly in thrall to this current fascination which is how to get the US in without them having to take any commitments at all, which I think is Defra’s latest mission, if I can put it a little unkindly, you are basically on a hiding to nowhere. There is no structure contemplated at all. This comes back to this fundamental *raison d’être* or the whole purpose: the objective of the convention. It is a numeric not a hand-waving exercise. There are specific values of concentration which are contemplated here. The science effort in the IPCC has been to explain, as best they can, the relationship between emissions and concentrations. We know by definition that

emissions are going to have to contract and we know that those are going to have to be shared. The question that arises is whether we are going to do this on the basis of guesswork and some kind of happy aggregation of accident under conditions where, even if we are successful, all we are doing is slowing the rate at which the damage is happening and this is widely known and understood and a source of increasing despair on the part of a lot of intelligent people, that we are somehow going to successfully negotiate co-operation and kindness and love and magic and all the rest of it on the basis of trading off the margins of our current growth parts, complicated by the inequity North and South and the obvious increasing outrage about the United States' refusal to engage with anything because of this refusal as they see it on the part of India and China to engage in quantified commitments. Do we honestly think we can go on guessing our way into this? I think the answer—and I am not the only person who will give this to you—is obviously no. So what is the solution? It is actually to spell it out; it is actually to say by definition it is going to be contraction and convergence at some rates, but, crucially, either simply guessed at or actually laid-out designs, spelled out, stressing the political purchase that we can get with developing country partners and—and I would urge you to urge Defra to do this—to underline the fact that convergence can be accelerated relative to the rate of contraction in order to buy off, if you like, their legitimate complaint about historic inequalities, debt and responsibilities and so. That potentially gets the other side into the game. Then we can argue about the rates at which that is actually going to be done.

Q85 Mr McWilliam: Do you think that C&C applies logically within society?

Mr Meyer: Yes.

Q86 Mr McWilliam: Given that some of the states in the United States already have emission legislation, others do not. Some states in the United States produce a lot of emission, others soak up a lot. It just depends on the geography and the geology.

Mr Meyer: I would not say that it depends entirely on the geography and the geology. In the previous evidence we provided to you the enormity of Texas emissions is out of proportion to all other aggregate local population groups on the planet.

Q87 Mr McWilliam: California is proposing some controls.

Mr Meyer: Absolutely and that is very welcome. You could cease trading within the United States, but I would also more specifically, to go back to the beginning of your question, link it to the proposals that have been put forward by Colin Challen for domestic tradable quotas. In principle, contraction and convergence within countries is no different from contraction and convergence between countries. We are continually being told by governments and politicians who are struggling to communicate this, that everybody has to become involved. Everybody has to feel motivated,

everybody has to feel that their efforts are in some way recognised and rewarded by the system. It is obvious: distribute the quota to everybody.

Q88 Mr McWilliam: Incidentally, that is why I am asking the questions. We thought it would be too embarrassing otherwise. How many countries have formally adopted C&C as a negotiating stance?

Mr Meyer: Good question. We did our best to answer that in the least disingenuous way possible in this evidence. You can also, by all means, have one of these to see the longer story, but the difficulty here is that a commitment to C&C itself can be a little variable over time. People can get excited about it and then feel they are not getting any traction with it and get exhausted and say, "We've tried our best but for the moment we cannot do any more, so we'll have to play along with circumstances as they are". In respect of the Africa group, they definitely championed this prior to Kyoto and you would have seen in the previous evidence, I think we gave it to you again here, that they got acknowledgement of this at the highest level, at the high point of the previous negotiating climax in Kyoto. I can assure you that certainly the Kenyans at this stage will be leading C&C back. How many they have got with them at this point, I do not know. I am one guy and it used to be a dog; I now have Tim who assists me, but there is a limit to the extent that we can actually monitor what is going on. I can give you this kind of a test: if you go on Google and search for C&C, you will find it in thousands of entries in many languages from all sorts of institutions, great and good. Most of them are pro C&C and interestingly, the ones who are against, and we risked giving you one quote here from an individual whose name you will recognise, Myron Ebell, which basically said, "I guess in these darkening times, C&C is not such a bad thing" or words to that effect. I am absolutely open to all comers. We are regarded askance by many people because the World Nuclear Association is so intensely behind C&C. Our answer to them is to say that C&C is about technique, it is not about technology. This, by definition, needs to be the broadest possible church; it is the ultimate all-party initiative.

Q89 Mr McWilliam: What would you like to see come out of the UK's chairmanship of the G8s and EU in 2005? What do you think can practically be achieved? How much do you think the UK approach should be governed by the need to bring the US on board? Do we need to bring the US on board as an entity, given that most of the decisions which will need to be taken are actually within the states' competence?

Mr Meyer: You are going to think me incompetent here. You read out a whole list of things. Can you give me them one by one?

Q90 Mr McWilliam: What do you want to see coming out of the UK's chairmanship of the G8 and EU in 2005?

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Mr Meyer: Let us take that one. Honesty; honesty about the intensely poor prospects we have for solving this problem. It is okay for politicians to get up and say, "We are not entirely sure what to do". It is better than saying, "Don't worry, trust us, it will all come right children". In that respect Tony Blair probably sometimes feels rather lonely, because he has actually made some remarkably forthright statements about the seriousness of climate change. In fact in one of them I remember he spoke language which appeared to be an appeal to the electorate to rise up and demand of politicians what they knew needed to be done, but were incapable of actually giving life to. More of that honesty is the first thing. Part of the honesty is that if expansion and divergence is the problem, C&C is the solution. In principle, that is what it is. In principle, it is a commitment to sharing the planet, at least in the use of the atmosphere, on an equal basis. It is a vote of good faith to everybody. It is not taking people hostage and saying "Don't worry, it'll come right on the basis of efficiency and technology and somehow further science research budgets" and dither and drift with Kyoto-plus type arrangements. It is not good enough. It is not reassuring to young people. This is their future that we are actually adjudicating. I think at the very least that children should have honesty from their parents and we, for the purposes of this argument and the G8 especially, are their parents. What is the next question?

Q91 Mr McWilliam: How much do you think the UK approach should be governed by the need to bring the US on board? Or is that terribly important for the US as such, since most of the decisions that will be needed to implement C&C are within the individual states' competence?

Mr Meyer: The US has been a sort of puzzle in this for a long time and the further difficulty is that the US itself tends to morph in the process between

Democrat and Republican presidencies. So under Bill Clinton's administration, a Republican and a Democrat, Hagel and Byrd put together the famous Byrd-Hagel resolution. We maintain, and they did not reject, on the contrary they quite specifically in some cases encouraged the point that we made, that the Byrd-Hegel resolution was C&C by definition. I can unpack that separately, not now. In that sense, getting the US involved in a coherent, they used to call it comprehensive, strategy is hugely important, in the sense that getting everybody involved in a comprehensive strategy is important. In respect of how things have changed since Mr Bush came to power, I am not entirely sure it is correct for any of us to entertain the notion that this is America. There are many, many people in America who are not happy with that version of America. At this point I would say, especially to those in the Civil Service here, who are charged with the task of trying to arrange the discourse at the G8 with the appearance that there is some kind of *détente* with the US, between the US and everybody else, mediated by the UK in the chair, if the cost of doing that is to demonstrate that you have a whole lot of unquantified agreements to research and perhaps even deploy some clean technologies, to talk broadly about issues of what I think of as, not the invisible hand so much as the wandering hands of efficiency, it has completely unfocused our argument. If that is all that is on offer, it is better not to pay that price. In other words, it is better for Defra and their colleagues in Whitehall to say, "Actually that is a price that we are unwilling to pay. We would rather go with coherent arrangements that are in least some way related to Kyoto if not actually to C&C". Ideally, by definition, these all should be seen as a function of contraction and convergence.

Chairman: Thank you very much indeed, Mr Meyer. Thank you also for your written evidence, which was most helpful.

Memorandum submitted by The Corner House, SinksWatch and Carbon Trade Watch

1. The Corner House is a not-for-profit research and advocacy group, focusing on environment, development and human rights. It has pursued research into climate change policy, emissions trading, and carbon trading more generally since 1998, working closely with a range of specialist and advocacy organisations in Asia, Africa, Europe, North America, Latin America and the Pacific. It has published a number of research papers and contributed to numerous UN and unofficial forums on the issue. Throughout this time, it has closely monitored the development of the Kyoto Protocol and its market-based mechanisms, the European Union Emissions Trading Scheme (EUETS), the Chicago Climate Exchange, the UK Emissions Trading Scheme, and the voluntary carbon "offset" market. In the past, The Corner House has submitted evidence or memoranda on other issues to the Trade and Industry Select Committee, the International Development Committee and the Environmental Audit Committee, as well as various UK Government departments.¹ SinksWatch is an initiative of the World Rainforest Movement (WRM), hosted by the WRM's Northern Support Office and implemented by FERN, a European non-governmental organisation focused on forest policy. The organisation tracks and scrutinises carbon sequestration projects

¹ See, for example, submissions to inquiries into the Ilisu Dam by the Select Committee on Trade and Industry and by the International Development Committee; the submission to the Environmental Audit Committee's 2003 inquiry into Export Credits Guarantee Department and Sustainable Development; "UK Export Credits Guarantee Department (ECGD) minimum conditions for reform: A memorandum from concerned non-governmental organisations and parliamentarians", July 2000; "Lessons of the Ilisu Dam UK Export Credit Policy, Corporate Governance and Future Investment in Turkey: Lessons from the Ilisu Hydroelectric Project. A Memorandum from Concerned Non-Governmental Organisations", January 2002; Hawley, S, Turning a Blind Eye: Corruption and the UK's Export Credit Guarantee Department, The Corner House, www.thecornerhouse.org.uk, July 2003.

related to the Kyoto Protocol, and highlights their threats to forests and other ecosystems, to forest peoples, and to the climate. SinksWatch's main focus is on tree plantation sinks projects, particularly in areas where land tenure and land use rights are in dispute. It advocates addressing the links between forests and climate change in a way that honours forests as a safeguard against the impacts of extreme weather events without justifying the continued, additional and permanent release of carbon from fossil fuel burning. Carbon Trade Watch, a project of the Transnational Institute, monitors the impact of pollution trading upon environmental, social and economic justice and seeks to challenge the assumption that a liberalised marketplace is the only arena in which environmental problems can be resolved. It also pools the work of others and acts as a meeting point for researchers, campaigners and communities opposing the negative impacts of pollution trading. The aim is to create space for bottom-up solutions and alternatives. In October 2004, all three groups were among the principal organisers of a major international conference on "Carbon Trading: Consequences and Strategies" held in Durban, South Africa.

2. The Corner House, SinksWatch and Carbon Trade Watch welcome the Environmental Audit Committee's present inquiry into the feasibility of emissions trading systems as a framework for negotiating a post-Kyoto agreement. They are grateful for the opportunity to comment on the following issues in the Committee's remit:

- Whether an international emissions trading system (ETS) is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject;
 - What other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries;
 - What approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005; and
 - What contribution individual departments can make (eg, FCO, DEFRA, HMT, DfT, and DFID), and whether they are sufficiently "joined-up" in delivering a coherent UK agenda.
3. The principal conclusions of this Memorandum are as follows:
- International emissions trading systems (ETS) as currently conceived are not feasible.
 - In particular, mixed trading systems which treat as exchangeable (a) credits allowing the emission of carbon dioxide from fossil fuel combustion and (b) credits for carbon sequestration, "avoided emissions", "emissions reductions" or baseline-and-credit projects generally, are not verifiably climatically effective or relevant and hence are a waste of time.
 - All trading systems that involve the allocation by the state of large quantities of free emissions rights to business are prone to a fundamental contradiction, which, again, tends to render such systems climatically ineffective. They are also unlikely to be politically sustainable due both to their blatantly inegalitarian allocation of property rights and additional inegalitarian structural tendencies.
 - Mixed trading systems involve an additional regressive global redistribution of land, water, air, forests and other goods which also renders them politically and environmentally unsustainable.
 - Contraction and Convergence, which involves a nominal or theoretical egalitarian pre-distribution of private property rights in the earth's carbon-cycling capacity, overcomes some of the political difficulties associated with trading systems that rely on "grandfathering" of rights. In particular, in the long term, it is likely to have more appeal to both South and North than many of its competitors in international negotiations. Unlike other trading systems, such as those associated with the Kyoto Protocol and the EUETS, it also reflects in its structure the need for effective climate action over realistic time periods.
 - Insofar as Contraction and Convergence allows mixed trading systems, however, it would be climatically ineffective and prone to set off conflicts over land, water, air and other goods in local areas. Insofar as it appends itself to current regimes of commodity trade and national sovereignty, moreover, problems of inequity in practice need to be considered.
 - Numerous more effective, more efficient, and more egalitarian alternatives exist both to emissions trading systems and to the particular types of emissions trading system currently enjoying a vogue. These include regulation, taxation, support for existing low-fossil-carbon economies, and various alternative schemes of creating and distributing property in the earth's carbon-cycling capacity that do not involve commerce and do not presuppose that the private sector already owns the world's carbon-cycling capacity.
 - For these alternatives to be properly researched, explored and supported, and for the challenge of evolving new property regimes governing the earth's carbon-cycling capacity in a way which respects equality, political realism and the necessity of swift action to slow the transfer of fossil carbon to the surface, it is necessary for government to promote a public debate on the issue, halt the rush into ETS, and redirect research and development funds toward more realistic, non-market-based schemes.

- Even more important, the Government must halt subsidies for continued exploration, extraction, exploitation and burning of fossil fuels, instead supporting and fostering communities' and local authorities' own attempts, many of them of long-standing, to follow low-carbon ways of life; institute deeper cuts in carbon use; respect regional decisions to exclude mining or refining of fossil fuels, power production, and so forth; and support energy efficiency, renewables, non-fossil-fuelled technologies and responsible tree-planting without trading them for continued fossil fuel extraction.
- Internationally, the UK can exercise leadership both in the G8 and the EU on all these scores. One simple, easy, concrete and relatively painless first step would be for the UK immediately to set out a policy of abjuring reliance on carbon credits of type (b) (see above) and on all mixed trading schemes.
- Joined-up policy by different government departments is needed, but joined-up in the service of a different objective than at present. Currently, the policy of different government departments is joined-up, to a greater or lesser degree, around the objective of maximising the flow of fossil carbon from underground to above-ground biophysical systems, whether through subsidies for fossil fuels or, indirectly, through emissions trading. Government policy must be turned around so that the work of different departments is joined up around a different objective. The ending of subsidies for fossil fuel extraction and exploitation must go hand in hand with an abandonment of emissions trading, particularly mixed trading systems, and with new support for energy efficiency, renewables, and existing community-based sustainable energy systems.

BASIC CONCEPTS AND HISTORICAL BACKGROUND

4. The nature of emissions trading is widely misunderstood, often even by traders themselves. Hence it is important to begin by briefly reviewing basic concepts.

5. The climate change crisis is an example of a familiar social problem—the overflowing waste dump. For over 150 years, industrial societies have been transferring fossil carbon from underground deposits of coal, oil and gas, via the combustion chamber, to a more active and rapidly circulating carbon pool, or “dump”, above ground (Fig 1) (Not printed).

6. This transfer is one-way. Once carbon is in the above-ground system, it will not return underground into fossil fuel or carbonate deposits for a very long (geological) time. Over time spans important to human beings, belowground and aboveground carbon belong essentially to different systems (although they are linked over geological time spans not only by formation of fossil carbon but also by such mechanisms as subduction and volcanoes).

7. The above-ground “dump” consists of many things: air, oceans, vegetation, soil, surface rock, each with different mechanisms and capacities for taking on fossil carbon (Table 1).

Table 1

<i>Above-Ground Carbon Pools</i>	<i>(billion tonnes)</i>
Atmosphere	720–760
Living land biomass	600–1,000
Dead land biomass	1,200
Fresh Water	1–2
Oceans	38,400–40,000
<i>Below-Ground Carbon Pools</i>	
Fossil fuels	> 4,130
Coal	3,510
oil	230
gas	140
other	250
Rock	> 75,000,000

8. But the capacity of the above-ground “dump” as a whole to absorb carbon from underground is limited. For example, it would be biologically impossible for the earth's trees, grass and other vegetation to absorb even a small fraction of the carbon in remaining fossil fuel deposits. Even the oceans, with their huge carbon-absorbing ability, can only take on so much new carbon, and are starting to show the strain (Fig 2) (Not printed).

Fig 2 (not printed). Between the start of the industrial revolution in 1800 and 1994, the ocean has removed 118 billion metric tonnes of human-produced carbon, or 48% of the CO₂ released to the atmosphere from burning fossil fuels and cement manufacturing. If the ocean part of the above-ground carbon “dump” were

not there, the CO₂ level in the atmosphere would be about 55 parts per million greater than currently observed. The oceans are already $\frac{1}{3}$ “full” of carbon dioxide, altering shell calcification rates, with especially high concentrations in the North Atlantic.²

9. The result of this limited capacity of the earth’s above-ground carbon “dump” is that some, perhaps half, of the fossil carbon continually being added to the overloaded above-ground active pool of carbon is building up in the atmosphere. The current rate of increase is around six extra billion tonnes of carbon dioxide every year.

10. This overflow cannot go on indefinitely. If all the remaining fossil carbon were taken out of the ground and injected into the above-ground carbon pool, the earth would probably become uninhabitable.³ Some scientists fear that transferring even a small fraction of remaining fossil fuels to the above-ground carbon pool (as little as several hundred additional billion tonnes) could trigger a runaway process of warming pushed on by catastrophic releases of (eg) sea-floor methane hydrates or Amazon basin biotic carbon. The result could be warming of a magnitude and speed more disastrous than even the worst scenarios envisaged by the Intergovernmental Panel on Climate Change.

11. To restate the issue in political terms, industrialised societies alone currently use far more of the absorptive capacity of the biosphere and atmosphere to stow their carbon emissions in than is globally “available” (assuming a common interest in avoiding worldwide catastrophe). Were the global North’s use of aboveground carbon “dump” space to be held constant, no space would be left for others to use, even for activities which do not involve transfer of carbon from fossil stocks (such as breathing). In brief, rich and poor are heading toward a conflict over who gets to use a limited “dump” space which is already dangerously overflowing. The upshot is that political pressures can only grow not only to stop hydrocarbon development, but also to find ways of using the earth’s above-ground carbon-cycling capacity more equitably.

12. The realistic solution to the problem of the overflowing dumps is to slow or halt the production of the substance that winds up in the dump. Reducing the dangers of nuclear waste, DDT, or polyvinyl chloride leaking out of overflowing or irretrievably faulty disposal grounds ultimately requires a halt to production. Similarly, the only realistic approach to the dangers of climate change is to stop production of coal, oil and gas as soon as possible, leaving the great bulk of fossil fuels safely underground.

13. There is nothing novel or controversial about this conclusion. Even the former Saudi Arabian oil minister, Sheikh Zaki Yamani, has famously pointed out that “the Stone Age did not end for lack of stone, and the Oil Age will end long before the world runs out of oil.” Most fossil fuels are going to have to be left in the ground, just as most of the world’s stone is never going to be transformed into arrowheads or Stonehenges.

14. Although this is hardly to be considered a tragedy, given the alternative, many private corporations reluctant to take up new technologies or product lines which would shift their current core markets, together with colleagues in various technocracies, particularly in the United States, have sought, fruitlessly, a way out of this predicament. Instead of facing the need to reduce the flow of carbon from below—to above ground, they instead hope either to find new dumps to stow it in, or to be able to exclude others from using existing dumps, or both.

15. The result is that instead of restricting and equalising the use of the above-ground carbon dump, a relatively small group of actors, particularly in the North, and particularly in the United States, have been working, since the 1990s, to turn it into a privately-owned asset. Bit by bit, starting with voluntary carbon markets and the Kyoto Protocol⁴ (together with its offshoots such as the European Union Emissions Trading Scheme), international climate agreements have become a charter for the commodification and trading of the carbon-absorbing capacity of the world’s air, oceans, soil and vegetation in a way that benefits neither the climate nor the great majority of the world’s population.

16. The public justification for this innovation is that it translates the political and environmental reality of climate change crisis into the orthodox economic terms of competition and scarcity. Carbon dump space, like oil before it, it is said, can and must become an economically scarce resource. Then, it is claimed, “the market” can help solve the climate problem.

17. However, this translation is not being made, and it is not clear that it can be made. Moreover, even if it were made, it is not clear that the result would serve climatic or societal ends. In this case, what is lost in translation is more significant than what is translated. The crisis will not be addressed by ensuring that that carbon dump space, like oil before it, becomes part of an economic system that makes it difficult to constrain a fairly small global elite from using too much of it—or for the elite to stop itself.

² Sabine, C L *et al*, “The Oceanic Sink for Anthropogenic CO₂”, *Science* 305, 16 July 2004, pp 367–71.

³ Leggett, J, *The Carbon Wars*, London, 1999.

⁴ Michael Zammit Cutajar, who as former Executive Secretary of the United Nations Framework Convention on Climate Change was a direct witness to this politics, recently put it like this: “The sensitivity of the (Kyoto) Protocol to the market was largely instigated by the negotiating positions of the USA . . . For example, the European Union—now fully committed to emission trading—was insistent (at first) that trading should be supplementary to domestic action to limit emissions, the latter seen as essential to the development of technologies that would open the way to a low-carbon future. The EU also frowned upon recourse to ‘sinks’ for the same reason and because of the uncertainties surrounding that option. Yet these were among the final make-or-break issues for the US negotiators and it is not an exaggeration to brand the mechanisms of the Kyoto Protocol as ‘Made in the USA’.”

TWO TYPES OF TRADING IN CARBON

18. Under the Kyoto Protocol, the EUETS, the UKETS, and various private sector schemes, attempts are currently being made to commodify, and trade in, two different kinds of carbon dump. One is the world's existing carbon-absorbing capacity in air, oceans, vegetation, soil, surface rock and so on. The other consists of speculative "new" carbon dumps to be opened up above ground or in the future. The first kind of carbon dump is real. The second kind of dump is largely fictitious, as is the commodity that would be made from it.

19. The attempt to commodify either type of carbon dump is problematic along many different axes. To a certain extent, the problems with commodifying both types of dump are similar. Nevertheless, just as the two types of dump must be meticulously distinguished, even if both are commonly, if carelessly, referred to under the rubric of "emissions trading", so, too, the characteristic problems associated with attempts to trade in the two dump types must be carefully set apart from each other.

THE KYOTO PROTOCOL AS CASE STUDY

20. One good place to start is with the Kyoto Protocol, which currently represents the main thrust of commodification and trading of the world's carbon-cycling capacity.

21. The Protocol has two parts, corresponding to the two types of carbon dump mentioned above.

Trading existing dumps

22. Under the first part, the United Nations would distribute billions of dollars' worth of rights to (over)use existing carbon dumps to 38 industrialised nations who already use them the most, permitting them to sell portions of what they do not use. The Protocol is intended to bind these countries to reducing their emissions by an average of about 5% below 1990 levels by 2008–12 (that is, to use only around 95% of the dump space they had used in 1990), although due to various loopholes these reductions will not be achieved even if the Protocol is implemented as planned.

23. The governments of most of the 38 nations (although not that of the US, which of course has not ratified the Protocol), in turn, are quietly distributing large quantities of their entitlements to dump space gratis to hundreds of private companies in heavy industrial sectors such as power generation, steel, cement, chemicals and pulp and paper. These firms, again, can sell them on to other polluters in the first stage of activity of what some believe may become the largest market ever created.

24. In the UK, assets in carbon dumps currently worth up to €3.7 billion yearly are to be handed out beginning in 2005 under the European Union Emissions Trading Scheme (EUETS) free of charge to approximately 1,000 industrial installations responsible for around 46% of UK emissions (Table 2). On a rough reckoning, these rights entitle UK industry alone to transferrable, monetisable access to approximately 5% of available world carbon dumps.

Table 2

PRIVATIZATION OF GLOBAL CARBON DUMPS BY THE UK

DRAFT NATIONAL ALLOCATION UNDER THE EU EMISSIONS TRADING SCHEME

<i>Industrial Sector (UK only)</i>	<i>Annual Gift of Emissions Rights (mtCO₂)</i>	<i>Percentage of Available World Above-Ground Carbon Dump*</i>	<i>Proj. Annual Value 2005–07**</i>
Power generators	143.7	2.9%	€718m—2.155b
Iron & steel	21.2	0.3%	€106-318m
Refineries	19.1	0.4%	€95-286m
Offshore oil & gas	19.1	0.4%	€95-286m
Chemicals	11.1	0.2%	€55-166m
Cement	10.1	0.2%	€50-151m
Pulp & paper	4.3	0.1%	€21-64m
Food & drink	3.9	0.1%	€19-58m
Other industries	12.9	0.3%	€64-193m
Total	245.4	5.0%	€1.227—3.681b***

* Based on the assumption that anthropogenic CO₂ emissions from fossil fuel combustion and flaring must be reduced by 80% from current levels of 24,533 million metric tonnes/year to achieve eventual stabilization of CO₂ levels.

** Based on the assumption of a "market price" for EU emissions allowances of between €5-15/tCO₂ (see Environmental Finance, April 2004).

*** Columns may not add up due to rounding.

Source: EU Emissions Trading Scheme, UK National Allocation Plan 2005–07, DEFRA, London, 2004.

25. Several points are worth making about this statistic.

- (a) UK population amounts to less than 1% of the world total, not 5%.
- (b) The dump space being distributed by the UK government does not fall, geographically or otherwise, under UK legal jurisdiction, but is a capacity inherently spread around the world.
- (c) No allocations are being made to individuals or cooperative groups, but only to corporate bodies.
- (d) Under Kyoto, no entitlements are as yet to be given to Southern countries, but also no restrictions placed on Southern dump use.
- (e) While the aggregate amount of property rights in the world's carbon dump being distributed to industry is to be progressively reduced in the future, the pace and magnitude of this reduction is unclear, while the benefits industry gains from its initial holdings will be lasting.

26. Such schemes, in awarding the largest historical users of carbon dumps the most formal future rights in them, constitute, ultimately, one of the largest, if not the largest, projects for creation and regressive distribution of property rights in human history, bearing comparison with the enclosure movement in Europe and elsewhere.

27. The political problems of emissions rights trading such as that mandated by the Kyoto Protocol do not, however, end merely with unfair allocation of rights in a common heritage. The trade also perpetuates and aggravates environmental injustice in other ways. For example, the six greenhouse gases to be traded all have toxic co-pollutant side effects,⁵ so when polluting industries are disproportionately located, as they are, in low-income areas and communities of colour, it is the underprivileged who suffer most. In the case of a Los Angeles sulphur dioxide trading scheme known as RECLAIM, localised pollution of the Latino communities around factories involved in the scheme continued unabated in spite of reductions elsewhere.⁶ In the UK, as Friends of the Earth recently showed, similar patterns of environmental injustice are evident in the siting of polluting industries in England and Wales. The poorest families are twice as likely to have a polluting factory close by than those with average household incomes. Over 90% of London's most polluting factories are located in communities of below-average income.⁷

28. It is likely that this phenomenon will be replicated in global greenhouse gas trading. Reductions which might otherwise have been mandated across the board will not need to be made at source, allowing factories and power plants, a disproportionate number of which are already sited in vulnerable communities, to continue polluting locally. This is bound to hit the poorest hardest, entrenching "pollution ghettos", as polluting industries continue to buy credits instead of making reductions locally. This is in addition, of course, to the severe impacts suffered by communities from the Niger Delta to Durban to the Ecuadorian Amazon due to exploration, extraction, transport and refining of fossil fuels—all of which is sanctioned by trading in credits from so-called "emissions reduction" projects. Such impacts are invisible to trading schemes, highlighting the dangers of this narrow approach to climate change.

29. The considerable economic and political consequences of emissions trading thus stand in sharp contrast to their marginal climatic effects, which, in the case of the EUETS, are limited at the very most to the minimal reductions mandated under Kyoto.

30. Politically and economically, then, the commodification and trade of existing carbon dumps is obviously a questionable procedure. All the more remarkable, then that the process within the UK of the allocation of an entirely new set of property rights, and its significance, as well as the EUETS Linking Directive, have none of them been a matter for noticeable public scrutiny or debate. The National Allocation Plan, for example appears to have been, rather, more a matter of quiet negotiation between business and government, and between government departments such as DTI and DEFRA.

31. Perhaps as a result, with the exception of power generators, the UK government has ended up giving rights to most industrial sectors to emit yearly at least as much carbon dioxide as they annually emitted de facto between 1998–2003.

32. This matter should be of pressing concern to Parliament. Not only is equity at stake, but also the ability of a market constituted and regulated in this way to meet its objective of contributing to efficient action on climate change. Business' success to date in negotiating the gift of such large amounts of rights in the world's carbon-absorbing capacity entails that there is as yet insufficient scarcity in the market for it to work in the direction of helping to stabilize climate; indeed, many businesses are still sceptical about whether the EUETS will result in any reduction in emissions at all (Figure 3).

⁵ The six greenhouse gases focused upon in the international negotiations are; carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆).

⁶ "Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy". Richard Toshiyuki Drury, Michael E Belliveau, J Scott Kuhn and Shipra Bansal (1999) Duke Environmental Law & Policy Forum.

⁷ Friends of the Earth Report The Geographic Relation Between Household Income and Polluting Factories <http://www.foe.co.uk/resource/reports/income-pollution.html>

FIGURE 3

EC FAILS EMISSIONS SCHEME, SAYS E&Y DIRECTOR

The European Commission's failure to challenge eight EU national allocation plans undermines Europe's ability to meet its carbon dioxide emissions reduction targets agreed under the Kyoto Protocol, according to Ernst & Young's director of emissions trading Tony Ward.

Without creating scarcity of supply by challenging national allocation plans, the commission runs the risk of undermining the value of carbon credits and of providing insufficient financial incentive for companies to cut emissions, says Ward. The price of carbon credits has dropped "significantly" upon the announcement, according to market monitor Point Carbon.

An Ernst & Young Survey conducted in June found only 40% of respondents believe the scheme will result in a reduction in emissions.

"There is a danger this becomes a self-fulfilling prophecy," says Ward. "If . . . people are not preparing (for the ETS), it gives further oxygen to the idea that people don't need to change their behaviour."

(Energy Risk, 8 July 2004.)

33. This raises questions about whether a system in which it is always rational for business to seek the largest possible amount of property rights, in which business has the political means of doing so, and in which business is proceeding to do so (see the upward revision of emissions allocations under the National Allocation Plan revealed on 26 October 2004) is compatible with a market intended to meet environmental goals. Less scarcity means weak or nonexistent system-wide incentives for necessary systematic change toward low-fossil carbon technologies.⁸ Moreover, allocation of large amounts of emissions rights by the state to vested interests entrenches their claims to continued and future overuse of the earth's carbon-cycling capacity.

34. This is likely either to make the evolution of effective future emissions caps more difficult or to increase pressures to reduce emissions in sectors which have not been awarded so many rights in the dumps (for example, domestic households and the transport sector) in order to ensure that national Kyoto targets, for example, are met. The effect is to secure the assets of large industry at the expense of other sectors, including that of the state.

35. Of course, if the government does resist business pressure and does progressively cut the amount of property rights granted to the private sector, increasing their scarcity—which is how the system was designed to work—those rights will be worth even more in monetary terms to business, raising even more acute questions about equity.

36. Alternative property regimes—for example, standard regulation, in which the state tacitly cedes rights to the private sector but stipulates that they will not be tradeable; taxation, in which the state notionally leases property to the private sector; and auctioning, in which governments temporarily assume possession of emissions rights before selling them to the highest bidders—have not been major components of EU nations' climate policies (see annex 1).

37. Moreover, while the government has been pursuing questionable emissions trading schemes which award space in carbon dumps far in excess of what exists or what is in its gift to bestow, it has failed to make adequate progress either in reducing subsidies for the transfer of fossil carbon to the surface or in supporting existing initiatives toward a no-fossil carbon economy.

Creating and trading new dumps

38. The second part of the Kyoto Protocol attempts to open up, create property rights in, and market two new, speculative, cheaper types of carbon dump. The aim is to help industrialized countries avoid restrictions on, or democratization of, their use of existing dumps. As carbon allowances awarded to Northern industry become scarcer and more expensive over time, those sectors most in need of them will be able to buy an alternative, cut-rate supply from a new production line. In May 2004, prices for EU emission allowances were around US\$9.60-10.80 per tonne of CO₂ equivalent, while those of new dump space being developed under the Clean Development Mechanism of the Kyoto Protocol were \$3.50-5.50 per tonne. Among those active in trying to create this market in new dumps (which is also being constructed independently of the Kyoto Protocol by some private firms), are oil companies, heavy industries, national research establishments, universities, think tanks, carbon brokers, consultancies, forestry industries, United Nations agencies, the World Bank, marketing firms and international business lobby groups.

⁸ Preventing Toxic Pollution: Toward a British Columbia Strategy. A Report to the BC Hazardous Waste Management Corporation by Calvin Sandborn, William J Andrews and Brad Wyljnyko. 1991. West Coast Environmental Law Research Foundation Vancouver, Canada.

New Dumps in the Biosphere

39. The first type of new carbon dump is to be carved out of land, forests, soils, water, even parts of the oceans. Fast-growing eucalyptus monocultures, for example, may be established or financed on cheap land in the South and the carbon they “sequester” then sold. Many such “carbon sink” projects have already been set up in countries from Brazil (Fig 4) (Not printed) and Uganda to India and the UK.

Fig 4. (not printed) Plantar, a firm planting eucalyptus monoculture in Minas Gerais for use in producing charcoal for pig iron manufacture (used partly in the production of cars), claims it should be able to sell “carbon credits” to other industries because its plantations absorb CO₂ from the atmosphere. Without these credits, it says, it would switch to coal, a less “climate-friendly” fuel. Plantar’s claim, supported by the World Bank, is contested by local farmers, fisherfolk, indigenous people, rural trade unions and NGOs who have long seen Plantar as causing social and environmental problems.

40. The idea is that these trees are “new” and thus make up for the fossil carbon which continues to be pumped out of the ground (Fig 5) (Not printed)⁹

41. Along the lines of the Kyoto Protocol, several private firms are now also selling their own “carbon credits” from trees. They claim that by planting trees for customers, they can make (for example) their air travel “carbon neutral” (Fig 6) (Not Printed).

Fig 6 (not printed) Not only the Kyoto Protocol, but also many private European firms claim falsely that they can make the burning of fossil fuels “carbon neutral”. Several of them plant trees in Southern countries to “absorb” rich Northerners’ carbon dioxide emissions. This misleading symbol is used by one British marketing company on its website.

42. The UN, business and various research establishments around the world are also exploring other types of “new” carbon dump. One proposal, for example, is to pump carbon dioxide into old oil wells or deep layers of the ocean (Fig 7) (Not printed).

Fig 7 (Not printed) An early US Department of Energy proposal for a new carbon dump involved pumping liquid carbon dioxide into deep ocean layers. Projections showed, however, that the CO₂ would quickly migrate toward the Caribbean and Brazil. The US’s old nuclear weapons laboratories are busy with a number of such ingenious schemes.

43. The problems with this project of constructing new carbon dumps in the biosphere are manifold. First, in addition to licensing continued overuse and unequal use of the existing carbon dump, the attempt to build new biospheric dumps inevitably means taking over or using people’s land, water, forests, air and communities. The result is, inevitably, local resistance.

44. In Minas Gerais, Brazil, for example, through a project promoted by the World Bank’s Prototype Carbon Fund, a corporation called Plantar S.A. is claiming that it deserves carbon credits for not switching its pig iron operations from eucalyptus fuel to coal or coke, and for 23,100 hectares of its eucalyptus plantations. “We were surprised and bewildered by the news,” a group of over 50 trade unions, churches, local deputies, academics, human and land rights organizations and others protested in March 2003:

“Corporations like Plantar S.A. installed themselves in our states in the 1960s and 1970s during the military dictatorship, taking advantage of attractive tax incentives. Local communities were never consulted . . . Indigenous peoples . . . Afro-Brazilian communities and tens of thousands of (other) peasants . . . lost their lands . . . increasing unemployment. . . the new Plantar nursery . . . , about which no local inhabitant was consulted . . . , diverted an existing road that has always been utilized by local communities, and extended the travelling distance for local inhabitants by more than five kilometers . . . Most lands owned by these corporations are devolutas, . . . without land titles, . . . (and) belong to the state. According to Brazilian law, corporations cannot acquire this type of land, only peasants. Even so, with often fraudulent registrations in the registry offices and “hiring” contracts with the state, the corporations succeeded in acquiring hundreds of thousands of hectares of devolutas lands . . . the occupation of (savannah) cerrado areas . . . made more difficult the subsistence of these people, which was based on the immense biodiversity of the cerrado. The short-cycle eucalyptus monoculture does not allow any other plant or any animal or bird to live within it, and therefore does not possess any biodiversity . . . food products factories closed . . . The pig iron companies still use around 15-20% native cerrado vegetation . . . Plantar does not do anything for its former workers, many of whom are injured or suffering from health problems; many have already died as a result of the very bad working conditions associated with charcoal production and eucalyptus cultivation. Eucalyptus plantations result in less jobs if compared with any other agricultural activity.”

Locals note further that Plantar’s intimidation tactics, which make many local residents afraid to let interviewers cite their names, are nowhere acknowledged in project documents. Having been thwarted by the Prototype Carbon Fund, the local movement is now appealing directly to European investors not to put

⁹ Interestingly, Perversely, recent statistics from the US Environmental Protection Agency recently released showed that sulphur dioxide levels in the US have actually increased by 4% as a result of trading. News 8 WMTV web article: <http://www.wmtv.com/Global/story.asp?S=2338956>

money into the carbon project. One local man interviewed by Carbon Trade Watch, who asked for anonymity out of fears for his own safety, notes that his municipality “suffered a great loss with the sale of the land to Plantar”:

“Plantar has planted all over, even until the Seu Zé do Bonitim river spring. 35,000 hectares of land . . . they sprayed pesticides with a plane. There used to be deer and other animals in the area. The native fauna lived together with the cattle. But since they applied the pesticide, every one of them got killed . . . The eucalyptus planted over here is meant for charcoal. It is a disaster for us. They say it provides jobs, but the maximum is 600 work places in a plantation of 35,000 hectares. And, whenever everything has been planted, one has to wait for six years. So, what work does it generate? . . . We used to produce coffee—the Vera coffee—and pasta and cotton. Several different little factories in their suitable regions. Nowadays, there is only the eucalyptus. It has destroyed everything else.

Why do they come to plant in the land suited for agriculture instead of most suitable areas? Because it takes 10 to 20 years and over here only seven. All the best pieces of land went to the eucalyptus plantations, pushing the small producers away and destroying the municipalities . . . These companies don’t want unions. They immediately co-opt the union leaders and they begin to make part of their inner circle of managers and directors . . . The eucalyptus gives the water back to the earth after some years. But when it is time to give it back, they plant a new one that will absorb the water returned by the old one. This new plantation will develop really quickly, because, besides the rainwater, it will receive the water from the old eucalyptus . . . they are using the carbon credits to plant these eucalyptus that will grow very quickly.”

45. A similar pattern of problems has already emerged in carbon dump projects in the US, Ecuador, Tanzania, Uganda and many other countries.

46. But resistance comes not only from poorer communities who battle the awarding of carbon finance to predatory local plantation, energy, or agribusiness firms. It can also be expected from richer communities, such as New Zealand forest owners, who are similarly concerned that their property is being taken away from them (Fig 8).

FIGURE 8

FOREST OWNERS

Nationalisation of Kyoto credits is theft

A group representing the owners of forests planted after 1989, the only forests eligible to earn lucrative carbon credits under the Kyoto protocol, says the government is stealing \$2.6 billion from them by fiat.

Under the terms of the Kyoto protocol, forests planted after 1989 generate carbon credits which can be sold or traded to help other nations avoid fines for having failed to meet targets in efforts to reduce greenhouse gas emissions.

The credits are traded government to government, and each government has the right to disburse the earnings as they seem fit.

In New Zealand, the government plans to hold the earnings for its own programmes.

The newly formed Kyoto Forest Owners Association says the decision “is possibly the largest private property theft in New Zealand’s history.”

“After all, we grew them (the carbon sinks) in our trees—they are ours to do with what we like—they are not the Government’s,” spokesman Roger Dickie said.

(*Business Today*, 30 December 2003.)

47. A second difficulty with the attempt to build new carbon dumps in the biosphere is that they can’t be verified to be working. For one thing, scientists are radically uncertain about the fate of carbon dumped in the biosphere (Table 3).

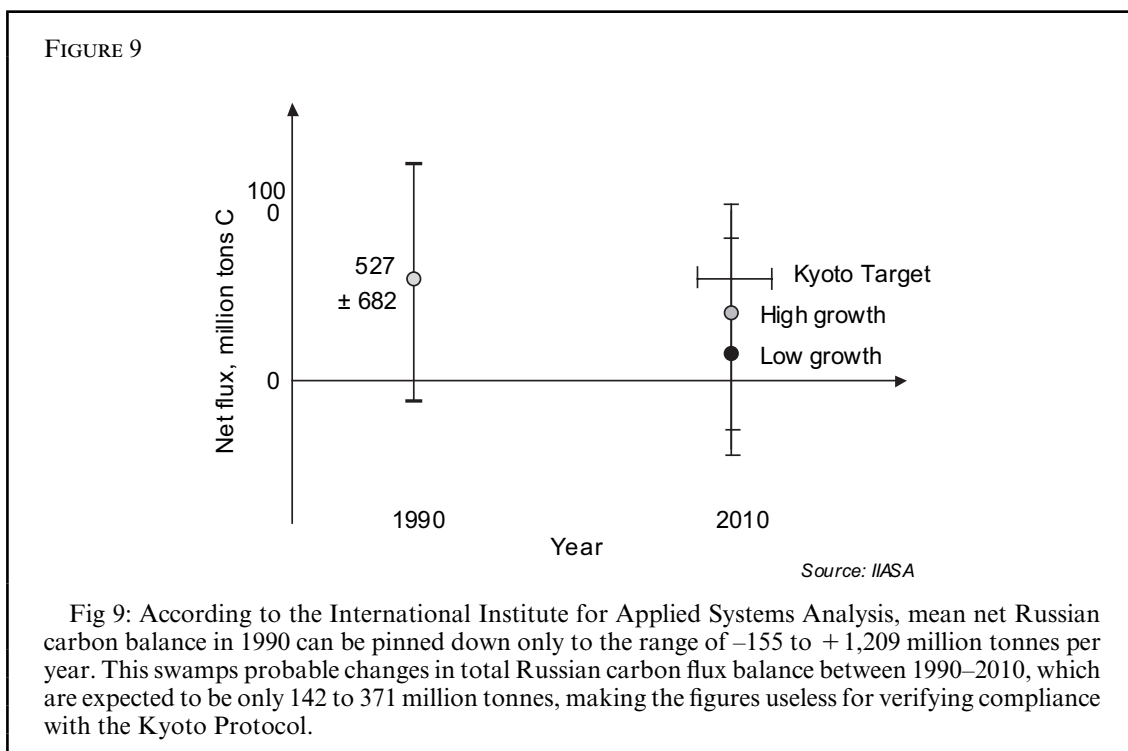
Table 3

UNCERTAINTY REVEALED YEAR BY YEAR

- 1998: German ACGC cautions against counting growth of forests as “emissions reductions”.
- 1998: Technocrats and NGOs propose “discounting” or “insuring” carbon credits derived from biospheric dumps.
- 1999–2002: IIASA says Kyoto Protocol “completely unverifiable” due to accounting uncertainties, Proposes quantification and pricing of uncertainties.
- 2000: VERTIC says forestry and land use “must not be used to meet emissions reductions commitments” since changes to carbon stocks will rarely be verifiable”.

- 2000: IPCC land use panel assumes without evidence that emissions and “removals by sinks” can be aggregated quantitatively.
- 2001: R.A. Houghton suggests carbon errors “as large as 500% in the forest inventories of northern mid-latitudes”.
- 2001: Royal Society cites “urgent need” to reduce uncertainties before land carbon sinks are used.
- 2001: World methane sources found to be uncertain by “20 to 150%”.
- 2003: UN, consultancy and NGO discounting and insuring proposals continue to leave uncertainty unquantified or to ignore it.

48. For example, according to the International Institute for Applied Systems Analysis, the margin of uncertainty in the current carbon balance in Russia is so large that it will be impossible to determine, if biotic carbon is made part of the equation, whether the country has achieved its Kyoto targets or not (Fig 9). In short, the IIASA says, the Kyoto Protocol is “completely unverifiable”.¹⁰



49. In fact, however, scientists cannot even know in advance all the factors related to biotic carbon that will affect climate, and all the nonlinear or noncontinuous ways they may interact, making the problem even worse than mere uncertainty (Table 4). The paths above-ground carbon takes are not only much less stable but also, more importantly, much less predictable, than the paths taken by fossil carbon left under the ground.

Table 4

IGNORANCE REVEALED YEAR BY YEAR

- 1990s–2003: “Missing terrestrial sink” of $110 \pm 80\text{GtC}$, or $> 3\text{GtC/yr}$ (= half of annual fossil fuel emissions), remains unfound.
- 1990s: Scientists warn that ocean warming could result in sudden catastrophic releases of methane from methane hydrates on sea floor.
- 1998: German ACGC warns that “complex non linear dynamics” of terrestrial ecosystems sets them apart from “energy-related processes”.
- 2000: Review article in *Science* warns that unanticipated “feedback effects between carbon and other biogeochemical and climatological processes will lead to weakened sink strength in the foreseeable future”.
- 2001: UK Met Office calculates tree-planting in boreal regions would heat planet rather than cool it due to albedo effects.

¹⁰ See the large selection of papers at www.iiasa.ac.at.

- 2001: Met Office reveals lengthening of dry seasons could abruptly result in catastrophic releases of carbon through fires in Amazon, pushing temperatures up six to eight degrees Celsius in 100 years.
- 2003: UN, consultancies and NGOs continue to speak as if “discounting” and “insurance” can cover the possibility of unanticipated findings.
- 2003: CDM Methodological Panel rejects methodology for Plantar project which was based on assumption of stable exchange rates between US\$ and Brazilian Real.

50. No matter how much additional biospheric carbon could be cultivated, moreover, it could never be of an order of magnitude remotely comparable to what would be required to “fix” the emissions from remaining unmined fossil fuels (Table 1). As Cambridge University forest historian Oliver Rackham quips, to tell people to plant trees to help the climate is “like telling them to drink more water to keep down rising sea-levels.”

51. In short, a verifiable climatic equivalence between fossil carbon and biotic carbon cannot be established, rendering the claims of the Kyoto Protocol and the voluntary carbon “offset” market nonsense. Planting trees cannot be proved to make fossil fuel burning “carbon-neutral”.

52. For this reason alone, it is a matter of some urgency that the UK make clear as soon as possible that it will, at the very least, not accept carbon credits from “sink” projects in its national climate plan.

New Dumps in the Future

53. A second, more complex type of new carbon dump, is, in a sense, to be carved out of the future. Fossil-fuel users buy permission to go on dumping by investing in activities which, while contributing still more carbon flows into the dumps, are claimed to produce smaller flows than would “otherwise” be the case. Alternative futures which would use even less carbon are dismissed by contracted experts as impossible. Thus an electricity utility in the North can gain extra permits to burn fossil fuel in its own country by investing in a gas-fired power plant in a Southern country, if the plant can be demonstrated to have been designed to release less carbon dioxide than a coal-burning plant which might have been built in its absence. It does not matter that energy efficiency measures or solar power—or not building a plant at all—would be less carbon-intensive than the gas-fired plant. As long as the company’s consultants can rhetorically eliminate these possible other “futures” in favour of the single counterfactual scenario represented by the coal-fired plant, it can be licensed to continue transfer of carbon to the atmosphere above its own power stations. As with emissions trading proper, this type of carbon trading is compatible with—it may even encourage—the removal of remaining fossil carbon to above-ground systems, with all the consequences for human survival that entails. Today, large hydroelectric dams, efficiency programmes, forestry firms, biomass energy projects and even fossil-fuelled power plants are all seeking to create and market dumping rights on the ground that they emit less carbon than baseline “alternatives” identified by experts. The claim that alternative low-carbon futures do not exist becomes a way of dumping carbon in those futures which could otherwise be left in the ground.

54. The fact that firms seeking carbon finance have the power to hire experts to “decertify” any low-carbon futures which do not involve the firms themselves is also leading to local resistance. The Minas Gerais protesters put it like this:

“The argument that producing pig iron from charcoal is less bad than producing it from coal is a sinister strategy . . . What about the emissions that still happen in the pig iron industry? What we really need are investments in clean energies that contribute to the cultural, social and economic well-being of local populations. . . . We can never accept the argument that one activity is less worse than another one to justify the serious negative impacts that Plantar and its activities have caused. . . . (We) want to prevent these impacts and construct a society with an economic policy that includes every man and woman, preserving and recovering our environment. That is essential for survival.”

55. What the Minas Gerais groups point to is also a devastating technical flaw in the project to find and sell new carbon dumps in the future. In truth, no single story-line can be proved to be “what would have happened” in the absence of a supposedly carbon-saving project. The future is a matter for open political decision, not economic/technical prediction by vested interests.

56. This is why, even among corporations and their contracted experts, there are so many disputes about “what would have happened otherwise”—disputes that are leading to estimates of “carbon saved” that differ by orders of magnitude, pushing the whole market in “new carbon dumps” toward incoherence.

57. Members of the House of Commons Public Accounts Committee, for example, recently lambasted the government’s early experimental emissions trading scheme for propagating “bullshit” by claiming emissions reductions that were not real, following a National Audit Office investigation.¹¹ A PricewaterhouseCoopers specialist has meanwhile openly confessed that the claim that a project would not have happened without carbon finance “cannot really be checked by a validator” (Table 5).¹²

¹¹ *ENDS Report*, May 2004, pp 34–35.

¹² Comments by Mr Hans Warmenhoven, PricewaterhouseCoopers, on a draft Clean Development Mechanism Project Design Document, no date, available from The Corner House.

Table 5

INDETERMINACY REVEALED YEAR BY YEAR

- 1999: Michael Grubb concedes “impossibility” of measuring or defining climatic difference between with and without project scenarios but then reinterprets this indeterminacy as “uncertainty” or “difficulty”.
- 2000: Yamin and Haites admit there is no “correct” account of “what would have happened without a project” but propose settlement by committee.
- 2002–03 Project certifier express concern that UN rulebook’s inability to screen out “business as usual” CDM projects put them in a difficult position.
- 2002–03: Developers, brokers and government ministers counterattack, scorning the ideal that carbon project must be better for the climate than what would have happened without investment in them, and reinterpreting the Marrakech agreement accordingly.
- June 2003: PCF forced to concede that this a misinterpretation of Marrakech.
- May 2003: DM Methodological panel rejects methodology used to claim that Brazilian “avoided fuel switch” project is not “business as usual”.
- June 2003: DCM forced to reject all 12 mitigation projects proposed to it to date on the ground that they could not be proved to be activities which “would not have happened anyway”.
- 2003: Project proponents begin to admit that some projects rejected by CDM are going forward anyway, meaning that they are indeed “business as usual”.
- June 2003: NGOs with a stake in CDM begin arguing that such projects are not necessarily “business as usual”: eg, that they were not BaU at the time of application but later became so, or that initial CDM interest enabled them to find other finance.

58. The practical effect of this impossibility is that attempts to settle disputes about “what would have happened otherwise” are inevitably driving dump “validation” procedures toward greater and greater convolutedness and difficulty. This frustrates traders, brokers and other businesses. What they want is, instead, easier, more uniform procedures which lower their “transaction costs”. Caught in the middle, international bureaucracies and consultants responsible for formulating and approving validation procedures do not know where to turn. The respected business publication ENDS Report puts its finger on the root of the problem in a July 2004 editorial: “In all the excitement over the imminent arrival of a fully-fledged carbon market, we may be losing sight of one fundamental question—what, exactly, are we trading in?”¹³

59. To sum up, space in two types of speculative new carbon dump is being bought and sold alongside space in existing carbon dumps on the tacit assumption that

A world containing closed fossil fuel mines

is climatically equivalent to

A world containing open mines + more trees, no-till agriculture, iron-fertilised oceans, etc.

is climatically equivalent to

A world containing open mines + an indefinite number of foreclosed futures.

Attempts to create the new dumps, however, are running up against both popular resistance and the awkward fact that they are more likely to have a negative than a positive effect on climate.

60. This negative effect is due, among other things, to particularly ill-advised current attempts to mix, in a single trading system, (a) credits allowing the emission of carbon dioxide from fossil fuel combustion and (b) credits for carbon sequestration, “avoided emissions”, “emissions reductions” or baseline-and-credit projects generally. The claim that (a) and (b) are equivalent in terms of their effect on climatic is permanently unverifiable at best and, more often, blatantly false. Since even if the claim of (a)-(b) equivalence were true, the most that could be said of mixed trading systems is that they would be theoretically climate-neutral (their efficacy entirely dependent on the stringency of the cap under which they were set up), it follows that, since (a) and (b) are not verifiably climatically equivalent, mixed trading systems are bound to exert a negative effect on the climate. It must be emphasized that this is regardless of the intentions of the actors or the enforcement regime applied.

¹³ “Time to Question Carbon Credits”, p 2.

61. The fact that (a) and (b) are known by market actors not to be verifiably equivalent in terms of climate will make further hash of the system, since it will destroy the trust in the inherent robustness of the commodity to be traded which is necessary for any market, as well as provide incentives for deliberate attempts at cheating and gaming. All this will, in the nature of the case, again remain beyond the reach of any system of adjudication or enforcement. It is likely even to result in the collapse of the market. In any case, the outcome will be many wasted years of effort.

THE INTERNATIONAL CONTEXT OF TRADE RULES

62. If international emissions trading remains a principal component of government climate change policy, the rules governing it will have to cohabit peacefully with other rules governing international trade and investment. While the exact nature of the relationship between the recently reinvigorated Kyoto Protocol and the World Trade Organisation (WTO) is still under negotiation, many experts agree that some points of conflict will need to be addressed, and in a way which detracts from effective climate policy.¹⁴

63. These probable points of conflict involve issues such as subsidies for renewable energy technologies and tax credits, discrimination of products based on process and production methods, labelling standards, certain environmental and social provisions in the Clean Development Mechanism and Joint Implementation mechanism of the Kyoto Protocol, the nature of certain types of rules which may be imposed on emissions markets to fortify accounting standards and prevent fraud, carbon taxes and cross-border adjustments. In all these areas and more, there are concerns that WTO rules will restrict countries from adopting ambitious climate policies.

64. The solution proposed by industry lobby groups and think-tanks is to encourage WTO compliance across the board. Many corporations and lobby groups in particular, as is well-known, want unrestricted free trade in greenhouse gases rather than government regulation and taxation discipline.¹⁵ While WTO compliance may ensure stability in the burgeoning emissions markets and boost investor confidence, it is likely to restrict severely government climate policy choices and the ability of governments to regulate emissions markets to meet climate policy goals.

65. It is important to consider, too, the impact of numerous International Investment Agreements (IIAs) on emissions trading. These agreements often go beyond existing WTO norms to include investor protections and rights, investor-state dispute mechanisms and compensation requirements, mutual recognition agreements, and broad guarantees of government non-discrimination and non-intervention in certain sectors. There are currently over 2,100 Bilateral Investment Treaties (BITs) now in force worldwide, of which approximately 80% have been negotiated since 1990.¹⁶ Global trends in investment and trade liberalisation suggest that more and more ambitious measures will be pursued by Member States both within the WTO system (such as through negotiations of investment and services liberalisation), bilaterally (through more BITs) and multilaterally (as part of negotiations between the EU and other trading blocs) which will have a significant impact on the ability of governments to regulate emissions markets.

66. Under the Kyoto Protocol, Contraction and Convergence or other market-based schemes, rules aimed at improving integrity and preventing fraud will continuously be threatened by the emergence of new and more ambitious liberalisation initiatives. Wary of sparking high-profile disputes between trade and environmental interests, governments have so far opted for a “complementary” approach to such issues, whereby Kyoto rules are being refined according to WTO requirements.¹⁷ This “chill effect” will have enormous impact on the development and pace of rule-making in the climate sphere, likely forcing lawmakers to take the path of least resistance and adopt policies in line with existing economic commitments.

67. While emissions trading proponents have reflexively assumed that market-based systems will be easier and cheaper than government regulation, this is unlikely to be the case if required safeguards are in

¹⁴ See for example: Cosbey, Aaron. “The Kyoto Protocol and the WTO”, The Royal Institute for International Affairs (RIIA), and the International Institute for Sustainable Development, December 1999; Brewer, Tom, “The trade and climate regimes—compatibilities and conflicts in WTO-Kyoto relationships”, *Policy Brief*, McDonough School of Business, Georgetown University, Washington DC, published by the Transatlantic Dialogue on Climate Change, CEPS, 19 March 2002; IISD-UNEP, “Environment and Trade: A Handbook”, published by IISD and UNEP, 2000; United Nations University—Global Environment Information Centre, “Global Climate Governance: Inter-Linkages between the Kyoto Protocol and Multilateral Regimes” 1998. Zhang, ZX and L Assuno, “Domestic Climate Policy and the WTO”, 2001, Nota di Lavoro 91, Fondazione Eni Enrico Mattei, Milan, Italy. Zhang, ZX, “Greenhouse Gas Emissions Trading and the World Trading System”, published in the *Journal of World Trade*, 1998, Vol 32, No 5, pp 219-239.

¹⁵ See for example extensive research into corporate lobby groups by Corporate Europe Observatory in a report entitled “Greenhouse Market Mania”, CEO, November 2000.

¹⁶ UNCTAD, “World Investment Report”, UNCTAD, Geneva, 2003.

¹⁷ IISD-UNEP, “Environment and Trade: A Handbook”, published by the International Institute for Sustainable Development and the UN Environment Program, 2000.

place.¹⁸ In order for emissions trading systems to work well and fairly, they would need to be small; highly regulated; tightly defined; contain no toxic co-pollutants; have rigorous independent monitoring and verification; contain strong penalty provisions; and provide for vibrant community consultation, participation and assessment. However, these are not features of any emissions trading scheme currently implemented, under development, or being proposed.

68. The end result of applying these fundamental safeguards to emissions trading schemes would be to create a system more complex than the regulations that industry has been complaining about in the first place. Even during its formative stages, the UK National Allocation Plan for the EUETS alone is widely regarded as the most complex piece of environmental legislation ever seen in the country. Mixed trading schemes, moreover, as is clear from the sections above, are immeasurably more complex even than such relatively “pure” emissions trading frameworks. These considerations also argue for effective climate policy de-emphasising unwieldy market-based solutions to environmental problems and instead reasserting government’s right and responsibility to enforce mandatory policies upon polluting industries.

69. In considering the fate of the new carbon commodity in the current world trade regime, particularly the hybrid pseudo-commodity postulated under mixed trading systems, it is important, too, to recall the failure of traditional commodity export dependence to lift countries out of poverty, given phenomena such as overproduction, declining terms of trade, failure to diversify production base, and so on. Even under nominally equity-oriented trading schemes such as Contraction and Convergence, International Monetary Fund and World Bank prescriptions would include strategies for selling off emissions rights to raise revenue under which control over the sale of surpluses would be in the hands of international financial institutions who have enormous power to enforce “budget discipline” and “spending priorities” in many Southern countries.

70. Even if emissions rights were notionally allocated per capita, as under Contraction and Convergence, the countervailing and antidemocratic nature of the institutions administering the new market—notably national governments and international trade regimes—needs to be considered. Under Contraction and Convergence, too, there remains the likelihood that polluting industries in the North would migrate to the South where they could find more “allowances” to use. This is not a difficulty with the philosophical principles of Contraction and Convergence, but it is a problem with the market system to which it is currently wedded.

CASE STUDY: THE KYOTO PROTOCOL’S CLEAN DEVELOPMENT MECHANISM

71. The Kyoto Protocol’s Clean Development Mechanism (CDM) is perhaps the leading attempt to create new, cheaper carbon dumps in the South as part of a mixed worldwide carbon trading scheme. It is premised on the idea that to the degree that it makes possible projects “reducing emissions” in the South, the North will be licensed to continue producing and burning fossil fuels on the ground that to do so will then be “climate-neutral”.¹⁹

72. As might be predicted from the section on new carbon dumps above, however, the CDM community has been riven by disputes about whether CDM projects actually are reducing emissions “that would have happened otherwise”—ie, without the projects. In June 2003, the CDM board was forced to reject all 12 mitigation projects proposed to it to date on the ground that they could not be proved to be activities which “would not have happened anyway”. In November 2003, its methodological panel expressed concern about the verifiability of carbon credits from projects which merely continue current practice. More recently, DuPont has created an uproar by claiming that its rival Ineos Fluor’s methodology for hydrofluorocarbon abatement projects, approved by the CDM Executive Board in 2003, overstates the reduction in emissions by a factor of three due to false projections about “what would have happened otherwise”.²⁰

73. In the nature of the case, indeed, it has proved impossible to demonstrate that many CDM projects are not in fact *increasing* emissions beyond “what would have happened otherwise”.

¹⁸ This facile assumption has recently been called into question by a raft of economics literature, including Burtraw, D, Palmer, K *et al.* (2002) “The Effect on Asset Values of the Allocation of Carbon Dioxide Emission Allowances”. Washington: Resources for the Future; Hultman, N and Kammen, M (2002) “Equitable Carbon Revenue Distribution under an International Emissions Trading Regime”. Amherst: Political Economy Research Institute; Jensen, J and Rasmussen, T (1998) “Allocation of CO₂ Emissions Permits: A General Equilibrium Analysis of Policy Instruments”. Copenhagen: Ministry of Business and Industry; Lane, L (2003) “Allowance Allocation under a Carbon Cap-and-Trade Policy”. Washington: Climate Policy Center; Parry, I (2003) “Fiscal Interactions and the Case for Carbon Taxes over Grandfathered Carbon Permits”. Washington: Resources for the Future and “Are Emissions Permits Regressive?” Washington: Resources for the Future (2003); Parry, I, Williams, R *et al.* (1998) “When Can Carbon Abatement Policies Increase Welfare? The Fundamental Role of Distorted Factor Markets”. Washington: Resources for the Future; Pezzey, J (2002) “Distributing the Value of a Country’s Tradeable Emissions Permits”, paper presented at University College London, March; (2003) “Emissions Taxes and Tradeable Permits: A Comparison of Views on Long-Run Efficiency”, *Environmental and Resource Economics* 26: 329–343; United States Congressional Budget Office (2000) *Who Gains and Who Pays under Carbon-Allowance Trading?* Washington: CBO; Barnes, P and Breslow, M (2000) “Pie in the Sky: The Battle for Atmospheric Scarcity Rents” and Bernow, S, Kartha, S *et al.* (2000) *Free-Riders and the Clean Development Mechanism*. Gland, Switzerland: World Wildlife Fund.

¹⁹ The following sections rely heavily on an unpublished paper by Ben Pearson of CDM Watch, “Is the Carbon Market Working?”. See www.cdmwatch.org for extensive documentation.

²⁰ *ENDS Report*, July 2004, p 6.

74. First, if a country introduces governmental programmes supporting renewables or other climate-friendly projects, then it is correspondingly harder to prove that individual CDM projects in that country are “additional”. There are thus perverse incentives for choosing the short-term benefit of CDM revenues over the long term benefits of good environmental policy. There is evidence, for example, that Mexico City has held back several “climate-friendly policies” in order not to jeopardise CDM investment. On a global level, this is clearly an inferior outcome.

75. Second, some proposed CDM projects are claiming carbon credits simply for obeying the environmental laws of the host country on the ground that, without the projects, it can be predicted that the law would be violated. This, of course, gives both the host country and the project proponent incentives for ensuring that environmental laws, including those governing emissions, are normally not enforced. The climatic “balance sheet” for such projects would thus, logically speaking, have to be debited for the climatic effects of the damage done to the rule of law in the host country. This type of proposed CDM accounting, of course, also raises questions about the vaunted commitment of the international community involved in CDM projects, including the World Bank, to “good governance” and the rule of law.

76. Third, CDM projects, by cheaply licensing the continuing extraction and burning of fossil fuels in the North, arguably have the global effect of reducing incentives for necessary technological change in industrialized countries. This, too, is a perverse outcome (although one which is, again, impossible to quantify).

77. The probable counterproductivity of many CDM projects is not an accident, but an inevitable consequence of a set of national and international market-based policies that, with one hand, encourage continued transfer of fossil carbon to the atmosphere and, with the other, try to “compensate” for that transfer in convoluted and impossible ways. The CDM remains a small, contributing component of a set of policies and structures whose overall thrust is precisely the opposite of what is needed to address the climate crisis, which is a halt to transfers of fossil carbon from underground. Its market approach of providing least-cost services to fossil-fuel-intensive industry cannot address the problems of climate protection stemming from that industry’s activities, because these two goals are intrinsically contradictory.

78. The CDM, like emissions trading and carbon trading generally, clings to the margins of a fossil-dominated structure of energy finance. In 2000, the World Resources Institute warned that existing financing by export credit agencies (ECAs) was undermining ongoing efforts to address climate change and noted that “the failure to place ECAs within a wider development and environmental context is generating a policy perversity”. The same could be said of the carbon market as a whole. To engage in loose talk about hypothetical “emissions reductions” resulting from specific abatement projects in the absence of a framework for holding fossil fuels in the ground is—as do institutions such as the World Bank’s Prototype Carbon Fund and firms such as Climate Change Capital—is, so to speak, to live in analytical sin.

79. The World Bank, for example, currently lends more in one year to extractive industries projects than the entire amount of funding that will be made available through its Prototype Carbon Fund, BioCarbon Fund, and Community Carbon Fund. Even in the most romantic original projections of what the CDM could achieve (projections which, as the above argument demonstrates, were never going to be sustained), non-sinks CDM projects were expected to lead to (unverifiable) “reductions” of only 50–375 million tonnes of carbon per year. At the same time, annual emissions from fossil fuel projects supported by multilateral development banks and export credit agencies exceed this amount many times over. For example, in an average year of financing between 1992 and 98, the World Bank supported fossil fuel projects with lifetime emissions of 1,457 million tonnes of carbon; this is at least four and as much as 29 times the amount of alleged “emissions reductions” achieved by the CDM under its own rosier scenarios. In an average year of financing between 1991 and 96, the European Bank for Reconstruction and Development (EBRD) supported fossil fuel projects with lifetime emissions of 296 million tonnes of carbon; this is three-fourths and as much as six times the supposed emission reduction value of the CDM per year. If only 20% of the financing by the World Bank Group, the EBRD, OPIC and the US Ex-Im Bank had been diverted away from fossil fuels and into investments in energy efficiency and renewable energy, the emissions avoided each year would have equalled more than one-and-a-half times the amount of carbon averted under a best case scenario for the CDM.²¹ For the World Bank alone to divert its extractive industries financing to renewables, as the Bank’s own recent Extractive Industries Review recommended, would be massively more significant than any effort to salvage the CDM.²²

80. The Bank, however, is only one example. Globally, North-South flows of investment and governmental support through ECAs and international financial institutions favour fossil fuels, financing and entrenching them in developing country energy systems to a degree that makes the new financial flows achieved by the emerging carbon market largely irrelevant. A real solution to climate change must address this reality, not create a carbon market alongside it. Point Carbon, a noted carbon market analyst, has estimated that the value of trading in the global carbon market could reach US\$10 billion a year by 2008.

²¹ Hampton, Kate, “Banking on Climate Change: How Public Finance for Fossil Fuel Projects is Shortchanging Clean Development”, The Sustainable Energy and Economy Network, Transnational Institute and Institute for Policy Studies, Washington, November 2000.

²² This paragraph relies on information from the Sustainable Energy and Economy Network. See www.seen.org.

Yet annual subsidies to fossil fuels in the decade up to 2002 were US\$200 billion. If the value of new investment for greenhouse gas reducing projects mobilised by the global carbon market continues to be 0.5% of annual fossil fuel subsidies then it will exist merely to enrich traders and consultants.

81. The policy implications for government departments such as ECGD and DfID (which is responsible for relations with the international financial institutions) are obvious. It will be necessary for these departments both to halt finance underwriting the flow of fossil carbon to the surface and to refrain from supporting the quixotic attempt to open up new dumps in the biosphere and the future to put this fossil carbon in.

82. Empirical evidence, unsurprisingly, already abounds that the CDM cannot both lower costs of Northern compliance with Kyoto targets and “facilitate sustainable development”, particularly renewables, in host countries. The cheapest reduction options are mostly those that have fewer sustainable development co-benefits, while projects which do most to promote sustainable development are commonly those that deliver higher-priced credits. To answer the question “Is the carbon market working?”, it is only necessary to ask which of these mandates is being prioritised by investors and credit buyers.

83. The overriding priority for industrialised country investors is reducing the costs of complying with their Kyoto targets. They are searching for projects that deliver large volumes of cheap credits such as projects that capture or destroy non-CO₂ gases with high global warming potentials from existing facilities, like methane and HFC-23. While these projects do carry environmental benefits on the occasions when it can be argued that they are “additional”, they do not deliver other sustainable development benefits, and do not help to effect broader change in critical climate-related sectors such as energy or transport. A recent overview of the CDM by the OECD summarised the emerging trend by noting that:

“a large and rapidly growing portion of the CDM project portfolio has few direct environmental, economic or social effects other than greenhouse gas mitigation, and produces few outputs other than emissions credits. These project types generally involve an incremental investment to an already-existing system in order to reduce emissions of a waste stream of GHG (eg F-gases or CH₄) without increasing other outputs of the system.”

84. HFC-23 projects, for example, decompose HFC-23, which is emitted at existing HCFC-22 facilities. N₂O projects decompose the N₂O that is emitted in the production of adipic acid. Some projects involving landfill gas capture can at least point to the fact that they may use the captured methane to generate electricity and thus displace fossil-fuelled grid electricity, but the amounts are small and most projects in the CDM do not actually do this anyway. Overall, the non-CO₂ projects involve opportunistic end-of-pipe reductions in non-energy related sectors.

85. The scale of these projects is huge by comparison with those capable of delivering more structural environmental benefits. Of the 236 million credits being claimed by 106 projects at the time of writing, 40 million come from two HFC-23 projects, and another 70 million from one N₂O project; nearly 50% of all credits from these three projects alone. If anything, this situation will become even more pronounced in the coming years. Firstly, a number of the projects included in the above total should be eliminated as non-additional, while the HFC-23 and N₂O projects have approved methodologies and seem clearly additional. More large HFC-23 and N₂O projects are under development. Two additional HFC-23 projects in India are awaiting successful registration of the first project in Gujarat, while a consortium of Japanese, Italian and Chinese partners are investigating a project spread across 12 HCFC-22 plants in China that would yield 60 million credits a year from 2008. Point Carbon has estimated that projects involving N₂O and PFC could yield up to 50 million credits a year.

86. The prospects for renewables are not nearly so bright, and are getting progressively dimmer. While renewables are currently the most common project type in the CDM, this is a misleading way of judging how effectively they are using carbon finance and how much of the investment generated by the CDM will flow to them. Given that the CDM involves industrialised countries buying carbon credits, it is more accurate to compare how many carbon credits are being generated by renewables projects, as this indicates how much of the amount that will be spent on carbon credits will flow to them. Currently, only 10% of the total volume of carbon credits is being generated by renewables projects. While in some cases they attract incrementally higher prices—The Netherlands, for example, offers more for renewables—it is still clear that they will receive a small amount of the total spent on carbon credit purchases by industrialised countries. Furthermore, while renewables projects are numerous now, if additionality testing is credibly applied, their numbers will decline substantially.²³ Significantly, none of the nine remaining²⁴ renewables projects being developed under the Dutch CERUPT program have demonstrated that they “would not have happened otherwise”. Indeed, the first CERUPT project to seek approval—the Suzlon wind farm in India—was withdrawn in May 2004 because it was blatantly non-additional.²⁵ Yet these nine CERUPT projects account for about 25% of all renewables projects, and are responsible for over 30% of the carbon credits that renewables projects are claiming in total. Other high-volume renewables projects are also in trouble. The largest current renewables project—the Darajat III geothermal project in Indonesia—recently had its baseline methodology rejected due in part to its inability to demonstrate that it “would not have happened

²³ Although this is also true of other project types, particularly large hydro and avoided fuel switching.

²⁴ There were 10 but Wayang Windu in Indonesia will not go ahead.

²⁵ To see submissions on Suzlon go to www.cdmwatch.org.

otherwise”. Darajat III accounts for nearly six million of the 25 million credits currently being claimed by all CDM renewables projects. The Zafarana wind farm in Egypt, which is generating over four million carbon credits, uses a soft-loan from the Japanese Bank for International Cooperation in clear breach of CDM rules against using ODA, and will likely be rejected on those grounds, and also because it is non-additional.

87. It is also clear that many Northern credit buyers are including renewable projects to “green” their portfolios, not because they are commercially attractive. The Finnish Government has recently put up four micro-hydro projects in Honduras for validation by the CDM, yet their credit generation is so small—one project is claiming only 9,000 credits over 10 years—that it is difficult to see how they will even cover transaction costs, suggesting that the motivation for their development is political. The World Bank itself has recently conceded the political nature of the current CDM portfolio, noting that the “current distribution of projects may not be representative of the mature CDM market”, and that the renewables projects in its own portfolio reflect its mandate to test all project types, not what would be expected under purely commercial conditions. In the future, the Bank suggests that participants will concentrate on proven project types with approved methodologies and a demonstrated ability to deliver credits, citing as an example the shift of Japanese investment towards landfill gas projects. The steady increase in non-CO₂ projects, such as landfill gas schemes, suggests this prediction is correct. Clearly, the priority of the carbon market will continue to be identifying low cost carbon credits. While renewable projects may continue to be used for political purposes, they will not be part of a coordinated effort to use carbon finance to assist their development, and their continued use in the CDM will be beholden to political factors.

88. Recent calculations by the World Wide Fund for Nature (WWF) also show that the amount of financing that is expected to be mobilised by the CDM for renewables is a fraction not only of existing investment and Overseas Development Assistance (ODA) flows, but also of Global Environment Facility (GEF) financing. WWF estimates that the CDM will account for less than 0.5% of the annual renewables market in Southern countries, if current trends continue. Even allowing for a huge theoretical increase in CDM renewables projects—the opposite of what is expected—it will not deliver a significantly larger volume of new investment. The Bank has consistently claimed that the carbon market and CDM is a way of boosting private sector capital flows to developing countries, yet the flows so far have been limited (Table 6).

Table 6

<i>Funding source</i>	<i>Amount (USD/Year, rounded)</i>
Renewables investment in developing countries, 2005–10. Annual average ²⁶	3,000,000,000
ODA renewables, 1989–99. Annual average ²⁷	986,000,000
GEF including leveraged investment ²⁸	295,000,000
Renewables CDM including CERs and leveraged investment up to 2012 ²⁹	124,000,000
GEF renewable energy expenditure, 2002 ³⁰	59,000,000
CERs for renewable energy up to 2012 ³¹	15,000,000

89. The World Bank itself has admitted that most developing countries can only deliver small projects. The high transaction costs and high risks involved in delivering carbon from these projects means that most of the smaller and poorer of the Bank’s client countries will be unable to benefit from carbon finance as a catalyst for investment in clean technologies.

90. The current portfolio of CDM projects bears this out. At present, 107 projects in 28 countries are claiming around 352 million carbon credits through the CDM. Of these, six countries (India, South Korea, China, Indonesia, Brazil and Chile) account for 50 of the projects and 285 million of the credits been generated, about 80% of the total. Strikingly, the 57 remaining projects in 23 countries will generate less credits over 21 years than the N₂O project in South Korea will generate by 2012. In the coming years, growth in large volume CDM projects will likely happen in the same six countries, particularly India and China. China is currently developing a coal-bed methane project that will generate 29 million credits over its crediting lifetime.

²⁶ Argiri M, IEA Senior Energy Analyst. Personal Communication. 2004.

²⁷ G8 renewable energy task force. Annexes. July 2001.

²⁸ GEF estimates that it levers other investment at a ratio of 1:4.

²⁹ According to the World Bank, Certified Emissions Reductions (CERs) leverage other investment at a ratio of 1:6 to 1:8. Note that this figure assumes 100% additionality because non-additional projects by definition do not lever new investment.

³⁰ OECD estimate, 2004.

³¹ Derived from CDM Watch Quickstats. Assumes no further renewables projects but 100% acceptance of all existing listed proposals by the Executive Board for a total of 24,96,511 CERs by end 2012. Average CER value of USD\$5 tonne. CER revenues averaged over eight crediting years (2005–2012) ie all projects are available to come on stream 1 January 2005. See www.cdmwatch.org.

91. The World Bank's response to the problem—setting up a special purpose fund that pays higher than market prices for small projects in developing countries—is ironically an implicit admission that the market will not work for developing countries, and that a carbon market that revolves around private capital and low-cost carbon credits will bypass the smallest countries.

92. As a market mechanism providing cheap credits over a short time, CDM is indeed discovering some low-cost options for cutting greenhouse gas emissions. But, as a market mechanism, it cannot achieve the objectives of a development fund nor a renewables promotion mechanism. Attempts to enforce sustainable development criteria by host countries will actually make their CDM projects less economically attractive—as this will drive up transaction costs—and thus less likely to attract investment. Unsurprisingly, no host countries have yet introduced stringent criteria. Some environmental organisations have attempted to address the problem by developing renewable-focussed quality labels that substitute a political incentive for a commercial one, but they have been unsuccessful. Interestingly, an analysis of US led acid rain trading programs makes a point about their failings which is directly applicable to the CDM:

“Because trading focuses solely on reducing a single pollutant by an exact date and a precise amount at least cost, techniques and practises that deliver multiple benefits—eg, new ways of energy conversion, as well as conservation, and renewable forms of energy—are frozen out of the market”³².

93. This narrow focus on a tradable commodity means that a carbon market will actually frustrate environmentally superior outcomes by directing investment away from projects with the most overall benefits. By going after the cheapest reductions, the market all but ensures that investment will flow to the “lowest quality” reductions, those that involve the least investment, least genuine technology transfer, and least sustainable development co-benefits, as all this would raise prices. It must be noted in passing that the World Bank is currently trying to gain approval for a baseline methodology which would allow projects to get carbon credits for doing nothing other than continuing current practise, the antithesis of what the CDM and carbon market were meant to achieve.

94. Just as US sulphur dioxide emissions markets have been necessarily blind to “hot spots”, so the CDM market is necessarily blind to the fact that not all so-called “emissions reductions” locations are equal in environmental value and potential for driving long-term, system-wide structural innovation and change. An industrialised country that has to meet its target domestically has more incentive to implement more fundamental shifts in energy production and use, or changes in land use, than if it can meet half of its target through cheap carbon credits from CDM projects. The environmental and social value of a rigorous demand-side management program or additional renewables support mechanisms in a European country that creates local jobs and domestic investment clearly outweighs the environmental and social value of buying credits from the reduction of HFC-23 emissions out of pipes in India. Similarly, in Southern countries, a sustainable renewables project will have greater environmental value than a project that merely captures end-of-pipe emissions from an already operating chemical facility, even if they generate the same number of carbon credits and are identical in market terms. Yet the CDM is dominated by such projects, simply because they generate huge volumes of credits quickly and cheaply. The Gujarat HFC-23 project in India, for instance, will prevent the emission of only 289 tonnes of HFC-23 annually, yet, because HFC-23 is such a potent greenhouse gas, it will yield 3.3 million carbon credits per year, more than all 48 CDM renewables projects are generating together. Renewables projects, by contrast, tend to be greenfield developments which are capital-intensive, provide low rates of return, and generate relatively small volumes of credits. Moreover, the prevalence of a commodity model for the purchase of the carbon credits—in which credits are bought as they are delivered over the 10 or 21 year crediting period—makes these revenues less useful for renewables, which incur the majority of costs upfront. The World Bank estimates that 95% of all existing transactions involving CDM and Joint Implementation projects follow a commodity model.³³

95. Early optimism about how the CDM could be used for renewables, which assumed that buyers would invest debt or equity in return for carbon credits, delivering extra revenues upfront where they were needed, has proved unjustified. Banks, already wary of renewables projects, do not see carbon credits as enhancing a project's appeal and will rarely lend against a carbon credit purchase agreement. Indeed, if a project's viability is dependent on carbon credits it may actually be judged even more risky.³⁴

96. The fact that transaction costs are generally similar regardless of project size, moreover, militates against smaller renewables projects, which cannot afford to shoulder the burden of the necessary documentation, validation, ongoing monitoring and verification of emissions reductions. No market system which prioritises price per unit of carbon credits will benefit renewables, as the World Bank itself recognized

³² Moore, C, “Air pollution trading—marketing failure”; www.acidrain.org/AN2-04.htm

³³ World Bank, State and Trends of the Carbon Market 2004, www.carbonfinance.org

³⁴ The Green IPP network has delivered a blunt assessment of the value of a carbon revenue stream in attracting financing:

“Banks . . . do not count the cashflow from the sale of emission reductions in evaluating few projects that are up for CDM evaluation. Most investors are also not counting the potential for revenue from the sale of carbon credits. Yet at the moment banks and equity investors are generally not willing to place value on a carbon credit purchase agreement.” See <http://www.asem-greenippnetwork.net/dsp—page.cfm?view = page&select = 142>

early on when it calculated that carbon credits would only improve the project internal rate of return for renewables by about two%, while projects targetting methane were the real winners. Only months after the 2001 Marrakech Accords, Ecofys examined the opportunities for renewables and concluded: “Various studies indicate a limited role for renewable energy projects under the Kyoto Mechanisms”. Moreover, “Kyoto Mechanisms dominated by least-cost approaches only would seriously limit the scope for renewable energy projects”³⁵, although noting a range of other influencing variables.

97. At current low prices, the ability of the carbon market to assist high-quality projects such as renewables will remain limited. Indeed, its ability to mobilise new projects in almost any field beyond high-volume non-CO₂ projects is questionable. Cement company Holcim, currently developing a CDM project in Costa Rica, noted in relation to additionality testing that “The incentive provided by carbon credits, especially at their current price of \$3–5 offered by the Prototype Carbon Fund (PCF) and Senter, cannot possibly prove decisive in investment decisions”. Ironically, the World Bank itself (together with responsible government departments such as DfID) is partly responsible for this low price. The Bank was already promising its investors carbon credits at less than US\$5 in 1999, two years before the US pulled out. This low price then influenced other carbon funds such as the Dutch procurement funds. As a recent paper on the PCF notes, “given its dominated [sic] role on the buyer side, . . . it will largely in practice set the standard for the carbon market”.

Annex 1

Property Creation, Certification, Appropriation, Transfer and Conflicts Under Greenhouse Gas Restriction Schemes						
	PRINCIPLE OF ALLOCATION			ACTUAL ALLOCATION		
TYPE OF CONTROL REGIME	Initial creation, confirmation, allocation, appropriation, seizure, or transfer to:	Subsequent allocation, transfer to:	Nature of property right created, confirmed, transferred, etc.	Who supports it, why and how strongly	Who contests it, why and how strongly	Who supports it, why and how strongly
STANDARD REGULATION ('command and control')	Private sector	Private sector	Felt, de facto, informal, not directly monetizable, quasi-usufruct.	Private sector tolerates it as it affirms 'first possession'. Public, NGOs may see it only as a curb on pollution.	Economists see it as non-market, 'inefficient'. Private sector dislikes abatement decisions resting with the state.	Some NGOs, some politicians, some academics, Green Party.
TAX (whether 'pure' or 'contaminated' with project-based rights)	State	State, private sector	State effectively rents or leases property to private sector; property not exchangeable.	Some states (e.g. in Europe). Public (does not feel business's 'first possession' rights are being unfairly usurped).	Private sector (especially US), feels its 'first possession' rights are being handed over to the state to sell back to them.	Some environmental NGOs, some academics, Green Party.
AUCTIONED (whether 'pure' or 'contaminated' with project-based rights)	State	Private sector	Initial source of rent for state, then a monetizable asset exchangeable for land, etc. Formal.	Some states find it attractive (similar to 3G mobile phone spectrum auctions). Many economists.	Private sector sees as usurpation of first possession rights. 'Why should we buy what we already own?'.	Some academics, consultancies, think tanks, governments (UK). Some propose combination with grandfathering.
TRADEABLE PERMITS GRANDFATHERED ('pure')	Private sector	Private sector	Monetizable asset usable for accumulation of land, etc. Formal.	Private sector (biggest polluters in particular). Some economists.	Potentially, public or politicians concerned about distribution of land, air. Some big polluters oppose all limitations.	US business and government. Many business groups and governments elsewhere.

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³⁵ Ecofys, “Opportunities for Renewables under the Kyoto Mechanisms”, February 2002.

Witnesses: Ms Heidi Bachram, Researcher, and Mr Adam Ma'anit, Researcher, Transnational Institute, Carbon Trade Watch, examined.

Q92 Chairman: Good afternoon. Thank you very much for an extremely pungent written submission, which we have enjoyed reading. Could you possibly explain precisely who you are and who you are representing this afternoon?

Ms Bachram: The submission was mostly written by our partner, The Corner House, Larry Lohmann. We contributed to parts of that submission and we are from the Transnational Institute project called Carbon Trade Watch.

Q93 Chairman: You are both from the same organisation.

Ms Bachram: Yes.

Q94 Chairman: Okay, thank you. You are very welcome. We get the impression from your written submission that you are not terribly keen on emission trading schemes, is that fair?

Mr Ma'anit: That is very fair.

Ms Bachram: That is very fair.

Q95 Chairman: You say that there are numerous more effective, more efficient, more egalitarian alternatives, including regulation, taxation, support for existing low fossil carbon economies, various alternative schemes for creating and distributing property in the earth's carbon cycling capacity. That is a very clear position, but does it represent a basis on which we can actually move forward to get international agreement?

Mr Ma'anit: It depends. Inasmuch as the UK government is willing to engage with emissions trading, it would. It depends on how far we want to go with it. In international negotiations that option is there; it does not mean that we have to take that option in the Kyoto Protocol. It is a voluntary act; we do not have to engage in emissions trading. What emissions trading does do though is distorts the primary point of this whole exercise of climate change policy, which is that we need to reduce emissions at source. That should be a primary focus of our efforts and if emissions trading can be demonstrated to show that reductions at source happen across the board, then we would be in favour of it. Unfortunately, to date there has not been a sufficient body of evidence to suggest that any emissions trading scheme in existence or proposed will achieve that. By its very definition emissions trading allows for some sources to increase their emissions and that has knock-on effects. One of the misleading angles about emissions trading is that we are only talking about greenhouse gases and because we are only talking about greenhouse gases, those gases do not have localised effects on communities in which these factories are sited. There are many co-pollutants involved in the combustion process which do have local effects and are a part of the process of production of greenhouse gases. Any increase in emissions at source will involve an increase of those co-pollutants, many of them extremely toxic and with damaging effects on human health: carcinogens fluorocarbon compounds, polycyclic aromatic hydrocarbons, fine particulate matter, etcetera. Just

today, we read a report that the asthma incidence arising among children in the UK has increased fourfold since the 1970s. This is a public health crisis and we have to start looking at ways to reduce emissions at all sources, not just one here and increase somewhere else.

Q96 Chairman: Reading through your submission, I kind of got the impression that you object in principle to emissions trading because it involves commerce. Would that be correct?

Mr Ma'anit: That is not fair. The commerce angle only distorts the relationship. It is the question of what actually happens on the ground that we are concerned with. We are concerned with weak environmental regulations; we are concerned with weak oversight of factories and the emissions at each site; we are concerned about the verifiability of emissions reductions. We have already seen that the data we have at the moment, in terms of our requirements for reporting to the EU and to the UN, are grossly inefficient. You yourself tabled a question recently in parliament about HFC emissions. We have discovered that HFC emissions are actually 40% higher than we previously thought. This is a huge problem. The only thing we know that works for sure, guaranteed, is effective government regulation of emissions at source. Anything else complicates the matter.

Q97 Chairman: That is interesting because, actually one of things I felt, having read your memorandum, was that you were good at critique, but pretty short on solutions. Obviously the context of this whole inquiry is that we have a serious problem. What we are struggling to find is a solution which is going to work. If you reject emissions trading, as you do, in favour of some other thing, we have to be sure that the "some other thing" works. What sort of chance in hell is there that an international tax regime is going to be put in place that is acceptable to all the parties concerned? Is that credible?

Mr Ma'anit: Maybe not an international carbon tax regime, but certainly there is a huge momentum for an international tax on speculative flows, for example, which has a lot of support, mainstream support even in many governments in the European Union. That is not unrealistic. Another realistic option would be to look at fossil fuel subsidies; this is something that even the World Bank admits is a huge problem and needs to be dealt with. Fossil fuel subsidies in the EU alone amount to \$15 billion a year annually; the UK's contribution to that is something like one point two, one point three on average each year. Those are distortions of the market; they are not market-based mechanisms.

Q98 Mr Challen: These things are not mutually exclusive, are they? I think we might well support all of these things, including ETS, if that delivers what we want. If that were the case, would you still maintain your opposition? Do you think that there

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is some underlying reason why emission trading schemes make it more difficult to obtain these other results in other areas such as fossil fuel subsidies?

Mr Ma'anit: We have to look at why we are even talking about emissions trading in the first place. The reason why is because industry in the United States originally had felt that the regulatory burden placed upon it was too much and there needed to be something a bit more flexible, something that allowed industry to be competitive, to be efficient, to engage in commerce, but without the regulatory red tape. This gave birth to the existing trading schemes in the United States, including the RECLAIM programme, the sulphur dioxide trading programme in the Los Angeles area and Safer Trading with Sulphur trading, which was part of the title for our Clean Air Act in the United States and now we are talking about it here. The problem is that what we have seen in the United States' schemes, for example, is that rather than complement regulatory discipline, emission trading schemes have subverted regulation, in other words, regulation has disappeared from the agenda and has been replaced by an emissions trading package. For example, in the LA RECLAIM scheme 10 years of work in terms of achieving smog reduction commitments in the LA region has been rolled back almost overnight by the decision to move to an emissions trading scheme. Meanwhile what we have seen from the evidence from the RECLAIM programme was that the emissions trading results were heavily fraudulent, a number of cases were involved with direct fraud in the market, in fact no emissions had actually been reduced and all the existing regulatory disciplines that were in place have been rolled back. This was a dramatic loss. The scientific advisory panel advising on this scheme resigned *en masse* in protest at what was taking place and we see this across the board. We see this with all the existing emissions trading schemes in place in the United States: mandatory pollution trading now; a lot of pollution trading being devised. It is instead of government's duty to regulate directly.

Q99 Chairman: Obviously there are people who believe that it has actually been pretty successful, particularly in relation to sulphur.

Mr Ma'anit: In the case of sulphur, that is a myth, it is a mythology and this is part of the problem. On the sulphur trading scheme, a *New York Times* investigation in 1998 and another investigation in 2003 found that sulphur dioxide emissions had gone down in the United States, not because of the emissions trading system but because of the switch from coal to gas and because of legally mandated pollution technologies, controlled technologies, that the States had imposed on the sites. These accounted for most of the reductions in sulphur dioxide and recently the EU Environmental Protection Agency has admitted that sulphur dioxide emissions have actually increased by 4% in the last year alone in the United States. So part of the problem with all this data that we are dealing with from emissions trading schemes is that a lot of the data is voluntary; it is voluntarily produced by industry itself to report on

its emissions portfolio. We see a huge problem and a capacity problem within the Environment Agency here in the UK to deal with monitoring of emissions. They themselves admit that they cannot visit all sites. In some sectors, for example sectors involved in metals processing, less than 1% of the sites were physically visited by an inspector.

Q100 Chairman: We are coming on to this. Given that we have just heard from Aubrey Meyer that emissions trading is a kind of integral part of his vision of C&C, what in brief is your opinion of the C&C proposition?

Mr Ma'anit: Inasmuch as C&C is useful as a form for negotiation about the equitable distribution of the atmosphere commons, in terms of governments slicing up the pie, it is useful. As long as it related to emissions trading, it is not.

Q101 Joan Walley: Given that we are where we are, we are actually in a world which is post-Kyoto and there have been all the discussions about which country is going to ratify Kyoto and where we are with that, I still do not really understand what your approach is to the post-2012 framework in terms of following on from Kyoto. What are you actually advocating?

Mr Ma'anit: First of all we want to re-focus the priorities of government policy on domestic reductions at source.

Q102 Joan Walley: Can I just stop you there? Therefore you are looking at it without any international agreements, you are looking at it country by country by country outside of an international treaty.

Mr Ma'anit: Not necessarily. It is certainly a worthwhile process to engage with. Some of the aspects of the Kyoto negotiations have led to increased awareness about climate change as a problem, have committed funds to research in the scientific community, etcetera. We are not opposed to that, but no one can argue that the existing commitments in the first Kyoto round are going to produce any kind of significant results in terms of dealing with climate change. We have to do better. In terms of the question that this panel is looking at and this Committee is looking at, in terms of the UK's leadership role or potential leadership role, because I do not think it does play a leadership role, it would be one where it actually engages itself domestically and demonstrates that it can do what it sets out to do. In other words, it can make that 20% commitment by 2010, it can make that 60% reduction by 2050 and it can join a green league of countries like Costa Rica and Iceland and many others which have demonstrated that they are transitioning very rapidly into a carbon free future.

Q103 Joan Walley: I am still not clear what you are saying. Are you saying that leadership only matters if it is taking place in a domestic arena? Or are you saying that that leadership which could produce results in a domestic arena could only be making a

difference if it were within an international global context? Therefore, are you saying that leadership is needed in both levels at one and the same time?

Mr Ma'anit: Yes, both levels. You need the credibility. If Tony Blair's pronouncements about making 20% reductions by 2010 etcetera are fulfilled, then he will have greater credibility in terms of negotiating on the international level.

Q104 Joan Walley: If there is no international level agreement saying industrial competitors in every other country are taking no notice whatsoever, they are just merrily, merrily consuming away, how is that going to deal global problem that we face?

Mr Ma'anit: The presumption is that one country can fix the global problem. What the UK government can do is fix the UK government's contribution to that problem. Collectively, as countries are prepared to make commitments about climate change, they can do so through international negotiation, but those negotiations have their limitations. There is only so much that can be done on international levels. There is always going to be horse-trading involved, there is always going to be bending over backwards to accommodate Russia, for example, to ratify the Kyoto Protocol in the United States and Australia.

Q105 Chairman: You are not going to escape that.

Mr Ma'anit: Exactly, but we have to do better.

Q106 Chairman: You have to do it on a silo basis nation by nation, because you run straight into the problem with the competitiveness argument. If the UK does everything in the absence of any kind of international framework, then you just get businesses relocating somewhere else and polluting as much as they like and that does not achieve anything.

Mr Ma'anit: But if we had an international framework to reduce fossil fuel subsidies for example . . .

Q107 Joan Walley: Who is going to achieve that, if you are saying there is no scope for leadership and individual countries should look after their own, tend their own garden as it were, like something out of Richard II almost.

Mr Ma'anit: No, what we are saying is that the focus of the energy should be on achieving those goals which it sets out. So if the UK does not achieve its 20% reduction promise by 2010, it will lose credibility in international negotiations for being able to challenge anybody else about their commitments.

Q108 Joan Walley: What I am trying to understand is what you are advocating, in respect of the international global arena. Who should be negotiating on the international level? Should anyone indeed be negotiating on the international level?

Mr Ma'anit: Everyone should constantly be negotiating at an international level, but we have to not rely entirely on it. In other words, the future of

the earth in a sense cannot depend on the result of the Kyoto negotiations. More has to be done and more can be done. I mentioned the fossil fuel subsidies, for example. If there were a global agreement with UK leadership from Malingai and the G8 negotiations next year on removal of fossil fuel subsidies or phasing them out by the year 2010, that would make an enormous contribution, not just to eliminating and balancing the market in terms of the distortions that subsidies place and the competitiveness of renewable energy industry, but also in terms of the CO₂ emissions reductions which eliminating fossil fuel subsidies themselves would create and that would be an enormous step forward. Another one would be, for example, the G8 commitment to provide one billion people with renewable energy by 2010. This is something that it does not look as though we are even vaguely close to achieving, but if there were a concerted effort on the part of the government to do that, then we would be in the right direction.

Q109 Joan Walley: Are you saying that you would prefer more limited agreements, for example, with individual countries like, say, India or China, developing countries, and forget about global agreements through Kyoto altogether?

Mr Ma'anit: We are not saying forget about global agreements through Kyoto. We do not, for example, even though the fiscal mechanisms are there and they are there at the behest of the United States, necessarily have to use them. We can do these reductions at home, we do not need to rely on them externally and if we do, then that just creates a lot of distortions in the marketplace. All we are trying to say is that these commitments that we are making internationally, do not have to be the be all and end all of what we do.

Q110 Joan Walley: I am just talking about those international commitments and you mentioned the US just now. How far do you think the UK approach should be governed by the need to bring the US on board?

Mr Ma'anit: I do not think the existing system, through the Kyoto agreement for example, was much help in convincing in the United States to get on board. As Aubrey mentioned, the Byrd-Hegel resolution legally prevents the United States from ratifying any agreement which would harm the economic competitiveness of the nation and does not include developing countries in the negotiations. It would be something that I think would be certainly more useful if we had the ability to demonstrate "Look we've done it. It didn't hurt so bad. Why don't you try it" kind of approach; the sort of green league idea that we have a number of countries who are getting together, who are demonstrating best practice in terms of implementing renewable energy strategies in their economies and who can then show to the world that this system works and that it is not something to be frightened of.

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Q111 Joan Walley: Just finally, if I may, you have mentioned the G8 and you have talked about what the UK might achieve in terms of its own domestic agenda, but what do you think could realistically, most ambitiously, come out of both the UK's presidency of the G8 and of the European Union presidency as well? What would you like to see? What do you think the UK could achieve?

Mr Ma'anit: I think one thing that the UK should do is refuse to engage with emissions trading and should set an example by making a commitment to making reductions at source. If it could do that through the European Union system, for example by phasing out the EU emissions trading scheme, by dealing in the EU emissions trading scheme from the Kyoto Protocol, which exists as a linking directive, by making a firm commitment to remove fossil fuel subsidies on the EU level, which is something much more doable than on the international level, I think we would go a long way to getting where we want to be.

Q112 Mr Challen: We have had a couple of literary references this afternoon, one to Dylan Thomas and one to Richard II, so I will introduce the third which is the title of one of Kierkegaard's better known works, *Either/Or*. I am just wondering whether this is an either/or situation, where you are talking about emissions trading in a rather bad light and perhaps this is industry trying to pull the wool over our eyes and working this scheme to defraud us of our future, or whether we have to have all the other things that you mentioned: more regulations, taxation and so on. If emissions trading operated under C&C, I take it from your submission that basically that might be operable. Is that correct?

Mr Ma'anit: It would be operable: that does not mean that we would agree with it.

Q113 Mr Challen: You still would not agree with it.
Mr Ma'anit: No.

Q114 Mr Challen: So it is an objection in principle to emissions trading altogether.

Mr Ma'anit: Yes, because it distorts the relationship between the gases produced, the pollution produced and the source. In other words, a reduction is virtual and it can be anywhere in the world. There is no way of knowing whether it really happened or not, the verification is very ineffective, the regulations are very weak, the data is constantly changing, our estimations of what the base line would be or would not be, the horse-trading involved and all that pressure which exists within the system . . . We have already seen a huge scandalous outcome from the first phase of the UK emissions trading scheme in which £250 million was shunted off to industry. We have to stop that because this is the kind of thing that happens with emissions trading and is beyond control. Once you have "marketised" and "commoditised" the product and you allow corporations to engage and play and gain the system, you lose control over government's ability to regulate industry at source any more. You have now given them rights: they have rights to pollute and

they have earned those rights and to take those rights away from them becomes a very difficult exercise.

Q115 Mr Challen: Once again, that is not mutually exclusive is it? If it is a cap and trade scheme, and surely nobody would want to promote ETS if it were not cap and trade because it would seem to have very little purpose and possibly very little future, all that human activity which you have described, the foibles of humanity, if it were cap and trade and year-on-year, seen to develop over time, producing better results with a reduction in carbon emissions, what is wrong with that?

Mr Ma'anit: Again, with a cap and trade system you allow in theory some industries to increase their emissions. For example, if it is based on baselines, those baselines can be hedged, you do not know what the future is going to be five years from now. In the case of the UK scheme, we saw that industry that was already legally mandated to make reductions through the EU's integrated pollution control and pollution prevention control systems, was actually counting those towards their baselines and their agreements with the UK government and they were receiving rewards for that. This is something that clearly cannot go on and is a fundamental aspect of all carbon trade systems that we have seen. There is always this kind of distortion, because we are relying on our ability basically to know what the future is going to be, to know what business is going to do five years from now.

Q116 Mr Challen: If it gets the necessary result at the end of the day, is that not worth pursuing? Could we not perhaps still characterise those aspects which you have described as being the teething problems of introducing such schemes, trying to get everybody on board is not always easy, surely that is something which over time will be resolved.

Mr Ma'anit: No, because if you look at teething, all this market that exists at the moment and the largest in scope has been the sulphur dioxide trading system in the United States and I just stated previously that the EPA has admitted that emissions have actually gone up 4% in the last year and that is the outcome of a very, very tightly defined cap and trade system that everyone is singing praises about in the halls of governments, but in actuality on the ground has led to increases of emissions in many sites, usually poor communities, the lowest 20% income brackets in the country, which has basically spawned the environmental justice movement in the United States.

Q117 Chairman: Has it actually led to increases?

Mr Ma'anit: It has.

Q118 Chairman: Has it failed to mitigate sufficiently? Has it actually itself generated increases?

Mr Ma'anit: It has itself shown increases and that is partially to do with the nature of the market. One of the reasons is because of banking. The banking systems that are in place in the US SO₂ scheme are

very convoluted and allow for lots of leeway in terms of how things are counted and when. The other problem is that those emission increases have to do with specific increases at certain sites and those communities that live by those sites are adversely affected as a result. We have to work out a much more comprehensive approach to dealing with pollution and that is an across-the-board reduction of emissions at source. There should be no source that is allowed to increase its emissions by any means.

Q119 Chairman: May I just get this clear? Sorry to interrupt. Are you saying that the increase in sulphur emissions in America recently is as a result of the emissions trading system?

Mr Ma'anit: Yes.

Q120 Chairman: But you are not attributing any of the 50% decline in sulphur in the US since the scheme was introduced to the introduction of the scheme.

Mr Ma'anit: No.

Q121 Chairman: That is not an entirely even-handed approach, is it?

Mr Ma'anit: The *New York Times* itself says that many of the reductions which are being attributed to the scheme in the United States have more to do with the fact that very simple measures that were legally mandated, for example installing technologies, smoke stack scrubbers and switching from coal etcetera, were the primary motivating factors behind the reductions in the United States. Now we have reached a situation where those cheap technological improvements can only go so far and industry is struggling. Now industry is saying they cannot really do this and there are all sorts of flexibilities there: certain sectors get permission to increase here and there, banking allows you to hedge against the future, etcetera. The net effect has been an increase due to the market.

Q122 Joan Walley: I am just interested to know how much the fact that the trading was coming on stream was the incentive to make the investment in those cleaner technologies which could then bring about the reduction. Are you saying it is not at all?

Mr Ma'anit: No, it was no incentive at all. It was a legally mandated requirement that existed before the emissions trading scheme took effect in 1990. A lot of those things were there, they had to be integrated over a long period of time; they existed in law beforehand. Each state has its own extra laws which it adds to the zoning requirements for specific industries. Those industries then had to implement those, as the UK industries had to do with the integrated pollution and prevention control requirements. Those were laws which were already there.

Q123 Joan Walley: It is the case, is it not, that regulation is a very powerful driver of achieving outcomes in terms of less pollution of whatever kind it is?

Mr Ma'anit: It is the best thing we have.

Q124 Mr Challen: Is it your fear that governments will ease off on regulation because they will see ETS as the great white hope, so to speak, the great white smoke?

Mr Ma'anit: Absolutely. We have seen that in the US already and it is increasingly clear that the Environment Agency is under a lot of strain to modernise its regulatory regime.

Q125 Mr Challen: Conversely, is it not possible that if we can lock industry into this scheme, and at the moment the US administration is probably locked into industry in ways that we do not like but that can change, once industry is locked into something and has given it a head of steam, so to speak, does that not mean that, in terms of the verification issues that you have raised and the accountability issues and all the other things like sequestration and dumping and whatnot, once you have this scheme up and running a lot of other people can add to the momentum as you yourselves are doing in terms of providing a critique, in terms of improving it, in terms of trying to make it work in a more accountable way? Academics around the world, universities, NGOs will all provide that critique, which then means that you have a tourniquet on industry. Do you not think that that process is also a naturally evolutionary kind of way of improving it and making it more practical and workable?

Mr Ma'anit: I think in the case of that, it is much easier to do that when government is holding the reins. The minute you let industry itself voluntarily report its emissions, have its own accountants verifying its emissions portfolio or whatever, you start to take away the ability for ordinary citizens, NGOs, etcetera, to influence the policies of those corporations. If there is no stick, then all you have left is the carrot of emissions trading and nothing left behind it. There needs to be something there and there is not and the whole premise of emissions trading is that industry does not want it to be there, industry does not want the stick, it does not want the regulations that are burdening it, that have been placing undue red tape on it, that are making it very difficult to be competitive, etcetera. It is the only lever we as citizens have to influence the activities of polluters. If we do not have that regulatory oversight, if we do not have that government control, that strict control that we can rely upon and advocate and go to committees like this and present our evidence and the committees can then take decisions on, we then have nothing left. If all we have is emissions trading scheme, all we can do is hope that somebody gets a good idea and changes it.

Q126 Mr Challen: You suggested that the UK should, as soon as possible, not accept carbon credits from sink projects in our national climate plan. How much reliance do you think we are going to place on sinks within the UK?

Ms Bachram: There is nothing really clear about that at the moment but from the outside looking in Defra has been looking into converting agricultural

1 December 2004 Ms Heidi Bachram and Mr Adam Ma'anit

land to woodland, so there is the possibility that the UK would be using sinks within the UK. They can also be connected to sinks in the CDM through the linking directive in the EU scheme.

Q127 Mr McWilliam: You are pretty scathing about the role of the clean development mechanism and you feel that it should not have been included in Kyoto. Is that predicated on the idea that the support for cleaner technologies in the developing world should be quite separate and targeted?

Mr Ma'anit: Yes. For example, if we took the fossil fuels subsidies issue again, if we moved fossil fuel subsidies and placed that money into dealing with the debt burden of the developing world, that would free up a lot more money for them to be able to invest in clean technologies and any efforts we can make through CDM.

Q128 Mr Challen: Could CDM not be an additional factor? If we have already a certain amount of money devoted to overseas development assistance and CDM introduces maybe 2% more, even in its flawed state at present, would that not be worth having?

Mr Ma'anit: That is not what we are saying in actuality in terms of the actual projects that are being developed around the world at the moment. Many of the projects that are receiving CDM funding are potentially receiving CDM funding—because very few have actually been formally approved—are being lined up in such a way that the financial impacts of the project, the burden, is actually shouldered on the developing country itself and whatever industry is involved from the developing country. The actual financing flows from the CDM are negligible in terms of financial additionality and so on.

Ms Bachram: I can give you one example of that in the case study that we have been following in Bissau Road landfill site which is in Durban, a prototype carbon fund project. A local activist there is a scientist and she has been gathering lots of data on

the project and she calculated the so-called social economic benefits that the GCF project for the project. It would have been more economic to put the money that they invest in that project into a savings account than it would be to get the benefits from the project. There are very limited flows of investment or benefits for local communities or for the governments in the South.

Q129 Mr Challen: I was reading in your report about the Zafarana wind farm in Egypt which seems to have been a very problematic project in terms of qualifying for CDM support. I was just wondering, looking at that description of it, whether some governments might want to reduce overseas development assistance because they say, you can rely on CDM. They then find that some of these projects may not qualify for CDM, so they could fall between two stools and not get anything at all. Is there that possibility, do you think?

Mr Ma'anit: It is one that is happening already.

Ms Bachram: The Dutch government have already said that they are pretty much dedicating 50% of their ODA into CDM; they are taking it away.

Q130 Mr Challen: That is a net reduction in funding basically.

Ms Bachram: Yes.

Mr Ma'anit: Absolutely; even though it is illegal under CDM rules.

Q131 Mr Challen: What would be the penalties for doing that? You say it is illegal, but are there sanctions.

Mr Ma'anit: None.

Q132 Mr Challen: None at all?

Mr Ma'anit: It is a fudge, because they can claim that there were intending to reduce the budget for the foreign ministry anyway.

Chairman: Thank you very much. It has been a very stimulating session; we are very grateful. Thank you.

Memorandum submitted by Friends of the Earth England, Wales and Northern Ireland

Whether an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject;

1. When considering international emissions trading it is important to differentiate between the system of inter-state trading in emissions allowances that will come in to force when the Kyoto Protocol is ratified, and begin in 2008; and the development of “company level” or “private sector”³⁶ emissions trading at an international scale.

2. The Kyoto Protocol is a market-orientated international agreement between nation states. It requires Annex 1 countries (developed countries) to hold sufficient allowances (AAUs) to match the level of emissions in that country in the first compliance period (2008–12). The number of AAUs initially allocated,

³⁶ Neither “company level” nor “private sector” is a truly adequate descriptor, in practice Governments themselves will be involved in these schemes as they themselves are point sources of emissions (eg schools, hospitals). “Installation level” or “point source” emissions trading would be an alternative but this too fails to capture the fact that in future, mobile sources of emissions, for example, aeroplanes, and, sources of emissions that are derived from down stream consumption, eg petrol producers, are likely to be participants in these schemes. “Sub-national” might work but this becomes confusing when you consider sub-national participants can trade internationally.

represents the level of emissions from that country in 1990, plus or minus the amount of reduction or increase in emissions that have been agreed for each country—set out in Annex B of the Kyoto Protocol. Countries therefore contribute towards meeting the target within the Protocol by either, delivering reductions at home, or, through purchasing emissions allowances from countries who have exceeded their target (AAU trading), or by purchasing approved emission reductions from projects in other Annex 1 countries (Joint Implementation, JI) or in non-Annex 1 countries (Clean Development Mechanism, CDM).

3. The ability to trade and generate credits is intended to enable participants to find the least cost route to achieving reductions. For greenhouse gases, where the geographical point of release is irrelevant, a market solution of this kind is ideal. However, the initial aim of achieving a 5% reduction in developed country emissions by 2012, relative to 1990 levels, is unlikely to be achieved without the participation of the US. Indeed the degree to which Russia can sell its “hot air” or excess allowances to all other countries in the scheme, raises the question of whether the Kyoto Protocol will deliver any additional savings at all, beyond those that have resulted from lower than projected growth in Russia’s emissions.

4. The inclusion of credits from countries who have yet to take on targets also raises the possibility that Annex 1 countries will simply buy their way out of their commitments, and in doing so, reduce the potential for countries who host these projects to benefit from the potential for emissions savings these projects represent, if and when they themselves take on a target. A cap on the number of project credits that can be used for compliance would provide some protection against this.³⁷

5. Only one commitment period has been defined in the Kyoto Protocol and questions relating to the development of international trading between countries will inevitably arise as negotiations begin over the second commitment period.

6. There have been many criticisms of the Kyoto Protocol but the agreement was a political success given the fierce opposition that existed, and still exists, to any kind of legally binding agreement. The Kyoto Protocol and the Marrakech Accords that govern trading within the Protocol are an important first step towards the establishment of an inter-country emissions trading scheme. However, elements are missing and lessons can be learnt from experiences to date. For example, to ensure more certain delivery of reductions in emissions within participating countries, the list of participating countries will need to be determined in advance of targets being set (the assumed list of participants in the first phase (which crucially included the US) clearly was not delivered). Allowance allocation methodologies or target setting procedures will need to be clarified and refined. Penalties for non-compliance will also need to be established to drive the market—at present there are none. All of these issues will need to be resolved before the Kyoto Protocol and its successors can be claimed to have successfully introduced a working international market in emissions reduction credits.

7. The process of allocation of emission allowances under Kyoto can really only be described as a version of political horse trading with no serious methodology underpinning it. There was no systematic consideration of, for example, historic liabilities, economic and technological potential for reductions, current or projected per capita or per unit of GDP emission levels, or geographic circumstances. This has led to some commentators calling for an altogether more prescriptive approach to be adopted. Allocation systems based for example on pure per capita calculations are simple and elegant in their design, however, they fail to take into account important political and economic realities. In a world where existing economic superpowers are quickly being caught up by rapidly developing economies, there is little appetite for creating additional redistributive effects in the global economy.

8. Such is the urgency with which rising global emissions need to be reversed, reductions can and should be the goal of every country that is in a position to deliver them. Rich developed countries must go first. Economic assistance will be needed in some countries and therefore all existing international finance institutions should be re-orientated, and new funds created, to ensure that technological leaps to low carbon solutions are incorporated in all countries currently investing in their energy infrastructure.

9. Having touched briefly on inter-country emissions trading we will concentrate the majority of our remaining comments on the development of company trading at an international level. The difference being that company level trading schemes apply to individual sources of emissions within countries, with Governments deciding who will participate, how many allowances to hand out and what the rules for non-compliance will be. The EU Emissions Trading Scheme (EU ETS) is the first example of an international ETS and it has already proved to be easier (although by no means easy) to agree the framework for this scheme than for the preceding UN-negotiated Kyoto framework.

³⁷ An interesting side effect of the EU ETS also enabling the use of international project credits for compliance, is that companies and countries will now be competing to secure low cost credits from overseas projects (CERs). If supply is limited this will push the price up above abatement costs for in-country emissions reductions reflected in the price of European Allowance Units (EAUs). Emissions in the EU will in reality be able to be achieved relatively cost effectively and with a reasonably high degree of certainty so the relative price of CERs and EAUs will be carefully monitored by companies in the scheme when deciding on abatement strategies.

Markets need clear rules and regulations to govern them if they are to develop effectively

10. The EU, in devising the EU Emissions Trading Scheme has broken new ground. The mechanism provides, in one integrated economic instrument, the ability to control approximately 50% of the Union's emissions of carbon dioxide. The mandatory nature of the scheme and the relatively high penalties for non-compliance (40 Euros per ton in the first phase, rising to 100 Euros a ton in the second—with cancellation of equivalent future allowances in both) give it the potential to be a highly effective tool in the fight against climate change.

11. However, allocation of allowances within the scheme has proven to be a highly politicised process. Concerns over effects on industrial competitiveness have served to hamper Governments' ability to use the scheme to deliver emissions reductions. These will need to be overcome and genuine effort required from participants if it is going to deliver a significant environmental outcome.

12. This issue, however, applies to all conceivable efforts to combat climate change—no matter what mitigation tool you might choose, the question of balance remains—regulate too hard, set the level of a tax too high, hand out too few credits and economic growth could be severely damaged. Do the opposite and the tool will fail to deliver environmental benefits.

13. The question facing policy makers is how best to achieve control over emissions whilst providing industries with flexibility and incentives to change business models. All this must be done in as least disruptive a way as possible to the economy. Trading is one flexible way of doing this and the degree of control, the absence of the need for public spending and the fact that savings can be achieved at least cost has made company level emissions trading a popular concept.

14. Trading also allows industries to determine the cost of compliance and arguably they are far better placed to do this than Governments, who will be relying on estimates rather than experience. Little is genuinely known about the cost of abating carbon—even in the UK—experience in the sulphur market has shown that it is likely to be a lot less than imagined. This means that if the right balance can be found we will see considerable reductions but at a relatively modest price. Abatement cost discovery is one of the most important ancillary benefits of any trading scheme as this can be used to counteract industry alarmism in future rounds of target setting.

15. Despite concerns over the high level of allocations of allowances in the first pilot phase of the EU ETS, from Jan 2005, across the EU, emitting carbon will carry a price and for the first time industries directly responsible for greenhouse gas emissions will have the price of those emissions factored in to their company accounts. The effect of this on corporate purchasing and investment decisions is potentially very significant.

Implementation of Kyoto through trading

16. The idea of moving forward with emissions trading schemes at regional, national and international scales is gaining ground around the globe. The hiatus created by the prolonged uncertainty over the future of the Kyoto Protocol and the US's steadfast refusal to take part have, perhaps, given impetus to this trend. It must be stressed, however, that Kyoto still represents the only credibly multi-lateral approach to tackling climate change. Company level emissions trading schemes are merely one tool amongst many that will need to be used to help countries meet the requirements of the UNFCCC and subsequent legally binding international frameworks to drastically reduce global emissions of greenhouse gases.

17. The EU is not on currently on track to meet its Kyoto reduction target (in 2002 a reduction of 2.9% had been achieved meaning that we are some distance from the linear path to meeting the target where we should have achieved a 4.8% reduction). All eyes are therefore on the European Union's Greenhouse Gas Emissions Trading Directive which introduced a trading scheme which will establish the world's first international mandatory cap and trade scheme for the control of carbon dioxide emissions.

18. Norway is developing a scheme in parallel with the EU that will be linked to the EU scheme. Canada another early ratifier of Kyoto is also in the process of implementing an emissions trading scheme and a schemes is also being talked of in Japan and very recently even in Russia³⁸. In non-ratifying countries such as the US and Australia state level emissions trading schemes are being discussed in defiance of Federal level inaction.

19. In addition, countries such as China and most recently Chile are taking their lead from the US's highly successful sulphur and NOx emissions trading schemes and adopting their own trading mechanisms to combat environmental problems. It is not inconceivable that these and other non-Annex 1/B countries may wish to implement their own national carbon emissions trading schemes to enable them to comply with UNFCCC and Kyoto which require that they develop national strategies to constrain emissions.

³⁸ Point Carbon 03.11.04 RUSSIA KEEN TO LINK TO EMISSIONS TRADING SCHEMES

Russia is considering setting up a domestic emissions trading scheme that could link to the EU scheme, and a potential Canadian one, from 2008. <http://www.pointcarbon.com/article.php?articleID=5148&categoryID=147>.

Links between schemes

20. As the location of emissions reductions is in environmental terms immaterial, and the achievement of least cost reductions desirable, there is a strong argument in favour of creating interconnected company level trading schemes to bring down global emissions.

21. In political terms, however, it does matter where emissions reductions take place and the world is looking to the rich developed countries, who are responsible for the majority of historic and current emissions of greenhouse gases, to take action first. This raises a political problem in that early action in these countries will disadvantage certain industries putting them at a competitive disadvantage. This risks emissions being exported rather than reduced as environmentally damaging industries move to countries who have yet to take action. The European Aluminium Association, or EAA, is claiming that as much as 50% of aluminium smelters across the EU might move to non-Kyoto countries due to rising EU energy prices as a result of the Emissions Trading Scheme.³⁹

22. One way of limiting competitiveness impacts in the EU is to support the linking together of emissions trading schemes. The EU Emissions Trading Directive already establishes the possibility for discreet trading schemes involving Annex 1 countries to be linked together, however, there is little detail available on how such a link might operate. In addition, the European Parliament recommended an amendment to the Linking Directive that would enable trading schemes in non-Annex 1 countries also to be “linked”. Again, there is little detail available about how this might be achieved. Indeed it could be that this recommendation was as much a political statement as a serious statement of intent. Nevertheless it seems certain that the EU will not wish to remain isolated in its pursuance of cap and trade measures and will seek to encourage other countries to follow their lead.

ISSUES OF CONCERN:

Likely diversity of schemes

23. Emissions trading schemes can be designed in many different ways and it is highly likely that schemes in different parts of the world will adopt different rules and methodologies. This is already the case between initial proposals for the Canadian scheme and EU one although modifications are now expected to the Canadian scheme to make it more compatible with the EU.

<i>EU scheme</i>	<i>Canadian scheme (proposed)</i>
Mandatory	Mandatory
CO ₂ only to begin with	All six gases
Overall cap set at beginning of scheme	Intensity targets create “cap”
Caps established by MSs—Commission state must be consistent with Kyoto targets and domestic policies	Caps set by Gov—16% below BAU
No cap on costs—fine for non-compliance 40E ton/CO ₂ in 1st period plus allowance reduction	Cap on costs of \$15 Canadian per ton CO ₂ e
No use of domestic credits	Use of domestic credits
Proposed link to KP flex mex—eligibility criteria likely to be restricted	Proposed link to KP flex mex eligibility criteria unlikely to be restricted
No fungability with AAUs	No fungability with AAUs

Compliance implications

24. Diversity between schemes makes the establishment of links potentially problematic. If allocations are more generous, or the rules in one scheme more lax than another, then complete fungibility would result in a race to the bottom with participants in stricter schemes circumventing the rules by buying in lower value credits from other schemes. Gateways and restrictions on the flow of emissions credits can help to minimise this risk, however, they would need to be carefully designed. At present it looks likely that this job will fall to the EU where questions relate to linking to the EU scheme, however, over time a fully independent supra-national body will be needed to oversee this process.

Verification

25. As well as careful consideration of rules and methodologies the linking of schemes requires rigorous compliance mechanisms including monitoring and verification of baselines and emissions. Confidence amongst traders, participants and NGO stakeholders is essential for the proper functioning of any internationally linked emissions trading scheme. If links are created between schemes, the integrity of all schemes will be determined by the least tightly verified scheme, if the flow of allowances is unrestricted. It

³⁹ Dow Jones Newswire 11/11/04 EU Emissions Rules To Hit Aluminum Competitiveness.

is in the interests of all parties, and in the proper functioning of a market, that verification is rigorous. A supra-national independent body that is able to verify the verifiers would help to build confidence in the carbon market by providing an additional layer of security for all participants.

The rules gap

26. The desirability of internationally consistent rules, compliance and verification regimes was accepted when trading was introduced to the UNFCCC in the drafting of the Kyoto Protocol. The Marrakech Accords provide detailed provisions for this. There is no equivalent rule book for company level trading. It is important that compliance and verification rules keep pace with the fast moving political discourse about international company level emissions trading. To date these issues have been given insufficient attention and too few resources have been applied to considering the framework and rule book that must be in place before links can be established.

Prompt action on Trading

27. It was accepted in COP 7 that in for the Clean Development Mechanism within the Kyoto Protocol to operate effectively rules should be established under the UNFCCC that enabled it to be set up early in expectation of ratification.

28. The same rationale and set of provisions used to establish the CDM Executive Board can be used to establish a monitoring and verification body for company level carbon trading schemes that would help to facilitate the establishment of schemes in more countries and enable schemes to be effectively linked without risking their environmental integrity.

The suggested supra-national body would not necessarily become involved in the setting of targets within individual trading schemes but would concern itself primarily with overseeing the relationship between company level trading and the achievement of internationally agreed reduction targets. It could also set criteria for linking, design gateways between schemes, and monitor and verify the environmental integrity of individual trading schemes once designed. It could also play an important role in communicating best practice, capacity building, and encouraging the development of common international standards.

Examples within other multi-lateral agreements

29. The precedent of establishing supra-national bodies to verify compliance with international agreements is well established. In 1957 countries came together to establish the International Atomic Energy Agency. They recognised that atomic energy represented a risk of potentially global proportions—the widespread effect of the Chernobyl disaster only serving to prove the case. An independent Secretariat was formed under the auspices of the UN with signatory countries providing funding. Rights were established that enabled IAEA teams to independently inspect and verify national monitoring and reporting procedures with respect to civil uses of nuclear power.

CONCLUSION

30. The establishment of a global system of governance for company level trading is essential if schemes are to be introduced in other countries and links between them established. The UK is well placed to begin international discussions towards this goal having been the first country to introduce its own domestic carbon trading scheme, and, consequently, having become a global centre for emissions trading expertise through early experimentation with this important mitigation tool.

What other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries

31. An international company level ETS is simply one way of stimulating emissions abatement activity in countries and sectors of the economy that are included in the scheme. Alternatives range from the maintenance of discreet trading schemes in individual countries or blocks of countries, to the introduction of a global tax on all sources of greenhouse gases.

32. The reason there is considerable interest in company level trading is that it provides participants with flexibility, enables savings to be achieved at least cost and Governments with a degree of control over emissions (in cap and trade schemes Governments limit the total amount of emissions allowances created, whereas taxes rely on high enough price signals to effect demand).

33. There is momentum behind company level trading that indicates that it will be widely adopted as an emissions mitigation tool—the pressing question is with what degree of environmental integrity? The same cannot be said of either global taxes or carbon taxes and given the urgency of the need to limit global emissions there may be insufficient time for this to develop. Of course as the impacts of climate change become more apparent this situation may change.

34. The question of how to channel investment into low carbon technologies in developing countries is a crucial one given the rate at which some countries are industrialising. The introduction of cap and trade schemes in rapidly developing countries would establish a price for emissions, meaning that more polluting developments would have a financial penalty relative to cleaner alternatives. However, this is unlikely to be a viable option in the short term for all but the most rapidly developing countries. Not least because many countries lack the well established regulatory, monitoring and verification infrastructure and culture that are essential to underpin trading schemes. An alternative and complementary approach would be to establish international financing facilities that will provide loans and guarantees for clean technologies and refuse financing for high emission projects. Existing financing institutions should adopt new policies that create a maximum emissions limit for all new infrastructure projects funded.

What approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005; and

G8

35. The G8 summit in July will need to lead to a firm consensus amongst the G8 that immediate and sustained activity is necessary to tackle climate change under a legally binding internationally agreed framework. A key test of work streams begun in the G8 will be whether they culminate in re-invigorated discussions and negotiations at and around the first meeting of parties to the Kyoto Protocol in December of the same year.

36. Key milestones towards this goal could include:

- agreement to review the adequacy of commitments which should have happened in 1998 (UNFCCC Article 4 para 2.d);
- agreement to establish an international framework governing the development of company level emissions trading schemes enabling in the long term all UNFCCC signatories to design and implement effective schemes to control their domestic emissions;
- consensus amongst G8 and OECD countries to divert public funding away from projects which lock us into high emissions pathways and to support instead truly sustainable renewable energy developments; and
- consensus between developed and developing countries about the reorientation of global agricultural subsidies towards supporting biofuels and away from food production.

Re-engaging US and Australia

37. Pressure must be applied to Annex 1 countries remaining outside the Kyoto Protocol to re-engage in international negotiations and take on legally binding emissions reduction targets. Under the Kyoto Protocol negotiations for second commitment period targets must begin in 2005. However, if these negotiations are only carried out with under the Protocol, non-signatories will be excluded. It is therefore important that a parallel negotiation is begun under the auspices of the UNFCCC. Article 4 para 2 (d) requires that a review of the adequacy of commitments under the Framework Convention be carried out no later than 31 December 1998 and such a review is clearly therefore long overdue.

38. In addition to restarting negotiations the EU should also take action to protect the competitiveness of its directly affected industries by seeking redress through traditional trade measures. Sanctions could be applied if non-ratification of the Kyoto Protocol can be shown to create trade distortions, in which non-compliance is shown to create an effective subsidy.

More on G8 ask on trading

39. The G8 offers an opportunity to achieve agreement to work together to introduce an international framework for the development and potential linking together of company level emissions trading schemes.

40. For the EU countries represented at G8, this provides an opportunity to insulate against competitiveness impacts that may occur as a result of their early action. For Japan and Canada it offers similar advantages enabling them to meet their Kyoto commitments without being isolated. For the US it offers a means of consolidating initiatives already gathering pace at State level.

The need for co-operation

41. The Marrakech accords to the Kyoto protocol outline rules governing inter-country trading but there is no equivalent for company level schemes. Without a strategic international framework, interlinked company level schemes could result in poor environmental integrity and a weakening of individual schemes as abatement costs and verification standards will naturally drop to the level of the least tightly implemented scheme.

42. Company level trading means that Nation States have reduced control over their in-country emissions. It can therefore result in countries being traded out of compliance with any national or international targets they may have—resulting in a negative financial impact on the public purse as compensating credits will need to be purchased by the State.

43. The work stream for the G8 would therefore need to cover:

- Governance structure
- Standardised verification and monitoring rules
- Harmonisation of compliance and allocation rules
- Rules for linking schemes
- Extension of best practice
- Capacity building internationally (especially in rapidly industrialising countries)
- Assessing implications for compliance with UNFCCC and Kyoto.

EU Presidency

44. The UK's EU Presidency offers an opportunity to influence the future development of the EU Climate Policy. Russia's ratification of the Kyoto Protocol now means that targets for future commitment rounds can begin to be discussed. The EU must continue to press ahead not only with meeting its existing target but also in setting challenging new targets.

45. To date the EU has failed to adhere to a linear path towards its Kyoto target and few, if any, countries within the EU can claim to have achieved adequate control over their emissions. In the face of uncertainty the question of control is key. If it transpires that climate sensitivities are greater than first thought then we must have in place policies and measures that can be quickly adapted to new information.

46. In this context the biggest challenge for the EU is therefore not meeting a long term reduction target in 20 or 30 years but in successfully placing itself on a linear reduction pathway as soon as possible and working to seek agreement from other countries that they will seek to do the same. Friends of the Earth is currently consulting internally on the level of targets we will be recommending, however, initial discussions indicate that they will need to be in the region of a 3% per annum reduction from 2010.

47. Another important point that must be accepted is that departure from linear reduction paths towards targets, means that targets must be made more stringent to compensate. Increased concentration levels of gases will be achieved if the volume of emissions over time is higher than would be the case if a linear reduction path is adopted. This is the case if high emissions are sustained and reductions only achieved towards the end of the target period—if this occurs to achieve the same reduction in concentrations a deeper cut needs to be achieved at the end of the period.

48. As successive commitment periods are likely to run consecutively from 2008 this will be less of a problem in the future, however, the degree to which non-linear pathways to existing targets have been taken (ie between 1997 and 2008) and the increased commitment to global warming that has occurred as a result, must be assessed and considered in the process of setting new targets.

49. In addition, the EU has significant influence over how public money is spent in international finance institutions. Historically huge sums of money have been spent underpinning fossil fuel developments, locking in emissions for many years to come. Friends of the Earth is calling for public money in the shape of international loans and guarantees to be diverted away from projects with high emissions—particularly export focussed projects, which have delivered little in the way of economic advantage to host countries and simply served to provide developed countries with cheap fuels. Instead public subsidies for truly sustainable renewable energy projects should be greatly increased.

On trading

50. The EU Emissions Trading Directive is the most significant piece of climate legislation to date anywhere in the world and the EU should be congratulated for introducing it as it is an example of the kind of policies and measures that will be needed to give Governments control over emissions.

51. However, implementation to date has been weak with the substantial lobbying power of directly affecting industries undermining Governments' ability to set challenging caps on emissions.

52. The UK should use its Presidency to ensure the review of the EU ETS recommends the setting of an EU-level cap for total allowances that is consistent with the EU's Kyoto target. It should also seek to achieve greater harmonisation of allocation rules and tougher criteria in Annex III of the Directive to prevent over allocation.

53. The Directive can and should be strengthened for the second phase.

Friends of the Earth recommends the following

(for more information please refer to Annex 1):

- set a challenging European level cap on total allocation of allowances in the second phase of trading (2008–12);
- increase the harmonisation of rules governing how Member States allocate allowances to participants including: fixing the baseline years for future allocations; introducing compulsory auctions; establishing technology benchmarks for new entrants; providing consistent incentives for plant closures; and agreeing banking and borrowing rules;
- committing to 100% auctioned system in the third phase of trading;
- introducing tough penalties for abuses;
- introducing tough caps on use of overseas credits (ie Joint Implementation and Clean Development Mechanism credits) to meet domestic targets.

54. If progress can be made on these issues then the EU should also continue to explore ways in which trading can be extended to cover other greenhouse gases and other sources of emissions eg aviation and land-based transport emissions.

55. The latter are likely to be best accounted for at the point of production fuel rather than through downstream customers or car manufacturers. The fact that emissions from these sectors are projected to grow (although recently land based emissions appear to be levelling off) means that their inclusion in the scheme could provide important additional demand for credits, raising the price of carbon meaning that more expensive abatement options in other sectors become economic. If they remain outside, with no comparable policy interventions, then industrial sectors will quite correctly start to complain that the burden of meeting reduction targets is not being equitably shared across the economy. This will lead to increased pressure on Governments to provide generous allocations.

56. Additional measures to constrain growth in emissions in these sectors will, however, also be needed irrespective of whether they enter the scheme.

What contribution individual departments can make (eg. FCO, DEFRA, HMT, DfT, and DFID), and whether they are sufficiently "joined-up" in delivering a coherent UK agenda

57. Government has made efforts to create links between Departments by for example creating the interdepartmental Sustainable Energy Policy Network to oversee the delivery of the Energy White Paper. Integrating environmental considerations, in particular climate change, throughout Government policy, continues, however, to present something of a challenge to Government.

58. Even though the Department for Trade and Industry was the lead Department on the Energy White Paper they are also a powerful voice within Government opposing measures that they believe will threaten certain sectors of industry's competitiveness. This was never more apparent than in the discussions surrounding the allocation of emission allowances within the first phase of the EU ETS. The section of the DTI which specialises in maintaining relations with industry acted as a conduit for a range of industries to make very strong cases against challenging targets. The DTI has an important role to play in maintaining the wellbeing of the industry operating in the UK but this must not be at the expense of progress towards a low carbon economy. Certain high emitting or energy intensive industries will need to adapt to life in a carbon constrained world and it should be the role of DTI to facilitate that transition as quickly as possible—not to seek to reduce Government's ambition to deliver easily affordable carbon savings.

59. The Department of Transport now has a Public Service Agreement committing it to helping to deliver the Government's climate change targets and this is welcome. However transport is responsible for roughly a quarter of the UK's emissions of carbon dioxide, and this share is set to rise in coming years, making the Department for Transport (DfT) a key player in reducing emissions.

60. DfT must play a full and positive role in reducing emissions of CO₂. However events since the Spending Review do not bode well. The Transport White Paper "The Future of Transport: a network for 2030", published in July, projected CO₂ emissions from road transport continuing to rise for at least the rest of this decade⁴⁰ with emissions still possibly above 1990 levels in 2025⁴¹. DfT has failed to address the problem of rising traffic levels as a cause of rising emissions, seemingly placing all its faith in technology as

⁴⁰ "Department for Transport "The Future of Transport: a network for 2030" (July 2004) chapter 10.

⁴¹ "The Future of Transport" chapter 1.

a solution. We share the concerns of your Committee that “the Future of Transport White Paper had nothing new to say on the practical steps the Department for Transport would take to tackle carbon emissions from transport”⁴².

61. The draft guidance to local authorities on Local Transport Plans (LTPs), published by DfT in August, did not include tackling climate change as one of the priorities. Instead it is included in a list of “other quality of life issues” about which the draft guidance says “the Department does not expect local transport strategies and LTPs necessarily to be aimed at dealing with these issues as key priorities”⁴³. Given the importance of local authorities in delivering integrated transport, we find this astonishing.

62. DfT must accept that technology alone will not be enough to substantially reduce emissions from transport. The Interdepartmental Analysts Group (which was set up to inform the Government’s response to the RCEP recommendation of a 60% cut in carbon dioxide emissions by 2050 and brought together officials from DTI, DEFRA, DTLR, HM Treasury and the PIU) concluded that: “substantially reducing carbon emissions from transport will require a combination of measures to reduce traffic demand, enhance the transport infrastructure across all modes, improve the energy efficiency of vehicles and encourage the introduction of low carbon fuels”⁴⁴. The Tyndall Centre for Climate Change Research has reached the same conclusion⁴⁵.

63. There must be a “climate filter” on all of the DfT’s work. There should be clear targets for reducing carbon dioxide emissions from the transport sector, with specific targets for both the contribution of technology and for demand management. Among policies required are:

- (a) DfT should press for tougher regulation on vehicle fuel efficiency, with the next agreement between the EU and ACEA, representing car manufacturers, being made mandatory rather than voluntary.
- (b) The introduction of a renewable transport fuel obligation to stimulate the development and commercialisation of alternatives to fossil fuel based fuels.
- (c) Continuing traffic growth will make a major contribution to rising carbon dioxide emissions and must be tackled through a range of measures including investment in improved public transport alternatives, investment in making streets safer for cycling and walking and the cancellation of road-building schemes that will lead to traffic growth. These policies reflect the manifesto of the “Way to Go” campaign, of which Friends of the Earth was a key part⁴⁶.

64. Tackling climate-changing emissions must also be a priority for transport at the regional and local levels, as this is where much of the delivery of integrated transport takes place.

65. DfT’s responsibility also covers aviation, an area in which your Committee has worked tirelessly in recent months to expose “the glaring inconsistency of facilitating so large a growth in carbon emissions at a time when we need to make huge cuts to minimise the worst impacts of global warming”⁴⁷. We share the Committee’s concerns and believe that expansion of aviation on the scale forecast by DfT will make achieving longer-term carbon dioxide reduction targets at best much more difficult and at worst near impossible. We believe that emissions targets impose a limit on aviation growth, which must be the key factor in future decisions about airport expansion, and that the Government, including DfT, must use a range of powers—planning controls, local air pollution emissions controls, fiscal and other economic measures—to ensure that these limits are met.

66. The Treasury is clearly hugely important and has made some important moves towards setting the right economic framework to deliver a low carbon economy. It has not however been anything like as bold as it needs to be. The Climate Change Levy was an important step towards progressive green taxation. However, its implementation has been confusing. It is unclear whether the tax is a tax on energy use or on carbon emissions. Practically speaking it is both as it applies to direct use of emitting fuels and indirect emissions arising from electricity. In terms of acting as a carbon tax, however, it fails to grade taxation according to the carbon content of fuels and therefore fails to incentivise a switch to cleaner fuels. As an energy tax it fails to properly incentivise behavioural change as it is set a too low a level to make a difference to the companies who pay it. Energy intensive companies who would be affected by a tax, even one set this low, are required instead to meet a voluntary emissions reduction agreement that is negotiated with DEFRA.

67. The Treasury has a potentially important role to play in the development of UK and International climate policy. The Chancellor could champion root and branch reform of IFIs for example to ensure that all loan and finance agreements for energy infrastructure projects meet minimum efficiency standards and maximum emissions limits. He could also encourage the setting up of new adaptation and mitigation funds to help poorer countries tackle climate change.

⁴² Environmental Audit Committee “Budget 2004 and Energy” (August 2004) paragraph 46.

⁴³ Department for Transport “Full Guidance on Local Transport Plans Second Edition” (August 2004) chapter 3 paragraph 76.

⁴⁴ Interdepartmental Analysts Group “Long-term reductions in greenhouse gas emissions in the UK” (September 2002).

⁴⁵ Tyndall Centre “How can we reduce carbon emissions from transport?” (July 2004).

⁴⁶ Details of the Way to Go campaign’s manifesto and how much it would cost to implement are contained in “Paying for Better Transport”, available at <http://www.foe.co.uk/resource/reports/paying—for—better—transport.pdf>.

⁴⁷ Environmental Audit Committee “Aviation: Sustainability and the Government’s Second Response” (September 2004) paragraph 3.

68. Closer to home he will need to integrate the management of carbon emissions into the budget. From 2008 the level of our emissions will become a potential asset or liability, with a price attached. The Chancellor could and should manage our carbon budget on behalf of all of Government in such a way that minimises the risk that the public purse will need to pick up the bill as a result of us failing to meet our international targets, and maximises the financial benefit we would accrue from making early and cost effective reductions in our emissions.

Department for International Development

69. The UK is a significant shareholder in many Multilateral Development Banks (MDBs), and DFID is the UK Government department with responsibility for formulating and communicating UK policy for MDBs. MDB investment portfolios in extractive industries and power generation are currently weighted heavily towards fossil fuels. DFID support for existing MDB policy contradicts the UK Government aim of promoting global action on climate change through promotion of low carbon energy technologies.

70. International financial institutions play a significant role in development of global energy infrastructure through provision of direct loans, and facilitation of private finance through guarantees and insurance. IFI energy finance is heavily weighted towards fossil fuels, which, eg comprise 83% of World Bank energy portfolio, while renewables comprise 14%.

71. The lifetime of this energy infrastructure is of the order of 40 years or more. Thus present day investment in fossil fuel locking-in to considerable period of fossil fuel dependence. In the case of IFI's this is often in countries with poor existing energy infrastructure and huge potential to follow less carbon intensive development pathways.

72. IFI financed projects make a significant contribution to global fossil fuel infrastructure and hence greenhouse gas emissions. Friends of the Earth estimates that over the last 10 years IFIs have provided at least \$110 billion for fossil fuel projects. Since 1992 the World Bank alone has provided over \$11 billion for fossil fuel projects, this included \$4 billion for oil projects, of which over 80% were export oriented. The cumulative lifetime ghg emissions from these World Bank financed projects is estimated at 47 billion tons of CO₂.

73. IFI finance of fossil fuel projects promotes society's continued dependence on high carbon energy technologies in a number of ways. IFI are providing substantial levels of funding for fossil fuel projects, but its significance is greater than a simple calculation of total finance. IFI funding guarantees political stability, insures the deal, reducing the associated risk and therefore the cost of private capital, effectively subsidising fossil fuel production, and ultimately consumption. The benefits of IFI subsidy are enjoyed by Kyoto signatories and non-signatories alike.

74. The recent World Bank Extractive Industry Review (EIR) concluded that IFI funding of extractive industries fails to alleviate poverty and promote development, and recommended a moratorium on World Bank funding of coal projects, and a 2008 phase-out from oil in order to meet the challenge of climate change. The EIR also recommended a rapid switch of World Bank energy finance renewable energy.

75. Renewable energy technologies have huge potential in developing countries. The G8 renewable energy task force identified lack of finance as the key barrier to deployment of renewables, and suggested that with concerted action, in a decade 200 million people in developing countries could have access to significantly improved biomass cooking, and access to electricity for up to 800 million, including 600 million in developing countries

76. There is substantial evidence to demonstrate that developing countries whose economies are heavily dependent on extractive industries display poor developmental outcomes. Furthermore, the emissions generated when these fuels are combusted contribute to climate change—itsself the biggest threat to global sustainable development. IFI finance should be redirected away from high carbon energy sources, and towards provision of sustainable renewable energy.

77. DFID must acknowledge the significant contribution to promotion of fossil fuels represented by IFIs, and work to divert public funding away from projects which lock us into high emissions pathways and to support instead truly sustainable renewable energy developments. DFID should cease support for high emitting fossil fuel development through IFI finance and bilateral aid, and address the lack of financing available for low carbon and renewable energy technologies.

Specifically:

78. DFID should adopt a climate policy consistent with UK Government aspirations for global action to avoid dangerous levels of climate change.

79. DFID should assess its current and historical support for fossil fuels and whether these projects have helped or undermined the meeting of Millennium Development Goals.

80. DFID should formulate a strategy to address the causes of climate change to augment its strategy for adaptation. This must involve a coherent strategy of support for sustainable low carbon and renewable energy provision in developing countries, including timings and targets, and withdrawal of support for high

emitting fossil fuel projects over a clear timetable. Minimum efficiency and maximum emission standards should be set for all energy infrastructure projects to facilitate the development of only the best available technologies.

81. DFID should promote G8 Renewable Energy Task Force recommendations of enhanced IFI support for renewables through increased R&D, subsidy programmes, capacity building and finance.

82. DFID should take a proactive responsibility for its votes in multilateral development banks, requiring a rigorous assessment of the cumulative impacts of projects, and their climate impacts, and only vote in favour of projects which have a significant and demonstrable poverty alleviation benefit. These assessments should be published on DFID's website.

References:

Papers presented to EA/INECE International Conference on Compliance and Enforcement of Trading Schemes in Environmental Protection, Oxford, 17–18 March 2004.

Greenhouse Gas Market 2003—emerging but fragmented, IETA, December 2003.

Linking Domestic and Industry Greenhouse Gas Emissions Trading Systems, by Erik Haites in association with Fiona Mullins for EPRI, IEA and IETA, October 2001.

Annex 1

BACKGROUND INFORMATION IN RELATION TO THE EU ETS

Introduction

The purpose of this paper is to provide a brief overview of the implementation to date of the EU Emissions Trading scheme and to outline areas where environmental groups might lobby for improvements including the timeline over which they may be possibly achieved.

Summary of potential objectives

- set a challenging European level cap on total allocation of allowances in the second phase;
- increased harmonisation of rules covering: baseline years for future allocations, compulsory auctions, benchmarking for new entrants, incentives for plant closures and banking and borrowing;
- 100% auctioning in the third phase;
- tough penalties for abuses;
- tough caps on use of overseas credits;
- establish UN procedure to oversee the development of trading internationally;
- possible extension to other gases; and
- possible extension to other sectors including transport and aviation.

1. HOW IT WORKS

1.1 *Coverage*

It is the first international trading system for CO₂ emissions in the world. It covers some 12,000 installations representing close to half of Europe's emissions of CO₂ (combustion plants, oil refineries, coke ovens, iron and steel plants, and factories making cement, glass, lime, brick, ceramics, pulp and paper). All 25 countries in the Union are covered, in larger Member States some 1,000 to 2,500 plants are included, while in most other Member States the number of plants covered tends to range from 50 to 400.

The EU GHG Emissions Trading Directive was agreed in October 2003 and creates two trading periods—the first from 2005 to the end of 2007 is widely regarded as a trial period with the second, 2008–12, corresponding with first Kyoto compliance period, being seen as the first real trading round.

1.2 *Relationship to Kyoto*

The European Emissions Trading Scheme is based on a Directive which entered into force in October 2003. It is part of the EU's general policy on climate change and, as such, does not depend on the entry into force of the Kyoto protocol. The scheme will therefore start in January 2005.

1.3 *Basic function*

At the end of each trading period all covered installations must hold sufficient allowances certificates to match their recorded emissions of carbon dioxide in that period. Any installations out of compliance ie without sufficient allowances, must pay a fine (40 Euros a ton in the first period rising to 100 Euros a ton in the second) and will also have the corresponding number of allowances removed from future allocations.

Installations who reduce their emissions below the level of allowances they have been allocated can sell spare allowances to companies who wish to exceed their allocated emissions.

How many allowances are handed out to installations is determined by Member States who are currently in the process of finalising their allocations plans for the first traded period. National Allocation Plans or NAPs must be completed and accepted by the European Commission by 31 October 2004.

Draft allocation plans for the second period must be submitted to the Commission for approval 18 months before the start of the second traded period.

1.4 *National Allocation Plans*

The Directive makes it the responsibility of Member States to determine how many allowances they grant to covered sectors and participants. Allocation methodologies must be set out in detail, including the amount of allowances to be granted to individual installations, in National Allocation Plans. These are then scrutinised by the Commission according to a set of criteria (see Annex 1) and either approved, rejected or partially rejected with suggested amendments.

A number of countries have now submitted their National Allocation Plans for the first round of trading and had them approved. The UK Government commissioned an assessment of the plans submitted to date, comparing allocations against progress towards Kyoto targets and comparing allocations against projected “business as usual” emission levels in the traded period.

Most countries have used the scheme to some extent to help achieve their Kyoto targets by allocating fewer allowances to industry than their predicted need. There are, however, exceptions where countries with a long way to go to achieve their Kyoto targets have chosen instead to use Kyoto’s flexible mechanisms to purchase emissions credits from other countries or claimed to be able to make substantial reductions non-tradable sources of GHGs (eg transport, domestic sectors or in non-CO₂ gases).

A detailed analysis of the NAPs submitted to date can be found at:
<http://www.ecofys.co.uk/uk/publications/documents/Interim—Report—NAP—Evaluation—180804.pdf>

The general consensus appears to be that allocations in the first phase have been generous and that the Commission has had too few powers to reign in Member States. This is likely to lead to a very low price for emissions permits in the first phase and the possibility of very limited numbers of trades. The fact that credits from overseas projects can also be used means that between now and 2008 the EU is unlikely to deliver any significant emissions reductions at home.

That said the scheme represents the first and only international scheme to place caps on carbon dioxide emissions from large scale point sources and is a significant step forward in terms of providing Governments with a means to control up to half of their national carbon dioxide emissions.

1.5 *How trading takes place*

The legal framework of the trading scheme does not regulate how and where the market in allowances takes place. Companies with commitments may trade allowances directly with each other, or they may buy or sell via a broker, bank or other allowance market intermediary.

It could also be the case that a company purchasing a fossil fuel (coal or gas) will be offered allowances in combination with the fuel. Finally, organised markets (allowance exchanges) may develop.

There will also be an electronic registry system. This is now being developed in preparation for 1 January 2005. This registry system is separate from trading activity—not all trades result in changes in ownership of allowances, but where a trade culminates in a change in ownership there will be a transfer of allowances between accounts in the registry system. In this way, the registry system is similar to a banking system which keeps track of the ownership of money in accounts but does not track the deals made in the goods and services markets which were the cause of the money changing hands. So the registry system is not a marketplace; the way in which allowances are traded is a decision made by the participants in the market.

The system will be purely electronic, and so allowances will not be printed on paper but exist only in an online registry account. Each company with a commitment and any person interested in buying or selling allowances will need an account. The system will consist of a national component in each Member State where the allowances are held and a hub at European level, which will conduct automated checks on each transfer of allowances to ensure that the rules of the Directive are respected. Some of the data held in the registry will be released periodically, in accordance with UN rules and a forthcoming Regulation. A balance will be sought between environmental transparency and commercial confidentiality.

1.6 Allowances

In the UK, for the first period of trading, companies will receive annual allocations of a third of their total allocation of allowances for the period (first phase lasts three years). They will be required to submit allowances at the end of each year. However, they will be given their next years allowances before the have to submit for the previous year. This means that companies may borrow from the next years allowance and delay the need to take action to meet their reduction targets until the end of the traded period.

Banking is restricted between trading phases in the majority of countries, so almost all allowances from the first traded period will cease to have a value from the end of 2007. Poland has proposed to allow banking which raises questions which have yet to be answered about who may take advantage of this provision and how.

Allowances will appear on company accounts as a new budget line—in determining their value they will be treated like currencies to take into account the changing price of allowances.

Total number of allowances compared against total annual emissions will determine whether the company has a net asset or liability in any given accounting year.

It is highly likely that allowances will be able to be used as security for loans and other financial services.

The total number of allowances to be created in the UK is approximately 200 million—valued at 1 billion Euros (at 5 euro a ton of CO₂).

The total number of allowances to be created in the EU 25 is approx 2 billion valued at 10 billion euros (at 5 euro a ton of CO₂).

1.7 Links with Kyoto flexible mechanisms

(Clean Development Mechanism (CDM)/Joint Implementation (JI))

Within the Kyoto protocol countries may use projects overseas that deliver CERs (Certified Emissions Reductions) to meet their Kyoto targets. Companies covered by the EU ETS may also do the same. The Linking Directive enables CERs from Clean Development Mechanism (CDM) projects and Joint Implementation (JI) projects to be used for compliance with the requirements of the trading scheme.

The Directive does not set limits on the quantity of overseas credits that can be used in the scheme but requires Member States to set these limits. It notes that domestic reductions should remain a “significant element of the effort made” and limits be set accordingly.

Qualitative criteria for the type of project credits that can qualify were established in the Directive excluding nuclear and sinks projects (sinks decision to be reviewed in 2006) and requiring that the environmental and social impacts of large hydroelectric power projects are addressed through the application of relevant international criteria and guidelines when they approve such projects.

The Directive will be officially adopted by Council in its October meeting and Member States then have 12 months to transpose it into law. Theoretically they should state the level of the cap they intend to apply in their National Allocation Plans although in practice the tight timing may mean later adjustments.

JI credits cannot be used until 2008 whereas CDM credits can be used from 2005.

2. HOW IS THE EU ETS EXPECTED TO DEVELOP?

2.1 How caps will be set in the future

At present it seems likely that caps for the second phase will remain the responsibility of Member States, however, compliance with Kyoto should be a more pressing issue for most countries in the second phase and therefore the temptation to over allocate should be reduced.

The option of purchasing overseas credits rather than requiring reductions within traded sectors will still remain for each country, however, the financing of this will need to come from the public purse which may temper their desire allocate generously to industry. The possibility of raising revenue by auctioning 10% of allowances in the second phase provides one way in which countries could finance purchasing programmes.

In subsequent phases it would be far more sensible for an overall cap to be set at a European level and for Member States to then negotiate allocations up to but not exceeding a total fixed level of EU allowances. This could in theory be pushed for in the 2006 review in time for implementation in the second phase. NGOs together with the financial services industry could potentially lobby for this, however, as there is no specific mention of it in the Directive and unlikely to be much support amongst Member States the likelihood of success may be low.

2.2 *Extension to other sectors and gases*

The Commission may make a proposal to the European Parliament and the Council by 31 December 2004 to amend Annex 1 to include other activities and emissions of other greenhouse gases (listed in Annex II). Given experiences to date it is highly unlikely that the Commission will take up this option.

The Commission must also submit a report to the Parliament and Council by 30 June 2006 outlining amongst other things how and whether the Directive should be extended to cover additional sectors (chemicals, aluminium, transport) and gases.

The UK Government has stated that it supports the extension of the scheme to cover emissions from aviation and also more recently land based transport emissions. It seems likely that the UK will use its Presidency of the EU in 2005 to help achieve this aim.

Practically it would be relatively easy to include aircraft as large point sources of emissions as there are equivalent in scale to many of the installations already covered by the Directive. Land based transport emissions are far harder to deal with and an upstream approach would be most likely need to be adopted. This could attribute emissions to vehicle manufacturers or fuel providers. In pure environmental terms there would be far greater integrity if the scheme were to apply to fuel sources but other considerations would also need to be taken into account including political realities and deliverability.

NGOs will need to decide whether to support the extension of the scheme to other sectors and gases and to lobby accordingly including during the drafting of the Commission's report.

2.3 *Increasing harmonisation*

There is a danger that with the existing levels of subsidiarity in the Directive that Member States engage in a race to the bottom on the grounds of competitiveness. The EU and more progressive Member States are likely therefore to support increasing harmonisation for future trading rounds.

By June 2006 a report by the Commission will be submitted to Council and Parliament containing considerations and proposals relating to increased harmonisation of allocation methods. Harmonisation where it relates to caps and auctioning (see below) could significantly improve the environmental integrity of the scheme. It could also remove perverse incentives where they exist (see below) and ensure that all Member States apply the Directive in a consistent manner.

At present, for example, France has interpreted the definition of which installations should be included very narrowly whereas countries such as the UK and Germany have taken a broader approach including a larger number of installations.

For more detailed analysis and recommendations relating to harmonisation see below.

3. WHAT ARE THE PROBLEMS AND SOLUTIONS?

3.1 *Macro concerns about trading and its future development*

The main concern over the development of company level trading schemes is that it may be seen to undermine the need for global multilateral agreements such as Kyoto.

Interlinked trading schemes are seen by some as a "plan B" if Russia should fail to ratify Kyoto and/or the US should decide to remain outside the protocol.

Trading schemes are already being considered by Canada and Japan and at a state level within the US and Australia. They could also relatively easily be introduced in countries with well developed financial markets eg South Africa, Brazil, Honk Kong. It is unlikely however that trading will be perceived by the majority of countries who are signatories to the UNFCCC as a viable alternative to country level caps.

A more likely scenario is that in the event of non-ratification a second protocol is developed under the UNFCCC—this would no doubt include international trading mechanisms within it, as Kyoto does.

Lessons learnt in the implementation of company level trading schemes would inform this process—for example the setting of country level caps could be influenced by the principles that have been used to underpin company level trading schemes.

Rather than being perceived as an alternative to international agreements—company level trading schemes should be viewed as a potentially important mitigation tool for delivering emissions reductions and also as an important tool to help inform future country level reduction target negotiations.

NGOs will however need to make it clear that support for trading is entirely conditional on it being implemented correctly and delivering real results for the environment. One of the best levers of influence we have is that companies prefer trading to regulation and taxes and will be far more inclined to accept tougher targets if there is a threat that either of these two alternative approaches may be adopted in the future.

3.2 *Links to other schemes*

Whatever the status of the international regime it seems likely that company level trading will remain a popular tool for countries to deliver emissions reductions and that in the interests of minimising costs there will be an inclination towards linking schemes.

The Linking Directive also included provisions for the EU ETS to be linked to other national emissions trading schemes. At present the rules and procedures for how this could be achieved are not clear. Schemes operating at a sub-national level eg the regional states scheme being considered in the US, would not be able to be linked.

A genuine concern if linking happens is that there are no international rules to govern how such links might be established. The Marrakech accords outline rules governing inter-country trading but there is no equivalent for company level schemes. Without a strategic international framework interlinked company level schemes could result in poor environmental integrity and a weakening of individual schemes as abatement costs and verification standards will naturally drop to the level of the least tightly implemented scheme. There is also the very real danger that company level trading can trade countries out of compliance with any national or international targets they may adopt unless the links between international and inter-company trading are clarified.

In the interests of establishing a clear development framework and maintaining momentum within the UNFCCC process we should be calling for the establishment of a UN procedure to oversee the development of internationally linked trading schemes. This should be raised in COPs 10 and 11.

3.3 *The extent to which trading is open to market abuses and corruption*

Establishing pollution rights and turning those into a tradable commodity obviously raises concerns about the degree to which the market in that commodity can be manipulated and abused. At the heart of any market in intangible assets are issues relating to verification and transparency. As fraudulent activities in an emissions trading market could have serious consequences for the environment as well as the market, robust monitoring regimes and stiff penalties are needed to guard against abuses.

The Directive and an associated set of Guidelines set out requirements for Member States to verify reported emissions. Operators of installations have to submit verified reports of emissions annually (by 31 March) to the competent authority in that country (the Environment Agency in the UK). Trading can be suspended until the authority is satisfied that emissions have been verified.

Penalties for deliberate abuses are determined by each Member State in their implementing legislation. In the UK those penalties are:

A person guilty of an offence under paragraph (1) shall be liable:

- (a) on summary conviction, to a fine not exceeding the statutory maximum or to imprisonment for a term not exceeding three months;
- (b) on conviction on indictment, to a fine or to imprisonment for a term not exceeding two years or to both.

That person as well as the body corporate, the limited liability partnership or the Scottish partnership, as the case may be, shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Whether verification procedures and penalties need to be further harmonised should be included in the Commissions review report and we should be lobbying for the universal adoption of the most stringent regime.

3.4 *Inadequacy of targets*

In the same way that the effectiveness of a tax is determined by the value it is set at, the effectiveness of trading is largely determined by the target set for the scheme, which is expressed as the total amount of allowances allocated relative to the demand for allowances. In both cases the level of ambition will be affected by opposition from affected sectors.

The EU's target under Kyoto is to achieve an 8% reduction in GHGs (compared to 1990 levels) by 2008–12. The EU has to date only achieved a 3% reduction. The EU ETS is regarded as the primary tool with which the EU can achieve its target, however, in the first phase of trading, targets set do not appear likely to put the EU on a linear path to meet its target.

An assessment of NAPs submitted to date by Ecofys on behalf of the UK Government shows that the total BAU emissions for the 17 countries who have so far submitted plans (excluding Italy's draft NAP) is 1.5 billion tons CO₂.

The level of reductions required so far is approximately 8MtCO₂ or 0.5% of the total.

There are a number of options available to redress this fact. The EU can:

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- tighten the rules governing the scheme to enable it to set far more challenging targets in the second phase of trading;
 - introduce new measures covering non-traded sectors (including introducing new sectors into the trading scheme) to reduce emissions in those sectors;
 - allow increasing proportions of the EU's target to be met through use of Kyoto's flexible mechanisms.

The views of Council and the Parliament will be crucial in determining how far the EU is able to take action to address this issue. NGOs and together with the financial services industry should work together to create the political space for the setting of a challenging EU wide target. There will continue to be opposition to such moves from affected sectors and the portion of Governments that exist to defend and represent industrial interests and industrial competitiveness.

3.5 *Failure to apply polluter pays principle*

Trading works on the principle that companies respond best to a combination of incentives and penalties designed to change their behaviour. The precise combination of incentive relative to penalty is dictated by the rules governing the trading scheme. It is possible to design trading schemes that put more emphasis on penalties or conversely on incentives. The biggest influencing factor over this balance is the allocation methodology and whether and to what extent companies are required to pay to pollute. In the EU ETS in the first round of trading companies are likely to be set relatively easy reduction targets and given a minimum of 95% of allowances for free. This arrangement places the emphasis on incentivising changes in behaviour rather than penalising existing behaviour. The rationale for this is that industries require time to adapt to changing circumstances and should not be unduly punished for actions that have hitherto been considered acceptable. As time goes on it is possible that the EU ETS will be adapted so that targets are more challenging and increasing proportions of allowances are auctioned rather than handed out for free. This will shift the balance and could eventually result in the complete application of the polluter pays principle.

NGOs should be campaigning for the introduction of 100% auctioning at the earliest possible opportunity.

3.6 *No cap on use of overseas credits*

The fact that overseas projects may be used by companies to meet their EU ETS targets, with limits on their usage being set at Member State level, undermines the degree to which the scheme can deliver a genuine reduction in EU emission levels.

The flexible mechanisms introduced in Kyoto already establish the risk that countries may choose to “by out” their obligation to deliver cuts in emissions. This potentially undermines the EU's ability to demonstrate leadership on climate change internationally by failing to demonstrate that low carbon economies can be achieved without seriously impacting on competitiveness and economic development.

The additional risk now exists that companies may also import significant quantities of overseas allowances. This will compound the perception internationally that developed countries like the EU have no intention of delivering emissions cuts themselves. It could also result in a country being traded out of compliance with its Kyoto target. This would mean that the Government must then use public funds to purchase sufficient international allowances (AAUs) to meet their targets.

To minimise this threat NGOs in all Member States will need to lobby to ensure tight caps are introduced on the proportion of CERs that may be used to meet targets. During the passage of the Linking Directive NGOs were calling for an EU cap to be set at between 3% and 0% of total allowances.

3.7 *Perverse incentives*

3.7.1 *Allocation methodologies*

Text book descriptions of trading schemes describe two basic methodologies for allocating emissions allowances—grandfathering—the allocation of allowances without payment on the basis of historic emission levels—and auctioning—the sale of emissions allowances where emitters purchase allowances before the trading period commences.

The EU ETS has adopted a grandfathering system and made provision for an optional auction of a set percentage of allowances—5% in the first phase, 10% in the second.

Member States have adopted differing versions of grandfathering but most involve the subtraction of allowances from a projected baseline. This system is open to abuse as projections are far from certain and difficult to critique.

For example in the UK where iron and steel emissions have been steadily falling in recent years the most recent projections show a steady increase due to optimistic growth assumptions.

A more pure form of grandfathering based on actual historical emissions or preferably a 100% auctioned allocation system would provide far greater transparency. Another alternative would be to allocate on the basis of technology benchmarks. This would mean calculating an average allocation for specific types of installations on the basis of either best available technologies or a weighted industry average. Such an allocation process would benefit the most efficient installations and penalise the least efficient.

In the UK the overall total of allowances has been determined subtracting a set amount of carbon from projected emissions for the period. Unusually and, as it turns out, unwisely, the decision over the amount to be subtracted was taken before the projections were finalised. This has led to increasing allowances as projections have been steadily revised upwards. It is important that phase two allocations are negotiated using previously agreed and unchanging projections to avoid a similar situation occurring.

The allocation of total allowances was then split into allocations for different industrial sectors (ie electricity generators, iron and steel etc). The share of these allowances was based on sectoral shares of emissions in 2002.

Individual allocations to installations within these sectors were then calculated based on an average of historic emissions (1998–2002 minus the lowest year).

Allocation methodologies adopted at sector and installation levels do not affect the overall allocation of allowances but can affect competitiveness and either reward or penalise early action. Eg a company who has reduced emissions steadily between 1998 and 2002 would receive proportionately fewer allowances than one who had steadily increased their emissions over that period.

This raises a concern over the allocation methodologies for future traded periods. If it is not made clear that the same baseline years will be used for all future allocations to individual participants, companies may assume that future allowances may be determined by future emissions, meaning that they have an incentive to maintain, or even increase, their emissions levels. Increases may be likely in this situation if a company estimates that allowances will be cheap in the first phase but significantly more expensive in subsequent phases.

We must lobby for an early indication from Member States that the same historic baselines will be used for the second and all subsequent trading periods until a harmonised system of 100% auctioning (or benchmarking) is introduced.

3.6.2 Closures of installations and new entrants

Member States in the first round of trading have been free to determine their own rules for how to manage allocations for new entrants to the market and closures of existing installations.

Consequently different rules have been applied and a greater degree of harmonisation is likely to be adopted in future rounds.

A comparison between the UK and Germany illustrates the different approaches taken: In the UK if an installation closes the company will not receive their allocation of allowances for that station for the next full year after closure. If that company wishes to open a replacement installation they are required to apply for a free allocation of allowances from a reserve of allowances that have been set aside for new entrants.

In Germany companies who close installations can maintain their full allocation of allowances either for sale or for use at a new replacement installation until the end of the traded period. A smaller new entrants reserve is in place for genuinely new entrants to the market.

In the UK the rules incentivise companies to keep stations operating in Germany they incentivise closures.

We should be lobbying for harmonised rules that incentivise closures of existing installations.

3.6.3 Banking

Trading schemes can adopt rules about participant's abilities to bank spare allowances into subsequent periods or borrow future allowances from future periods.

The EU ETS left it to Member States to decide on banking rules. So far only Poland has decided to allow banking between the two periods. The rationale for most countries not allowing it was to try to ensure there was sufficient scarcity of allowances in the second more important period corresponding with the EU's Kyoto commitment period. It was felt that if excess allowances were handed out in the first phase and banked forward it would be very difficult to guard against the EU being traded out of compliance with Kyoto.

The absence of banking, however, means that there is little incentive for companies to make investments in the first phase of trading to reduce emissions when demand for allowances and the corresponding price is likely to be low.

A potential solution to the problem of maintaining scarcity and incentivising early action would be to allow banking but to subtract the number of banked allowances from future allocations.

TIMELINE

Oct 2004	Council formally adopts Linking Directive Member States must finalise 1st phase National Allocation Plans UK—work begins on phase 2 targets as part of Climate Change Programme Review
Dec 2004	Commission has option to extend Directive to cover other gases and activities—unlikely to be taken up
Jan 2005	Trading period officially begins Commission issues questionnaire to Member States on their implementation of the Directive
March 2005	Deadline for transfer of allowances to installations UK—Climate Change Programme Review finalised
June 2005	Member States submit report on the application of the Directive (based on questionnaire)
Sept 2005	Commission published report on the application of the Directive based on Member States reports
June 2006	Commission submits report to Parliament and Council on further development of the scheme including proposals as appropriate Deadline for submission of Member States phase II National Allocation Plans
Jan 2008	Second phase of trading begins

RULES GOVERNING MEMBER STATE ALLOCATION METHODOLOGIES
AS SET OUT IN ANNEX 3 TO THE DIRECTIVE

1. The total quantity of allowances to be allocated for the relevant period shall be consistent with the Member State's obligation to limit its emissions pursuant to Decision 2002/358/EC and the Kyoto Protocol, taking into account, on the one hand, the proportion of overall emissions that these allowances represent in comparison with emissions from sources not covered by this Directive and, on the other hand, national energy policies, and should be consistent with the national climate change programme. The total quantity of allowances to be allocated shall not be more than is likely to be needed for the strict application of the criteria of this Annex. Prior to 2008, the quantity shall be consistent with a path towards achieving or over-achieving each Member State's target under Decision 2002/358/EC and the Kyoto Protocol.

2. The total quantity of allowances to be allocated shall be consistent with assessments of actual and projected progress towards fulfilling the Member States' contributions to the Community's commitments made pursuant to Decision 93/389/EEC.

3. Quantities of allowances to be allocated shall be consistent with the potential, including the technological potential, of activities covered by this scheme to reduce emissions. Member States may base their distribution of allowances on average emissions of greenhouse gases by product in each activity and achievable progress in each activity.

4. The plan shall be consistent with other Community legislative and policy instruments. Account should be taken of unavoidable increases in emissions resulting from new legislative requirements.

5. The plan shall not discriminate between companies or sectors in such a way as to unduly favour certain undertakings or activities in accordance with the requirements of the Treaty, in particular Articles 87 and 88 thereof.

6. The plan shall contain information on the manner in which new entrants will be able to begin participating in the Community scheme in the Member State concerned.

7. The plan may accommodate early action and shall contain information on the manner in which early action is taken into account. Benchmarks derived from reference documents concerning the best available technologies may be employed by Member States in developing their National Allocation Plans, and these benchmarks can incorporate an element of accommodating early action.

8. The plan shall contain information on the manner in which clean technology, including energy efficient technologies, are taken into account.

9. The plan shall include provisions for comments to be expressed by the public, and contain information on the arrangements by which due account will be taken of these comments before a decision on the allocation of allowances is taken.

10. The plan shall contain a list of the installations covered by this Directive with the quantities of allowances intended to be allocated to each.

11. The plan may contain information on the manner in which the existence of competition from countries or entities outside the Union will be taken into account.

23 November 2004

Witness: Miss Bryony Worthington, Senior Climate and Energy Campaigner, Friends of the Earth, examined.

Q133 Chairman: Thank you very much for joining us. You heard that. The previous witnesses clearly do not think much of anything that is going on, Kyoto, emissions trading, international agreements. I am wondering where that is going to leave us. What is your reaction to what you have just heard?

Miss Worthington: I do not think that we are that far apart in terms of some of the criticisms we might have. I suppose the big difference is whether or not you engage with the existing system pragmatically to try to improve it or whether you stand outside it and say you do not support it in principle and therefore you will not engage. We have taken the pragmatic option, basically from the point of view that if we do not engage, who will, and it could be an awful lot worse? We have been involved in the development of the UK's implementation of the EU emissions trading scheme and as a result of that our solution really is to advocate far stronger regulation of emissions trading at an international level which would make it compatible with a multinational approach to reducing emissions. Some of the issues are exactly the same.

Q134 Chairman: The enforcement issue is obviously critical.

Miss Worthington: Absolutely.

Q135 Chairman: If there is nothing there to make sure people are doing it, it cannot be monitored and cannot be enforced and then it is not going to achieve very much. Are you part of what appears to be a growing consensus which believes that Kyoto is not actually going to achieve very much anyway and that what really needs to start happening next year is a serious debate about what happens post Kyoto, post 2012?

Miss Worthington: Yes; absolutely. I think people largely welcome the fact that Kyoto has been ratified and is an important political statement, but in practical terms it is going to deliver very little. The objective it set itself of achieving a 5% reduction in industrial country emissions relative to 1990 will not be achieved. It is partly because, when it was designed, it was assumed that the US would be a participant. One of the differences going in next time around is to be very clear about who is in and who is out when you are target setting

otherwise the target is meaningless. I am sure there will be a very different approach to the post 2012 discussions.

Q136 Chairman: Do you think there needs to be a different approach to the setting of the targets? It seems to some of us that the targets have been set as some sort of political horse-trading.

Miss Worthington: Yes; absolutely.

Q137 Chairman: Do you have any idea how that process might be reformed?

Miss Worthington: Anything would be an improvement. Essentially it was exactly horse-trading, where countries simply went into a darkened room and beat each other up. We had no methodology attached to it at all. The experience the EU had over its implementation of its own emissions trading scheme, was that they have now experimented with very different ways of allocating allowances. There is going to be far greater appreciation within government about different methodologies and the pros and cons of those methodologies. I hope that those people going into the debate next time around will be far more informed about the options which are available to them and it will not simply be a political fudge, it will be based on something approaching a scientific approach to the issue.

Q138 Chairman: When they go into that debate about post 2012, do you think what they should be talking about is a sort of Kyoto-plus arrangement, or is it too early to tell?

Miss Worthington: If you are asking me whether the architecture of trading should remain within it in terms of the flexibility, if you had an improved methodology then the architecture could remain. I think we would probably agree with the criticisms of the CDM mechanism, for example, as not delivering what it was expected to deliver and providing unnecessary levels of flexibility which are not necessary, given the huge amount of potential for individual countries to abate themselves. There is this issue also of us taking the low-hanging fruit from those countries in advance of them hopefully taking on their own carbon abatement strategies. There is certainly that aspect of it which should really be looked at. In terms of individual countries taking on targets and allowing an element of

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trading to allow for flexibility, that is inevitably going to be a part of whatever comes in the second phase.

Q139 Chairman: Are you broadly happy with that sort of structure?

Miss Worthington: I should say that we are fairly happy with the architecture but the implementation to date has sadly been woefully inadequate.

Q140 Chairman: How important do you think it is next year, as part of the G8 and all the rest of it, to try to get the Americans more on side than they are?

Miss Worthington: It is highly unlikely that we are going to see the Americans ratify Kyoto. The question then is how much you involve them in discussions about what comes next. There are two parallel trains of thought on this. You can go back to the convention, the UNFCCC itself, and trigger a review of the adequacy of commitments which is actually overdue; it was meant to take place in 1998. The last adequacy review spawned the discussions which led to the Kyoto Protocol. That would be one way, as the US are signatories to UNFCCC, of moving ahead with the US on board and hopefully with some voluntary participation in rapidly developing countries. If you do not take that route and you simply have the Kyoto ratifiers discussing targets, then that would be a very different discussion and that is the other alternative route.

Q141 Chairman: Is there not a danger though that we could allow the whole opportunity that presents itself next year to be diverted by an endless sort of argument with the United States about what they will or will not do, when there is another option, which is to ignore them altogether and get on with developing ideas with people who are prepared to recognise there is a problem and face up to it?

Miss Worthington: Absolutely, and I think the government would have to pursue both tracks. I do not think you can do either/or really. I suspect the discussions will need to carry on without the US's engagement, but in a purely practical way which is going to make it very difficult for developing countries to become involved if the world's richest and largest emitter is not also part of that discussion. The politics of this are in no way simple. What I would say is that the EU has shown great leadership today in terms of its setting of targets and moving forward with interesting policy instruments. It should also be mindful of its need to protect itself, having taken that leadership role. Certainly from an NGO perspective, something that we will be calling for with increasing volume is the need for trade sanctions or other instruments to be introduced to protect ourselves so that we do not hit the fundamental problem of anti-competitiveness, which is what seems to be undermining EU leadership at the moment.

Q142 Joan Walley: I am interested really in the timescale of all of this. Given that Kyoto is what we have and it is there and as things develop it might seem that perhaps a different approach would be more appropriate, given the stage that we are now at in terms of the need to deal with global warming, how do you see the timing of all of this, given that we have a very specific time slot with which to take Kyoto forward and if we do not take Kyoto forward, find some alternative means of dealing with it? Do you see what I am saying about the sort of timing of it all really and the opportunities that there are for action?

Miss Worthington: I know that Kyoto is fortunate in that it meets annually and that means that progress can be made in reasonable time. There is a very great need for some urgent action and you do need to continue the parallel process which the UNFCCC framework gives you. So you have the over-arching convention which will meet through the COP mechanism and then the MOP, which will be there to talk about Kyoto. In a sense, they will have parallel discussions and as and when the politics of the US changes, there will then be a shift from one track to the other. I cannot see that they cannot be carried on in parallel at the moment.

Q143 Joan Walley: So you think there is scope to have a change of the kind that perhaps some others would say is really needed within the overall architecture of Kyoto, if there were the political will to do that.

Miss Worthington: If there were the political will to do it.

Q144 Joan Walley: Right; okay. That is helpful, thank you. You talked earlier on about regulation and the importance of regulation. If you accept that an emissions trading system really needs to be based on long-term target cap and that in this respect our current short-term approach, especially in relation to a European Union emissions trading scheme, is damaging both because of the minimal reduction set, and because it is failing to give a clear framework against which industry can invest, how important do you think it is for industry to have some certainty about medium-, short-term and long-term financial decisions which it has to make?

Miss Worthington: There are quite a few issues bound up there. Obviously an indication of where governments want to go on carbon abatement would be useful, but in a sense the actual more critical issue is about immediately bringing down emissions and setting ourselves on a trajectory which is a clear trajectory towards longer-term targets. In a way, the biggest failing of the EU scheme is the absence of any short-term target for the scheme; it has merely been created from a bottom-up approach with individual member states setting their caps, which means that the net effect is that there are far too many alliances being generated. It will achieve very little in terms of domestic reductions in the EU, meaning that the EU is likely to be unable to meet its own Kyoto target. So the absence of short term targets is

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actually a central issue. Obviously industry will say they want certainty, but I have never heard an industry say they do not want certainty on every single front and it is impossible; you cannot give complete certainty. Actually industry would not like it, because that means everybody has everything the same and there would be no market advantages. There is a lot talked about level playing fields, but it is usually a bit of a fudge to try to strengthen their own arguments and undermine governments' intentions.

Q145 Joan Walley: Given what you have just said there, how much do you think that that is undermining any success or credibility about the way in which the European emission trading scheme is actually likely to operate?

Miss Worthington: Our position is that this is a regulation. It is a market-based regulation, but in its being introduced to cover 50% of the EU's emissions with fairly strict penalties for non-compliance, it is ground breaking. Had it been implemented slightly differently, and there are many ways in which it can be improved, then it could have delivered low-cost saving in a way which engages industry positively as opposed to them seeking to get round taxes. Fraudulent behaviour, which was mentioned, is a threat no matter what scheme you introduce. There is nothing really unique to trading in that. I simply think that unfortunately it has been implemented so poorly in this first phase that that potential which it had, has been lost, which is regrettable. Certainly the UK in its presidency of the EU can do a lot to improve the scheme going forward.

Q146 Joan Walley: Do you think there is scope to look at some better way of merging the two, the European Union and UK schemes?

Miss Worthington: The UK scheme probably demands an inquiry of its own because it is a lengthy and complex piece of policy making and I am probably one of its most severe critics. I think it was not necessarily the best way of spending taxpayers' money. However, there is huge scope for the EU scheme to be improved. The setting of an EU-wide cap in line with our Kyoto target would vastly improve it and stop the race to the bottom that has been occurring through Member States competing with each other. The introduction of auctioning and very rapidly moving to 100% auctioning of allowances as opposed to the very convoluted projection-based allocation systems which are being used today would greatly improve it. Eliminating all links to CDM and JI—

Q147 Joan Walley: I am sorry, I did not quite understand that last point.

Miss Worthington: Eliminating all links to the clean development mechanism and the joint implementation credits is simply not necessary. Those are all ways in which it could be improved.

Q148 Joan Walley: Do you think that the way in which, for example, most of the allocations were handed out free in the European Union scheme, has hindered or helped matters?

Miss Worthington: Practically, it has meant that it can get off the ground. Environmentally, it certainly breaches the polluter-pays principle quite spectacularly. We would advocate a move towards 100% auctioning. Not only would that give government a revenue stream upfront which you could then redirect, but it would stop all the horse trading around projections which are causing everybody complete nightmares, both over in Defra and DTI and other parts of government at the moment.

Q149 Joan Walley: Just going back to the points that you were making about how the whole system could be changed, do you feel that there is a mechanism which could be used maybe through the European presidency that this country will have? Is there a way, a procedure, a process by which some of the concerns that you wish to flag up could be addressed?

Miss Worthington: Yes; absolutely. The directives sets out a very clear timetable for reviewing the first pilot phase, improving the second phase and the timing of it coincides quite nicely with the UK's presidency. Member States have to report on their first experiences towards the middle of next year and then the Commission is to draw up a review and a set of recommendations for how the directive might be improved following that.

Q150 Joan Walley: So if you were actually advising the UK minister about what to take up in phase two and how to take it up, what would be your top three priorities?

Miss Worthington: Establish a EU-wide cap. It makes sense in relation to our Kyoto target. Make it mandatory that auctioning is introduced for the second phase and get rid of the linking directive for the second phase.

Q151 Joan Walley: Just absolutely finally, may I ask you about the contraction and convergence? I read that in your view it is the only rational basis for allocation or do you think that there are other options, or that they are not necessarily exclusive?

Miss Worthington: It is an elegant model. It certainly highlights some interesting differentials between countries. Personally, I do not think it can be implemented in time. The interesting thing about the need to peak and decline is that it is becoming ever closer really and it is now possibly only 10 to 15 years away before we need to see global emissions peaking and declining to stay within two degrees and I think starting from scratch with a completely new system may not be achievable in that time. That is not to say the principles of contraction and convergence could not be incorporated in whatever sensible allocation methodology comes forward for future rounds. There is always going to be other considerations

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that need to be taken into account. A pure per-capita model will bring with it potential problems and I think Aubrey has accepted this in his regionalised model, where you have regional allocations between those regions. So the whole of Africa could have an allocation, as the whole of Europe does and then the allocations are subdivided down. That is more pragmatic and practical than a pure per-capita for everybody. It throws up some interesting anomalies when you look at it from a pure per-capita basis.

Q152 Chairman: Before we move on, on a point of fact about auctioning, there is scope for some auctioning at the moment is there not, but it is limited to 5%? Is that right?

Miss Worthington: Yes, it is voluntary and 5% in the first phase and up to 10% in the second phase. I believe only Denmark has taken it up. The UK, in its inimitable fashion, has taken it up in a rather bizarre way in terms of auctioning off any spare allowances from a new entrants reserve, which we will think will be entirely removed in the next phase. It would have been better to follow the Danish model and we would urge the UK to take on full auctioning in the second phase.

Q153 Paul Flynn: Would you just clarify the different forms of trading which might occur under Kyoto? There seem to be three distinct levels. There is the inter-country trading, there is a trading which might occur under the joint implementation schemes such as the EU ETS and then the trading in CER credits which arise from the CDM projects in developing countries. Is that a reasonable simplification of what is possible?

Miss Worthington: There are two levels of trading, but there are three combinations. You can trade inter-countries and you can trade inter-company, but then there is this extra source of emission credits which is from developing countries or joint implementation projects which can be used in either market.

Q154 Paul Flynn: What do you think the impact will be of the inter-country deals on the inter-company trading which is coming on through the EU ETS and the CDM? Do you think there is a risk that the deals can undermine investor confidence and remove the incentive for inter-company trading?

Miss Worthington: The risk is all around in a way. The inter-company trading has potential, depending on how it is structured, to introduce credits into the annex one countries which are bound by Kyoto targets. That would then mean that their actual emissions were in excess of the overall allocation within annex one, if it were not regulated properly. It all depends on who is able to trade in which markets essentially and at the moment there is no governance of that beyond the EU acting as a *de facto* policeman over who they will and will not link their inter-company trading scheme to. The point we have been trying to make in our submission is that absolutely is not

sustainable and an international scheme of governance is absolutely necessary in order to give that some structure.

Q155 Paul Flynn: You suggested in your submission that the emissions trading might develop through the link in various different regional trading systems. Is this a more practical and more feasible approach, rather than attempting a great single world trading system? Is it really not on?

Miss Worthington: There is a lot of movement in the US in terms of introducing inter-state, sub-national trading schemes. We would strongly advise the EU not to link with those schemes until such time as the US takes on a federal cap and that the EU ought to use the isolation of the US from this trading scheme as one of the very few bargaining tools it has in terms of trying to encourage US participation in a multilateral approach. That is not to say we would not welcome the movement towards carbon trading in the US as a means to encourage a carbon abatement, with all the caveats that we have said in terms of all trading scheme, that they must be properly governed and set decent caps and be properly regulated.

Q156 Paul Flynn: Do you think there is any room for adopting a different approach to America altogether? Do you see some likelihood, if you had a more free-wheeling approach to America, that we might get them on board even if it means losing a great deal of the rigour of the scheme at the moment?

Miss Worthington: In terms of alternatives, we are strongly of the view that those countries which can abate should abate and quickly, but that would need to be within an overall framework so that you can see how you are progressing in terms of your scientific needs to abate emissions in line with IPCC projections. I do not see that as an alternative to Kyoto, but it is a modification of focus, so that we are now thinking about lines and linear reductions from now into the future, as opposed to squabbling about long-distance targets which people can then either chose or not to try to meet. This seems to be one of the biggest weaknesses of Kyoto: it had a long lead-in time, the targets adopted were never really properly worked out or bought into, so now it seems to be optional. We do not think Holland, for example, as was mentioned before, can meet the target domestically, therefore they are buying in credits. Italy does not seem to even care how it is doing in terms of Kyoto. The target-setting part of Kyoto was so poorly done that it has almost unravelled itself and a new approach that is based on ability to abate really rather than political power would at least improve the system.

Q157 Sue Doughty: Can we go into compliance penalties because at the moment we have been trying to talk about persuasion and now we are trying to talk about enforcement very much. The current Kyoto agreement has no penalties and you suggest we need to deal with this next time round.

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What sort of penalties would you really want to see though? Would you want something, as with European emissions trading scheme, with a carbon penalty that kicks in? Is that actually feasible? Would it have an impact? Or do you think we might just end up with carbon mountains, rather like debt mountains?

Miss Worthington: Two suggestions were tabled, on which the discussions were never really concluded. One was, assuming you have consecutive periods, that if you are out of compliance, then you have the amount that you are out of compliance by removed from your future allocation. The problem with that really is that you need to do that in advance, you need to have a gap, otherwise people will gain the system. You would need to have three periods in a line in order for that penalty then to be real. So you would incur a penalty and then it would be removed from your next but one. This was all discussed, but the absence of that long-term framework is preventing that. The other is that it was suggested that a tax might be levied on all transactions between countries of allowances and that that tax would be rebated if you were compliant, but kept from you if you were not compliant. I think there were problems to do with the kind of incentives that that created or did not create in terms of trading or non-trading. Those are the two suggestions that we have had and I suspect that with that, it has to be something which will be triggered automatically. You cannot just levy a fine and then expect payment: it will have to be that something is withheld from non-compliant countries. So a combination of either the tax approach or the removal of credits, which is exactly how the EU scheme works, would be the best route.

Q158 Sue Doughty: So some form of trade sanction moving along there. You do not sound very confident about whether there is enough political will to make it really happen. Do you think actually that we would ever get Europe levying tariffs on the United States, for example? We still have this big problem about where the big boot is going to come from and whether it will actually join with the person it is kicking.

Miss Worthington: We can but try. I do not think we should instantly dance to the US's tune. The EU should continue to show leadership and take the path that it think is right and do whatever it can to put leverage onto the US. The US is in an interesting position at the moment: it does not have the strongest currency; it knows China is catching up quickly with it in terms of its global economic power; it is obviously a hugely powerful country and you would not go into a trade war without good cause. However, if the EU truly believes in what it is doing, then it should be able to put a case together, which says, rather than have a race to the bottom in which we do not move forward because the US is not, we move forward but we punish the US by whatever means we can for non-compliance. Keeping them out of international trading would be one route; another, as we have said, would be the usual traditional trade sanctions. If you can go

into a trade war over cricket bats and ice-cream, then you ought to go into a trade war over carbon and non-compliance.

Q159 Chairman: To what extent do you think our case would be weakened, were the Italians to continue to behave as they do and the Dutch, who clearly do not seem to be very engaged with this, continue to behave as they do? How can Europe really have the gall to take any action against America, if it is not setting its own house in order?

Miss Worthington: I think the perception is that they will try to set their house in order in time for their Kyoto target—It would be hugely politically embarrassing to miss it by a wide margin. I suspect the EU will make full use of the flexibility within the scheme, if it comes to it, but there is no doubt that politically we need to demonstrate action at home in order to maintain that leadership. Time is running short, which is why the emissions trading scheme is so important and why it is frustrating that the first phase has not gone more smoothly than it has. The debate about the second phase starts now and everybody I speak to who has been involved in talking about the first phase is now far more aware of the pitfalls and the tricks that were played against them and the potential problems than they were this time 18 months ago.

Q160 Mr Challen: Are CDM projects more likely to go to fast-developing countries than to the poorer ones as they will be in a better position to take advantage of these?

Miss Worthington: I have to say that I am not in anyway an expert on CDM but I would say that it is open to those people who seek out the projects and then seek accreditation through the executive board and to that degree it is very difficult to second guess where they will come from. I have read in reports, that countries like China will be potentially big sources of CDM credits. It certainly is not going to be a method which enables quite high cost abatement technologies to be introduced into the poorest countries: it is going to be about finding the least cost solutions internationally. If we are expecting it to lead to big investment in, say, African renewable energy, I suspect that is not what it will deliver. It is more likely to deliver chemical or power-plant efficiency gains from those countries which already have high emissions.

Q161 Mr Challen: Lastly, we have heard this afternoon that part of the problem of verifying Kyoto and the accountability of it is the use of carbon sinks. There still seems to be a large debate about that. Do you think that they ought to be included in future, post 2012, and that perhaps we should reduce their role even now, as we were talking earlier on about the UK?

Miss Worthington: Yes, we do not support the use of sinks, for all the reasons which I am sure have been rehearsed previously. They should be excluded and they are currently excluded from the EU emissions trading scheme, but there is provision for them to be brought into the second phase. I think

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the UK should stand firm on keeping them out and we should not be tempted to use them in our own country to try to fudge the figures. There is evidence that that is occurring. The DTI energy projections that were published in November were an embarrassment because they showed that we were quite a long distance from our 20% target and one of the ways of softening the blow has been to

up our assessment of what we can get from land use change, which could be the first signs of a government policy to move into that direction. We would oppose that obviously. Abatement is what is needed.

Chairman: Thank you very much. I think that concludes our questions. Thank you very much indeed for your time.

Wednesday 8 December 2004

Members present:

Mr Peter Ainsworth, in the Chair

Gregory Barker
Mr Colin Challen
Mrs Helen Clark

Sue Doughty
Joan Walley

Memorandum submitted by British Airways plc

INTRODUCTION

1. British Airways welcomes the opportunity to submit evidence to this Environmental Audit Committee inquiry. British Airways is the fifth largest airline in the world, measured in terms of passenger kilometres travelled, and the largest outside the United States on this measure. BA employs around 48,000 employees worldwide, 80% of whom are based in the UK, and generates annual revenues of £7.6 billion (2003–04).

2. British Airways seeks to promote and enhance aviation's role as a contributor to the sustainable development of global society, recognising that sustainability must strike a balance between economic, social and environmental objectives.

3. Aviation plays a fundamental role in global society, as it brings significant social and economic benefits. British Airways also has a strong record in addressing the social and environmental impacts of its operation. We have reported annually on our environmental performance since 1990 and have played an active part in national and international efforts to reduce the problems of aircraft noise and emissions—including involvement in the work of the UN International Civil Aviation Organisation (ICAO) Committee on Aviation and Environmental Protection (CAEP). British Airways has also taken a number of voluntary initiatives to improve its environmental performance, including commitment to a 30% fuel efficiency improvement between 1990–2010 and participation in the UK Emissions Trading Scheme. We are currently participating in a cross-sector initiative to develop a sustainability strategy for UK commercial aviation (CASS).

QUESTIONS POSED BY THE ENVIRONMENTAL AUDIT COMMITTEE

Q1 Whether an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which international ETS would be subject.

4. The feasibility of any mechanism for limiting anthropogenic climate change will be related to global political willingness and resolve to take action. Significant efforts at the international level will be required in order to secure a practical and acceptable response to climate change. There is no reason to believe that an Emissions Trading System (ETS) will be less feasible than any other mechanisms.

5. At national industrial sector and company level, compliance regimes for ETS are being enshrined into national legislation. Heavy penalties for non-compliance should act as sufficient incentive to meet the requirements of the ETS. However, at the nation state level, the lack of an international compliance policing authority for meeting Kyoto commitments has the potential to undermine emissions reduction progress through uncertainty and political manoeuvring. However, this weakness is not exclusive to ETS but can equally be applied to any international emissions limitation regime.

6. Hence, whether or not an ETS approach is decided upon for the post-Kyoto period, it may be desirable to establish an international compliance monitoring body, perhaps through United Nations auspices.

Q2 What other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low carbon technologies into less developed countries.

7. All potential options for maximising global carbon reductions and engaging developing countries should be evaluated. Emissions trading itself can take many different forms and each deserves detailed consideration. However, the basic premise of emissions trading—harnessing market forces by setting an emissions cap and creating an artificial market for carbon with flexibility to meet the cap at least cost to the economy, has much to commend it.

8. Approaches based on taxes or charges are not only uncertain in terms of environmental effectiveness and outcome, but disproportionately penalise economic activities that have high marginal abatement costs.

9. British Airways believes flexible, market based mechanisms based on emissions trading are consistent with the needs of sustainable development, since the external costs of climate change are automatically built into the cost of goods and services. The economy and society then have choice in determining the appropriate mix of economic outputs within carbon reduction constraints.

10. Regardless of the approach adopted to pursue global carbon reduction, it must reflect the need for a long-term, stable and transparent framework of policy measures.

11. An international approach to carbon reduction must address action in both developed and developing countries. The proposed use of emissions reduction projects through the Clean Development Mechanism as a means of channelling investment in low carbon technologies into developing countries is an important policy initiative.

Q3 *What approach and specific objectives in relation to climate change the UK government should adopt during its presidency of the G8 and EU in 2005*

12. Suggested objectives for the EU and G8 presidencies are as follows:

- (a) Make progress on incorporating aviation into the EUETS in a way that does not undermine the competitiveness of the aviation industry.
- (b) Intensify atmospheric research into non-CO₂ climate effects and interactions, by raising the priority of the work and increasing funding where necessary.

13. To be effective, action to reduce climate change impacts must take place within a global framework. Existence of a global framework and objectives helps to minimise competitive distortion when actions are taken at nation or regional level. Within the aviation sector, British Airways welcomes agreement at ICAO that emissions trading is likely to be the most cost efficient and environmentally effective mechanism for dealing with carbon dioxide (CO₂) emissions. This provides a basis for incorporating aviation into an EU Emissions Trading Scheme (EUETS).

EU EMISSIONS TRADING

14. At the EU level there is a need to establish greater convergence in national allocation mechanisms that are applied within the EUETS. British Airways recommends an EU-wide unified approach to initial allocation and target setting for international aviation emissions within Europe.

15. British Airways supports the UK Government focus on the potential inclusion of aviation CO₂ into the EUETS, however, there are many technical issues that would need to be resolved if emissions trading is to be a practical proposition for the aviation sector within Europe. These issues are summarised below:

(a) *Focus on CO₂ for emissions trading*

Emissions trading is a suitable instrument for CO₂ and other Kyoto greenhouse gasses but not appropriate for addressing the upper atmospheric effects of aviation. In line with other sectors, an EU scheme must only cover aviation CO₂ emissions.

(b) *Avoid market distortions*

Any scheme must be applied to minimise competitive distortions within the EU, between EU and non-EU carriers, and between transport modes. A unified EU-level approach to allocation and target setting should be sought for aviation. All operators on a particular route must be covered by the scope of a scheme.

(c) *An approach that includes aviation CO₂ within the Kyoto process under ICAO guidance should be sought*

Any regime created for EU aviation CO₂ should be developed in conjunction with ICAO and with reference to it's ongoing work to include aviation in global emissions trading.

(d) *Seek simple and appropriate approaches to the particular circumstances of aviation*

Air service operators should be the trading entity. Initial allocation should be a free allocation. Targets should reflect high marginal abatement costs in aviation. International and domestic regimes should be harmonised as far as possible. Aviation should have the broadest possible access to emissions allowance markets.

NON-CO₂ ATMOSPHERIC RESEARCH

16. Whilst it is appropriate to evaluate reduction measures for greenhouse gas emissions such as CO₂, there are a number of anthropogenic atmospheric effects that are thought to contribute to climate change, for which scientific understanding is inadequate and requires much more research. One example of this is the large range of uncertainty associated with the impacts of aerosol particles in the atmosphere.

17. In addition to CO₂ emissions, aviation is thought to contribute to climate change through effects in the upper atmosphere related to NO_x, particles and water vapour. However, unlike CO₂, scientific understanding of these non-CO₂ effects of aviation is subject to considerable uncertainty. The effects vary depending on flight profile, background atmospheric conditions at the time, and from season to season.

18. The atmospheric science community report that “much work (is) yet to be done before we can have higher confidence in assessments of the impact of aviation on climate change and establish methods by which these effects might be ameliorated.”¹

19. British Airways is involved in an EU research project called IAGOS that aims to improve understanding of aviation’s non-CO₂ atmospheric effects by installing measurement equipment onto commercial aircraft. Direct measurements of this kind are essential to improving scientific knowledge of these effects and to understanding the most appropriate instruments for mitigating them.

20. A critical priority for developing measures to address climate change is therefore the intensification of atmospheric research to improve understanding of upper atmospheric effects and interactions. Such research is imperative for addressing all anthropogenic effects, not only those associated with aviation.

Q4 What contribution individual departments can make, and whether they are sufficiently “joined-up” in delivering a coherent UK agenda.

21. Through the Department for Transport the UK has established strong credibility on the international stage in dealing with aviation environmental issues and we should aim to build on this in the EU and G8 presidencies.

22. We recognise that in the case of aviation a number of departments have a role to play in formulating climate change policy. British Airways looks to all government departments to formulate pragmatic inter-governmental positions on climate change that reflect the competitive position of the air transport industry.

29 October 2004

Witness: Dr Andrew Santance, Chief Economist and Head of Environment Affairs, British Airways, examined.

Q162 Chairman: Good afternoon. It is good to see you back in front of the Environment Audit Committee.

Dr Santance: It is good to be here.

Q163 Chairman: As you know, we are looking at the feasibility or otherwise of emissions trading schemes in general, and particularly in this session, with the first two sets of witnesses, at aviation’s role in future emissions trading scheme. I have a report here produced by somebody called INFRAS. I do not know if you have heard of them or seen their report *The External Costs of Transport*, but they suggest that the external costs of aviation amount to around 53 euros per thousand passenger kilometres. I reckon that on that basis, if that figure is right, if I were to go to Berlin and back I would be paying an extra £35 each way for my flight. I noticed on your website today that you can fly return to Berlin for £46 at the moment. If that sort of cost were to be added to the ticket price for passenger travel and for freight, what sort of impact do you think it would have on the number of flights?

Dr Santance: You said “if that sort of cost were to be added” to the flight cost and I think that is the big if. I was only able to look at that study this morning but I think quite a few assumptions have gone into producing that figure of 53 euros per thousand kilometres, which involved some very high estimates of the climate change impact—much

higher I think than the UK Government would conventionally assume. I think the notion of adding that to the cost of flight as a policy measure is something that we would significantly question, both on economic grounds and on environmental grounds because, as you know, we favour a different approach, not just adding a big cost to passengers but an approach for dealing with those climate-change impacts based on emissions trading. But, to answer your question as you have put it, if that sort of addition were made to the cost of travel, it would clearly discourage travel and that has social and economic costs as well as it may have some perceived environmental benefits. The issue of balancing the social and economic issues and environmental issues is what we have to do in this arena.

Q164 Chairman: Do you have a figure that you have worked out for yourselves for the cost per passenger kilometre?

Dr Santance: We do not regard this external cost approach as being the best way for developing policy in this area. I might have given our views to this Committee before on this issue but I will reiterate them. We see that aviation does have some very distinct environmental impacts and the way in which we should approach those is to address the environmental impacts and to seek to reduce them and mitigate them as best we can. We can see an example of this with noise, where there is an

¹ Rogers H L *et al* (2002) The impacts of aviation on the atmosphere. *The Aeronautical Journal*.

established approach for dealing with noise issues. The ICAO United Nations body agreed what is called “a balanced approach” and this involves reducing noise at source, taking operational measures, putting in operational procedures and getting better land-use planning at airports. Following that sort of approach, if we see what has happened with noise at Heathrow, for example, over the last 25 years the number of people in the noise disturbance area of Heathrow has reduced by 85%.

Q165 Chairman: That is a whole range of technical solutions. We have discussed before with aviation that it has a variable impact on the environment because you cannot get a plane off the ground without burning huge amounts of fossil fuel. Do you not accept that it is possible to put an external value on costs of aviation? The Royal Commission for environmental protection put a price of £40 per passenger kilometre on it, which is higher than the other figure we were talking about.

Dr Santance: If I may develop the answer that I am giving, if you would allow me to take a bit of time. That is an example based on noise. There are two other very distinct issues that the aviation industry faces. One is local air quality at airports, and we have to find approaches for making sure that that is reduced, and the other is climate change, which is what I think you are focusing on and where the big numbers come from in these calculations. We have made clear that in addressing climate change we need to find the most environmentally effective and cost-efficient approach, and the notion of adding up the big total and then supposing that that is put as a tax or an impost in the industry is not, according to analysis conducted under the auspices of ICAO and by other independent bodies, a cost-efficient or environmentally effective approach. There is an approach based on emissions trading that is likely to be more cost-efficient and environmentally effective.

Q166 Mr Challen: Do you not accept then the “polluter pays” principle?

Dr Santance: I think we have to be careful how we apply that principle. When we are talking about climate change we are saying that what we are trying to achieve internationally is to reduce the amount of climate change gases, greenhouse gases, particularly carbon dioxide, over time on a long-term basis and we in the aviation industry would accept that. That is a sound policy. That does not mean that we have to pay for every ton of carbon dioxide. We have to make sure that we are working consistently with the rest of the business community and the rest of the economy in making sure that we play our part in that reduction in carbon dioxide and greenhouse gases.

Q167 Mr Challen: Who would pay for the other tons? Who picks up the tab for the amount that you do not want to?

Dr Santance: Under an emissions trading scheme you would pay for the amount that you produced over and above your allocation—which is absolutely right. I think that is consistent with the “polluter pays” principle. I would argue that emissions trading, rather than the notion of adding a large amount to every flight as a sort of tax or charge, is the right approach in this area of climate change. It is the question of making the impact at the margin that you want to make sure you are doing, not just taking large sums of money out of the industry, and that is what emissions trading achieves.

Q168 Chairman: One of the points that we make is that in order to be effective an emissions trading scheme needs international compliance policing system. That is going to be very hard to achieve, is it not?

Dr Santance: I think we make the point in the context of international climate measures generally. But emissions trading is not exempt from that. We can observe what is happening on the international scene, that some countries are moving faster than others to meet their climate change commitments, and the extent to which that is being supervised, policed and overseen at the international level is not, I think, totally satisfactory. Part of that is a political issue. Part of it is that some major countries, particularly, the United States have not signed up to the approach that the rest of the international community is following. I think as we develop our approach to this subject internationally, we do need not only to put into place institutions that will make sure that are you complying at the national level—because when you introduce emissions trading we have seen in the UK and at the European level compliance regimes put in place—but to give some sort of open and international oversight to that.

Q169 Chairman: What do you think the chances are of getting up and running an effective compliance system?

Dr Santance: As I said, this is not specific to emissions trading; this is a question of making sure that countries are following through on their climate change commitments generally. I think it is a very difficult issue but it is the same issue that we face whatever instruments we deploy. If we are talking about taxes and charges or—

Q170 Chairman: They would be simpler, would they not? They may not be more efficacious in your view, but they would be simpler.

Dr Santance: I do not think we have any more scope of obliging, say, the United States to impose a tax on aviation than we have of getting them to comply with emissions trading. I think we have more chance of getting them involved in emissions trading because it is a market mechanism that in the US context has perhaps more degree of policy support.

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Q171 Chairman: It is not only the US that has a problem with this, is it? It is Germany as well. Could you share with us your view of the current debate between Germany, the UK and other EU countries about including aviation in the emissions trading scheme?

Dr Sentance: I think a background to the situation in Germany is that they have taken on the largest reduction in the carbon dioxide and other greenhouse emissions within the European Union, so they are bound to be more sensitive generally on this topic, particularly in business circles. I think it is fair to say that when we discuss this with our European counterparts in the aviation sector in Germany, it is a more general business issue, it is not specific to aviation. There seems to be perhaps less support within the business community for emissions trading than there is in the UK, but I think there are a number of factors behind that. One is that they have taken on a large commitment, and I think it may reflect the political and economic climate in Germany.

Q172 Chairman: Including the tax regimes.

Dr Sentance: I do not think they are any more enthusiastic about taxes. I suppose that is my point.

Q173 Chairman: They do not want both, they want one or the other.

Dr Sentance: I think Germany is in a very difficult situation politically and economically. The German economy has been growing on average at 1% per annum slower than the average of the European Union, whereas the UK the economy has been growing faster than the average for the European Union. When times are difficult economically, I think the business community is in general very cautious about taking on new commitments in the environmental domain or elsewhere.

Q174 Chairman: On the question of tax versus emissions trading, we have discussed in the past the extent to which aviation is exempt from taxes which other businesses pay. If other industry is going to participate in the emissions trading schemes, as it is going to, is there any reason why they should continue to pay tax—VAT and fuel taxes—as well as participating in an emissions trading scheme? Or should they be treated like you and exempt from tax?

Dr Sentance: If I could go back to your initial statement, you are saying aviation is exempt from taxes that other industries pay. You are referring, I think, perhaps predominantly, to fuel tax. There are some very good reasons to do with international agreements for that.

Q175 Chairman: I am not asking you to justify it this afternoon. We have been through all that. It is just a question of whether it is fair on the rest of the participants in an emissions trading scheme that they have to pay taxes which you do not have to pay or whether you think it would be fairer for them to exempt them in the way you are exempt.

Dr Sentance: In one of the Government's publications there is a table at the back called *Environmental Taxes*, and one of the largest revenue raisers, as the Government defines environmental taxes, is air passenger duty, which raises over £800 million a year. I do not think that puts us in a position where we are exempt. The Government is raising money in different ways from the aviation industry where it is raising money, for example, with a climate change levy, from other ground-based sources. If I could just take you to what British Airways have done, we have in a sense taken on voluntary commitments within our sector where we can, by participating in the UK emissions trading scheme. I think we are keen to address the environmental issue. I do not think it is question of fairness; I think it is a question of what is the most effective mechanism that we can find both environmentally and in terms of its impact economically on the industry to address the issue that we face. We have seen in relation to motor fuel that taxes can go to economically very high levels—and levels where they begin to experience political obstacles rather than economic constraints—without actually achieving the environmental objectives that we would like to achieve. I think it is well worth thinking about a different approach when we come to aviation.

Q176 Joan Walley: I would like to press you a little bit more about some of the comments you make in paragraph 7 of your evidence and preface them by saying that a lot of people are having difficulty understanding how an emissions trading system actually works and I thought I was one of the few but it seems from today's press reports that it is perhaps something whose time has come and not everybody understands it entirely. Just for a little bit of casting light on it, when you say in your evidence that emissions trading can take many different forms, each of which deserves detailed consideration could you set out for me which different forms there are that it could take.

Dr Sentance: Certainly. I think the basic notion of emissions trading is there is some sort of cap or allowance or benchmark or target that a company or participant has, and then they will trade or they will get credits or they will have to purchase credits or permits if they are above or below that. That is the sort of basic notion behind emissions trading. The advantage of that from an environmental point of view is: if you are trying to hit an environmental objective such as reducing CO₂ emissions, you can specify that in the target or in the cap that you are trying to achieve, and if that is policed properly you should almost by definition achieve that. I think the differences come in the way in which you apply that. One of the key issues is in terms of allocation of those targets or caps. I think there are three different approaches that people have discussed. One is a grandfathered approach, where basically you have an allocation which depends on what you have done in the past with some sort of reduction target possibly built in; another is a benchmarking

approach, where there is some calculation of what you ought to be emitting based on objective benchmarks; and then there is an auctioning approach, which says you have to pay for everything. And you could have different combinations and variants. The other area where people have introduced variants into these schemes is the notion of whether we should have some sort of safety valve—and I am not putting this forward, I am just saying that this is an idea that is around. The advantage of an emissions trading scheme is that it is environmentally effective but you cannot predict—and the debate we had at the beginning about costs and prices is because this is quite a difficult area—the cost. You cannot predict exactly the cost of achieving that. Some people have suggested that some sort of safety valve should be built in, some sort of ceiling on the cost of permits to give business some reassurance that it is not going to face very large economic penalties. I know certainly this is an issue in the United States where there is a feeling that the agreements that have been made in Kyoto could incur, potentially—they do not know—a very high economic cost. That is one of the reasons the United States is reluctant to sign up. That is what we meant when we said there are various shapes and forms of these schemes, but I think the basic principle of some sort of cap/target/allowance with trading: if you exceed you have to buy, if you go under you can sell, is the sort of common theme.

Q177 Joan Walley: Thank you for what must be one of the most definitive accounts of the variations in emissions trading that we are understanding right now. You mentioned a cap. Would you say that, whatever variation you are looking at, whether you are looking at benchmarking on the grandfather approach or the auction approach, the really important thing is to have a cap so you actually have limits and a ceiling of what will be emitted?

Dr Santance: Absolutely. I would go beyond that and say the other important thing is to make sure that that cap is enforced and can be consistently applied across the range of participants. As our paper highlights, there are some issues that we have not fully addressed, certainly in the broader international domain, about making sure that is done when we get into broader international emissions trading. But, if I could say, in the broader European context, where I think the real policy debate is now happening about bringing aviation into the European emissions trading scheme, the European Commission and the European institutions act as that international broker and policeman, or however you want to describe it. We do have an infrastructure within Europe that allows us to have that international cooperation. We may not have it more broadly internationally.

Q178 Joan Walley: Given that there are some industries or some sectors where it is actually very difficult if there are not technological solutions available to minimise or reduce the amount of

carbon emissions, is it not the case that you are actually setting up what could be a demand management scheme? How do you get round that conflict, if you like, between just a demand management tool and whoever can afford to pay for it does pay for it? How do you link that to the ceiling to make sure it is not just a demand management tool that we are introducing?

Dr Santance: Demand management has a specific meaning in aviation, I think, in the sense that it has the meaning that you try to stop environmental impacts of aviation by stopping the growth of aviation and stopping the growth in demand. I would agree with you, in the sense that there will clearly be some impact on demand, of an emissions trading scheme—that is clear. It would introduce extra costs into the industry—if it is done correctly it should introduce them on a level playing field basis—and costs impact on prices and that impacts on demand but I would draw a distinction between an emissions trading approach and a crude demand management approach that says we will stop the production of certain forms of goods and services, whether it is aviation or anything else, as a policy instrument, as a policy act in itself. I would draw a distinction between that and a more sophisticated approach which works through the market which is emissions trading. Coming back to the point that the Chairman raised about fairness, one of the advantages of emissions trading in terms of fairness is that the costs of the permits are equalised in the market place. If you are in an industry where it is harder because of technological reasons, or if, as in our industry, there are various safety and technical constraints that mean that a certain form of technology is required to get an aircraft off the ground, you are not penalised unduly for that. The market can equalise the costs to various industries of making a reduction across the whole global industry or across the whole region or across the whole country depending on which level you are operating. It will have an impact on demand but I think it is far superior to some sort of approach that says we will stop the production of something purely because it has an environmental impact.

Q179 Joan Walley: Are you really saying that the emissions trading scheme is really about enabling those companies and sectors which can reduce their emissions to do so but those that cannot will be forced to buy extra credits from within the scheme.

Dr Santance: Those that cannot or do not wish to, in the sense—

Q180 Joan Walley: Presumably you would be in that latter category.

Dr Santance: Not necessarily. If you go to our social and environmental report—and I have brought a copy with me and can supply copies to the Committee—you will see that we have been reducing our aircraft carbon dioxide emissions in British Airways. It is not an unknown thing. We as a company have probably taken a much more cautious approach to growth than some other participants in our industry, such as no-frills

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airlines or some other network airlines. We believe it is not necessarily the right thing to grow at the maximum possible rate; the important thing is to have a financially sustainable business which can meet its commitments into the longer term and perhaps a more broadly sustainable business. I do not think you should assume that all airlines will be increasing their emissions. If you put in the right market incentives it will make airlines, along with other businesses, think much more carefully about their emissions.

Q181 Joan Walley: That is a link not just to emissions but also to the growth in aviation and to extra runways and to extra services. It is not just about the single aircraft; it is about the whole business plan.

Dr Sentance: We should be basing our plans for aviation on sensible forecasts of growth.

Q182 Joan Walley: Do you mean business growth or—

Dr Sentance: Traffic growth, the number of passengers flying. If you go to the aircraft manufacturers' forecasts, Airbus and Boeing, and get out their glossy brochures, you will find that they are projecting growth of about 5% per annum or so across the industry for the next 20 years. I think that is too high, and I think the Government came to the conclusion that was too high. They have produced their White Paper on the basis that growth will be somewhere round about 3% or just above. I think that is a much more sensible assessment.

Q183 Joan Walley: Finally, where would you say the interface is between the projections which you have as a business in respect to growth within the industry, your own company's growth, and transport policy, in so far as the Government is looking at increased runways, extra growth and so on? What is the interface between that and making sure that we try to get this cap on carbon emissions within which your industry sits?

Dr Sentance: When we think about the future growth of our business we do take into account the fact that there may be policy instruments coming along in the future. We think those policy instruments should be based on an emissions trading approach that will, in a sense, add to the cost of increasing your emissions. We do take that into account in our planning. I think the other point to make is that British Airways, historically, because of the constraints under which we operate within the structure, has not been a fast-growing airline, and even if you look at the projections and infrastructure in our main base, Heathrow, it is not going to allow us the same growth prospects as some other airlines. So it is quite likely that we will grow less rapidly than the industry as a whole.

Q184 Mrs Clark: I think it is fair to say, is it not, that targets that have been set for the initial phase of the EU ETS scheme have really come in for a bit of slamming? They have been regarded as being

extremely undemanding. First, why have they been so undemanding, do you think? Would you agree with me that a far more rigorous and stringent EU-wide cap and, indeed, corresponding national targets, are absolutely vital for phase 2?

Dr Sentance: I have heard comments on both sides of the fence in terms of the stringency of the targets. I have heard comments perhaps more from some of the environmental campaigning groups along the lines you have highlighted.

Q185 Mrs Clark: Which ones in particular?

Dr Sentance: Green Peace, Friends of the Earth, for example. I have also heard comments from the CBI and business organisations that they see the targets as being very stretching and demanding. I do not want to give an opinion on that but I observe that there are views on both sides of the fence. We are only a small player in terms of the initial phase of the EU emissions trading scheme—we have one maintenance installation that is captured under the scheme—and it is not a big issue for us but I would just observe that about the debate. I would say in terms of this whole question that we have to recognise that we are trying to make some quite major reductions in overall carbon dioxide and other greenhouse emissions over a long period of time. The UK Government has suggested a 60%.

Q186 Mrs Clark: For how long?

Dr Sentance: In the period to 2050. I would expect as a process of trying to get to what is a stretching target in the longer term, the stringency, as you describe it, is that you tighten up as you go forward. There are a number of reasons for that approach. One is that there is a limit to what you can change in the short term, and therefore the costs of change in the short term are going to be much greater. Secondly, technology has a chance of catching up and helping you much more in the longer term than it can in the shorter term.

Q187 Mrs Clark: Is that not rather doing it behind the back door rather than being in your face and making a message?

Dr Sentance: I would say it is just being pragmatic about the challenge that business faces. I think we have to be honest about the challenge for businesses such as aviation or any other business sector. They are being asked to make potentially major changes in the way in which they conduct their business operations. Society at the same time I do not think is saying we want these business to stop delivering economic value-added, stop delivering the high standard of living that we enjoy, and in order to get that balance about right I think it makes sense, as you go forward, to set larger targets for the longer term reduction than you do for the shorter term.

Q188 Mrs Clark: You would agree with me that targets do need to be quite a lot more radical than they are at the moment.

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Dr Sentance: I would expect as we go through the development, not just of emissions trading schemes but of climate change policy generally, that, if you take 1990 or 2000 or any particular year as a base, business and the economy as a whole will be expected to deliver greater reductions against that baseline.

Q189 Mrs Clark: In that case, how is it going to be possible at all to incorporate aviation in the second phase? Do you honestly believe that other sectors are really capable of generating sufficient emission reduction not only to meet their own more stringent targets but also to enable and generate the credits required to fund what we are continually told is going to be an enormous forecast growth in aviation?

Dr Sentance: It depends on what target or cap is set and the way we approach the limiting of aviation emissions. Perhaps I could develop this because it is quite an important point. The EU emissions trading scheme takes its lead from the Kyoto protocol and the allowances that are created within the Kyoto protocol. Within the Kyoto protocol there are no specific caps or targets for international aviation. Article 2.2 of the Kyoto protocol says for international aviation: This is down to ICAO to find limits. ICAO has gone as far as saying: We think emissions trading is broadly the right approach. But ICAO has found it hard to make progress over the last few years because of the United States' stance and also because of the economic difficulties of the industry. I think I have said that to you as a committee in the past and I think we have to be frank about that.

Q190 Mrs Clark: So no cap.

Dr Sentance: No.

Q191 Mrs Clark: Aviation gets excepted.

Dr Sentance: We have to find within Europe a sensible way of starting with aviation. It makes no sense to set up a very draconian regime that saddles the aviation industry with very large costs that (i) is going to cause a lot of upset and antagonism within the industry, but (ii) is going to competitively damage the industry, so you will get the impression being created that where most environmental progress is being made is where most economic damage is being done. It does not, as a matter of practical policy, seem sensible to take that approach. We have to think, in terms of the EU emissions trading scheme, that this is the first chance we have to bring aviation into an international emissions trading scheme and to show to the doubters in the United States and the international community more generally that it can work. That means setting targets or caps that are stretching but achievable and sensible and pragmatic, which do not saddle the European aviation industry with a competitive problem or unreasonable costs. That is a matter of practical policy-making to advance the broader cause of

actually getting a bigger prize, which is a more comprehensive system of international emissions trading.

Q192 Mrs Clark: My colleague mentioned auctioning before. Would you regard that a more extensive use of auctioning would be a means of allocating emissions entitlements? If you do not agree with that, how do you think emissions should be allocated to aviation?

Dr Sentance: If I believed the proceeds of auctions would be used for very sound environmental purposes, I would perhaps be more supportive of them. At an extreme, an auction just becomes a tax in a different guise.

Q193 Mrs Clark: In a different name.

Dr Sentance: In a different name—sorry, yes. It imposes a large deadweight cost and financial penalty on the industry. I would rather we went along the approach that has already been established in the EU emissions trading scheme, that by and large it is mainly based on allocations that are granted to participants based on their past operations and on some sort of benchmark.

Q194 Chairman: The problem with that approach is that you get the political horse trading that we have seen in recent months and there is nothing to say at the end of that rather squalid process that you have something which is equitable or going to work.

Dr Sentance: As far as international emissions are concerned in any emissions trading schemes, we would like to see, if possible, an international approach to allocations and a European approach to allocations. I think that gets you away from some of what you have described as horse trading, which I think reflects national pressures. If we could get a European system of allocation, we would favour that and I think other industries probably would be moving in that direction based on what they have seen over the initial phase.

Q195 Mrs Clark: My final question is a two-pronged question really. Do you have a personal view of a likely emissions cap for UK transport, given that all sectors of the economy are supposed to be playing a part in doing their bit to reduce greenhouse gas emissions? What supply or demand side drivers would you envisage reducing the sector's greenhouse gas output?

Dr Sentance: If aviation is brought into emissions trading there will be two components to it. There will be domestic aviation, which falls within the UK's domestic cap, and I would expect us to follow similar rules to other domestic participants. Then there is the question of the international emissions which are between other European countries. There I cannot give you a definitive approach but I have highlighted the principle that would apply: that we should set something that is not just business as usual; it has clearly had some environmental stretch built into it but we have to take account of the feasibility and deliverability of that for the industry

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and its international competitive position. We do not want to get ourselves into a position where emissions trading in aviation has turned out to be a “disaster” and the whole cause of trying to use this as a mechanism for addressing climate change in aviation internationally is set back.

Q196 Mr Challen: Could I ask if British Airways is doing anything at all to prepare its passengers for this bright new sustainable future for aviation; for example by promoting the take-up amongst passengers of carbon neutral schemes which have recently come into vogue?

Dr Sentance: We have not taken any major initiatives in this area but we are following it very closely.

Q197 Mr Challen: Do you plan to?

Dr Sentance: We do not have any definitive plans but we are following it closely. It is something that we think may have some potential. We do observe that the customer is very driven by price and so if we are going to approach the customer and say “Would you like to pay something extra?” we have to do it in the right way. We also want to be able to work with partners who are really delivering genuine offsets and some of the players in this area are quite small and quite how they are achieving the offsets is not always exactly clear.

Q198 Mr Challen: If one of the largest airlines in the world entered into this with a bit of enthusiasm, perhaps you would be in a position to help them develop very sustainable offsets, and that would be of great assistance to them.

Dr Sentance: We are certainly interested in it but we are also conscious that we should be doing as much as we can to get perhaps the bigger prize, which is some industry-wide approach to climate change, and, in particular, carbon dioxide, established at the international policy level. While carbon offsets are perhaps a useful addition to what we might do, we have to remember that perhaps the take-up may be still fairly modest and we really should be looking towards bringing aviation more closely in line with other industries which are addressing climate change issues.

Q199 Mr Challen: International negotiations and so on might take a very long time—years, if not decades. We have seen how long it takes to negotiate an international aviation treaty. Is this not just rather putting everything on to the back-burner and paying lip service to environmental concerns?

Dr Sentance: I do not think so, because we have the possibility within this decade that we could bring in an important region of the world economy within the European Union, aviation, into an emissions trade scheme. We have to remember that the authoritative IPCC report on aviation global atmosphere came out in the late 1990s and to be making significant steps of this sort within a decade of that I think would be real progress. So I do not feel that we are putting it on the back-burner, and,

indeed, as a company British Airways has been vocal in its support for the Government’s desire to get this moved up the agenda within Europe.

Q200 Mr Challen: Could I ask a question about the issue of grandfathering and whether British Airways has established a policy on this. Would you want allocations based on existing levels of emissions or would you want them based on future forecasts of emissions?

Dr Sentance: I think you have to take into account what the future projection is likely to be because only on that basis can you then see what the stretch is away from that; how much you are expecting an industry to deliver. But we are conscious of the fact that we are ultimately trying to achieve very significant reductions from a historic baseline. In the short term I have said that the main thing is to get something operating which includes aviation, with a bit of stretch in it. As we go forward, I would expect the targets and caps to become more stretching.

Q201 Mr Challen: We would see this might damage credibility of trading schemes if we see at the start an allowance for growth in emission within a scheme that is supposed to have a cap on reducing emissions. How are people going to—

Dr Sentance: But we already see that. If you look across the European Union, many countries in the European Union have within their Kyoto targets an allowance for growth, even though at the global or sort of regional level we are seeking to reduce the overall amount of emissions in the European Union. I think we have to keep our eyes on the overall big picture of what we are trying to achieve globally or regionally.

Q202 Mr Challen: Do you think the existing forecasts for air transport are environmentally sustainable?

Dr Sentance: If they are accompanied by policies which ensure that the aviation industry takes account of its environmental impacts, I think they are sustainable. That means dealing with the noise issues (which are already in place), the air quality issues and also the climate change issues. We believe that emissions trading has a very important role to play in that.

Q203 Mr Challen: What if the aviation industry could not contain itself within those limits that were set? Would you want some kind of guarantee or get-out clause that allowed you to continue? How would you approach that situation?

Dr Sentance: No, we are not looking for get-out clauses. We are looking for a pragmatic approach that takes into account the international competitiveness of our industry, so we do not have a very stringent approach applied in one region of the world which hampers its competitiveness internationally, and we are looking for pragmatism that says we may start out with something that is clearly less stretching than we have to achieve over the longer term, and built into our whole approach

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to climate change, whether it is the Kyoto protocol or other initiatives, is the notion that we start off with modest reductions and we become more demanding as we go forward.

Q204 Mr Challen: Given the intransigence of the United States on this issue, we are never going to get that, are we? We might get a rather token scheme but we are never going to get the international agreements that you talk of and that is why I am concerned—

Dr Sentance: I am suggesting that getting emissions trading up and running in Europe in a sensible and pragmatic way is part of the way of getting the United States on board. We also support the

Government's efforts through the G8 presidency to clear away some of the undergrowth on the science and to make sure that there is a much stronger degree of scientific consensus. I agree with you, it is unfortunate the direction in which policy has gone in the United States, and it has particularly impacted on the approach in our industry, but we have to live with that. We have to then think on what are the pragmatic means of getting the US on board. I think it is through dealing with the scientific issues that they have and showing that sensible, cost-effective, pragmatic policy approaches can work.

Chairman: Thank you very much indeed, Dr Sentance.

Memorandum submitted by BAA plc

1. INTRODUCTION

1.1 BAA is the world's leading airports operator. In the UK, BAA owns, develops and operates seven airports: Heathrow, Gatwick, Stansted, Southampton, Edinburgh, Glasgow and Aberdeen. Overseas we either manage contracts at, or have interests in, airports in the USA, Australia and Italy.

1.2 This submission focuses on the areas of the Committee's interest where BAA's expertise can add most value, particularly the incorporation of aviation into emissions trading at a European and global level and the objectives that the UK should pursue in its EU and G8 Presidencies to help deliver that goal.

2. SUMMARY

2.1 In keeping with the emphasis placed by a sustainable development framework on policy integration, the debate on aviation needs to recognise both the realities of environmental limits and aviation's socio-economic benefits.

2.2 At a European level, BAA has two main interests in climate policy: we are a major energy user and a major player in the aviation industry. We are committed to making a significant contribution to reducing greenhouse gas emissions arising from energy use at our seven UK airports, by reducing our total CO₂ emissions by 15% over 1990 levels by 2010.

2.3 BAA has played a leading role in the debate over aviation's climate impacts and supports the UK Government's leadership position on climate change. BAA recognises the importance of effective international action to address this issue. We support the delivery of targets adopted by Governments within the framework of the Kyoto Protocol, and favour the mainstreaming of all aviation within EU public policy on climate change, noting that at present only climate change emissions by airports and domestic air transport are included within the Kyoto targets; international air transport emissions are not currently included.

2.4 Industrial climate change impacts are most effectively dealt with by harnessing market mechanisms and corporate self-interest, where possible, since these are powerful drivers and are likely to produce faster, better results than blunt regulation. BAA rejects policy approaches for aviation which are aimed simply at reducing demand by raising the cost of flying through taxes and charges, the revenue from which simply flows to Government and is not hypothecated to addressing the impacts. The right approach, as in all industries, is to target the impacts of the activity, rather than the activity itself. We recognise that the consequence of a regime of smart, well-targeted instruments for aviation may be higher costs and reduced demand.

2.5 EU-level action can provide an effective interim policy response, as a first step towards the development of more co-ordinated global frameworks. In particular, we believe that partial integration of intra-EU flights with an environmentally-credible EU Emissions Trading Scheme (where airlines can buy EU emissions allowances from the open EU market, but not sell to that market) is deliverable by 2008, and that full integration (where both buying and selling are allowed) is achievable by 2013. We very strongly support the UK Government's stated objective to make aviation's incorporation into the EU ETS a priority for its 2005 Presidency.

2.6 In this context, we welcome the recent statement by the ICAO General Assembly that ICAO has not ruled out the EU pursuing action on emissions trading at a European level prior to ICAO developing guidance on this issue at an international level. We welcome the role played by the UK Government in negotiating the ICAO statement and ensuring that freedom to act on climate change was not restricted at a regional level prior to global consensus being reached.

2.7 We also acknowledge the IPCC assessment that aviation's total climate impact is some 2.7 times that due to CO₂ alone, due mainly to the climate-warming effects of NO_x and water vapour emissions (contrails) in the atmosphere and to cirrus cloud enhancement effects. We are not in a position to comment on the robustness of this assessment, noting the scientific uncertainty relating to elements of it, particularly the extent of the contrail and cirrus impacts. However, we accept that aviation should address its total climate change impacts and we would welcome greater clarity on the elements which are currently scientifically uncertain. We also urge a smart, targeted approach to addressing aviation's climate impacts, which may require a mix of measures, to avoid unintended consequences of a measure adopted to tackle one impact (CO₂) leading to increases in another (NO_x), where there is a known technological trade-off.

2.8 BAA has therefore suggested that, for the 2008–12 phase, aviation should be linked with EU emissions trading on the basis of both aircraft CO₂ and NO_x emissions. Provided airlines were prevented from selling Aviation Allowance Units into the open EU trading market, the targeting of both CO₂ and NO_x would not compromise the EU Emissions Trading Scheme's compatibility with the Kyoto Protocol.

2.9 From 2013, BAA would also like to see aviation's contrail and cirrus impacts directly, separately, and fully integrated into EU emissions trading. BAA would therefore welcome and support UK and EU leadership on the international climate change negotiations for the 2nd commitment period ("Kyoto 2"), due to begin in 2005, to:

- Prioritise the full legal allocation of international aviation's climate change impact to country governments. While negotiations need to begin soon, the legal allocation could take effect from 2013, so as not to put legal compliance with the "Kyoto 1" budget period at risk.
- Prioritise the legal designation of aviation's non-CO₂ impacts, as a step towards enabling their direct and separate integration within EU/international emissions trading from 2013.
- Prioritise investment in scientific research, including on the development of a predictive system capable of assessing the contrail and cirrus impact of any given flight. Such a system would be necessary to enable the smartest possible direct and separate integration of aviation's cirrus and contrail impact within EU/international emissions trading from 2013.

2.10 Linking intra-EU flights with EU emissions trading must be seen as a first step towards including all aviation within a global system of open emissions trading addressing aviation's total climate change impact. As such, we welcome the recent decision by Russia to begin the process of ratifying the Kyoto Protocol. Russian ratification will mean that Kyoto enters into force and will add political momentum to the negotiations over the Kyoto 2 compliance period, which are due to begin in 2005. BAA also welcomes the UK Government's declared intention to use its Presidency of the EU and G8 to press for further international progress on the climate change agenda. We hope that both of these developments will lead to non-EU nations taking a more constructive, international approach to resolving the issue of aviation's climate change impacts.

3. CONTEXT: BAA'S APPROACH TO SUSTAINABLE DEVELOPMENT

3.1 BAA is committed to continuing to understand and improve its performance with respect to sustainable development. Like many companies we work within the UK Government's policy approach which entails meeting four objectives at the same time:

- maintenance of high and stable levels of economic growth and employment;
- social progress which recognises the needs of everyone;
- prudent use of natural resources; and
- effective protection of the environment.

3.2 As identified in BAA's Sustainable Development Policy,² we also recognise that other stakeholders define the concept of sustainability in terms of the capacity of the natural environment to accommodate social and economic growth into the future. In this context we believe it is important that choices about how best to control the impacts of social and economic activity should be made with the widest public support. We see this as a dynamic and continuous process of change and negotiation, the objective of which is to find solutions which provide the most benefit for society overall.

3.3 Responsible air transport and airport growth should take place only where it is in accordance with the sustainability objectives above. BAA further accepts that there are certain known environmental limits, such as the earth's capacity to handle greenhouse gases, which demand a clear and specific response (discussed in more detail below).

² BAA Sustainable Development Policy, October 2003. See: http://www.baa.co.uk/main/corporate/sustainable_development/our_policies/sustainable_development_policy_frame.html

3.4 However, in keeping with the emphasis placed by a sustainable development framework on policy integration, the debate on aviation needs to recognise both the realities of environmental limits and aviation's socio-economic benefits. Economically, aviation plays a crucial role in promoting the high-knowledge and high-value-added industries, such as electronics, pharmaceuticals, insurance, and finance. Socially, air travel is a facilitator—for people to visit friends and family scattered around the world, to seek new cultural experiences, to learn, to visit parts of the world inaccessible to their parents or grandparents. Sustainable development rightly places emphasis on improving quality of life for all. In this context, the fact that aviation is now accessible to most people, at least in the more prosperous countries, is both significant and welcome.

3.5 BAA regards policy integration as fundamental, and we therefore reject approaches to tackling aviation's environmental impacts which are aimed simply at reducing demand by raising the cost of flying through taxes and charges. However, we do recognise that the consequence of a regime of smart, well-targeted instruments may be higher costs and reduced demand. Nevertheless, we strongly believe that each environmental impact should be targeted individually, with the objective of reducing or mitigating its impact, using the most effective policy instrument. That could be a planning condition, local or national regulation, economic instruments or voluntary action. Where the policy tool is an economic instrument, any payment should be proportionate to the scale of the impact and the revenue raised should be used to reduce the impacts. This approach—of targeting the impacts rather than the activity—is the right approach to demand management.

4. EU MEASURES TO ADDRESS AVIATION'S CLIMATE IMPACT: 2005–12

4.1 In this section we focus in particular on the incorporation of aviation within the EU ETS. We fully support the Government's goal to incorporate aviation by 2008 and believe that it should be a major focus of the UK's 2005 EU Presidency. In Section 5 of our evidence we focus on EU policy post 2012, and in Section 6 on the international framework to succeed Kyoto and in particular on the role of international emissions trading systems, which is a key focus of the Committee's Inquiry.

4.2 BAA has two sets of interests in EU climate change policy. We have substantial energy interests, as one of the UK's top 20 consumers of industrial energy, and are also a major player within the aviation industry.

4.3 BAA supports the leading role that the UK Government and has played on climate change position on climate change and recognises the importance of effective international action to address this issue. BAA notes the EU's publicly stated long-term climate change policy objective:

“a long-term objective of a maximum global temperature increase of 2 Celsius over pre-industrial levels. . . In the longer term this is likely to require a global reduction in emissions of greenhouse gases by 70% as compared to 1990, as identified by the Intergovernmental Panel on Climate Change (IPCC)”³

4.4 BAA supports the delivery of targets adopted by Governments within the framework of the Kyoto Protocol and we are committed to making a significant contribution to reducing greenhouse gas emissions arising from energy use at our seven UK airports. Our aim is to reduce absolute CO₂ emissions from energy consumption by 15% by 2010, compared to 1990 levels. This objective is particularly challenging in the face of passenger numbers rising substantially over the same period and represents a step change in targets from the company's previous commitment of a 5% reduction on 1990 levels. BAA has also registered three sites for inclusion in the EU Emissions Trading Scheme from January 2005, and would like to register a fourth site (Terminal 5) for entry into the scheme during 2005–06.

4.5 As a major player within the aviation industry, we favour the mainstreaming of all aviation within EU public policy on climate change, noting that at present only climate change emissions by airports and domestic air transport are included within the Kyoto targets; international air transport emissions are not currently included.

4.6 While aviation's current climate impact is significant (11% of the UK's total climate impact), it is nevertheless still smaller than the climate impact arising from other sectors of the economy, such as power generation (29% of UK's total climate impact in 2000). However, BAA recognises that aviation's climate impact is set to grow, and grow significantly, while a UK economy-wide total reduces in line with the requirements of the earth's global environmental capacity, and that, in line with the precautionary principle, aviation must accept its responsibility to address the climate effects of this growth. In addition, as recognised by Governments at the Johannesburg Sustainable Development Summit, the priority to meet key human development needs such as clean water, food, and sanitation (in both developed and developing countries) will rightly use up a significant proportion of the earth's environmental capacity.

³ Article 2, the 6th EU Community Environment Action Programme, adopted in co-decision in 2002.

4.7 There is a powerful economic and social case for aviation to take up some of the remaining capacity, given the absence of short-term technological solutions within the aviation sector, compared with the availability of solutions in other sectors of society. Importantly, this would only be permissible by users of aviation paying for emissions reductions (clean development) in other economic sectors—in developed countries, in transition economies, or in developing countries.⁴

4.8 Industrial climate change impacts are most effectively dealt with by harnessing market mechanisms and corporate self-interest, where possible, since these are powerful drivers and are likely to produce faster, better results than blunt regulation. BAA rejects policy approaches for aviation which are aimed simply at reducing demand by raising the cost of flying through taxes and charges, the revenue from which simply flows to Government and is not hypothecated to addressing the impacts. We believe the right approach, as in all industries, is to target the impacts of the activity, rather than the activity itself. We recognise that the consequence of a regime of smart, well-targeted instruments for aviation may be higher costs and reduced demand.

4.9 Effectively addressing climate change requires action at all levels—local, regional, national, EU and international. While climate change is a global problem and unified global action is the ideal, BAA recognises that regional political and trade blocs such as the EU have a key role in shaping public policy on climate change, and BAA is pleased that the EU is engaging seriously and constructively on the issue of aviation and climate change. In particular, EU-level action can provide an effective interim policy response prior to the development of more co-ordinated global frameworks.

4.10 The UK aviation industry, most notably BAA and BA, has led the EU debate on aviation's climate change impacts and obligations, and BAA believes that industry co-operation should be built on by policy-makers and Governments.

4.11 EU-level action can provide an effective interim policy response, as a first step towards the development of more co-ordinated global frameworks. We believe that the EU is an appropriate level for action, since unilateral action by individual EU Member States would raise market distortion and competitiveness issues. We believe that action on aviation at an EU level is a priority between the launch of the ETS in January 2005 and the beginning of its second phase in 2008.

4.12 In this context, we welcome the recent statement by the ICAO General Assembly that ICAO has not ruled out the EU pursuing action on emissions trading at a European level prior to ICAO developing guidance on this issue at an international level. We welcome the role played by the UK Government in negotiating the ICAO statement and ensuring that freedom to act on climate change was not restricted at a regional level prior to global consensus being reached.

4.13 Partial integration of intra-EU flights with an environmentally-credible EU Emissions Trading Scheme (where airlines can buy EU emissions allowances from the open EU market, but not sell to that market) is deliverable by 2008, and that full integration (where both buying and selling are allowed) is achievable by 2013.

4.14 An environmentally-credible emissions trading scheme should embrace a number of key principles, and these should guide EU public policy on addressing aviation's climate change impacts. These principles include deliverability, environmental effectiveness, economic efficiency and equity.

4.15 As such, BAA very strongly supports the UK Government's objective to try to extend the EU Emissions Trading Scheme, by linking intra-EU flights within the scheme by 2008, and we welcome the Government's intention to make this a priority for the UK's EU presidency in 2005. This will help to bring aviation within the club of climate-responsible industries. All intra-EU flights should be linked with the EU Emissions Trading Scheme, irrespective of the nationality of the airline (including EU and non-EU airlines).

4.16 We also acknowledge the IPCC assessment that aviation's total climate impact is some 2.7 times that due to CO₂ alone, due mainly to the climate-warming effects of NO_x and water vapour emissions (contrails) in the atmosphere and to cirrus cloud enhancement effects. We are not in a position to comment on the robustness of this assessment, noting the scientific uncertainty relating to elements of it, particularly the extent of the contrail and cirrus impacts. However, we accept that aviation should address its total climate change impacts and we would welcome greater clarity on the elements which are currently scientifically uncertain. We also urge a smart, targeted approach to addressing aviation's climate impacts, which may require a mix of measures, to avoid unintended consequences of a measure adopted to tackle one impact (CO₂) leading to increases in another (NO_x), where there is a known technological trade-off.

4.17 BAA has therefore suggested that, for the 2008–12 phase, aviation should be linked with EU emissions trading on the basis of both aircraft CO₂ and NO_x emissions. Provided airlines were prevented from selling Aviation Allowance Units into the open EU trading market, the targeting of both CO₂ and NO_x

⁴ The Kyoto Protocol (KP) provides for three “flexibility mechanisms”, to assist Annex B countries (those taking on legally binding emissions reduction targets) to deliver against their targets. These flexibility mechanisms are: Joint Implementation (article 6 of the KP), the Clean Development Mechanism (article 12 of the KP), and Emissions Trading (article 17 of the KP). It is recognised that the JI and CDM mechanisms will help facilitate clean development in transition economies and developing countries.

would not compromise the EU Emissions Trading Scheme's compatibility with the Kyoto Protocol. It should be noted that this is true even though NO_x is not yet legally designated as a greenhouse gas within the Kyoto Protocol basket.

5. EU MEASURES TO ADDRESS AVIATION'S CLIMATE IMPACT POST-2012

5.1 From 2013, BAA would also like to see aviation's contrail and cirrus impacts directly, separately, and fully integrated into EU emissions trading. BAA would therefore welcome and support UK and EU leadership on the international climate change negotiations for the 2nd commitment period ("Kyoto 2"), due to begin in 2005, to:

- Prioritise the full legal allocation of international aviation's climate change impact to country governments. While negotiations need to begin soon, the legal allocation could take effect from 2013, so as not to put legal compliance with the "Kyoto 1" budget period at risk.
- Prioritise the legal designation of aviation's non-CO₂ impacts, as a step towards enabling their direct and separate integration within EU/international emissions trading from 2013.
- Prioritise investment in scientific research, including on the development of a predictive system capable of assessing the contrail and cirrus impact of any given flight. Such a system would be necessary to enable the smartest possible direct and separate integration of aviation's cirrus and contrail impact within EU/international emissions trading from 2013.

5.2 BAA understands that the balance between auctioning and free allocation of emission allowances (eg by grandfathering against historical or future projected emissions levels) is a key issue to Government, industry, and NGOs. BAA believes the key issue here is one of equitable integration alongside other business sectors within the emissions trading regime.

5.3 In this context, BAA notes that, under the provisions of the EU Greenhouse Gas Emissions Trading Directive, EU Member State Governments will be allowed to auction up to 5% of emission allowances from 2005, and up to 10% of emission allowances from 2008. The remainder will be given away free of charge, within the framework of the National Allocation Plans. It is important that, as far as practicable, aviation receives equitable treatment alongside other participants in emissions trading. BAA would also welcome discussion on the potential for other transport modes to be incorporated into EU/international emissions trading frameworks.

5.4 Consistent with the principle of equitable integration, aviation should be given equitable access alongside other business sectors to emissions reduction opportunities in transition economies and developing countries. Accordingly, BAA would like to see aviation, as far as practicable, granted equitable access to the Clean Development Mechanism (CDM) and Joint Implementation (JI) flexibility mechanisms of the Kyoto Protocol. BAA notes that the European Commission has already published a proposal for a Directive linking the EU emissions trading regime to the CDM and JI flexibility mechanisms, and understands that the link is expected to increase market liquidity.⁵

5.5 All industries should meet the external costs of their activities—but only once. Therefore, once smart, effective policy instruments (such as the EU Emissions Trading Scheme), which are targeted at reducing aviation's specific impacts, enter into force and cover aviation's external costs over time, the existing blunt instruments, such as the UK Air Passenger Duty (APD), should be phased out, as they are currently intended to capture some or all of aviation's external costs.

5.6 We strongly oppose alternative policy instruments of blunt taxes and charges, where the revenue raised flows into the public purse for general government expenditure and is not exclusively and entirely hypothecated to purchasing emissions reductions in other parts of the economy. Such instruments offer limited positive environmental benefit, impact negatively on competitiveness, and essentially act to tax away demand and the positive benefits that aviation brings.

6. INTERNATIONAL MEASURES TO ADDRESS AVIATION'S CLIMATE IMPACT

6.1 The debate is moving in the right direction in the EU. The EU should continue to focus on the wider international arena and that linking intra-EU flights with EU emissions trading must be seen as a first step towards including all aviation within a global system of open emissions trading. At an international level, we welcome the recent decision by Russia to begin the process of ratifying the Kyoto process. Russian ratification would mean that Kyoto enters into force and would build political momentum around the negotiations over Kyoto 2. Parallel pressure should continue to be brought by EU member states on the US and other non-EU regions across the whole climate change agenda, including on aviation.

6.2 BAA welcomes the UK Government's declared intention to use its Presidency of the G8 to press for further international progress on the climate change agenda, and hopes that this will lead to non-EU nations taking a more constructive, international approach to resolving the issue of aviation's climate change impacts.

⁵ CEC COM(2003) 403 final, 23 July 2003.

6.3 BAA also recognises the valuable role played by the International Civil Aviation Organisation (ICAO) in facilitating the exchange of information and in the provision of guidance, both on environmental matters and more widely. We note that the recent ICAO General Assembly which in October 2004 agreed to continue to endorse the role of emissions trading as part of a package of measures to address aviation's environmental impact and to provide guidance on how an international system might function.

6.4 We are aware that many stakeholders emphasise the practical difficulties in delivering aviation's integration in international emissions trading and that some even perceive the industry's interest in emissions trading as a ploy for postponing the day when aviation will have to deal with climate change. In particular, aviation's special treatment under the Kyoto Protocol is often highlighted. In this context, we note that a range of stakeholders strongly challenge the credibility and practical feasibility of legally allocating international aviation emissions to ICAO.

6.5 BAA's interest is in promoting aviation's integration in an environmentally effective, deliverable emissions trading regime at the earliest opportunity. In this context, we suggest, as noted in the preceding section, that international aviation emissions should be legally allocated to existing "Kyoto Parties" (ie country governments), as is normal procedure for greenhouse gas emissions from other sectors of society. We welcome the work within UNFCCC and, more specifically, SBSTA, the UNFCCC subsidiary body on scientific and technical advice, to consider how best to allocate international aviation emissions.

6.6 BAA's position is driven both by pragmatism for early action and a desire to see aviation mainstreamed within the international climate change negotiations, to improve the likelihood of aviation receiving equitable treatment with other business sectors. So long as aviation is positioned as receiving special treatment, we believe the risk of UK/EU blunt taxation is heightened.

6.7 However, if it could be robustly demonstrated that legal allocation of international aviation emissions to ICAO would deliver aviation's rapid participation in emissions trading on terms that are both environmentally credible and provide for aviation's equitable treatment with other business sectors, we would be prepared to give further consideration to this aspect of the aviation/climate change debate.

6.8 For wider international aviation, in order to get broad international agreement, emissions trading should begin with CO₂ and move towards addressing total climate change impact as quickly as possible over time. Long term, BAA would like to see all aviation inside a global emissions trading system covering total climate change impact.

6.9 In context of moving towards effective global action, BAA would underline the need to engage the US in the debate over climate change, including in relation to aviation's climate change impact. In this context, the following suggestions are therefore offered, not as fully formed proposals, but as ideas to stimulate further debate:

- Payment of a proportion of APD in the currency of emissions allowances. This would hypothecate part of the current revenue in such a way as to guarantee climate change benefit.
- A two-tier approach to APD—ie a higher and lower rate—with those international flights generating a substantially reduced contrail and cirrus impact eligible for the lower rate.

6.10 As with intra-EU aviation, the integration of wider international aviation within emissions trading should be, as far as practicable, on an equitable basis with other participants in the trading regime. This is an important point generally, and more specifically in relation to the extent of emission allowance auctioning and access to the Clean Development (CDM) and Joint Implementation (JI) flexibility mechanisms.

7. CONCLUSIONS

7.1 Aviation has a small, but significant and growing impact on climate change, and this must be addressed.

7.2 Aviation should be brought within the mainstream of industry and climate change policy within the UK and the EU, as quickly as practicable. The most effective way of achieving this is for intra-EU flights to be linked with the EU Emissions Trading Scheme from 2008.

7.3 EU policy to address aviation's climate change impacts is a welcome and necessary first step to global solutions, but the UK Government and the EU must vigorously pursue this agenda internationally through the G8 and other bodies.

28 October 2004

Witnesses: **Mr Mike Toms**, Group Planning and Regulatory Affairs Director, **Mr Stephen Hardwick**, Director of Group Public Affairs, and **Mr Matthew Gorman**, Group Sustainability Manager, BAA plc, examined.

Q205 Chairman: Good afternoon and welcome. Thank you for coming along. Could I begin by asking you some specific questions about your participation in phase 1 of the EU emissions trading scheme. What sector does BAA fall under?

Mr Toms: Our role in the emissions schemes is in two parts—and I will ask my colleagues to add on the technical side, not being the greatest technical expert. First, as a generator in our own right, power generator, where we participate in the scheme by virtue of our generation plants at Heathrow and Gatwick North and South Terminals, which are heating and chilling plants, all of which will require credits under the scheme. Secondly, we should participate separately and indirectly through the broader aviation community which will have to participate, as Dr Sentence has demonstrated, through their own organisations.

Q206 Chairman: How many installations do you have? Is it just Heathrow, Gatwick and Stansted?

Mr Toms: Those are the only three.

Q207 Chairman: Three installations are going to be participating in the emissions trading scheme.

Mr Toms: That is correct.

Q208 Chairman: What proportion of your total carbon emissions do those three installations account for?

Mr Toms: I would not have a precise percentage, but I could get back to you on that. It would be a significant amount.

Q209 Chairman: It would be helpful to have not only the proportion but also the absolute figures as well.

Mr Gorman: Yes, I could certainly come back on that.

Mr Toms: They are the largest by a margin.

Mr Gorman: Yes.

Mr Hardwick: Could I add, Chairman: they are installations which exceed 20 megawatts of power generation under the EU ETS, and that is why we have three of them. We have a fourth at Terminal 5, which we will be registering in the coming year or so, coming into force in 2008 when we open Terminal 5.

Q210 Chairman: If you do not have this information with you, forgive me, but it would be helpful to have it: what targets have been set for each of these installations—or perhaps you could give us a global figure?

Mr Toms: We do not yet have the final allocations for this year, as I suspect you probably know, so we are still unsure what the precise number will be. But I can tell you that by virtue of our own policies towards a reduction of our emissions—which have been partly driven by the prospect of an emissions trading scheme, I have to say—we are hopeful that we will fall within any allowance which we are given.

Q211 Chairman: Your own policy being to reduce CO₂ emissions across the board by 15%.

Mr Toms: Fifteen% from 1990 to 2010, which, expressed in terms of passenger numbers, because passenger numbers have been growing, is a policy effectively reducing our emissions per passenger by around 50% over that period.

Q212 Chairman: You would expect your allocation to be broadly in line with that internal target.

Mr Toms: Indeed.

Q213 Chairman: In which case, is it not business as usual?

Mr Toms: It is not business as usual because it is the prospect of an emissions trading scheme and our own policies towards responsible growth which have driven us towards having a target of this kind. Business as usual, in which we did nothing, would not have produced the reductions at which we are now looking.

Q214 Chairman: Which is interesting, because it means that the emissions trading scheme itself is less important than the threat of an emissions trading scheme. What do you expect the scheme itself to achieve over and above what you have already set yourselves as a result of anticipating the scheme?

Mr Toms: I think you are absolutely right: the threat of a scheme is a highly powerful incentive but the scheme itself is a continuing device to keep our feet to the fire, bearing in mind that we would anticipate, over phase 2 of any scheme, that the ratchet will be raised, it will continue to incentivise us highly to minimise our emissions.

Q215 Joan Walley: Could I follow on from that—and in a way my series of questions is linked to those which I asked previously to British Airways. You have set out in your own evidence that you are in favour not only of incorporating aviation within the European scheme but also incorporating all its global warming impacts at least from 2013. As a matter of interest, would you favour extending that to road transport as well?

Mr Toms: In principle, those who admit should be in the scheme, but capturing the emissions of very large numbers of individual vehicles of course is a different order of complexity process.

Q216 Joan Walley: I am not clear what you mean by that.

Mr Toms: I mean essentially that it would be nice but it would be difficult.

Q217 Chairman: When calculating your gross carbon emissions do you take into account road transport or other transport which is generated by the existence of the airports?

Mr Toms: We approximate as best we can our emissions from carbon dioxide from our road vehicles. But of course they are not captured by the ETS.

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Q218 Chairman: This is from you road vehicles.

Mr Toms: Our road vehicles.

Q219 Chairman: Your own ones rather than the travelling public.

Mr Toms: If I may just develop that for a second, as part of our responsible growth policy we are highly focused on the fact that we do emit from our road vehicles and we have a major clean vehicles programme to improve the emissions characteristics of our vehicles. In addition to that, we run the largest car sharing scheme, I think of any organisation in Europe, to get people off the roads and to emit less.

Q220 Chairman: Why is it harder to evaluate road transport emissions than aviation ones?

Mr Toms: From our boiler houses we can measure what we consume and what we burn. Capturing that by each individual vehicle for each individual movement is a rather more difficult technical task, therefore you have to approximate.

Chairman: I am tempted to say: Presumably, abolishing the Gatwick Express would not help. But that would be inappropriate!

Q221 Joan Walley: We talked with our previous witness about emissions trading systems effectively being a demand management tool. If there are not any technological fixes to reduce emission by other means, then we end up simply with a demand management tool, do we not?

Mr Toms: I do not see emissions trading that way, with all due respect. Emissions trading is a very certain device for capping the amount of emissions created. There are different methods for companies to manage their own emissions within those. First, we do not discount the possibility of technological change. There is nothing like a good financial incentive to inject technological change into an industry. But there is also behavioural and economic change: using the equipment we have more efficiently and changing the mix of equipment. If I may give you just one example: aero engines now are 70% more fuel efficient than they were 30 years ago but there are still old aircraft in fleets. As an emissions trading scheme raises the cost of emitting, it will provide a greater incentive to people to substitute older, dirtier aircraft with newer, cleaner aircraft.

Mr Hardwick: I would like to add that emissions trading is one mechanism but it is not the panacea for all the environmental impacts of air transport. There are targets, European ACARE targets, of achieving an 80% reduction in NO_x by 2020—for all new engines to be certified to be 80% cleaner in NO_x terms by 2020. It will take time for those to work through the fleets, but, if you have a technological prospect of removing all but 20% of the NO_x emissions, that is something to work towards. There is also the prospect of changing the way that aircraft fly through airspace to avoid the production of contrails and the impact that has on cirrus, because it is not a *sine qua non* that every aircraft will produce a contrail. It is only if it is going through a certain sort of cold air mass that the exhaust emissions turn

into condensed water vapour. You can avoid those air masses with air traffic management systems which plot climate as well as route.

Q222 Joan Walley: Are those the sorts of instruments that you were taking about in paragraph 2.4 of your evidence when you talked about some other well-targeted instruments? Are they looking at other issues like NO_x?

Mr Toms: There is a panoply of regulatory instruments available, including the international provisions for the quality of aircraft engines, which I think could be part of the total package of managing emissions.

Q223 Sue Doughty: I was very kindly invited to Gatwick and one of the things that came up was the quality of some of the craft flying in and out, particularly craft flying freight from Africa, which are very old aircraft and far more polluting than some of the modern craft. Do you see some way of policing this type of aircraft and getting it out of the skies long-term if it is going to fail to meet environmental targets?

Mr Toms: In due course, aircraft of that kind will leave the skies anyway, because the economics of operating them compared with newer more modern aircraft will mean that they will be naturally substituted. But we are doing our bit to help that process. We have at our airports now an emissions-related charging system to govern the emission of NO_x on local air quality, under which more polluting aircraft pay a higher charge than some less polluting aircraft. That gives a fairly clear message to those who are doing this, that actually we would like them to change the way of operation of their aircraft types.

Q224 Joan Walley: Following on from that, given that nothing stands still, and we are already looking at some more radical plans in phase 2 of the European emissions trading scheme, can you explain how it will be possible to incorporate aviation? I am concerned that there are other sectors of industry and sectors that are intensive users of energy in industry. Is it really possible to be able to generate enough emission reductions in order that the more stringent targets can be met, and at the same allow the forecasted growth in aviation which seems to be on the cards. I am just confused as to how it will all square up.

Mr Toms: The short answer is that it is possible.

Q225 Joan Walley: It is having your cake and eating it.

Mr Toms: It is not having your cake and eating it; it is having your cake and paying for it if you have to. If a total emissions cap is set for all sectors, and aviation enters it, as a large number of organisations each trading within that cap, then the market in credits will determine who gets the credits and who does not. Those who have simpler technological substitutes or behavioural substitutes will act, because they will act to reduce their emissions naturally because it will suit them to sell their credits.

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In the end, the market will resolve who, out of all the emitters keeps their credits and who trades them away.

Q226 Joan Walley: It is a case of aviation having as many allowances as it needs and paying for them?

Mr Toms: It is a case of aviation having to trade in the market and having allowances it can afford and that it needs, subject to its ability to reduce its emissions by having technology behavioural fixes. If aviation can find solutions, then it will not need as many credits and it can sell rather than buy.

Q227 Joan Walley: So you would not be making a special case then for aviation to be exempted from the overall cap—

Mr Toms: No, we are making exactly the opposite case, which is that aviation should be in there with other emitters in exactly the same way.

Mr Hardwick: Aviation is still currently a very small part of the climate change debate. It is still only around 3% compared, for instance, with power generation at between 25-29%. Certainly in the first few years, despite the growth in aviation, aviation's need to purchase a credit will be relatively low. A lot of aviation growth is passenger growth, not growth in the number of movements. Part of the growth will be larger aircraft with more people on each of them, so a 4% increase in passenger growth does not mean a 4% increase in the number of flights.

Q228 Joan Walley: Can you explain, in relation to your paragraphs 5.2 and 5.3, what approach to allocation you favour? It does not come across as being very clear? Is it auctioning or pre-grand-fathering?

Mr Toms: We are anticipating in stage 1 that there will be pre-grand-fathering of the large majority of current emissions through the national allocations. We believe that that is the right way to start the process off. It is most important at this stage to get a process embedded which is understood and enforceable, and which commands general support. That is the only way in which it could work in phase 1.

Q229 Joan Walley: Do you think that will take sufficient account of the forecast growth in aviation, because there is a forecast growth, is there not?

Mr Toms: There is a forecast growth in aviation, but it is worth bearing in mind that the growth forecasts for aviation at the moment, those in the Government's White Paper, already assume supply-side restrictions and increases in environmental costs to aviation, so you are already looking at a constrained forecast. Whether aviation can grow at that rate will depend on aviation's ability to adapt to the emissions trading scheme.

Q230 Joan Walley: I want to get a sense of comparisons with other sectors. I am very aware that other industrial sectors pay fuel taxes and VAT, and now a climate change levy on the power sources they

use—and I can say this very much from my position as a constituency MP—but why should they not be exempted like air transport?

Mr Toms: We pay the climate change levy on our part of the consumption, so we are in that boat as well, if you like.

Q231 Joan Walley: Is that fuel taxes?

Mr Toms: Fuel taxes? We are in that sense in the same situation as other public transport providers such as railways and public bus companies that do not pay fuel taxes, but what we do pay is air passenger duty, as Dr Sentance has just pointed out, which is an exceptional taxation on our industry.

Q232 Joan Walley: It is hardly a level playing field, is it, because other sectors will be paying for the carbon market and they will be paying as part of the emissions trading scheme; and they will be paying the price for the emissions they are producing. They are also having to pay other taxes and so on as well. It is just not a level playing field, is it?

Mr Toms: It may or may not be a level playing field but can I say that it is different from the way you suggest because in as much as it is not a level playing field a lot of it is in the other direction. We are one of the few components of the transport industry that has financed all of our own infrastructure since we have been created effectively. We have had no tax-based support to our industry at all. We are large-scale payers of corporation tax and we pay APD. In that sense, the level playing-field, if anything works against us rather than for us.

Joan Walley: I am sure your competitors will be very interested to hear that.

Q233 Chairman: Absolutely! You are very keen that the whole issue of radiative forcing by contrails should be included when assessing aviation for the purposes of the emissions trading scheme. British Airways are emphatically unenthusiastic about that. Can you explain why you are so enthusiastic and why you think British Airways takes such a contrary view to yours?

Mr Hardwick: I cannot speak on behalf of British Airways and say why they are or are not enthusiastic.

Q234 Chairman: You must have discussed it.

Mr Hardwick: I think you will find the UK aviation industry will speak with one voice in agreeing that the total climate change impact of our activities needs to be addressed. There are questions about how the radiative forcing figure is arrived at and how you deal with it. Our public position we arrived at after quite a lot of debate, which is to try to bring everything into the emissions trading scheme for 2008—NO_x, CO₂ and the impact of water vapour. It has become clear to us over the debates in Europe over the last year that this will be very difficult to achieve. There are some problems over the verification of the scale of impacts of NO_x and water vapour, and also over the calculation for each flight. While you can work out how much carbon is being emitted per thousand litres of aviation fuel, you do

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not get the same figure for NO_x, because it depends on the altitude and the weather; so you need to calculate it per aircraft per flight. There is a question of capturing the scale of that impact. I think you will find there is a wider degree of consensus on the principle of dealing with climate change, but that the measures must be brought in a way that does not disadvantage the industry *vis-à-vis* other industries because other industries are not dealing with NO_x or non Kyoto impacts, and also in a way that does not create competitive differences between Member States. We are now of the view that probably the best way of capturing the total climate change impact is bringing in different measures at different times: regulation, charges to some extent, trading and other measures like technological innovation that will capture and eliminate the impacts as we go along and as we reach the 2050 target. Our aim is to stop aviation growing to a third of Europe's total climate change impact by 2050, not to bring a sledgehammer on the 3% that we are at at the moment; it is to prevent mitigating extra growth rather than to stop us doing—

Q235 Chairman: I am sorry, but I still do not understand why you expressly state that you would like to see that. We know there are various ways of measuring it, and the Treasury has a way which has been broadly accepted by most people, by multiplying the CO₂ emissions by 2.7% of the CO₂ emissions. Can you not just accept that basis and work with it, if you are so eager to see it as part of the scheme?

Mr Hardwick: There is a problem there with the 2.7, which is that there is a trade-off between carbon dioxide and NO_x. You can reduce CO₂ at the expense of NO_x, so applying the multiplier to carbon, which is what the 2.7 figure is, could lead you to increase NO_x. That is one reason which we make clear in our public position, why we do not believe the straight 2.7 multiplier is the right solution.

Q236 Chairman: So you are keen on including it but you do not have any idea how it should be evaluated.

Mr Hardwick: No, and we have offered alternative ways of doing that—separate NO_x trading, charges are another alternative. It is a case of dealing with each impact in the way that is most likely to reduce that impact, rather than trying to find one all-singing, all-dancing measure that will do everything, because we do not think there is one.

Mr Gorman: To clarify, an important part of the position that we submitted in the evidence, around the contrails and serious issue, was that prior to deciding what the most effective measure would be—and Steve is right that we have talked about emissions trading and others have talked about other options—but an important precursor to that is research to more fully understand the impact, because the multiplier really does not work at the moment with cirrus or contrails, and there is a significant degree of uncertainty over the impacts,

and they will vary by flight according to altitude, location, atmospheric conditions and so on. You would need research first.

Q237 Sue Doughty: I would like to go back to the price of carbon reductions. One of the things we heard was about a recent study of external costs of air transport, suggesting that the external costs of aviation amount to €53 per 1,000 passenger kilometres, and this notion of paying £35 extra on a flight to Berlin. What is your view about the impact on passengers and freight volumes if one were to apply this type of calculation?

Mr Toms: I guess I was lucky because I heard the question as you asked it to Dr Sentance and I was able to have a quick look at the table in the meantime. I want to draw two points out of this. The first is that my reading of this table is that 52.5 is the high estimate, and that there is a low estimate of 14. What that says to me is that there is a huge margin of uncertainty in these figures, and that therefore alighting on one particular one will not be particularly illuminating. The second thing I noticed was that this was not just a measure of environmental cost; it was a measure of all external costs, including the cost of accidents. If, for the sake of argument, you said that 53 was the correct number and it included the cost of accidents at 0.4, would that be an argument for charging 53, charging people for their accidents? I would see that rather differently and say that the correct solution to accidents is not to charge people to have accidents, but to manage away the accidents by better regulation, by better corporate activity and technological change. I think it is exactly the same point in relation to emissions, which is that the solution is not just to charge up for them but it is to find a policy instrument which reduces the number of emissions.

Mr Hardwick: There is an underlying principle that Dr Sentance pointed out and reiterated, which we obviously support, which is that you can add up whatever the figure is—€53 or €10—and you can add up the cost but the solution to aviation's environmental impact is to deal with the impacts at source, not to write a cheque to cover the costs of them and posting it to the Exchequer, because you end up still with the same impacts, but you are just paying someone else to salve your conscience.

Q238 Sue Doughty: That is quite interesting, especially in view of what you said earlier. If the price of CO₂ does rise over time because of demand or because governments tighten up, and you see the cost as prohibitive as impacting on your growth, how would you then react? What would you do about it?

Mr Toms: If the price of carbon rises through the credit markets and the supply of free credits falls, then it will impose an additional operating cost on airlines, and that will naturally work its way through to air fares and reduce demand; or incentivise airlines to make technological and operational changes of the kinds we have talked about. The challenge for airlines will be to find those

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technological changes or operational changes which allow them to grow their business without growing their costs. In that way, we all get what we want, which is less emissions, but at the same time people having the ability to travel.

Q239 Sue Doughty: Do you think that balance is achievable?

Mr Toms: Oh, yes. We do not take this lightly, in the sense that it is not going to be easy; but the great thing about emissions trading is that it will give everyone the right incentive to get the right result.

Mr Hardwick: We do accept the demand consequences of addressing environmental impacts but we see them as consequences rather than as tools.

Q240 Sue Doughty: You discussed about getting the balance right in the transport sector by reducing emissions and taking some of the hit but not all of it because you want to manage the growth in a cleaner environment and keep your passengers hopefully; but would you put a ceiling price on CO₂ if you felt the price was getting too high? Would you try and intervene at that level?

Mr Toms: If the price gets too high, the truth is that people will not want to pay to travel and the market will clear, so in that sense less credits will take place, and the environmental objective will have been achieved but it will have been achieved through less air travel. If aviation can adapt or if generators can adapt, then the scope exists for people to travel and control emissions at the same time.

Q241 Sue Doughty: So you will stay within the emissions trading scheme and let the market forces follow through.

Mr Toms: Yes. I do not think there is a choice in the sense that if we join the club, we are in it, and will be in it by European law.

Q242 Sue Doughty: Even if it is costly?

Mr Toms: Yes.

Q243 Sue Doughty: We still have to get these huge reductions in carbon, and we have talked about it quite a bit. We have this public conflict between cheap energy and getting these huge reductions in carbon by 2050. Where do you really see the price of energy going if we are going to get carbon reduction, given some of the other things you have mentioned?

Mr Toms: The price of energy will have two components. It will be the input cost, the cost of buying gas and the cost of buying coal and fuel, which in itself is likely to rise in the long term anyway. Added on to that is the cost of buying credits. It is likely that as the ratchet has turned and the EU or responsible governments reduce the amount of credits available that the price of credits will rise. It is the combination of the input price of fuel and the price of credits that is likely to lead over time to higher energy costs to air travel, if you like, unless there are technological or behavioural change that solves that.

Q244 Mr Challen: Mr Hardwick, you mentioned 3% being the contribution to emissions from aviation. Is that the European level or—

Mr Hardwick: That is the global figure for aviation climate change impact.

Q245 Mr Challen: For all aviation in the globe.

Mr Hardwick: It is 3%.

Mr Gorman: It was 3.5% in 1992. It was a 1999 report for the year 1992.

Q246 Mr Challen: I am trying to compare like with like. In your memorandum to the Committee it says 4.6. The UK's total climate impact from aviation is 11%, so we seem to be somewhat above the average in that case. That has cleared up that point. There are a couple of other assumptions out of your memo. Have you calculated the different scenarios with ETS and what the reduction in demand might be?

Mr Toms: It is very difficult to do that because you do not know how people are going to respond to the price. There will be tremendous incentive to more efficient performance, and as the ratchet is tightened then you would expect to start seeing demand effects for—

Q247 Mr Challen: Surely this is a crucial area for your business to figure out the impacts on passenger demand for your product? Why have these calculations not been done?

Mr Toms: They have not been done because they cannot be done. They demonstrate that we are subject to commercial risk.

Q248 Mr Challen: They can be modelled. There are so many models available on climate change that surely this should be part of it?

Mr Toms: We can model any number of scenarios, but the trouble is knowing what the scenario is.

Mr Hardwick: An estimate has been done by HSBC for EU emissions trading, an average of two and a half hours' flight within the EU borders would lead they reckon at a price of around €8 to a tonne of CO₂; to adding €2.90 to the price of a ticket. Given our experience of the introduction and then the hike in air passenger duty, and then the recent increase in fuel costs, there should not be in the short to medium term at that sort of rate any great impact.

Q249 Mr Challen: If you have not modelled it and come to calculations, where does that leave the Government's White Paper forecasting this huge growth in passenger traffic?

Mr Toms: In producing the White Paper the Government went through a very large-scale transport forecasting process and conducted a series of tests on the sensitivity of traffic volumes to rises in costs. They effectively said that if there is an environmental add-on to the costs of operation, what does that do to demand. Using previously calibrated demand elasticity figures that demonstrated that even with a doubling of the environmental components in the cost of aviation, the Government's traffic forecasts were still robust

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at the expected level of growth of around 3.5% in the south-east; so a lot of modelling work has been done; it is just that there is still a lot of uncertainty.

Q250 Mr Challen: It is definitely not crystal-ball gazing, then. We can be sure of that. I had one query on your statement at 4.7 that there is a powerful economic and social case for aviation to take some of the remaining capacity, that is the world's environmental capacity. Do you believe there is a spare capacity around in terms of the world's environmental capacity?

Mr Hardwick: By "remaining capacity" we mean the capacity left after basic human needs have been met, and the needs of developing countries. It is not the

belief that there is some stuff slushing around there that we can get hold of; it is that which is left to industrial society or to society after the needs of human beings, for their existence, and other absolute essentials are ring-fenced. It is the rest, and it is us competing against power generation, manufacturers or any other industry or any other use of carbon.

Mr Toms: There is a reasonable case for saying that in the event of the number of carbon credits being reduced, it is likely that a significant proportion of aviation will be in the category of last month's standing, because other sectors will be able to adapt and reduce their emissions credits with greater flexibility.

Chairman: Thank you very much indeed.

Memorandum submitted by Shell International Ltd

1. THE DEVELOPMENT OF EMISSIONS TRADING

An active emissions trading market remains the most cost effective approach available for industry to reduce CO₂ emissions. It does not depend on specific technology choices nor predetermined implementation timetables, but simply on price signals and the consequent selection of a route forward by the emitters.

A truly international system is feasible, but probably not by design. Such a market needs to evolve and would be based on bilateral and multilateral recognition of individual schemes and approaches in different parts of the world. Even if many nations agree the same high-level system (such as Kyoto based on AAUs), each individual country may still choose to cascade it differently (eg the forthcoming domestic Canadian emissions trading system looks to be intensity based, but Canada itself has absolute caps under Kyoto). Trade with other systems should be actively promoted by such recognition (eg the recent EU linking directive) to allow the international market to take shape. The difficulties encountered in getting the Kyoto Protocol ratified show that it is very difficult to get wide consensus/action on this issue. The shape of any system will depend on whether an ETS that covers the globe is required, with all parties participating, or an ETS where the willing participants from various parts of the globe are allowed to manage their emissions together. The latter is more feasible and the issue then is to ensure that the schemes are compatible and that the verification is good.

Legislated systems (eg EU-ETS) need to be based on considerably longer time periods than is currently the case. Three and five year allocation with late notification of allowance positions does not encourage business investment. Clearer goals over periods of up to 10 years forward are required, supported by the necessary targets for facilities, sectors etc Significant emission reduction projects can take a number of years to implement with payback periods stretching many years into the future after start-up. Uncertainty beyond a three or five year time frame with no or at best a weak future price signal discourages such projects.

However, emissions trading may not be a suitable approach for tackling the totality of carbon emissions. A critical success factor in all emissions trading schemes is that the allowance holder directly controls the emissions, so that an efficient decision to make reductions or buy allowances can be made. Schemes that simply pass a price through the supply chain may not work. An example of such a scheme would be the application of emissions trading to the road transport sector. As it is not practical to cap each motorist, one scenario might be that the caps would be put on the fuel supplier. However, the fuel supplier cannot implement the necessary reductions with existing fuels, short of restricting supply. Reductions with existing fuels can only be achieved with more efficient vehicles and changes in consumer behaviour. Other measures would also be required to assist the transition to a new fuel base.

2. APPROACH OF THE UK GOVERNMENT DURING ITS PRESIDENCY OF THE G8 AND EU IN 2005

As the UK takes over the G8 and EU presidencies, it should encourage the tabling of a variety of solutions from individual countries. However, a first step must focus on energy and carbon in the economy. By 2010, all countries should aim to have either carbon managed economies (where carbon is measured, reported and managed through targets, trading systems, incentives, etc) or at least carbon aware economies (where carbon is measured and reported and its link with future energy demand is recognised by government and a lower carbon economy is clearly being encouraged). Before any discussion on targets, timetables or approaches can take place, countries should table their respective energy strategies, stretching out to 2030 or even beyond (as the UK did in its Energy White Paper). These energy strategies should place emphasis on the

issue of carbon emissions in the context of expected energy demand. Without some clarity around energy development and the goals of individual countries understood by all, it is difficult to see how further discussions on managing carbon can commence.

The goal of the UK during its presidencies should be to push this energy and carbon based agenda, lending the necessary assistance and advice based on its own experience in developing the UK Energy White Paper.

3. LINKS BETWEEN GOVERNMENT DEPARTMENTS

All Government departments need to work together in a joined up approach that will deliver the most cost effective means of reducing CO₂. For example, to say that bio-fuels should be used in road transport, because transport has to do its bit, rather than finding the most effective place to use the bio-fuels is clearly not designed to deliver the overall objective.

1 November 2004

Witnesses: **Mr James Smith**, Chairman, **Mr David Hone**, Group Climate Change Adviser, and **Mr Garth Edward**, Trading Manager, Environmental Products, Shell UK, examined.

Q251 Chairman: Good afternoon. We were all quite struck by the interview that your Chairman, Lord Oxburgh, gave to the *Guardian* back in the summer, in which he said he was extremely worried for the future of the planet and was aware of the contribution of fossil fuels to climate change and global warming. Is this a concern shared throughout your organisation?

Mr Smith: Yes, it is. We have been public in confirming our concerns about climate change induced by carbon emissions into the atmosphere. We have participated in public debate. We have made emissions reduction targets for ourselves and introduced new lines of business in anticipation of that. We have done our best to support various work that has been done to confront the climate change challenge. Our view is consistent with what he said.

Q252 Chairman: That is a relief for everyone, then! Do you go along with the IPCC and EU policy goal of restricting the increase in global warming to a maximum of 2 degrees Centigrade? Is it something that is embedded in your policies on those areas?

Mr Smith: I do not know that it is as specific as that, but in broad terms, yes.

Mr Hone: If you look at that, it assumes that we can meet a global atmospheric concentration of CO₂ of at most 450 parts per million. The evidence has shown that the growth we will experience in the next 10-20 years will be extremely challenging. It means that global emissions have to start to downturn . . .

Mr Hone: The 2 degrees Centigrade is in line with a 450 at most atmospheric concentration of CO₂. Achieving that implies that we have to start down-turning emissions globally by 2010 to 2015, in that range. Realistically that does not look to be an outcome that can be achieved. We have done quite a lot of work in recent years with the World Business Council for Sustainable Development. The findings of that show that probably a level of something like 550 ppm in the atmosphere represents still a tough challenge but a balance between what could be achievable over the next 50 years in terms of emissions reductions and climate change that could potentially be adapted to.

Q253 Chairman: Is that above the safe level that has been officially adopted by the EU and other organisations?

Mr Hone: There has been a lot of discussion about the safe level, and there is no correlation that we know of that aligns particular atmospheric concentration with the word "safe".

Chairman: That is not reassuring.

Q254 Sue Doughty: I would like to look at where you go in future, because obviously we have been talking about diversification and looking at Shell's general business approach, and this whole issue about renewables and sequestration. In the *Guardian* interview, Lord Oxburgh told them that the only hope for the planet is carbon sequestration, and even that might not be possible in the timescales possible. I know this also has an impact on your calculation of your oil reserves. Do you see a major role for sequestration as a means of exploiting all the fossil fuels you can get at?

Mr Hone: Sequestration is certainly an option available for reducing emissions, but if we look at the energy projections and energy use over the next 50 years, it represents perhaps one of a dozen different opportunities that are available for emissions reductions and change in the energy infrastructure. It is important therefore, but no one solution will crack this problem; it will rely on a range of different areas, broadly in new types of energy such as renewable energy, potentially things like nuclear, further growth in gas, and then a concerted effort to improve our usage of energy in areas of road transport, buildings, mass transit and things like that. All those measures coupled together are needed to bring about the types of reductions that are necessary to meet the 550 type of goal over the next 50 years. Carbon sequestration is perhaps one of a dozen measures.

Q255 Sue Doughty: In this interview Lord Oxburgh almost contradicted himself and said he thinks the solution is sequestration; he says that it is difficult and says that if we do not have sequestration he sees very little hope for the world. He was worried about the timescale in that article. Where does it sit then? Will it be essential to deliver the changes

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we need and, if so—and you mentioned a lot of other things—can we do it in the time? Have we got the technology?

Mr Hone: As I said, there is not a large number of options—a dozen is not a large number of options to rely on in the next 50 years, and it sits as one of those. In that respect, I think it is an important option. It is a particularly important option, for instance, if we start to look at transition to a hydrogen economy. Two or three years ago, Shell renewed our energy scenarios looking out to 2050, and those scenarios identified ways in which our infrastructure can change over fifty years to accommodate 550 parts per million CO₂ in the atmosphere. They identified that the birth of the hydrogen economy, which was only one of the scenarios, was supported heavily by sequestration in its early days because the hydrogen was manufactured from fossil fuels before the cost of manufacturing hydrogen from renewables declined sufficiently. It has an important role, but the other things I mentioned in my previous reply are equally important.

Q256 Sue Doughty: You sound a little more optimistic than Lord Oxburgh in terms of it being the only one; you are looking at a basket of approaches. In the Energy White Paper that said that there was an urgent need for research into the possibility on sequestration in the North Sea. How is that going along?

Mr Hone: Shell is involved in a number of research programmes of sequestration, none of which are currently focused on the North Sea. We are involved in a project in Germany. We have been involved in research projects in the US, and we are involved in a project in Australia. The North Sea is one of many places in the world where various opportunities come together to allow sequestration to take place, and it is not currently one we are specifically involved in.

Q257 Sue Doughty: It is still economically attractive to Shell, is it not, to actually get hold of those untapped reserves? We had an example when we were looking at the Athabasca tar sands in Canada. Are you diversifying faster than possibly the Committee had assumed when looking at the problems you might be facing, about sequestration and getting the additional oil out and using this technology and about the comment that Lord Oxburgh made in June? Do you still need to go for this very heavily? Is this still an underlying part of the economy of Shell; or are you saying you are moving along with all the other opportunities that you are taking at a much faster rate than you might have done had we asked the question in June?

Mr Smith: I am not sure that I totally understood your question. If it is about adding to our oil and gas reserves and oil and gas production, there is no question that that is the major part of our business and we still wish to do that. It is not as if there is a sudden change more towards renewables, although that is still part of our business. We are still very anxious to increase our oil reserves and oil

production. If you are connecting that to sequestration in the sense of re-pressuring oil reservoirs, which was the second part of your first question—for getting more out—we certainly want to do that, and there are some provinces where it is easier to do that than others. For example, the United States in CO₂ from geologic sources at the moment; so the infrastructure is there and if you can obtain the CO₂ from power stations and put it into the ground to re-pressurise your oil reservoirs, then you do not need to get geologic sources. There are many ways of increasing your oil production. Some of the oilfields are amenable to this sort of re-pressurisation and some are more amenable to other sorts of things like multiple drilling of wells. It is one of the technological tools you use to enhance the recovery you get from the oil fields. I am not sure that is answering your questions.

Q258 Sue Doughty: I had both those ideas in mind when I was asking those questions, so you have gone for both of them and I am quite happy with the response you made. How far, given the fact that you still have some oil reserves which obviously, understandably, you want to exploit, is your future tied to oil now?

Mr Smith: When we look at scenarios through to the middle of the century, we envisage that oil and gas and coal, hydrocarbon sources, may be something like two-thirds of the total energy mix by mid-century and a whole range of other new energy sources will make up the difference. We could envisage that our business would not be too far different from that if we shifted towards gas—less oil, but hydrocarbons are likely to be a significant part of our future. Therefore, technologies for clean use of those hydrocarbons are an important part of what we try and do, as well as thinking about going through this transition away from hydrocarbon sources of energy and mobility through to more renewable sources, so we are trying to work options on those renewable sources as well. For some decades we expect to be a substantial hydrocarbon business.

Q259 Sue Doughty: I appreciate there is a progression. Eventually, where do you see the part of renewables in Shell? We have been talking about hydrocarbons, but where do renewables fit in? How far will you go into renewables?

Mr Smith: Strategically, given the market opportunities and the environmental pressures, we see renewables as an important area of our business. We are committed to invest somewhere between \$500 million and \$1,000 million by the end of 2005 in various forms of new energy. To an extent, a lot of that is understanding those businesses and seeing what we are best at and where our best opportunities lie, with the intent of developing our strategy as we go along, and because you cannot be sure of which of the technologies are going to work best. Our business strategy is to try to acquire options and understandings across a range of technologies, and evolve for those that seem to be best. We do not

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have a prediction that says it is going to be X% in 20 years but we know that that transition has to take place and we want to participate in that transition. Our goal is to generate energy, rather than just to be in hydrocarbons.

Q260 Mr Challen: A lot of organisations have described the targets under phase 1 of the European trading schemes being generous and challenging, and I just wonder how you would characterise the current targets.

Mr Edward: The targets have not been finalised in any country yet. We have had draft national allocation plans issued so far, and that really is what the dialogue has been taking place on so far. The European Directive issued its own guidance and said that national allocation plans should not be drafted in a way that would allow countries to move their industrial economies, or at least the covered parts of their economies under EU ETS into the Kyoto compliance trajectory. There is a degree of subjectivity around exactly what that means, but basically that was the guidelines that were then implemented by Member States in drafting their national allocation plans. That is what happens to Shell. It means that rather than proceeding on a “business as usual” emissions growth trajectory, there is a tailing off on that trajectory and moving on to the so-called—

Q261 Mr Challen: We recently had controversy over the government’s decision to make Britain’s national allocation plan a bit more generous. In the UK do you find the demands on your business demanding? Is it going to set you a total challenge or will you fly through it and will you be very happy with the result?

Mr Edward: First of all, it is a challenge purely in terms of all the new actions that have to be taken for monitoring clarification and reporting the grip on control on emissions that was never there—the appreciation on emissions as a financial monetisable asset or indeed liability. So the entire thinking about this issue is—

Q262 Mr Challen: Is it demanding? Will it just be a jolly breeze or will it be a very tough job to meet the challenge?

Mr Smith: The important thing is that whether the targets in proportionate terms are hugely demanding is not so much the issue; the issue is whether we are going to get this started. We know in the long term that we need to go for a significant reduction of the carbon that goes into the atmosphere. It is crucial that we begin and it is crucial that the economies get under carbon management and that the industries within economies get under carbon management. We are not feeling it a breeze at all. There is a lot of commercial thinking, engineering and technology that goes into a lot of measurement; setting up our trading systems as well. It is important to us that we know this is there for the long term, because carbon then becomes a property that has to be managed. It is an economic entity like other

economic entities that we have to develop and manage, and if we know that is there for the long term and we know there is going to be increasing toughness in those targets over time, then we can plan the technologies and engineering to respond. We are not in any sense feeling this is easy—we are making crucial first steps.

Q263 Mr Challen: What participation do you have in phase 1?

Mr Edward: All the installations are covered by the Directive so all refineries and all power generation of 20 MW storage capacity and greater, and that means basically the oil rigs. It may not be obvious to everybody, but oil rigs carry a lot of power generation capacity. Shell has 46 installations around the whole of the EU, in multiple different countries. That will include about 10 or 15 oil rigs that are in UK national waters.

Q264 Mr Challen: How do their targets compare with current emissions and “business as usual”?

Mr Edward: They are in line, as they have to be, with so-called emissions trading system targets, the direct participant targets, because those installations will opt out for the first two years of the EU emissions trading system while they remain in the UK emissions trading system. There was a so-called equivalence of effort requirement, which meant that they could opt out so long as the EU targets were the same as or even tougher than UK targets that otherwise would have been applied.

Q265 Mr Challen: Do you accept that the targets for phase 2 will have to be far tougher and more radical?

Mr Smith: We know that over time the targets will have to be more demanding. That is why, knowing that the management of carbon is going to be there for the long term, it is important because the projects we are going to have to put in place are long-term projects.

Q266 Mr Challen: In phase 1, countries are allowed to set their own caps. Do you think there should be an overall European Union cap in phase 2? Do you have a view on that?

Mr Edward: Obviously, there has been a lot of concern about the ability to generate the national allocation plans and have them agreed and approved by the Commission and entered into force, and that debate is rumbling on until this day in this country. There are a lot of people saying they must be harmonised the next time round; the allocation process must be the same in all countries; and the question is how that will be achieved. The allocation process for the next period starts to get discussed next year, with a view to having it finalised in 2006; so it is a very present concern for everybody, and harmonisation would be very useful.

Q267 Mr Challen: You have referred to the need for targets to be set over considerably longer periods, and that probably makes very good

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business sense; but would you also agree that that should go hand in hand, and have a longer timescale, with targets that also have to be much tougher and have a longer period to plan for?

Mr Smith: It depends what you mean by “much tougher”. We start with the 450 and 550 and we need then to translate that into what can be emitted and then translate that through the available technologies as to what the targets need to be. The targets need to be those that can enable us to hold the emissions into the atmosphere to those levels we feel will not do excessive damage. We know that over time the amounts will be substantial.

Q268 Mr Challen: If things did get tough over a long period of time, would you not fear the danger is that companies like yours would go to the Government and plead all sorts of circumstances, and we would end up then with a political fudge, because politicians do not like to think that far ahead?

Mr Edward: I think it is important that we have a level commercial playing field and an emissions trading system on the principles of Kyoto tends to create a level commercial playing field.

Q269 Mr Challen: There has also been concern about the amount of so-called hot air in both Kyoto and EU trading systems. Is that something we have to just accept to get the scheme going, or will it damage the credibility and operation of emissions trading?

Mr Hone: Internationally, hot air has been identified as an issue. It remains to be seen exactly how it will manifest itself, because Russia has just ratified and until they start measurement and verification and we get some clarity as to title and ownership of emissions in Russia, then the hot air may never manifest itself. It is fairly clear though that that is not translating itself through the cascade down into the EU emissions trading system. That has been very much ring-fenced. It is not a system you could say is full of hot air; it is a system that has clearly been built to bring about real reductions from industry. I do not think that at the end of the day the hot air issue will affect how we go about how we go about our business and seek reductions.

Q270 Mr Challen: How do you see the interaction of intra-country and inter-company deals trading, which seems to be evolving under Kyoto? Will that endanger these bilateral deals and undermine the growth of carbon trading schemes generally? Will it be rather a desiccated market?

Mr Edward: If we are talking, for example, about EU entities such as yourself buying for instance Kyoto instruments from outside of the EU—if that is the concern, it happens within the Kyoto framework itself, specifically the clean development mechanism. That allows us and other companies of course to develop so-called clean development projects in developing countries. That can be done as of today. The first projects have been registered with the executive board of the CDM, and in

principle the so-called certified emissions reduction credits are generated in those projects can be imported into the EU emissions trading system and used against our compliance objectives or requirements from 2005 through to 2007 without limitation—or at least it is within the gift of governments’ international allocation plans to apply limitation, but that has not happened in any national allocation plans we have seen so far. In the second period, 2008–12, there is likely to be further discussion whether there should be limitation about the impact of those certified emissions reductions in areas of Russia as well.

Q271 Gregory Barker: Shell says emissions trading may not be a suitable approach for tackling all carbon emissions, and in that context you specifically cite the road transport sector. Would it be correct then to take it that you would also oppose road transport within Phase 2 of the EU ETS?

Mr Hone: A lot of work needs to be done to think through the whole road transport issue. What is happening in the emissions trading system today is that people who are emitting CO₂ are given allowances, and that is how the system works. Those people who have the allowances are then making decisions about whether they can implement reductions in their facilities, whether they need to buy more allowances, whether they have allowances to sell and so on. In a road transport scheme, it is unlikely that allowances would be issued to individuals. The measurement, verification and cost of doing so would outweigh the potential benefits. We see that it may manifest itself as, for example, the supplier of fuels holding allowances. In that case, the supplier of fuels does not have the ability to implement the full range of reductions that are possible. That is usually a choice of the motorist, for instance; whether he buys a Range Rover four-wheel drive or a Toyota Prius. We see that the fundamental link between make or buy is broken and the emissions trading system may not apply to road transport in the same way it applies to industrial facilities. Secondly, there is evidence that the cost of emissions reduction for road transport may be a great deal higher than the cost of emissions reductions in a refinery, and if the two were just lumped together, nothing would happen in the road transport sector at all. The manufacturing industry would probably find all of the reductions to meet the reductions required in the road transport sector. We see quite a few problems associated with this.

Q272 Gregory Barker: Could you not just have separate markets for those sectors?

Mr Hone: I guess that is a potential way forward, but road transport—

Q273 Gregory Barker: It is the obvious way forward, is it not? Just have different markets and levels of market—

Mr Hone: I do not think at this stage, having put quite a lot of thought into it, nothing is obvious with the road transport sector. It is problematic because you have consumers at one end who do not seem at all responsive to price, and often do not respond—it certainly would not be apparent if they responded—to small changes in the price of fuel. The number of options at the moment for bringing about reductions is relatively limited. There are really only three ways in which reductions can take place. One is change of fuel. The only alternative fuel currently is biofuel-based products; secondly it is a change in the type of vehicle, and the third is change in consumer behaviour, in other words less drivers. Each of those is triggered by different things. Exactly how this all comes together is—

Q274 Gregory Barker: Actually there is a very successful model of unleaded petrol where a relatively small differential in price triggered a major change in consumer buying habits, and it led to a shift to unleaded petrol by manufacturers and consumers.

Mr Hone: I do not know the history of unleaded petrol in this country.

Q275 Gregory Barker: It is very simple.

Mr Edward: To a similar extent, there are tax incentives designed to introduce bio-fuels.

Q276 Gregory Barker: Unfortunately, they are just enough to keep their head below water—of the consumer and industry.

Mr Edward: That is right.

Q277 Gregory Barker: I am surprised you do not know the history of it, working for Shell.

Mr Hone: I am sorry, I am from Australia. I know the history of unleaded petrol in Australia, but not the history here.

Mr Smith: I am just trying to think if the parallels are as complete and whether it is simply a price signal that caused the motorist to move, because new engine technology was brought in and eventually it was only unleaded petrol that was available. You may be right. I am not certain that it was simply price signal that—

Q278 Gregory Barker: Leaded petrol is still available today, is it not?

Mr Smith: You are right, most of the engines today cannot use lead, so there was a combination of technology and price signal. It is not obvious to me that the same parallels would apply in this case, particularly the motorists' response to price.

Q279 Gregory Barker: I am surprised to hear you say that. Do you take a similar view on the aviation emissions trade?

Mr Hone: Aviation is a different business model to the motorist. In essence, aviation is run by large companies that have large fleets, and therefore if an aviation company were brought in to the emissions trading scheme and granted allowances, essentially the make or buy decision remains with them, so

they can make reductions by changing the technology, changing the planes, changing their routing, with the variety of options available to them, which helps them manage their allowance position. That business model, which is effectively the same as the business model that we are in with refineries, where we are granted an allowance for the emissions coming from our refineries, has a potential to work. Motoring breaks all that apart and therefore introduces problems as to how you get this thing to function.

Q280 Gregory Barker: You are in favour of ETS on aviation.

Mr Hone: We do not operate in the aviation sector.

Q281 Gregory Barker: You supply fuel.

Mr Hone: We do, and certainly we have always taken the view—

Q282 Gregory Barker: You do operate in the aviation sector.

Mr Hone: As an aviation company, I meant.

Q283 Gregory Barker: But you do not operate cars.

Mr Hone: No. Can I finish? We favour the broadest possible application of emissions trading because it introduces the widest number of reduction opportunities.

Q284 Gregory Barker: Would you agree therefore that the inclusion of transport within ETS would only lead to rationing as suppliers have no—would you not agree that ETS would inevitably act as a demand management tool if technology solutions are not available, for example the transport sector but particularly aviation?

Mr Hone: In the transport sector related to roads, that is one of the areas that our thinking on road transport has highlighted. That could result in a demand management model. What we have done in our paper is to highlight some of the areas that we see as problematic in road transport. We have not seen through this yet to find a complete solution to the issue so I cannot offer you one today, but we have seen where some of the difficulties are in simply applying the current emissions trading model immediately to road transport, and expecting it to work.

Q285 Gregory Barker: Where are the difficulties?

Mr Edward: Perhaps it is useful to look at the mechanics. You have emissions trading applying to large industrial stationary emitting sources and the reason for that is because they are quite relatively cheap to monitor, verify and enforce. If someone cheats, it is quite easy to know who it is. If you devolve back to individual drivers, obviously you have to monitor, verify and enforce against the sources, and the transaction costs of doing so tend to be prohibitive, and would kill the game, so to speak. Aviation of course sits somewhere in the middle, whereas it is not stationary sources but there are finite amounts of them. You can monitor and verify them and so on. There are more costs

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associated with that than doing it at large power stations and so on, but still it is probably tractable within the overall economy.

Q286 Gregory Barker: What other policy instruments would you advocate in achieving reductions in the transport and domestic sectors?

Mr Hone: As I said earlier, there are three areas. There is obviously a change in the type of fuel that is used. At the moment the only possibility is to introduce bio-fuels into the mix. The second one is to improve vehicle efficiency and so you need a policy measure that is really targeting an improvement in vehicles on offer in the marketplace and getting acceptance of them from consumers; and the third one is to address consumers themselves and get them to change driving habits, use of public transport and so on. Obviously, that is clearly a debate that is already active in society today.

Q287 Gregory Barker: There is not much that Shell can do about the second two, but can you quickly tell us what you are doing on the bio-fuels and particularly whether you see this as an issue for government to play about with the tax relief.

Mr Hone: I will quickly cover the area of what we are doing on bio-fuels. We are probably the world's largest blender of bio-fuels already today, not in the UK but Brazil and the United States. We are also investing in advanced bio-fuel technologies. We have a stake in Iogen in Canada, a company that is looking into advanced techniques for making bio-fuels such as cellulose ethanol from lignin, a material such as straw and things like that. So we have an active bio-fuels programme and we are active in development of new bio-fuels, and this will bring about better improvements.

Q288 Gregory Barker: So far as the UK is concerned, do you see development of the bio-fuel market being on hold until the Government sorts out the tax position, or are there things you could do to push it ahead as a bio-fuel producer. There does seem to be a lack of progress in making substantial strides in getting bio-fuels replacing other fuels.

Mr Hone: At the moment, bio-fuels do need incentive to move into the marketplace. I guess the answer to that question is that we would need to.

Q289 Gregory Barker: Is there anything that Shell can do apart from simply looking for tax relief?

Mr Hone: We are doing what we can do, which is that we are looking at development of bio-fuel technology to improve the manufacturing cost. That is what we are doing.

Q290 Gregory Barker: Do you think that is likely to happen in the near term?

Mr Hone: No. I would say it is in a ten-year timescale, looking at the introduction of new bio-fuel technology, manufacturing facilities in the UK or elsewhere.

Q291 Gregory Barker: So unless the Government starts to shift the current tax regime to bio-fuels, it will be 10 years before we see any significant movement.

Mr Smith: That is probably right. You probably know that the subsidies in Germany are higher than they are here, so to the extent bio-fuels are in relatively scarce supply, then they would move in that direction.

Q292 Gregory Barker: Is not the truth of the matter that we cannot progress a sustainable energy strategy on the basis of cheap energy?

Mr Smith: I am not quite sure what you mean by "cheap energy". If you are postulating getting back to the 450 or 550 ppm then somehow the cost of energy will be much higher if we are able to maintain emissions at that level, I do not know that that is the case. It is very difficult to make those predictions. Making any assumptions about the future benefits of technology or energy efficiency are difficult to make. There is a set of solutions available which involve renewables and other things such as nuclear, and they will figure in the mix. We hope that the market, the emissions trading systems, the advances in technology, will be sufficient to generate the energy we need in an affordable way; but the market will have to find that out.

Q293 Chairman: Can I turn Mr Barker's question round and ask you whether you think the recent increase in the price of oil is likely to act as a spur to investment in renewable forms of energy?

Mr Smith: Other things being equal it will, of course, because now the alternatives look a bit more attractive. The difficulty is then coming to some long-term view about what the cost of oil and gas is going to be. We do not necessarily think it is going to be at today's levels. Everything is hard to predict and particularly the price of oil and gas is hard to predict; but when industry does its calculations, it is on the basis of numbers that are lower than today's prices. Directionally, it does help to drive towards more renewable sources.

Mr Hone: There is good solid evidence of this too. In the 1970s, as a result of the oil shock and the beginning of the 1980s, you did see a transition in car types and energy efficiency in the United States. When we went to the US and somebody said it was a compact car, it actually looked like one, which is not the case today. The pressure was taken off again as the price moved and went back down again. The market ultimately will dictate where we move to and how the new technologies will move in. If you look already at the cost of wind energy, irrespective of any sorts of incentives and taxes, the cost of wind energy has declined. We have moved from very small wind towers to ones that now generate 5 MW each. The cost per kilowatt hour is declining. The same can be said in the solar business. We hope that the same will be true in the bio-fuels business.

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Q294 Chairman: The relative cost has come down considerably more because of recent increase in traditional oil.

Mr Smith: In today's comparisons, yes.

Q295 Sue Doughty: I would like to look at where we are internationally. In your memorandum you were quite downbeat about making progress internationally on carbon reduction. You said that other countries would need to develop carbon strategies in the same way as the United Kingdom has done. You said: "Without some clarity around energy development and the goals of individual countries understood by all, it is difficult to see how further discussions on managing carbon can commence." How long do you think it will take to get to the starting point?

Mr Hone: For us, the starting point is very much a focus on energy. Energy is the key that unlocks this whole thing. What we see is a lack of focus on future energy demand and energy management within economies. The UK has set a good example with its Energy White Paper, and what we are advocating is that that process replicates itself throughout the world, particularly in countries that really do not tackle this issue at all and which move from one crisis to another. I do not think it necessarily has to be a long process. Certainly within the time frame of negotiating the second phase of Kyoto, energy management and energy ideas can be tabled as part of that process. I think it is the right starting point to get everybody in the frame of mind.

Chairman: We will have to end our session there. Thank you very much for your evidence and for your written submissions. There may be some questions that we would like to follow up in writing. We will be in touch with you.

Wednesday 15 December 2004

Members present:

Mr Peter Ainsworth, in the Chair

Mr Colin Challen
Sue Doughty
Paul Flynn
Mr Mark Francois

Mr John McWilliam
Mr Simon Thomas
Joan Walley

Memorandum submitted by Climate Change Capital

SUMMARY

1. As a specialist merchant bank operating exclusively in energy and environmental markets, Climate Change Capital (CCC) sees international emissions trading as a pivotal development in securing global action to address climate change. International emissions trading is largely untested but has the potential for significant and cost-effective emissions reductions. We believe that commercial opportunities follow.
2. However, in order to work, market integrity must be secured with significant caps, wide coverage, transparency and robust enforcement. Above all, the market must be short in order to function.
3. Emissions trading needs high-level political commitment. Politicians must consistently and publicly assure the business sector that they are serious and that emissions trading is here to stay. The credibility gap between rhetoric and action is damaging.
4. Capacity building is a precondition for expansion of emissions trading.
5. The best approach is one of evolution, not revolution. The first phase of the EU ETS and the first Commitment Period of Kyoto are transitional phases. Having undertaken much of the groundwork, the climate effort must be strengthened.
6. Transparency and the development of complementary policies and measures are vital to ensuring widespread political acceptability.

INTRODUCTION

7. Climate Change Capital (CCC) is a specialist merchant bank focused on energy and environmental markets driven or impacted by government policy. CCC has expertise in finance, climate policy, power pricing, renewables and emissions trading markets.
8. We believe that the increasing political adherence to the climate change agenda and the development of the emissions trading market in particular provides a stimulus to innovation and a significant commercial opportunity. In a sense, we are the proof of concept.

THE EMISSIONS TRADING RECORD

9. Faced with growing international consensus on the imperative to tackle the causes of anthropogenic climate change, governments face a choice in the policy mechanisms available. In very broad terms, the three main policy options are: establishment of a traded market, a fiscal approach or a regulatory approach. Each approach presents its own widely-recognised challenges in securing the objectives of environmental integrity, equity, harmonisation and economic efficiency.
10. In some respects, the regulatory approach enjoys perhaps the best international track-record to date, demonstrated through the impact of the Montreal Protocol which phases out ozone-depleting substances. At the opposite end of the spectrum, there is no precedence for an internationally agreed fiscal framework being employed in respect of securing discrete policy objectives. Some progress has been made towards harmonisation of VAT and energy taxes, but only within the confines of the EU on the grounds of a common market. Despite ongoing campaigns in favour of a Tobin Tax or a global fossil fuel tax, in CCC's view international taxation remains well outside the realms of the possible.
11. Like international taxation, international emissions trading has yet to be proven as a means of securing international obligations. However, due to its inclusion in the Kyoto Protocol and the introduction of the European emissions trading scheme, there is much greater political and institutional momentum behind trading than there is behind taxes. But this momentum should not be taken for granted. It will dissipate if trading fails to deliver emissions reductions. Moreover, even cost-effective trading is under constant challenge from industry. Emissions trading needs high-level political commitment. Politicians must consistently and publicly assure the business sector that they are serious and emissions trading is here to stay. The credibility gap between rhetoric and action is damaging.

12. The principles of a traded market for emissions of polluting gases have been demonstrated and have proved effective at a national level. The US Acid Rain Program established a nationwide cap-and-trade scheme for SO₂ emissions from power plants. Emissions have been reduced by more than 6.5 million tonnes from 1980 levels under the scheme and by 2010, the cap will be lowered to 8.95Mt—a 50% reduction from 1980 levels. A number of studies suggest that compliance costs would have been greater if, instead of trading, a command-and-control approach had been adopted. Meanwhile, the EU approach to reducing SO₂ emissions has been one of regulation, delivering a similar rate of emissions reduction. A study commissioned by DG Enterprise this year found that industrial air pollution expenditure as percentages of industrial gross value added appear to be similar in the EU and the US and that competitiveness impacts were very limited and certainly small when compared with wider price effects in the market.¹ This very limited comparison suggests that at the very least, the cost-effectiveness and environmental record of emissions trading is equivalent to that of a regulatory approach.

13. The UKETS cannot be regarded as a success in securing the abatement of greenhouse gas (GHG) emissions, with an excessive supply of emission credits from two principal sources limiting incentives for wider abatement and inhibiting the development of an actively traded market. Furthermore, questions over additionality of much of the supply of emission credits within the scheme persist, as does uncertainty regarding the continuity of the mechanism itself. This experience should not, however, be interpreted as a failing of the principle of a traded market, but is more properly attributed to inappropriate application and flawed execution. However, the UK ETS certainly contributed to the development of institutional capacity, the importance of which should not be underestimated. It was a useful learning exercise and has helped to create a comparative advantage for the UK in global emissions markets by establishing a UK emissions trading sector encompassing banking, law, accountancy and consulting services.

14. The EU ETS will enter into operation on a statutory basis with effect from 1 January 2005. To the extent that forward trades have been executed, it is *de facto* an operational market and is properly regarded as an international market. The process of implementation has already afforded powerful lessons with regard to establishing the integrity of an emissions trading scheme as a policy tool and affords a realistic perspective on prospects for the more widespread adoption of this model.

15. Notwithstanding the practicalities of implementation and the political dimension to this process, CCC has been well placed to observe the practical impact of the market. Our experience has been that the introduction of the EU ETS has had a significant impact in stimulating a commercial response to the climate change agenda. While this response has not been universally positive, the diverse, complex and dynamic set of responses observed would appear—even at this early stage—to set the establishment of a GHG market apart from other policy measures as a catalyst for change and a stimulus for a creative commercial response. This is manifested directly in the apparent growth of activity in the emissions trading business, broadly based around the City of London, and indirectly in the attention that the wider clean technology market is attracting from institutional investors.

16. Although the introduction of the emissions trading scheme is in itself significant, both in environmental terms and with respect to businesses such as CCC, it is important to place it in perspective. Compared to traditional securities markets, even the pan-EU EUETS is small: the total allowances issued are some 2.4 billion tonnes of CO₂ equivalent (€21.1 billion in nominal value at a price of €8.8 per tonne), as compared, for instance, to the UK Gilts market with a nominal outstanding value of £320 billion. In scale terms the emissions market is more comparable with the European power market, as indeed generation of 1 MWh of coal-fired power emits approximately one tonne of carbon. Even here the dynamics of the market may prove fundamentally different, since the inability to store significant volumes of electricity tends to drive short-term market volatility, whereas the ability to redeem allowances on an annual basis may dampen activity in all but a few, intensive trading periods.

17. Thus, the development of an efficient and orderly emissions trading market is of central importance to the ongoing development of CCC's business. The company's outlook is not a fundamentalist one: CCC recognises that the market is immature, that there are practical limits to the reach of the market, and that while bearing the label of a market it remains a political construct. However, the company is convinced that on the limited body of evidence that is available today there is considerable merit in pursuing an emissions trading approach as a core element in international efforts to combat climate change, and our submission is presented in this context. It focuses to a great extent on that aspect of the inquiry upon which CCC's expertise can be brought to bear, namely the role of international emissions trading in delivering long-term climate targets.

MAKING EMISSIONS TRADING WORK

18. Preventing dangerous levels of climate change is primarily an investment problem. Success or failure will depend upon whether the right investment framework can be created in order to drive capital towards low- and no-carbon solutions. If the EU is identified as one entity, the world's largest 12 countries represent about 70% of global emissions. This means that the climate effort depends in very large part on establishing the right investment framework in these 12 countries. It is therefore important to set out how emissions trading can best be designed in order to deliver this objective.

¹ <http://europa.eu.int/comm/enterprise/environment/reports—studies/reports/study1.pdf>

19. Before discussing this, it is important to note that there are two main levels of international emissions trading: international government-level trading and international installation—or company-level trading. By way of illustration, the Kyoto Protocol establishes the framework for government-to-government trading, under which each party to Annex 1 of the Protocol faces a cap, expressed in terms of greenhouse gas emissions above or below a 1990 baseline. The traded currency of this inter-governmental system is the Assigned Amount Unit (AAU). As one of the Annex 1 signatories, the EU has unilaterally decided to implement the EU Emissions Trading Scheme (EUETS) as one measure to secure its Kyoto target, with its own currency, the EU Allowance (EUA). The two schemes are not additional: rather they are complementary, with the EU scheme providing one—but by no means the only—measure by which EU Member States can secure their own contribution to the overall EU savings target.

20. The parallel operation of these markets provides a powerful illustration of the choices facing Government over where the burden of meeting our international obligations should fall. At the present time, Member States are finalising the details of their National Allocation Plans (NAPs), which determine the overall cap on CO₂ emissions from those installations included within the scope of the EUETS. In deciding whether to set tight caps under their National Allocation Plans that pass the burden of reducing emissions onto industry or whether to buy Kyoto credits on the government-to-government market, governments are essentially deciding whether the customers of carbon-intensive goods, and in some cases the shareholders in carbon-intensive processes, or the taxpayer should bear the cost of the emissions reduction. The existence of these parallel markets thus provides optionality to governments facing difficult political choices, but it does not avoid their fundamental obligations.

21. A second differentiation is needed between the two broad types of scheme: cap-and-trade and baseline-and-credit. The former applies to schemes like the US sulphur regime and the EU ETS where total emissions are capped and participants trade underneath this overall cap. Baseline-and-credit schemes, like Kyoto's Clean Development Mechanism (CDM), are supposed to result in lower emissions as compared with a hypothetical business-as-usual emissions baseline. Under the CDM, a project developer generates a volume of emissions credits equivalent to the difference between the hypothetical emissions baseline and the actual project emissions. The practical result is a lower level emissions as compared with the situation in the absence of the project. Baseline-and-credit schemes have more limited data and capacity requirements than cap-and-trade schemes because they can be restricted to the project level. However, they are much more uncertain.

22. Fortunately, environmental integrity and economic efficiency have the same requirements when it comes to emissions trading. Both require a well defined cap, wide coverage, transparency and verification, enforcement and institutions.

Emission caps

23. First, the market must be short, ie the total emissions allowed must represent a significant reduction against the business-as-usual (BAU) emissions trajectory of the trading parties. A reduction that is too small can result in market collapse because if the price of carbon falls too low, there is little incentive to trade. This occurs well before the price hits zero.

24. BAU is an inherently problematic concept. Because they are hypothetical, assessments of BAU can vary wildly. The assumptions that result in BAU projections have been highly contended in the implementation of the EU ETS. For instance, the UK's National Allocation Plan (NAP) was revised in order to meet industry concerns that emissions factors and output assumptions were incorrect, so BAU had been underestimated and therefore the "burden" faced by industry was greater than the government anticipated at the time of publishing its first Plan. The questionable validity of historical data, allied to the inherent uncertainty over emissions projections, presents a very real risk that government decisions may be built upon misleading information by affected parties. Governments should monitor the extent to which the data provided to it has been accurate as the carbon price plays out. Experience in the US sulphur market and within the EU suggests that industry usually overestimates compliance costs.

25. Practical experience of the allocations process under Phase one of the EUETS has demonstrated a common tendency on the part of Governments to set emissions reduction targets relative to BAU, with less regard to the imperative of securing the absolute reductions necessary to stabilise the climate system. Although once set these caps are fixed rather than relative, the process of setting the caps has resulted in a widespread divergence between national caps and the emissions trajectories necessary to secure Member States' Burden Sharing Agreements.

26. This experience demonstrates that transparent process and political leadership will always be needed in determining the level of reductions. In CCC's view, this has not yet been achieved within the EU context, as caps under the EU ETS are not yet consistent with Kyoto targets. Future caps must be, and extension of the scheme beyond 2012 should create a predictable reduction pathway aimed at achieving longer term climate objectives. However, the first phase of the EU ETS and indeed the First Commitment Period under Kyoto are transitional. Now that much of the groundwork has been laid, we are in a position to improve the practice and performance of emissions trading.

Coverage

27. Liquidity—best indicated by the volume of trading but meaning the extent to which trades can be made without moving the entire market—is determined by both the cap and the size of the market. Liquidity improves with a tougher cap and a bigger market. This means that wide coverage of emitting sectors and installations by an emissions trading scheme will contribute to its liquidity.

28. In addition, wide coverage can deliver emissions reductions at potentially lower cost. The more countries, sectors and installations are involved, the greater the range of available abatement options. By increasing the number of abatement options, it is possible to increase the number of low marginal cost abatement options. This principle also applies to gas coverage. By extending emissions trading beyond CO₂ to the other greenhouse gases, more so-called “low hanging fruit” become available. Clearly, wide coverage has the potential to deliver greater or cheaper emissions reductions and encourages parties to trade.

Transparency and verification

29. The acquisition of accurate emissions data within the EU15 is challenging at both national and installation levels. Data quality presents even greater problems in new Member States and outside the EU. Despite the entry into force of the Aarhus Convention, a culture of secrecy still pervades much environmental data compilation. Business maintains a monopoly on data in many countries and insists that emissions information is commercially confidential, preventing governments from publishing it or at least disaggregating it. This precludes transparent debate in the implementation of emissions trading and ultimately undermines market transparency. Such is the absence of data in Japan that the government is designing a mandatory emissions reporting system for industry before it can even prepare new climate policies, including an emissions trading scheme.

30. There are problems inherent in determining both hypothetical and actual emissions so efforts to improve data quality are essential. All stakeholders must be able to rely on published data in order to make reasonable judgements about the market. Moreover, transparency enables actors and observers in emissions trading to become enforcers as competing interests seek to level the playing field.

Enforcement and institutions

31. Success relies upon the existence of penalties for non-compliance and the capacity of institutions to enforce them. Although the cost-effectiveness of emissions trading limits likely political pressure on the compliance system, penalties must still be set at a level which provides a robust incentive for compliance. This objective has been achieved under the EU ETS, where penalties are punitive² and will be enforced by Member State governments. However, while international law is binding on countries, it cannot be enforced in the same way as national law. Ultimately, any country can drop out of the Kyoto system at any time, as is true of any international treaty. A major factor is political will, which is determined by diplomatic and public pressure as well as the existence of incentives, such as access to knowledge and the flexibility mechanisms, which encourage countries to stay in the system. This means that the success of the compliance system is ultimately dependent upon governments wishing to remain within the system and therefore accepting as legally binding the consequences for non-compliance?

32. The Kyoto compliance system, designed in Bonn and part of the Marrakech Accords, has yet to be adopted even though key parameters have been agreed. The Protocol states that it must be amended in order for consequences for non-compliance to become legally binding. Resolution of this aspect of the institutional framework is expected at the First Meeting of Parties to the Protocol in 2005. The main features are eligibility requirements for participation in the flexibility mechanisms and “legally binding consequences”, including a penalty of 1.3 tonnes in the next Commitment Period for every tonne by which a target is missed in the current period.

33. The only compliance institutions that have been established to date are the national registries under the EU ETS, the international transaction log for government-level trading under Kyoto and the CDM Executive Board. However, mature markets need mature institutions. A Central Bank-type function might be needed in order to underpin the market, preventing price collapses through interventions as seen in currency markets. Such an institution might also manage major liquidity events such as auctions, new entrants and changes under Phase two.

² The Emissions Trading Directive (Directive 2003/87/EC) dictates that any operator who does not surrender sufficient allowances by 30 April of each year to cover its emissions during the preceding year shall be held liable for the payment of an excess emissions penalty. During Phase 1 of the EUETS the excess emissions penalty shall be €40 for each tonne of CO₂e emitted by that installation for which the operator has not surrendered allowances, rising to €100 during Phase two. Payment of the excess emissions penalty shall not release the operator from the obligation to surrender an amount of allowances equal to those excess emissions when surrendering allowances in relation to the following calendar year.

Capacity building

34. Capacity building presents a challenge under any international regime, but it is particularly important in a context of international emissions trading where institutional failure in one part of the system can affect the entire market. Richer nations will have to increase significantly their financial commitments in this area if any progress is to be made towards a truly integrated international regime.

35. Institutional development can only proceed in a step-by-step way as experience and confidence develop. Expecting developing countries to adopt the most complex environmental instrument in the first instance is too ambitious. Clearly, some countries could develop capacity more quickly, particularly the newly or rapidly industrialising nations. However, emission trading requires not only policy and enforcement, but also competitive markets and other conditions that cannot be created by international environmental treaties alone. Installation-level trading is a challenge in an EU context, let alone outside.

36. A major barrier to effective operation of the market is the EU principle of subsidiarity. Success of the EU ETS requires the harmonisation of financial regulation, registries, VAT, credit risk management and the need for a common delivery-versus-payment mechanism. The EU must overcome the fragmentation of trading infrastructure by pan-European agreement on a range of issues. This is a massive undertaking between countries of a similar stage in institutional development but it will be infinitely more challenging in a global context.

Different government-level trading-based approaches

37. Unless and until emissions trading is brought into disrepute, any future international climate regime will include it. However, regime design will affect the functioning of the emissions trading market. Different frameworks for the post-2012 regime essentially generate different government-level emissions trading markets:

- (a) The extension of Kyoto, ie deepening reductions within Annex 1 countries and widening its coverage to include new countries, will require no new institutional development at international level. However, very few countries that currently do not have absolute caps are likely to take them on and those that do will have to increase their policy, monitoring and enforcement capacity considerably. This approach provides certainty regarding environmental outcomes but limits the number of new participants.
- (b) If, under a so-called “multi-stage approach”, new participants adopt targets of a different nature to the absolute caps adopted by Annex 1 countries, then international emissions trading will present new challenges. New targets are likely to be relative targets, ie intensity or input based or using baseline-and-credit systems; the inclusion of these types of targets in the regime removes certainty in outcome and increases market volatility, but it also increases opportunities for participation by more reticent countries. Clearly, however, participation in international emissions trading requires the adoption of binding targets, whether relative or absolute. Variations of the “multi-stage approach” are currently the most widely endorsed at expert level, largely for reasons of political acceptability.
- (c) The key feature of a “Contraction and Convergence” approach (C&C) is the concept that national emissions entitlements are determined on a per capita basis, providing some governments with a surplus entitlement akin to the “hot air” available from economies in transition. Setting aside the argument that, based on historic and current contributions to global emissions, developing countries have a greater moral claim to this hot air than Russia does, Russia’s behaviour during Kyoto’s first Commitment Period should provide some useful lessons about the effectiveness and capacity needs for this type of market. C&C is similar to the extended Kyoto approach in that it provides certainty in outcome. While it also provides the opportunity for greater participation by some developing countries, it is not politically attractive to higher per capita emitters amongst Annex 1 and non-Annex 1 countries. In order for the approach to work, however, a much greater number of countries would have to improve their institutional and emissions monitoring capacity than under the first two approaches.

DIFFERENT INSTALLATION-LEVEL TRADING-BASED APPROACHES

38. CCC believes that until 2012, international installation-level trading is most likely to grow organically, ie from the bottom up with gradual linking across borders as domestic trading schemes are introduced by Annex 1 countries. However, international installation-level trading will most likely need to be designed into the post-2012 regime: while a fully worked-up framework may not be a realistic objective at this time, any regime encompassing cross-border business trades will require appropriate international institutions. International verification and capacity building are preconditions for linking that is environmentally and economically sound.

39. The Marrakech Accords, agreed in 2001 at the 7th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC), include rules for international trading under Kyoto. Corporate or installation-level trading across borders must be backed with the transfer of Assigned Amount Units (AAUs, or government-level emissions allocations) to ensure that the overall Kyoto budget is not breached.

40. It would be unwise for the EU to link with emerging US state-level schemes (even if the legal hurdles can be overcome) unless these schemes require reductions against BAU comparable to those occurring in Kyoto Parties. If current proposals for the introduction of unilateral CDM projects come to fruition, nothing will prevent US states from recognising credits from these projects and buying them on the open market in order to lower implementation costs. Ultimately, similar provisions may also apply to Joint Implementation. Gradual convergence of US climate policy with international climate policy is desirable but granting US participants access to the carbon market without them having to comply with the rigours of Kyoto will undermine the leadership efforts of others and do nothing to address the competitiveness concerns of industries operating within the Kyoto budget who are likely to face tougher emissions limits.

41. If new types of targets are adopted by developing countries in the next phase of the international climate regime then new rules will have to be identified for cross-border trading. While international linking is desirable to improve the cost-effectiveness of emissions reductions, it must not undermine the integrity of emission reductions by countries with absolute caps. Establishing a common basis now for the development of linking rules could encourage early action by developing countries and discourage them from linking with weaker systems originating outside Kyoto.

BUILDING A CREDIBLE POSITION FOR 2005

42. The EU climate effort is the engine room for Kyoto and has kept the treaty afloat in order for it to enter into force. Russian ratification is a major achievement of European diplomacy. However, a credibility gap has emerged between the rhetoric of EU leadership and domestic action—a gap that is starkly evidenced by the inconsistency of National Allocation Plans under the EU ETS with Member States' Kyoto targets.

43. This credibility gap is also true for the UK, which needs to work hard to maintain the progressive voice of Europe in the world. The UK must ensure that the EU enters the post-2012 climate negotiations with a credible position; this means that the overall cap for the second phase of the EU ETS must be consistent with Kyoto and the EU needs to present an ambitious commitment to further action post-2012.

44. The UK must avoid the lure of insubstantial US-centric initiatives arising from its G8 presidency. The Bush administration is not representative of the level of concern and action occurring within the US, particularly at state level. Moreover, high oil prices provide a real opportunity to discuss and deploy global decarbonisation strategies through EU-led partnerships with Japan, Canada, China, India, Brazil, Mexico and others.

COMPLEMENTARY MEASURES

45. Too great a focus on trading will not deliver an international agreement. Concessional finance from government sources, whether provided through soft loans or other mechanisms that present a lower cost of capital than commercial sources, should be scaled up—after all, a stable climate is a public good that needs public investment. Additional instruments such as better export credits for renewables will accelerate international decarbonisation. Technology initiatives must focus on the commercialisation of near-term technologies.

46. Adaptation needs have to be addressed for those climate change impacts that are already inevitable.

47. Finally, internationally scaled-up efforts on public education and engagement are essential in order to provide the political basis for action and encourage consumers to change their behaviour.

DEPARTMENTAL CONTRIBUTIONS

48. DEFRA must work with DTI to improve the integrity of the UK's domestic position. At times, this will require stronger leadership from the Prime Minister. Recent adjustments to the NAP have undermined the UK's credibility, despite protestations that the cap has been tightened. A fundamental problem exists with adherence to BAU projections; the political case must be made for absolute reductions and execution advanced on this basis.

49. The Treasury should become more proactive: emissions trading will drive wealth creation and enterprise in high technology and the financial and professional services that are central to the enduring growth of the UK economy. At the same time, the Treasury must strive to secure a better understanding of the impacts of the shift in value created by carbon pricing in order to adopt an objective and dispassionate perspective that prevents the exertion of undue influence by narrow, vested interests. Treasury is also in a powerful position to drive the institutional development of the market both domestically and internationally.

CONCLUDING REMARKS

50. CCC welcomes the opportunity to make this submission to the EAC. We would be pleased to address any queries or comments arising either directly or through the submission of oral evidence.

17 November 2004

Witness: Mr James Cameron, Founder and Board Member, Climate Change Capital, examined.

Q296 Chairman: Good afternoon, Mr Cameron, it is nice to see you, thank you very much for your time. Do you have any introductory remarks that you would like to make to the Committee?

Mr Cameron: I thought I would introduce myself and Climate Change Capital, if that is okay?

Q297 Chairman: Feel free.

Mr Cameron: My name is James Cameron. I am a barrister by training and have been a professor of law, and one of the founders of a new specialist merchant banking group called Climate Change Capital. I have spent the best part of 18 years working on the climate change issue, as a lawyer. I did that initially through a foundation which I founded with some others, the Centre for International Environmental Law, which became the Foundation for International Environmental Law and Development. I have taught international environmental law all over the world, at London, Cambridge, Bruges, Sydney, and my last remaining academic connection is with Yale, with the Yale School of Environmental Law and Policy. I negotiated all of the climate change agreements. From a long with that I wrote the first law review article on Climate Change and State Responsibility, back in 1989, which was published in 1990. So I have been there from before the International Negotiating Committee on Climate Change. So the Second World Climate Conference would be the first key event; then leading into all the negotiations for the Framework Convention on Climate Change and then ultimately Kyoto. It is that experience and building a specialist practice within the world's largest law firm, Baker & McKenzie, that encouraged me to build a bridge between the world of policy and law on the one hand and the world of financing and investment on the other. So Climate Change Capital is a specialist merchant bank and it is as a consequence of that experience and the getting together of specialists from insurance, and investment banking and from research and analysis of the related markets to the carbon market that Climate Change Capital is a little over a year old and is the first institution of its type anywhere in the world. I think it is right to say that it could not have been created with that name anywhere else but here, in London.

Q298 Chairman: Thank you very much indeed. You obviously know your Climate Change. We have quite a lot of ground to cover and a limited amount of time and therefore it would be very helpful if you could try to keep your answers as snappy as possible, and we will try to do the same with our questions. On

that basis, let me begin by asking you how you think that the investment community at large views the EU ETS?

Mr Cameron: I think it is fair to say that the investment community is, by nature, sceptical about markets that are formed by policy. Or put another way, investment that is dependent upon policy. That scepticism is pretty well founded. It is also exaggerated, and the reason why it is exaggerated is because in this context Emissions Trading is a device designed exclusively for delivering an environmental policy, and there is no reason for it to exist other than to reduce tonnes of carbon dioxide or, in due course, carbon dioxide equivalent from the atmosphere. So at some point the usual grounds of scepticism in the investment community, "Should I depend upon this government policy or will they take it away or will they change it fundamentally and make my investment either lose money or made less of a return than I promised my investors," that sort of concern, becomes an issue of credibility in the system as a whole. Provided—*provided*—that this government and others—and it is a very substantial international market now—display total commitment to this particular policy device investment will happily flow into Emissions Trading. In that proviso there is a concern about how things have started and investment for low carbon technologies, for example, will not flow to support Emissions Trading or be behind Emissions Trading unless the price signal is loud enough and strong enough, and in the first phase of the EU ETS it is not loud enough or strong enough for investment; it is probably enough for people to trade, but there is a distinction there between what is enough for people to do transactions, to comply with the law, and what is sufficient to make them invest in solutions.

Q299 Chairman: So your biggest concern about it, from the point of view of a financier, your latest hat, is political uncertainty?

Mr Cameron: Yes. The investment response which ought to follow from this policy framework, and where there are real prospects that this policy framework will encourage significant investment, is contingent upon belief that the system will endure, that the policy makers are serious that they will keep it there. Secondly, that the price signal is sufficiently loud and clear early on for investment. I do need to break this up into parts because a price of, say, around 5 Euros a tonne of CO₂ in the EU is more than enough for people to begin trading and to exchange value from their balance sheets from next year onwards in the first phase. But for many companies it will not be enough for them to change their investment patterns to invest in the solutions.

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Once the price gets above that and starts to make a Board allocate resources over time to meet quite a large exposure, quite a large potential liability, then you are really achieving something out of Emissions Trading. You will still get reductions but they will be modest. The beauty about Emissions Trading is that if you capture the commercial consciousness of the investment boards of companies you will not only take tonnes out from the scheme itself but you will encourage people to put investment behind low carbon technologies over time, providing you get that pricing clear.

Q300 Joan Walley: If I could just come in here quickly. You are talking about the investment community. Could you just say very briefly how you see the investment community relating to business sectors and the kind of interface between those?

Mr Cameron: That is a very strong point because there is a simplistic blurring of edges here because the investment community includes, for the purposes of this exchange, companies with their own balance sheets to invest, as opposed to banks and private equity houses and the various other people who put money into the system. So I have been talking about the total sum of investors, which includes companies investing their own money to either secure compliance or to achieve competitive advantage over others who may not be so adept at responding to these policy signals. For the time being a good deal of the money which is available to be spent on taking tonnes of carbon out of the atmosphere is on the balance sheets of energy companies, power companies and the like. But what is actually more interesting in the medium-term is that if others see an investment opportunity, investing their money and of course their clients' money into the market place, which is supported by a price for carbon—and this is one of the many reasons why I am enthusiastic about Emissions Trading—once you establish a reliable price for carbon you incentivise a lot of other investments which may emerge in clean fuels or other clean technologies, energy efficient technologies, or, ultimately, in renewable energy itself, and this produces very attractive synergies between the carbon market, which is useful in itself in taking tonnes out of the atmosphere, but other markets that can borrow value from a price per carbon, make an argument to a private equity firm or venture capitalist or even bank lending, providing debt to a company that has a solution.

Q301 Mr Thomas: A follow-up question. I was interested to hear what you had to say initially about your concerns about the initial stage of the EU Trading Mechanism and that you felt that there was not sufficient incentive there or possibly, as the Chairman said, political certainty to get that investment and all those investors going. And in the light that the government only last week of course missed its own target for CO₂ reductions. What sort of reactions does that send out to the investment community, that this government is not hitting the targets and now we are asking the investment

community to come along and help all the governments in the EU to meet targets? Are the signals strong enough, is what I am trying to get to here?

Mr Cameron: I think the signals are strong enough to begin and early on next year we will see that, and there will be a carbon market in Europe—and a short pause here to say that that is a remarkable achievement. To all those who have been involved with constructing that, the often unsung, much criticised civil servants here and in Brussels, well done for having created such a thing. But the investment community wants to be sure that the market that has been created, for this environmental purpose, is sufficiently “short”, to use the traders' jargon; that people will trade; that there will be sufficient activity in the market place for it to be meaningful. I believe that it will just about be sufficiently short enough for people to trade, but barely, and it ought to have been shorter; it should have been more demanding. There is going to be some embarrassment, I think, in the early phase as to who has done really rather nicely out of the allocation process. We have got time to put it right for the next phase, but we will need to see very early on—next year—a serious commitment for making the next phase significantly shorter and harder to achieve, and if you do not have that you certainly will not get real investment—you will get a little bit of trading but you will not get real investment—and you will get people holding back and waiting to do things, which they really ought to be getting on with now.

Chairman: We are leaping ahead a little into territory that I would like to cover in a little more depth in a moment. Mr Challen.

Q302 Mr Challen: I wanted to know if you thought that there was any relationship between if there was a low price for the carbon and therefore not much liquidity in the minds of the Board, and whether they have penalties that would then kick in, as it were, to incentivise them to trade more?

Mr Cameron: Not if it is too easy. A market does not really work if the majority of the market place sits on their allowances and waits for one date in the year at the end and hands them over. It is okay for some and the vast majority of those roughly 15,000 installations across Europe do not have specialist carbon trading teams, and are not going to create them any time soon and have relatively modest demands placed upon them. If there is a very low price they do not have to worry too much—it is not going to hurt their business one way or the other—so they might as well just do what they have to do to comply. That might be one single trade in a year, and that is not really very much to be excited about in creating a liquid market. However, there are all sorts of variables that feed into the carbon market: the price of oil, the price of gas, the price of power, the weather, ie what sort of winter we have. These things do have an influence if you are a large energy producer or consumer and if people do sit on their allowances and there is not an active market, and if there is some kind of shock or surprise you might get

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a very uncomfortable, unprepared-for spike in the price even in this early phase. So the only sensible and rational thing to do for someone in receipt of these allowances is to find out how they manage their risk early, and they really ought to be in some way involved with trading, even if they hand the burden on to someone else if they work through a trade association, or their bank or somebody who does it on their behalf, if they do not really want to do it on their own.

Q303 Mr McWilliam: Some of my questions we have partly gone into, so forgive me if I ask them again because we want to look at them a bit more narrowly. In your submission in chapter 18 you said, "Preventing dangerous levels of climate change is primarily an investment problem. Success or failure will depend upon whether the right investment framework can be created." Does that not run counter to the criticism you made in your opening remarks about markets being deterred by being driven by the policy rather than a hard-headed business decision?

Mr Cameron: No, because the energy markets, power markets have always been heavily influenced by regulation. The waste market does not exist without regulation, and I am not of the view that there is too much policy uncertainty here. That is because I have worked on it for years and years and I understand it. But I was asked a question generally of the investment community and I accurately recorded a general view of the investment communities. I happen to believe that the policy frameworks are perfectly clear; they are not doing as much as they ought to but I am confident that the Emissions Trading Scheme will work and will develop and will have a useful effect on not just establishing the price of carbon but encouraging other related markets.

Q304 Mr McWilliam: The setting of targets is clearly a crucial aspect of the EU Emissions Trading Scheme. You state that the Phase 1 targets are too lax and do not even accord with the Kyoto targets that Member States face, and this will need to be radically tightened up in Phase 2. Why do you think this situation has come about?

Mr Cameron: I think the way that most policy is made in most governments—and we are no different here—enables a certain type of industrial lobbying to be very effective, particularly around the competitive arguments. The stuff that you hear in these Committees year in year out—and I have been a specialist adviser myself in other Committees—I have listened to the arguments that get brought forward, and they work, they are effective arguments; there are often reasons, particularly in the environmental regulation field, for either not regulating or regulating softly or taking account of a certain type of interest, and I think it has been successful again. As it happens I think that strategy fails to accord proper recognition to the substantial business interests in an effective Emissions Trading Scheme, most notably in the City but also in support in the professions, in accountancy, in law,

consultancy and the various other new businesses that are growing up around a market for emissions—certifiers, validators, people who are necessary practitioners to offer comfort to investors in carbon. So I think that the competitive arguments have been very badly managed, they have been very misleading, counterproductive and, in many cases, irresponsible, but they have worked and we have to live with them until the next time around, because I very much hope that Ministers and senior civil servants have kept a very close record of the arguments which were made to them for having a softer allocation than there otherwise ought to have been the case.

Q305 Mr McWilliam: Do you not think that the situation will exist and they will fundamentally damage the credibility and the operation of the ETS?

Mr Cameron: It has already caused some damage. There have been plenty people in my day to day work who have said that, "When it comes to it the market is not worth very much; not enough there yet, I will wait until the next round. Let us see what they do in the next phase." Certainly there are a lot of people out there with that view, but personally I think there is enough there to get started. More should have been done but there is enough to get started, and as long as we signal very early in the day—and this process is underway so I am not telling the government anything other than what it is already doing—that we will not get fooled again, that next time around these emissions are going to be considerably reduced, and in a sense what has happened is that you have made it harder for us all the next time around. That conversation, of course, has to go on with our European counterparts because it is mirrored in virtually every Member State.

Q306 Mr McWilliam: Coming to that, Member States were allowed to set their own caps for Phase 1. Do you think that there should be an EU-wide target cap for Phase 2?

Mr Cameron: Ideally, yes; practically it will not happen. So some way of negotiating between the ideal and the pragmatic, as ever, will have to be done. This is a big market place. You have listened to several rather critical remarks about the beginnings, but they are the beginnings of something very substantial, and to have 25 countries in a system with what will be greater scope in the next phase is a major undertaking. So when I get over my complaints about the lack of ambition at the start I am aware of how demanding a policy challenge this is. It is obvious that the Commission would have a preference for a solid pan-European target, but equally they do not have exclusive competence over this issue, they have to share it with Member States and, what is more, new Member States that are taking on obligations the like of which they have never had before. So it is just not going to be possible to do this on a hard pan-European basis and we have to start negotiating right away at a Member State level. So that is what will happen, I am afraid.

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Q307 Mr McWilliam: The targets set in the EU ETS are short-term—only three or four years. Do Emissions Trading really work with that sort of approach, or do you think it should be based on far longer-term target caps?

Mr Cameron: There is no doubt that there is a problem associated with a regime that appears to end with a cliff, and investors do not like that either at all. So together with it will be harder in the next phase the next thing is that there will be a phase after 2012. Both those are required because you look at a long-term power purchase agreement, for example, that extends beyond 2012—a lot of financing is going beyond 2012. So investors want to know that there is no cliff face. There will not be but people who do not spend their lives in these sort of processes do not know that, so they need to be told and to be left in no doubt that this regime is continuing on past 2012, both at the international level—which of course is what is going on now in Buenos Aires, at the COP—but also at the regional and domestic levels, the EU and the UK.

Q308 Mr McWilliam: If we did have far longer-term targets to what extent would they have to be more radical? Would the investment community have any greater confidence in those targets—and you seem to say they would—or would it simply not assume that, once the going got tough, States would renege on their commitments and there would be a political fudge?

Mr Cameron: What we are looking at here is the development of a market place that requires very, very careful and skilful intervention from policy makers. Too much and the market will withdraw, too little and there is a danger that the price becomes unstable in both directions, or either direction. So the first thing, the most crucial concept of being able to communicate consistently amongst the policy making community and to investors is that this is a market that has to be kept permanently short, by which I mean to have any chance of delivering large tonnes of CO₂ or CO₂ equivalent reductions over time we have to keep making it more and more ambitious; we have to make sure that we do that projection; there has to be some discipline imposed by the scientific consensus, that is what it is there for. So bit by bit, phase after phase, you have to be checking progress against real reduction targets, and ultimately the one that is contained in the Framework Convention on Climate Change, which us and the rest of the world have signed up to, stabilisation of greenhouse gas concentrations in the atmosphere, which, for the time being, we have fixed on the 550 parts per million target. So Emissions Trading has to be linked to that, and of course we have just started and we are nowhere near that. That is the first thing to communicate. The community market will get there but what they do not want to find out is that if we achieve somehow then, again, it is all over, we have literally done our job, because that will not be the case; we have to keep going to reduce. The second thing that needs to be consistently communicated to investors, and indeed the actors, is that we will not allow the price to fall

to nothing or to go so high as to cause damage to our industrial and large energy user base. This system cannot work if the price falls down to a Euro, does not do anything, cannot work. But equally, if it shoots up to 50 or 60 early on, you watch—people will give up. So that requires skilful management, conceptually not a lot different from interest rates and the sort of key statistics that any government must watch in its economic affairs, the sort of thing the Treasury monitors, that the independent central banks of Europe look at too. That is the kind of analysis you need because it will be disastrous for this market if you had either very high or very low prices.

Q309 Mr McWilliam: Was the use of the free grandfathered allocations simply designed to buy over industry? Would you favour a move to the far greater use of auctioning?

Mr Cameron: Yes and yes.

Q310 Mr McWilliam: My final question is this: I gather that the power sector will enjoy substantial windfall profits in Phase I. Is this true and, if so, why has it come about and can you put any figures on it?

Mr Cameron: I have knowledge, which I am afraid will have to remain confidential, but I have made a point publicly and I have made it directly to Ministers—

Q311 Mr McWilliam: Was anything I have said substantially inaccurate?

Mr Cameron: The truth be told, there has been a problem not just in this country but in other parts of Europe in the way that the “Business-As-Usual” reference point has been used to calculate reductions for, in particular, the power sector, which means that because we have now gone, since April, to a new target hooked upon Business-As-Usual projections, albeit on better data than we had earlier in the year, it is very hard to tell now whether those predicted reductions are going to be real. To my certain knowledge a number of power companies in this country are going to be sitting very comfortably on their allowances and will be able to convert them into valuable income on to their balance sheets. Now, at the same time I know that a number of the CEOs of a number of those companies are very aware of that, that they know the markets—and one of the beauties about these markets is that they are a whole lot more transparent than a lot of other regulatory deals that are done in other parts of the world—and we are not immune to them here—and the markets are very good at finding out these things. There will be some embarrassment and it will have to be corrected. The CEOs will have to act very responsibly with their windfalls.

Q312 Chairman: Could you give us any idea of the scale?

Mr Cameron: No. I will simply say that when I express frustration at the way the lobbying worked and some of the pronouncements that were made, in particular by the Director-General of the CBI, in the media I knew very precisely how inaccurate those

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pronouncements were; that there was not going to be a great deal of suffering in the power sector; that there was not going to be a great deal of suffering in the industrial sector; that the price for carbon was going to be low and there were lots of options available to industry to meet those targets. I think I must leave it at that.

Q313 Chairman: We are hoping to see the Director-General of the CBI later on in this inquiry.

Mr Cameron: I hope you are very firm with him.

Q314 Chairman: If you are not specific how can we be firm?

Mr Cameron: I think it is enough to say that were a number of well quoted—because he is very quotable—statements about how this Emissions Trading Scheme is going to damage British industry for 40 years—was the time frame he offered—and that we would be put at a competitive disadvantage to our European allies, and that essentially we were taking on board too much pain here as compared to others in Europe. All three of those statements are inaccurate.

Q315 Paul Flynn: I am reluctant to move away from that line. We will look forward to that meeting. Could you clarify for us the type of trading that is likely to happen under Kyoto? There seem to be three distinct levels. There is the inter-country trading, the trading under the Joint Implementation Schemes, such as the EU ETS, and trading in CER credits which arise from the CDM projects in developing countries. Is that a reasonable understanding of the position?

Mr Cameron: Yes. There is no such thing as a single carbon market; there are several markets. It is likely that over time they will converge—there will be a tendency to converge. But it is going to take a good many years before that happens.

Q316 Paul Flynn: Do you think that there is a risk that political deals between different countries, even countries within the EU, might undermine the growth of inter-country trading through EU ETS?

Mr Cameron: No, I am not all that bothered about the inter-governmental trading, I do not think it is going to take up a large proportion of the carbon market. I would like to see transactions that involve the trading of what is called an “Assigned Amount”, which is what is given through the Kyoto Protocol to governments in order to enable them to stay within a cap imposed by the Kyoto Protocol. I would like to see those sort of transactions heavily scrutinised and a commitment made to ensure that in some way or other real reductions are associated with the transaction. So if the UK government—actually it is not in any position, has no interest in doing this—so if a European government wants to buy an assigned amount from the central European or Eastern European government, that they will be sure that that transaction was going to directly lead to real reductions. There are ways to do that. There is a rather loose phrase, but it is not bad for communicating, that you can “green” your assigned

amount transaction and I would like to see that done on a routine and organised basis and you could do that by way of political commitment—there is no legal obligation to do that. I think that if there is significant pressure to reduce emissions in the second phase of the EU ETS there will be demand for those sorts of reductions. It is also the case that countries like Canada are now very far off their target, so the Canadians who had a 6% target off a 1990 baseline are now in the order of 40% off their target by 2012. That is a very big number and they are going to want to do some government-to-government trading. But I think they prefer on the whole to purchase from projects that work through the Kyoto mechanisms.

Q317 Paul Flynn: You have been very helpful talking about the price. Do we understand from what you are saying that you might regard the present price as too low and, if so, what sort of price do you think it might settle at?

Mr Cameron: If my esteemed colleague Tony White were here he would talk you through those numbers very confidently, and I take great care not to make price predictions. It is obvious that if you can establish a price—and let us call it in the 10 to 15 Euro range—relatively early on, that is enough for people who have a tough target to meet as a company to start to make investments of their own capital to reduce their exposure to that sort of price, and it is enough to tempt speculative capital into the market place, and it is enough to take investment capital and apply it to businesses that provide the solutions. A price of 20 is extremely exciting for a solution provider in renewable energy or clean fuels—they are going to be very excited by that—but others who have a large liability, if it happens too quickly, are going to be very bothered by that. So if we are going to reach prices of 20 or 30 or so let it be gradually, please, and in a managed way otherwise we will definitely scare people into more robust resistance. The trick really is to balance real pressure to reduce through an Emissions Trading Scheme bounded by law here, with opportunity for valves to open up to release pressure through these other instruments in other parts of the world. So you want to constantly calibrate, pressure to reduce and valves to allow flexibility in forestry based credits, in emission reduction in the developing world, in transactions with other Emissions Trading Systems, whether they be at national or sub-national level, these sorts of things. Bit by bit you want to build a big global market to give yourself the maximum flexibility and range.

Q318 Paul Flynn: If there is a really tough approach to Emissions Trading can you see it becoming a demand management tool, and is that not a way of making the economy more carbon aware?

Mr Cameron: Yes, absolutely. As soon as you consistently establish a price for carbon so many other things follow. There is actually no limit to the creativity of our business and entrepreneurial community. They pick up on signals all the time. It is amazing how many people come up with the most bizarre ideas for reducing carbon once you have

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incentivised them. There are all sorts of possibilities that you would never think about, which again is why this works. People who want to reduce carbon from the agricultural sector by capturing methane, people who have all sorts of ideas. The forestry area, which is a perfectly sensible way of taking carbon out of the atmosphere. There are projects associated with switching fuels, energy efficiency projects, district heating, the list is endless. All perfectly sensible approaches that switch from being not quite cost effective to being, to use the jargon, “in the money” because of the price signal that you get.

Q319 Joan Walley: Just staying with Europe for a while, in paragraph 36 of your evidence to us you talk about barriers to the effective operation of the market arising from subsidiarity, and you go on to talk about a range of issues which are not perhaps synchronised and that being a barrier to getting trading going. How are we going to overcome those? What signs do you see that there is progress being made on those?

Mr Cameron: You have to sit down and work through the detail very carefully and painstakingly.

Q320 Joan Walley: Who is doing that?

Mr Cameron: The Commission is leading it. They need a lot of support from Member States, the cooperation from people who have expertise in Customs & Excise and VAT areas and from the accountancy profession, from the Financial Services regulators. There are lots of market issues that have not been properly resolved, which are all barriers to people doing business.

Q321 Joan Walley: So what is the mechanism by which that joined-up approach to work through all of those difficulties could come about, and will it be something that could be taken up through the UK Presidency?

Mr Cameron: Yes.

Q322 Joan Walley: What is in situ at the moment?

Mr Cameron: I hope a lot of those things will be resolved before the Presidency begins, but certainly if they have not been, absolutely the Presidency will be very helpful; it is enormously helpful to have these twin Presidencies next year at the G8 and the EU, that really is a boon for us here in the UK.

Q323 Joan Walley: But the investment community is taking these barriers seriously?

Mr Cameron: Yes. You want to get the mainstream involved. I happen to be delighted that the mainstream is just a little bit behind the pioneers, but really from a policy point of view you want the mainstream involved, and they have too many reasons for not getting involved when these things are not sorted out. For some people there is money to be made in the incoherence. They will always do well with arbitrage between errors, glitches in the system once they find out what they are. But to get the system to work smoothly so that it is relatively easy to transact, to take large amounts of carbon dioxide out of the atmosphere, and it just keeps

running on so that the dynamism in the system keeps delivering emission reductions. That is what you want, you want the market people to do it, get on with it, and then you, the policy makers, keep fine-tuning the machine. So they all get up, they trade and trade and trade away and what we are doing is they are reducing carbon, reducing carbon and that is what you want. To do that, so that the system is well oiled and efficient, you have to take away these glitches and tax glitches and regulatory glitches. If I want to do business in Spain, to trade with a Spanish utility with them selling me some of their allowances—or it might be better the other way around, with a UK power station selling some of their surplus to a Spanish operator, and if I do that, having met the gentleman in Spain, and I transact, am I allowed to do that? Does the Financial Services regulation entitle me to do it or must I be registered with the Spanish authority to do that transaction? These are little but important things which are not quite sorted out.

Q324 Joan Walley: Who is charged with taking the lead on that? Who are the people who can get those going?

Mr Cameron: The people responsible for Emissions Trading in government here are Defra, who take the lead on these things. They are a very good team and are working extremely hard on all of these issues. They are fully aware of these questions and they just need a bit of help and support, with others, and they need for it to be a priority to dedicate negotiating time too, and they need good expertise to help them to iron out these things, and they need cooperation from the Financial Services and the tax authorities and these sorts of things.

Q325 Chairman: Are you engaged in advising Defra on all this?

Mr Cameron: We have very good relations with Defra and indeed other parts of government and we have meetings lined up with Treasury as well, which will be helpful to conclude swiftly.

Q326 Joan Walley: And with the CBI?

Mr Cameron: No, not this directly.

Q327 Joan Walley: One of the things that you refer to again is transparency and you refer to the situation in Japan where they are thinking of introducing a mandatory monitoring scheme. Do we need that here? Is that something you would like to see taken forward globally in the UK and in Europe? Or can we have trading without it?

Mr Cameron: It comes down to trust in the system; people need to feel comfortable that when they do business they are transacting in something known and understood. So high levels of transparency are good for the system. That is not to say that there will not be people who are very happy to do very well in the rather darker regions of the market place. But to make the system function effectively transparency is a good thing.

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Q328 Chairman: If mandatory, yes or no?

Mr Cameron: I think probably yes.

Q329 Joan Walley: Without going into the detail of the Company Law Review which took place, is there scope within that to enable that degree of mandatory monitoring, or could there be, easily?

Mr Cameron: You have to be careful in one regard. You cannot disable trading because everybody knows your position. There is a certain type of transparency that is totally counterproductive because people will hide their position in various ways. But you need to be able to trust that what passes through your account is the real thing, and so it is fairly understood that although I will answer to your question yes, that I would want to be very careful with what it is that is mandatory. I would not want there to be a rule that requires somebody that has a position in the market place to disclose that to their competitors.

Chairman: I am aware that time is passing and we have another important witness to listen to, so if we can move swiftly through the next set of questions.

Q330 Mr Challen: Given that you were heavily involved in the drafting of the CDM part of the Kyoto Protocol, how do you view its subsequent development?

Mr Cameron: Yes, I was heavily involved with my colleagues at FIELD, advising all the Alliance Of Small Island State countries and my perspective of it comes from that experience. There was a genuine bargaining between north and south that offered real opportunity for investment into the developing world to enable them to have a better technological input into their particular energy production and consumption, and I am a fan of using the CDM to add flexibility now to our European market. However, for various reasons, notably concern in the non-governmental organisation world that the Clean Development Mechanism would be used as a sort of excuse for inaction in the developed world, it has been burdened with a number of ancillary rules to the original one that I helped draft, which I think are problematic. In essence I would like to see the CDM operate with a bias towards volume, lots of projects, with the risk that some of those projects—every now and again there is a fraudulent one, every now and again one does not deliver what they said they would, and the monitoring of those projects is crucial—but take that risk in order to get lots of capital to flow for lots of projects. I want the bias that way and I think the CDM is a waste of everybody's time and effort if you do a handful of Mary Poppins' projects a year, "practically perfect in every way", and of no use. So the CDM is potentially a rather beautiful device for bringing together the north and south and the collective solving of the Climate Change problem, but only if its mechanisms function efficiently and a lot of projects can pass through it in a calendar year. At the moment I am worried that insufficient projects will pass through, that there is a misguided notion, misinterpretation of what we meant by the concept of additionality. I do not know whether you want to

go into this level of detail but there is a real problem with how that works, and in essence that mechanism was designed only to prevent public money aid being diverted away from poverty into these projects. At no stage was it designed to prevent profitable projects being conducted in the developing world.

Q331 Mr Challen: So additionality was one of the extra rules introduced, was it?

Mr Cameron: It is not even an extra rule, it is just an interpretation that seems to have developed, utterly irrational and, I am afraid, totally counterproductive from an environmental point of view. It carries no merit from the environmental point of view. What it means is that it encourages a kind of doublethink first and a double-speak later on behalf of the project developers. So somebody who wants to do a big emission reduction project in Brazil has first of all got to go to their Ambassadors or their Board and say, "We are going to do this because it is fundamentally a good idea," and then they have to pretend that it is actually fundamentally a bad idea from a commercial point of view in order to ensure that the carbon finance element is additional, or constitutes additionality, and this is a really very bad way to proceed. The only point to additionality—I am sorry, I have gone there and I did not mean to—is to stop public money being diverted, it is not to prevent profitable projects being done.

Q332 Mr Challen: Does that mitigate against trying to capture the low hanging fruits?

Mr Cameron: You want profitable projects to be done. All you need to focus on is the "but for" test. If this project did not exist would we get these reductions? That is what you have to focus on, and you need to have a robust baseline, a good verification and all sorts of technical skills apply, and careful monitoring and scrutiny because there will be people trying to try things on. But after a while practices will develop that are robust and can be trusted and the Executive Board will pass projects, methodologies will be improved and then investors will be able to look at that list and say, "Right, we will build a fund just to deal with these sorts of projects," and you watch the money flow into places that they would not otherwise go. It will be a lower risk investment to generate a certified emission reduction, which has currency in the rest of the world, than to take a risk of investing in some of the countries that are beneficiaries of these projects.

Q333 Mr Challen: As it stands though would you say that the CDM is not the most effective way of channelling money into the least developed countries?

Mr Cameron: At the moment the least developed countries will not be big beneficiaries in the CDM, no, I am afraid to say. They ought to be but they will not be initially. We are going to have to do a lot more work to make that system easier to use, more efficient and we may have to alter the rules to advantage the least developed countries.

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Q334 Mr Challen: You have been very sceptical of the entire concept of Business-As-Usual, largely I think because of its variability. How can you be so supportive of the CDM in that case, given the fact that it is essentially built on this baseline and credits approach which is at the heart of the Business-As-Usual concept?

Mr Cameron: Baseline credit has its real value when it is connected to the cap and trade system, so the great beauty about the linking directive in the EU, connecting the EU scheme and the Kyoto credits, is that you create demand for these credits in the developing world. So what might start as a baseline and credit type system is given value by an absolute constraint. I am afraid I do believe that it is useful for the developing world as you bit by bit try to involve them in the taking of obligations under the Kyoto Protocol, the next phase. Baseline and credit is actually quite a good technique for bringing people on who do not have obligations today.

Chairman: We have to move on, I fear, very quickly to Mark Francois.

Q335 Mr Francois: The framework for post-2012, do you think that a post-2012 agreement needs to be based on the current Kyoto approach, ie national targets for states decided on the basis of political negotiations, supplemented by Emission Trading regimes, and what some people call Kyoto-plus?

Mr Cameron: Yes.

Q336 Mr Francois: If so, what aspect of the present treaty do you think needs to be developed or changed for a post-2012 agreement?

Mr Cameron: In the written memorandum we go through a number of the options, which are currently being debated. I need to be careful that I am not being precious about this—you get very proprietorial about things you have negotiated, and I hope that that is not what drives my answer—but I do believe that Kyoto-plus is the only realistic way—and I cannot believe I am saying realistic, I am such an idealist by nature—of proceeding, yes, I do. It is

not that the treaty system is anywhere close to perfect, nor that it would be impossible to create a complete alternative, but I do believe that there is sufficient momentum now in Kyoto to warrant concentrating effort in a post-Kyoto regime that is based upon what we have already agreed. That does not mean that it has to replicate; it is not just a question of going through the same allocation process and saying, “We are going to give you less next time and the following countries are going to have to carry the same burden as the first.” I do not believe that we need to replicate Kyoto, but the next regime needs to have absolute targets that are meaningful and connected to the original obligation in Article 2 of the Framework Convention, the one that governs the whole system. They have to be able to accommodate the very rapidly industrialising developing world and will need to get over the developed versus developing world dichotomy, which it is of no value or relevance to the Climate Change debate—it just needs to go. So we need new categories of people under the original principle of common but differential responsibility, which is in the Framework Convention, and we need to get another category of countries to begin to reduce their emissions even on a relative basis, and I have a very optimistic view about that. I know what is going on in China and India and Brazil; I am not in the doom and gloom camp with those countries, they are already doing more in terms of policy put in place than many of the OECD countries.

Mr Francois: You described yourself as an idealist and perhaps being an idealist tempered with realism is no bad combination, so thank you very much.

Q337 Chairman: Thank you very much indeed. Unfortunately we have run out of time. It may be that the Committee has a few more questions and if so could we put them in writing?

Mr Cameron: I would be delighted, and if other colleagues can assist on aspects of your questioning we would be happy to have our officers collect them together and present them to you.

**Memorandum submitted by Steve Rayner, James Martin Professor of Science and Civilization Director,
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THE AUTHOR

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Rayner spent two decades working in leading research institutions in the United States, much of which was devoted to research on the human dimensions of global environmental change with a particular emphasis on climate. He is co-editor of an extensive review of social science research on climate change, the four volumes of *Human Choice and Climate Change* (Battelle Press 1998). He is also co-author of the book *Making Markets*. He has led the writing of various reports to the Congress of the United States on climate policy instruments and has presented testimony to the US Congress on climate research policy.

He writes here in a personal capacity.

THE INTERNATIONAL CHALLENGE OF CLIMATE CHANGE: UK LEADERSHIP IN THE G8 AND EU

This memorandum to the Environmental Audit Committee of the House of Commons consists of two parts, broadly following the structure of questions accompanying the committee's invitation to submit my views. The first section addresses the general strategic questions about what the UK climate change priorities should be during its presidency of the EU and G8. Part II addresses some of the issues facing the global emissions trading system envisaged in the architecture of the Kyoto Protocol and briefly reviews alternatives to such a system.

PART I: GENERAL STRATEGIC QUESTIONS

What priorities on climate change should the UK pursue prior to and during its presidencies of the EU and G8 in 2005? To what extent should the primary focus be on a post-Kyoto framework? Are there any other short or medium term issues that should be part of the UK agenda? If so what?

The UK presidency of the EU and G8 presents an important opportunity to move on from the current emphasis on the Kyoto mechanisms and to develop other strategies to deal with both the causes and impacts of climate change that are capable of engaging critical actors in the United States.

The Kyoto Protocol was an agreement of historic proportions, signalling that governments around the world were ready to take climate change seriously. However, it is also an intrinsically problematic mechanism for bringing about the kinds of changes in the global energy system that will be required to stabilize anthropogenic greenhouse gas concentrations over the course of the next century and to protect vulnerable human and natural populations from climate change impacts.

Many of these problems were identified even before the protocol was formulated in 1997, but were glossed over in the rush to secure a diplomatic success that has yet to translate into meaningful emissions reductions. As various commentators have observed, the current architecture for an international climate policy regime was based on that achieved for the protection of the stratospheric ozone level. But, despite some obvious superficial parallels, the scientific, technical, and political structure of the ozone and climate problems is quite different. As a consequence the world has committed itself to a framework for climate policy that, in many respects, may be quite unsuited to the problem. It seems to be a classic case of the phenomenon observed by military historian Gwynne Dyer, that generals invariably try to fight the next war with the technologies and strategies that won the last one.

However, there is an aspect of the ozone regime that is often overlooked when considering it as a precedent for a climate regime. We should remember that the Montreal Protocol itself was a response to the diplomatic failure to conclude an international ban on CFCs as aerosol propellants under the terms of the earlier Vienna Convention on Protection of the Ozone Layer. Most experts on the ozone regime agree that the much more radical provisions of the Montreal Protocol and succeeding agreements would not have been achieved so rapidly had the aerosol ban been achieved. It is conceivable that a more effective regime could emerge from recognizing the failure (or at least, the serious limitations) of the Kyoto Protocol than from its success.

No-one suggests that the global emissions reductions envisaged in the Kyoto targets will come anywhere close to limiting emissions at levels that would stabilize anthropogenic greenhouse gas concentrations. The short-term targets give the appearance of serious action, but gloss over the absence of any viable plans for compliance at these levels, let alone those that would come into force with the inevitable tightening of targets. It has been pointed out that, even if all the current Kyoto commitments were met, it would require some 30 repeat performances to reach this goal. At the current rate of 7–10 years for each phase, we would achieve the goal of atmospheric stabilization in 200–300 years! Clearly this is not an acceptable strategy. We are told that “a journey of a thousand miles begins with a single step” and that targets in future reduction periods will have to be ramped up (always assuming that the first step has in any case taken us in the direction that we wish to go). However, there has been no serious analysis of the political viability of the kind of radical correction to targets and timetables that would be required for emissions trading to deliver the goods in a more timely fashion. The recent UK experience of negative reaction to policy-driven increases in petrol prices is not encouraging.

Even the assumption that an inclusive global treaty is required to curb the growth in greenhouse gas emissions may be questionable. Considering the EU as a single entity, the international political units that really count in terms of emissions controls are fewer than 10. In addition to the EU these include at least the USA, Russia, China, India, Brazil, and Indonesia. Relying exclusively on an international agreement system that requires the agreement of 185 national governments inevitably results in the very lowest of common denominators.

Of the units that count, the USA remains the largest per capita and total emitter of greenhouse gases. Yet the Kyoto Protocol was dead on arrival at the Clinton White House, as it was abundantly clear that it would never be ratified by a Senate that in 1997 had already voted by 95–0 to reject any treaty that did not require developing country parties to reduce their emissions in the same compliance period. For domestic political reasons, President Clinton chose to keep the corpse on ice in the hope of future resuscitation until President

Bush, with an eye to a different political constituency, sent it off for burial. It is not really conceivable that the USA is going to ratify Kyoto in the foreseeable future, so there is a clear and present need to find alternative means to engage critical actors in the US in efforts to combat climate change.

There are many opportunities to do this if we are willing to recognize the realities of US political culture. It is encouraging that about 60% of Americans responding to opinion polls have stated that climate change is a significant global problem that requires attention. However, only 40% believes that such action is primarily a matter for the Federal Government. A continued focus on engaging the US government in the formalities of Kyoto can only continue to distract international efforts from engaging with Americans on levels other than national governments. Some US State governments are contemplating civil law suits against electric generating companies to recover the costs of adaptation to climate change to which their activities have already contributed. The threat of civil liability may prove to be a much more powerful incentive to the US electric utility industry to reduce its emissions than the distant threat of incremental Federal regulation. California is the world's sixth largest economy. Appliance and vehicle efficiency standards in California become the de facto standards for the entire USA. Nine Northeast and Mid-Atlantic states are currently putting together their own regional cap-and-trade system to reduce greenhouse gas emissions known as the Regional Greenhouse Gas Initiative (RGGI), raising the possibility that the US could develop a robust domestic climate policy without the intervention of the Federal Government.

Britain could use its leadership of the EU and G8 to encourage regional policy responses outside the Kyoto framework (for example the RGGI) as well as within it (for example the EU emissions trading scheme).

The various initiatives being developed by the governments of certain US states clearly demonstrate that national governments are not necessarily the most promising agents for achieving effective climate policy. It also suggests that a regional approach to climate change may be a way of building a global climate regime from the bottom up. One might imagine an Asian climate policy bubble or a Latin-American policy bubble. In every case, the focus should be on progress towards the desired result of stabilizing the concentrations of anthropogenic greenhouse gases in the atmosphere, rather than on fetishizing any particular programme, process, or protocol.

Unfortunately, support for Kyoto has become a litmus test for determining those who take the threat of climate change seriously. Between Kyoto's supporters and those who scoff at the dangers of leaving greenhouse gas emissions unchecked, there has been a tiny minority of commentators and analysts convinced of the urgency of the problem while remaining profoundly sceptical of the proposed solution. But their voices have largely gone unheard. Climate change policy has become a victim of the sunk costs fallacy. We are told that Kyoto is "the only game in town". However, it is plausible to argue that implementing Kyoto has distracted attention and effort from real opportunities to reduce greenhouse gas emissions and protect society against climate impacts. While it may not be politically practical or desirable to abandon the Kyoto path altogether, it certainly seems prudent to open up other approaches to achieving global reductions in greenhouse gas emissions. Britain's leadership of the EU and the G8 is a golden opportunity to establish some new games and open alternative, or at least supplementary, paths to achieve climate policy goals. Britain, in contrast to the US, has high credibility as a country that has taken the challenge of climate policy seriously. It is therefore well placed to introduce and support much-needed novel approaches and measures into the international arena.

Policy makers should explore the possibility that international competition could prove to be as important as cooperation in progress towards lowering global carbon emissions.

The debate about climate change is no longer about whether it is a real scientific issue, but about how society should respond. All available strategies should be considered. While cooperation is undoubtedly required at some levels of climate policy, others may be more effectively advanced through competition. Consider the following scenario. Regardless of Kyoto, the EU as a whole decides to take advantage of the historic opportunity to modernise its energy sector while the US continues along its present path of relying heavily on coal and oil. Initially Europe may experience some loss of competitiveness vis à vis the US. However, after a while the modernized EU economy would be likely to outstrip the performance of the aging infrastructure of the US (much as the West German economy did relative to the UK during the post World War II recovery). This would provoke the US to modernise its own energy sector to recover its competitive position with respect to Europe. The result could be a much more rapid reduction in greenhouse gas emissions than would be achieved by endless rounds of tortured negotiations to set targets that will always be the lowest common denominator.

I do not pretend to know the time scale of such a scenario, let alone its probability, although I have canvassed it among various experts on historical technological transformations who assure me that it is quite plausible. It would seem to be quite consistent with the steady 150-year global trend towards decarbonisation of primary energy intensity (from 0.84 tons C per kWyr in 1850 to less than 0.5 tons today.) The point is that it would require cooperation at some levels (in this case, within the EU) while relying on competition at others (between the EU and the USA).

Of course, such a scenario does not depend on the imposition of emissions caps or even explicit emissions targets; rather, it takes advantage of the economic efficiencies that would be achieved through greater energy efficiency. Rather than a restrictive approach towards emissions, it approaches the policy goal indirectly

through a positive policy to encourage energy modernization. One thing that social scientists have very hard evidence for is that the framing of policies fundamentally shapes the choices that people make. A positive approach towards energy modernization is likely to be politically much more attractive (particularly in the US) than one that is framed as a negative policy towards greenhouse gases. It also asks less from people in terms of behavioural change. Extending initiatives such as the UK's Carbon Trust across the EU could be an important step towards the European action necessary to initiate such a cycle of competitive modernization.

Regardless of the level of commitment to the Kyoto mechanisms, it is imperative that the EU and G8 countries reverse a decade of precipitous decline in public and private sector investment in energy R&D. Achieving a significant reversal of this trend would be the most significant single action by which the UK could demonstrate international leadership and make an indisputable contribution to any workable strategy to address climate change.

Since the mid-1980s, the world has enjoyed cheap and abundant fossil energy supplies. Technological advances, discoveries of new petroleum resources, improved energy productivity, and the creation of futures markets, have alleviated fears that the world's energy future would necessarily be characterized by scarcity and high prices. The widespread perception that energy has become a matter of less urgency, relative to other social priorities, has led to shrinking government budgets for R&D, which have dropped by over 40% worldwide since 1980. The decline has been particularly dramatic in Germany, the UK, and the USA, with the largest hit being taken by the renewables sector.

At the same time, an ideological shift towards deregulation of the energy sector in many industrialized countries has placed additional pressures on private R&D investments. The introduction of competitive forces has led to shrinking private sector R&D budgets while remaining private sector resources gravitate more often to lower risk, market-oriented projects than to riskier projects with more distant payoffs.

This disinvestment in R&D could hardly be happening at a less-opportune time for the pursuit of climate change goals. Much of the electrical generating capacity in the industrialized world is nearing the end of its useful life and will need to be replaced in the next three decades. Europe alone will need to replace over 200,000 Megawatts of capacity by 2020. Without significant new investment in energy R&D, the technologies upon which any emissions reduction strategy depends simply will not be available at a competitive cost at the time when they could make a significant difference. It is not that the technologies are missing altogether, but that many of them lack the investment needed to take them to the production levels that would make them economically competitive. Such an investment could, in principle, accelerate the move away from fossil fuels more rapidly than targets and timetables.

It is also worth noting that over 60% of all energy R&D undertaken around the world during the past forty years has been spent on developing nuclear power. This might be part of the solution, at least as an interim stop-gap technology, provided that the nuclear waste issue could be resolved. To achieve public acceptance, this would probably require the establishment of secure, monitorable and retrievable waste storage, the capacity of which would be strictly limited to accommodate only the waste of any licensed new facilities.

Another stop-gap technology is carbon sequestration, which could be used to buy time for an effective transition away from intensive use of fossil carbon for energy. The investments in this sector have been meagre, but the insurance value of such investments could be quite substantial.

A mere 6% of the world's energy R&D budget has been used to support renewable energy. Since only 10 countries carry out 98% of the world's energy research, a concerted programme of new investment in renewable energy is plausible. In principle, this could be achieved without any need for international—let alone global—treaties, as the government policies that are needed mainly consist of domestic programmes to induce firms to invest in renewable energy. At a minimum, the Presidency of the EU and G8 could be used to encourage and support such programmes.

Some limited forms of international agreement would probably be necessary to help transfer advanced, low-emitting technologies to less industrialized countries so that they can avoid following the carbon intensive development path. However, these arrangements would be far less problematic than full implementation of the Kyoto architecture. Rapid dissemination of advanced technologies is essential. One approach might be to emphasize the world class R&D capabilities of China and, increasingly, India, so that they could be partners in this process. Such partnerships could also have longer term economic advantages for the UK and EU as these countries rapidly become more developed.

Policymakers in all countries must recognize that the triggers and motivations for climate policy are inevitably values based and cannot be provided by science.

The American political scientist, David Victor cogently argues that caps on emissions only make sense "if the objective of international efforts to slow global warming is to avert a catastrophe that would be triggered by a certain accumulation of emissions in the atmosphere." This is exactly the rationale envisaged by the architects of the Framework Convention on Climate Change (FCCC) and the Kyoto Protocol. Emissions would be capped below the trigger point and trading would then provide the most cost-efficient means of staying below the threshold. However, the problem is how to establish a shared understanding of what that threshold should be.

To date, the goals of climate policy have, somewhat arbitrarily, focused on preventing atmospheric concentrations of greenhouse gases from rising above 450 to 650 ppm of carbon dioxide equivalent or alternatively above levels that would force a global average temperature increase of 2 degrees C. However, there is no strong scientific basis for choosing these particular thresholds. They are certainly not ones associated with any specific sudden dramatic event, such as shutdown of North Atlantic thermohaline circulation or detachment of polar ice sheets. Science cannot, even in principle, provide policy makers with any credible, consistent targets upon which permit allocations, or other policy thresholds can be based. We don't even really know what the actual consequences of carbon stabilization at a given level would be for climate behaviour.

During the summer, the Prime Minister announced his intention to call a scientific conference to determine what level of climate change would be "catastrophic". Yet science cannot decide what counts as a catastrophe. What would be the metric? Today a child dies every eight seconds from waterborne disease. Every 15 seconds an African dies from Malaria. If these do not represent already catastrophic levels of mortality among the very kinds of populations that will be most vulnerable to the impacts of climate change, it is hard to envisage what levels would be required to provoke action. Similar points could be raised about the current rate of loss of vulnerable species in marginal ecosystems.

We also know that people in rich countries are willing to live with very high levels of risk (such as earthquakes in California and Japan or hurricanes in the USA), which by any measure must be a much more immediate hazard than climate change risk.

In the end, climate policy comes down to a question of values—not science. The decision to proceed with effective climate policies cannot wait for a dramatic precipitating event. In fact, it's hard to visualize what such an event might be. But without one it seems that public pressures on government and private sector decision makers may not be sufficient to get them to take and sustain necessary actions. We also know that the public is more likely to be moved by disaster to support emergency relief than it is to offer sustained support for development assistance. Mobilizing public values rather than scientific consensus is the key to successful climate action. These may be good reasons to focus more attention than hitherto on adaptation policies that are more directly linked in the public imagination to the consequences of climate change than is the issue of emissions.

Presidency of the EU and G8 offers an important opportunity to increase policy attention and resources focused on proactive adaptation to climate impacts.

Until very recently the focus of international negotiations about climate change focused overwhelmingly on emissions mitigation and not very much on issues of climate change impacts and adaptation. Indeed, for the better part of the decade leading up to the turn of the last century, adaptation strategy was virtually a taboo topic in climate policy discourse because of a widespread belief that it would be viewed by many as a way to sidestep the imperative to mitigate. Another reason why adaptation has gotten off to a slower start in international negotiations is that it is even harder to design a universal framework for adaptation (let alone one where compliance is measurable and monitorable) than it is for mitigation.

Adaptation measures avoid climate impacts by changing human behaviours, such as land use, and by taking actions to protect valued resources, communities, and landscapes. Adaptation encompasses a wide range of options that can reduce vulnerability of marginal human and natural populations to the consequences of atmospheric disturbance. Many (although admittedly not all) adaptation measures also offer increased resilience in the face of climatic variability (such as droughts and storms), which makes them potentially attractive policies even in the absence of long-term secular changes in climate.

From the point of view of public policy implementation, adaptation actually may have some advantages over policies directed at mitigation. Adaptation may be more immediately relevant to stakeholders than emissions mitigation as it directly addresses people, objects, and landscapes that are known to them and valued by them in their daily lives. Thus adaptation policies may provide opportunities for a wide variety of people to become directly engaged with the climate issue. Also, the basic regulatory and legal concepts and frameworks already exist (eg, governance of land use) and are broadly accepted; they just need to be adapted. This is not to minimize the political challenge, but the point is that you are not starting from scratch. This is in marked contrast with the challenge of mobilizing public support and action to cut emissions. Emissions are too abstract and too easily seen as someone else's problem to be a good starting point from which to mobilize support for climate policies. However, once people have mobilized around concrete adaptation goals they may be more likely to recognize the limits of adaptation and move to support for more effective emissions reductions measures than seem plausible at present.

Domestically, the UK Climate Impacts Programme and various regional initiatives represent an important start in this direction. Government support for these kinds of programmes should be strengthened across all of the governments of the EU and G8.

Another advantage of increasing the focus on impacts and adaptation is that action on these issues does not require any kind of global consensus. Indeed, as impacts and the potential for adaptation vary widely on a regional basis, it seems quite likely that such an emphasis would favour regional responses. There would almost certainly be many and varied opportunities for the articulation of climate policies with other policies designed to improve public health and protect populations from natural disasters.

In summary, the UK presidency of the EU and the G8 presents an important opportunity to open up much needed avenues of climate policy that are presently under emphasized. The current overwhelming focus on Kyoto offers only one potential path and, at present, there is no viable alternative or fallback. Even if the Kyoto route is followed to its conclusion, a significant reversal of the last three decades of disinvestment in energy R&D and a much increased focus on adaptation strategies will be required. If Kyoto does not deliver the results desired of it, investments in energy R&D and adaptation will be even more critical.

PART II: SPECIFIC PROBLEMS ASSOCIATED WITH GLOBAL EMISSIONS TRADING

To what extent does emissions trading offer the best potential for achieving radical reductions in carbon dioxide worldwide? Could other bespoke approaches offer better and more targeted solutions?

It is often claimed that governments have successfully applied emissions trading in combating acid rain, although even these claims are sometimes disputed. However, basing the expectation that there will be an efficient global market in greenhouse gas emissions on, for example, experience of the US market in sulphur emissions, may be problematic for several reasons.

First, all existing emissions trading has been within nations where the state has been able to establish and secure property rights.

But international law cannot compel countries to remain within a treaty and (as indicated by the nuclear non-proliferation regime) sanctions on defectors are generally not effective. As presently constituted, international law is a poor mechanism for allocating permits and controlling a permit market potentially worth trillions of pounds. It is hard to envisage an effective mechanism that would prevent countries from selling their emissions shortfalls until their quotas are used up and then exiting the agreement or forcing the renegotiation of allocations.

This problem is ameliorated where states are closely bound by other constitutional or treaty arrangements, such as the countries of the EU, where withdrawal from the trading system might not be possible due to the wider net of obligations and advantages of membership. At present, the only global candidate for such a role would appear to be the World Trade Organization. Despite the carrot of WTO membership that has been held out to Russia if it should ratify the Kyoto Protocol, the world trade body shows few signs of developing in this direction.

Second, emissions trading creates new property rights of uncertain value.

The fact that property rights in a well-functioning market are more valuable than the annual payments that those rights generate creates huge obstacles to agreeing initial allocations of emissions rights, as their eventual value is so difficult to determine. This was the problem that held up progress on the UN Convention on the Law of the Sea (UNCLOS) for many years, although seabed-mining rights for manganese nodules had only a hypothetical future value. This creates significant headaches for the international allocation of emissions permits, the value of which are essentially unknown, but potentially very high. Emissions levels for the most important greenhouse gases are inherently unpredictable.

Third, in the past, national governments establishing trading programmes for environmental management have had to buy off the opposition of affected parties claiming established rights that would be violated unless they are grandfathered in.

For example, the US government had to make substantial allowances for the existing sulphur emissions of electric power companies in its programme designed to reduce acid rain. Indeed, it was only able to allocate permits at all because of its ability to threaten more costly forms of regulation if the industry did not accept the system—an option unavailable at the international level. In New Zealand, the system of tradable fishing quotas (“TACs”) was only possible because of the substantial grandfathering of established interests within the fishing industry. This may be a necessary concession to set up a programme, indeed substantial new chlorofluorocarbon production capacity in the former Soviet Union was grandfathered under the original terms of the Montreal Protocol.

In constructing an international climate regime, the emissions baselines established for certain countries (notably Russia and the Ukraine) under the Framework Convention on Climate Change were set at levels that they were unlikely to reach, even under optimistic economic scenarios. The result is a potential for sales of “hot air” (allowances that do not actually represent emissions reductions) to the West in excess of £100 billion. Any serious attempt to develop the Kyoto global trading framework will require that the baselines for Russia and Ukraine be revisited. However, this would drastically reduce the incentive for these countries to participate.

The problem is exacerbated in any international context where new entrants, ie, developing countries, will demand allocations that will upset the historically established expectations of the industrialized world. This is an especially visible issue with respect to the prospects of achieving any sort of US participation in an effective climate policy and was a factor in the Senate’s unopposed resolution not to support any US emissions reduction commitment that was not accompanied by comparable commitments from developing countries.

Fourth, monitoring compliance may be more problematic than is commonly recognized.

Monitoring carbon dioxide from fossil fuels is simple in principle, although it must be done indirectly by calculating the emissions implied by combustion of fuels under certain assumptions of thermodynamic efficiency. However, even approximately accurate calculation of emissions from coal, oil, or gas depends on access to reliable figures for consumption, which only takes account of official production and trading. Although these are generally considered to be tolerably well measured, there is room for scepticism about the official fossil fuel production figures of many countries that have access to large, but poorly monitored resources.

The issues of monitoring and enforcement are exacerbated still further by the inclusion of multiple gases and all sources and sinks in the global programme envisioned under the Kyoto protocol. Biomass burning, tree planting, and carbon released from and sequestered in soils are examples of carbon fluxes that are much harder to measure (or, more accurately, estimate) than fossil fuel emissions. Once you include sequestration in carbon accounting, the uncertainties and complexities increase with the inevitable result that countries will try and game the system to maximize their claims to be removing carbon dioxide from the atmosphere. This can produce some paradoxical results. For example, at least one study published in *Science* has suggested that the annual emissions of the USA may be carbon neutral due to the rate of reforestation, especially in the Northeast.

Furthermore, the Kyoto Protocol created a basket of six greenhouse gases, each of which has different atmospheric warming characteristics. The accounting device of “global warming potentials” or “CO₂ equivalency” is designed to eliminate this variation; however periodic scientific reassessments of these values and the issue of the dramatically different residence times that the gases will persist in the atmosphere have the potential to destabilize the greenhouse gas accounting system upon which trading will have to be based.

Fifth, even at a national level, emissions trading has only been implemented for stationary sources, such as electric power plants.

A significant proportion of greenhouse gas emissions are from mobile sources and a significant proportion of these are engaged in international travel involving “bunker fuels” which are exempted from domestic taxation. The Royal Commission on Environmental Pollution and the Environmental Audit Committee have repeatedly highlighted this problem.

Sixth, the issuance of permits may have implications for the distribution of liabilities.

The allocation of potential civil liabilities for damages caused by permitted greenhouse gas emissions is an issue has received little attention. Does issuance of emissions permits imply the assumption of liability? In other words, will governments be held liable in law for damages caused by greenhouse gases emitted by permit holders? The recent initiation of civil suits against US electric utilities for the costs of rectifying climate impacts from their emissions suggests that climate liabilities may become an issue intertwined with the creation of a system of formally recognized emissions rights.

Finally, any international system of carbon trading is likely to be only as good as the national systems that compose it. The UK’s experience is not encouraging.

It seems likely that any such scheme will permit national governments to trade internationally while firms trade within national boundaries. In the case of the EU, the member states propose to establish a European bubble that would allow the EU essentially to function as a single nation for international carbon accounting purposes.

The UK has conducted the world’s first experiment in national carbon trading. Defra claims that “31 organisations (“direct participants” in the scheme) have voluntarily taken on emission reduction targets to reduce their emissions against 1998–2000 levels, delivering 11.88 million tonnes of additional carbon dioxide equivalent emission reductions over the life of the scheme (2002–06). . . In the first year, the Direct Participants achieved emission reductions of 4.64 million tonnes CO₂e (carbon dioxide equivalent) against their baselines and in the second year they have achieved emission reductions of nearly 5.2 million tonnes CO₂e against their baselines.” (<http://www.defra.gov.uk/environment/climatechange/trading/uk/index.htm>).

However a careful reading of the UK NAO report on the scheme suggests that it was something less than a resounding success. It actually:

- had considerable difficulty in getting going;
- established very undemanding baselines;
- significantly overpriced the value of reductions purchased (nearly £18 per tonne as against a current market price of £2.50 per tonne);
- only delivered 4 Direct Participants with significant surpluses to trade; and
- only generated trade at 10% of the tradable surplus savings achieved (most of the savings being banked against future emissions).

The government spent £215 million to purchase emissions reductions under the scheme, which does not include the cost of establishing and running it. A well-designed simulation could almost certainly have generated any conceivable social-learning benefits obtained from the scheme at a small fraction of these costs. In short, the very limited domestic experience with greenhouse gas emissions trading is not as encouraging as its designers might have hoped.

Overall, the international prospects for emissions trading seem to depend on the initial target reductions not being sufficiently painful to discourage participation. Even at this level there is likely to be much international wrangling over the fairness of the allocation of permits and commitments. However, undemanding baselines and initial targets will require severe (ie, expensive) corrections in later phases of both domestic and international trading systems. This is the particular form that the “ramping up” of Kyoto targets in future commitment periods would take under a trading scenario. The acceptability of such corrections to domestic trading systems will vary tremendously from country to country. Policymakers depending on international trading to deliver a solution that is both environmentally effective and economically efficient are betting that the system will be resilient to both cheating and withdrawal by the time those corrections are required.

Overall, the inherent problems suggest that it is unlikely that the Kyoto cap-and-trade scheme will result in an economically efficient global market that achieves environmentally effective greenhouse gas emissions reductions.

However, this does not mean that trading is entirely useless. It seems that trading may well be a useful policy tool in at least two respects.

First, where countries are closely bound together by other constitutional or treaty arrangements, such as within the EU, so that the incentives for defection are drastically reduced, trading may well be a mechanism for drawing attention to climate goals as well as contributing to their fulfilment within such regional groupings.

Second, any strategy to stabilize greenhouse gas concentrations will require considerable transfers of technology to allow developing countries to leapfrog the carbon intensive development phase experienced by the industrialized (and now post-industrialized) world. Trading with developing countries may well be a necessary vehicle to convince the domestic populations of the transferring nations that they are getting something in exchange and to discourage a dependency culture among the recipients of such transfers.

What are the alternatives to a global cap-and-trade regime?

At least three alternative architectures to Kyoto have been described by observers who are critical of the cap-and-trade approach. These are:

- carbon taxes;
- the “hybrid approach” of tax-and-trade; and
- the “clumsy regime” approach, also described as the “policies-and-measures” approach.

A coordinated system of carbon taxation, in contrast to emissions trading, sets prices rather than quantities for greenhouse gas emissions. This is likely to be more economically efficient than a cap-and-trade regime because of the long atmospheric lifetime of carbon dioxide, which requires an inexorable, but non-volatile price signal to bring about the required changes in infrastructure investments. It could ameliorate the political difficulties of allocating emissions reduction commitments among countries, because governments would have some discretion to adjust the level of taxation to suit their economies, and it would avoid creating the potentially huge financial flows that would result from the creation of new property rights under a trading regime.

However, taxation also has its drawbacks. It is likely to be regressive. It would make the costs of climate policy more transparent and therefore it would be an easier target for political opposition. There would inevitably be divisive disagreements about the ways in which the tax revenues were returned to the economy. Like any “sin” tax, carbon taxation could potentially create a moral hazard for governments seeking to offset its distorting effects on the economy by lightening other forms of taxation. And, unless it were set at an internationally uniform level (thus eliminating the advantage of government discretion) it would also have implications for international competitiveness.

The “hybrid approach” proposed by David Victor, combines emissions trading and carbon taxation. This mechanism would allow governments to set targets for both emissions quantities and prices by establishing a trading system with price ceilings on permits. Some of the Kyoto complications would be eliminated by confining the system only to carbon dioxide. But there would be no absolute limit on the number of permits, so that if the trading price exceeds the target price, firms would be able to purchase new permits from governments at the lower issue price. Whenever the trading price dropped below the issue price, firms would purchase them at lower cost on the open market. Victor argues that this would make it easier for governments to allocate commitments and permits, reduce firms’ uncertainty about the costs of compliance, and enable compliance to be enforced by making the buyer liable for the seller’s compliance as a way of discouraging “hot air” trading.

Of course, the hybrid approach is not without its downsides. While it would encourage emissions reductions, it would be less restrictive than the Kyoto trading system because the number of permits would be less rigidly restricted. Individual governments may be tempted by the prospect of extra revenue to sell permits below the agreed price. It would still require a fairly intrusive system for monitoring compliance, especially to reveal differences in nominal and effective tax rates if governments opt to implement their obligations under the system solely by levying the emissions taxes and forgoing trading.

The “clumsy approach” is much less dependent on coordinated international action and focuses on social learning. Countries would pick and choose their policy measures that suit their particular circumstances. Such measures could range from informational instruments, such as labelling, through market instruments, such as emissions trading, to command and control mechanisms, such as technology standards. The benefit of this approach is that it focuses on what governments, firms, and households actually do to reduce their emissions, in marked contrast to the target setting that has characterized international policy making since the Toronto Conference of 1988. Since the exact consequences of any particular package of policy measures would be explicitly uncertain, governments would focus less on compliance with precise targets and more on a rough allocation of effort and the direction and pace of progress. The flexibility of this approach would allow early mitigation efforts to serve as a series of policy experiments from which lessons could be drawn about what works when and where. Cooperation, competition, and control could all be brought to bear on the problem as appropriate. A particular advantage of this approach is that it allows for “strategy switching”. Policy actors (not just governments) would have the ability to abandon courses of action that are not working and transfer their efforts to those that do, without the necessity of renegotiating an entire international regime.

The problem with this approach is that its downsides mostly accrue to governments and the sense of loss of control could be problematic. Monitoring and verifying the actions of other nations would be a considerable challenge, but part of the benefit for this approach is that it places less emphasis on the nation state and encourages transnational collaborations among firms, trade associations, local governments, nongovernmental organizations, scientific and technical organizations, and so forth. Governments could negotiate performance benchmarks analogous to the OECD’s Environmental Performance Reviews, which assess countries’ environmental performance in relation to the goals that they have set for themselves. An approach of learning-by-doing may not be an elegant one, but it does have the advantage that it does not provide incentives for firms or countries to hold back from emissions reductions in the expectation that such reductions will have a future value that would be lost by action today.

This brief review of some alternative approaches to the Kyoto system of cap-and-trade is necessarily incomplete. At best it is only suggestive, but at least it does suggest that Kyoto need not be “the only game in town”. To put all of our eggs into the Kyoto basket seems to be a somewhat brittle strategy. The present imperative must be to open up new avenues for climate policy. The UK presidency of the EU and G8 represents an historic opportunity to do so.

19 November 2004

Witness: Professor Steve Rayner, James Martin Professor of Science and Civilization, and Director, James Martin Institute, University of Oxford, examined.

Q338 Chairman: Professor Rayner, thank you very much for your patience and welcome to the Committee. I know that most of us have other commitments at five o’clock so we are very constrained for time, and I apologise to you for that. I can only repeat that if we keep our questions short and the answers brief we will get through far more quickly than otherwise. Do you have any opening remarks that you would like to make to us?

Professor Rayner: I think probably in the interests of time I should forego my planned introductory remarks and merely say that I think there are four main areas that I do address in my written submissions to you. One is the issue of the realism and effectiveness of the Global Emissions Trading Programme under the Kyoto Framework; the second one I think is the importance of Energy R & D, which I think is the missing part here. We are talking about pushing up the price of carbon, but if we are not creating the technologies at an affordable price that can come in underneath there then all we are doing is putting up the price of energy, and that is a significant issue. Thirdly, to emphasise the

importance of addressing the whole issue of adaptation to Climate Change, both in order to protect vulnerable human and natural populations, also as a mechanism to mobilise public values around the climate issue, adaptation being a much more tractable and accessible way into the climate problem for many people than emissions mitigation. Finally, if I have any single message it is, “for heaven’s sake let us stop fetishising the single political instrument of the Kyoto Protocol and get on with the real job of thinking about how we move towards dealing both with the adaptation to the Climate Change, to which we are committed, and to the longer-term challenge of moving effectively away from a carbon based economy.”

Chairman: Thank you very much, and thank you also for your written evidence, which was certainly pugnacious! Sue Doughty.

Q339 Sue Doughty: Thank you very much for that crisp introduction. In the point you are making there, where you talk about fetishising the Kyoto Process and also the point you are making about

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investment in R & D Energy, those points are very strong points; but do you think that there is anything else that a broader approach could cover beyond that?

Professor Rayner: Yes. Where do I begin? I think there are two areas here which we often do not clearly demarcate to address. One is the whole question of emissions mitigation and the pathway in terms of carbon emissions. The other is the problem of adaptation and actually meeting with the challenges of the Climate Change to which we are already committed. I think they require quite different approaches. Emissions mitigation does not, quite honestly, require the engagement of much more than about 10 countries, the ones that really matter. Having an international agreement with 185 signatories is a very clumsy arrangement in fact, a very dysfunctional arrangement which inevitably leads to the lowest common denominator in terms of policy. On the other hand, I think that dealing with adaptation is going to require a much broader framework within which to act.

Q340 Sue Doughty: Within the area of emissions mitigation, and this whole point that 10 countries are responsible for most emissions, do you think that we should be focusing the attention on just getting agreements between those countries, rather than trying, as you suggest is a bad idea, for going for lots more countries who are not actually the main culprits in the case?

Professor Rayner: I think there is a lot of room for bilateral and multi-lateral agreements among the arrangements that link together those leading industrial economies and emerging economies, particularly around the issue of energy technology. We think energy technology is the key here, as I said before. You can have a trading scheme, you can have a carbon tax, all you do essentially with those is put up the price. You are banking therefore on the notion that the technological innovation will be stimulated by that increase in price. As the previous speaker indicated, you could have a time lag of a decade, two decades before you start to get sufficient bite in there, to even begin to stimulate a reversal of the precipitous decline in Energy R & D that we have seen happen over the last 30 years, where we have seen a 50% drop in both public and private sector investment in Energy R & D. Let us be clear here, we are not talking about inventing technologies *de novo*, we are talking about a suite of available technologies and enhancing them to the point where they are economic alternatives. Very often that means bringing them up to the point where they can actually be mass-produced at lower cost. The other thing that I think is important to emphasise here is that even an ideal market solution, if you believe in it, will not deal with the problem of the displacement of polluting technologies. With the exception of sperm whale oil the world has never abandoned an energy technology that it has used; we still use as much biomass on a global scale today—fuel wood and cow dung, which, incidentally, is very hard to see how you will get fuel wood and cow dung into a global Emissions Trading Programme, the

monitoring challenges are quite remarkable. We still use as much fuel wood and cow dung today on a global scale as we did 100 years ago. So it is not just the question of bringing in new technologies at the top end, in the industrialised world, where you have some kind of a bite from a tax or permit system driving the price up, but how are we going to take those technologies out at the bottom that are highly carbon intensive? Basically what happens at the moment, you just simply relegate those down to being the technologies of default for the poor.

Q341 Sue Doughty: Given your criticism of the feasibility of bringing in an international Emission Trading System, do you think that there is any chance of implementing a system that brings in traditional capital trade, or do you think that we are wasting our time even trying?

Professor Rayner: I think cap and trade at a global level is a non-starter, for a variety of technical and institutional reasons, not least of which the one that you have already alluded to earlier this afternoon, which is the point that at a global level there is very little disincentive to countries to renege on the treaty if it becomes inconvenient. I think that is quite different from when you have something like the situation like the European Union where there are sufficient other ties binding those signatories together, that it makes it very difficult to exit from an agreement where you have basically lots of areas for pressure from other buyers in other countries. I think Emissions Trading can be useful at a regional level, where you have those stronger ties, but at a global level it is a non-starter. I think also that the notion of Emissions Trading could be very important domestically to sell to voters the idea that we are going to have to make some significant capital transfers in the form of technology transfer to less industrialised countries, to allow them to leapfrog the carbon intensive phases that we have actually gone through ourselves in the industrialised world.

Q342 Sue Doughty: So given that situation it is all looking quite bleak. The UK has its agenda for the next year, 2005. What do you think the UK can achieve next year?

Professor Rayner: I think whatever can be done to reverse this precipitous decline in energy in R & D would be really important. Basically there are again about 10 countries in the world that perform the vast bulk of Energy R & D and clearly the G8 group represent the bulk of those. So I think anything that can move in that direction will be terribly important. This is not something that I think can be simply left to the private sector. Not only have we seen a decline in Energy R & D over the last 20, 30 years we have also seen that the private sector component of that has become much more conservative in that time than it was before. So I think this is something that would really be the key. I think the second thing is to develop this other track, which is that of adaptation to Climate Change. Basically the problem of Climate Change, it seems to me, is very much one of how many more poor people in developing countries we are prepared to stand by and see go hungry, get

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sick and die young than we currently stand by and see go hungry, get sick and die young. And how many more species and marginal ecosystems we are prepared to say goodbye to? If you look at the very long haul one might say if you are not worried about either of those two categories we will just wait for endogenous technological change over the next 100 years to take us away from carbon anyway. So clearly the adaptation agenda and taking care of those vulnerable populations and those species is the other critical plank here.

Q343 Mr Thomas: In that context I wondered what you would say about a need to engage the largest single emitter of greenhouse gases, which is the United States of America, because a global trading system is not engaging them, Kyoto is not engaging them? Do you think it should be the aim of the UK government to try to engage the Americans in some sort of global system, come what may, or, as you seem to have suggested so far, that it is not worth doing that and to try to find a different approach?

Professor Rayner: As you may know, if you have looked at my biographical note, that in fact I spent over two decades living and working in the US, much of that time attempting to influence US government on their climate policy, with less success than I would have liked I might add. A few years ago I had the pleasure of advising a former UK environment minister in New York on this whole question of the US and one of the things I pointed out was that in the US the political culture does not in fact look to the Federal Government to take the lead on these kind of issues. Quite honestly, the Civil Rights Movement and Federal Government's leadership is an historical anomaly. For the most part American political culture is that the Federal Government is there to provide defence and basic infrastructure, therefore it is not necessarily the most promising point at which you would want to articulate policies of this sort, and in fact there is much more potential, as I pointed out at that time, to articulate with state governments. As I mentioned in my written submission, the State of California, *de facto*, can set appliance efficiency standards. Nobody is going to make a separate product for California and for the rest of the United States. You have the precedent where you see the States of New Jersey and New York produce very detailed climate action plans for their States, and indeed are involved in the development of a regional Emissions Trading System for the North-eastern and mid-Atlantic Seaboard in the United States. Those same States have also been making moves towards litigation against utility companies to recover the costs of damages from greenhouse gas emissions. I think that the threat of litigation in many cases for US companies is actually one which carries much more weight than the risk of some kind of piecemeal Federal legislation. So I think there is a lot of room to bring the Americans in, but the trick is to do it without necessarily getting into a state of believing that you have to have the diplomatic nicety of having the US Federal Government sign up to the kind of arrangements that have been much more

favoured in Europe. So I am actually optimistic about the ability to bring America in. Heaven help us, even ExxonMobil, Exxon which was for many years the primary force denying the science of Climate Change, has given up that line of argumentation and has currently invested \$100 million in Stanford University for the development of new technologies.

Q344 Mr Thomas: You have given us evidence along these lines and we have also had similar evidence that does show that the characteristic of the US has not been engaged in Climate Change is nonsense and there is a lot of research and development and there is a lot of individual State actions there.

Professor Rayner: The science, incidentally, was developed in the US Department of Energy.

Q345 Mr Thomas: Yes, a very useful website! How can we mix all this together into some kind of global approach because although you may not be advocating necessarily a Global Exchange Mechanism, is there not a need for some kind of global approach—because this is a global problem—that does show that the countries of the world are signed up both to the facts of Climate Change and to the need to take action on it. You have a more clumsy approach, if you like, but should we be trying to do it in some way, shape or form?

Professor Rayner: I think certainly the Framework Convention is an important symbolic symbol. I was trained as an anthropologist, so when I say something is symbolic I am not dismissing it, symbols are terribly important foci. I think Kyoto can have some of that symbolic importance, although I think, as I said earlier, we have fetishised it as almost as an acid test, as “Are you pro or anti climate?” rather than, “Do you think that this is an effective mechanism for getting where we want to be?” I would favour a much more pragmatic approach generally. There was a stage in the development of the climate regime where there were proposals for what was called a policies and measures approach, and basically that was an approach which allowed countries to declare what kinds of “policies and measures” for implementation of those policies they were going to follow, and to put in place a reporting mechanism. The importance of that is that it focuses on what countries actually do rather than commitments that they might make for some future emissions reduction period. It also has the advantage of giving us a range of strategies that can be applied from which there could be some worldwide social learning about what works well under what circumstances and what does not work elsewhere, or what might work in one place that does not work in another. So in other words, by having a broader set of strategies we may well actually learn how to deal with the issue much faster than this rather awkward and painstaking process of incremental reductions depending on building this rather elaborate trading scheme which is going to require a lot of technical monitoring and institutional finesse for it ever to pay off.

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Q346 Mr Thomas: You put a lot of emphasis in your evidence, and you refer to it now as well, on social learning and also on Research and Development. Turning in particular to achieving that, you would have heard the previous witness suggest that investment—and I assume from what he was saying that Research and Development was part of that—had been incentivised by clear targets and a clear political context to operate within those targets. You seem to be suggesting a much more fuzzy approach to all this. Can you be clear or confident that that would incentivise people to invest in the right technology to deal with Climate Change?

Professor Rayner: I do not think it necessarily has to be fuzzy, I think it has to be much more multi-stranded and, in a sense, pluralistic. I think what I would suggest is that an analogy might be something closer to a Marshall Plan than to a market and I think if anybody had actually insisted on doing a benefit cost analysis of the Marshall Plan before its implementation we would never have done it. I think there are very few people around who would suggest that the world would be in a better shape today if we had not done it. I think you can do that in a way that actually does say to countries, “We want you to devise policies, we want you to declare your measures, we want you to set benchmarks and we want you to report on your progress against those benchmarks,” and basically to have a regime that evolves in that way.

Q347 Joan Walley: That is all very interesting, the way that we have been concentrating on the nuts and bolts of all of this, but I want to move a bit more towards hearts and minds in terms of how we are going to achieve this, how can we carry the public with us and have that political awareness? You say something quite interesting about taxation having drawbacks and suggested that it makes it an easy target for political opposition, simply because of its transparency. How do you reconcile that comment with the need for greater understanding, without which we cannot bring about any of these changes that we really need to see?

Professor Rayner: My remarks on taxation are based on obviously very prominent things like the rebellion against petrol tax here in the UK and about President Clinton’s attempts when he first went into Office to introduce some rather modest tax on energy, which was defeated politically as well. It is right to say that it is about hearts and minds, and one of the things that I would emphasise, that I draw out of my written remarks, is that science is not going to tell us what constitutes dangerous Climate Change. It is quite wrong thinking to believe that science can tell you that here is the point at which you need to do something. Yes, there are spectacular things like switching off thermohaline circulation, and if we wait for that to happen as an indicator it will be way, way too late. So what is an adequate indicator? How many people are going to have to die? Well, we are already told that there is a very high level of deaths from diarrhoeal dehydration, malaria and so on. So basically it is not the science, it is going to have to be mobilising public values that is going to be the

trigger. There, I am afraid, I am very sceptical that you are going to get widespread support around the world, particularly in the United States, for emissions mitigations at first step. That is why I want to advocate focusing on adaptation. If people in their communities, in their families, in their local landscapes identify something that is precious to them, and you can point out to them how that is going to be threatened by uncontrolled Climate Change, they then will have an incentive to mobilise, to try to protect that thing, whether it is a feature of the landscape, a building or whatever. In that process I think people are then empowered at the community level and at the local level and indeed the individual level by the notion that there are things that they can do which will have traction on this Climate Change impact. They will also become aware that there are limits to the extent to which you can protect, and I think through that process you have the possibility then of the politicisation and it will lead people to say, “Now I understand the scene, how the mitigation agenda is not just something for government, it is not just something for big business, it is something that I actually have to get involved in and support and create the political will for government and big business to actually move in this direction.” So although it may be counter-intuitive—and in fact for many years when I was living in Oak Ridge, Tennessee, in the United States, you could not talk about birth control with Southern Baptists because it was thought it would encourage experimental sexual behaviour, you could not talk about climate adaptation to environmentalists because they believed that it would perpetuate the idea that it was okay to keep emitting, and I think that was quite wrong-headed. I think counter-intuitively is where you can start to mobilise people on the ground.

Q348 Joan Walley: That is helpful because I took it from your evidence that you were talking about taxation as one possible way forward, but if not taxation looking at Emissions Trading because it was less transparent, in a way, and might be easier given that there is not that immediate public recognition about what is precious and therefore how lifestyles have to change to maintain and safeguard what is precious, then we have to go down this other route. I just wondered where that fits in with your whole concept, which has come through very clearly in your evidence, that the real solution is this adaptation of new technology.

Professor Rayner: I certainly did not want to give the impression that I am favouring carbon taxation. In that section of my evidence I was trying to outline what the alternative to an international cap and trading system might be. An alternative might have been some kind of international arrangements for carbon taxation; and then the third possibility is what I call variously the “clumsy approach” or more taking the policies and measures approach.

Q349 Joan Walley: You talked earlier on about the Marshall Plan. Some of us on this Committee had the opportunity to meet Lester Brown in the not too

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distant past. I just wonder about our political and social institutions being adequate to be able to process the changes that are going to be needed and whether or not, with this whole emphasis that we currently have on short-termism, we can structure our societies to adapt to these things without something like the need for radical change, where we have no choice whatsoever but to adapt to some terrible catastrophic consequences?

Professor Rayner: I am not quite catching the question.

Q350 Joan Walley: The question is really how adequate are the political and social institutions that we currently have at the moment to deal with the scale of the challenge that we have if we are going to deal with the whole problem of Climate Change?

Professor Rayner: I think the problem is that we do not actually engage a sufficient variety of our political institutions and particularly, if I may say so, in the UK one of the things that rather shocked me, coming back from the US, was that I had forgotten over 20 years the extent to which there is in Europe generally and in the UK in particular a very strong culture that it is the government's responsibility to take care of everything. That is quite different, interestingly enough, from the general default cultural assumptions that you find predominating in the United States. So whereas in the US I think you might say that there is a deficit in government involvement in climate issues, whereas there is a fair amount really, relatively speaking, in terms of the philanthropical NGO sector on the one hand and business on the other, you might say that in the UK that we tend to focus too much on government putting all the pieces in place and not doing enough to engage the private sector and the NGO community and civil society in moving forward here on policy. Just as I would advocate for a more pluralistic approach at the global level I would say the same thing applies at the domestic level.

Q351 Joan Walley: You say that our social and political institutions effectively have to change to be able to respond to this challenge that we face?

Professor Rayner: I think we have strong institutions in government; I think we have strong business institutions. We are a bit weaker here on civil society but they are by no means absent. It is not that we need new institutions to come into being; it is that we need to engage all three sets of institutions in a more constructive way. There tends to be also—forgive me if I start sounding like an anthropologist here—when you are dealing in either of those sectors, a natural tendency to look for solutions in the direction of more of the problem that is wrong. So if things are not working out in the private sector basically you say, “We need to get the government off our backs and allow us to be more exuberant in our creativity,” and the government will say, “No, we have to get the rules right,” and the NGO sector, “We have to open up to more public participation.” So in a sense each of those kinds of segments of society has a natural default bias towards a particular set of policy strategies. My argument is in

fact that the Emissions Trading Strategy, for example, in some ways purports to be a market strategy although in many ways it is a way of dressing up a regulatory structure in a way to make it more palatable to people with that sort of market bias. What we need to do is to recognise that we need to have policies that are advanced using all three kinds of strategies. You just cannot rely on the market, you just cannot rely on the government and you just cannot rely on people to volunteer. If you can bring all three together you have a lot of creativity.

Q352 Mr Francois: Professor, you talk about international competition as being as important as cooperation and about the need for wholesale modernisation in energy markets. How do you think governments can practically encourage that kind of activity?

Professor Rayner: How can governments stimulate Energy R & D?

Q353 Mr Francois: Yes, as one example of that. But your thrust was that you were talking about competition and you wanted to see wholesale modernisation in energy markets. How can governments help bring that out?

Professor Rayner: Once again, I think there is a combination of things that need to be done there. One is the encouragement of genuine competition in energy markets; I think it is, if you like, the exuberant individualist strategy, but I think there is important room there for direct government investment in R & D, for providing tax incentives and other kinds of stimuli to the private sector to develop those technologies to the point where they are practical and affordable substitutes for fossil fuels. I think there is also much to be done in respect to communities in terms of popularising ideas about using energy more efficiently in the home, about stimulating moves away from large, gas guzzling cars to vehicles that are quite capacious and capable of 60 miles a gallon. To some extent the system here in Britain where we have a road tax that is differentiated in relation to emissions is certainly a smart move in that kind of direction.

Q354 Mr Francois: Also you refer to the threat of civil liability. I do not know if that is partly because of your experience in the United States. You talk about there being potentially quite a powerful incentive to reduce emissions.

Professor Rayner: Certainly in the US, yes.

Q355 Mr Francois: But is it not ultimately the threat of financial penalties to companies, whether it is through the courts or through compliance penalties associated with trading which are ultimately going to force them to act?

Professor Rayner: I think clearly profit is what motivates companies, yes. Whether it is an incentive or whether it is a penalty ultimately you are looking at the bottom line. On the other hand, I think once again it is not companies that are the only actors; there is also huge potential for changing the kinds of

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demand that companies are responding too. For instance, we are beginning to see the emergence of the sort of celebrity elite who are competing with each other for whose car gets the most miles to the gallon rather than whose car gets from 0 to 60 in the shortest possible time. The interesting thing about that is that you are still having competitive consumption, you are not turning around to people and saying, "Change your entire world view," but you are changing the things which people are competing about from things which are environmentally damaging to things which will bring about environmental improvements, and there is a lot of room to do that on the demand side as well as on the supply side with companies and so on.

Q356 Mr Challen: I would like to briefly return to the issue of developing countries, which we touched on earlier, because certainly the comments you were making you were not entirely comfortable that trading was going to be effective in view of the problems with developing countries. We were discussing some of the things that we are not even touching on at all, as you were saying, about burning wood and dung. What more should be done in terms of capacity building, to look at those countries where really, according to you, we are not going to make a lot of impact?

Professor Rayner: Let me be clear, I do not include China and India as countries that are not making a lot of impact; they are going to make a huge impact.

Q357 Sue Doughty: The less developed countries.

Professor Rayner: There are a lot of countries, both developed and less developed, that are not presently or in the next 50 years likely to be the major contributors to greenhouse gas emissions and build-up of concentrations. With respect to major developing countries, particularly China, India, Indonesia for reasons of population and coastline,

and Brazil because of its forest resources and its particular place in Latin America, are going to be terribly important countries. One of the interesting things is that we have seen a remarkable growth in China over the last 20 year, which has happened without the increase in carbon intensity that we would have predicted 20 years ago. It is still considerable but it is much less than we had actually anticipated. If we look at India, it is a country which actually has a fairly considerable indigenous technological capacity. There are all manner of opportunities where we can cooperate with those countries—Brazil is another one with major technical capacity—to develop paths which will allow those countries to have their economic growth without the kinds of levels of carbon intensity to which they would be committed if they were to proceed with the kinds of technologies that we would have taken for granted 20 years ago.

Q358 Sue Doughty: Looking at the less developed countries, the ones following on behind them, some way behind them, what can we do there?

Professor Rayner: I think the truth of the matter is that those countries need to be supported in their development and that will mean that if they are not to simply follow in the path of becoming this lowest level where, as I mentioned earlier, the default technologies that everybody else has given up become deposited; then we are going to have to have to make some positive decisions to transfer technologies and invest in more cutting edge technologies in those countries than would otherwise be the case. In other words, we are going to have to make some capital transfers, but I would like to see those capital transfers made in technology, not in cash—cash has a way of leaking out of the system, unfortunately.

Chairman: Thank you very much indeed for this interesting session and to thank you also for your witness submission—it was interesting to read.

Wednesday 12 January 2005

Members present:

Mr Peter Ainsworth, in the Chair

Gregory Barker
Mr Colin Challen
Mr Malcolm Savidge

Mr Simon Thomas
Joan Walley

Memorandum submitted by Barclays Capital

1. INTRODUCTION AND OVERVIEW

Headquartered in London, Barclays Capital is the investment banking division of Barclays Bank PLC, one of the largest multi-national financial services groups in the world. With a focus on financing and risk management we act internationally as an intermediary and adviser to industry, financial institutions, governments and supranational organisations. Barclays Capital's Environmental Markets team is at the forefront of developments in the wholesale market in emissions allowances under the EU emissions trading scheme and we take a keen interest in the expansion of the EU scheme to other greenhouse gases, new sectors and, ultimately, to new countries. We welcome this opportunity to provide to the House of Commons Environmental Audit Committee our views on the international challenge of climate change.

There is a growing international consensus on the need to reduce emissions of greenhouse gases. That consensus has been sufficiently broad and compelling to effect global agreement on the need to tackle climate change. The Kyoto Protocol and the EU emissions trading scheme provide impressive first steps in coordinated international action to address the problem. Given the international consensus on the need to tackle climate change, the UK government should take the lead in developing the next phase of mechanisms to tackle climate change. In our view, the best option to reduce global emissions is an international emissions trading scheme that covers the whole world. Such a scheme can promote international agreement on the path of future emissions, deliver the required reductions—and most importantly—achieve those reductions at the lowest possible cost to the global economy. We would therefore urge the UK government to place the establishment of an international emissions trading scheme at the centre of their presidencies of the EU and G8.

In section 2 below, we briefly outline the main benefits of emissions trading when compared to other potential instruments for tackling climate change. In section 3, we outline a possible design for an international emissions trading scheme which, we hope, will provide a useful blueprint upon which future discussions might be based. Finally in section 4, we address the question of how this vision might be delivered in practice and examine some of the potential alternatives.

2. THE CASE FOR AN INTERNATIONAL EMISSIONS TRADING SCHEME

Given the international consensus on the need to reduce carbon dioxide emissions, of the possible instruments to achieve the required global reductions, the most efficient method by far will be an international “cap and trade” scheme similar in broad application to the EU emissions trading scheme (ETS). An international emissions trading scheme has two overarching advantages stemming from both the “cap” and “trade” elements:

- Emissions trading gives a determinative environmental impact, ie, the cap on emissions will deliver specified emission reductions in line with agreed reduction levels; and
- Emissions trading ensures that emissions reductions are delivered at the lowest possible cost to the global economy. Participants can only increase emissions if they source the required allowances from other participants who have reduced emissions and have surplus allowances for sale. Participants who can reduce their emissions most cheaply will therefore do so and will sell their spare allowances to participants who find it more difficult—and costly—to contain their emissions. A vibrant global market in emission allowances streamlines this process by bringing together multiple buyers and sellers and ensuring that emissions reductions come from the lowest cost sources.

Other potential methods for controlling emissions fall short on one or both of these features of emissions trading. For example:

- While carbon taxes would discourage emissions-related activity, it is difficult—if not impossible—to determine the precise level of taxation to achieve a specified reduction in emissions and the tax is likely to be inefficient unless its incidence can be artfully tailored to target the most efficient sources of carbon reduction.

- Schemes which seek to reduce emissions against a “business-as-usual” baseline focus on relative, rather than absolute, reductions in emissions. Such “relative schemes” have been used as a compromise to mitigate emissions for sectors and countries which have proven politically difficult to include within the scope of an absolute cap under emissions trading schemes. For example, the “relative” sector of the UK ETS and Kyoto Clean Development Mechanism (CDM) credits both seek to give credit for reducing emissions against a pre-determined benchmark. However, since relative schemes allow emissions to continue to grow, albeit at an attenuated rate, they do not stem the underlying growth in global emissions and hence remain a poor substitute for emissions trading under an absolute emissions cap. Relative schemes are also administratively complex since significant effort must go into establishing and policing acceptable technological benchmarks to determine what emissions would have been in the absence of the project and the concept of “additionality” to ensure that credits are not granted to projects which would have taken place anyway.
- Using direct regulation of specific technologies to ensure technological efficiency substitutes for economic trade-offs on the most economic sources of emissions reduction and hence increases the overall cost of reducing emissions.

An efficient emissions market also allows participants to manage the risks associated with variable emission allowance prices thereby stabilising their cash-flows and minimising financing costs. This latter element will be crucial in providing the conditions to underwrite the major investments in carbon reduction technology and infrastructure that will need to be made. This can be contrasted to the impact of other forms of emissions regulation which create significant regulatory risk for investments in the face of changing technological specifications and/or the rules for granting additional credit.

In the next section, we describe a proposed outline for the design of an international emissions trading scheme. We hope that this might provide a useful “straw man” that the UK government could use in putting the case for an international scheme during its coinciding presidency of G8 and the EU in the second half of 2005.

3. A BLUEPRINT FOR AN INTERNATIONAL EMISSIONS TRADING SCHEME

Implementing an international emissions trading system would be a significant challenge. However, the EU emissions trading scheme suggests that it is nevertheless an achievable goal and the broad parameters of the EU’s “cap-and-trade” scheme provide a useful template on which to base an international scheme. The parameters of the scheme would, however, need to be expanded to increase coverage of emitting activity, to retain some flexibility for national implementation and to provide a longer-term platform for investment in carbon reduction technologies. In the following sections, we outline a long-term vision for how an international trading scheme might operate.

3.1 *Long-term national emissions caps*

As in the EU ETS, the cornerstone of an international trading scheme would be national caps on allowed emissions which translate into a finite set of emission allowances. The agreement of these national allowance caps is the single most important hurdle to cross in implementing the scheme. One of the main obstacles to international agreement on emissions caps is likely to be the disagreements on a global emissions reduction target, which countries should bear the burden of reducing emissions and which countries are allowed to increase their emissions as their economies develop. One way to facilitate this process is to reach an international consensus on a long-term target for global emissions at a date well into the future and a fair way of allocating a share of these emissions to individual countries at that distant date. Caps in the intervening years would then be calculated as a gradual transition between the current emissions baseline and the long-term target. The hope would be that negotiations on a long-term target and allocation would prove significantly more tractable than arguments about who has the right to emit what over the next five to 10 years. The gradual transition also ensures that there are no step changes in individual countries’ allocations, while emissions as a whole remain on a glide path to a long-term sustainable target. For example, the scheme might work as follows:

- A target value for global emissions is set for a date well into the future, say 2062 (ie, 50 years post-Kyoto);
- The long-term global target is allocated among countries to set long-term national targets for emissions in 2062. This could be done, for example, by using a common per capita emissions allowance at 2062 against fixed national population baselines (as agreed at 2012) to give fixed absolute national aggregate targets for emissions in 2062;
- National baseline emissions would be established in a base year, eg, by using the Kyoto baselines (potentially updated from 1990 to 2012);
- A national annual cap would be calculated as a weighted average of the baseline emissions and the long-term target emissions. For example, using a straight-line average over the 50 year period, the target for each country C in year X would be calculated as:

$$\text{Emissions Cap}_{CX} = [(50-X) \times \text{Base Year Emissions}_C] + (X \times \text{Target Emissions}_C) \div 50$$

where X is the year of the scheme, eg, 2013 would be year 1 and 2062 would be year 50.

In this way, national emissions targets over the period would gradually converge to the agreed long-term targets, ie, allowance caps would gradually fall for developed countries and increase for developing countries. The benefits of such a scheme are numerous:

- The agreement on a common per capita allowance in 2062 represents a “fair” ultimate allocation of allowances and, hence, would hopefully unlock the potential stalemate on agreed national targets (although we would still expect significant negotiation on what would constitute a fair, fixed population baseline).
- The long-term gradual transition from current national emissions to the long-term targets avoids step changes in the initial burden on developed nations and/or any allowance windfalls for developing nations (which could prove a barrier to getting developed nations to subscribe to the scheme). At the same time, developed nations bear a gradually increasing share of the total cost burden for reducing emissions as developing economies grow toward the long-term sustainable emissions target. This facilitates the achievement of both environmental and international development objectives.
- The scheme would provide significant long-term certainty for countries, companies and investors on the emissions targets—and consequently allocations—well into the future. This avoids many of the difficulties associated with Kyoto and the EU ETS which, while making a welcome start, are for periods which are too short to provide for long-term investment in emissions reduction. Most investments will typically have horizons extending beyond the three and five year periods of Phases 1 and 2 of the EU ETS (the second of which corresponds to the first Kyoto compliance period) and the potential for rebasing allocations and targets between these periods currently represents a significant risk to potential investors and market participants.

3.2 National caps translate into allowances allocated to companies

Since the purpose of emissions trading is to modify economic activity to account for the external costs imposed by climate change, participation should be at the level at which decisions on whether to emit or not are taken, ie, at the company level. Individual companies covered by the scheme would therefore have the obligation to surrender carbon allowances equal to their annual emissions.

Against these compliance obligations, individual countries would allocate their national quota of allowances to those companies covered by the scheme. Countries would have the choice of whether to allocate their quota of allowances to companies for free or to auction those allowances. This gives each country the flexibility to manage the distributional consequences of emissions, ie, the relative burden borne by industry, consumers and taxpayers. (The method used to allocate allowances, however, will not undermine the ability of the scheme to reduce emissions and to do so at least cost.)

This process would need to be scrutinised by an international body to ensure that allowances are properly created and policed and not subject to fraudulent duplication. Depending on the coverage of the scheme, a standardised approach to accounting for any emissions not covered by the scheme would also be required (as the European Commission is required to scrutinise National Allocation Plans to ensure that they are consistent with Member States’ obligations under the Burden Sharing Agreement).

3.3 International Allowance Trading

Allowances would be perfectly fungible internationally such that allowances initially allocated (or sold) in the UK could be used for compliance in any other country. The free trading of allowances across national borders will ensure that global emissions are reduced at the lowest cost irrespective of the company or country making those savings. This provides a universal, economic incentive to install carbon efficient technologies. This is the main benefit of a truly international scheme. Unlike schemes which only cover a subset of countries or activities, an international scheme avoids the possibility of emissions being shifted to uncapped regions as uneconomic reductions are made in the participating regions (eg, via the relocation of a CO₂ intensive industry such as steel production to India say). In doing so, a global scheme also ensures that global emissions are reduced, rather than being controlled in one region, but continuing to expand unabated elsewhere.

From an international development perspective, the proposed scheme has the beneficial consequence of facilitating growth in developing economies while not unduly constraining continued growth in developed economies. Hence, while developed economies face a gradually increasing share of the total cost of reducing emissions (via reduced national allowances), all countries and companies face a common marginal cost of emissions growth. While developed economies will need to buy more allowances to meet their growth, as developing economies grow they will use up their allocations and therefore face the “opportunity cost” of using—rather than selling—their allowance allocations. As a result, all countries and companies face the same cost at the margin for increasing emissions thereby establishing a completely level playing field between nations in respect of future economic growth.

3.4 Sectoral Coverage

The scheme should cover all activities that emit greenhouse gases, subject to practical minimum thresholds to optimise the associated administrative burden. As in the EU ETS, the starting point would be power generation and direct emissions from large industrial facilities (eg, energy, ferrous metals, minerals, pulp and paper). This coverage should, however, be expanded to encompass a larger proportion of total emissions to ensure that the maximum amount of emissions can be traded and hence reduced in the most cost-effective way. In particular, an international scheme should also include:

- Aviation.
- Road transport.
- Domestic and commercial fossil-fuel consumption (eg, natural gas, LPG, heating oil).

Prior to the development of an international trading scheme, these sectors should also be included in Phase 2 of the EU emissions trading scheme.

In the case of transport, domestic and commercial fuel use, while it would be administratively difficult to require individual consumers to become participants in the scheme, it would be relatively straightforward to include domestic and commercial petrol retailers and fuel suppliers within the scheme, eg, by requiring them to surrender allowances equivalent to the calculated emissions on the fuel supplied. Since emissions trading reveals the cost of the carbon externality associated with fuel use directly, inclusion of fuel supplies within the scheme also offers several advantages in streamlining the various policy instruments designed to mitigate use of—and emissions from—these fuels. For example:

- There would be no environmental requirement for a complex range of taxes and duties. For example, in the UK, it would offer the opportunity to streamline the separate administration of climate change levy, fuel duties and VAT and the complexity of the associated exemption regimes.
- Inclusion of transport and domestic fuel supplies would provide direct economic incentives to promote energy efficiency and reduce carbon requirements. This would obviate the need for a complex range of explicit obligations and regulations targeting the efficiency of domestic and transport fuel uses.
- Placing the obligation on fuel suppliers may provide some flexibility in drawing the boundary between those installations directly covered by the scheme and those covered indirectly via their fuel supplier. In respect of the EU ETS, this could provide an opportunity to simplify the compliance overhead for some of the relatively small installations covered by the scheme. It should also remove potential distortions associated with the threshold for inclusion within the scheme, eg, under the EU ETS there is a potential incentive to develop generating plants with capacities under 20 MW to fall outside the scheme.
- Including domestic and commercial fuel supplies would ensure that electricity and gas usage is compared economically rather than providing undue incentives to reduce use of electricity from the national grid (which includes the cost of carbon) and increase the use of gas for domestic applications or in small-scale distributed generation (which would not include the cost of carbon).

3.5 Enforcement and compliance

Ensuring universal compliance with the scheme is a key challenge, particularly as the required reductions get more significant and/or expensive. The ability of individual countries and companies to “opt out” or simply fail to comply should therefore be precluded by an effective regime of internationally agreed sanctions and penalties. We would propose a “two-tier” approach to compliance where:

- The primary compliance responsibility would be on companies to buy sufficient allowances to cover their emissions;
- but
- National governments should retain ultimate responsibility for ensuring that all of their country’s emissions are backed by allowances, ie, governments should underwrite the compliance of companies within their jurisdictions (much as the EU-ETS and Kyoto will interact in EU countries from 2008).

This would require each country to submit an audited annual compliance report detailing emissions from the covered sectors and details of the surrender of allowances. Each country would then be responsible for underwriting their national obligations by buying allowances to meet any shortfall on their national accounts. This would help to buttress the scheme against problems with individual company compliance

and insolvency.¹ We would then expect countries to impose penalties on non-compliant installations to ensure that their need to step in to balance the national accounts was limited. However, this proposed “two-tier” approach to compliance is also sufficiently flexible to allow governments themselves to buy allowances in the international market to meet any projected shortfall on behalf of companies within their jurisdictions.

By making individual countries responsible for the proper implementation and monitoring of, and compliance with, the scheme—and the imposition of appropriate sanctions for failing to do so—there should be no supplementary need to restrict a country’s aggregated purchases, sales or holdings of allowances (as for example exists under the Kyoto Protocol with the Commitment Period Reserve). This would remove a potentially significant barrier to trade in emissions and hence facilitate the achievement of the required reductions at the lowest possible cost.

3.6 Annual compliance: no borrowing from future allocations

Compliance with the scheme by companies and Governments would be on an annual basis, with allowances being issued in annual vintages with no borrowing of allowances between years. Unlike the EU ETS—which allows limited borrowing—this isolates the risk of non-compliance to individual years. This avoids the possibility that compliance liabilities get “stored up” for a distant date and ultimately abrogated. (It should, however, be possible to “bank” spare allowances not used in the current year for use against future compliance liabilities.)

Although a restriction on borrowing may raise concerns about the ability of market participants to manage the risks associated with variable emissions requirements and prices between years, it should be borne in mind that these risks are present in all financial and commodity markets (eg, limited annual oil production) and the global financial system exists precisely to aggregate, disaggregate and reallocate these risks to those most willing to bear them (and at the lowest cost). The truly global nature of the market will also minimise the risk that events in any one company, industry or country lead to massive swings in the price of emissions from year to year and provides a huge pool of “liquidity” from which individual companies (and countries) can manage variations in their annual emissions requirements. The development of such a global market in emissions will generate sophisticated risk management tools—such as futures, swaps and options—for individual market participants to manage their requirements to buy and sell allowances and to stabilise the associated prices. The generation of these risk management services, in turn, will ultimately foster investments which reduce emissions. When seen from the perspective of an efficient global market in emissions, there remains no need to allow individual companies—or indeed countries—to stretch their compliance obligations over several years.

4. STRATEGY FOR IMPLEMENTING AN INTERNATIONAL EMISSIONS TRADING SCHEME

We believe that international negotiations should focus on establishing a single over-arching global emissions trading scheme as it is demonstrably superior to the alternatives in achieving the required global emissions reductions. Other schemes are either inefficient or—while limiting emissions growth—ultimately fail to deliver actual emission reductions from an agreed baseline. The starting point for international negotiations should therefore be an international trading scheme with associated national emissions caps.

The previous section has outlined one potential method for introducing an international emissions trading scheme. In developing this outline we have tried to overcome many of the difficulties and limitations associated with the current EU ETS and the Kyoto Protocol. However, despite the theoretical—and hopefully practical—benefits of the scheme we have described, it would be impossible to underestimate the practical challenges the UK government might face in achieving an international consensus to implement such a scheme. In this section, we therefore offer some thoughts on how such a scheme might be implemented in practice and how it might interact with other schemes and approaches.

4.1 2013—*The start of global emissions trading*

Significant effort and negotiation has gone into the development and implementation of both the Kyoto Protocol and the EU emissions trading scheme. It would be unwise at this stage to attempt to unpick or replace the massive achievement that these schemes represent. The UK government’s focus should therefore be on achieving a consensus now for a global scheme to replace Kyoto in 2013. In the interim, however, it should be recognised that the EU scheme builds in significant flexibility and provides an attractive platform for the expansion of emissions trading to cover new gases, new sectors and new countries. The UK and the EU should therefore maintain their global lead in tackling climate change by seeking to extend the scheme as far and wide as possible in the run up to 2013. Doing so will broaden the international consensus around emissions trading as the best means to tackle climate change.

¹ Insolvency can create problems for the integrity of the trading scheme. For example, if a company goes out of business having pre-sold their allowances they leave the market “long” in emissions allowances without the prospect of the corresponding “short” compliance liability being met by purchases. This dilutes the value of allowances and the efficacy of emissions trading. Insolvency is one of the main reasons why we are proposing that governments underwrite the balance of their country’s compliance accounts.

4.2 *A global problem needs a global solution: All or nothing?*

While the free-market may lead to some reductions in emissions—as organisations align their corporate and social responsibility agendas to those of key stakeholders—voluntary action alone is very unlikely to achieve significant emission reductions. In the absence of internationally enforced reduction obligations and the scope to trade emission allowances, individuals, companies and countries will not systemically factor the “external” cost of climate change into their daily economic decisions. Carbon reduction will remain a “nice-to-have” rather than a “must-have”. It would therefore be preferable to establish a single over-arching scheme from the outset rather than to rely on the organic growth of an international scheme by well-motivated companies, economies or regions (eg, Canada and the EU). Moreover, focusing the development of an international scheme on a subset of nations runs the risk of:

- Undermining the effectiveness of emissions reductions by participating countries in reducing global emissions, as emissions continue to rise in non-participating countries.
- Exacerbating the problem as production resources are diverted to non-participating countries, increasing transport-related emissions and potentially diverting resources to less efficient technologies and processes which only become “economic” when the cost of carbon dioxide emissions can be ignored.
- Inefficient implementation as low-cost reduction options in non-participating countries are overlooked.

In turn, partial solutions are likely to undermine the current positive perception of emissions reduction in participant countries, leading to pressure to leave the scheme and/or never to sign up in the first place (as has been the case with some countries in respect of Kyoto ratification). This has not prevented many countries from “taking a lead” by ratifying Kyoto, implementing domestic schemes and introducing the EU emissions trading scheme. However, looking beyond Kyoto, a country’s continued willingness to tackle emissions will be severely tested if there is little prospect of that domestic and joint action translating into genuine progress in reducing global emissions. It is therefore essential that the start made by many countries under Kyoto and the EU emissions trading scheme is converted into truly global commitments to reduce emissions via an international emissions trading scheme. While practically, therefore, it would still be better to have more countries involved rather than fewer, the UK government should make every effort to achieve a global consensus on the adoption of an emissions trading scheme which binds all countries into an emissions cap. One possible mechanism to enforce global acceptance would be to use a system of import duties and export credits designed to reflect the underlying cost of carbon on imports from, or exports to, those countries not accepting an absolute cap. This would ensure a level playing field between capped countries and uncapped countries and remove any incentive to “opt out” from accepting an absolute cap.

4.3 *Relationship to Kyoto “flexible mechanisms” and other parallel schemes*

An explicit focus on international emissions trading as the solution offers a more tractable basis for international negotiations on the respective national burdens. Against the backdrop of a global reduction target, negotiations can centre on the question of the quota of “allowances” each country should receive rather than side-negotiations on the details of a raft of different potential policy instruments. For the reasons described above, running such a scheme in parallel with other mechanisms, eg, the achievement of relative reductions against growing baselines, risks undermining the integrity of the trading scheme in achieving real emissions reductions at the lowest cost.

Our vision for an international emissions trading scheme would cover the vast majority of emissions and the vast majority of countries. This would largely avoid the need to continue with additional mechanisms to cover emissions not included within the scheme. Specifically, the adoption of absolute national targets coupled with company-level compliance would remove the need to establish relative, business-as-usual baselines within those countries not accepting an absolute target. As a result, the need for project-based credits such as those established under the Kyoto Protocol (ie, Joint Implementation and Clean Development Mechanism credits) and the associated limitations on the use of emissions trading (eg, the Commitment Period Reserve) would become superfluous. These restrictions raise many barriers to the efficient trading of emissions as they limit their transfer to national authorities and raise the possibility of “force majeure” delivery problems associated with emissions trades between companies that might be interrupted because of national gateway problems. These barriers to trading undermine both the ability to achieve the required emissions reductions and the ability to do this at least cost.

We would therefore see international emissions trading as a direct substitute for the continuance of the direct emissions reduction targets and associated flexible mechanisms established under the Kyoto protocol. Nevertheless, we have to recognise that comprehensive coverage of the scheme may not be achievable in practice. In this circumstance, it would clearly be better for countries that do not accept an absolute cap to achieve emissions reductions relative to a growing baseline (eg, specified as average emissions per unit growth in GDP) than to accept no obligations at all. However, in doing so, it will be important to ensure that any scheme of credits attaching to these relative reductions is not allowed to dilute the value of allowances within the capped sector. In the absence of a cap on the volume of relative credits that can be generated, there is a danger that allowing the unrestricted import of these credits into the capped sector

would dilute the value of allowances, reduce incentives to cut emissions and, ultimately, lead to continued emissions growth. Preventing this would require the establishment of some form of “gateway” between non-participating countries and the international emissions trading scheme which caps the conversion of these “relative” credits into credits tradable within the scheme. The gateway between the relative and absolute sectors in the UK emissions trading scheme—which caps the transfer of relative credits to the aggregate reduction in the “relative” sector—could provide one model for this. Failing that, there should be an aggregate cap—perhaps allocated by nation—on the volume of credits that can be exported from countries that do not accept an absolute cap.

9 December 2004

Memorandum submitted by Charles Donovan

1. THE AUTHOR

Charles Donovan is the Commercial Manager of the Climate Change Policy Group of Enviro Consulting Ltd., one of the UK’s largest environmental consulting firms. Enviro Consulting is a leading advisor to industry and Government on issues related to climate change and the application of market-based mechanisms to environmental protection. The company’s experience in environmental markets includes consulting work on the UK Emissions Trading Scheme, the Climate Change Levy Agreements, the Landfill Allowance Trading Scheme, the EU Emissions Trading Scheme, the Clean Development Mechanism, Joint Implementation, and the Renewables Obligation.

Mr Donovan is also Chairman of the Executive Committee of the London Climate Change Services Providers Group (LCCSPG), a new business association of UK companies with expertise in greenhouse gas emissions reductions. The LCCSPG has been formed to capitalise upon the “first mover” advantage of British companies in delivering climate change solutions to a global market. The LCCSPG expects to be formally incorporated in the spring of 2005, drawing upon the support of over 70 UK organisations in the fields of engineering, consulting, law, accountancy, verification, information technology, education, and financial services.

Mr Donovan’s written and oral testimony is provided in a private capacity. His comments may not be construed as being the policies of either Enviro Consulting Ltd. or the London Climate Change Service Providers Group.

2. INTRODUCTION

Emissions trading has been embraced by international governments as a tool for reducing greenhouse gas emissions for good reason. Experience from other emissions trading schemes indicates that the flexibility afforded by trading may allow environmental objectives to be achieved at reduced cost. Due to the scale of investment required to accomplish a low-carbon global economy, the issue of costs and cost minimisation must be of paramount importance to UK and international policymakers. To pretend that we can stabilise greenhouse gas emissions irrespective of cost would not just ignore the realities of our modern global economy, but more importantly, would reduce our chances for success.

As demonstrated by previous testimony given to this Committee, there are widely divergent views about the capacity of emissions trading systems to deliver greenhouse gas reductions on the timescale required to avert severe climate change. While some of this criticism is indeed well founded, all stakeholders in this debate should keep in mind that emissions trading is a tool for accomplishing objectives, not an objective in itself. The element currently lacking that would make emissions trading a truly potent tool for combating climate change is the political leadership to implement it effectively. If such political will surfaces, emissions trading will be a powerful tactic we can employ to cost-effectively reduce GHG emissions at a domestic, European, and international level.

3. EMISSIONS TRADING IS A CRITICAL ELEMENT OF A GLOBAL SOLUTION TO CLIMATE CHANGE

European and international emissions trading systems are both feasible and desirable methods of reducing greenhouse gas emission. Before exploring the details of why I believe this to be true, it is useful to quickly review the basics of how the EU Emissions Trading Scheme (EU ETS) will work.

Obligated installations across Europe will soon be allocated a specified quantity of allowances to emit carbon dioxide (CO₂). Firms must manage these allowances in a way that ensures that by the end of the trading period, the number of allowances held is commensurate with the amount of CO₂ emitted. For the scheme to work there must be a scarcity of allowances; that is, there must be, on aggregate, fewer allowances available to firms than they need.

By appealing to the profit motives of a firm, emissions trading encourages installations not to meet their individual caps, but rather to optimise their output given a new marginal cost, the cost of emitting carbon dioxide. Installations with low-cost opportunities to reduce CO₂ are expected to continue to make emission reductions so long as the cost incurred to do so is less than the revenue gained from selling carbon allowances. At the right price, all firms are capable of making carbon reductions.

With demand created by the installation-level carbon caps and supply available by firms with low-cost carbon abatement opportunities, a market is created and CO₂ reductions can be achieved. The concept of emissions trading is in fact quite simple. However, the implementation of such a scheme has proven to be highly complex, raising concerns from Government and industry about both its viability and its desirability.

In considering which approach and specific objectives the UK Government should adopt during its presidency of the G8 and the EU in 2005, a number of potential benefits and potential failures of greenhouse gas emissions trading must be kept in mind. I wish to emphasise three issues in particular. These are:

- the economic benefits to the UK economy from emissions trading;
- concerns about the fairness of emissions trading; and
- the need for a durable long-term strategy.

3(a) *The economic benefits to the UK economy from international emissions trading*

The UK is the most significant social laboratory in the world with regards to the application of market-based mechanisms to environmental protection. The tradable permit schemes currently operating or in development include those to increase packaging waste recovery, reduce waste to landfill, increase the generation of renewable energy, and reduce greenhouse gases.

With regards to the UK's experience with greenhouse gas trading, there are numerous points of legitimate criticism about the environmental effectiveness of the schemes and their value for money. Nonetheless, a number of important benefits must be recognised. Because of the UK ETS, we have a much improved understanding of the quantity low-cost GHG reduction opportunities that remain in the UK economy. Because of the EU ETS, some of the UK's largest tanks and financial intermediaries are now active contributors to the policy debate about CO₂ reductions. Because of the Clean Development Mechanism and Joint Implementation, UK renewable energy companies are actively seeking business opportunities in Africa, Asia, and Latin America. In short, we have learned enormously, engaged important stakeholders, and stimulated industry in a manner that could not have been accomplished by the alternatives to emissions trading schemes.

The UK's forays into emissions trading have also developed a new domestic industry comprised of climate change service providers. Similar to the success of Denmark's energy policies in developing industry-leading wind energy companies, applications of emissions trading are making UK companies global leaders in delivering climate change solutions. As a result of their unique experience, UK companies are creating jobs and value added for the UK economy from their knowledge and technical skill on climate change issues.

UK climate change service providers are key enablers for governments and industry to deliver the environmental objectives of climate change policies at minimal cost. The economic benefits of the UK's leadership on GHG emissions trading lend legitimate support to its desirability.

3(b) *The perceived fairness of the EU ETS*

While the EU ETS has so far been championed by the UK, attention must be given to short-term implementation issues to ensure that the European experiment with market-based greenhouse gas regulations achieves its objectives and, in turn, lays the foundation for coordinated global action to reduce greenhouse gas emissions. One of the most pressing issues for consideration in the short-term is distribution of the costs and benefits of CO₂ reductions across industry.

The EU ETS has the potential to increase costs for industry in two ways. Installations that expect to exceed their CO₂ caps will need to make emission reductions or purchase allowances from other market participants. These may be referred to as the direct costs of carbon trading. Companies also must adapt to changes in energy prices that result from the EU ETS. These are often termed the indirect costs; they do not arise from installation-level caps but rather, the way in which the market responds to CO₂ caps.

While much attention has been paid to the direct costs of carbon trading, the indirect costs pose the greatest financial risk to industry. For UK industry in particular, financial risk will become manifest most immediately through an increase in electric power prices. Despite the complaints from some economic sectors about these price rises, this is how carbon trading is intended to work. The EU ETS was designed to send a price signal to electricity users indicating the environmental cost of consumption.

While this is likely to work in the UK, the price signal will not be seen in all EU Member States. In countries where tariffs remain highly regulated, electricity prices will not accurately reflect the cost of carbon. A legitimate argument can be made that in this respect, the EU ETS will create an unfair playing field. However with low carbon prices, the distortion is likely to be quite small.

Perhaps a more compelling issue with regards to the perceived fairness of the EU ETS is the potential for a transfer of wealth from power consumers to power generators. Power generators, particularly those in the UK's liberalised electricity market, will seek to increase the price at which they sell electricity by the marginal cost of emitting CO₂. This is how a competitive market is intended to work. The problem is that the total revenues that will be gained by power generators by passing carbon costs to consumers will far exceed the total costs from carbon trading. This is a direct result of the decision taken at a European level that most carbon allowances should be given away for free.

It is surprising—as well as potentially damaging to the viability of the EU ETS—that this issue has not received wider consideration. Perhaps less surprising is that power generators have not yet explained to consumers and the Government the magnitude and eventual use of the revenues they will gain.

Concerns regarding wealth transfer have also been raised with regards to allocation by some EU countries of more CO₂ allowances than are needed by their industries. A surplus of allowances attributable to unrestrictive carbon caps is expected in several EU Member States. Over-allocation is not just counterproductive with respect to the underlying objective of reducing greenhouse gases, but also raises troubling questions about the underlying logic of the scheme itself.

If the benefits of emissions trading are to be fully realised, the supply of allowances into any emissions trading scheme must be the result of investment in emission reductions. This holds true for trading on any political level, whether it be domestic, European or international. If such a guideline is widely observed, there will be no doubt about the desirability of emissions trading systems as a tool for reducing greenhouse gases.

3(c) *The need to place emphasis on long-term goals as much as short-term objectives*

Depending upon the actual rate of economic growth within Europe over the next three years, the allowance deficit created by the National Allocation Plans of EU Member States will create demand for CO₂ allowances of between 5–50 million tonnes per year during Phase I. With respect to the long-term objective to stabilise atmospheric GHG emissions, it is almost trivial. Nonetheless, if the EU ETS is supported by a durable greenhouse gas policy framework, the reduction will be part of a greater achievement.

While we must have some focus on short-term objectives of climate change mitigation policies, we can not afford to be myopic. Climate change mitigation is not primarily an environmental problem, but rather an economic one. For this reason, effective climate change policy development in the UK will require more significant participation from the Department of Trade and Industry, the Treasury, and other Government ministries charged with management of economic affairs. The task facing us is to fundamentally change the carbon-intensity of the domestic and global economy. Considering the pervasiveness of carbon energy sources in our economy and the level of investment that has been made in its infrastructure, it is clear that we face an unprecedented task. To reduce carbon intensity while at the same time improving quality of life, the only course of action available is not to contract, but to grow. This growth must, however, be based on new models of infrastructure investment.

Due to the long-term nature of capital investment in the energy, transport and industrial sectors, we must focus on creating market conditions that will facilitate substantial GHG reductions into the future. Establishing a cost of carbon through market-mechanisms is a first step. This must be quickly followed by the establishment of a long-term signal to energy consumers about what future carbon costs are likely to be. With respect to the decision-making process of businesses, there is a growing body of evidence that without a reasonable level of certainty about the scope of future climate change regulations, firms will delay or cancel plans for investment.

Without a durable climate change policy framework, the EU ETS will not reach its potential. For this reason, achievement of the UK's publicly stated target to reduce emissions to 20% below 1990 levels by 2010 can help shape the present-day choices being made by industry. Perhaps even more important is the goal of a 60% reduction by 2050 outlined in the Government's 2003 Energy White Paper. More concrete proposals are needed about how and at what rate the UK will achieve this goal in order to increase confidence on the part of business that low-carbon investment is the most prudent alternative.

It is essential that politicians, people in business, and the general public develop a deeper shared understanding of the impetus for climate change mitigation. Significant levels of education and outreach will be required to convince all levels of society of the need to act. In particular, more dialogue outside of the United Nations Framework Convention process should be initiated to gain widespread consent for this urgent global project.

4. SUMMARY

Over 40 years ago, Americans were urged by their political leaders to support a massive financial undertaking in order to land a man on the moon. That first lunar voyage mobilised the resources of an entire nation on an urgent time scale to achieve a breathtaking goal. With a sustained and disciplined effort, the race to stabilise GHG emissions can capture the imagination of British citizens in just that same way.

The UK has vast technological, financial and creative capabilities that can be organised for the purpose of climate stabilisation. The G8 and EU Presidencies provide a unique opportunity to inspire widespread mobilisation. As the UK already possesses all of the resources and talents needed, Government must now show its leadership by developing a major national commitment to technological and social research on climate change mitigation and by effectively implementing policies that will contribute to a low-carbon economy.

While building its vision for the future, the Government should not lose sight of the remarkable aspects of the achievements to date. The EU Emissions Trading Scheme is the first cap and trade emissions trading system in the world to be implemented for the reduction of greenhouse gases and it is the first time that any government has so comprehensively regulated carbon dioxide emissions. But for the EU ETS to be truly successful, it must not be just an achievement of innovative environmental regulation, but also deliver real reductions in emissions that will lend support to our 21st century race to the moon.

10 January 2005

Witnesses: **Paul Dawson**, Director, Environmental Regulation, Barclays Capital, **Louis Redshaw**, Head of Environmental Markets, Barclays Capital and **Charles Donovan**, Commercial Manager of the Climate Change Policy Group of Enviros Consulting Ltd., examined.

Q359 Chairman: Good afternoon all of you. Thank you very much indeed for coming in and also for your excellent memoranda, which we have read with great interest. Can I start by asking Mr Donovan, as well as obviously being involved in Enviros I note that you are also involved in the London Climate Change Services Providers Group. Can you tell us about the work of that group, briefly?

Mr Donovan: The London Climate Change Services Providers Group is a group of companies who have as their primary focus services related to climate change. That group of companies was, on the whole, starting to feel under represented by the business voice that was available to them through the other associations of which they may have been a part. These are companies that are part of the building blocks for a low carbon economy and for that reason have perhaps a different set of views with regard to climate change policy and for that reason they wanted to develop a business voice that would reflect their business interests. So this comprises a group that includes banks, it includes brokers, it includes engineering firms, it includes academic institutions in the UK, and it includes consultancies and law firms.

Q360 Chairman: How often do you meet?

Mr Donovan: There is an executive committee that has been formed, of which I am the chairman, that has been meeting, I would say, on a monthly basis to date, and there are open meetings that are being held quarterly. I should emphasise that this is a new group and a lot of work is ongoing to set up the structure under which it will exist.

Q361 Chairman: We look forward to hearing of progress from that group. We want to do this afternoon is to look at the EU Emissions Trading Scheme, the immediate issues; then Phase 2 issues and then post 2012, if we can handle it in that way. It is difficult not to observe that the whole thing seems to have got off to a pretty lousy start. Do you have any comments to make on the Press reports? There was a piece in the *Guardian* a couple

of days ago saying that the UK may even be going to sue the European Commission over the disagreements over the National Allocation Plan.

Mr Redshaw: I think it probably got off to quite a good start in terms of the trading, which is the focus of the scheme. Trading has been going on for over a year now, and in some more reasonable volumes it has been trading quite well since April last year; and in fact last Friday was a record day, half a million tonnes traded, only to be superseded by Monday of this week with one million tonnes traded, and we had 300,000 tonnes yesterday and probably another half a million tonnes traded again today. So on the trading side of things, which is where we come in, it has got off to a pretty good start.

Q362 Chairman: So you do not think that a possible legal dispute between the UK and the EU over the refusal by the Commission to accept the EU's National Allocation Plans is a problem?

Mr Dawson: I think any form of uncertainty like that is a problem for a market that relies on setting a target and then using trading as the most efficient means of meeting that target. So I would not dismiss it as a problem, but I think that Louis is right to emphasise that the scheme has actually got going and is meeting to that requirement to reduce emissions at least cost, well before the official start date of 1 January.

Q363 Chairman: Presumably this involves an exchange of contracts, each party?

Mr Dawson: Yes.

Q364 Chairman: Those are legally enforceable, are they?

Mr Redshaw: Yes.

Q365 Chairman: Even though there is not an overarching legal context yet put in place by the EU?

Mr Redshaw: Yes. I think companies got comfortable with the Emissions Trading Scheme when the directive was passed into law. Some companies have actually traded emissions—I think

12 January 2005 Paul Dawson, Louis Redshaw and Charles Donovan

the first one was July 2003, although it traded rather sporadically between then and April 2004. The pick-up in trading came as companies got a realisation of what their shortfall and, in some cases, excess emissions' position was going to look like, and as the countries have passed the directive into law companies have got—including ours—comfortable that the Emissions Trading Scheme would actually start. We still have allowances trading today but they are actually trading for delivery in December 2005 because allowances still do not exist. So all the time it has been trading it has been with the expectation that the law had been passed and the allowances would actually be allocated and dished out. If the scheme went away altogether then the contracts would have no validity, but as long as the scheme exists and allowances exist then anyone who is committed to buy and sell those must deliver.

Mr Dawson: I think that is an important distinction, that the scheme is actually passed into law and what the report on Monday reflected is to some extent the end game, arguing about how many allowances to allocate and to whom they should be allocated, but the obligation to surrender allowances and the monitoring of verification is already effective.

Q366 Chairman: As far as you are aware, is the UK the only country with a significant problem with the Allocation Plan?

Mr Redshaw: There are delays to the Greek, Polish, Czech Republic and—

Q367 Chairman: Germany?

Mr Redshaw: No, Germany has got it sorted. Italian of course. Greece only put their Allocation Plan in in December of last year and that was actually due in on 31 March of last year.

Q368 Chairman: What price is carbon trading at or are these agreements trading at?

Mr Redshaw: When I left the office we had just traded at 6 Euros 95 cents.

Q369 Chairman: Is that high or low relative to previous trades?

Mr Redshaw: It is actually relatively low. The high over the last year and a half's worth of trading has been 13 Euros, although those were trades on the back of pretty much no information. A lot of the early trades were testing systems and to prove that it could be done contractually. Then it settled in the range seven to nine Euros in the last nine months and it actually reached a low of 6 Euros 30 cents this week and bounced back up as people realised it had been oversold.

Q370 Mr Challen: Can I ask if the volume is increasing?

Mr Redshaw: It is, yes, it is exponentially increasing.

Q371 Mr Challen: What sort of volume are we talking about now?

Mr Redshaw: We probably traded between 10 and 11 million tonnes over all, across all trading through the brokered market. I only have access as a trading organisation to reported trades that come through brokers. There are obviously bilateral deals going on in the background also. But the amount of volume of trades per day, we would have been lucky to get half a million in a month over the summer last year and now we are getting half a million in a day, and to have a million tonnes, as I have mentioned, is unprecedented. That volume is starting to pick up now that it is a real scheme.

Q372 Chairman: Can I turn to you, Mr Donovan, again? In your August 2004 brief, which you kindly sent through, I think you said that on the basis of the draft National Allocation Plans, as they then stood, that emissions could in fact increase between five and 11% over the next three years. Obviously there has been some jiggery-pokery over the actual level of the Allocation Plans since then. What is your estimate of the likely possible increase now?

Mr Donovan: The trend for emissions in the EU is absolutely on the upward. In the EU ETS, as it currently stands, even with the revised National Allocation Plans, it will do very little to dent that. We do expect there to be demand for allowances in the first phase of the EU ETS but we do not expect it to significantly reverse the trend upwards in emissions in the EU 25. So while those numbers would need to be revised in order to reflect the most recent version of the NAPs I am comfortable still with the general indication that, yes, over the three years of the first phase emissions in Europe will be increased.

Q373 Chairman: Which begs the question of whether there is any point in the whole scheme?

Mr Donovan: You have to remember that the point of the scheme is to cap emissions at some level and if emissions are growing fast to have them grow less fast is indeed a constraint. So placing any amount of burden on industry or any of the sectors included in the EU ETS is a first step. However, it is very true that there must be a scarcity for this market to work, and for real change to occur that scarcity must grow over time and we are not yet at the point where we will see significant scarcity, in my opinion, where real substantial investments in emissions reductions will occur.

Mr Redshaw: I think it is worth pointing out that presumably Charlie's forecast of emissions across the EU, including aviation, transport, et cetera, but not covered by the EU ETS, clearly the emissions from those sectors cannot increase because there is a capped amount of allowances—basically people cannot pollute without those allowances.

Mr Donovan: I will respond to that by saying actually that does include the trading sector. The cap refers to capping their emissions at some point. The allocation methodology that has been employed by most Member States is looking at what are emissions in the business-as-usual case and then let us look at how we would change

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emissions based on that business-as-usual. So if we are constraining from business-as-usual, which is for high rate of growth, we can still constrain those companies but still see growth. So actually putting the cap does not mean capping them at zero, it means capping them at some level and the level is of course the critical question that has to be resolved by each Member State.

Q374 Chairman: Is it not the case that even more critical is the Phase 2 cap and the agreements that are going to be reached about that, because part of the point of Phase 1 is seeing whether it works at all, and I think we probably have the beginnings to establish that it physically can be made to work. Given that the setting of the first phase NAPs was hugely contentious and subject to some pretty lengthy horse-trading between Member States and within industries within Member States, do you think that Phase 2 is going to be equally contentious or more difficult?

Mr Redshaw: I would hazard a guess that Phase 2 would be simpler because everybody knows what the actual reduction targets of their country must be, and people have a better idea of what allocations they are going to be able to make to the covered sectors. Our view is that the covered sectors in the trading scheme should be expanded to all sectors. In our view there is no one obstacle that cannot be overcome in order to include supply to domestic consumers of gas and emissions of the transport sector.

Q375 Chairman: We are coming on to investigate that more a little later.

Mr Redshaw: It should be more straightforward because everybody knows what they need to do. The difference with Phase 1 was that we had a bunch of countries that did not want to constrain their industry relative to their neighbouring country and every country was incentivised to be as generous as possible. Under Phase 2 we have the Kyoto target to meet and therefore the amount of room you have for manoeuvre is limited.

Q376 Mr Challen: This question is for Mr Donovan. There is a part of your report I did not quite understand and it is about the issue of windfall profits for power generators. You say that the problem is that the total revenues that that will be gained by power generators by passing carbon costs to consumers will far exceed the total cost from carbon trading and this is a direct result of the European decision that most carbon allowances should be given away for free. I just want you to expand on that, to somebody who puts all his savings into building society accounts.

Mr Donovan: If you will allow me a moment let me explain a bit of the background for the scheme so that I can answer what you are asking directly so that it makes sense because there have been a lot of instances where people have tried to answer or direct some amount of analysis towards this question without really considering the scheme as a whole. So if you will let me explain that? The EU

ETS is what is known as an upstream trading scheme. For many years, particularly in the United States, there have been both practical experience as well as academic research on the use of these schemes. The EU ETS will take regulation at the point of fuel combustion. Where the EU ETS is quite different from anything that we have done before is in its coverage. We are including two parts of the energy value chain, if you will. That is those people who are combusting fuel to make electricity as well as those people who are using electricity, and that is going to lead to some potential impacts that may not have been totally envisioned. So the question about profitability, we need to think about it in the terms of both the marginal costs that power generators will face in terms of producing their electricity and also the average costs that they will face by complying with the scheme. When you have a scheme where allowances are given away for free—and that is this allocation method known as “grandfathering”—the difference between the marginal cost and the average cost is quite considerable because the average cost is based on what they paid for the allowances—in this case very little—and the marginal cost is the decision that they have to make each time they produce an additional unit of electricity. So it is this feature of the EU ETS as a type of Emissions Trading Scheme which is giving rise to this disparity. I think it is quite a basic relationship that has been noted by a number of organisations, that the increase in revenues associated with marginal costs being passed through the power sector will be in excess of the average cost they will face in complying with the scheme.

Q377 Mr Challen: I shall have to study the transcript on this one! Do I take it then that this is going to be a permanent feature of the scheme? It is not just a start-up situation, an initial windfall, but it is a permanent built-in feature of the scheme because the allocation is free?

Mr Donovan: If grandfathering were to continue—and the directive does say that in Phase 2 no more than 10% of allowances could be distributed by some other means than grandfathering—then, yes, you would have a situation that in a liberalised electricity market, such as the UK, one would expect to see marginal cost pricing lead to higher revenues for power generators; yes, indeed.

Q378 Mr Challen: The power generators in the UK appear to face tougher targets under the National Allocation Plan. How does this square with that perception? They are going to make more money out of something which appears to be tougher. The public are not going to warm to the idea of a trading scheme in carbon if that appears to be the case.

Mr Dawson: I think the scheme was drawn up and the free allocations were designed primarily to mitigate the impact of introducing Emissions Trading on some of the other industrial sectors, to the extent that if a company in the EU faces international competition they may not be able to

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pass on the cost of buying in carbon to meet their emissions, and the allocations were designed to mitigate that impact on the competitiveness. I think the fact that power generators also receive those allowances and, as Charles has articulated, have the ability to pass that cost on in the price of electricity means that the general nature of the scheme may be more or less applicable to particular sectors, and whilst there may be a windfall for power generators that feature of the scheme is a very useful one for other industrial sectors.

Mr Donovan: It might be worth noting that there are some people who have asserted that there could be a windfall for all industries who are within the EU ETS. That is, that if each industry behaved the same way as power generators they would be in the exact same situation. But I will tell you quite honestly that my conversations with managers across a number of the industries that are included in the EU ETS, very few of them outside of the power sector are looking at it in that same way; they simply do not operate in both closed—and by “closed” I mean in the absence of international competition—and also competitive markets; they simply do not have the same type of market structure. Many of them are also looking at environmental compliance for the EU ETS in the same way that they would for other types of environmental issues; so, “Tell me what it is going to cost. We will pay that and we will get on with doing business.” While this feature is not unique to power generators in terms of the way that the scheme is set up, it may be that due to the market structure and the actual type of competition within these other industries that the power generators are one of the few that actually end up behaving in this “economically rational way”.

Q379 Joan Walley: Mr Donovan, I am following very closely what you are saying and I realise that we are talking about something which is very new and which does not have a common currency in terms of widespread understanding of this issue outside the industries that are most acutely affected. I am wondering whether or not in your first response to Mr Challen’s last question you could perhaps summarise it in terms of a bottom line position about the windfall, and if I could ask you to explain that in such a way that, for example, if you were on my local radio station my constituents could actually understand what the real issues are. They are complicated issues and it is almost a new language that is needed to discuss all of this and I would hate to go from here thinking that I had quite grasped the kernel of what it is you are saying and what the implications are. You clearly live with this all the time, we do not; so I would be very grateful if you could just do that, please.

Mr Donovan: I will attempt to do that as compact as I can, and let me also ask my colleagues here if there is another way that they would rephrase that. Profitability in the power sector is dependent upon the difference between the cost and revenue. When revenue exceeds cost there will be profitability. It is

impossible to say what the profits of the power sector would be in the absence of the EU ETS, just as it is impossible to say what they will be with it. But it is very clear that there will be additional revenues that will be earned if power generators obey what we expect in a very free UK electricity market.

Q380 Joan Walley: Would there be a difference if we did not have that liberalised market?

Mr Donovan: Absolutely.

Mr Dawson: Yes.

Q381 Joan Walley: Could you just set out how that would be different?

Mr Dawson: In a competitive market every megawatt hour produced incurs a cost associated with carbon, so every additional megawatt hour requires a generator to go and buy a tonne of carbon. In a competitive market the prices closely reflect the marginal costs of production, so producing an additional megawatt hour precipitates the need to buy a tonne of carbon, so you would expect the price of carbon to feed through very directly into the electricity price. In less competitive markets the electricity prices do not track the cost of production as keenly because they are typically high and they are regulated. So there is scope for regulators to capture any increase in costs of production and not pass those through in increased prices to consumers.

Q382 Joan Walley: So are you saying that there is almost a double penalty for industry in this country as a result of us being part of that liberalised . . .

Mr Dawson: Not quite because I think when you have a competitive electricity market your electricity prices are typically lower than they would be in a non-competitive electricity market.

Q383 Joan Walley: That is not what some of my private companies would say, but never mind!

Mr Donovan: Can I just add that when we think about this issue it is very important to keep in mind that one of the core objectives of the EU ETS is for electricity consumers to see the price of carbon; that is to understand that there is an environmental issue associated with their consumption. So if we are looking at how potentially to deal with this issue we need to remember that it is not a double hit it is actually the hit that is intended by the scheme, and whether that is right or not is obviously for you to consider. But that is how the scheme is supposed to work, it is for electricity consumers to see a cost of carbon when they consume electricity.

Q384 Mr Challen: That begs the question then, there is a real cost here of carbon mitigation, and so on, which this scheme is part of, and I still do not quite understand how the companies can add their profit margin on to the real cost—you are saying we are getting these carbon allowances for nothing. So just reading *that*, you might superficially believe that there is no extra cost at all,

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at this stage anyway, to the companies because they are getting an allowance for nothing, and yet they are going to turn that into a profit. It is a very enterprising business.

Mr Redshaw: Let me give that a go because Paul Dawson has explained that the reason for the free allocation was to prevent distortions with markets, so to prevent an increase in costs to companies that are covered by the scheme who are trying to compete with companies that are in countries that are not in any Emissions Trading Scheme, so by giving the free allocation you reduce that risk. The UK government, for example, decided to give all of the companies that have international competitors close to 100% of their requirement for CO₂ allowances. But if you take 2-Widget manufacturers—and that Widget could be a megawatt hour of electricity or it could be a tonne of cement—and if you had a fixed demand, so a demand that was price insensitive, so a fixed demand for that product, and if both companies had been given an allocation of CO₂, for one company to reduce its output, ie to not produce enough Widgets for that demand, would actually require another company to buy a tonne of CO₂ to produce that Widget and therefore push the marginal price of that market up by exactly the amount of CO₂. So even though the company has been given a free allocation, if it is sufficiently competitive and the demand is sufficiently fixed then the company can just decide not to produce one Widget and sell that tonne of CO₂ to the market at the market price, and it instantly moves the price of all Widgets up by the price of CO₂. So that is potentially a situation where you have a free allocation that actually has a value because you are pushing all of the Widgets up by that price.

Mr Dawson: So I could be sitting there on a stock of allowances and my decision for tomorrow is, “Am I going to generate electricity or sell allowances for 7 Euros?” and I am going to want that 7 Euros if I am going to generate electricity tomorrow, notwithstanding the fact that I have a stock of allowances sitting there already.

Q385 Mr Challen: How much do you think that power generators, in this country at least, would generate in profits from this? Is it impossible to estimate the level of profit that might be made, a windfall profit?

Mr Donovan: I would be more comfortable talking about the level of additional revenues. What profits end up being is a very difficult question indeed; there are many more factors than the EU ETS that one would need to take into account. So I think that is a very difficult answer. What I would suggest though, as a way of looking at this, is perhaps for a moment to look at it in reverse. If the power generators did not pass this cost through then we are also not achieving what we want because to not pass through those costs would be to actively discourage new entrants into the market, and by raising the price we are actually sending a price signal that we hope will bring in clear forms of power generation. So to not have this occur in a

competitive market is also not an outcome that we would like to see. First, it would be anti-competitive; secondly, it would be contrary to the goals of the scheme.

Q386 Mr Challen: I have been given a range, which I assume applies to the EU, of between 1.3 to 3.6 billion Euros in 2006 and up to 30 billion Euros by 2010, so obviously if that is the whole EU scheme then it is quite a big share for British companies. Do you think that it would be a reasonable idea to suggest that national government should try in some way to claw some of that back, given that it is a windfall created by the construct, and perhaps that could be reinvested into new technologies and a carbon free future?

Mr Donovan: If we continue to see the kind of competitive market in the UK electricity market that we have seen over the past few years, then we are talking about additional revenues at today's carbon prices in the hundreds of millions of pounds.

Q387 Mr Challen: Given that the UK scheme gave away about £200 million just to get things started would it be fair to try and get that back? Is that going to have any distortive effect on the market if the government did try to do that?

Mr Dawson: This is distinct from the UK Emissions Trading Scheme?

Q388 Mr Challen: The UK Emissions Trading Scheme did cost the taxpayer in the region of £200 million and most people thought it was a rather generous scheme and indeed one of our sister Select Committees did have an inquiry into how generous that was, and everybody recognised that teething problems and other issues had to be addressed and it was expensive, but it did not really produce any reductions in carbon emissions over and above what companies were already going to do. So here is a possibility we could get that money back for the taxpayer. Would I be correct in the assumption that that would not distort the market if that were to be done?

Mr Redshaw: It certainly would not distort the market for emissions allowances because the number of emissions allowances that have been given out are fixed, and so the price for those emissions allowances is the same regardless of whether company X, Y or Z is making what we are terming a “windfall profit” and whether or not the government, through whatever mechanism, decided that they would like to have some money back. But in terms of the Emissions Trading Scheme itself, it has no effect whatsoever.

Mr Donovan: I think there is a very serious issue that you are hitting upon that needs much more serious consideration. The only thing I would emphasise is that in considering any further intervention in the market one needs to keep in mind the price signal that is being set and how that could change and the overall goal of bringing new entrants into the UK power market. It is a very complex thing to grapple with.

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Q389 Joan Walley: Could I just add to that, because I am not clear how the work of the Regulator—and this must have implications, the onset of the ETS must have implications for the Regulator and the way that that operates to the power companies. Is he part of that equation in terms of the issues that need to be looked at as a result of the way in which trading is now setting in?

Mr Dawson: Not really. The UK wholesale electricity market is an entirely liberalised market and the Regulator plays no direct role in setting or determining prices within the UK market.

Q390 Joan Walley: Presumably there is not going to be a level playing field, is there? There is going to be an even disparity, or a more un-level playing field as a result of this compared to the way in which companies are operating in this country and perhaps in other EU countries where there is not the same liberalised market?

Mr Dawson: It would be going a bit far to say that liberalisation was fully established across the Union. Certainly in the central continental countries there are competitive power markets and you would expect a similar pass through of carbon costs in the electricity prices. That is certainly true within France and Germany.

Mr Redshaw: The Regulator does not step in and control the price of coal or gas or anything like that, so everyone has to view emissions allowances as just another input cost, almost as if it was another fuel.

Q391 Chairman: Mr Donovan, can I come back to the point that Colin Challen was trying to explore with you about the benefit to the UK industry? You probably did not intentionally do it but you rather ducked it by a distinction between profits and turnover. The word you actually use in your memorandum is “benefit” and it is the benefit of 1.3 billion to 3.6 billion Euros in 2006 and up to 30.2 billion Euros in 2010. In modelling those figures did you a breakdown between various EU Member States?

Mr Donovan: Because we were looking so far ahead we adopted a methodology that had actually been developed first by the International Energy Agency looking at making an assumption that the EU power market moves towards greater harmonisation and greater liberalisation. So those figures are based on what the EU would look like if it actually resembled in a lot of ways what the UK is today. So, no, it was not differentiated by each Member State, it was more predicated on an assumption towards convergence of the realised power markets.

Q392 Chairman: Would it be a valid calculation simply to prorate the existing share of the cake between various Member States and to apply that to these figures, and if we could calculate then what the UK bid was?

Mr Donovan: Based upon their electricity sales, yes.
Chairman: Thank you very much. Greg Barker.

Q393 Gregory Barker: Mr Donovan, in your memo you make the point that for Emissions Trading to work the supply of allowances must be the result of real investment in genuine emissions reductions. Will this really be the case in Phase 1 or will the targets, such as they, be achieved through old “hot air” surpluses or very low cost fuel switching in the power sector?

Mr Donovan: There is an issue that we need to learn how to get around, and that is this issue of what ends up happening, a bit of a race to the bottom in terms of allocation. We are definitely going to see in some countries over allocation, and that is beyond what is expected in their business-as-usual. The argument that might be raised is what is business-as-usual? So it is very difficult to pinpoint over allocation in any one country. But our expectation is that depending upon the rate of economic growth across the EU we are looking at somewhere between five and 50 million tonnes of demand. Some of the supply to meet that demand certainly will be the result of a surplus of allowances within some industries within some countries.

Q394 Gregory Barker: Are there any particular industries or particular countries that stand out?

Mr Donovan: I will be quite honest with you, one would have to be as of this afternoon an expert in the process of National Allocation Plans and where they sit with the Commission and what has been approved, and I cannot put myself forward as an expert in that regard.

Q395 Gregory Barker: In terms of how real the market in carbon trading is likely to be, you have thrown some figures around but what is it likely to be its size in terms of trades and value? I am thinking here relative to the side of the other financial markets in the City of London.

Mr Donovan: If I can defer that question?

Q396 Gregory Barker: Yes

Mr Redshaw: We have been thinking about this question as well and we draw a parallel with other trading markets and the trading market for UK power, UK gas, potentially international oil, typically the financial markets trade a multiple of the underlying delivered volume, so we would expect to see a multiple of two to three times the underlying volume being traded through the markets that people buy and sell in and speculate in, et cetera. So if we draw a parallel between the EU Emissions Market, which has a value of around 14 billion Euros, so a two billion tonne allocation at current price of around seven Euros, giving 14 billion Euros per year total value of the underlying commodity, and multiply that by two or three times then we end up with a market that is as big as 45 billion Euros per year.

Q397 Gregory Barker: How does that compare to other commercial markets?

Mr Redshaw: Completely comparable. Other energy commodity markets?

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Q398 Gregory Barker: Yes.

Mr Redshaw: Those are the parallels we have drawn. So we can actually compare—because the size of the UK electricity market is approximately 14 billion Euros, so those two markets are the same size and they both trade this multiple two or three times.

Mr Dawson: Although the carbon market has some way to go before it trades two to three times.

Q399 Chairman: We are delighted you are here, of course, but you are here because, as you say, your team is at the forefront of development in the wholesale market in emissions allowances in the EU. How many staff do you have dedicated to this work?

Mr Redshaw: Dedicated to the cause we have three staff at present; that includes myself, Paul Dawson and one other. To man a trading desk it probably only really requires one person, so that shows our commitment to this process. We have a further 20 to 30 in the commodities sales team who generalise with the commodities that they are salesmen for and so our capabilities extend beyond the immediate trading desk.

Q400 Gregory Barker: The recent IEA report on the impact of the EU ETS on international competitiveness suggests that the impacts will be relatively small and manageable. How do you square that with the somewhat very vociferous complaints that we have had about this from British companies?

Mr Donovan: There are two sources of cost for industry in the UK and that will be these direct costs of dealing with their own carbon caps and then these indirect costs, they are sometimes termed, of dealing with changes in energy prices. I cannot speak for the people who are making claims that there will be problems but our own analysis leads us to believe that it is the indirect costs, the changes in the energy prices, that will have a bit of a bite on industry and that will actually be several times the problem of dealing with their individual installation level carbon caps. So I am sympathetic to the concerns raised by them but I think that they also need to be clearly delineated: where are those extra costs arising from and what scope do those industries have to pass through those costs to their consumers in the relevant product market?

Q401 Gregory Barker: What is your conclusion to those questions?

Mr Donovan: My conclusion is that you would have to be one heck of an analyst to understand the dynamics of all of the industries that are included in the EU ETS and I think for that reason we are actually embarking on a bit of an experiment here because the coverage of this scheme is much wider than anything that has been tried before. So my conclusion is that there are actually a number of options available to industries to mitigate this risk but that, yes, indeed there will be risk that will arise.

Q402 Gregory Barker: Would you be more concerned if there were tougher targets for Phase 2? You seem relatively comfortable that industry can cope—you are not unduly concerned.

Mr Donovan: I am very comfortable that smart companies within those industries can cope, yes.

Q403 Gregory Barker: What impact do you think having a tougher target for Phase 2 would have?

Mr Donovan: It really depends upon the amount of time that industry is given to adjust to it. If we are looking at a low carbon economy and that is the path that we want to put ourselves on, the question becomes what is the rate of change at which industries can begin to adapt to that and to make new investments in order to do that in a way that does not hinder their competitiveness.

Q404 Gregory Barker: What do you think would be a reasonable timescale for a 20% carbon reduction?

Mr Donovan: 20% from what levels?

Q405 Gregory Barker: Phase 2.

Mr Redshaw: From pre-Kyoto levels?

Q406 Gregory Barker: Do you think that the 20% carbon reduction target would penalise British industry too much, if you put that into Phase 2, or is that something that is achievable? I am trying to get a feeling for what could be achieved within the current parameters and the targets that are being laid down without unduly penalising British industry?

Mr Dawson: Is that the 20% reduction target by 2010 that you are referring to?

Q407 Gregory Barker: Yes.

Mr Dawson: I forget the exact figures but I think the UK is already on course for a 15 or 16% reduction, so the increment is there and is significant but I perhaps would not go as far as saying it is perfectly and easily achievable, but as far as away as the 20% headline might indicate.

Mr Redshaw: Certainly with Spain and Portugal missing their Kyoto targets by such a large margin we have less work to do than other countries.

Q408 Gregory Barker: You have also hinted at this in the course of your remarks already, but do you accept that Emissions Trading will only work if it actually results in real price increases—and I think you have said as much? In other words you cannot move towards a sustainable energy policy based on cheap fossil fuels unless energy prices fully reflect the full environmental costs inherent in them?

Mr Donovan: I do not think we should simplify it in the sense that sustainable energy in the future means high carbon prices. There are a number of opportunities available both within industry that is obligated within the EU ETS, but outside of the sectors that are currently obligated to reduce emissions and I do not believe that there is a direct relationship between high carbon prices and a sustainable energy future. I think we would be much better off with effective implementation of

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the EU ETS at low carbon prices to stimulate the kind of investments that we want to see than trying to move aggressively to higher prices and really not get the kind of results that we are after.

Q409 Gregory Barker: Do you not require higher fossil fuel prices in order to make other forms of energy generation more viable, that cannot compete with low cost fossil fuels?

Mr Dawson: The price to some extent is an output of this process. The overriding need is to reduce carbon emissions and the price will be whatever it is consistent with reducing emissions to that target.

Q410 Gregory Barker: But the price will dictate investment.

Mr Dawson: And the price will dictate investment, but having set a certain level of carbon reductions you will get the level of investment required to achieve higher level of reduction. So the driver here is how much carbon do you want to reduce and by when, and you have to make that consistent, as Charlie has pointed out, with a sustainable—

Q411 Gregory Barker: Does that follow, if you set the target you get the investment?

Mr Dawson: You are capping emissions. You are limiting the amount of carbon that can be emitted from the sectors from countries covered by the Emissions Trading Scheme.

Mr Donovan: I think the issue that you are picking up on is how do we get investment, and that is actually for an issue that may be, yes, if you set a cap you will get that—as long as those caps are enforced you will get that reduction, however that occurs. But if we are talking about now starting to replace the capital stock that we have in this economy with less carbon intensive forms of it then we do need new investment and that is where this long-term price signal has to be believed and also acted upon by industries. That is a different challenge from just meeting one year's carbon caps; that is how do we stimulate investment over a long period of time, 20, 30 years, while we currently have a scheme that is only giving visibility three years out?

Q412 Gregory Barker: So how do you?

Mr Donovan: The way to do it, in my opinion, would be to try to set a price signal that goes out that far. The natural issue you are going to have is that we cannot contain industry—the free movement of capital and all of that around the world. We have to realistically deal with the fact that if companies thought there was a structural change in the UK energy market, that it was going to be much more expensive to operate here, they may in fact do things that would lead to less employment, would lead to less value added in the UK. So we have these twin objectives: one is to give this long-term certainty, and, second, to keep people investing in the domestic economy where those regulations are going to be placed, and that is a very difficult challenge.

Q413 Gregory Barker: But can you give that long-term certainty in terms of price in a free market?

Mr Redshaw: You cannot give that long-term certainty today because the Phase 1 of the EU ETS runs for three years, Phase 2 is running in parallel with Kyoto which is only another five years, which gives you an eight-year investment time rise, which simply is not long enough. I saw a presentation by an oil major recently and they said that Phase 1 of the EU ETS, so we are going to identify a project, we are going to design a project which is going to reduce CO₂ emissions and we are going to get the health and safety checked out, we are going to get planning permission for that project, we are going to finance the project, we are going to build the project and Phase 1 is already over three years later.

Q414 Gregory Barker: But people do not honestly believe that ETS will just collapse and go away, or are there real—

Mr Redshaw: You need the rules. If you do not know how much you are going to have to reduce you will just wait because otherwise if you do not know how the allocation methodology is going to work in Phase 2 you are actually incentivised to pollute more today potentially.

Q415 Gregory Barker: So why are these rules not being set down?

Mr Redshaw: That is for you guys and the Commission to sort out.

Chairman: As Chairman I must point out it is not for our Committee, it is indeed for her Majesty's government! Joan Walley.

Joan Walley: Thank you, Chair. On that happy note, I think it is very interesting when we are talking about the EU ETS scheme and how it is working because my initial question to you was how do we move from Phase 1 to Phase 2? And in a way the implication behind that was that Phase 2 was going to give us some kind of long-term direction and pointers that would give the stability and the certainty that would then inform the kind of investment decisions that are needed by industry in the UK. But in view of what you have just said, you seem to be saying that even Phase 2, which goes up to 2012, is nowhere near medium or long-term enough to be able to give the clear indicators about what is needed. I would welcome if both Barclays and Mr Donovan could comment on that. In terms of the competence of the parties and where it is all at, what kind of timescale should we be looking at?

Q416 Chairman: In doing so, please try to avoid going into too much detail about post 2012 arrangements because we want to talk about those later.

Mr Redshaw: Let us say that if the government in an uncompetitive electricity market said, "I want someone to build me a 1,000 megawatt power station but I am only going to buy the output from you for five years and after five years I am not committing to buy that output either way," so the person building that power station says, "If I have to

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pay back all of my costs over five years then I am going to charge an awful lot for that electricity.” Now, in a competitive market you cannot do that because you can only charge what the market will bear. Modern power stations are built with 15-year financing, so a payback over 15 years, and in reality some are not expected to make that money back until the sixteenth year onwards because power plants tend to last for 25 years and, in some instances, very much longer. So if a power station investment time rise is 15 years then something that goes on the back of the power station, either to make it more efficient or to sequester to CO₂ or to do whatever, to reduce the CO₂ emissions, should be considered on a 15-year time rising also. Again, the reality of a power station is it last 25 years plus so maybe that time rising should be 25 years. Every power station developer today knows that people will be consuming electricity in the future, so knows that there is a high probability for a market for the electricity they produce. So the longer the better, because the longer-term the cheaper the reduction, just like the longer-term achievement of electricity.

Q417 Joan Walley: Moving on now and looking at the long-term to the extent to which not ever sector is covered by Phase 1 of the European scheme—and this question is more to Barclays Capital, although I would be interested in Mr Donovan’s comments as well—I think that Barclays Capital suggests in the evidence you have given to us that it should be extended in Phase 2 to aviation, the domestic sector and transport *per se*. Would there need to be any transitional arrangements for that and do you think that by doing that, by bringing in these extra sectors there will be some instability into what is being attempted to be set up at the moment through Phase 1?

Mr Dawson: I do not think it would introduce any instability into Phase 1. I think the crucial thing is to try to get some agreement sooner rather than later on possible extensions to the scheme because I think there will be some work to do to bring these sectors in, not least on the requirement to monitor and verify the emissions from those sectors and work out exactly where the point of compliance is, and whether that is on the fuel suppliers or the airlines and the like. Notwithstanding that, I think that is feasible. You have to remember that the EU ETS was only put in place over a very short period of time—a matter of a year, 18 months. So I think that can be done.

Q418 Joan Walley: How easy do you think it is going to be to get everyone signed up to extend it to aviation because aviation seems to be the one particular sector where there is a lot of concern?

Mr Redshaw: I am not sure how much choice was given to the power section in the EU ETS—they were told they had to do it. Getting people signed up to it—it is not a voluntary agreement; if the governments decide to include a sector then that sector must be included.

Mr Dawson: I think it is inherently difficult because as soon as you include a sector part of the discussions and disagreements over allocations is, “Why I am making this reduction when they are not constrained at all?” Whether that is a different sector or a different sector or different country outside of the EU. So I think every time you try to bring a new sector or a new country in there will be disagreement, but, as Louis says, the more you bring in the better and the greater the opportunity to achieve the reductions at least cost to everybody.

Q419 Joan Walley: Given the exchange you had earlier with Mr Challen about the issue of windfall profits, what about a scenario whereby, for example, British Airways have argued that if aviation is included then their allocation should be taken into account for future growth. So effectively we would be issuing them with the possibility of windfall profits, and at the same time would that not be destabilising?

Mr Dawson: I think there are two things. One is that there should be an overall cap on emissions that is consistent with the Kyoto target of Phase 2 and within that overall cap you just have a fixed sum of allowances. If you are giving more to the aviation sector you are giving less to other sectors and it is a matter for government to decide where that pain should be borne.

Mr Redshaw: The important thing to point out, the reason we mention the inclusion of other sectors is to increase the efficiency of the system. So that if an airline—and let us say the price of CO₂ allowances gets to 15 Euros—can make a reduction of CO₂ for 15 Euros that the electricity sector cannot, then the airline will do so. The more people that you include in a trading scheme the more opportunities there are to reduce at various different prices and of course the lowest cost reduction will get done first and the highest last. If you had a bunch of sectors that have an average price reduction at this level and you do not include sectors that have an average price reduction down here then you have actually cost the economy more money than it needs to spend making these guys reduce when you could have made these guys reduce and bring everyone down to this level.

Q420 Joan Walley: It is a question of how you get a level playing field, if everybody is contributing fairly and equitably.

Mr Redshaw: Yes.

Q421 Joan Walley: Can I ask you as well about extending the scheme and if you have comments about extending it to other greenhouse gases—we have really just been talking about carbon—what would be the implications of that?

Mr Donovan: We have seen in a couple of situations now where the non-CO₂ gases, the cost of reducing those gases is really quite diverse, and so you have seen incidences, particularly in the emerging CDM market, where reductions have been made in HFCs at very, very low cost; and there are instances where it is actually much more expensive, so we are not seeing perhaps renewable energy projects come

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through in the developing countries that was in fact part of the objective of the CDM. So wider coverage and more gases in some sense is a good idea because you get more opportunities and you get more gasses, but we also know that the costs of reducing all of those now we have just made a much bigger pool and we may end up resetting the supply and demand equation, and where that comes out we want to make sure that that is consistent. So there has to be thinking that it is not just a positive in terms of bringing in, we have to know that economists use this marginal cost of abatement, and there is a marginal cost of abatement for greenhouse gasses across all of those different sectors, across all of the different countries, across all of the different types of greenhouse gases, and some thinking needs to go into at what point and how do you bring in those types of sectors, gases and countries into a trading scheme?

Mr Redshaw: Just to expand on that a little further. Our view, like with increasing the sectors that are covered, is to increase the gases that are included because the more opportunities you have to reduce, again the more efficient the reduction that can take place. What I am reading from Charlie's evidence there is that if you suddenly introduce a new gas into the Trading Scheme that has a very low cost abatement you will send out a price signal—in fact you will drop the price of CO₂ allowances which will cause an aberration. So these things need to be done carefully. An example would be methane capture. In the UK you have to capture the methane from a landfill gas site and flare it, and methane per tonne has a global warming potential of 21 times that of CO₂. In other countries—I am not certain how it works across the EU—of the world there is no legislation for the capture of that gas, so you have a slightly un-level playing field already with one country potentially making money out of capturing gas when another country has to do it already through legislation. So there are some potential distortions, so it needs to be done with some consideration of the full picture.

Mr Donovan: I really believe that Emissions Trading is a very, very powerful tool for what we are trying to do, but that does not preclude the possibility that dealing with some greenhouse gases may be better done through traditional forms of regulation.

Q422 Joan Walley: I am exploring the European Union Emissions Trading Scheme just that little bit further. Do you think that there could be other key improvements in what comes out at the stage of Phase 2? What sort of changes do you think would be helpful to see in there?

Mr Dawson: I think it would help to have a more streamlined and common approach to the determination of the National Allocation Plans, and I think it would be good to get those agreed sooner rather than later. Inevitably when the scheme was being introduced over such a short timescale there was always going to be delays in putting the Plans together and getting those agreed. I think having done that once I would certainly hope that Member State governments and the Commission could

curtail and streamline the process for agreeing the Plans the next time around, and I think a common allocation methodology in terms of allocating the allowances between sectors would be hugely valuable.

Mr Redshaw: And common ways of treating new entrances and common rules for closure of plant across the whole of the EU.

Q423 Joan Walley: Common laws of?

Mr Redshaw: Of closure, the definition of closure of a plant. So in Germany, for example, you could close an inefficient coal fired power station on one site in one part of Germany and the same company could open another power station in another part of Germany that is a clean gas fired power station. They can transfer the allowances from one to the other and actually make a profit out of being cleaner. The UK, if you close your power station you lose allowances and walk away and if you open another gas fired power station then you would get an allocation from a new entrant reserve, which per megawatt hour produced by a power station would be lower than you would have got from a coal station. So in Germany you have a bigger incentive to be cleaner than you have in the UK in that instance.

Q424 Joan Walley: Which could well be uncompetitive as well.

Mr Redshaw: Because the compartmentalisation of electricity markets it is difficult to say if there would be any competition issues as such, but it would certainly be a more level playing field if those rules were common.

Q425 Joan Walley: None of you have mentioned about the possible use of greater use of auctioning or having a single European-wide emissions cap. Not important?

Mr Redshaw: I guess they are attempting to achieve the same objective. A single auction would undo the good work that has been done, giving free allocations to companies that are facing international competition. A single cap for the EU would have to be sub-divided into companies and countries nonetheless.

Mr Dawson: And unlike Phase 1 of the scheme Phase 2 takes place in the context of the first Kyoto commitment period, where country targets are already determined. So it becomes a lot easier to crosscheck the National Allocation Plan against the Kyoto target rather than arguing about whether or not you are on the path in three years' time to the Kyoto target.

Q426 Joan Walley: Having said that, you are not saying that Phase 2 is already set in stone and there is not any flexibility or changes that can be made moving from Phase 1 to Phase 2?

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Mr Dawson: I think that is true, but I do not think—

Q427 Joan Walley: You think it is set in stone?

Mr Dawson: I do not think it is set in stone but I think there is less flexibility in Phase 2 because of the Kyoto commitment.

Q428 Joan Walley: So we are set on the track that we are going down?

Mr Redshaw: If a country objects to that or is not particularly happy about the Kyoto target they have signed up to—and one is—then the further socialisation of that would be unpopular in one and popular in another.

Q429 Joan Walley: I am sorry, which country were you referring to?

Mr Redshaw: There are countries that have gone past their CO₂ emission limit by quite a large amount—Greece, Portugal, Spain, Ireland—and there are countries that have got very close to their emission reductions, such as Germany and the UK, and to then turn around and ask those countries to make further reductions is probably rather problematic, having negotiated the reductions that are already being met, and in the case of Portugal and Spain they have actually negotiated increases under their Kyoto target.

Q430 Mr Savidge: Joan's line of questioning has been basically talking about Phase 2 and I would like you to look beyond 2012 and picking up one of the questions Joan has asked. With the Barclays' Blueprint you are talking in terms of including air and road transport, commercial and domestic sectors and therefore almost creating a situation where other policy instruments might be redundant if everything would depend on international ETS. I wondered whether you think that we need more evidence of Emissions Trading working before we can go quite that far?

Mr Dawson: I think it is an interesting perspective because I maybe see it from the other end of the barrel. Many of the difficulties associated with Emissions Trading as it is currently being implemented are associated to some extent with Emissions Trading not going far enough. It is not including other sectors, so some sectors are saying, "Why are we getting a reduction target when transport"—as a classic example—"is allowed to go on increasing its emissions unmitigated?" Part of the problem with ensuring Kyoto ratification has been that some countries—one in particular—deciding not to accept an emissions target when other countries are not going to mitigate their emissions. I think the arguments tend to be on who gets what and to some extent that is inevitable, but I do not think that that undermines the theoretical purity of Emissions Trading, which is that it has an absolute cap on emissions. You know what the reduction in emissions is going to be and you let people trade and it delivers that reduction at the least cost. Many of the so-called difficulties of Emissions Trading are either associated with arguing about who bears that burden or associated with any form of scheme to

reduce emissions. The classic example would be the monitoring and verification. Any scheme of emissions reduction must monitor what emissions are reduced by whom, and that is as much the case for Emissions Trading as any other form of global reduction. So I think more ambitious plans to introduce Emissions Trading would improve things immeasurably and remove a lot of the current disagreements.

Mr Redshaw: And making it truly international removes even more problems, in that we talked earlier about the UK government giving 100% allocation to companies that are competing on the international arena. If every country in the world is facing the same cost production of CO₂ as every other company you are in a situation where you have a completely level playing field. At the moment all companies that consume oil pay the same price for oil and therefore there is no competitive distortion because of different oil prices because everyone pays the same price. If that cost is then increased by forcing companies to pay for their CO₂ as well, but on an equitable basis across the whole world, then you have a level playing field.

Q431 Mr Savidge: Charles, would you like to comment further on this issue of the idea of an international Emissions Trading System as *the* all-encompassing policy instrument, because you spoke in your submission about a wider range of policies and you have already mentioned the possibility of the need for regulation in relation to greenhouse gases, but I wondered if there were other policies also that you felt ought to be used?

Mr Donovan: The most important thing for me—and while it is enjoyable to try to explain all of the fine details about what is going to happen in the next few years—we have a massive, massive undertaking ahead of us, and that is where the focus should be just as much as on some of these details we have gone over in probably excruciating detail today. So in terms of looking at the long-term, Emissions Trading is just one tool and I think the thing that I tried to highlight in my memo was, yes, the policies that we have in place now need to be implemented effectively, and that is the very first thing that we could do with any kind of leadership that would arise from the Presidencies of the G8 and the EU. But the other—and really responding to your question directly about long-term—we need a massive undertaking in social and technological research in order to get to the kind of goals that we are talking about, and it is not going to be sufficient to play around at the margin with some of the rules of the scheme as we currently know it. That one instrument—it would be impossible to deliver the kind of investment that we are talking about, simply using one policy tool; it is a fallacy to think that we could rely so heavily on one instrument. So there is a mix of things. But I think as the paper that Barclays drew up pointed out very, very accurately, Emissions Trading could be the lead in that and if you bring everything under that umbrella you start to have a fairly coherent vision of one of the major pieces that could help deliver.

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Q432 Mr Savidge: An International ETS system will be immensely administratively complex and costly. Is there a natural geographical limit to the scale on which an ETS can work, and beyond which it will become too complex or insufficiently efficient to operate? I ask that generally.

Mr Redshaw: We are in an international Emissions Trading Scheme right now with the EU ETS. You talk about it being costly but any system whereby you have to monitor and verify emissions, be it for taxation purposes or for any other compliance obligations put on companies, the cost of that verification is going to be the same, and the additional cost of Trading Emissions versus being taxed is nominal. We do not believe that the geographical constraints exist either. If the US, for example, would accept a cap on their emissions that was similar to the EU's and therefore would allow the two systems to operate together, it would be simplicity itself. There is nothing to stop me having an office in Bermuda and trading emissions on behalf of customers with the aid of electronic platforms, et cetera. I guess the difficulty comes with verification of emissions, but so long as you have—as we have highlighted in our blueprint—audited emissions from companies and governments underwriting their companies' emissions you avoid companies cheating and you put countries on the hook and so avoid countries cheating, and I imagine the electronic nature of trading means that the administrative burden is actually very small.

Chairman: We have to go and take part in a division; I am sorry about that. I think there will only be one, so if you could bear with us until just around 5 o'clock. We should be back within the next five minutes or so, and we can then carry on.

The Committee suspended from

4.35 pm to 4.43 pm for a division in the House

Chairman: We can now start again.

Q433 Mr Savidge: As we were saying before we were interrupted, your Emissions Trading System you suggest expanding it to expand the EU ETS. Might it be more feasible to think in terms of linking the EU system to other trading systems like the one in US and Canada and so on? Might that be the more practical approach for seeking a single worldwide trading system? Again, perhaps you would like to say something about how feasible you think it would be to get a single worldwide trading system at all?

Mr Dawson: In terms of an extension of the ETS we were talking much more in terms of extending the concept of the ETS and that would require a global agreement, rather than extending the ETS in and of itself: ie trying to agree an international scheme that looked relevantly similar. I think that carries over to consideration of linking to other schemes. I think that the key element of an effective Emissions Trading Scheme is that there is an absolute cap on emissions and the ability to trade those emissions to meet that cap. I think the problem with some of the other so-called Emissions Trading Schemes is that they include relative caps on emissions where credit is given for emitting less than a certain established baseline, where that baseline typically is still

upwards and emissions continue to grow. I think you see that within the project-based credits under the Kyoto Protocol and the CDM-JI. I do not know too much about the Canadian scheme—I think Louis can talk a bit more about that. I think unless they have that inherent cap and trade—absolute cap, not a relative cap—then it becomes very difficult to link into a scheme like the EU's. The danger is that you allow credits to be given a common currency within the EU when they are achieved in economies and countries where emissions are actually continuing to grow, and you are thereby devaluing the absolute reduction of emissions that you are achieving through the cap.

Mr Redshaw: So absolutely, linking of any trading scheme to the EU ETS is desirable because it broadens the scope and increases the opportunity to reduce at a lower cost. The Norwegians are actively seeking to link their scheme to the EU scheme—of course they are not part of the EU. The trouble with the current American scheme is that it is a voluntary scheme and emission credits over there trade for between half a dollar and a dollar. It is voluntary; there is no price signal. If the price in a voluntary scheme got high people will just walk away from it. In the EU scheme if the price gets higher people have to pay more for it because they have to comply—there is a finite supply of emissions allowances. So there is no prospect at all of linking with the existing US trading scheme—and it is not a US trading scheme, it is actually a group of companies that have got together and put this thing together. There is also no prospect, in our view, of a link with the Canadian scheme, for the reasons that Paul has highlighted, but, in addition, the Canadian government intends to cap the cost of CO₂ at 15 Canadian dollars, which is around eight or nine Euros. That means that you could not have the EU scheme working hand in hand with the Canadian scheme because if the going gets tough Canadian companies can go and buy allowances from their government, essentially, and, okay, so there is a potential gateway to stop the allowances going into the EU. But if the allowance price in the EU is 12 Euros European companies cannot buy Canadian allowances to meet their requirement; but if the price is lower in the EU, say six Euros, then Canadian companies can buy EU allowances and comply with their obligations with those EU allowances. These are some of the ideas that have been floating around. Which means actually that you are going to drive the price of the EU allowances up for European companies because there is no two-way street. The chance of linking with those are extremely slim until those schemes are designed so that they are comparable to the EU scheme. We will definitely encourage that linkage but there are hurdles that need to be overcome before it can ever happen.

Q434 Mr Savidge: You suggest using a potential finance tariff levied against non-participating countries as a way of encouraging compliance. Do you feel that a similar measure might be appropriate in the short-term as far as addressing competitiveness issues are concerned?

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Mr Redshaw: What it does is give that level playing field that everybody is looking for and actually incentivises, because if you have a country that is facing, as, say, the US is facing an import duty into the EU, that company not only is competing on a level playing field with EU companies but actually back at home their costs are probably higher because they are potentially less efficient. So what that does is to incentivise those companies to push for Emissions Trading within their own countries and those countries then to adopt Emissions Trading in order that there is a truly level playing field for those countries that do not have emissions caps. So it is a highly complex subject; you could not just slap a tariff on imports of certain goods: (a) you have to work out what the what the CO₂ intensity of that good is, which is no simple feat—the CO₂ intensity will vary from one country to another and one factory to another within that country—and (b) of course you have the issue of the WDO.

Q435 Mr Challen: This is to Mr Dawson and Mr Redshaw. You say on page 5 of your document, which Mr Savidge has described as the “Barclays’ Blueprint”, that “The agreement on a common per capita allowance in 2062 represents a ‘fair’ ultimate allocation of allowances,” which sounds to me like you are moving towards a Contraction and Convergence model, as put forward by the Global Commons Institute; I do not know if you are familiar with that?

Mr Redshaw: Yes.

Q436 Mr Challen: Does that represent the corporate view of Barclays Capital or the corporate view of the Barclays’ group of companies? To what extent has that view been accepted within the organisation?

Mr Dawson: I think we were using that as an example of an approach that might be used as opposed to proposing it as a Barclays’ view. Clearly it is one way in which you could envisage reaching some form of consensus on who should ultimately get the rights on that carbon dioxide. I think in trying to propose an international scheme we were looking for a benchmark that might prove acceptable, and at some future date, obviously.

Q437 Mr Challen: From your knowledge of Barclays as a whole do you think that such views would be welcome or acceptable?

Mr Dawson: I think Barclays is very committed to its environmental responsibilities. I cannot say that that position is Barclays’ position but I know that Barclays has a strong commitment to environmental matters.

Mr Redshaw: In terms of efficiency of trading there will be minor impacts on the cost of metals production in Europe and on the cost of refining oil products. To the extent that there is a truly level playing field for international commodity trading, certainly from the commodities desks’ perspective the fewer distortions the better.

Q438 Chairman: Can I pursue that a little further? We have a document here, Barclays Capital Memorandum, with Barclays’ logo on every page. Are we to assume that these are some personal opinions from you two and not an official document submitted by Barclays?

Mr Redshaw: The way we approached this is we were asked to submit evidence and we sat down—Paul is an economist and I am a trader—and we attempted to determine what would iron out the problems as we see them with the current EU ETS and the Kyoto mechanisms, and if you want to satisfy the requirements of, say, the United States, who insist on developing countries being included in the trading scheme, and the developing countries saying, “Why should we be in it if the US are not in it?” and if you want to satisfy what we would perceive as just fairness, you come out with the solution that we have.

Q439 Chairman: You make a very compelling case and your document is extremely helpful and, if I may say so, extremely well written. I just think it might be helpful to all concerned if the whole might of the Barclays machine got behind this agenda and started talking to the government about it and to the EU and to the US. You have that kind of power to do that.

Mr Dawson: We are here representing Barclays. You have correctly pointed out that the document has Barclays written on it and we have agreed its contents with our colleagues.

Q440 Chairman: You are beginning to sound like a politician!

Mr Dawson: With respect to the Contraction and Convergence thing, that was used as an illustration rather than us advocating that necessarily. Clearly it has consequences that can prove contentious.

Mr Redshaw: Contraction and Convergence ideas are not completely parallel with ours and the first one is contraction. We do not suggest quite how the world or countries achieve and what objective they are looking for, we are saying that if you want to have an emissions reduction an efficient way to achieve that would be to have a convergence. But to say that we should have contraction in the first year is perhaps not seeing the full picture. The key here is inclusion of as many countries as possible and potentially some other mechanisms to incentivise that inclusion. It would not be a sensible negotiating standpoint for the UK government or for Barclays Capital to stand on a soap box and say that the US should reduce its emissions by half overnight because that simply will not happen because (a) the US will refuse to do so, and (b) it would have such ramifications on their economy that the world would suffer. What needs to happen is that there is a very long-term certainty for all countries and companies within those countries that CO₂ is going to become a cost of production like oil and coal and gas is today, and that with that information companies can make informed investment decisions and other companies will innovate with new technologies. The reason that the fuel efficiency of the of the transport,

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the vehicle fleet in the UK, Japan and Europe is much more efficient than the US is because of cost—the cost of fuel is much higher over here, and technical directions come on the back of that.

Q441 Chairman: Can I quickly ask you about the CDM arrangements—and we touched on them very briefly earlier? How do you view the CDM as a mechanism to promote financial investment in less developed countries?

Mr Redshaw: It is a positive development because it does encourage some investment in developing countries. You cannot argue with that because that investment is taking place right now, and Charlie has some examples. But the blueprint that we put together actually solves all of what we see as the inherent problems with the CDM mechanism. The first point was Paul's earlier, that the CDM is a relative reduction not an absolute reduction, and so you can go and build the most dirty, polluting lignite fire and coal fired power station in one corner of the country and then do a highly efficient project in another corner—

Q442 Chairman: And collect the difference, as it were?

Mr Redshaw: The dirty one pays nothing and the clean one makes some money. The other problems with CDM are the additionality rule whereby you have to prove that you are doing something above and beyond what you would have done normally, and you have the Executive Board who register the projects and issue the CDM certificates, the CERs. There is a bottleneck with that Executive Board and there is a problem with proving additionality. If you put a cap on developing countries as much as you put a cap on developed countries you take away that bottleneck. The methodologies are useful and can be used as benchmarks and the Executive Board can help the process, but if you put the allocation responsibility on the government of the country and if they have made a project that is more efficient than business-as-usual, then the government is in a position to allocate allowances to that project, and that project can then determine what it wants to do with those allowances. Our blueprint suggests that developing countries have an increasing cap and developed countries have a decreasing cap and that allocation would come from that cap that is given to that country, and it bypasses all of those problems.

Q443 Chairman: Do you have some examples, Mr Donovan, of some of the projects that are being invested in?

Mr Donovan: Yes, we have been involved in a number of CDM projects. In the large majority we have seen very, very important developments come from them, both in investment in a country that needs it, but perhaps a bit more selfishly for the UK really motivating some people to go out and do the kinds of projects that simply three years ago if you told someone there was an interesting renewable energy opportunity in Vietnam they would have considered that to be way off their radar screen in terms of the kind of things that they want to do. So

we have created a UK industry that can capitalise upon that and that is a legitimate benefit we are seeing, that now we have a best of class, a leading global industry that wants to go out and do these kinds of projects. Now, whether we are getting the right kind of emissions benefit out of it is probably a separate issue but I do think that there are a number of examples where you are seeing a sustainable development occurring through the CDM, but let us not forget that the CDM was intended to do that and not just be a source of cheap emission reductions.

Q444 Chairman: If we can attempt not to try your patience overmuch it might be helpful to have a very short supplementary memorandum from you on precisely that point, setting out some of the projects you have been involved with and the benefits that you have perceived there. Would that be possible?

Mr Donovan: What I would propose to you is that through the London Climate Change Services Group there are a number of organisations that are involved in developing these projects and I would be happy to canvass them and ask them to put something together to address that exact issue.

Chairman: Thank you very much indeed. Simon Thomas.

Q445 Mr Thomas: Just to conclude—and I apologise for missing the beginning of your evidence session, but it has been fascinating—I would like to invite you to come even further towards the political side, as this is a year in which the government has two key leadership roles within the EU and the G8. What specific priorities and objectives would you like to see the government set up for 2005, looking to the future, as you have sketched out in both your documents?

Mr Donovan: There are three points that I would advocate. One is to have recognition of the economic benefits of what we have done already, that this is a powerful tool for a number of reasons, not least of which it is bringing benefits into the UK and we want to keep on it and preserve it. The second though is that we really need to urgently address some of these fairness concerns that have been raised by you and by my colleagues here. They are potentially detrimental to the success of the scheme; if those are not ironed out we are looking at a problem down the road. The problem that we are looking at, for example, with over allocation in the EU is the same exact problem that we are looking at with international emissions trading—how do we get people with one big leap to all move forward together and not seek to take some profit opportunity by doing the least amount possible? So the leadership opportunity is to say that it is inexcusable not to step with us. Now, maybe the steps are larger for some people than they are for others but everybody needs to step together. The last one is this idea of a durable long-term strategy and that is where, as I had said previously, we are talking about a massive, massive undertaking that is not just about funding projects and doing all that but convincing people that there is a 21st century project that we have to get on with and that all levels of

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society support doing that, and that is probably the hardest point because we need to go beyond just this group of people who have chosen to inform themselves, but to people who are consumers of energy and really get them to feel that there is a reason that we have to solve the climate change issue. So those would be the three issues I would say would be come up in that long-term strategy.

Q446 Mr Thomas: And Barclays, would you agree?
Mr Redshaw: Absolutely and in the Presidency of the EU, more specifically, is to get Phase 2 organised now. There is no reason not to have this sorted out. Any problems that have come about now in Phase 1 were foreseen in 2004. I think that we can get certainty very quickly if the push comes from the right sources. So a continuation of that—sorting out post-2012 and that is probably the key push for Tony in the G8. The blueprint that we put together gives the opportunity to have a fresh dialogue perhaps. Clearly there are many other ideas out there—ours is just one of them—but the political will is there and the public will is there, and there must be political will otherwise we would not have got to Kyoto in the first instance. So, yes, we have problems with Kyoto, but it does not include developed countries and it does not include the US and it has no prospect of doing so in the near future, and a fresh dialogue that takes a practical look at a global solution we think would be a useful thing to push for.

Q447 Mr Thomas: And in terms of that fresh dialogue and particularly the question of fairness and equity—although you may not want to use the words Contraction and Convergence—how important is it, would you say, that the Prime Minister actually talks about those principles during this year?

Mr Dawson: I think the benefits of Kyoto and the EU scheme represent massive achievements currently, but they are only a partial solution to a global problem. If you follow them to their logical conclusion you have to have a global solution and that global solution has to be all nations accepting their responsibilities to reduce carbon dioxide.

Q448 Mr Thomas: From your perspective, if there was one thing that we could this year that would get the US on board, what would that be? If there is anything indeed of course.

Mr Dawson: Getting them on board from when? I think talking post-2012 I would be perhaps unwisely optimistic about moving beyond Kyoto and trying to work out a broader consensus. I think getting them on board before then is a much trickier problem.

Mr Redshaw: The public in the US, I spoke to one of Senator McCain's aides at COP10 in Buenos Aires last year and I asked the same question, and he said that 75% of the US public not only agreed that there is an issue of global warming but that actually something should be done about it. It obviously was not at the top of their agenda in the recent election but the majority of global warming science comes

out of the US and most people believe in it—and I am sure even George does really. The key would be to give them something that was palatable. If you take SO₂ trading, the very first emissions trading market in the world came out of the US and if you listen to the Environmental Agency equivalent in the States, when they talk about SO₂ trading they say that it was way more successful than they first anticipated. They had a lot of objection to it in the first stages; people abated the emissions of SO₂ in ways that had not been envisaged before the trading scheme started. The economic cost was much lower than anticipated; the trading was much greater than anticipated, and the benefits to health measured in dollars were also much greater than anticipated; and then the US does not trade CO₂—so it is at odds with that policy.

Mr Donovan: I think the only problem in drawing too much conclusion that was referenced in terms of Americans' beliefs about global warming is that that same percentage probably thinks that global warming is what happens when the air conditioning goes down in your SUV. It is the same problem that we are facing across all levels of society, that there fails to be a deep recognition of what it is, what gases are these. I cannot tell you the number of times I hear even informed people say "carbon monoxide". It is a very difficult thing for people to understand how pervasive this issue is, how deeply entrenched in our economy the use of fossil fuels is and the use of energy is. So while we want to address that it is a bit of a mirror to what we have to do in the UK as well as in Europe and other countries, is to really start to engage deeply with people about what this issue is and why it is important.

Q449 Mr Thomas: And it needs government leadership?

Mr Donovan: I would agree with that, yes; I do not see who else could possibly do it.

Q450 Joan Walley: Finally, when I was in Johannesburg at the World Summit on Sustainable Development I was very conscious that at that summit there was very much a sense that the governments internationally and business and commerce as well should be part of the partnership to deal with these global issues, and I think my final question is to Mr Donovan to say that you have articulated very passionately the need in the 21st century for this mission that gets people who are not yet informed about global warming, what can be done. What is your company, your consultancy doing in terms of being part and parcel of bringing about that change? It is not just for governments to change public opinion, is it? In terms of the companies that you are dealing with—and Barclays as well—what are you doing to be part of the solution of bringing about that wider informed general public which will in turn push governments and maybe even at some stage the US government to take this more seriously?

Mr Donovan: First, thank you for saying that about what I put in the memo. In a lot of ways my passion about it is simply because I have had enough time to

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sit and think about it. Like a lot of other people that I see in London—and you will notice that this is not a North Yorkshire accent that I am putting to you!—I worked for the US Environmental Protection Agency when Kyoto was signed; I had a sense of enormous optimism that we were on to something at that point, and then eight, nine years later seeing that things have not moved on a lot, but the problems continue to get that much bigger, it instils in a person that, wow, we really have a lot to do. So in terms of what I can do as an individual or what my company can do are some of the basics. Enviro has an environmental management system; Enviro has a corporate policy on environmental management. I bicycle to work; I try to do other things; I have low watt fluorescent bulbs in my house, but any of that of itself is not going to be enough. But I do agree with what I think is your underlying point, that there is a certain amount of top-down actions that government can take to encourage people but at the end of the day they have to choose to take up those opportunities. So there is a twin challenge both to have the leadership at a governmental level but also to create individual leadership amongst everybody who contributes to this problem.

Q451 Joan Walley: My question as well is how can a company like yours play that leadership role with other companies, like Michelin in my constituency, to help to involve more companies in putting this whole agenda further forward?

Mr Donovan: I do not have the answer to that unfortunately. I think the starting block is dialogue. We only really have one process going and that is the United Nations Framework Convention on Climate Change—that is the only really major talking shop that we have going at the moment, and this idea about bringing in the US and all of these things is not going to happen by banging heads together in meetings that happen once a year at some far off location, it is a sustained engagement with dialogue, and I would be very, very pleased to see that, where companies such as Barclays could sit down with companies who they do not serve, say industrial

companies, and just go through issues and have that facilitated. I think that would be a very reasonable starting point.

Q452 Joan Walley: Mr Redshaw?

Mr Redshaw: I think the education that Charlie refers to is useful for shareholder pressure because corporations are at the mercy of their shareholders and asking a corporation to pay for its CO₂ consumption when it is used to getting it for free, as the saying goes, is like asking turkeys to vote for Christmas. You come across issues with companies like Michelin, why would they want to pay more money in costs? What has happened with companies like Michelin is that the UK government, as part of the EU, has said to them, “You have to limit your emissions. If you do not want to limit your emissions you have to pay.” So the government has forced them to limit their emissions. The same can actually be done of the public but indirectly. So by including the sectors we have talked about like transport and supply of fossil fuels to end user customers in the Emissions Trading Scheme, what you actually do is you increase the cost to that consumer and the consumer then makes the choice. The consumer can be helped with education so it can make an informed choice but the key driver from a trader’s perspective is that people should be responding to cost and if there is no cost incentive then they will not respond.

Mr Dawson: In terms of what Barclays is doing, Barclays, as with Enviro, has an environmental management system and has reduced our emissions by 21% since the year 2000 and there is quite a strong commitment there to investigate sources of energy efficiency and mitigating over that.

Q453 Joan Walley: So you are on track with Kyoto!

Mr Dawson: We are, but unfortunately we represent a very small proportion of global emissions.

Q454 Chairman: That is one of the problems, is it not, at the risk of extending the conversation beyond its natural life? Even if we in Britain did everything it is only 2% of the global total of the problem?

Mr Redshaw: But if we in Britain did nothing.

Chairman: Still adding 2%. Thank you very much indeed. It has been fascinating and really very helpful and we are all most grateful to you.

Wednesday 19 January 2005

Members present:

Mr Peter Ainsworth, in the Chair

Gregory Barker
Mr Colin Challen
Mrs Helen Clark
Paul Flynn

Mr John McWilliam
Mr Simon Thomas
Joan Walley

Memorandum submitted by the CBI

1. The CBI—with a direct company membership employing over 4 million and a trade association membership representing over 6 million of the workforce—is the premier organisation speaking for business in the UK.

2. The CBI welcomes the opportunity to assist the inquiry by the Environmental Audit Committee on the international challenge of climate change.

3. The CBI represents a broad spectrum of business in the UK, including energy producers, suppliers and users, manufacturing and financial services—all of whom are affected by policy decisions on climate change.

INTRODUCTION

4. British business takes the threat of human-induced climate change seriously and recognises its responsibility, with other sectors, to help tackle the problem.

5. To-date the emphasis of UK policy has been very much on a national or EU commitment to climate change. Macro-economic analysis of the impact of national climate change policy (in the UK Climate Change Programme and the Energy White Paper) assumes that the world's leading industrial nations will act together, but there is very little detail on how government aims to work towards achieving a concerted international effort to reduce carbon.

6. Climate change is a truly global problem and cannot be solved by the UK or the EU alone. In 2000, the UK contributed only 2%, and the EU-15 14%, of global greenhouse gas emissions. In contrast, the USA contributed approximately a quarter of global greenhouse gas emissions. In addition, absolute emissions are growing rapidly in both industrialised (eg USA) and developing (eg India and China) countries. Unilateral efforts to reduce emissions in the UK or EU will serve to increase the costs to business in the region, while doing little to address the climate change problem (owing to inevitable displacement of carbon-intensive production to other regions with less stringent climate change regimes).

7. For example, in 2003 China consumed 1,667 million tonnes of hard coal, thereby emitting some 4,900 million tonnes of carbon dioxide (CO₂). However, the increase of coal consumption over 2002 was 287 million tonnes, with an increase in emissions of 840 million tonnes CO₂. From 2001 to 2002 the equivalent was an increase of 219 million tonnes coal consumption and some 640 million tonnes CO₂. In only two years, China's CO₂ emissions have increased by nearly 1.5 billion tonnes from coal consumption alone. By comparison, the EU15 have reduce CO₂ emissions between 2001 and 2002 by 7 million tonnes.

8. A global response, including both industrialised and developing countries and in particular major greenhouse gas emitters, is thus essential to address the climate change problem. The CBI would be reluctant for the UK (or the EU) to take on further unilateral emissions reduction targets, without securing comparable action by major EU trade partners.

9. The primary focus of the UK Government in its upcoming presidency of the G8 and the EU must, therefore, be to work towards achieving a shared vision for achieving global action on climate change.

ENGENDERING GLOBAL ACTION ON CLIMATE CHANGE

10. The CBI views the Kyoto Protocol as an important first step towards achieving a global climate change regime. However, there is a significant amount of distrust of (and political resistance to) the Kyoto approach to setting emissions reductions quotas both by industrialised and developing countries. Consequently, there are serious doubts that attempts to extend Kyoto style caps and targets beyond 2012 would engage major greenhouse gas emitters, such as USA, China and India, in a future international climate change regime.

11. The UK (and the EU) needs to look beyond the limited range of options offered by the structure of the Kyoto Protocol. However, it is also important that lessons learned during the negotiation and implementation of the Kyoto mechanisms and institutions are not lost.

12. The post-2012 regime should set out long-term aims necessary to create certainty and encourage investment, while providing short-term flexibility.

International Emissions Trading

13. In principle, the CBI supports the use of market-based instruments to achieve emissions reductions and we believe that emissions trading, if well-designed and well-implemented, can provide the flexibility needed for business to achieve cost-effective emissions reductions.

14. The CBI, together with ACBE, was instrumental in setting up the UK emissions trading scheme and supported the development of an EU-wide scheme as a first step towards establishing a global emissions trading scheme.

15. The UNFCCC and Kyoto process has highlighted that the establishment of any international climate change framework or regime will inevitably face challenges—politically and practically. Establishing an international emissions trading scheme is no different. The following should be taken into account:

- timeframe for implementation—while climate change is happening and it is imperative that we act quickly, it is crucial that we set an appropriate timeframe for implementation of an international scheme, taking into account the complexities of setting up a fair scheme, which meets environmental, economic and international competitiveness objectives;
- disparities in knowledge/data—the EU scheme demonstrated the complexities added owing to different levels of knowledge and expertise within and between member states and disparities in data availability. This is likely to be exacerbated at an international level, with widely different levels of understanding of the concept and the state of readiness (in terms of legal requirements, data, registries, expertise etc); and
- responsibility and participation of different countries—the CBI supports the concept of differentiated responsibilities, taking into account the different contributions to the climate change problem, different vulnerabilities and different capabilities to adapt to or mitigate climate change. The CBI recognises the need for the UK and EU, with other industrialised countries, to demonstrate progress towards achieving emissions reductions. However, there are also enormous variations between developing or non-Annex I countries in terms of levels of development, economic wealth and emissions. Consequently, differentiation of developing countries seems not only necessary, but fair, in the post-2012 international climate change regime.

16. Within this context, the trading system must ensure that there is comparable effort by industrialised countries and must seek to engage major emitters either directly or through complementary initiatives.

17. An international emissions trading scheme, whatever form it takes, should be guided by the following key principles developed by business within the forum of the Emissions Trading Group:

- environmental rationale—the trading system must be seen by all parties to be achieving a valid environmental objective;
- economic rationale—the trading system must be seen by all parties to be more flexible and cost-effective than other ways of achieving the environmental objective;
- credible—administrative procedures must be adequate to ensure compliance with climate change goals; and the system must have appropriate monitoring and verification procedures;
- simplicity—deviations from simplicity should only be introduced where and when demonstrably necessary;
- certainty—in order to inspire business confidence, encourage innovation and investment, there must be a high degree of certainty so that business can invest. This means that allocation must be as far into the future as possible, the rules simple and permits must be bankable;
- transparency—the system must be transparent to inspire national and international confidence;
- international competitiveness—there must be no significant distortion of international competitiveness; and
- inclusive—the process should be as inclusive as possible in the longer term.

Supplementary or complementary initiatives

18. In addition to international emissions trading, a range of complementary or supplementary approaches may be considered, including:

- Extension of the Kyoto project mechanisms—the CBI welcomed the adoption of the “linking directive”, which allows credits from clean development mechanism and joint implementation projects to be used in the EU emissions trading scheme. We believe this enables more cost-effective emissions reductions for EU member states, while also ensuring wider participation in the global climate change regime and enabling the transfer of technology to developing countries. The extension of the Kyoto project mechanisms into the post-2012 period should be considered, but there must be moves to reduce the very high transaction costs associated with such projects and to simplify administrative and approval procedures.

- More flexible commitments—greater flexibility in terms of target-types is likely to lower entry-barriers and foster learning by doing. Alternative paths that could be explored include complementary voluntary or binding targets for sectors and relative targets focusing on emissions efficiency improvements.
- Technology development and transfer—technology has a major role to play in the mitigation of climate change and could be key to increasing the participation of both industrialised and developing countries in an international climate change regime. Increased investment in research and development programmes, including pilot and demonstration projects, is crucial to speeding up technology development in low-carbon and end-use energy efficiency technologies. Deployment in the market place is crucial to reduce the costs of new technology development and policies and measures to encourage diffusion of new and existing technologies should be considered alongside any research and development programme.

UK PRESIDENCY OF THE G8 AND THE EU

19. The primary focus of the UK Presidency should be engage the G8 and the EU to develop, through the UNFCCC negotiations and bilateral/multilateral discussions, a common vision on internationally agreed global emissions reduction pathways.

20. Key ways of achieving this include:

- develop understanding of scientific consensus—the UK should focus on developing and communicating scientific understanding of the scale and nature of the climate change problem at a political level, rather than revisiting the significant body of scientific evidence for global warming and climate change already developed by the IPCC;
- adopt flexible approach—while it is important the UK (and the EU) put forward proposals, to engender the collective and political will necessary to address the climate change problem it is crucial we adopt a flexible approach in the international negotiations, which considers the range of different policies and regimes on the table and evaluates their effectiveness (both in terms of political workability and environmental impact);
- facilitate technical discussion on international emissions trading—aim to develop understanding on how emissions trading could work at an international level, rather than merely promoting the EU emissions trading scheme as a model; and
- promote development and uptake of cleaner energy technologies—the CBI supports the Government's focus in this area and agrees that there is a need to build international consensus on how we can speed up the introduction of both existing and new low carbon technologies.

21. The review of the current EU climate change strategy provides an opportunity to ensure a cost-effective programme of policies shared between businesses, individuals and other sectors and to consider effective migration of policies beyond the Kyoto period. To deliver a sustainable policy which delivers real climate change benefits, this should:

- position any future climate change policy within a global context and ensure it is consistent and coherent with international agreements at UNFCCC;
- tackle all economic sectors, in particular those where emissions continue to rise, for example the inclusion of aviation under the EU emissions trading scheme, and improvements in domestic energy efficiency, through progress on directives on energy demand management and energy performance of buildings; and
- ensure that senior business people in the UK and EU business communities, particularly in non-energy intensive companies, are informed of the opportunities for business engagement on the issue of emissions reduction.

8 November 2004

Witnesses: Sir Digby Jones, Director-General, and Mr Michael Roberts, Director, Business Environment, CBI, examined.

Q455 Chairman: Good afternoon and welcome to the Environmental Audit Committee.

Sir Digby Jones: Thank you for having us.

Q456 Chairman: Mr Roberts is making a reappearance before the committee and Sir Digby Jones is making his first appearance. Congratulations on your new knighthood, Sir Digby.

Sir Digby Jones: Thank you very much.

Q457 Chairman: It is good to see you. We are going to divide this session into two: first of all, questions relating to our inquiry on the international leadership on climate change and then towards the end some questions relating to one of our other inquiries which is to do with the Pre-Budget Report. I will try to make it clear when we switch from one

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to the other. First of all, can I ask you, Sir Digby, whether you agree with the government's Chief Scientific Adviser, Sir David King, that climate change is the most serious problem facing mankind?

Sir Digby Jones: I am not too sure I would say that it is the most serious problem. I would say it is up there as one of the first equal. I think there are one or two other equally serious problems. It is certainly not the second most serious. It is first or first equal.

Q458 Chairman: Do you accept, following on from that, that we need in the developed world to make reductions in our emissions of between 60 and 80% by 2050?

Sir Digby Jones: I do, and I will go further than that and say that I am very pleased you used the words "developed world". I am very pleased that the European Union, led in many ways by example by Great Britain, have set stringent targets and have said that they will go for it. I just wish America was doing the same and we have not a hope of getting India and China and other emerging nations on board, especially those at the top of the developing world. India and China have got to the point where I do not even think we can call them developing any more. They are very much beyond that. We need in the developed world to set an example, so not only do I accept that but I would call on the United States to not only do something but be seen to do something because I think the example set is as important as saying we are going to try and do it.

Q459 Chairman: I am delighted that we have got off to such a positive start, Sir Digby.

Sir Digby Jones: I agree, it is a positive start. I am proud to lead businesses which really do want to do their bit. They really do understand how important the issue is and they do want to play their part in contributing to cleaning up the planet. If it is something where you may perhaps, Chairman, have been thinking, "Are we going to get such a positive start?", I will just mention with my tongue in my cheek and a smile in my eyes but nevertheless true, that it is a year to today since I used the immortal words in a press release which has been quoted many times very happily since, that the problem is that the UK Government risks sacrificing UK jobs on the altar of green credentials. I stand by that remark one year to the day, and in the same release when I said that I also said, "Britain should lead the world on the environment issues but not to the extent that some other EU members and other competitor countries profit from our good intention". I am sitting here today saying I am proud that I belong to a nation, my members belong to a nation, that is leading from the front, that has a Prime Minister who has said that he is going to make it the central tenet of his G8 chairmanship; I am proud that my members do and, by the way, they could do so much more as well. However, the issue where we might not find so much common ground, Chairman, is that I worry that we go into the ring of global competitiveness with one hand tied behind our back because we are one of the few nations that lead from the front and others do not and that renders us uncompetitive.

Q460 Chairman: This, of course, is worrying because whilst we welcome the fact that you recognise the potential profound seriousness of the problem, the qualification you have subsequently places on the issue means that the CBI has been actively engaged in trying to water down various governmental measures to seek to mitigate the problem and it seems to me that, with the greatest respect, you cannot have it both ways,—

Sir Digby Jones: Why not?

Q461 Chairman:— that this is one of the first equal problems facing mankind and at the same time be seeking to diminish the efforts which Britain is making both at home and in international fora to tackle the problem.

Sir Digby Jones: I disagree with you. I would say we can but, more importantly, if anybody thinks that by ensuring that jobs are lost in Britain, that businesses migrate to countries where I would criticise their regime because it is not as environmentally friendly but nevertheless in the real politic of life they go there, if you think that is going to clean up the planet more quickly, by having more polluting countries getting more business operating in their countries where the more environmentally friendly countries such as ours with a stricter regime, which we happily embrace, is going to lose work because of it, think again.

Q462 Chairman: But do you not accept that if Britain is to take the leading role, which you say you are proud to see the Prime Minister taking, although it is mainly rhetoric at the moment and anyone can be proud of rhetoric, it will involve showing a lead by taking effective action to tackle the problem, not just making speeches and lecturing other countries and at the same time allowing our industry to continue to treat the environment in a way which is damaging.

Sir Digby Jones: I could not disagree with that, could I? Of course it is right that you get maximum effect from recommendation if you have the moral high ground of setting a good example.

Q463 Chairman: But you can flip it round and say that if we are not setting a good example, if we are not doing everything we possibly can—and clearly everyone recognises that there are economic constraints to this, of course there is an economic dimension to it—then we have no credibility in the international community when we come to lecture other people about how they should behave.

Sir Digby Jones: We are in violent agreement, Chairman. What I am saying is that there is a massive difference between saying, "Let us be the best at this",—which we are not, by the way, but we are on the way to being,—and then over-achieving to the point where you render the business environment uncompetitive so that yes, I might then be unhappy because you damage business in this country,—and, by the way, that would mean less profit, it would mean less tax and fewer schools and hospitals, but if that is what you want, fine—but on the other hand if that that happens you are not going

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to clean up the planet more quickly because it is all going to go to countries that will say, "I am not going to follow your example anyway". The biggest polluter on earth is 3,000 miles west of here and he is not signing up to Kyoto. That is not British business's fault.

Chairman: No, we accept that. There is no argument about that.

Q464 Mr McWilliam: You might have been in danger of inadvertently not being entirely clear because I do not think you wanted to name names. Supposing 100,000 call-centre jobs go to India, which is one of the countries that really ought to start, as you rightly said at the beginning, sorting out its act in terms of environmental pollution. Are you claiming that that is a net disbenefit in terms of the world environment?

Sir Digby Jones: And you specifically said call-centre jobs?

Q465 Mr McWilliam: I just said call-centre jobs because they are the ones that are going abroad.

Sir Digby Jones: That is not true. The whole question of the jobs that go to other economies is not just an environmental issue, of course it is not. I would say that, unlike France, unlike Germany, unlike America, you do not see the protectionist siren calls from business or unions or politicians or journalists in the same way as you do there. Why? Because we have got virtually no unemployment and we have got a skill shortage, so if you can put more energy from business and more money into training people into better skills and then put more value-added work in there, the job that migrates actually produces more wealth for the country, not less, because we have not got enough people with skills. It also has the double effect of helping the developing nation get richer. Offshoring and outsourcing generally are not something you will find the United Kingdom—and I say this with great pride—in any of our different walks of life criticising and being protectionist about like other countries. If it is a call-centre job the potential for environmental damage is going to be less by definition. There might be some but it is going to be less than if you move a manufacturing capability to the Pearl River delta in China, for instance. Would I say that moving a manufacturing job out of Sweden, Germany, Britain into China would be worse for the planet in the short term environmentally? Yes, I would. I am being serious. I was in India last week. I went to see factories round Delhi, I was in China just before Christmas, I was in factories in Zhanjiang. They are clean, you could eat your lunch off the floor. They are environmentally doing their bit. The good ones are very good, but of course if you go a thousand miles inland in China it is a completely different story. Therefore, at this moment that migration is going to be environmentally damaging to the planet, not the other way round. Would that be the same if we could get China, India, Indonesia, Vietnam, Brazil and all the other countries to adopt the same regimes as the European Union? No, it would not, but if it was a call-centre job, as you call it, and I

know what you mean by that, a people-based job, I would say that the environmental impact would be neutral.

Q466 Mr McWilliam: That is what I thought you meant but you did not quite say it.

Sir Digby Jones: No, you are quite right.

Q467 Chairman: Where we have got to so far in this conversation is that you accept that climate change is one of the biggest threats facing mankind.

Sir Digby Jones: Yes.

Q468 Chairman: You accept that in the developed world, and that includes the United Kingdom, we need to reduce our carbon emissions by 60-80% by 2050 if we are to play a proper and responsible part in dealing with the threat to climate change, and let us remind ourselves that it could be utterly catastrophic, but the message I am getting is that if the price of doing that is the loss of traditional jobs in the United Kingdom you are not going to do anything about it?

Sir Digby Jones: Oh, no, no, no. Do not put those words in my mouth, Chairman. You said, "If the price of doing that is the loss of traditional jobs . . ."—that is not true at all. We can as a nation progress towards that target in ways (and I want to concentrate on one in a minute) where we can make that progression, so it is not a black and white issue; it is not an all-or-nothing issue, and we can get there. What I am saying (and where you can happily put words in my mouth) is that on that journey please do not, for the purposes of our kids who want a school and a hospital, stop the wealth creation. It is as blunt as that because if you stop the wealth creation you stop the tax and you stop the public spending. For the good of that and for the benefit of the planning, because you do not want it all to migrate to other countries that are not so strict, please do it in a way that does not render it illusory at the end of the day. That is not the same as saying that I do not want to get there, because I do just the same as you. I perhaps would do it by taking more countries with me at the same time.

Q469 Chairman: I had not been going to raise the question of your quote from exactly a year ago about sacrificing British jobs on the altar of green credentials, but the use of the word "credentials" in that is quite interesting, is it not, because we are not really talking about credentials. We are talking about potentially the future of the planet and humanity's ability to exist. If I were to change your quote to "not sacrificing British jobs on the altar of the future of the earth", would it still hold good as far as you are concerned?

Sir Digby Jones: Probably not, because one of the problems with this issue is that many people do see business placings as very much black and white, very much that they are on the right side or the wrong side, very green or not green, and life is not like that. I can point to many businesses in Britain that statistically and emotionally have over-achieved, are completely on the right side, and I can point to some

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which frankly could do an awful lot more. Britain itself has changed fundamentally in its attitudes in the last five years. Certainly in the five years since I have done this job and I have also seen an attitude in business and I have seen an attitude in the media. “Green credentials”, my remark of a year ago, by which I certainly stand today, I do not want to see playing to a degree of political correctness, playing to a politically vibrant and exercised time before a general election when people are desperate to try to show that they are green by forcing British companies abroad. That is what I mean by “credentials”. When you just said, “For the future of the planet” I could probably find far more common ground with you. In that respect we are then talking about those jobs that Mr McWilliam referred to going out over a period of time, supplemented by other value-added jobs probably with businesses which are far more environmentally friendly, and at the same time, with America setting the example and pressure being brought on the Indias and Chinas of this world, where those jobs were going to were more environmentally friendly environments, fine. If that meant that UK jobs had to go, then I would be with you. I would settle for the change in that text but not in the first one. Do you want to say anything, Michael?

Mr Roberts: I was going to suggest where the change would be difficult would be in the context of recognising that the UK’s contribution to the global problem is small. We contribute of the order of two to three% of the global carbon emission total. Therefore, we could commit to unilateral action of a very significant amount and yet have a marginal impact upon the problem unless, of course, others are coming alongside with us. I think where the argument crystallises is the extent to which the UK shows leadership, not whether it should. That I think comes down to the stretch of any domestic aspirations to reduce carbon compared with what else goes on in the rest of the world and also the policy mix by which government seeks to achieve that reduce that reduction. I think that is where you get the two things coming together: an acknowledgement that we need to show leadership but a concern about how we best achieve that.

Sir Digby Jones: Can I put that into context? We are just over 2% of global greenhouse gas emissions, we are 3½% of world GDP in manufacturing and energy production and we are just over 5% of world GDP, full stop. So, if we deliver 5% of the world GDP, just over three of the things that really do deliver the carbon into the atmosphere, and only contribute out of that 2% of the world’s emissions, I would say to you that we are certainly not doing enough but we are doing a lot more than a hell of a lot more countries.

Q470 Mr Challen: Which British companies have relocated abroad purely as a consequence of environmental pressures?

Sir Digby Jones: In terms of they have left somewhere where there is a strict environmental regime and cleared off to a place where they can pollute, I would say nil. I can tell you of a company

that I got involved in about four years ago representing their interests where they had a factory company in France and a factory in Britain. They wanted to close one and they chose to close the British one because of the Climate Change Levy, because they did not have it in France and they had it in Britain and they were going to pay more money if they stayed in Britain, and I do not think climate change was ever brought in to cause unemployment in Britain.

Q471 Mr Challen: They chose to blame it on that as opposed to possibly other reasons? That was exclusively the reason?

Sir Digby Jones: Yes, that was exclusively the reason why. I understand where you are getting and yes, I did explore that, because often they can wrap it up in something else; I fully understand that. Nevertheless I did explore it and that was the reason. It was purely and simply the cost of the Climate Change Levy. Your real question was, because they were going to close one anyway, did the company leave Britain and clear off somewhere else so that they could pollute? The answer is categorically no.

Q472 Mr Challen: I am quite interested in the environmental balance sheet, in terms of how many jobs can be created in this country because we are taking a leading role in tackling climate change and creating new technologies and so on?

Sir Digby Jones: I said to the Chairman in one of my previous answers that I would like to come back to one thing and that was your point here on investment in science and technology as a way of dealing with this issue alongside limiting emissions and creating a trading scheme and fiscal remedies as well. One thing we as a nation should do this year—and I will ensure that the CBI plays its full part in this—is that if we constantly put America’s back up against the wall on not signing up to Kyoto as the European Union we are going to fail. They have made it very clear that they are not going to sign it and we really ought to find another way of getting them to come to the party. I had a very interesting visit there just before Christmas when I explored this with quite a few representatives from New England and from the West Coast, where indeed you have some Republican governors; this is not party-political in that respect. They are investing enormously in science and technology to try to get there another way rather than the Kyoto way. If, during this year of Britain’s chairmanship of the G8, we could encourage America to come to the party by not only doing it in their own country but helping other countries in the investment in different ways of approaching this problem rather than just using the blunt (I think necessary but nevertheless blunt) instrument of Kyoto, that would be an advance. We do not want to get to the end of December and find that all America has done in the year is say, “No, no, no, no and no”. If, instead of that, we could get them to do more of it domestically and pump resource into other countries for them to do it, would that not be an advance? Where we can create a win-win out of this is, first, our own investment in science and

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technology ought to be increased in the whole area of limiting carbon emissions and, secondly, we are very good traders; as a nation we are pretty good at it. The Emissions Trading Scheme is another trading environment. We can bring our expertise, both in financial services and in trading generally, into this area and create wealth and employment out of the system but we need two things if we are going to pull this off in that regard. By the way, I do not say that as an alternative to Kyoto at all. I think Kyoto is necessary—a bit blunt but very necessary. However, America has set its face against that so we have to do something. What we need in this country if we are going to push those two points forward is more skilled people than we have just generally. The nation needs to get more skill. Secondly, we need more funding both from private and public sector into science and technology to make this happen. Am I with you? Yes, but there are a few hurdles to get over along the way.

Q473 Mr Challen: When you say that Kyoto is a blunt instrument, do you mean it is too demanding?

Sir Digby Jones: No. I think it is an eventual goal. It is a bit like the first conversation we had. I think the eventual goal is not too demanding. Of course, it depends what you define as “too demanding”. I personally do not think it is too demanding.

Q474 Mr Challen: Having strict national targets.

Sir Digby Jones: Could the way that we get there, the speed at which we get there, be too demanding in certain sectors at certain times in certain countries? Yes, but that is for a national government to decide and the European Commission to decide. That is not for Kyoto. Do I think it is too demanding? I think the world needs it.

Q475 Mr Challen: You have a clear view of how to deal with America and I think everybody has got a clear view on that subject, but George Bush, even if we accept that he accepts that global warming is taking place, has set his face against having firm national targets, against a great deal of what Europe is doing. He thinks it is a deliberate attempt to undermine the American economy and indeed, as you have said, has pledged to increase the spend on R&D and technology. Would you say that that is the better approach rather than having firm, strict, targeted political frameworks which provide the overall context in which industry has to address the issue or is it simply going to government saying, “Give us some money for R&D and we will sort it out for you”?

Sir Digby Jones: No. What gets measured gets done.

Q476 Mr Challen: So there should be a strict international treaty for determining national targets which we can see panning out into the future?

Sir Digby Jones: Yes. Should there be that? Yes, there should, but I am trying to live in the real world where we have the President of the United States saying that he is not going to do it. I do not really want to be sitting here in a year’s time, our chairmanship of the G8 gone, everybody saying,

“Oh, well, we made loads and loads of speeches—the Director-General of the CBI, the Prime Minister of Britain, and everybody else saying, “This is dreadful. America, sort your act out”. Frankly, if they are not going to, they are not going to.

Q477 Mr Challen: Not even if they are demonstrably wrong?

Sir Digby Jones: Clearly not. I wish they would set targets and I wish they would sign up, but they are not going to. What we need to do is work with them to get them to use what they will do, and they have clearly said they will put big resource into science and technology to try and get there another way. Where you and I agree is, what do we mean by “get there”, because unless you have targets they will meet, and you have a path and a route map (if I may use the expression) to get there, how do we know if they have got there? I would say yes, there ought to be internationally agreed targets so that we can judge them on them. If they have set their face against getting there one way let us help them get there another way.

Q478 Mr Challen: But if they intend to get there simply by investing in R&D that does not necessarily give us a clear indication of meeting the urgent need to reduce carbon emissions.

Sir Digby Jones: I agree with you.

Q479 Mr Challen: I think that is a very open-ended agreement, so we need strict, clear, well-defined, manageable targets. Do you agree with that?

Sir Digby Jones: I totally agree, but I am afraid that in a year’s time we will still totally agree and they will still not do it. I am trying to think of a way in which we can be more constructive during our chairmanship of the G8.

Q480 Mr Challen: Should their own position be allowed to undermine our position?

Sir Digby Jones: We have a commitment to a target so to that extent the principle holds despite their not coming on board.

Mr Roberts: Can I add something to Sir Digby’s comments? In an ideal world firm commitments to do something which should be monitored is the optimum way forward in many respects, particularly given the science about carbon concentrations in the atmosphere and the consequences of that. Where the intelligent debate is starting to focus is on how we establish those commitments, how we establish targets. There is a sense that the process by which Kyoto led to commitment in targets was that was not amenable to the American way of thinking. It does not mean that targets *per se* will not work; it is just the way in which they are established. It may be that in the short term there is an imperfect way that needs to be pursued. Imperfect as they are, maybe relative rather than absolute targets are something to be thinking about, the way in which we get the Americans to think about producing a serious approach. There might be a way forward through international sectoral targets. There are one or two sectors I can think of, aluminium, for example,

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which is a global industry where there is some thought being given to that which might embrace individual sectors and corporate players within the American economy. The other thing to think about is to build on those things which are happening below the national US level, the things that Digby mentioned that are already happening at federal level. We have a system of north-east emissions trading in the United States which embraces both Democrat and Republican states and I think the more we can try and build on those so that the concept of a commitment, however it is delivered against, becomes more acceptable to not only business but also to society within the US. There are different ways of skinning the cat and we need to think imaginatively about that.

Q481 Mr Challen: In that context we have got all these different initiatives about climate change. We have got things happening in Europe, obviously, and other voluntary, flexible arrangements and perhaps we can all approve of those. Should there not be some overall framework in which these things are cast because some people are very cynical about emissions trading schemes that give taxpayers' money hand over fist to industry so that they can just pick a few low-hanging fruits, which they are going to pick anyway. That is the windfall profit; that is going on later in this session. Would you agree perhaps with Contraction and Convergence which sets a reducing cap each year and distributes carbon emissions on a per capita basis? Would you agree that that provides the overall framework in which we should operate?

Sir Digby Jones: There are two points. One is that I cannot let you say that on the record without refuting it, and that is that I do not believe that taxpayers' money is going straight into what you call industry and I call business—

Q482 Chairman: We are going to explore this in a few minutes.

Sir Digby Jones:—so I disagree with your statement. The second point, do I think we need that more global but transparent system of easily earned and distant targets? Yes, I do. You asked me in one of your earlier questions did I think that the current American stance undermines the European position. I am a little bit more worried about whether the participation of certain European states undermines the European position. One of my worries, which I said a year ago in that press release—and again I stand by it today—is that if you were a business in Sweden or Germany or Britain today I think you would be forgiven for worrying about your competitiveness and therefore your ability to employ people, earn money, pay tax and build schools and hospitals, when you see the behaviour of some other countries in Europe who have either just paid lip service to what the Commission is trying to achieve and, frankly, by their conduct have shown that they do not intend to do it, or put in a national action plan which, at the end of the day, was clearly something which was going to achieve no change whatsoever. A British

business or a German business would say, “Why should we be busting a gut here when in the European Union itself other member governments and member businesses are not?”. I think that is as important in the undermining issue, because I think I agree with you in that, as the American position. I sat in Beijing in October, I sat in Delhi last week. At 11 o'clock in the morning the sky is nearly yellow, your eyes are watering, your chest gets congested. That is only going to get worse. How are we going to clean up that act? If the European Union, Japan and America do not set the example—again, real politics—they will not. The only way is a globally recognised, clearly understood what that what measured gets done. I am agreeing with your overall wish, yes.

Q483 Mr Challen: In terms of the UK economy, your deputy has said recently that industry has taken its fair share of this burden of dealing with the environment and that the domestic sector ought to now do more. Do you agree with that statement?

Sir Digby Jones: Yes.

Q484 Mr Challen: Have you considered what the domestic sector ought to do to fulfil that objective?

Sir Digby Jones: I have been in this job for five years and what has been noticeably absent is hard, strict governmental pressure on the average voter to step up to the plate on this whole issue. Business is a very easy target. One reason is because, yes, we are very visible in the way we pollute and, secondly, we do pollute, so we are a worthwhile target and we certainly ought to accept that, so we are not trying to avoid our obligations but we are allowed, I think, to be frustrated. A statistic I was told a couple of years ago is if you take four semi-detached houses in the average housing estate in Britain and look at their back yards and if you put a motor mower down those four lawns on one Sunday afternoon you will pollute the environment more than a Ford Focus in 12,000 miles. Ford get hammered every day as a manufacturer in Britain for being a polluter and the thing they make they are told pollutes the environment. Do we see any government action to go and do something about four people who might vote Liberal, Tory or Labour? No, we do not.

Q485 Chairman: Is the answer not to hammer the manufacturers of motor mowers?

Sir Digby Jones: If you are going to let the market do it, then of course what you do is ensure that the motor mowers become less attractive and the other ways of mowing your lawn become more attractive. I understand that. However, at some point somebody has got to look the voter in the face and say, “This is going to cost you in a change in your behaviour and your cheque book,” and until they do we will not stop saying that business has shouldered its share of the burden and it is time the government of any colour acknowledged that. I would love to see three manifestos dealing with this saying to the people whose vote they are looking for “it is going to cost you too”.

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Q486 Joan Walley: What about the cost to the environment?

Sir Digby Jones: What about the cost to the environment?

Q487 Joan Walley: In that line-up you have just drawn up you have not included the cost to the environment of not taking action.

Sir Digby Jones: I agree, I am sorry, I thought that was a given, yes, completely right.

Q488 Mrs Clark: I am very enthused by what Sir Digby has just said about the individual and the domestic situation and pollution. He may or may not be aware that our Committee has been doing some considerable research into environmental crime and into the responsibilities of local authorities and individuals, et cetera. Indeed, we did have a debate on this in Westminster Hall only last week as I recall. Would he like to comment now on what he actually thinks central government should do in terms of local authorities? You have talked about the concentration (and I would agree with you) on making business a scapegoat instead of local authorities and what their responsibilities should be. Indeed, would you agree with me that a) perhaps central government should impose some financial penalties on local authorities who do not actually come up to stump on these matters, and b) John Major's Environment City Status Award was absolutely excellent but that in fact there has been no attempt to police this and ensure that those cities, including my own of Peterborough who were given that award, go through their paces and come up with it or have it withdrawn?

Sir Digby Jones: The answer to the first point is I would sincerely like to see—and I do not see a lot of this at the moment—over the next few years increasingly government seeing public sector and private sector employers as very much the same and not different in the way they behave environmentally, the way they employ, the way they skill, the way they participate in society because the public sector has become a huge employer in Britain and a big operator of many businesses and for some reason they tend to get treated differently. The public see them differently, politicians see them differently, they see themselves differently, and at the end of the day the private sector are often put into a position where they compete with them. They often see what they do not being duplicated there and it is high time that the public sector did not see themselves as special and they saw themselves as very much part of the overall ambition, which I thought was to make this country great. On your second point about one of John Major's initiatives, the honest answer to you is I do not know enough about the facts to comment, I do not know enough about it and I do not comment on things I do not know. I will look at it for you and I will write to you individually and tell you what I think, I could not do it now simply because I do not know the facts.

Mrs Clark: Very helpful.

Q489 Mr Challen: You have said that you support the principle of contraction and convergence and in the domestic sector the need for individuals to do a lot more. Has the CBI come across the proposal for domestic tradable quotas and have you had a chance to evaluate that at all?

Mr Roberts: Just a point of clarification, we did not say we agreed with the principle of contraction and convergence. We agreed with the principle of commitments to real action and that those should be international. The debate about contraction and convergence is one that we are still having with our membership. That is just for clarity's sake although I understand the rationale behind it. With regard to the issue of quotas for the domestic sector, again that is one of the things that we are looking at at the moment in terms of our response to the current review of the Climate Change Programme to see whether that is something that might have legs. Clearly it is a reasonably radical proposition and whilst trading may well be suitable for certain parts of the corporate community who have the resources to engage in trading, there is a question mark as to whether individual members of the public would find it such an easy proposition when one wades through brokers and the like. It is not something on which we have a clear view at the moment but it is one of those issues we are looking at in terms of how you might unlock the contribution from that sector of the economy.

Q490 Mr Challen: The financial analysts and carbon traders have told us in previous evidence sessions that they would prefer absolute caps and targets and those are essential if emissions trading is to work effectively. Would you agree with that?

Sir Digby Jones: I for one would agree with more certainty. I think caps and targets give that certainty and give that transparency. Everybody understands where this whole thing is trying to get to and when you can judge progress. Things that tend to be certain and easily understood have a better chance of winning. So for that purpose, yes, I would.

Q491 Mr Challen: How does that sit with flexibility?

Sir Digby Jones: I was going to say "but I will let my expert comment on that"!

Mr Roberts: The flexibility is in how you achieve those. The prescription is not about the method; the prescription is about the end outcome.

Q492 Mr Challen: A 60% reduction by 2050, which has been quite controversial in the last few days in European discussions taking place, does suggest having to have some rather strict ways of dealing with it. It does not affect the community but that is nevertheless a strict target. How much flexibility does having a strict target allow you to interpret these things in a way that perhaps the Americans would like to do but we Europeans seem less inclined to do?

Mr Roberts: The flexibility is in how you get towards that target and it is an ambition towards—

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Q493 Mr Challen: Can you give me an example of flexibility? If we have a strict and demanding target how do we have flexibility? I cannot quite square the circle.

Mr Roberts: The target is the outcome, it is the goal. The goal could be achieved through a variety of means. If government is trying to establish how you get to that goal government has at its disposal a number of policy levers, if you like, whether that be classical tax or straightforward regulation or encouragement of voluntary initiatives or some mix of all of those, and that is where the flexibility comes into play. What is particularly important about this debate at the moment is that five years ago the UK committed to a programme of activity that would take it towards its current set of targets. That included a mix of those types of instruments. What was lacking in that programme was a clear sense of the benefits and costs associated with the mix and indeed with individual measures so there was no sense either on the part of the UK as a whole or on business specifically as a major player in that programme as to whether or not we had identified the least cost way of achieving our 12.5% reduction on Kyoto or indeed our transition towards the 20% target. This time round we need to learn that lesson because some measures will be more cost effective than others. That is what I mean by flexibility towards an agreed outcome. Having said all of that, you need to be clear that your outcome is properly specified. The 60% target that everyone talks about, ideally speaking, should be a 60% reduction in global emissions to reduce the concentration of carbon to scientifically what is deemed to be a reasonable level to address the issue of climate change. If that then translates into “the UK will do that but no-one else will do it because that is the way politically things turn out in the future”, we go back to our original concern which is we will have done a lot in this country, potentially at some significant cost to individual parts of the economy, but it will only have a marginal impact on the global problem.

Q494 Chairman: Just for the record I think Sir David King is now talking in terms of an 80% reduction by 2050 to take account of the accelerating melting going on on the Greenland ice cap.

Mr Roberts: I appreciate that the science is changing and we need to be alive to that.

Q495 Chairman: It is not getting better.

Mr Roberts: But the fundamental point remains about shared effort globally and flexibility in delivering our bit towards that shared effort.

Q496 Joan Walley: Can I apologise for not being here at the very start of the session this afternoon and missing some of the earlier questions. I want to try and wrap up this discussion we are having about post Kyoto. It seems to me that there are so many possible variations but from what you have just said to Mr Challen what you really seem to be saying is that, yes, Kyoto is there and that would give the certainty and that would give the firm signals to all the sectors to know what they had to do and to get

on and do it, but if we are in the real world, we might not get (as we have not at the moment) the US and everybody signed up to it, therefore this flexibility needs to be somehow or other kept as a reserve to try and push us through this transitional phase to where we need to be to meet these ever greater targets. I am not quite sure whether you are saying in an ideal world Kyoto, yes, but we are not in the ideal world so we will just get the best that we can and the best that we can go at this moment at this place in time. Are you therefore saying that relative targets have got an important part to play?

Sir Digby Jones: Just because America will not sign Kyoto does not mean we should not pursue, prosecute, and get to the Kyoto targets. I do not think that the European Union should duck out of its responsibilities to the planet. I do not think business should either if they operate there. I often have big arguments with politicians in America who, as the Chairman said just now some, see Europe as saying business in Europe is going to have to adopt these Kyoto targets as a barrier to entry. That is wrong. It is Europe trying to lead and set an example. And I repeat what I said earlier, I am proud of that. Because I advocate a different way of trying to deal with America trying to “get there”. I am just accepting the realpolitik of life. What I am not doing is saying because of that we should all stop doing it. What I would say—and I sincerely hope this is a non-party political issue in Britain—is that if the United Kingdom has signed up to it and the European Union has signed up to it then please explain to me why we all allow some Member States of the European Union, frankly, not to come to the party to the same extent and not to be rigorous in their implementation in businesses in other parts of Europe. Worrying about America is bad enough; worrying about someone in your own backyard is even worse.

Q497 Joan Walley: We want to look at the European trading scheme in a short moment but before we get there can I try and home in on this relative target business because it seems to us that the way that those have been looked at is akin to “business as usual” and if it is business as usual then you have not got any kind of cap and then you are not getting the environmental benefits that you are aiming to get in the first place.

Sir Digby Jones: Just so I understand your comment, are you saying you think the amendment by the Government was working on the basis of it is now business as usual?

Q498 Joan Walley: No, I am not saying that. I am saying were you to go down the route of we cannot get the ideal progress therefore the relative target could be an option; that is based on business as usual targets. If we have got business as usual targets we have not got progress.

Sir Digby Jones: I see what you are saying.

Mr Roberts: Let me try and clarify what we said earlier about relative targets. I was not suggesting that the UK should shift from what is currently a commitment to an absolute towards a relative

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target. What I was suggesting was that the history of establishing international commitments through targets was not successful in getting the US at national level to commit on the international scene in the same way that some other developed countries did and that we in the international community with the UK playing a leading role in that have got to think a little bit more imaginatively and perhaps accept that there might be some second best ways in which we get the US to commit. There are a variety of options around target-setting, one of which (but not the only one of which) might be some process of establishing the commitment of the US to a relative target. I did accept that that was an imperfect way forward but not the only way forward.

Q499 Joan Walley: That is very helpful and clarifies it, thank you. Can I just pursue that a bit further in trying to get the US on board as well. When we had a session last week we had Barclays Capital giving evidence to us and one of the options that they defined for us was that if an international trading system is set up by a core of developed and developing countries but not everybody was on board with it, then some form of tariff might be levied on trade with non-participating countries. How would you respond to that?

Sir Digby Jones: I know the stenographer cannot write down my reaction,

Q500 Joan Walley: She can, she is very skilled at this. **Sir Digby Jones:** When I hear words like “tariff” and “restraints on trade”, I have the vapours. If what you mean by that and what they mean by that is that some of the major trading nations in the world create that international trading scheme and get on with it and share its success, I would like to think that a country as commercially active as the United States (which I think is probably where you are trying to lead to) would think this is something they should be engaged in. Where you take that is you would not find the USA then comes to it quickly but you might find California does or you might find Massachusetts does or Illinois does and at some stage you might find by default almost that America is taking part. So would I encourage the setting up of that as an international scheme immediately following with your ideas of then the targets are easily understood, the answer is yes. Would I penalise a country with some form of trade restriction, be it tariff or blanket exclusion, categorically and certainly I would not. Three reasons: one, I do not think you would get it past the WTO anyway; two, if you did you would certainly find that it would be the thin end of the wedge and people with different intentions and rather sinister intentions would start to use it as a way of stopping what we are trying to achieve out of international trade which is fewer tariffs and fewer subsidies; three, the law of unintended consequences would apply big time and the people you would hurt most would be the people in the developing world where they would automatically fall foul of it and you

would be back 15 or 20 years in trying to ensure that a multilateral, rule-based system of international trade can facilitate the poor getting richer.

Q501 Joan Walley: That said, how much do you think the Government’s approach through 2005 should be aimed at making sure that the US does come on board?

Sir Digby Jones: On board?

Q502 Joan Walley: To get the US to sign up to the Kyoto targets?

Sir Digby Jones: Next Wednesday in Davos I think the Prime Minister is making a speech on climate change as Chairman of the G8. You probably know what he is going to say; I do not, but I would urge him to a) set out the perils of America not signing Kyoto, especially the example setting point, b) to acknowledge that we live in a real world and at the end of the day understand that if at a national level the administration of America has said they are not going to then c) to really encourage separate states in America (the federal issue in America) and the European Union with their relationships with America, especially in this globalised economy of multi-national companies who operate all over. They can be a tremendous force for good. I know that political correctness says that multi-national companies are all up to no good but they can be fabulous conduits to improvement in this planet, if we get it right, to say let us move America towards where we are trying to go, facilitating their ability to put huge resource into investment, technology and science to try and get there. I would love to hear him say that next week. In other words, do not take the pressure off on Kyoto, make the world understand that America is not playing the game but on the other hand acknowledge the reality of the matter and stand up and be counted and say, “We will help you, America, get there in another way.”

Q503 Joan Walley: One of those other route maps for getting there might be for each and every individual state to communicate through whatever business or opportunities there are with stakeholders in Europe, stakeholders in individual states or on a sub-business level?

Sir Digby Jones: Yes, definitely. I was really heartened when I went in December and I talked to some of these state politicians because they really were up for it. They understood the issue and they were not going to take it from Washington, they were going to get on with it themselves on the west and east coast. It was very heartening because we sit there sometimes thinking from a competitiveness point of view we have got this enormous economy over there that is not going to play the same game and yet we are trying to compete in that world. I repeat we have got some nations in the European Union which do the same. It was quite heartening to see that some of those states want to come to the party in any way. I really do think that our chairmanship of the G8 can be used as a force for good to get America at the end of the day to advance the reality of the matter not just the argument but if

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all we do is bang on about them not signing up to Kyoto we will be here in a year's time and we will have lost the opportunity because they are not going to do it.

Mr Roberts: Another dimension of using the right approach and thinking cleverly about what is going to unlock interest within Washington relates to perhaps thinking about other ways of expressing the problem rather than simply being an environmental problem, which it undoubtedly is, and moving away from language which says you are the largest polluter in the world, which undoubtedly they are, and trying to press other buttons. There are for example security of supply issues over the long term in being a fossil-fuel based economy. In the present situation where the international climate has a higher degree of uncertainty than in the recent past, that sort of language might be a more imaginative way of unlocking engagement from the American political establishment.

Q504 Joan Walley: Environmental technology being good for business as well.

Mr Roberts: That being the other side of the coin. Potentially if we get the right approach in place there are economic wins. It is a \$500 billion market for environmental goods and services and it is growing at a significant rate. That is wider than services and goods in climate change but that is part of the mix, so there are opportunities, and that is a global market.

Q505 Joan Walley: Are we going to be looking forward to you appearing on the *Ruby Wax Show* waxing lyrically about different ways of dealing with this problem?

Sir Digby Jones: I do not know about Ruby Wax and whether she invites me but I am known as being a critic of the American protectionist attitude to trade and business and investment. I am known as quite publicly saying I think it is very wrong that America will not sign Kyoto because of the leadership role they wish to take in the world. Leaders have to set examples and they should. I also will use the opportunity (and you can look forward to it) to appeal to Americans to say even if you will not and you have an administration that will not, there are other ways you can get there and you have, unlike many countries on earth, the resource to do it in both money and manpower.

Q506 Chairman: Do you think there is a possibility that we might in the end have no successor agreement to Kyoto? It does not have to be a long answer. Do you think that possibility exists?

Sir Digby Jones: The facile answer is of course it exists because there is not one now so it could fall off. If what you are saying is has this achieved sufficient chatter noise on the radar that public opinion in certain parts of the world will not allow it not to have a successor agreement, I think I take the optimistic view that there will be one.

Q507 Paul Flynn: Those countries that have been leaders in investing in environmental protection and gearing up their industries do not seem to have lost any competitive advantage and there may well be a benefit in this and those countries, to use your language, that are not coming to the party might find themselves losing out on their share of the jelly.

Sir Digby Jones: If you talk country-by-country—and shall we discount China and India from this issue?

Q508 Paul Flynn: I would like you to identify those European countries that you think are going to be absent from the party.

Sir Digby Jones: I am sure you would! If you mean those non-behaving countries in the European Union, I think as countries you are right—I am agreeing with you. Where I think you are wrong is if you look at sectors. I will give you a very good example. We cannot carry on without the Commission, without the Council of Ministers, without Member States putting the pressure big time on certain countries that are choosing an easier path. It is no good saying “we have signed up to it.” The Chairman said at the start of this afternoon it is easy to be rhetoric; it is whether you do it. You will find certain industries leave countries. It is not beyond the realms of possibility that within a few years people will say a certain country does not have a steel industry any more, a certain country does not have a ship-building industry any more, a certain country does not have a car-making industry any more. I do not mean Britain, it could be any country. One of the contributing factors might be it is because other competing countries were not making it as difficult to do business from an environmental point of view. I am not saying that is right or wrong. Do not shoot the messenger. I am merely telling you that could be a contributory factor. The country as a whole might still be doing okay but there will be lots of people who are out of the job they were doing because of it.

Q509 Paul Flynn: Possibly in better jobs or jobs with a future?

Sir Digby Jones: Sure.

Q510 Paul Flynn: My difficulty is matching up what you are saying now to what you have been doing throughout the year in trying to push the Government into increasing the size of the UK emissions gap. It was not a very ambitious one. It was designed to have a business as usual approach, it was not very demanding to industry but it has been raised and you have tried to raise it again. It is the race to the bottom argument. You have taken the line if they are not doing it we should not be doing it either. The competition becomes who can do the least which is going to be very damaging.

Sir Digby Jones: Before I answer that in detail (and Michael will join me in this) can I just ask you, do you think it is the job of the government domestically to cause huge loss of production and mass unemployment through prosecution of extremely strict environmental rules and regulations?

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Q511 Paul Flynn: The job of the government is to save the planet initially.

Sir Digby Jones: Even if that is sacrificed?

Q512 Paul Flynn: That is all governments and using our influence to persuade them.

Sir Digby Jones: That is not answering my question.

Q513 Paul Flynn: In doing that there might well be some pain in that but the ultimate aim must be there. Clearly the government should not have that as an aim but you have a touching faith in our influence with the Prime Minister. I am sure we would all like to pass on the message that you gave to him but I believe he has said it already and you are pushing against an open door on that point. I represent and many of us do here a constituency where my steel industry has been cut in half. It was very painful and now the steel industry very prosperous because those jobs have been left, not for environmental reasons. You also talked about the Climate Change Levy. What is the firm that has ended up in France?

Sir Digby Jones: I am not going to tell you the name of the firm but they were very big users of energy.

Q514 Paul Flynn: In what area, in steel?

Sir Digby Jones: No, not in steel, in manufacturing. You used the words the “race to the bottom” and I do not recognise that. That is not the philosophy behind the CBI’s lobbying and what we are for is a race to the top. All I am asking is do it in a way that retains our competitiveness and getting there in a way in which the jobs will change, of course they will change, but perhaps a little more slowly than your touching faith in your own electorate saying it can happen.

Q515 Paul Flynn: There was a story in the paper last week that the UK might take legal action against the Commission if it does not approve the United Kingdom National Allocation Plan. This something of which you would approve? You have been lobbying for it.

Mr Roberts: That has not been our position and if I might suggest your earlier depiction of our position is a travesty of what we have done. What we have been doing over the last year or two years is two things with regard to the UK’s national allocation. Firstly, that it should be based on accurate data both about what has been and what might be on reasonable forecasts and, secondly, that other countries should apply a similar degree and a reasonable degree of stringency upon their industrial sectors as well. The very significant focus of our lobbying has been on the latter. It has not been about watering down what the UK was attempting to commit. It was ensuring that the commitments that other countries were seeking to engage in were of a similar stringency taking into account their history. That has been what we have been seeking to do so and to that extent Digby is absolutely right; our job has not been about promoting a race to the bottom it has been promoting the opposite.

Q516 Paul Flynn: But you have lobbied to raise the cap?

Mr Roberts: No, we have lobbied to ensure that the Government uses accurate data. The Government late in the day—and they have admitted this—at the time they submitted their revised application recognised that they had got their figures wrong and the reason they had got their figures wrong (on which they then made a commitment) was because sufficiently early they had not been talking to the right sectors in detail. As a result of them having the proper discussions at the right level with the right figures they realised they were in danger of signing up the UK to, in practice, a tougher commitment than they had previously realised and indeed a commitment not only tougher than the original but tougher than on the face of it appeared to be the case in other Member States.

Q517 Paul Flynn: What should the Government do about the Phase 2 targets?

Mr Roberts: There needs to be an early exercise in establishing the rules by which Phase 2 will operate. There is a fine balancing act to be conducted here between starting the discussions early so that companies which are going to start trading shortly, if they have not already started, they know what the rules of the game will be by the end of 2007. Equally, as far as is possible under that constraint of starting the discussion early, we need to know some of the lessons of how the trading system operates in its early days.

Q518 Paul Flynn: As we have already met our Kyoto target do you think Britain should go further by basing its commitment upon the UK domestic 20% carbon reduction targets.

Mr Roberts: I think the judgment of whether that is the right approach depends on whether or not there is some good analysis about what the costs of that might be to sectors and to the economy as a whole. We are clearly on all available evidence going to do better than our Kyoto target so I think we are in the business of seeing what is it beyond Kyoto that we commit to. I think it is also useful to recognise that the Climate Change Agreements which have preceded the European Emissions Trading Scheme (by which industrial sectors commit to energy saving) are themselves already based on a desire to move the UK towards its 20% target, so some parts of the business community, in other words industry, are already making that commitment despite the fact that some of their competitors in other parts of Europe are not making a similar explicit commitment.

Sir Digby Jones: If an opinion poll was to stop somebody in the street and say, “Do you really believe that Britain should exceed the Kyoto targets and this is the benefit to the world and this is the benefit to Britain?” They will say yes. If you say, “Now what that would mean is specifically you would be unemployed; now do you believe in it . . . “

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Q519 Chairman: We have heard a lot of this argument. I am sorry to interrupt but I think there is a degree of scare mongering—

Sir Digby Jones: Not in the slightest.

Q520 Chairman: There is absolutely no evidence—you yourself said there was no evidence—of companies leaving Britain to go elsewhere. There is absolutely no evidence from the European Commission competitiveness report or the substantive documentation produced by WWF that the threat that you always come up with that if we do the right thing by the environment we are going to lose British jobs is true and there is plenty of evidence that it is extremely exaggerated.

Sir Digby Jones: With respect, Chairman, you do not get round the members I get round and you do not talk to them in the way I talk to them, and frankly there is a very real threat. The competitiveness threat is alive and well. The thrust of what I was going to say was, and if only you had let me finish, if you then said to them, “It will cause you to lose your job” they will not say yes. I am not going to say they will say no. If you say to them, “But I will tell you what we will do, we will meet the box tick that you just said you want this cleaner world but we will meet it in a time-frame that enables us to reskill you in a different job where frankly the job you are doing will not exist but you will be in employment in a different way,” I reckon they would buy into that. What that needs is time and what you are suggesting, especially when the Chairman just spoke, is not giving us that time.

Q521 Paul Flynn: I think their answer will depend on whether they spent the previous evening reading the *Daily Mail* or watching the programme on global dimming.

Sir Digby Jones: You are probably right.

Q522 Paul Flynn: I think there will be more people watching programmes like that than reading the *Daily Mail*, thank God. There is a possibility that we will also be selling some of our surplus credits because we get to the Kyoto target, as you agreed. Do you think that is a good idea?

Mr Roberts: That we should sell our credits?

Q523 Paul Flynn: Yes.

Mr Roberts: Clearly in a market if we have something of value and other people are willing to buy it then the market should operate.

Q524 Paul Flynn: The International Energy Agency said that the emission trading targets we have will make very little difference on international competitiveness. Is there not too much being made of this? They will be small, they will be manageable, but we do hear these complaints, and certainly they are coming to me, about the effects they are going to have. I think, as the Chairman says, they are very much exaggerated on what is a very modest programme.

Mr Roberts: Let me suggest two answers to that. The first is that the impact on competitiveness depends upon assumptions about how the measures which are adopted are put in place. The concern that we have expressed is that if British companies for example under the trading scheme have commitments which are in excess of the stringency of the commitments of their competitors elsewhere in the trading scheme space, the implication is that they will have a higher cost to achieve that. Now, the extent to which that affects their competitiveness will also depend on a number of other factors. There will be a number of other pressures on business but one thing that we have noted in particular at the moment in the UK economy is that at that stage of the economic cycle (we are near the peak of the economic cycle) relative to similar periods in the last 20 years, the level of profitability in corporate Britain is low by historic standards, our margins are low, and in that context anything that adds to cost alongside other pressures on cost is viewed with sensitivity by the business community. That is not to say that lock, stock and barrel the whole of corporate Britain is going to go overseas but it is an added pressure and makes life more difficult to do business in this country. Our views as we have expressed them to the UK Government and to the Commission reflect that sensitivity and seek to say not that we should not be doing something but that we try and do that something in the most cost-efficient way. It is very unfortunate that people (not necessarily in this room but outside) misread or mishear our concern about the design of particular environmental objectives on climate change with somehow suggesting that we are not up to doing something. I would hate to think that this Committee would make that misinterpretation as well.

Q525 Paul Flynn: On Phase 2 would you be happy to see aviation and road transport included?

Mr Roberts: We certainly think that there is a strong case to try and have aviation integrated in some way in Phase 2. We have been seeking to take that forward and there is an event we have on Monday which will bring together business and government both at EU and UK level to see how we can do that. Technically there is going to be a range of issues to take forward and I think the debate is about whether aviation becomes a fully integrated part of the ETS in Phase 2 or whether in some way it becomes linked to ETS but that is a technical discussion to follow; the principle I think is a strong one.

Q526 Paul Flynn: Would the rest of business and industry agree with British Airways that any increase should be based on their future growth in aircraft traffic? Is that a sensible way of looking forward?

Mr Roberts: I am not sure I understand the question.

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Q527 Paul Flynn: British Airways are saying that they want the emissions allocation for aviation based on its forecast growth. Is that something that you would agree with? If their business goes down or goes up should it vary or should they have a set line?

Mr Roberts: Exactly how British Airways have approached it you would need to talk to them about but I think they are readily up for making a commitment to tackling their emissions over the longer term and they feel that emissions trading is the best way and most cost efficient way of delivering that at the end of the day for both British Airways and other players within the UK aviation community. The debate about the level of engagement is more broadly in the EU aviation community. Within the UK I think there is already acknowledgement that aviation will be a significant contributor to overall climate change emissions and that something needs to be done. The debate is about how best to achieve that and that is why I am sure trading is a way in which they can make their contribution.

Q528 Mrs Clark: We understand and I think it is quite widely known that carbon trading analysts are very convinced that United Kingdom power generation is going to do rather well and in fact make substantial windfall profits in Phase 1 of the scheme. I would be interested to know whether you think it is going to happen and what you think the Government should do?

Mr Roberts: First of all, I think the judgment about the impact on the generating sector will vary from generator to generator. It is not axiomatic that all generators will profit in some way. The extent to which there is an impact on their profitability would

depend on their current generating mix. Some may have a more carbon intensive mix than others and therefore face a greater degree of change of behaviour to deliver against their targets. At the end of the day the other issue that is at stake here is the extent to which they feel able or feel it is consistent with their corporate policy to pass on any cost increases they might incur to consumers, whether that is industrial or domestic. I would not take it absolutely as read that they will be making a windfall of the sort that you mentioned.

Q529 Mrs Clark: Obviously the jury is out on that one and we will have to wait and see. Have you been in discussions with the Government about this? Is this something you have gone into?

Mr Roberts: On the impact on generators specifically?

Q530 Mrs Clark: Yes.

Mr Roberts: No.

Q531 Mrs Clark: Do you think the Government should take action to ensure that if there are windfall profits—and I understand you are a bit dubious about that—are then redirected perhaps into low-carbon generation investment? Should it do that?

Sir Digby Jones: The answer is wait and see, is it not, because a) we do not know if they will and b) we do not know how the companies will behave if they did. Governments of all parties at all times have had a pretty appalling record of suggesting where companies should invest their money.

Chairman: On that note I think we had better conclude this part of our inquiry. I appreciate that you have been generous with your time already. Thank you for your evidence on climate change.

Tuesday 8 February 2005

Members present:

Mr Peter Ainsworth, in the Chair

Mr Colin Challen
Paul Flynn

Mr Malcolm Savidge
Joan Walley

Joint memorandum submitted by the Department for Environment, Food and Rural Affairs, Foreign and Commonwealth Office, Department of Trade and Industry, Department for International Development and Department for Transport

1. The Environmental Audit Committee has asked for evidence on the UK's objectives for 2005 and on the feasibility of emissions trading as a framework for negotiating a post-Kyoto agreement. This joint memorandum represents the agreed position of Defra, the FCO, DTI, DFID, and DFT

2. The ultimate objective of the United Nations Framework Convention on Climate Change (UNFCCC) is the "...stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." The Kyoto Protocol to the UNFCCC provides for binding emissions targets for the industrialised countries listed at Annex I to reduce emissions of a basket of greenhouse gases by an average of 5.2% from 1990 levels during the period 2008–12 (this figure assumed the involvement of both the US and Australia). There is no agreement on subsequent commitments. The Protocol envisages that negotiations on the post-2012 period should start by the end of 2005.

3. The Kyoto Protocol is an important step but there is much more that needs to be done to tackle climate change. Building an international consensus on longer-term action will be one of the key challenges for the UK in 2005 and beyond. The UK therefore intends to play a leadership role on international climate change in 2005, building on its Presidencies of the G8 and EU, in order to re-energise the debate and to stimulate further discussion on accelerated global action to tackle climate change. "UK International Priorities—The Energy Strategy", published jointly by FCO, DTI and Defra in October 2004, sets out in more detail the international energy challenge that we face and how we propose to meet this over the next five to 10 years.

APPROACH AND SPECIFIC OBJECTIVES FOR THE UK PRESIDENCIES OF THE G8 AND EU

4. The Prime Minister has made clear his commitment to using the UK's Presidencies of the G8 and EU to prioritise the issue of climate change. The political debate has lost some of its momentum (though Russia's recent decision to ratify the Protocol should help to re-energise the debate) and there is a need for more constructive and innovative dialogue to establish a way forward. The Presidencies present a significant opportunity for the UK to show leadership by creating a fresh dynamic for this to happen.

5. The UK has a strong domestic record in addressing the challenge of climate change. As well as being on track to meet its Kyoto target, the UK has set ambitious domestic goals for reducing greenhouse gas emissions and has also established processes for reviewing and refining our domestic climate change programme to ensure we deliver. The review of the UK's Climate Change Programme, assessing progress against targets in order to establish where further action is needed to meet those targets, commenced in September 2004 and is due to be completed by the first half of 2005.

6. On the international front, the Prime Minister is committed to using the Presidencies to re-invigorate the debate on climate change and to build consensus on the scale and urgency of the challenge that the international community faces in addressing the issue. The Prime Minister's key objective for the G8 in 2005 is to raise the profile of climate change as a matter deserving the urgent attention of Heads of State in the G8 and outside it, so as to promote an international consensus on the need for further action to control emissions.

Our aims for next year are:

- To use the Presidency of the G8 to build on a solid foundation on the science to promote greater understanding of the size and scope of the problem of climate change and how to address it in the medium to long term
- To use the Presidency of the G8 to reach agreement on a process to speed up the science, technology, and other measures necessary to meet the threat.
- To use the Presidency of the G8 to engage countries outside the G8 who have growing energy needs, both on how these needs can be met sustainably and how they can adapt to the impacts which are already inevitable.

- To use the Presidency of the EU in 2005 to continue the development of an EU medium and long term strategy for tackling climate change. This will help to prepare for the November 2005 Conference of the Parties (which is most likely to be held along with the first Meeting of the Parties to the Kyoto Protocol), where we expect to see the beginning of discussions on global action to fight climate change after 2012.
- To use the Presidency of the EU to highlight the contribution the aviation industry makes to greenhouse gas emissions and make significant progress on advancing our Air Transport White Paper commitment to including aviation emissions into the EU Emissions Trading Scheme, and look to get negotiations for an EU directive started with the publication by the Commission of a Draft Proposal.

7. We will take forward this agenda through a series of events in 2005, including an international meeting of scientists at the Hadley Centre in Exeter on 1–3 February 2005 and a meeting of Energy Research Institutions, probably in May 2005. The aim of the science meeting is to advance scientific understanding of and encourage an international scientific debate on the impacts of climate change for different levels of greenhouse gas stabilisation, and the pathways and options to achieve such levels; and to encourage research on these issues. The meeting will take as read the conclusions of the 3rd assessment report (TAR) of the Intergovernmental Panel on Climate Change (IPCC) that climate change due to human actions is already happening and that without actions to reduce emissions, climate change will continue to grow with increasingly adverse effects on the environment and human society. The details of the conference can be found at www.stabilisation2005.com. The meeting of Energy Research Institutions follows up the “Action Plan on Science and Technology for Sustainable Development” that was adopted in Evian during the French Presidency of the G8 in 2003. It will explore what current research on cleaner energy technologies is being done, where there are synergies and duplication and where greater collaboration could be beneficial. In addition to this meeting, the UK will be seeking to look at ways to promote the uptake of cleaner technologies and spur innovation into new ones as a key aspect of tackling climate change.

8. Defra and DFID have also commissioned a study to look at Africa and climate change to review what information is available on climate change in Africa and evaluate the adequacy of existing data to inform policy decisions. The study can add considerable value by identifying these knowledge gaps and what needs to be done to plug them. We have begun with Africa as it is the least well-covered region, but similar work in other regions may also be necessary.

CONTRIBUTION OF INDIVIDUAL DEPARTMENTS AND MECHANISMS FOR JOINT WORKING

9. The Ad Hoc Ministerial Group on International Climate Change, attended by ministers from Defra, FCO, DTI, HMT, ODPM, DfID, MoD and DfT, is chaired jointly by the Secretaries of State for Environment Food and Rural Affairs and for Foreign and Commonwealth Affairs. The Sustainable Energy Policy Network, jointly chaired by Defra and DTI Secretaries of State, is responsible for ensuring that the climate change and other commitments set out in the Energy White Paper are implemented.

10. Within Whitehall, Defra has overall responsibility for climate change policy including tackling the causes of climate change, working to find ways to adapt to unavoidable climate change impacts, promoting effective science to inform policy, leading on international climate change negotiations, promoting energy efficiency, reducing emissions from industry and business, developing alternatives to fossil fuels and encouraging the protection and enhancement of carbon sinks. The Department’s Climate, Energy and Environmental Risk Director also acts as the Prime Minister’s Special Representative on Climate Change, meeting regularly with the UK Sherpa in preparation for the UK’s G8 Presidency and with officials and ministers from other governments. A unit has been set up within Defra to drive forward the work on the climate change priority for the Presidency year and includes external experts (eg from industry and shortly an NGO and Non-Annex I country) as well as Defra staff and secondees from other government departments.

11. The Cabinet Office and No 10 contribute to policy development and provide co-ordination mechanisms at senior official level, while the FCO has established a working level G8 co-ordination team that covers all aspects of the G8 Presidency, including climate change. This team facilitates cross Whitehall working on the UK’s G8 objectives. In addition, informal working groups on particular aspects of the Presidency communicate regularly to ensure that all departments have an opportunity to input into the policy making process.

12. The FCO’s specific role in terms of the Presidencies is to ensure that policy across Government is consistent and cohesive. For the G8 Presidency, this involves working closely with key lead Departments such as Defra, DTI and DfT. As the Summit will be held at Gleneagles, the FCO is also working with the Scottish Executive. The FCO is also working with Defra to make the G8 Presidency as sustainable as possible. On the EU Presidency, the FCO’s role is to co-ordinate HMG’s wider international priorities across the full range of external activity in which the EU is involved. The FCO is responsible for a number of cross-cutting areas of EU and G8 Presidencies activity, including the scheduling of Summits, Councils and other meetings and events; aspects of the external communication of the Presidencies (including the Presidencies logos and websites); and for attracting commercial sponsorship for the Presidencies.

13. Overall, FCO contributes foreign policy perspectives and analysis to help Whitehall departments form policy on international climate change issues and negotiate effectively. FCO staff in overseas diplomatic posts maintain regular contacts with host governments in order to analyse and report on countries' climate change policies and priorities, and lobby for UK positions. FCO officials take part in the Defra-led delegation to international climate change meetings. FCO is able to put international climate change policies into the context of the UK's wider foreign policy work, to maximise leverage and coherence. Diplomatic posts also help to promote UK climate change objectives overseas by sharing UK views and experience on successful and cost-effective action to tackle climate change.

14. DFID is taking the lead on ensuring effective linkages between HMG objectives on climate change and the development agenda. Integrating management of climate change into development and poverty reduction strategies (so-called "mainstreaming") is key. To this end, DFID have produced multi-donor key sheets, initiated a study on the links between climate change and disaster prevention, and plan to start work in 2005 on climate change risk assessment and management as part of a multilateral effort.

15. DTI's role is to consider all aspects of climate change that impact on the energy and business sectors. This includes making sure that the competitiveness of industry is maintained and ensuring that issues affecting security of energy supply, energy prices and competitive energy markets are taken into account. The DTI has strong energy relations with all G8 partners through its work in the International Energy Agency, the EU (in particular through the EU-Russia Energy Dialogue) and in its bilateral energy dialogue with the US. It is using these relationships to promote the PM's G8 priorities (Africa as well as climate change) and is working with DEFRA, DFID, Treasury and others to propose initiatives that have substantial and practical outcomes. Given our close relationship with Russia on energy the DTI has a particular role in developing ideas to ensure synergies with Russia priorities for its G8 presidency in 2006. The DTI has responsibility for the energy and carbon dioxide projections that form an integral part of the UK's National Allocation Plan under the EU ETS, as well as promoting the uptake of low carbon energy technologies, including renewables, carbon capture and storage and clean coal technology. It also assists business on opportunities arising from emissions trading through UK Trade and Investment and the joint DTI/Defra Climate Change Projects Office.

What alternative approaches to succeed the current Kyoto Protocol are under consideration or may emerge and the extent of political support each attracts

16. The UK is committed to finding a workable framework under which global greenhouse gas emissions can be reduced to safe levels, but the international debate as to what that framework would look like is still at a very early stage. There are not yet any formal intergovernmental discussions of the design of a future commitment period to follow the Kyoto Protocol. Nevertheless, experts have been considering what different approaches might look like and a number of approaches have been suggested for the design of future action on climate change. The UK sponsors joint research on the Brazilian proposal on allocating emissions according to historical responsibility and participates in events such as the Future Action Dialogue organised by the Centre for Clean Air Policy.

There are a number of broad categories of approaches:

(i) "Kyoto plus" approaches

These would build on the basic architecture of the Kyoto Protocol to negotiate a further series of steps towards achieving the ultimate objective of the UNFCCC. They could offer greater flexibility in a number of areas, for example in the type of targets (absolute/relative/binding etc) and in the allocation of responsibilities of parties based on greater differentiation according to countries different economic circumstances, capabilities and other considerations.

(ii) Full term frameworks

These frameworks would start by identifying an overarching level at which global greenhouse gas concentrations should be stabilised in the long-term and would allocate responsibility to countries for reducing their emissions in a manner that would be consistent with meeting the target on the basis of agreed criteria (for example per capita emissions, historical responsibility and/or the capacity to act). Contraction and Convergence, based on moving progressively to equal per-capita emissions allowances, is one example of such a framework.

(iii) Sectoral approaches

Sectoral approaches would look for action at a global level in specific sectors such as energy intensive industries. This could take the form of voluntary agreements at an industry level or a new mechanism to promote emissions reductions in developing countries on a sectoral rather than a project basis. The details of how to operationalise such approaches are being explored in informal discussion fora along with the other types of approaches.

(iv) Policies and measures

This type of approach would build on national policy commitments to reduce greenhouse gas emissions and might include international elements to oversee implementation such as structured peer review. It could be accompanied by international commitments for example on funding or on technology development and diffusion, but would not necessarily provide a basis for international emissions trading other than through linked national schemes.

17. As yet, there have been no formal intergovernmental discussions of the design of a future commitment period under the Kyoto Protocol. However, now that Russia has signed up, the Kyoto Protocol will enter into force early in 2005, triggering the start of discussions under the UN umbrella of climate change action after 2012. The UK will chair the EU at the UN climate change conference at the end of 2005 at which these discussions are due to commence. Our Presidency of the EU gives us an excellent opportunity to galvanise work on preparing for future action. At this stage it is important that we remain flexible in looking at the options.

Emissions trading

18. Emissions trading is an economic instrument that can reduce the cost of meeting a target for emissions reductions. Emissions of greenhouse gases mix rapidly in the atmosphere, so from an environmental point of view, it is immaterial where in the world an emission occurs, so it makes sense to reduce emissions where the cost is lowest. Economic modelling shows that the cost of meeting any target for reducing greenhouse gas emissions is reduced significantly the larger the trading market. In other words, costs fall when moving from a national to a regional scheme and fall further moving from a regional to an international scheme. For this reason, international emissions trading and two related project based instruments, the Clean Development Mechanism and Joint Implementation, are an important part of the Kyoto Protocol.

19. The UK has gained experience of emissions trading through the UK Emissions Trading Scheme, a voluntary, incentivised scheme that has been operating in the UK since April 2002. The scheme was the first economy-wide emissions trading scheme in the world and is a cap and trade scheme with 31 Direct Participants drawn from a range of sectors, both public and private, and a further 6,000 potential participants who can meet their Climate Change Agreement targets through trading in the UK Scheme. The Scheme covers the basket of six greenhouse gases traded in tonnes of CO₂ equivalent (tCO₂e) and has provided first hand knowledge and experience of the difficulties and advantages of trading emissions across sectors. The UK has been able to deploy this experience effectively in the development of the EU Emissions Trading Scheme (EU ETS) and has been able to share its experiences with countries outside the EU to good effect. The Emissions Trading Scheme has achieved significant emissions reductions of around 9.8 million tCO₂e in its first two years and has been recognised by a National Audit Office Report as a “pioneering initiative”. The Report found that the Department had “successfully set up a novel and functioning emissions trading scheme” that has provided greater understanding of emissions trading, “has encouraged the development of the European Scheme and influenced its design in some aspects”.

20. Phase 1 of the EU ETS will begin 1 January 2005 (more details are provided below). Neither the UK nor EU schemes currently cover aviation emissions but the *Future of Air Transport* White Paper (Cm 6046–December 2003) committed the Government to incorporating intra-EU air services in the second phase of the EU ETS from 2008 or as soon as possible thereafter. DfT and Defra are working closely to deliver this commitment. Emissions trading is also recognised by the International Civil Aviation Organisation (ICAO) as a potentially cost effective measure to address aviation’s climate change impacts, and a major research project for ICAO has been completed recently—*Designing a Greenhouse Gas Emissions Trading System for International Aviation*—ICF Consulting, May 2004. The Government hopes that early moves in Europe on aviation and emissions trading will provide the platform for subsequent action at the global level. On 9 November, the European Commission let a contract to the consultancy firm CE Delft that will examine in detail how to achieve aviation participation in the EU ETS. This is a welcome development.

21. DfT’s response (of September 2004) to the EAC Report *Aviation: Sustainability and the Government Response—7th Report of Session 2003–04 (HC 623)* laid out proposals on aviation emissions trading in its response to recommendation 7.

Feasibility of an international ETS

22. International Emissions Trading is already part of the UN architecture for tackling climate change. The Kyoto Protocol establishes a scheme for international GHG emissions trading between Annex I Parties (and entities authorised by Annex I Parties) from 2008 and preparations for making this a reality are well underway. For example, Defra has developed a Registry which is compatible with the EU ETS and emissions trading under the Kyoto Protocol. Defra is licensing the registry software to other countries and there are currently eight licensees of the Defra EU/UN Registry. In addition, under the “prompt start” agreed for the Clean Development Mechanism (CDM), the CDM Executive Board was elected in 2001 and is expected to register the first CDM projects in the near future. CDM projects that meet the rules can be awarded credits for emissions reductions dating back to the year 2000.

23. Moreover, prior to the establishment of international emissions trading under the Protocol, from early next year the EU ETS will provide for international emissions trading between participants throughout the EU. The EU scheme is the first corporate level international CO₂ emissions trading scheme in the world. The scheme can be considered a system of 25 linked domestic trading schemes drawn up by Member States in accordance with their obligations under the Emissions Trading Directive (Directive 2003/87/EC). The EU ETS has been designed so that it will in time become international emissions trading as envisaged under the Kyoto Protocol in particular for industry sectors.

24. The EU ETS operates by requiring each Member State to set a total number of allowances to be allocated to the covered industry sectors in that country and then distribute that total through the allocation of allowances: In the first phase from 2005 to 2007, companies are allocated EU allowances created solely for the purpose of the scheme; from 2008, Kyoto Units (assigned amount units or AAU) will be allocated to companies within the EU¹. The first phase of the EU ETS covers about 45% of EU CO₂ and approximately 12,000 installations.

25. The EU ETS Directive also mandates linking the EU ETS to third countries with emissions targets under the Kyoto Protocol providing for the mutual recognition of allowances between the EU ETS and other greenhouse Gas trading schemes. Thus, the Directive envisages a network of linked company-level trading schemes between parties to the Kyoto Protocol. From 2008 (when Kyoto comes into effect), the mutual recognition of allowances from third countries will require the exchange of AAU in parallel with exchange of allowances to ensure continuing equivalence between the EU Scheme and Kyoto Schemes. The European Commission has already held discussions with Japan and Canada about the possibility of establishing links between domestic schemes and the EU ETS and at Environment Council in October announced that the EU ETS is considering a proposal to link to domestic trading schemes in Norway.

26. Although linking with Schemes operated by countries or sub-national entities that are not parties to the Kyoto Protocol is excluded from these mutual recognition provisions, the "Linking Directive" (Directive 2004/xx/EC) which amends the Emissions Trading Directive provides that the Commission should explore further the possibility of linking the EU ETS to non-Kyoto schemes within third Countries once the Protocol has entered into force.

27. In considering whether to establish links between domestic schemes and the EU ETS, the Community will need to consider the impact of linking in relation to a number of factors: institutional compatibility, economic efficiency, environmental integrity and equity (competitiveness). These impacts will be dependent on different aspects of the design of the scheme in question: differences in sectoral coverage and stringency of targets will not necessarily be a barrier to linking but minimum levels of compatibility will be required (eg systems for tracking trades, comparable levels of penalties and enforcement).

28. Though mutual recognition between Kyoto and Non-Kyoto Schemes is legally barred at present, a more limited unilateral linking remains possible where other schemes recognise the use of EU allowances or Kyoto units for compliance with domestic schemes. In this case there is no mutual recognition of allowances and no actions by the EU are required. Such a link would be possible between the EU ETS and regional emissions trading schemes of the kind under development for the power sector in the 10 north-eastern US states that are working together on the Regional Greenhouse Gas Initiative.

29. In addition, the Linking Directive provides for the use of project related emissions reduction credits (ERUS and CERs) from the Kyoto project-based Mechanisms by installations for compliance with the EU Trading Scheme. Joint Implementation (JI) Projects between Annex I Parties countries will generate Emissions Reduction Units (ERUs) from 2008 and Clean Development Mechanism (CDM) Projects will give rise to Certified Emissions Reductions (CERs) probably from early 2005. Thus, a link is already in place between the EU ETS and credits arising from international projects in non-EU developed countries and developing countries which are party to the Kyoto Protocol.

30. As can be seen from the above, the EU ETS and the Kyoto mechanisms already provide for a system of limited international emissions trading between regulated entities, which can be expanded through the linking to additional domestic trading regimes.

31. It is possible to imagine other routes for the further development of international emissions trading:

(a) Top down:

Either within the global framework under the Kyoto Protocol, in which national targets and the rules for trading have been negotiated under the UNFCCC.

Or through another international framework. For example the EU scheme can be viewed as establishing a top down framework for emissions trading at a EU level, albeit linked to the CDM from 2005, and broader international emissions trading from 2008.

¹ The EU Registry Regulation provides for the link between EU and Kyoto Trading via the Conversion of Kyoto AAU to EU Allowances prior to allocation to Companies from 2008.

(b) Bottom-up:

Through a bilateral linking of national and regional initiatives. This approach is reflected in the EU Directive in that it provides for mutual recognition of allowances by agreement between the EU and those that have ratified the protocol.

Through a more coordinated linking within the framework of a regional economic integration organisation (the EU) or another international organisation. For example because the EU Scheme maintains significant national discretion over allocation plans etc it can (as well as being an example of a top down approach above) be conceived as the simultaneous and coordinated linking of 25 national schemes within the framework of EU legislation. The elaboration of an international sector based trading scheme for aviation or shipping, in the context of ICAO, or International Maritime Organisation, might also be considered examples of this coordinated approach.

Through unilateral recognition of credits for compliance with particular schemes.

Compliance and enforcement issues

32. In general terms, international law is dependant on the will of states and implementation at national level to ensure enforcement. Nevertheless Parties to the Kyoto Protocol have agreed a compliance decision at the Seventh Conference of the Parties to the UNFCCC in Marrakech in 2001 that provides detailed procedures and penalties for non-compliance with trading rules. The primary sanction for non-compliance with many Kyoto rules is the suspension of eligibility to participate in trading. The ultimate penalty for non-compliance with targets is provision of penalties for non-compliance with targets.

33. The European Union provides an additional compliance framework for Kyoto obligations through the implementation of UN obligations as EU obligations making them enforceable in the European Court. The Ratification Decision, the Monitoring Mechanism Decision, the EU Registry Regulation in particular incorporate UN obligations into EU law. Pursuant to these decisions the establishment of assigned amounts, establishment of national inventory systems, annual reporting on assigned amounts and emissions, and the establishment of national registries are all EU obligations.

34. At the level of individual trading entities, additional implementation measures are required to determine the scope of coverage and the level of targets, to ensure equivalent monitoring verification and compliance and enforcement measures, and to ensure accounting of entity level targets and trades in national registries. Within the EU, the EU ETS and implementing measures already provide for obligations and sanctions for individual participants. Monitoring and Reporting Guidance and the EU ETS Registry Regulation provide a certain level of harmonisation of accounting for entity level emissions and allowances. The EU ETS also provides for harmonised penalties (€40/tonne for 2005–07 and €100/tonne thereafter).

35. Outside the EU Scheme differential treatment of trading entities under national law, as well as differences in coverage of schemes and level of target can cause competitive distortions. As mentioned above, these issues would need to be considered prior to the establishment of any formal linkage between the EU ETS and other domestic schemes, although they could be addressed in the mutual recognition agreement itself.

Alternatives to international emissions trading

36. The main alternatives to international emissions trading include:

- (i) carbon taxes; and
- (ii) harmonised national or sectoral policies and measures.

An international carbon tax, if set at an appropriate level, might well have a similar effect to a perfect emissions trading system. However, where regulators lack perfect information about abatement costs for the regulated industry, it is often not possible to calculate the appropriate level of tax that would lead to the desired level of abatement. In these circumstances, a taxation system can mainly provide for a certain control on costs, but not a certain control on quantity of emissions abated. For climate change mitigation policies, there is uncertainty about abatement costs in the part of the regulators and the policies tend to focus on quantity abated—making carbon taxes a sub-optimum policy response in most cases. In addition, it is unacceptable to many countries on the grounds that taxation is a matter for national policy-making.

37. Harmonised policies and measures can take a wide range of forms. They might include minimum efficiency standards for electrical appliances or motor vehicles, commitments to standards in government procurement or public buildings, or commitments to derive a certain proportion of electricity from renewable sources. As before, due to imperfect information about abatement costs available to governments, these quantity based controls are often set without specific reference to costs leading to higher over-all abatement costs. From a purely economic perspective, an emissions trading scheme can control the quantity abated at minimum cost and therefore is more efficient than either a tax or a quantity based instrument. There are also problems with the negotiability of some such measures, but in some areas they have an important role to play. The voluntary EU agreement with EU, Japanese and Korean car

manufacturers on automotive energy efficiency is an example of this approach in practice. In particular, a worldwide commitment to standards in one sector might help to alleviate concerns about competitiveness in highly traded sectors.

Relative effectiveness of international Emissions Trading Scheme and alternative measures in reducing emissions and assisting technology transfer to developing countries

38. Both emissions trading and policies and measures have a role to play in maximising emissions reductions worldwide. An international Emissions Trading Scheme has the potential to deliver reductions at the lowest possible cost. This should help to ensure that more stringent targets for emissions reductions are politically and economically feasible. But in other sectors, international emissions trading is less relevant—for example it is more difficult to use such a scheme to influence household decisions on energy use, so that policies and measures clearly have an important role to play.

39. Emissions trading can play a role in helping to channel investment in low carbon technologies to the developing world. This is the rationale for the Clean Development Mechanism, which allows parties to the Kyoto Protocol with binding targets for emissions reductions to meet part of their obligations through emissions reductions in developing countries.

40. Emissions trading might play a greater role in facilitating technology transfer to developing countries if those countries were to take on some form of targets in order to enable them to trade surplus emissions reductions. This might have most impact if the targets were negotiated at or below the projected growth in actual energy use. The country would then have an incentive to proactively seek out and disseminate lower carbon technologies to reduce emissions wherever it was affordable to do so, in order to generate credits to sell into the international market.

41. Policies and measures can also play a role in spreading low carbon technologies to developing countries through the private sector for example by creating demand for more energy efficient products and stimulating investment in manufacturing facilities for those products in developing countries. There is also considerable debate about the role of the public sector in facilitating technology transfer, for example through subsidies and bilateral co-operation agreements. It is unlikely that these measures could deliver emissions reductions on a scale equal to those that might be achieved through a global commitment to an international emissions trading system.

25 November 2005

Witnesses: Mr Bill Rammell, a Member of the House, Parliament Under-Secretary of State, Foreign and Commonwealth Office, Ms Valerie Caton, Head of the Climate Change and Energy Group, and Mr Henry Derwent, Director, Climate, Energy and Environmental Risk, Department for Environment, Food and Rural Affairs, examined.

Q532 Chairman: Good afternoon, Minister. We have some questions which we would like your officials to have an input into, I take it that they are on their way?

Mr Rammell: Do you want to hang on for them?

Chairman: No, we can crack on. We want to cover, as you know, basically the Foreign Office's involvement in the G8 agenda and the EU Presidency to do with climate change, which the Government has made a priority. I have some questions related to your departmental workings which I will leave until your officials are here, that is probably better. Welcome, thank you very much for coming, we do not often see the Foreign Office on this Committee. Joan Walley.

Q533 Joan Walley: It is really good that you are here, Minister, welcome. I think there is so much talk about Kyoto at the moment and, indeed, some of us have just come from the debate that is taking place in the chamber on climate change. What we really wanted to question you on was given that the Prime Minister has himself agreed with Sir David King that climate change is one of the most serious threats confronting mankind and, as we know, climate change is likely to become one of the key

priority issues that is being raised, I was quite interested to see how that relates to the set of Public Service Agreement objectives and targets and it seems from looking through these that they do not really mention climate change and I wonder just why that is.

Mr Rammell: Firstly, thank you for the welcome and genuinely it is good to be here and to engage as the Foreign Office Minister with direct responsibility for our environmental portfolio, which is something that we take seriously and I welcome this opportunity. If you look at objective seven under the PSA it talks of the security of UK and global energy supplies, and I think a key element of securing our energy supplies over the longer term is actually making them sustainable, is ensuring that they are not put at risk by the problems of global warming and the impact upon climate change and that is very much where it fits in within the Public Service Agreement. Certainly we are genuinely very plugged into the rest of Whitehall. We have got a number of official groups within the Foreign Office that deal with climate change and deal with our overall environmental portfolio, and I am sure we will be able to go through that at a later stage. At an international level, and indeed I was talking to Elliot Morley

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about this yesterday in advance of coming here, totally unprompted he was saying to me he finds the co-operation he gets from the Foreign Office in dealing with these issues one of the best within Whitehall. How do we do that? We do it through things like our posts regularly raising these issues, lobbying officials, being part of international Defra-led delegations to key international fora, and also looking for every opportunity that we can to promote these issues.

Q534 Joan Walley: I hear what you say there but you say if you look at objective seven that is where it all fits in, but it does not really spell it out as such and that is the issue that concerns me. It seems to me that if terrorism is the number one objective, it seems strange that climate change is not really mentioned. There seems to be an inconsistency there. If you look at objective seven, "Secure and well-governed British overseas territories enjoying sustainable development and growing prosperity", that does not really spell out the commitment to climate change, does it?

Mr Rammell: I accept the point that it does not spell it out in explicit terms. It is not the only area under the PSA objectives where climate change comes in. Under sustainable development, under objective six, it is a key factor. I take the point that it is not explicitly delineated. Since we have gone through this process in the last year or so, and I think it is a legitimate process, to actually determine what are our priorities in order to ensure that we are maximising our bangs for our bucks, as it were, I think it is the right process to be gone through. Inevitably there are some elements of what we do that come under generic headings and I accept the point that it is not explicitly borne out.

Q535 Joan Walley: Would it not be easier for you to show how FCO is delivering the Prime Minister's objectives if it was actually explicitly spelt out? I am sure that if I were in your shoes I would think it would be so much easier to deliver if it was spelt out as an agreed objective with the Treasury in respect of the Public Service Agreement and targets that have to be met.

Mr Rammell: If we were not delivering in practice on the climate change agenda I would willingly accept that argument but I genuinely believe from all that I do and all that I see the Department does at posts in terms of regularly raising these issues, ensuring that whenever a minister travels abroad it is one of the key issues that is put forward, by strongly working and lobbying and recommending that it should be one of the two major priorities that we are putting forward under the G8 Presidency, working very, very hard to look at the pulls and the levers that are necessary in terms of the EU Emissions Trading Scheme, in practice it is happening. I guess the way to respond is to say that with hindsight in terms of demonstrating what we are actually doing, arguably it might have been something that we could have put into one of the titles but it is genuinely not the case that this is a low priority within the Foreign Office.

Q536 Joan Walley: That is always the case, is it not, where the benefit of hindsight always makes an amazing difference. It just seems to me that if you were able to flag it up in the same way, for example, that you are able to flag up terrorism, it would just make it so much easier to be able to do cross-cutting work across government departments, to be able to take that international leadership role on if you had actually got it spelt out as a top priority in respect of those targets.

Mr Rammell: I know where you are going with the argument but I am not going to go as far as accepting that premise because the practice is that we are delivering. I think there are an awful lot of things that legitimately from many perspectives we can be criticised for but I think objectively if you look at the work that the Government as a whole and the FCO, as a key part of that, does on climate change, not only in absolute terms but relatively within the international community, I think we are rightly seen as taking a lead on this issue. We get a bit boring to some of our counterparts over the number of times and the number of ways in which we raise this issue.

Q537 Joan Walley: I accept what you say, that you are actually taking the lead on these things even though it is not explicitly spelt out. In respect of climate change and internal objectives and targets for 2005, could you just tell the Committee how you are doing that even though it is not explicitly spelt out? What is actually going on on the ground in the day-to-day work that the Department is doing in relation to the things that you are actually doing even though it is not spelt out?

Mr Rammell: Okay. Firstly, effectively we are servicing both our G8 and our EU Presidencies where within the G8 Presidency it is one of the two priorities that we have put forward, and within the EU Presidency it is going to be a key priority. We have set out very clearly that the aim of the G8 Presidency is to build a solid foundation on the science to try to develop international consensus on the urgency of the problem that we are facing, reaching agreement on how we need to speed up the process of the science of technology and also critically engaging with those developing countries outside of the G8. That means, for example, that we have got action plans in key posts in developing countries to engage with those host governments. We have got a number of priority ambassadors who have been specifically tasked by the Foreign Secretary with taking personal responsibility for that, and I think that is an important measure because often the way that it works at post is there are a whole host of priorities and they are filleted out and delegated. Under this system it is actually the ambassador or the high commissioner who has to take responsibility for that. We have a number of projects both through the renewable energy and energy efficiency partnership where we are in the lead internationally on this. We have given the biggest funding contribution, and there are a number of projects that are being funded at the moment through that mechanism, to break down

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the barriers to the spread of renewables and to take up energy efficiency measures and through the Global Opportunities Fund, which is an annual programme that is significantly expanding, there are a number of programmes that have been instituted from that source as well. Those are some of the key day-to-day things that we are doing. In addition to that, at a political ministerial level, as it were, we have the special energy group that is jointly chaired by the Secretaries of State for Defra and DTI, which I sit on, and there is then the Ministerial Group on Climate Change which is jointly chaired by the Secretary of State for Defra but also the Foreign Secretary. I think that chairmanship institutionally beds in the priority that we give to these issues.

Q538 Chairman: Can I interrupt and welcome two of your officials, one of whom may be Valerie Caton.

Ms Caton: Indeed I am.

Q539 Chairman: And one of whom certainly is not Kate White.

Mr Rammell: It is Henry Derwent. Both of them are going to have an exceedingly good explanation for their late arrival.

Chairman: You are both very welcome. I do not think the Minister has committed the Government to anything that you did not know about—yet.

Q540 Joan Walley: If I could just pursue the line of thinking that we were on in terms of the actual work that is going on as opposed to what is explicitly there in the targets. You just mentioned a whole list of different initiatives that are being taken in relation to G8 and the European Union Presidencies. If I could just ask you how you are monitoring and measuring progress on those things which are actually being done because I think one of the things that this Committee is really looking at, insofar as this is an audit committee, is to see not just what people say they are doing but how they know that what they say they are doing they are actually doing. Are you auditing it, measuring it? How do you feel that those internal objectives that you have set yourself are really being achieved?

Mr Rammell: I think we are trying to measure. Relatively we are still at an early stage with this in the development of a number of projects but I think we are trying to monitor even down to the level of performance appraisal for individual officials in terms of the job objectives that we set them.

Q541 Joan Walley: Does that apply to attendance at Select Committees? Sorry.

Mr Rammell: Good point. It comes in from that point of view. It comes in, as well, through the groups that we have established internally on climate change and sustainable development which meet regularly to log and review progress. Also, we are feeding that progress back in through the inter-ministerial working parties and committees. For example, and it is not explicitly on the climate change agenda although it links into it, an example

of the way that we have gone out of our way, and I in driving this have gone out of my way, to open ourselves up to scrutiny is on our Sustainable Development Strategy that we will be launching in a few weeks' time. We have worked throughout with Jonathan Porritt and the Commission for Sustainable Development and have had a regular series of meetings where I have got the submissions from officials, I have amended them, worked them through and then thrown them open to Jonathan and said, "Right, tell us from your independent perspective how well you think we are actually progressing".

Q542 Joan Walley: Thank you. I think you just touched on the Climate Change and Energy Group. Does that have specific objectives and targets?

Mr Rammell: Yes, it does. I will ask Valerie, if I can, to give some of the detail of that.

Ms Caton: I am Head of the Climate Change and Energy Group inside the Foreign Office. We were established last September with the objective of taking forward the Foreign Office's strategic priority number seven on climate change and energy security, which is set out in the Foreign Office's White Paper setting out its international priorities. Also, we have a role in taking forward the international aspects of the 2003 Energy White Paper and as part of that we led in drafting the UK's International Energy Strategy which was published by the Foreign Secretary at the end of October. That document was signed off by the Foreign Secretary and Mrs Beckett and Mrs Hewitt as well, so it had the backing of the three main ministries that lead in this area. We are now following up how we are taking that forward with the other government departments through the Sustainable Energy Policy Network, which is a cross-Whitehall body which has a number of publicly available objectives and milestones, and we are submitting our objectives and milestones from our business plan to that group and they will be monitoring our performance in following that up.

Q543 Joan Walley: Thank you for that. I think we will be coming in a little while to some of the detailed issues that stem from that. Before we do move off that, can I just ask the Minister to perhaps give us a little bit more detail. I know that you are the Green Minister in the Foreign and Commonwealth Office, and I think that is a really important position to be holding, and I just wondered how you felt that the work that you have been doing has enabled this whole issue to be embedded into the work of the Foreign and Commonwealth Office?

Mr Rammell: I think we have made progress. I am not going to deny that this is relatively a new issue. It is not an issue that historically has been seen as a key part of international diplomacy and the ongoing work of ambassadors and officials. What we are trying to achieve is a cultural change and we are certainly giving strong leadership on it. We are certainly setting up the mechanisms to ensure that it is embedded. I take your point about explicit

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wording, but the fact that energy and sustainable development are included as two of the eight key priorities sends out a strong message, I think. My assessment is that over the time I have been in the FCO, which is two and a bit years, holding this portfolio, the issue is much more mainstream than it was. Have we got further to go in bringing about that cultural shift, yes, we have.

Q544 Joan Walley: I am just wondering if I asked the same question of someone like, for example, Professor Paul Rogers from the Peace Studies Department at Bradford University whether or not he would give the same answer that you have just given.

Mr Rammell: I doubt he would because that is the divide between academia and the world of government.

Q545 Joan Walley: In terms of pursuing this whole issue of embedding environmental objectives into the work of the Foreign and Commonwealth Office and looking at the whole issue of conflict resolution and the prevention of conflict, is there more that you can do as the Green Minister or are you seeking advice of people who perhaps could be proactive in assisting the UK Government on this?

Mr Rammell: I think I gave you an example previously of the way through the Sustainable Development Commission with Jonathan Porritt, who is hardly a shrinking violet on these issues and has been quite robust and challenging externally from the Government to challenge and scrutinise what we are doing, I deliberately have gone out of my way to involve him and his organisation in developing our sustainable development strategy because I felt we needed that critical input from the outside. I keep an open mind about whether we need to take that further and involve others, but we are certainly not conducting this on our own within a silo and not looking for external influence.

Q546 Joan Walley: As the Green Minister you attend ENV(G). What do you think the role of that should be?

Mr Rammell: I think it is experience sharing and looking across different departments at what works and what does not work. It is keeping sight of the big picture and ensuring all of us are aware of what that is and how we are contributing, but it is also extremely—I should not say this with two officials beside me—fairly official light in terms of the dialogue that takes place and it provides a forum in which you can step back and not just read from official briefs but discuss with other ministers how you are taking the agenda forward.

Q547 Joan Walley: Is that something on which you think, in conjunction with the Treasury, there should be a greater acceptance of further systems that can be travelled on this issue?

Mr Rammell: Sorry, I am not following the question.

Q548 Joan Walley: In terms of ENV(G) and the Cabinet Committee there, I am wondering whether or not there is more work to be done, perhaps in conjunction with the Treasury, in respect of acknowledgement of the objectives that could be part and parcel of the Foreign and Commonwealth objectives that are there?

Mr Rammell: Sorry, if you are talking about broadening out our objectives through the PSA process, that is something that is kept under review. I still maintain, based upon what we are actually doing that we are mainstreaming environmental concerns, we are mainstreaming climate change, and I do not think we are hampered by not having that explicit objective in terms of climate change although energy covers it and sustainable development covers it.

Q549 Joan Walley: You would not object if it was there?

Mr Rammell: No.

Q550 Joan Walley: It would make it a little bit easier possibly.

Mr Rammell: There is an argument for that.

Chairman: I think you have answered most of the questions that I was going to ask your officials, which I do not think tells us anything.

Q551 Mr Savidge: In his Davos speech the Prime Minister stated: “This year offers a unique set of opportunities. I am committed to using the UK’s G8 and EU Presidencies to try to make a breakthrough on Africa and climate change”. What do you think would constitute a breakthrough on climate change? Do we have specific objectives against which we could assess success or failure?

Mr Rammell: Firstly, I think it is something to our credit that we have set climate change as one of our two G8 objectives. When I think back historically I cannot imagine many governments actually holding the G8 and saying that something like climate change is going to be one of the priorities. A lot of what we are trying to do this year will not be very easy to measure in terms of tangible outcomes because a lot of it is about re-injecting political momentum into the process as we have to start setting our sights on the post-Kyoto framework. That is why, for example, under the G8 Presidency we are holding a major meeting on innovation research into energy in May, that is why last week we had the International Scientists Meeting in Exeter and that is why we are having the Energy and Environmental Ministers Round Table on 15 and 16 March, all of which are designed to give a further kick to moving this process forward. Being quite frank with you, I do not think it is going to be very easy to quantify what the outcomes of that are until you get to the stage that you have actually achieved a post-Kyoto framework agreement but we need to be exploring all of the options, we need to be injecting urgency within the process. Certainly there are some tangibles within our EU Presidency which will demonstrate whether we have made progress. We

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have got summits planned, for example with the Russians, the Indians, the Chinese, the Canadians and the Ukrainians, and climate change should be, and will be, a key element of those discussions and I think we will be able to measure whether or not that has happened. Again, turning to some measurable specifics, I think during our EU Presidency it is likely that the Commission will come forward with the proposal to incorporate aviation emissions into the EU Trading Scheme. If we can get an agreement on that, and our target is to achieve it by 2008, I think that will be a very solid and tangible achievement. I think there are a number of things practically that we are looking to do where we can achieve and measure what we have done, but I am fully ready to acknowledge that a lot of it is more intangible, it is about re-injecting some urgency and momentum into the process.

Q552 Mr Savidge: In effect, you have got three separate arenas for climate change in 2005: the EU Presidency, the G8 Presidency and, of course, the United Nations' Framework Convention on Climate Change post-Kyoto negotiations. How far do you see the agendas for those three arenas as being congruent with each other?

Mr Rammell: I think they are going to be complementary but it is important for us to recognise that the negotiations and the decision making process on the future Climate Change Framework will come through the UN Convention process. It is not going to happen through the G8, it is not going to happen through the EU, and I make no apology for that. Sometimes one hears things debated about the role of the G8, that potentially it could be seen to be usurping the role of the United Nations, but that is not something we are comfortable with going along with. It is about setting the agenda through the G8 and the EU, trying to create some momentum. The fact that we are pulling environment ministers from across the world over here in March, we have got energy ministers in May, we have had scientific experts here just recently in February, is all about trying to re-inject urgency and momentum with a view that with a fair wind if we get it moving for the November meeting we can hopefully have enough momentum to be able to carry forward and start direct negotiations.

Q553 Mr Savidge: What is the UK's role during 2005? Do you see it sort of acting as a broker or do you see it as providing leadership to suggest a specific approach and, if so, what would that approach be?

Mr Rammell: I think it is about leadership and the very fact that a country like Britain has said that we will make it a priority for the G8 is important. I do not think at this stage we are setting out in tablets of stone, and rightly so, what the preferred post-Kyoto framework is because, frankly, there is not a consensus at the moment and that is part of the problem. I think we need to explore and look at every single one of them. It is also about leading

by example and that is where, although inevitably you can make criticisms about performance, I think Britain is one of the best ones internationally. For example, if you look within the figures for the EU X schemes, I think we have probably got the second best performance within the European Union at the moment, so it is actually leading by example through the EU process. It is about diplomatically encouraging those who are not making as much progress. In order to get the gearshift that we need to get consensus on the post-Kyoto framework, I do not think you can set it out in tablets of stone at this stage because if you did you would fairly quickly run into the buffers.

Q554 Mr Savidge: Do you personally believe that any long-term equitable solution to global warming must be based on the concept of equal per capita emission rights, as advocated in the Global Commons Institute's Contraction and Convergence model?

Mr Rammell: It is one of the options that we are looking at and on the face of it there are some attractions to it. There are arguments that actually it might disadvantage some developing countries, China as an example. I think the other more substantive difficulty is that to actually get a target and a cap regime itself agreed internationally, we know from our experience from Kyoto, is extraordinarily difficult. To set our stall out for that at this stage when not only has the United States set its face against it, not only has Australia done that but the G77 as well has done that, in those circumstances to emphatically say that is the way forward at this stage I do not think would help us achieve the kind of consensus that we need.

Q555 Chairman: Does that not go to the heart of the issue, that there are so many disparate interests and agendas, international relations and attitudes towards the problem that you could go on discussing potential solutions forever whilst the problem gets worse and worse and worse? That is the danger, is it not, that a consensus is not actually achievable?

Mr Rammell: Yes, except I am not sure what the alternative is to trying to establish that. I accept the point that we are dealing with a very difficult, very dangerous situation. When you sit down in the cold light of day and you look at some of the projections it is absolutely terrifying and one of the difficulties we all have is communicating that to the general public in order to get the sustained political pressure that we need for change, but I am not sure what the alternative is.

Q556 Paul Flynn: The alternative surely is that half the planet will not be habitable for our children or grandchildren.

Mr Rammell: Sorry, I am talking in the alternative what kind of actions we try to pursue. I accept your point that unless we take urgent remedial action we are going to have major problems. I would say on behalf of this Government and this country that, compared to others, we are taking relatively urgent

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remedial action but what we cannot do is guarantee that others will go with us, therefore however difficult it is and however complicated it is we have to seek to try to establish international consensus.

Q557 Chairman: But really we are at the talks about talks stage, are we not?

Mr Rammell: We just achieved a significant milestone—we have not just, it is coming on 16 February—we are going to get ratification of Kyoto. I tell you, it took a hell of a lot of arguing, lobbying and cajoling to get there. Again, coming back to the Foreign Office's specific responsibility, something we put enormous effort into was Russia to get that agreement. That will give us a momentum. I think the EU Emissions Trading Scheme when it comes on stream will give us some momentum and, hopefully, if through this process of our G8 Presidency, our EU Presidency, we sufficiently push this up the political ladder we will have a better chance than we would otherwise have of getting those negotiations kick started.

Q558 Joan Walley: I agree with all the huge progress that has been made and I think it is quite historic but you did not mention anything about the WTO and I just wonder how much we need to get the WTO on board as well in respect of all of this in terms of the possibility of trade sanctions against countries that do not comply, that kind of direction.

Mr Rammell: I think arguably it is something that we can look at. I think the prospects of getting agreement for that even in the medium term are very difficult. A big factor in this is the position of the United States where we have taken a very different position with regard to Kyoto. I do not think there are prospects on Kyoto of getting a different position in the short term from the US administration, although it is interesting, if you look back to the vote on Kyoto in 1997 within Congress, it was 95 votes to zero. In the McCain and Leeberman Bill in November 2003 there were 43 votes in favour of it and essentially it is just a domestic cap and target scheme whereas Kyoto is an internationally agreed one. If you look at New York and California, who in combined terms have the same global emissions as the UK, there are some very tangible and substantive pieces of progress being made. I do not think all is lost. I do not think the position of the US Government is going to budge on Kyoto. I do not think it is just a Bush issue. I think we would probably have been in the same position if there had been a Democrat president. If you look at some of the things John Kerry said during the election, they certainly were not a great deal more cuddly and friendly than the current position on this issue. So I do not think you are going to get a change. What we have therefore got to do is the post-Kyoto framework has got to involve the United States given their huge contribution in terms of emissions. We have got to look at ways and mechanisms to try and do that and that is where some of the cooperation on

science and technology is important and also looking at what other mechanisms we can try and get agreement on.

Q559 Joan Walley: You mentioned about looking at other ways of involving the US. When this Committee went out to Canada and met with the audit committee out in Canada we found that they had very robust views about the ways in which Canada could help influence the US in all of this. Is that something that is within your sights?

Mr Rammell: Certainly. It is not just America. Australia and others have a different view on how we take this forward.

Q560 Joan Walley: I mean Canada influencing the US.

Mr Rammell: Part of the role of the Foreign Office within this is to work out who we can bring on side in order to influence others, and we looked for a number of different countries who might be able to do that and Canada is one example.

Q561 Mr Savidge: The very recent Command Paper, *The Prospects for the EU in 2005*, continues to place a huge emphasis on the benefits of free markets and deregulation and includes the statement "regulatory reform in the EU is a top Government priority." Given that it is talking about 2005, it does seem surprising that it is not referring to Africa and climate change as the top priorities. It seems odd that it only mentions climate change in two paragraphs. In a sense it is pushing the point that Joan was pressing earlier in relation to public service agreements. Is it taking a while for the cultural change that you were talking about trying to achieve to come through fully in sections of the Foreign Office? How many priorities do we have?

Mr Rammell: Which Command Paper were you referring to?

Q562 Mr Savidge: It is the Command Paper, *The Prospects for the EU in 2005*. Out of 97 paragraphs, climate change appears in two.

Mr Rammell: It is difficult when something like that is quoted out of context. I would want to look at the whole of it and know what other subjects were mentioned however many times. If two of the 97 paragraphs are on climate change then it is certainly mentioned, but I would have to look at the detail to see whether it is mentioned enough. All I can say in terms of our engagement with the EU and in terms of our Presidency is that it would be absurd of us to make climate change one of the two priorities for the G8 and not to follow that through at the EU level and in practice that is happening. I think you can look at all sorts of documents and pick different paragraphs and words out. The fact that it is a G8 Presidency priority means it is a fundamental priority for the Foreign Office.

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Q563 Paul Flynn: I think we appreciate what the Government has done, the leading role of the United Kingdom throughout the world and the fact it is a priority here. You mentioned the lack of consensus. It is essential that we do achieve consensus. Almost every week at this Committee we get evidence from leading experts about the threat of global warming and the more knowledgeable and more expert they are the more terrified they are of the prospects. There is a due urgency that has come about. It is a very different situation now to when Kyoto was voted some years ago now. The Government can give a kick-start to this, but do you not think the world opinions, as it gets down to even the *Daily Mail* readers, will give it an even bigger kick-start when we realise what the prospects are? I believe your Department has got the role of feeding in to the Prime Minister who says that a global consensus is our aim. What are the attitudes in China and India? What is the hope there?

Mr Rammell: If you look at some of the global opportunity fund projects that we are developing, the Chinese are quite practical and quite cooperative in working on these issues with us. One example is a three-year project on clean and renewable energy development within China, on raising awareness of the environment and stimulating renewable energy in building design in China. The Chinese are quite practical and up for this. Some of the other developing countries are less so and that is why I think I said in my introduction we have tasked ambassadors and high commissions in key posts in developing countries to work through an action plan with those countries. We have got a general awareness of this problem not only internationally but domestically as well. Like you, when I look at the evidence I think it is terrifying, but I am struck that we have all yet collectively to come up with a sufficiently coherent language to convince people of that fact. I know part of the problem is that there are some significant forces who do not want to look at these issues for reasons associated with vested interests, but I do not think that collectively as politicians either here in Britain or internationally we are doing a sufficiently good job to explain it to people.

Q564 Paul Flynn: How has the work you have done with the embassies overseas had an effect? The ones I visit occasionally seem to be dominated by the main themes of the embassies, which is about cocktail parties and sales of military hardware and celebrating the Queen's birthday. I had not noticed any change in the culture. Is there any change in the staff involved or the interests?

Mr Rammell: I think that is a bit offensive. There are all sorts of criticisms that one can make of officials everywhere. Most of them work very hard.

Q565 Paul Flynn: It may be a bit offensive but it is entirely inaccurate of the activities of the embassies.

Mr Rammell: I do not think it is entirely accurate. As I travel round the world I see people working according to an agreed agenda that we set through

Government and doing their level best to promote that and push that, whether it be security concerns, whether it be negotiating international agreements or whether it be environmental concerns on climate change. My experience of working in the Foreign Office is that in a lot of posts you are dealing with some young idealistic people who buy in to these concerns and want to promote them.

Paul Flynn: I agree about the young ones. I am talking about the people who are running the embassies. The young ones are splendid and many of them are from a very diverse section of society.

Q566 Chairman: I am not quite sure where this is going.

Mr Rammell: Let me say one thing. I get particularly irritated when people make comments about MPs as though they are a class on their own and are not justified in what they are doing. I think we should all be careful when we categorise a whole group of people in the same way.

Q567 Chairman: What kind of sense do you have for what they might accept in terms of a post-Kyoto arrangement in China?

Mr Rammell: I do not think the detailed thinking or momentum towards acceptance is yet that far advanced. If you look at China's engagement in international relations across the board, they are often very reluctant to plug themselves in to international commitments. In terms of the post-Kyoto framework, we are not arguing that there should be absolute targets for the developing world. What I think we have to do is to try, through a process of practical cooperation on projects, to suck them in to the process so that as they engage more and more and see the practical benefits it becomes a far bigger part of their mainstream thinking.

Mr Derwent: May I start by apologising to the Committee and indeed to Mr Rammell for our unseemly and untimely arrival. We had been told that we would be brought in when your proceedings had started, but I fear the message did not get through. On the question of China and willingness to accept targets, it has been interesting recently to see certain Chinese authors talking about the possibility of rapidly industrialising developing countries, taking some form of targetry. There is an enormously rich variety of different types of target methodology which is being talked about post-Kyoto. Some of them are perhaps more suitable for industrialising developing countries than others and there are some signs that China is prepared to engage in that dialogue, although maybe only engage in that dialogue outside the forum of the formal United Nations and other processes. There they are, like other developing countries, quite clear that what the jargon calls the "principle of common but differentiated responsibilities", which means that developed countries have to do things first before developing countries think they are entitled to be asked to do so, reigns supreme. We see a great deal of engagement by the Chinese in the sort of projects

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that Mr Rammell has mentioned, whether they are about adaptation or about mitigation and we see fruitful areas for bringing them into the dialogue provided we and other developed countries make it clear that we are doing our bit and we are helping them.

Q568 Paul Flynn: But one of the few things that Sir David King was mildly optimistic about when he spoke to us was the possibility that the Chinese were trying to leapfrog the dirty industrial revolution stage of development that most countries have gone through and trying to get towards one which was environmentally friendly. He did raise the possibility of the Chinese claiming the right to pollute in the same way as the people of Chicago would with the terrible consequences there. Is that your view? Is there room for optimism from China?

Mr Rammell: I think there are some grounds for optimism on two fronts. First of all, they are practically engaging with us on very practical environmental projects, and, secondly, as Henry pointed out, they are prepared to sign up for certain targets as long as they are within the UN framework. Both of those give us some room for manoeuvre on the issue.

Q569 Paul Flynn: If we are trying to get consensus, do you think the best approach is to go for the G8 countries, perhaps two or three other developed countries, rather than trying to go for the impossible target of a global consensus?

Mr Rammell: I know this is the recommendation that has come out of the recent Stephen Byers committee and I think that has some attractions that are worth looking at. All of those proposals we think can contribute to our work. I am not sure that that should be a substitute for trying to get more concerted overall international agreement. Just as in the same way that we are trying to kick-start this process on a one country basis, actually getting a group of countries to work together in that way potentially has some merits.

Q570 Paul Flynn: You were pretty depressing about the possibility of changing attitudes in America. I know that certain environmentalists and leading ones were hopeful that John Kerry at least understood the situation more than the Bush government was likely to do and there was some hope that there would be a change there, but, of course, it is dashed now. Do you think there is any basis for thinking that any kind of response would be positive from the United States? We hear of hopeful stories from within the United States from some of the individual states themselves rather than the whole country. Is there anything to build on or are they becoming aware of the threat in the same way as the rest of the world appears to be?

Mr Rammell: The analysis I tried to give on the United States I did not intend to be wholly negative because I do not think it is. I think we have to get over this legitimate political hang up that we disagree on Kyoto and put that on one side. If you

do that there are some real tangibles that do give grounds for cautious optimism. As you say, what is happening at a state level I think is quite encouraging. I met the guy who is the Head of the Environmental Agency within California a few months back who is appointed by Schwarzenegger and yet, notwithstanding that, in terms of politically where Arnold Schwarzenegger is coming from, he is very radical and very progressive on the environmental agenda. In New York they have committed to 5% reductions in greenhouse gas emissions by 2010 and 10% by 2020. There is car emissions progress being made in California. I think all of that is happening. It is interesting as well at a business level. As businesses are recognising that actually ultimately there is a real issue here and it may be going somewhere a number of them and a number of sectors of business are showing an interest in the EU Emissions Trading Scheme and whether they could become part of that. At the moment legally and constitutionally that is not on the table, but I think all of those developments do give some grounds for optimism. Although I do not think the US is yet prepared to sign up to Kyoto or a successor cap and target regime, the fact that you moved from that 95 to zero vote in 1997 to 43 voting for the McCain Leeberman Bill does demonstrate that there has been a shift.

Q571 Paul Flynn: I think you are preparing us for modest achievements in the next year. You talked about very little tangible being achieved, but if we do not have a consensus by the end of 2005 what is plan B, what are the alternatives?

Mr Rammell: Firstly, I would hope that one tangible is that we have a clear way in to the negotiations. The November meeting is key. I am not anticipating that you are going to get a done deal out of that meeting, far from it, but a clear pathway to the way forward on negotiations I hope would be a possibility in terms of what we want to achieve. In terms of what are the alternatives, first of all, it is trying to get consensus on the kind of environmental mitigation measures that we are all taking internationally so we all pursue better energy efficiency standards, we all pursue better home insulation and a number of factors like that. Frankly, we are already doing that. The other possibility that has been muted is something like a carbon tax that you try to get agreement to internationally. I have to say that within this country we get the screaming heebie-jeebies when we even talk about European-wide taxation. The prospects of getting it on an international basis are fairly slim. I am not convinced there is a better alternative way than trying to do what we are doing. What I cannot do is guarantee you that we are going to get the results that ideally we want. I think we can and the reason we are giving it such a high political priority is because we want to do that.

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Q572 Paul Flynn: One of the suggestions from the EU is that there might be trade tariffs used against those countries that are refusing to participate in any global action. Do you think that is a runner?

Mr Rammell: I think it cuts across what we are trying to do within the World Trade Organisation, where we are trying to remove such trade tariffs substantively for the benefit of the developing world and I think that would be a very difficult path to go down.

Q573 Joan Walley: Would there not be a case, if America is not prepared to play the game at all, for the EU to start to look at restrictive taxes against the US for not being prepared to sign up to anything under Kyoto?

Mr Rammell: If you look at the history of it, once you start engaging in such trade barriers I think in the longer term we will lose through that process.

Q574 Paul Flynn: It seems to be all one way with the United States. I was not suggesting any tariffs against developing countries.

Mr Derwent: One of the ways in which we have perhaps failed to communicate with certain sections of opinion in the United States is that we have not been able yet to communicate successfully on economic costs. There is, unfortunately, a fairly widespread belief in parts of Washington that if you take measures to reduce carbon emissions you are automatically adding to the costs in your industry and it is a zero sum game and that if you take on those costs and somebody else does not then you have reduced your competitiveness vis-à-vis that other country. The analysis on which we based our own Energy White Paper and the UK's assumption of a 60% carbon dioxide emission reduction target for 2050 is entirely otherwise, it is that if you signal clearly enough to business the way that this form of effectively regulation will go, that there will be an increase in costs for carbon in the economy, you will actually stimulate, particularly if you do it through economically literate ways like emissions trading, the development of lower carbon technologies which will end up producing you the goods and services that you require without the dis-benefit of carbon at roughly the same price. If you look, for example, back at the way it was always assumed that it would be so outrageously expensive to remove sulphur from the smoke stacks of our energy supply industry and look back at some of the numbers quoted there about the costs and now look at a situation where everybody accepts that that is a necessary thing to do and questions of competitiveness between countries based on the degree of regulation just do not enter into it, I think you have a lot more communication to be done about the real economics of the situation.

Q575 Joan Walley: How much does that presume that you have got a level playing field? I can think of some manufacturers who are intensive users of energy who would say that maybe by the time you get to 2050 all the things that you have just said

would come into play would happen, but in the meantime there are transitional costs of moving from the technology that is used at the moment to bringing on board the changes in the way that they go about their manufacturing processes and so they would be at a disadvantage compared to similar ones that are produced in the US on a different level playing field?

Mr Derwent: I cannot deny that there will be transitional costs, but there are transitional costs for industries in moving from one area of activity to another which they undertake in pursuit of what they think is the advantage and the benefit that they see on the other side. If they want to move products from one area to another they have to accept all the costs associated with researching, with developing, demonstrating and tuning up for the new product in the hope that once they get there first they will be able to beat the other people and present themselves in a different way to the consumer, and I think the principle is much the same.

Mr Rammell: If you look at the research that has been done, the costs of actually tackling climate change, because productivity feeds through into relative GDP, are less than the costs in terms of the environmental impact of not doing so in terms of its impact on GDP. I know that is very difficult when you are talking to an individual business that is looking at their profit and loss account, but we have got to try and get those arguments across better.

Q576 Chairman: Do you think you do nearly enough to communicate this? It seems to me that what Mr Derwent is saying is absolutely critical to getting any kind of buy-in from industry anywhere in the world, that (a) the cost of not doing anything is going to be far greater than the cost of doing something, and (b) that doing something can create new business opportunities and does not necessarily impact on your competitiveness. I just wonder whether you feel you are doing enough to communicate this. It seems to me to be critical.

Mr Rammell: Certainly in terms of our international diplomacy part of the major pitch that we make to various countries, both developing and developing, is that there are significant business opportunities in the development of cleaner technology and environmental technology.

Mr Derwent: And domestically we make sure that other countries get this message as well. Since the beginning of 2005 we have been preparing a climate change communications strategy that was announced on 5 December when the Defra five-year strategy was placed on the table and we are doing that in partnership with the various bodies who are involved in delivering policies and programmes related to climate change, the first of which is the Carbon Trust and I hope at least some of you will have seen the product of the Carbon Trust's advertising campaign directed at business leaders which started this year. If you did not, do not worry, there will be another one along before very much longer addressing various levels which need to be dealt with and I include the Energy

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Saving Trust's work on ensuring that domestic energy efficiency will also get the treatment, which may sound mundane but which has huge potential for carbon reductions there.

Q577 Joan Walley: As a constituency MP I find there is a world of difference between what the Carbon Trust says it does and the actual offer of support and help that it gives to small businesses in my constituency.

Mr Rammell: I hear what you say.

Q578 Mr Challen: Is the Government conducting any research into how the United States would use the WTO to undermine our efforts at emissions trading and other environmental regulations, because I have read one or two reports recently that suggest that they will do their damndest to undermine our efforts in this regard? Are you using the appearance procedure in the WTO etcetera?

Mr Rammell: Obviously we are very plugged in to all of our key partners internationally to get a sense of where they are going on particular issues. I have not seen the detail of those reports and I am not aware that that is a major barrier.

Q579 Mr Challen: Is it something we keep under review?

Mr Rammell: Obviously. I am not saying that that is happening because I am not aware of those reports, but if any country was seeking to use the WTO mechanism to thwart legitimate emissions trading schemes that there is a consensus for internationally that would be a concern, but I am genuinely not aware of the detail of the proposition that you are making.

Q580 Chairman: Sticking for a moment with this competitiveness issue, I do not know whether you have seen the WWF report called *Cry Wolf*, which if you have not I commend to you. It is an analysis of what business said around the world about some forthcoming pieces of environmental legislation in terms of the cost and the disaster, that it would destroy jobs and wipe out their traditional industries and in fact what happened after the measure was introduced. It really does reveal the tendency on the part of some elements of the business community to exaggerate and they do that because they still see this whole agenda as in some way a threat to them rather than as an opportunity. I can only suggest this is something that urgently needs to be tackled. There is also the feeling that whenever push comes to shove Government tends to topple over in the direction of the CBI.

Mr Rammell: I am sorry?

Q581 Chairman: There is a sense that every time there is an issue which might impact on business in some way the voices that shout loudest are not necessarily representative but they are ones which say, "This is going to be the end of our business, thousands of jobs will move abroad, it is a disaster and hopeless". There is not a great deal of evidence to suggest that any of this has happened so far in

terms of any of the environmental legislation that has been brought in in this country or indeed across the UK and I would just ask you, insofar as it does relate to your responsibilities, to look warily at the arguments that some elements in business are prone to advance whenever you are trying to do anything positive.

Mr Rammell: I understand what you are saying. I think we are right to take account of competitiveness. If we accepted every proposal for a regulatory change that came forward, whether it was on the environment, climate change or whatever, we would fairly quickly mount up a substantial cost. I made the point earlier that I think the costs of not acting in the longer run are much more substantial. Just look at what has happened over the last few years with the floods that took place in Europe in 2002, \$16 billion worth of costs, the heat wave the following year, \$13 billion, or if you look at some of the insurance costs, Swiss Re are projecting \$30 or \$40 billion per year in insurance costs, these are not negligible insignificant sums, they will hit business, they will hit all of us. I also think that in convincing business we have to talk up our own experience and I know there are some caveats to this. From 1990 to 2002 our economy grew by 36% and we cut emissions by 15%. Of course business organisations and businesses are going to lobby you. All I can say to you is that those voices are heard, but there are counter-voices that are put forward and an active inter-agency debate takes place about the best way to take those forward.

Chairman: There is an interesting case study regarding the EU emissions scheme and the National Application Plan which I think Mr Challen may wish to ask you about.

Q582 Mr Challen: Is it not extraordinary, given that Tony Blair made public his desire to make climate change one of the key priorities for the G8 and the EU seven months ago, we have got to a situation now where we are embroiled in this legal controversy with the European Commission on whether we should be increasing our National Allocation Plan cap which appears to have gone up three times? Does it mean that people in Government have not really picked up the ball that Tony Blair kicked last summer in climate change terms and perhaps the message has not sunk in yet that this really means we have to toughen up our act?

Mr Rammell: No, I do not. I think this is the practical reality of trying to make the EU Emissions Trading Scheme work. Let us remember what the trading scheme is about. In the first phase it is about us defining what we think we can meet in terms of the cap by 2007 and in terms of a reduction of emissions compared to today in order to make our contribution towards overall Kyoto target. It is a national judgment and in order for it to work and it to be credible it has got to be realistic, because I think if you just set targets that you know are not going to be bought into particularly by industry the scheme is not going to

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fly. What has happened is that we had a provisional estimate that we have changed due to legitimate consultation with industry, I think that was inevitable and we are now in discussions with the European Commission about that. I think our position is clear and justifiable and we are hoping to take that process forward with the European Commission.

Q583 Mr Challen: The position has changed two or three times. The first time it was set last April it was 714 Mt. The starting point must have been the subject of considerable negotiations between government and industry. It has changed at least twice since then but always in the wrong direction. Does that not suggest that really we are the ones that blink first when industry says, “No, this is unachievable”, that they just want ‘business as usual’?

Mr Rammell: The EU Emissions Trading Scheme is our vehicle for us to work out through that mechanism what contribution it can make to our overall Kyoto target under Phase 1. We are exceeding our target on Kyoto Phase 1. We want to go further than that. I think the notion that this suggests that we are backtracking on our commitments is not borne out by the evidence. If we come up with a projection that simply does not work I think that will harm the momentum we need to move forward to the second stage and actually to see the EU Emissions Trading Scheme broadened out internationally, which is what we want to happen as well.

Mr Derwent: We adopted a methodology which we made clear in the first consultation exercise and which depended very much on getting ‘business as usual’, but in fact it is business with additional measures, planned numbers correct for each sector of industry. Unsurprisingly, that led to a number of rounds of discussion with industry during which a number of sectors claimed that we had got their numbers wrong and after some extremely long and detailed series of discussions with them we had to agree that they were right and we were wrong. It was consistent with the prospectus they had been given as to how their methodology would work and consistent with the account that we had given to the Commission of what we were doing and we therefore changed it up until the point where we and industry were content that we could agree figures. That has an impact on the total number of tonnes to be emitted, but as Mr Rammell has said, the total that we are now proposing is much further below the ‘business as usual’ position than the numbers which we started off with when we first put out the NAP numbers. We are therefore still way in the lead as far as Europe is concerned and for all the points that I made previously about competitiveness, this is a new issue, a new set of worries for industry and if they can see something happening today where they are being treated differently to their rivals and competitors in other countries they are, quite understandably, going to be asking for us to make sure that we have got it right.

Q584 Mr Challen: The experience of the UK ETS from the evidence we have—and the Public Accounts Committee did an inquiry on that—is that UK industry has pocketed about £200 million and this was taxpayers’ money. This was justified on the grounds it is a new scheme, there is going to be teething problems and it was a fair way of trying to address how a scheme might work to put some public money into it. We have been told in this Committee that certain sectors, as a result of the free allocation of carbon units under the European schemes, are going to make massive windfall profits out of that and yet when they come along to say they say, “We can’t do it quite as fast as you say we should do it,” and all the rest of it. Going back to the evidence that the Chairman was citing from the *Cry Wolf* report, we are going down the same route. My fear is that we are using Kyoto as a rather weak bench mark to judge our slightly tougher target by and Kyoto was negotiated and it was great that it was, but nearly everybody accepts that Kyoto does not address the basic problem.

Mr Rammell: I think there are two issues there, one in terms of the European scheme. There is a potential issue of profit for the power generators. I think whether that comes to fruition depends on the way that the market goes and it is fairly difficult to make those judgments at the moment. It is certainly something that we are watching very carefully and if we need to then for Phase 2 of the scheme we will take account of that and seek to rectify it. This is new, it is important. If we get the baseline wrong from which the target is projected then I think we potentially fundamentally undermine the credibility of the scheme and the support that we need for it. This is not something that has been around for an awful long time. If we get it wrong at this stage, given that not only do we want to move to Phase 2 but we want to broaden out beyond the EU scheme to see if we can try and get a more international scheme, I think we would live to regret that, which is why I think we have been right to say the calculation was originally wrong and we are seeking an amendment to the calculation.

Q585 Mr Challen: Does that lead you to anticipate that Phase 2 will be more strenuous and tougher? If the Germans do not like the idea of including aviation, as has been muted, would we stick it out and insist on a much tougher Phase 2?

Mr Rammell: Certainly we are a strong advocate of aviation emissions coming in at Phase 2. As I said earlier, we would hope for a Commission decision that we would push for and seek to influence during our EU Presidency during the second part of this year. We are working with all our partners, particularly on this issue of the Germans and the French to some extent, to try and get a consensus on that issue.

Q586 Mr Challen: Is there a huge gulf between the various countries or do you anticipate realistically a consensus developing?

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Mr Rammell: Famous last words! I think there is a possibility of a consensus.

Mr Derwent: I do as well. I think that this is genuinely a subject where everybody realises that something needs to be done about aviation. There is a big public groundswell of concern about the speed with which aviation emissions are rising, the size that they could reach in only a couple of decades and now it is a question of debate or methodologies rather than whether or if. We have been very strong advocates of trading since well before the EU ETS. You mentioned our UK scheme already. We think that the EU ETS provides the best solution for dealing with aviation, which is naturally going to grow and where the notion of simply stopping it growing is going to be very, very difficult to accept. Making it pay for the growth through buying the emissions credits seems a very sensible way forward. There are a lot of people in Europe who feel likewise. There are others who are more interested in taxation at the moment. On the basis of what I have seen and the discussions reported back from Mr Rammell's Department, it looks as though there is a really good debate and dialogue going on about this.

Q587 Mr Challen: I went, on behalf of this Committee, to a conference in the Berlin Embassy last year which was extremely fruitful and produced some excellent work. They were all fairly young. The embassy itself is young and also energy efficient. Let us move on to the linkage between the agenda of climate change and the poverty of Africa specifically. Do you think there is sufficient linkage in the Government's mind between these two things? Yes, they are both classed as our twin priorities. I have read some speeches recently and I will not mention the names of the people who have made them, but they do not mention climate change once. They either focus on one thing or they focus on the other. Late last year a number of NGOs produced a report called "Up in Smoke" which showed that it is going to be very difficult to hit the Millennium Development Goals if climate change does take this big turn for the worst that we all anticipate. Do you think that linkage is there or are people working in separate compartments?

Mr Rammell: I think the linkage is there and in a sense it is obvious that if the environment develops due to climate change in the way that we fear it is actually going to be the poorest people in the poorest countries who will suffer most, but in terms of protection and adaptation, we in the West have a lot of the mechanisms in place to be able to do that. There is a key linkage. Practically, if you look again at this year under the G8 Presidency, we have got the environment and energy ministers' meeting on 15 and 16 March and on the 17 and 18 March it is going to be environment and international development ministers because we very clearly see those linkages. I also think in the Millennium Development Goals summit in September, which will not only deal with that but will also deal with the high level panel report on the future modernisation of the United Nations, is another

motor which can add to the momentum of building up on this issue and again the Millennium Development Goals clearly brings in the poverty aspect as well. I do think it is something that is on our agenda and we are working cooperatively at between environment and development.

Q588 Mr Challen: Given the Make Poverty History campaign and indeed the global response to the tsunami disaster, clearly the phrase environmental equity should be used more. Is the Government going to do as much in this regard as it has in terms of the science? Are we going to be really launching that agenda very positively, more than just a meeting of ministers but actually doing big communications efforts on this?

Mr Rammell: I think if you look at the track record and what we have done to our international aid budget, which has virtually doubled, you will see we are increasing it significantly as a proportion of our GDP. We are at the leading edge of the debate within the WTO because fairer trading rules, however much you increase your aid budget by, can dwarf what you can give in aid contributions in terms of the benefits to the developing world and if you look at the efforts as well that we have made to write off debt from the poorest countries, it is actually central to our agenda. Whether it is sufficiently central to the overall international agenda is a different question and that is again where we are trying to give leadership. The two priorities we have chosen for the G8 Presidency this year are climate change and Africa. Africa has been chosen because of its poverty focus which demonstrates we are trying to give a lead on it.

Q589 Mr Challen: On the Clean Development Mechanism, are you getting much feedback about that? We have had evidence that it is not working as well as it should and that is probably an understatement. Are you getting feedback on that? If you are, where is that leading Government thinking in terms of Kyoto?

Mr Rammell: We are getting feedback of some concerns that projects historically were not being approved quickly enough. We have taken up those concerns and tried to beef up the executive board which is overseeing the assessment and approval of proposals that come forward. One has now been approved and we are certainly pushing and hope that many more will go through because I do think that initiative of getting the developed world to invest in energy efficiency and other similar projects within the developing world and getting a credit in return is a very practical mechanism that can help us take this forward.

Q590 Chairman: Do you have any concerns about the type of projects which are being invested in under the Clean Development Mechanism? We have had some evidence that some of the projects would struggle to be aligned to any sort of normal definition of sustainable development.

8 February 2005 Mr Bill Rammell MP, Ms Valerie Caton and Mr Henry Derwent

Mr Rammell: I have not seen any evidence of that.

Mr Derwent: There have been a number of arguments about the first schemes that have been put forward, certainly some of the ones that produce savings other than carbon dioxide, particularly nitrous oxide and some of the hydrofluoric carbons, in other words some of the more unusual gases. I think those reflect to a degree the fact that it is probably easiest to make money out of those schemes on the basis that the number of global warming units that a major reduction in emissions that such gases score is really very high and that is part of the deal. I think we have to accept that, not least as a result of the very slow progress through the CDM bureaucracy that Mr Challon was referring to, CDM projects are not for the faint hearted and it has to be, at least in its early stages, pretty attractive schemes with some pretty interesting additional revenue potential from selling the emissions credits which will come to the fore first. I think that life has been made a little bit more difficult than it might otherwise have been by the decisions in the making up of the rule book at CDM. That happened at the Marrakech conference of the parties. A large number of rules about base lines were left to be decided on the basis of the first relevant schemes that came through, which has meant that it has been a slow process. So I think we are seeing something which is intensely frustrating but which is one almost unavoidable set of teething problems and it is not surprising that it is the most financially rewarding schemes which are being pushed hardest first. I think the degree of scrutiny that the CDM board and its methodology panel and all the observing NGOs and countries are applying to these first schemes should be sufficient to make sure that nothing that is really inconsistent with the sustainable development principles that you mentioned does eventually get through.

Q591 Chairman: So you are satisfied that this is not a case of large companies taking advantage of the system to make some extra profit?

Mr Derwent: I think they may be testing the limits of the system in pursuit of maximising their profit. So far I think the system has grasped those projects which look as though they need a greater degree of scrutiny and has shown that it does not mind how much time it takes, which causes another set of problems, but it is not consistent with the notion that things are rushing through and that people are making windfall profits unwatched.

Q592 Chairman: So you are pretty satisfied with the way it is going?

Mr Derwent: I would not say that I was satisfied with the CDM processes. I do not think they are fast enough. I think they are learning on the job with insufficient resources. We are trying to increase those resources and we are trying to facilitate the development of base lines which will see classes of projects being identified and dealt with more speedily and more effectively in the future.

Q593 Chairman: So you do not think that there is a structural flaw in the way that the whole thing has been set up?

Mr Derwent: No.

Q594 Chairman: It can be made to work?

Mr Derwent: Yes, I think so.

Q595 Chairman: Let us just go back quickly to the National Allocation Plan. Is the situation currently that you are still threatening legal action against the European Commission?

Mr Rammell: No, I do not think we have threatened legal action. We are in discussions with the European Commission. We have received a communication in response to the amendment to our plan and we are now looking at this and we are hoping to go back to the Commission to be able to resolve this.

Q596 Chairman: So reports in the press that you were threatening legal action were wrong?

Mr Rammell: There are all sorts of reports I read in the press all the time, as I am sure you do, that are not necessarily based on fact.

Q597 Chairman: But these were wrong, were they?

Mr Rammell: As I say, we are in discussions with the Commission at the moment. There is certainly no threat at this stage of legal action.

Q598 Chairman: I am afraid we have not given Valerie Caton a chance to shine this afternoon, but we are nonetheless grateful to all of you for being here, particularly you, Minister. We may have some follow-up questions which we may put into writing about precisely how you deal with these things internally within the Department. Thank you very much.

Mr Rammell: Thank you very much.

Written evidence

APPENDIX 1

Memorandum submitted by Action for a Global Climate Community

A GLOBAL CLIMATE COMMUNITY: A FEASIBLE WAY FORWARD

EXECUTIVE SUMMARY

1. Action for a Global Climate Community was formed by a group of ngos and individuals to carry forward the conclusions of an international conference held at Wilton Park in December 2003 and organised by the One World Trust. (See attachment, the “Chanctonbury Initiative”). We call for preparation of a new initiative by the end of 2005 to build global support for a Global Climate Community of willing countries from north and south based on the contraction and convergence approach. This long term strategy to resolve the climate crisis should be a central theme of the European Union’s Common Foreign and Security Policy and the UK Presidency in 2005.

2. European experience has shown that a group of pioneering countries ready to act can inspire others to join them. In the 1950s six countries founded the Coal and Steel Community which has later grown to become a Union of all Europe. Today we propose that key countries from North and South, such as the EU, India and states from Africa and Latin America seek to mobilise the widest possible group of willing states to implement the UNFCCC at an accelerated pace, at the latest by 2012.

3. They should invite them to negotiate a Protocol of Enhanced Cooperation which establishes: a maximum concentration target for greenhouse gases, a global emissions budget for the contraction required, a date for the convergence of emissions to equal per person allowances, an emissions trading market, enabling measures and resources, and effective and accountable institutions, including a parliamentary body for the Community.

4. Effective action of this kind is the most effective way of mobilising reluctant countries, notably the United States—together with the growing impact of climate change. The US is unlikely to rejoin Kyoto but the best outcome for the G8 would be if the new administration is persuaded to accept that it does have an essential responsibility to join in collective action to meet the climate crisis, and prepares to rejoin the multilateral process at a later date. The goal should be for all states to join the GCC by 2020

5. Our proposal is feasible because convergence to equal per person allowances offers the equity that can mobilise the support of developing countries some of whom, such as India and African states, have supported it for many years. In Europe, the German Government’s Advisory Council on Global Change recently endorsed the policy proposed here. A positive lead from the UK Government would mean that a coalition of Germany, France, and the UK, together with Holland, Belgium Sweden and Denmark would be well placed to shape an effective EU lead in the UK Presidency at the end of 2005. The long-term framework of a Global Climate Community will offer the market framework for industrial and technological leadership and success in the post carbon age as well as an effective response to the climate challenge.

6. The response to EATS by the market has been encouraging in recent weeks. If the EU can succeed in fulfilling its Kyoto commitments to reduce emissions, EATS will be a useful model for a wider global system. Strong institutions to ensure implementation and the rule of law in a Global Climate Community are however essential if it is to work. At national level a few of the least developed countries lack the inventories and institutional capacity to join at once and will need help to enable them to do so.

A CLIMATE COMMUNITY OF THE WILLING AND ABLE: A FEASIBLE WAY FORWARD

1. LEADERSHIP FOR A LONG TERM STRATEGY

UK leadership on climate in 2005 must combine ambition and realism. The G8 and EU are very different types of organisation. The EU acts. The G8 talks. The G8 will provide a forum for putting pressure on the US administration to acknowledge the reality of climate change, act to curb emissions and rejoin the multilateral process in due course. For the US to switch from undermining to encouraging the efforts of others would be helpful in itself. Yet realism suggests that even a Kerry administration will not implement Kyoto and will take time to rejoin the global process. Efforts of persuasion must be kept up but the real pressure on the US will come from climate change, oil prices, and the demonstration by others that multilateral action works.

This means that the main UK ambition for 2005 must be to carry forward EU leadership in two practical ways: first in implementing Kyoto—thus showing that a group of major developed countries actually fulfils commitments to cut emissions and establishing useful precedents for a wider global deal through the EU Directive and EATS. There are encouraging signs from the market, with a massive

increase in carbon trading in recent weeks. Many larger companies have absorbed carbon trading as a management tool. The test of success will come in 2006 when the Commission endeavours to tighten national targets on industry and persuade national governments to fulfil wider commitments on transport and society as a whole. If the EU succeeds in achieving its reduction commitments, and links EATS successfully with other Kyoto partners and US states with reduction programmes, it will provide an encouraging model for the world.

The second and wider task for EU leadership lies in defining the vision of a long-term solution, exploring it with key developing countries, and taking the initiative with key partners at COP11 in December 2005. The UK Presidency in the second half of 2005 will be critical to this process. Following on a key Council meeting in April 2005 it provides the opportunity for the EU to formulate a long-term strategy by the end of 2005 with a view to negotiating its implementation by, at the latest, the end of 2012. Under Kyoto, there is a requirement to negotiate for a second commitment period. In our view this opportunity should be seized to negotiate a long-term solution set in the framework of the UNFCCC.

Acting within the framework of the UNFCCC, but not waiting for the slowest, we urge the EU to join with key developing countries in pioneering and establishing a Global Climate Community of all willing states. Just as the EU itself was founded by a pioneering group of six European states who formed a Coal and Steel Community which has since deepened and widened to become a Union of almost all Europe, so the urgent need for climate action requires leadership by a vanguard group of states from North and South creating a Global Community which all will ultimately join.

The new Community of the willing should apply the Contraction and Convergence approach to reducing greenhouse gas emissions—the concept developed by the Global Commons Institute and advocated by the UK's Royal Commission on Environmental Pollution, the German Government's Advisory Council on Global Environmental Change (WBGU) and many others throughout the world.

The shape of such a Community was explored at a conference, attended by participants from 18 countries, which took place in November 2003 at Wilton Park, UK. Its conclusions are set out in the attached paper (*The Chanctonbury Initiative*²) by the two chairs, from North and South. (Excerpts from the statement are in italics in the text that follows.)

The approach was endorsed once more at a conference in Delhi, India on 9 October 2004.

2. THE CLIMATE COMMUNITY PROPOSAL

Our proposal is that, in the absence of global consensus for sufficient action, those countries, North and South, with the necessary leadership, statesmanship and sense of responsibility should form a Community for Global Climate Protection (CGCP) and advance the implementation of the UNFCCC at an accelerated pace. They should negotiate *a Protocol of enhanced cooperation as a bubble within the UNFCCC providing for:*

Contraction of global GHG emissions to a level that stabilises concentrations at an acceptable level (for example a concentration target of 450 ppm of CO₂ initially, subject to adjustments in the light of scientific evidence).

Convergence of GHG emission entitlements to equal per person distribution within a specified time frame (say 30 to 40 years).

A global market in tradable emission entitlements (drawing no doubt on EU experience and transferring resources to poorer countries whose emissions quotas exceed their needs).

Attainment of sustainable livelihoods through international cooperation, capacity building and transfers of low carbon technologies and adequate and predictable enabling resources.

The Community will require institutions that:

- *ensure effective decisions on policies and measures;*
- *respect democratic accountability and the rule of law;*
- *manage the emissions market (securing a stable currency and payments regime for emissions trade);*
- *monitor and ensure compliance (with the necessary penalties);*
- *settle disputes fairly and ensure adequate transfer of resources from rich to poor countries;*
- *take responsibility for relations with other Parties, including association agreements as paths to full membership.*

The Community will need a Council of Ministers and perhaps a smaller body representing regions and meeting more frequently; a judicial mechanism; and, since it will have massive implications for everyday life and economies within the Community, a parliamentary element to ensure that its decisions are accountable, equitable and effective. In short, it will need institutions that can apply the rule of law. It would be set up within the framework of the UNFCCC and draw on its secretariat and the agreements

already reached to the maximum possible extent. However, the shortcomings of the present complex arrangements must be clearly recognised and remedied, so that the new Protocol is binding, effective and sufficiently democratic to carry with it communities and political authorities across the world.

3. A LEAD BY THE EU AND KEY DEVELOPING COUNTRIES: IS IT POSSIBLE?

What are the prospects for European leadership towards a Global Climate Community? Prime Minister Blair and President Chirac have already jointly committed to a 60% reduction in emissions by mid century. President Chirac has in the past supported an eventual equal per capita arrangement. The German Government is sympathetic to the thesis of the wbgu report. These core countries have undertaken commitments which go a substantial way towards those required by the GCC. We believe that a vigorous and tactful lead by the UK, together with France, Germany and other north European countries (Netherlands, Sweden, Denmark, Belgium) and a supportive European Parliament would have a good chance of developing a common EU position on the lines described above.

A bold strategy based on clear political principles will have the best chance of mobilising Europe's citizens as they wake up to the reality of climate change. Just as Europe's existential challenge of war and self-destruction demanded a radical initiative of reconciliation in the mid twentieth century, so the existential challenge to the world community posed by self-inflicted climate change requires a new shared social and political vision which heads of Government put to the people.

The project should not be launched as a purely European initiative. Diplomatic dialogue with the developing world is essential during the next twelve months so that it can be launched as an initiative between the EU and key Southern countries, such as India, key states in Latin America and the Africa Group. Europe and developing country partners must be politically equal partners in the initiative for a global climate community, because the founding members will lay down the ground rules on which the community develops. The founding principles of the new climate community will be equity, solidarity and shared responsibility in addressing the greatest challenge to threaten humanity.

Some Europeans question whether developing countries would be prepared to commit in this way. Our organisation has found strong support—in Delhi in our conference in October, and in the East African Parliament for example. Asked in London in June whether developing countries would respond positively to a northern approach based on Contraction and Convergence. Ambassador Raul Estrada, the Argentinean chair of COP and former chair of the Kyoto conference, replied, "yes certainly".

Diplomatic and political dialogue to prepare for this initiative must be started now, with a view to a joint initiative by the EU and key developing countries by the time of COP 11 in December 2005. The EU and its committed partners from the South should then invite all states to negotiate who are prepared to accept the core principles of contraction to an adequate concentration target, convergence to equal per capita emission entitlements and adequate community institutions and resources to ensure implementation.

4. A FAST-TRACK NEGOTIATION

The negotiation should be fast track. That is to say it should not go at the leisurely pace of the climate talks so far, with Ministers meeting once a year and 12 years elapsing from the first global statement of intent at Rio to the effective ratification of a first useful but modest step—Kyoto. Once an agreement of principle is reached between a core group of countries from both North and South, and all willing states who share these principles have been invited to join, Prime Ministers should designate plenipotentiaries to meet together for a non-stop negotiation until agreement is reached, much as the original Rome Treaty was negotiated by a group closeted in the Chateau de Val Duchesse, or the International Criminal Court was negotiated by a sustained negotiation in Rome.

Key subjects for negotiation will be:

- The concentration target and global emission reduction scenarios.
- The date of convergence to equal per capita entitlements.
- The consequent entitlement pathway for each participating state.
- The way in which population is measured and whether population entitlements should be frozen at a particular date.
- The institutions, rules and framework for implementation, including establishing and managing the global emissions market.
- The common resources needed for all this to take effect.
- Institutional provision must be made in the new Protocol for adjustments of the target—which may well be downward, given the continuing worrying signals about an accelerating rise in ghg emissions and global temperatures. We suggest that every five years Ministers be required to review the targets in the light of a report by the IPCC or (if the IPCC is unwilling to make policy recommendations) by a new Climate Scientific Advisory Committee for the Global Climate Community. These bodies could also advise change on their own initiative, requesting a Ministerial decision.

5. WHY THE CONTRACTION AND CONVERGENCE APPROACH? IS IT NECESSARY? IS IT FEASIBLE?

5.1 *Precaution*

Contracting emissions to meet a scientifically based concentration target would meet the unarguable necessities of the climate challenge.

5.2 *Equity: mobilising the South:*

Convergence to equal per person emission entitlements is the clearest means of applying the principle of equity and “differentiated responsibilities” laid down in the UNFCCC. It is also politically necessary to mobilise the efforts of the developing world. India’s Prime Minister Atal Bihari Vajpayee said in December 2002 that “We don’t believe that the ethical principles of democracy could support any norm other than that all citizens in the world should have equal rights to use ecological resources.” The view is widely shared in other developing countries.

The Brazilian proposal (an alternative equity driven concept) to base emission cuts on historical responsibility provides no medium to long-term guide for the future and raises invidious questions about the past. Brazil’s concerns could be met by an early convergence date which would ensure resource transfers from developed states which buy surplus emission entitlements from the south.

5.3 *Economic Effectiveness*

While an abrupt jump to equity would prove economically damaging, the rigorous but gradual transition of contraction and convergence will provide a cost-effective transformation. A principled long-term framework will save negotiating time and cut complexity, making clear the responsibilities of peoples, Governments and the business world. Market signals will be provided to global enterprise to invest long-term in the technologies and skills of a lean post carbon economy. Power stations can last fifty years and a new wave of global investment in power is pending. This is why the group of major global financial institutions which advises UNEP favours an early decision on the contraction and convergence approach. Technological revolutions also take a long time, like the Information Technology revolution which began with the invention of the transistor in 1951 and is now bearing fruit. The switch to the solar hydrogen economy also requires long-term investment and innovation and “learning by doing”, which must start now. An equitable allocation of emissions rights is more likely to last over the long term. It gives industry a predictable framework to phase out fossil fuels, and will increase energy security by reducing dependence on oil from the Middle East and former Soviet Union and the likelihood of oil-based conflicts. A well-regulated system of emissions trading would create flexibility and economic incentives to cut emissions in a cost-effective way.

5.4 *Flexibility Through the Regions*

One criticism of c and c is that it fails to allow for the varied condition and capabilities of member states—transport, climate, different sources of renewable energy. Unfortunately global negotiations based on these complexities sink under their own weight and lose sight of principle.

Under C and C flexibility could be provided by regional groupings or “bubbles” (eg in Africa or south America) on the lines pioneered by the European Union under Kyoto. In an African Group for example South Africa , with high emissions , might make use of some surplus entitlements from Mozambique in return for help with renewable energy Regional groupings of this kind would also mobilise political will and provide a framework for cooperation on clean energy, energy saving and adaptation to unavoidable climate damage. In many parts of the world there is a strong political impulse to regional unity—the African Union, Mercosur, South Asian Cooperation. This needs to be mobilised both to increase flexibility and to provide mutual help and peer comparison in implementing rules.

5.6 *The Key Role of Institutions*

The Contraction and Convergence model requires effective common institutions to: monitor and enforce compliance and manage the emission currency and market—in short apply the rule of law. It also requires effective institutions and inventories at national level. So does every other scheme which promises the major cuts in emissions required in developed countries and the necessary limitation in emission increases in developing countries. There is no evidence that voluntarism, even supplemented by major financial funding, can make the necessary cuts in time. Massive use of the tax weapon offers a possible theoretical alternative, but may fail on equity, and brings up the same issues of implementation as emission entitlements and market.

This brings home the critical importance of the EU's current model. If it can enforce binding constraints and, hence, a meaningful market in emissions, there will be a benchmark and exemplary tools which can be used on a global scale. Major developing countries such as India and Brazil or South Africa, and many Asian states do have the institutions to implement commitments and the rule of law, albeit imperfectly. Some African countries or states in the former Soviet Union do not.

One general answer is that the rule of law is anyway the concomitant of development. As states develop and must transform and restrict their use of fossil energy they will also become more capable of managing the change. But there is also a real issue about how to deal with weaker and less developed states.

Instead of a long-term framework, the so-called "multistage" approach proposes to treat different categories of countries in different ways, adding a number of the larger developed countries in the second commitment period, and others, say, in 2020. The trouble with this approach (in some of its forms) is that it fails to provide the principled equity required by developing countries or the long-term framework to drive investment and innovation for the low carbon age. Our proposal for a Global Climate Community of the willing and able would achieve these two goals but allow a few of the poorest developing countries to delay effective entry until they can handle it.

6. NOT WAITING FOR THE SLOWEST

6.1 *Start with the Willing and Able; enlarge the circle*

To get swift and effective action a Global Climate Community must start with a core group of willing democratic states in North and South who are prepared to lead and attract others by effective action. It must be hoped that their lead will attract most of the states that have ratified Kyoto and the majority of the G77 group of developing countries as founding members.

China is an essential part of any global climate solution. An equitable solution on the lines of c and c offers the best chance of drawing it in despite its breathtaking economic growth and rising emissions. Its membership of the WTO has demonstrated willingness to accept the rule of international law, but its lack of democracy means that it could not send members to a common parliamentary assembly. A strong form of Association, involving full commitment to emissions reductions and the full benefits of the emissions market, might be appropriate at first.

Empty Chairs in the form of the appropriate national emissions reduction paths would be defined for states that do not join at first, with the UNFCCC providing an Association Framework as a prelude to full membership.

As with the European Community some states will be unable and some unwilling to join at first. The unable may be a small number of the least developed states which do not have the institutional capacity to join. Their per capita emissions will be well below their emission entitlements so it will benefit them to join as soon as possible. They will need help from developed countries in the Global Community to develop institutional capacity and valid inventories.

The USA is clearly the key unwilling state.

6.2 *Action, not pleading, can mobilise America; a goal for 2020*

Just as Britain, then Europe's leading power, was reluctant to share sovereignty in 1950s Europe, so the US, today's global hyper power, is the most reluctant to make the international commitments necessary to resolve the climate problem—a reluctance already clear under the Clinton administration at the Hague Ministerial Conference of the Parties in December 2000 and before.

Yet a majority of Americans, according to polls, believe their country should play its part in responding to the climate crisis. In the absence of federal action several States have are legislating to impose compulsory emission reductions.

The best way for Europe and the rest of the world to help this strong body of opinion to persuade the US government to commit is to push ahead with successful action. US states with binding emission reduction programmes could be associated with the Climate Community's emissions market. A climate community involving developing countries through contraction and convergence would meet the requirement of the Byrd Habeler amendment in the US Senate which makes US action conditional on action by developing countries. The benefits of markets in sustainable energy and emissions within the Climate Community will be increasingly attractive to US companies, who will put pressure on the US to join it. As climate damages rise in the US, political pressure to join will also grow. John Dutton, Dean Emeritus of Penn State's College of Earth and Mineral Sciences, estimates that \$2.7 trillion of the \$10 trillion US economy is susceptible to weather-related loss of revenue.

The goal should be for all states to become full members, committed to their contraction and convergence paths, by 2020.

7. COMPETITIVENESS

In Europe there are fears that free riders in countries that do not join at first will benefit from cheap, dirty manufacturing technology. We believe that the risks of competition by dirty industries are outweighed by the huge industrial advantages of technological and industrial leadership in the low to no carbon age. US states with tough emission reduction programmes have already found that they benefited competitively through energy and resource saving efficiency. So have companies, such as Dupont and BP, which have introduced tough internal disciplines on emissions and energy saving.

Any overall competitive advantage of US firms through using cheap dirty fuel is massively outweighed by the competitive benefits of depreciation of the dollar, a depreciation that is driven by the overall uncompetitiveness of the United States as measured by its balance of payments deficit. A better measure of overall competitiveness effects might be the impact of the shift from carbon based energy systems on the overall rate of productivity increase in an economy. Again there is much evidence that, with gains through labour-saving productivity slowing down in advanced economies, the biggest gains may lie in resource and energy saving moves. Higher initial energy costs are a desirable driver of improved economic efficiency. The great value of the contraction and convergence approach, with its market in a shrinking of emissions entitlements is that it gives all businesses a long-term framework in which to transform their activities and make them energy-competitive in the most cost effective way.

More legitimate short-term competitiveness concerns about carbon-based dumping may be expressed by particular carbon-intensive companies or sectors. Nonetheless demanding targets for emission reduction require a rapid shift in energy utilisation both within and between firms and the medium term benefits will go to early movers. The wbgc has suggested that a Global Climate Community retain the option of imposing anti-dumping duties on carbon intensive free riders outside the community. This would clearly raise contentious issues in the WTO, but the option should be retained, particularly if certain states wilfully refuse to accept the obligations and responsibilities of addressing climate change.

Aviation should be brought into the long-term contraction and convergence framework. This is a sector where public finance still plays a major part in R and D. There is a need for a long term research programme at EU level to develop carbon free fuel, perhaps funded by a tax on aircraft fuel or landing charges. More broadly the UK Government should explore the possibilities of public private partnerships to establish the infrastructure for the hydrogen age.

8. HOW JOINED UP IS UK GOVERNMENT?

The Prime Minister's forceful statements, the Government's 60% emission reduction target for mid-century, and conferences planned—in Berlin this month and in Exeter early next year—all show a strong determination at the heart of Government to address the challenge of climate change. Implementation, however, is another matter. Despite Defra's efforts, the UK's initial targets for implementation of the EU Directive have been disappointing, (like those set by several other European countries) underlining the challenge to the Commission as it seeks to overcome "competitiveness" anxieties in member states and persuade all to implement their Kyoto commitments together.

As yet there is no agreed strategy for the period beyond 2012. Some in Whitehall support the Contraction and Convergence approach we suggest. Others do not. This debate is acceptable while policy is being formed. But clarity will be needed by next spring as the UK takes over its responsibilities in the G8 and the EU shapes its strategy. Defra officials have a healthy continuing partnership with their European colleagues. But as the need grows to build a relationship with key developing countries, greater input from the FCO and DfID, which have more contact with them and a keen awareness of the equity factor which drives their policy, could be valuable.

Some of the right forms exist. Secretary of State Beckett established a contact group with India on her recent visit. But will that contact be used to open up strategic and political discussion of the kind of issues set out in this evidence or will it focus primarily on useful but limited cooperation on adaptation and technical matters? The proposal for a climate community as a European initiative with the South is high politics, which will require leadership from heads of Government and, in the UK, a determined and unified effort by all Government departments and wide public debate of the key issues at stake.

Chairs' summary of a conference at Wilton Park, 15–17 November 2003

THE CHANCTONBURY* INITIATIVE

TOWARDS A COMMUNITY FOR GLOBAL CLIMATE PROTECTION

Climate Change is a global security issue which requires urgent and responsible leadership by countries North and South, to form a Global Climate Protection Community within the UNFCCC based on equal rights.

1.1 The latest assessment of the International Panel on Climate Change shows that the danger of climate change is intensifying and accelerating.

1.2 Without strong action, climate change could bring massive destruction, loss of life on earth and damage to ecosystems.

1.3 Climate Change should be recognized as a Global Security Issue and should be addressed with the utmost urgency by the international community.

2.1 Many scientists believe that greenhouse gas emissions must be cut by at least 60% by 2050 to satisfy the precautionary principle in order to arrest dangerous climate change.

2.2 The Kyoto Protocol of the UN Framework Convention on Climate Change (UNFCCC), which has not yet entered into force, will only achieve a reduction of 2% of Annex 1 emissions, while global emissions are projected to rise by some 30% by 2012.

Therefore:

3.1 Urgent action is required to meet the objective of the UNFCCC.

3.2 This will not be effective unless based on the principles of precaution, equity, solidarity, sustainable livelihood and common but differentiated responsibility.

4.1 European experience has shown that a community which starts with a core of states, ready and willing to take action and inspire other states to join them can create effective change.

4.2 We therefore propose that those countries, North and South, with the necessary leadership, statesmanship and sense of responsibility should form a Community for Global Climate Protection (CGCP) and advance the implementation of the UNFCCC at an accelerated pace.

4.3 This Community for Global Climate Protection (CGCP) would be founded by a group of states, North and the South, adopting a Protocol of Enhanced Cooperation as a bubble within the UN Framework Convention.

5. This Protocol would provide for:

- (1) contraction of global GHG emissions to a level that stabilises concentrations at an acceptable level;
- (2) convergence of GHG emissions entitlements to equal per person distribution within a specified timeframe;
- (3) a market in tradeable emissions entitlements;
- (4) attainment of sustainable livelihoods, through international cooperation, capacity building and transfers of low carbon technologies, and adequate and predictable enabling resources;
- (5) mechanisms that are flexible, transparent and robust to achieve the above.

6. This North-South bubble within the UNFCCC would require institutions that:

- ensure effective decisions on policies and measures;
- respect democratic accountability and the rule of law;
- manage the emissions market;
- monitor and ensure compliance;
- take responsibility for relations with other Parties, including association agreements as paths to full membership.

7.1 We call for an open dialogue in preparation for a political initiative by a balanced group of willing countries to take the lead in developing proposals by November 2005.

7.2 The member states of the CGCP would be taking a powerful step towards averting the greatest threat to the welfare and survival of humankind and other species. They would derive benefits, not only in leading the coming wave of technological development, but also in cultivating the practice of

* Chanctonbury Ring is an ancient ring of trees near the conference centre, which were blown down by a hurricane in 1987. Young trees are now growing up—an apt symbol of the regenerative policies now required to arrest devastating climate change. Participants attended the conference in a personal capacity and not as representatives of their governments.

cooperation that is ever more essential for peace, prosperity and security in an increasingly interdependent world. They should be confident that others will join them until all the peoples of the United Nations enjoy these benefits.

Rungano Karimanzira
(former chair, Africa Group) and
Professor Tom Spencer
Joint Chairs, Conference on a Global Climate Community
Wilton Park, 15–17 November 2003

1 November 2004

APPENDIX 2

Memorandum submitted by the British Cement Association

EXECUTIVE SUMMARY

1. The UK Government has received international acclaim for its pioneering policies to tackle climate change. The BCA welcomes the introduction of forward-looking approaches to environmental and other measures, but believes that there are important lessons to be learned from the experience to date in a number of areas.

2. The UK Chair of the G8 and Presidency of the EU provides a timely opportunity to ensure rigour in EU implementation of climate change policies, and to explore opportunities for global trading mechanisms.

3. The EU ETS is not alone as an emissions trading mechanism for greenhouse gases, and other schemes are being developed outside of Europe. It would be a positive step if the UK Government could work towards true international schemes and markets, especially as the EU starts to consider additional greenhouse gases within its trading scheme.

4. As Chair of the G8 the UK could explore the possibility of a role for the World Trade Organisation in this respect.

5. Any future “cap and trade mechanism”, either at EU or international level, should have much simpler mechanisms than those developed for the National Allocation Plan as part of the EU ETS.

6. With the European emissions trading scheme becoming effective in January 2005, and other trading schemes in prospect, in the interests of business efficiency the United Kingdom should terminate its domestic climate change levy and emissions trading schemes at the earliest opportunity.

THE IMPACT OF CLIMATE CHANGE MEASURES ON 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 Rugby Cement) are the major domestic manufacturers of Portland cement producing over 90% of the cement sold in the UK.

2. Energy represents approximately 35% of the variable cost of cement manufacture 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 Rugby Cement are committed to carbon dioxide 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. One of the BCA’s members, Lafarge Cement UK, is a direct participant in the UK Emissions Trading scheme. Other members have experience of trading carbon through their membership of the Climate Change Levy Scheme.

5. The industry is one of the sectors prescribed for mandatory inclusion in the EU ETS, either from its initial implementation in January 2005, or from January 2008 under the “opt out” provisions.

6. In the UK, BCA and its member companies have been working with Defra, Dti, and their consultants in relation to the development of the EU ETS and its implementation within the United Kingdom.

7. At the European level, BCA has been working with other European cement manufacturers, through its EU level trade body CEMBUREAU. In addition to the development of common issues, CEMBUREAU is in direct communication with the European Commission.

 UK CHAIR OF G8 AND PRESIDENCY OF THE EUROPEAN COUNCIL

8. The ratification of the Kyoto protocol by Russia ensures that the Protocol will come into force in 2005. This raises the importance of greenhouse gas emissions trading and related mechanisms, and brings the possibility of a global scheme closer.

9. Simultaneously holding the Chair of both the G8 and the EU provides a timely opportunity for the UK Government to champion and coordinate its environmental policies. BCA notes that the Prime Minister has already indicated his Government's intention to do so.

10. The EU ETS is not alone as an emissions trading mechanism, and other schemes are being developed outside of Europe. It would be a positive step if the UK Government could work towards true international schemes and markets, especially as the EU starts to consider the other greenhouse gases, (GHGs).

11. Any future proposals from the UK, EU or others in the international community should be market-based and compatible.

12. The UK could use its position in the chair of the EU and G8 to explore the possibility of a role for the World Trade Organisation to ensure the cost of tackling climate change is spread between those products manufactured within and outside of the European Union.

13. It is important that any future international cap and trade mechanism for carbon dioxide or the other GHGs should have much simpler mechanisms than those developed for the National Allocation Plan as part of the EU ETS.

14. The UK Government has received international acclaim for its pioneering policies to tackle climate change. The BCA welcomes the introduction of forward-looking approaches to environmental and other measures, but believes that there are important lessons to be learned from the experience to date in a number of areas:

14.1. Adoption of realistic timetables for development of any reduction scheme and introduction of appropriate measures by the parties concerned;

14.2. Provision of adequate level of certainty to assist industry and others concerned to make the necessary commercial decisions;

14.3. Clear unambiguous and enforceable targets with simple mechanisms for any compliance system;

14.4. Ensuring equitable targets from all participants in any given scheme, ie no discrepancies such as in the National Allocation Plans of many other Member States.

ALTERNATIVES

15. The Joint Implementation and Clean Development Mechanism (JI & CDM) are important components of the EU ETS and BCA hopes that the UK will use its time in the Chair of the EU and G8 to promote and foster their use.

16. Although the European Kyoto target is eight per cent, and the UK's contribution is set at 12.5%, the UK Government has set its own goal of 20% by 2010, with a commitment to implement the recommendation of the Royal Commission on Environmental Pollution's longer term 60% reduction by 2050.

17. These ambitions, although environmentally laudable, fail to take into consideration the way in which they may be achieved or the impact on European or international competitiveness.

18. In implementing any future EU-wide or global trading mechanism for carbon dioxide or the other GHGs it is vital that there is parity amongst EU countries or internationally. The UK Government should seek to implement the UK's contribution in an equitable way, which does not have a detrimental impact upon the competitiveness of domestic industry.

INDIVIDUAL UK GOVERNMENT DEPARTMENTS

19. 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.

20. A clear understanding needs to be established by these departments between climate change policy, environmental taxation, waste policy, construction and building regulations.

21. A coherent UK international policy seems a remote possibility while there is a clear lack of "joined-up" policy within the UK.

5 November 2004

APPENDIX 3

Memorandum submitted by British Nuclear Fuels plc

INTRODUCTION

BNFL welcomes the opportunity to respond to the Environmental Audit Committee's inquiry into "The International Challenge of Climate Change: UK Leadership in the G8 and EU".

Climate change is a global problem that requires a global response. The imminent entry into force of the Kyoto Protocol is important as it establishes an international agreement that takes the first step towards reducing global greenhouse gas emissions to levels that will stabilise atmospheric concentrations of such gases at a safe level.

However, the Kyoto Protocol is not a global response. The decision by the US and Australia not to ratify the protocol means a substantial proportion of global greenhouse gas emissions falls outside the scope of the Protocol. In addition, while the per capita emissions of those developing countries without emissions targets under the Kyoto Protocol are low, many of those countries have substantial populations, and therefore the overall percentage of emissions from those countries is significant and growing.

Clearly new agreements will be needed to build on what may be achieved through the Kyoto Protocol. Emissions trading has a role to play in addressing climate change, and the principles of Contraction and Convergence may also be an important input into future climate change agreements. However, these are just part of what a future climate change agreement will need to address.

POST-KYOTO CLIMATE CHANGE AGREEMENTS

The Kyoto Protocol sets greenhouse gas emissions targets for the 2008–12 period for developed countries. However, this is only part of what the Kyoto Protocol represents. The Protocol also deals with adaptation and mitigation measures to address climate change, with measurement and reporting of greenhouse gas emissions, and with the provision of aid to those countries most vulnerable to the impacts of climate change.

The Kyoto Protocol establishes the Kyoto Mechanisms—Joint Implementation, the Clean Development Mechanism and Emissions Trading. Emissions trading is a policy tool that can help countries reduce greenhouse gas emissions. It is perhaps significant that of these three mechanisms it is emissions trading that has developed most rapidly, but it has developed as a policy instrument applied to industry, rather than a mechanism used by Parties to the Kyoto Protocol.

Future agreements will need to address these issues, although there is a need to refocus on reducing greenhouse gas emissions. In addition future agreements should set longer-term objectives. The relatively short term objectives of the Kyoto Protocol will not encourage the long term infrastructural changes needed to achieve the substantial emissions reductions needed.

What is the feasibility of emissions trading systems (including Contraction and Convergence) as a framework for negotiating a post-Kyoto agreement?

Emissions trading is discussed in only one chapter of the Kyoto Protocol. Any post-Kyoto agreement will have to deal with many issues other than emissions trading. Emissions trading may have an important role to play as a policy instrument to be used by governments to achieve the emissions objectives set by future climate change agreements.

The principles of Contraction and Convergence appear attractive. The principle that global greenhouse gas emissions should contract is—of course—not exclusive to advocates of Contraction and Convergence. It is the key objective of the UN Framework Convention on Climate Change. The concept that global greenhouse gas emissions should be reduced to stabilise atmospheric concentrations is a commonly held assumption for those who accept the fundamental scientific case for global warming set out in the IPCC assessment reports.

Contraction and Convergence also has the proposal that per capita emissions should converge so that each individual has the responsibility for the emission of the same quantity of greenhouse gases. This is an attractive proposition on the basis of fairness and simplicity. However, beyond these simple principles is a great deal of complexity that could lead to the same convoluted negotiations and compromises as have already been seen with the Kyoto Protocol process

Contraction and Convergence envisions trading of emissions rights between individuals. It also envisions monitoring of the emissions of individuals. A presentation by Mayer Hillman¹ proposes that, for example, each person would receive an electronic card that would record his or her ongoing emissions use and reserve. Buildings would have sophisticated carbon management systems. These concepts are interesting and may be effective ways of managing a "carbon economy", but in terms of bringing Contraction and Convergence

¹ A Modest Proposal To Save The Planet, 28 May 2004, *Independent*.

into operation they suggest a level of infrastructure development that would not be possible in many developing countries for some time. If they were required, it would delay the introduction of a Contraction and Convergence regime.

Arguably the Kyoto Protocol process has become overly complex because it deals with many issues beyond emissions reduction. Emissions reduction runs in tandem with topics such as adaptation and mitigation, compensation to affected countries, reporting procedures and capacity building.

Part of the initial attraction of Contraction and Convergence is that its focus is on emissions paths. There have been proposals made to implement a global emissions trading scheme that could lead to wealth transfer from developed to developing countries. However, such proposals remain at a conceptual level.

The concerns and issues that have led to the broadened scope of the Kyoto Protocol and Marrakech Accords are valid. Such issues would have to be addressed—either within or parallel to the development of a Contraction and Convergence regime.

Is an international emissions trading system feasible?

The EU Emissions Trading Scheme (EU ETS), should it proceed successfully from 1 January 2004, will establish the feasibility of an international emissions trading scheme. It is a scheme that has been established through a common framework via the European Commission. However, individual membership states have been responsible for implementing that framework through their National Allocation Plans and the institutional infrastructure they have set up to monitor and verify the emissions records of the participants in the scheme.

When the EU ETS was first announced it was suggested that links could be set up between it and other emissions trading schemes. It has already been announced that links will be established with the Norwegian emissions trading scheme. Given the difficulties in agreeing the rules for the EU ETS, it is perhaps more feasible to imagine that a system of interlinked regional emissions trading schemes could be set up, rather than a single global emissions trading scheme. A global emissions trading scheme would require commonly agreed rules. Interlinked emissions trading schemes would be less burdensome in that they would require that the operators and participants in the respective schemes had confidence in the environmental and legal integrity of the emissions allowances in each scheme.

What alternatives to an international emissions trading scheme exist and would an emissions trading scheme be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries?

Emissions trading may have an important role to play as a policy instrument used by governments to achieve the emissions goals. It can help participants to achieve emissions reductions through lower-cost actions than if required to make emissions reductions in isolation.

However, emissions trading only achieves carbon reductions through the setting of fixed carbon emissions targets for participants in an emissions trading scheme. There are many other actions that would be needed as complementary measures, rather than being alternatives, to emissions trading. For example, unless emissions trading targets are set with very long term time horizons, emissions trading will not provide the incentive to invest in low-carbon technologies for use in developed or developing countries.

Furthermore, emissions trading will not incentivise investment in the adaptation measures that will be needed to deal with the impacts of climate change that will happen even if the worse scenarios for global warming can be avoided.

It is vital to ensure that we do not lose focus on the fact that, whilst climate change agreements and emissions trading schemes provide the framework to achieve greenhouse gas emissions reductions, it is behavioural change and technological solutions that will actually achieve the reductions.

Governments must encourage the development of technologies that can help reduce greenhouse gas emissions. In the power sector governments should promote the development of renewables, carbon sequestration and storage for fossil fuels and nuclear energy. The UK must ensure that the nuclear option is kept open and that steps are taken to ensure that, if the decision is made to commit to a programme of new nuclear build, the infrastructure required to assist the timely construction and entry into operation of such new plant will be available.

What objectives should be pursued by the UK during its presidencies in 2005 of both the G8 and the EU?

The expected ratification of the Kyoto Protocol by Russia, which will lead to the entry into force of the Protocol, has helped clarify the circumstances under which the UK will hold the presidencies of the G8 and the EU. The debate on climate change, that the UK has signalled will be a priority of its presidencies, will need to focus on what action and agreements will follow the Kyoto Protocol, whereas had Russia not ratified the debate would have had to examine alternatives to the Protocol.

However, the entry into force of the Protocol should not distract the UK from addressing the longer-term objectives of global emissions reduction.

There is a need to re-engage with the US and Australia in the global climate change discussion. The current US administration has made significant investments in programmes that could help develop technologies that help reduce greenhouse gas emissions. Indeed the EU is collaborating on a number of such projects, including a programme to develop the hydrogen economy and on the Generation IV programme to develop nuclear power technologies. The UK presidencies should be used to develop ways to increase investment and collaboration in technological solutions such as nuclear energy that can address the climate change challenge.

The UK should lead the discussion on how to improve the involvement of developing countries in the process of reducing global greenhouse gas emissions. This involvement must be fair and recognise that the developed nations have been primarily responsible for the increase in atmospheric greenhouse gas emissions, whilst recognising that developing country greenhouse gas emissions will become increasingly significant as they seek to improve the standard of living of their citizens.

What contribution can individual Departments make (eg FCO, DEFRA, HMT, DfT and DFID), and are they sufficiently “joined-up” in delivering a coherent UK agenda?

It is not at all clear that the various Government Departments are effectively joined up in dealing with the major and complex challenge of climate change. There is an urgent need for all of the Departments listed (and others, such as DTI—from an energy policy perspective—and ODPM—from the point of view of improving planning processes) to develop and work to a common vision which encompasses clear accountabilities, effective interfaces and measurable objectives. Without such co-ordination, the nation’s efforts and resources are being used sub-optimally. The prospects of the UK being able to achieve its longer-term goals in respect of helping to prevent climate change are therefore being diminished.

29 October 2004

APPENDIX 4

Memorandum submitted by English Nature

EXECUTIVE SUMMARY

English Nature welcomes the commitment demonstrated by the UK Government in tackling climate change and its mitigation, and the international lead it has taken over many related issues.

We strongly support the use of innovative fiscal measures, such as trading schemes and tax instruments, which serve to reduce greenhouse gas emissions. It is essential that the transport sector, including air travel, is subject to such measures.

We are concerned that the UK has not adequately or explicitly addressed the need for adaptation measures to accommodate the inevitable effects of climate change over the next 50 years or more.

Adaption measures should be robust, cross-sectoral, integrated and holistic. Explicit recognition of climate change in spatial policies and environmental protection measures is essential in this context.

From a biodiversity perspective, accommodating changing species’ distribution in response to climate change will be a key challenge for conservation. We believe this can be achieved by incorporating climate change considerations into spatial planning policies (eg PPS9 and Regional Spatial Strategies), and in agri-environment policy objectives thereby reducing habitat fragmentation at a landscape scale.

1. INTRODUCTION

1.1 English Nature is the statutory body that champions the conservation and enhancement of the wildlife and geological features of England. We work for wildlife in partnership with others by:

- advising—Government, other agencies, local authorities, interest groups, business communities, individuals on nature conservation in England;
- regulating—activities affecting the special nature conservation sites in England;
- enabling—others to manage land for nature conservation, through grants, projects and information;
- enthusing—and advocating nature conservation for all and biodiversity as a key test of sustainable development.

1.2 We have statutory responsibilities for nationally-important nature conservation sites: Sites of Special Scientific Interest, the most important of which are managed as National Nature Reserves.

1.3 Through the Joint Nature Conservation Committee, we work with sister organisations in Scotland, Wales and Northern Ireland to advise Government on UK and international nature conservation issues.

2. GENERAL COMMENTS

2.1 Climate change is likely to be the most significant and far-reaching environmental threat to have faced the Earth in its recent history. Greenhouse gas emissions from human activities are accelerating what was a natural process and scientific evidence suggests that we are currently committed to at least 50 years of rapid climate changes (and an average warming of 1.5°C in that time). In the longer-term, the amount of climate change will be determined by decisions made now about the management of the world's greenhouse gas emissions. The Kyoto Protocol has raised the political profile of the need to reduce emissions, but the targets agreed so far are too modest to have any real effect on the warming trend. However, many see such mitigation measures as being the solution to the climate problem, whilst the need to adapt to the more immediate and inevitable impacts of climate change is often overlooked.

2.2 Our evidence is, therefore, predominantly concerned with the inquiry question which explores the approach and specific objectives that the UK Government should adopt during its presidency of the G8 and EU in 2005. Here, we advocate the need for robust sectoral and cross-sectoral adaptation policies to accommodate the inevitable impacts of climate change.

3. MITIGATION MEASURES AND EMISSIONS TRADING

3.1 Climate mitigation is aimed at driving down greenhouse gas emissions in an attempt to manage atmospheric concentrations of these gases at sustainable levels—both in terms of environmental and socio-economic well-being. But due to the lengthy activity times of greenhouse gases once in the atmosphere, the effects of mitigation measures, although essential in moderating climate change in the long term, are unlikely to be realised until well into the second half of this century.

3.2 We welcome the commitment demonstrated by the UK Government in tackling climate change and its mitigation, and the international lead it has taken over many related issues. The UK has a high profile role in international negotiations under the UN Framework Convention on Climate Change and its policy framework is firmly focussed on the achievement of ambitious Kyoto targets.

3.3 We strongly support the use of innovative fiscal measures, such as trading schemes and tax instruments, which serve to reduce greenhouse gas emissions. It is essential that the transport sector, including air travel, is subject to such measures. We have no specific comments on the technical or political feasibility of ETS.

4. APPROACH AND SPECIFIC OBJECTIVES: THE NEED FOR ADAPTATION MEASURES

4.1 We are concerned that the UK has not adequately or explicitly addressed the need for adaptation measures to accommodate the inevitable effects of climate change over the next 50 years or more. The comments which follow essentially relate to this issue.

4.2 The potential effects of climate change are not widely understood. The concept of “global warming” has emerged as a popular euphemism for climate change. But temperature rise is one of a range of consequences of human intervention in the global climate system. Warming is being accompanied by changing precipitation patterns, increasing frequencies of extreme weather (storms, floods, drought) and rising sea levels (as ice sheets and glaciers melt, and as sea water expands in response to higher temperatures).

4.3 Cause and effect relationships, predicted impacts and the urgency with which these need to be addressed are not widely appreciated by policy/decision makers or amongst the public at large. For many, climate change is seen as a long term problem with no immediate relevance. However, the implications are already evident and will become more acute in decades to come.

4.4 Humankind has no option but to develop measures to adapt to climate change—now. It is already having marked impacts on the environment, societies and economies. Direct effects are being witnessed on, for example, biodiversity, coastal processes, human health, buildings, water resources, rural land use patterns and the insurance industry. Indirect impacts are influencing other sectors and areas of activity.

4.5 Clearly, to adequately address the more immediate impacts of climate change, adaptation measures should be cross-sectoral, integrated and holistic. Explicit recognition of climate change in spatial policies and environmental protection measures is essential in this context. From a biodiversity perspective, accommodating changing species' distribution in response to climate change will be a key challenge for conservation. We believe this can be achieved by incorporating climate change considerations into spatial planning policies (eg PPS9 and Regional Spatial Strategies), and in agri-environment policy objectives

thereby reducing habitat fragmentation at a landscape scale. Conservation strategies for protected areas and wider landscapes would then be set alongside policies for land use and coastal change and water resource management, providing an effective framework for informed decision making.

4.6 The future impacts of climate change are the subject of a growing field of research. Typically, such assessments use sophisticated computer models to simulate responses under a range of climate scenarios. Simulation models provide increasingly robust output data which should enable policy/decision makers to begin to address “adaptation” in the context of climate change. Whilst not yet being able to ascribe statistical certainty to any one prediction, models are able to provide a range of scenarios (least-worst to worst-worst) against which no-regrets options can be formulated. The English Nature-led MONARCH project (Modelling Natural Resource Responses to Climate Change) is an example of this type of assessment. MONARCH simulates the potential impacts of climate change on species, habitats and ecosystems and the model outputs are used to inform nature conservation policy and practice in Britain and Ireland.

25 October 2004

APPENDIX 5

Memorandum submitted by Feasta

I attach a policy paper, “The three Crises: Oil Prices, Climate Change and International Debt”, produced by Feasta, the Dublin-based foundation for the economics of sustainability with a request that it is passed on to the House of Commons Environmental Audit Committee for their consideration. [Not printed, available online at <http://www.feasta.org/documents/energy/three—crises.htm>].

To briefly introduce our paper—the Feasta approach links together the long term strategic aim of addressing the threat of global climate disruption, through Contraction and Convergence (C&C), with more immediate practical steps that the British Government could take to address current issues, in particular impending oil depletion and, soon, natural gas depletion.

Most economic commentators now acknowledge that rising oil prices could have powerfully recessionary effects on the international economy—hitting developing countries ability to import and pay their debts, as well as exacerbating the twin deficit crises, and the need for adjustment of the USA economy—which is heavily dependent on imported oil and gas. A dangerous recession is threatened on the demand side of the world economy. On the supply side depleting oil and gas threatens in the long term to encourage the substitution of an even worse greenhouse polluter, coal—not to mention a resurgence of nuclear power.

The Feasta strategy suggests a package of policy measures to resolve this crisis in the only way in which they can be resolved, namely at the systemic level. The aim is to reconfigure the global economic system so that it is designed for stability and sustainability. To this end the basic Feasta proposals are to form an international oil buyers cartel to fix an upper limit on the aggregate demand for oil and gas by international agreement. The aim is that demand does not overshoot what can be supplied. This will stabilise prices. The fixed quantity of oil and gas purchased would be allocated to countries on a per capita rationing system basis. It is proposed to use C&C principles for this and Feasta thinks there is a need to include coal in the energy demand rationing system, using tradeable energy quotas, in order to prevent a coal boom as substitute for oil and gas—with all the carbon and other pollution that would entail. This would stabilise energy prices and stabilise carbon emissions.

At the same time Feasta is proposing that the world’s political powers intervene to reform the international money and financial system and create liquidity in the form of a new international currency unit called the ebcu—which stands for Emissions Backed Currency Unit. (There is a precedent for creating an international currency when the IMF created special drawing rights based on a basket of currencies).

As you know before the late 1960s the chief reserve currency (the dollar) could be exchanged for gold at a fixed price. In this case the ebcu would be exchangeable for tradeable energy (emission) quotas at a fixed price—so that the ultimate numeraire of the international monetary system would be environmental and energy based. Different national currencies would, in turn, float against the ebcu. This way the international money system would be forced to align with the environmental system—using emission quotas as (limited and contained) broad measures of environmental damage. Feasta shares the view of many policy analysts and institutes that fundamental reform of the international monetary system is, in any case, overdue because of the massive dollar overhang and the threat that that poses to world economic stability—and because there are huge tensions opening up between China, the USA and the chief energy suppliers. These tensions and problems need to be managed through negotiated adjustment through the sorts of comprehensive policy agenda that Feasta proposes. (Much of the future policy work will be with China and the USA. China is now a major exporter to the US market, as well as lender to the US finance markets. It is also a major competitor for Middle East and Russian gas and oil and, like the USA, a major coal producer).

To repeat—there are several tangled knots of tensions in the world economy which are dangerously unstable. Although there are powerful vested interests for the status quo in the global economy the forces for change are also unstoppable and require the adjustments in the direction comprehensively proposed by Feasta. There are:

- (a) energy/emissions rationing with tradeable quotas setting an upper limit on the production systems of individual countries and global economy; and
- (b) an energy backed currency system for demand management, so that contraction does not occur too quickly.

In conclusion, perhaps it is worth advising busy members of the committee that this six page document has a one page summary at the end—though we hope EAC members will have time to consider all the complex issues in full. If there are later versions of the paper these will also be forwarded to the Committee with advice in regard to changes made. (This is work in progress for Feasta and, as you will appreciate, aimed at a trans-national audience).

3 December 2004

APPENDIX 6

Memorandum submitted by Future Forests

1. INTRODUCTION

1.1 Future Forests welcomes the opportunity to submit evidence to the Environmental Audit Committee's inquiry on climate change. Future Forests is a proven leader in engaging individuals and companies on the issue of climate change. Our measure, reduce and offset pathway (see appendix) has been adopted by over 200 organisations and 50,000 people worldwide, including Elliot Morley MP and Tim Yeo MP, both of whom have pledged to run CarbonNeutral (see annex) campaigns in the next General Election.

1.2 The United Kingdom and European Union emission trading experience, combined with various voluntary initiatives in countries which have not yet ratified Kyoto, specifically the United States and Australia, has shown emissions trading to be an effective method of engaging the international community. It allows nations to share the burden of tackling climate change in a cost-effective manner and provides flexible solutions appropriate to a more efficient market system.

1.3 Future Forests fully supports emission trading schemes as an appropriate method of ensuring national and international progress against climate change. However, we believe that progress can be accelerated if voluntary action on climate change is encouraged in parallel with, and as an extension to, the development of international trading systems.

2. EXTENDING THE EFFECTIVENESS OF EMISSION TRADING SCHEMES

2.1 The United Kingdom has pioneered the Emissions Trading System and paved the way for the current European Union ETS programme. The process for setting and allocating reductions at a national level is being refined and important progress has been made in setting the rules, processes and targets. This experience can be extended to international schemes.

2.2 However, the ETS's mandatory targets are modest in relation to the overall challenge of a material reduction in emissions, and indeed have recently been revised to make them even less ambitious in absolute terms. The process only directly impacts on selected industries and companies and excludes critically material sources in land and air transport, small and medium sized enterprises, and the commercial and residential sectors. In so doing it places an unreasonable burden upon a small sub-section of the economy, and excludes the wider public from active participation.

2.3 There are a number of ancillary problems in the way that the ETS is currently configured. The ETS is targeted at the lowest common denominator internationally, thereby determining a slow rate of progress which is insufficient to effectively tackle the problems posed by current carbon emissions. An international system will take time to develop, with targets which are likely to be considerably lower than those which scientists believe to be appropriate to the problem. While countries remain outside the trading system, inequalities and un-competitive pressures will continue to emerge.

2.4 Furthermore the current trading schemes distribution of the problem is not at all equitable. The current divisions are neither reflective of different national nor industry requirements. We support the Convergence and Contraction approach as a more equitable means of setting global and local targets, and see it as a valuable constituent of systems for the next generation of approaches in the post-Kyoto world.

2.5 The present ETS design also fails to engage and mobilise support from those organisations that are ready to go further than the regulated minimum. The Government must give full encouragement to any effort to cut carbon emissions. In keeping with our general philosophy of encouraging voluntary action, we believe that the Government should encourage additional reductions past national minimums, though fiscal and tax incentives proportionate to the level of reduction. Stabilising atmospheric concentrations of climate change gases requires actions which go far beyond the current basic regulatory requirements. The Government must recognise and support this by encouraging all possible reductions.

2.6 With regards to the specific objective and approach that the UK Government should adopt towards combating climate change, Future Forests firmly espouses the “polluter pays principle” (see appendix). We believe that every person and every organisation “owns” a share of the problem, because every part of our current patterns of production and consumption give rise to the emissions which cause climate change. Consequently it is the responsibility of each element of civic and corporate society to participate in the solution. Unless the costs of climate change are internalised in local, national and global economies then progress will not be possible.

2.7 As a part of this, Future Forests believes that the measure, reduce, offset pathway (see annex) is a valuable method of engaging people. It encourages individuals to measure the full extent of their carbon “footprint” and then to eliminate all avoidable emissions at source. Those emissions which can not be eradicated must be offset to balance out the individual’s carbon impact. The CarbonNeutral programme (see annex) has been highly successfully at engaging people and in publicising the problem of climate change. It is a practical example of the convergence and contraction model at work and is a valuable method of extending the reach of the ETS and Kyoto systems.

2.8 The real value of offset is that it provides a pricing signal which encourages a shift from compensation (which costs money) to reductions at source (which can save money). Further, where offset projects are chosen within the CDM and JI frameworks of the Kyoto system, funds are directed towards projects which speed up the introduction of energy efficiency and renewable power technologies.

2.9 Future Forests believes that individual Government departments must follow up on this by ensuring maximum awareness amongst the public of individual’s personal carbon impact. In particular we believe that three specific areas of life must receive additional focus—the school, the home and the workplace. The Department for Education and Skills should introduce a module on climate change management in school curricula to make sure that children are fully aware of the impact and dangers of global warming.

3. CONCLUSION

Future Forests calls on the Government to adopt an urgent and proactive attitude to improving the effectiveness of international, national, and local climate change regulation and legislative frameworks—specifically in the area of emissions trading. The adoption of the European Union Emissions Trading Scheme will go some way towards this, but we believe that the Government must go further by introducing a supplementary incentives scheme for sections of the economy which wish to go beyond the regulatory minimum. On a domestic level the Government must ensure that British public is fully engaged with the issue and has appropriate incentives to take action in their own lives.

Annex

FUTURE FORESTS’ POSITION ON POLICY AND REGULATION FOR CLIMATE CHANGE

Future Forests promotes action for a CarbonNeutral® world. The company’s mission is grounded in our belief that:

1. Climate change is a clear and present threat to economic, environmental, and social stability. Climate change has the potential to kill large numbers of people, destabilise global and national economies, and permanently degrade the natural environment.
2. While the causes and effects of climate change are not fully understood, there is a compelling body of evidence to support action now to reduce the atmospheric concentrations of gases which give rise to climate change.
3. Policy and regulatory responses to address the issue in an equitable and fair way will take time to develop and implement because this is the most complex global problem to confront modern society.
4. The overall objective of CarbonNeutral is to stabilise concentrations of greenhouse gases in the atmosphere at a level that avoids serious and irreversible damage to the planet’s ecosystems. This will require business and society to shift towards zero net greenhouse gas emissions by the second half of this century.

FUTURE FORESTS’ ACTIVITIES ARE FOUNDED ON FOUR CORE PRINCIPLES:

- (1) Ownership—the problem and the solutions belong to all: Every person and every organisation “owns” a share of the problem, because our current patterns of production and consumption give rise to emissions to the atmosphere which cause climate change. It is therefore the responsibility of every member of civic society and all business and government to participate in the solution, because progress is not possible without action by all.
- (2) The Goal—Eliminate, Reduce and Offset for a CarbonNeutral world: Action is required in three areas. Eliminate and reduce emissions to prevent impacts at source and then offset unavoidable emissions to compensate for unavoidable impacts.

(3) The economics—the polluter must pay: The Eliminate, Reduce and Offset approach respects the polluter pays principle and so ensures that the costs of climate change are internalised in local, national and global economies. This is a critical requirement if we are to encourage a speedy and significant transition to new technologies which avoid climate change impacts at source.

(4) Voluntary Action which goes beyond the regulatory minimum is needed and should be rewarded: Stabilising atmospheric concentrations of climate change gases requires actions which go way beyond the current policy and regulatory requirements, therefore voluntary action which goes beyond these minimum requirements should be encouraged and rewarded by government.

THE PATH TOWARDS CLIMATE CHANGE ACTION

Future Forests believes that there is a clear path that we can all follow towards protecting our climate and hence our economy and environment. We must raise awareness of the problem of, and solutions to, climate change. We must look to quantify the full extent of how our home and work activities give rise to greenhouse gas emissions. We must reduce our current levels of emissions by eliminating and avoiding releases at source. Recognising that not all emissions can be eradicated instantly, we must offset those carbon emissions which are currently unavoidable. Finally, we must look to communicate the problem so that others follow in our footsteps and continue the path towards climate change action.

THE POLITICAL ARENA

Future Forests believes that each political party has a responsibility to protect and safeguard the environment. We call for all political parties to:

(1) Adopt an urgent and proactive attitude to improving the effectiveness of international, national, and local legislative frameworks—specifically encouraging countries that are currently outside the process to rejoin and to strengthen targets, mechanisms, and processes to deliver an equitable and speedy response to climate change.

(2) Stimulate and promote activities consistent with the measure, reduce, offset, and communicate pathway, and reward voluntary action beyond requirements of current legislation through financial incentives.

(3) Ensure maximum awareness of individual's personal carbon impact in three areas of life—at school, at home, and at work—with a commitment to a climate change measurement module for children in school curricula.

(4) Lead by example by ensuring that government policies and operations are consistent with the principles of ownership and action beyond the regulatory minimum with the goal of ensuring that all Government policies are CarbonNeutral by 2010.

For its part Future Forests will record and make public the impact of the process of government and of government policies.

29 October 2004

APPENDIX 7

Memorandum submitted by the Green Party of England and Wales

1. REMIT

1.1 The inquiry gives its overall objective as “to assess the feasibility of emissions trading systems (including Contraction and Convergence) as a framework for negotiating a post-Kyoto agreement. It will examine whether such systems can be enforced and the practical difficulties involved, taking account of what has been learned from the development of the EU ETS and the growth of carbon trading initiatives such as the Chicago Climate Exchange. From this perspective, the Committee will examine the objectives to be pursued by the UK during its presidencies in 2005 of both the G8 and the EU, and the contribution of the various departments involved such as the FCO, DEFRA, HMT, DfT, and DFID.”

1.2 The Committee says it is particularly interested in the following:

- (a) Whether an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject.
- (b) What other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries.

- (c) What approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005.
- (d) What contribution individual departments can make (eg FCO, DEFRA, HMT, DfT, and DFID), and whether they are sufficiently “joined-up” in delivering a coherent UK agenda.

2. SUMMARY

2.1 The Kyoto Protocol suffers from some major shortcomings:

- (a) It is based on old science and its targets are inadequate.
- (b) It doesn’t count aviation-related or trade-related emissions, though these are increasingly significant.
- (c) It doesn’t take account of the problem of “CO₂ burden-shifting.” That is, a country may appear to have reduced its emissions attributable to manufacture for the domestic market, when in fact the manufacture has merely moved abroad, so the emissions attributable to that country’s domestic consumption have not reduced at all.

2.2 The best system for reducing emissions is the one known as Contraction and Convergence. This is the fairest system and the one most likely to ultimately win universal support. It should be adopted by the UK, the EU and the G8.

2.3 There are significant issues pertaining to the use of a currency like the dollar for emissions-trading purposes. In an inadequate system, the USA could simply buy the right to emit potentially limitless CO₂ by printing more dollars to buy emissions permits. As this could severely undermine emissions trading:

- (a) There must be a cap on overall emissions, not merely a system of trading.
- (b) Serious consideration must be given to the issue of which currencies are used for trading, including the possibility of creating a special international currency for this purpose only.

2.4 In parallel with urgent efforts to achieve international agreements, the UK must make very much stronger efforts to reduce its own emissions. The current problem may be summarised thus:

- (a) The UK government, and the three dominant political parties, are pursuing targets which are inadequate.
- (b) None of the above have the policies necessary to meet even their inadequate targets.
- (c) All of them propose inadequate measures in important policy areas, including inadequate support for road traffic reduction, inadequate measures on energy conservation, and inadequate investment in non-nuclear renewable energy production.
- (d) All of them continue to pursue some major policies which go in entirely the wrong direction, including aviation growth, road building and support for increasing trade and economic globalisation.

2.5 This submission does not contain a comprehensive package of policies for tackling climate change. This can be found in the Green Party’s Manifesto for a Sustainable Society and other Green Party publications. It does, however, identify some key issues that must be addressed, and indicates a number of concrete proposals which we believe must be taken on board by all UK political parties, and thus by the UK government, and must be actively promoted thereby to the EU, the G8 and indeed all other countries.

2.6 We look to the Environmental Audit Committee to help push for real progress on this.

2.7 This submission includes concrete proposals which we believe are essential, and which we hope the Committee will adopt as its own recommendations.

3. INTRODUCTION

3.1 The Green Party has been campaigning on the need to address the environmental impact of our economic and social system for the past 35 years. Climate change has always been at the heart of our concerns. We adopted the Contraction and Convergence policy in the mid-1990s and have campaigned for it ever since. We see this submission as a strategic approach to the political problems concerned with ensuring the global adoption of that framework.

3.2 The arguments over the science have concluded: climate change is now a political problem. The Green Party has viewed this as a political problem for a number of years and has arrived at various conclusions in terms of dealing with the problem.

4. LIMITATIONS OF THE KYOTO PROTOCOL (1)—OLD SCIENCE

4.1 The targets set in the Kyoto Protocol are based on old science and are very much short of what is required in terms of CO₂ reduction to avert the worst consequences of climate change.

4.2 In any case, there must be strong recognition that the higher-polluting countries like the UK have a duty to achieve greater reductions.

4.3 Therefore the government's current commitment to 60% CO₂ reductions by 2050 is inadequate. The Green Party believes that more like 90% reductions will be necessary by 2050, and in fact 85% by 2030, and thus 40% by 2020, and thus 40% by 2020 to have a realistic chance of meeting the higher targets later.

4.4 Proposal: The government, the EU and the G8 must all recognise:

- (a) That scientists are demanding greater reductions than they were in the 1990s when Kyoto was framed.
- (b) The countries that have been polluting more for longer have a duty to achieve significantly greater reductions.

5. LIMITATIONS OF THE KYOTO PROTOCOL (2)—TRADE-RELATED EMISSIONS

5.5 As a result of sustained corporate lobbying, trade-related CO₂ emissions were specifically excluded from Kyoto limits. This is a problem for two reasons:

- (a) Without their inclusion the targets are practically meaningless. The task in hand is to reduce CO₂ to sustainable concentrations; to exempt trade-related CO₂ as though it were not CO₂ is patently absurd.
- (b) This problem is compounded because trade-related emissions are growing and are likely to continue growing in the foreseeable future as economic globalisation generates greater freight mileage. It must be observed not merely that globalisation increases the quantities of goods consumed, but also the average distances they travel, as for example various well-known reports on food miles have demonstrated.

5.6 Clearly these emissions must be counted. Alleged difficulties in ascertaining which country ought to be held responsible (whether the producer, the consumer or the carrier) should not be allowed to delay progress in acknowledging the problem and beginning to address it. We would argue that the most obvious place to count trade-related emissions is the recipient country, because it is the recipient's demand that has stimulated the emissions.

5.7 Proposal: CO₂ produced during the transport of goods from one country to another must be included in the emissions total for the country most clearly responsible for the emissions—namely the country where those goods are consumed.

6. LIMITATIONS OF THE KYOTO PROTOCOL (3)—AVIATION-RELATED EMISSIONS

6.1 Aviation is now the fastest-growing source of greenhouse gas emissions. Michael Howard acknowledged this in his September 2004 speech on climate change. Tony Blair in his speech the very next day said that aviation will make up one-quarter of UK emissions by 2030. It is therefore reasonable to expect most MPs to acknowledge that excluding aviation emissions is a very serious shortcoming of the Kyoto Protocol.

6.2 Again, problems have been asserted regarding who should take responsibility for the emissions—the country of departure, the country where the aircraft took on the fuel, or the country where the aircraft is owned. Again, such arguments should not be allowed to delay acknowledgement of the problem. We would argue that the country which generated the demand—ie where the ticket was purchased—should take responsibility for that ticket's share of the emissions.

6.3 Proposal: Aviation emissions must be included in the emissions total of the country most clearly responsible for those emissions—namely the country where the ticket was purchased.

6.4 The House of Lords this year passed an Air Traffic Emissions Reduction Bill intended to reduce aviation-related CO₂ emissions by 50% by 2050. As far as we know, this was the first attempt in any national legislature to seriously address the issue of aviation emissions, and their Lordships are to be congratulated. If the UK government brought this Bill into law, it would set a much-needed example.

6.5 Proposal: The UK government should bring into law the Air Traffic Emissions Reduction Bill already approved by the House of Lords, and argue for its equivalent to be adopted by other countries.

7. LIMITATIONS OF THE KYOTO PROTOCOL (4)—THE PROBLEM OF CO₂ Burden-shifting

7.1 The movement of much of our heavy industry and production to poorer countries, especially China, has meant that there has been a process of CO₂ burden-shifting: that is, many goods consumed in the UK are no longer produced in the UK, meaning the CO₂ emissions associated with their production are now counted in other countries' emissions totals.

7.2 The problem with CO₂ burden-shifting is that it creates the false impression that a high-consuming country is managing to reduce its emissions—when in fact all that has happened is that its consumption has continued unchanged, and thus its emissions have continued, but the responsibility for those emissions has been shifted to another country. Because high consumption is a major driving force in increasing emissions, this very much distorts how we perceive responsibility for emissions and our performance in cutting them.

7.3 If we are to have a fair exchange system that all economies can support it is important that the CO₂ embodied in goods consumed in the UK but manufactured elsewhere should be included in UK emissions totals. Figures from Best Foot Forward suggest that alongside our net per capita emissions of CO₂ of 9,029 kg we should add CO₂ embodied in net imports of 2,132 kg—a 23.6% increase.

7.4 Proposal: There must be a mechanism to prevent CO₂ burden-shifting, so that high-consuming countries are required to count emissions related to that consumption as their own.

8. THE EU EMISSIONS TRADING SCHEME

8.1 The EU Emissions Trading Scheme seems to be designed to avoid loopholes and to ensure that emissions reductions really occur. To that extent, the Green Party endorses it. However it allows “grandfathered” rights to emissions and this must be phased out over time in a structured way, in concert with a revised focus of industrial policy.

8.2 Proposal: The EU Emissions Trading Scheme should be restructured to enable the phasing out of grandfathering rights and to allow its phasing in with a global trading scheme according to the principles of Contraction and Convergence.

8.3 A system of taxation needs to be used to constrain the unnecessary movement of goods and mitigate the negative impact on the ecosystem of the production, extraction and transportation of imported goods. Such a system is necessary to ensure that countries which take the need to reduce CO₂ emissions seriously are not penalized when trading with others. It also ensures that the CO₂ that is produced is used efficiently to increase human well-being.

8.4 Proposal: Import duties should be levied on both raw materials and finished products in order to reflect their ecological impact, where sufficient ecotaxes are not considered to have been levied in their country of origin.

9. SUPPORT FOR CONTRACTION AND CONVERGENCE

9.1 The Green Party has supported the C&C model for a decade. We believe it is the only just and sustainable approach to the problem of climate change. It must be noted that the UNFCCC secretariat has recently stated that C&C is “inevitable”—so this is not merely one more idea to consider, it is a policy increasingly recognised as the fairest, the concept most likely to be effective, and the concept most likely to gain the support of the largest number of countries.

9.2 The C&C package is completed with an emissions-trading mechanism, which must include a percentage cap to limit the proportion of a country's reductions that can be bought rather than achieved domestically. Monitoring and enforcement mechanisms are also required and should be set up by the UNFCCC.

9.3 Proposal: the UK government, the EU and the G8 should all adopt Contraction and Convergence and lobby for its adoption by all governments.

10. VARIABLE IMPACTS OF C&C

10.1 The C&C model will entail a transfer of economic resources from the wealthier to the poorer nations. As a rough guide, Table 1 shows how the shares of carbon dioxide emissions of poor countries do not match their shares of world population. The comparison of India and the USA is the most striking. The USA has around 5% of the world's population but produces around 25% of emissions. Conversely, India has around 20% of the world's population but produces around 5% of the CO₂ emissions. The different levels of consumption in the two nations and the gross inequalities between them can be directly linked to carbon dioxide emissions and could be solved by an economic transfer from the USA to India.

10.2 Table 2 indicates the extent to which a range of countries are over-producing CO₂ at present.

Table 1

SHARES OF POPULATION AND SHARES OF CARBON DIOXIDE,
A SAMPLE OF RICH/POOR COUNTRIES

<i>Country</i>	<i>% population</i>	<i>Percentage CO₂</i>
USA	4.77	24.4
Sweden	0.15	0.21
UK	0.99	2.39
Malawi	0.19	0.003
Malaysia	0.38	0.55
India	17.08	4.78

Source: CO₂ emissions data are from Oakridge National Laboratory for 1999; population figures from the UN for 2000.

Table 2

CO₂ ENTITLEMENT UNDER A PER CAPITA REGIME AND ACTUAL EMISSIONS,
A SAMPLE OF RICH/POOR COUNTRIES (CO₂ MEASURED AS MTC)

<i>Country</i>	<i>CO₂ entitlement</i>	<i>Actual CO₂ emissions in 1999</i>	<i>CO₂ per capita</i>
Algeria	31.59	24.76	0.80
Cameroon	15.57	1.28	0.08
Denmark	5.46	13.55	2.54
India	1050.13	293.94	0.29
Senegal	9.90	1.02	0.11
Jamaica	17.31	2.79	0.16
Kuwait	2.63	13.09	5.10
UK	60.99	147.20	2.47
USA	292.90	1499.85	5.26

Note: There are two possible ways to measure CO₂, either as a gas or in terms of the solid carbon. We have used the latter unit because of the neatness of the 6 billion tonnes and 6 billion people of the C&C model. The ratio between the two units is simply the ratio of their molecular weights, ie 44/12, so that 1 tonne of carbon is equivalent to 3.67 tonnes of CO₂.

Source: Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

Table 3

EXCESS OF ACTUAL CO₂ EMISSIONS COMPARED WITH C&C PERMITTED LEVELS AND
PERCENTAGE REDUCTION REQUIRED, SAMPLE OF RICH/POOR COUNTRIES

<i>Country</i>	<i>Excess (x-fold)</i>	<i>% reduction</i>
USA	13.0	92.2
Kuwait	13.1	92.0
Denmark	6.9	83.9
UK	6.2	83.4
Algeria	2.4	49.9
India	0.7	-42.9
Jamaica	0.4	-148.4
Senegal	0.3	287.7
Cameroon	0.2	-386.3

Source: Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

10.3 Table 3 indicates the size of the transfers that will be effected by the C&C model.

10.4 From a political perspective it is important that all nations have an incentive to sign up for C&C. The primary incentive is that only a system that is ultimately agreed by all can allow all to survive on a viable planetary support system; and a system that is visibly just makes general agreement more likely. However, we must acknowledge that different types of country will face different problems within a limited CO₂ framework, and seek to give them all an incentive to join the system.

10.5 There is a fairly widespread concern that the USA will drag its feet. However:

- (a) We cannot allow this to prevent us making whatever progress is possible in the meantime.
- (b) C&C is likely to achieve the most widespread support the soonest, which will put increased pressure on the US government to acknowledge the need for action.

11. EU TRADE AND EU CARBON TRADE

11.1 The Green Party is prepared to support the idea of carbon trading within an equitable framework on the understanding that a structured market can be the most efficient way of distributing a scarce resource.

11.2 However, much of the carbon dioxide that is presently produced is wasted in transporting goods from one market to another. Trade should be reduced so that it returns to being a means of obtaining goods that are not available locally, according to the principle of trade subsidiarity.

11.3 A CO₂ limitation framework inevitably implies that the CO₂ that is produced is used most efficiently to promote human well-being. This will require the active involvement of government to manage markets so that well-being rather than profits lies at the heart of economic activity.

11.4 As a step towards this, governments need to recognize that increases in trade are not always positive developments.

11.5 Proposal: The UK government, the EU and the G8 should cease regarding increases in trade as an inherently positive development.

12. CARBON TRADING AND THE RESERVE CURRENCIES

12.1 In establishing a carbon trading system, one fundamental question that must not be overlooked is: which currencies will be eligible for purchasing the right to produce CO₂? If it is the present reserve currencies this will introduce a political imbalance in favour of countries issuing those currencies, namely: USA, Japan, EU, UK and Switzerland. Countries controlling reserve currencies will be able to support an increased creation of their currencies to purchase more CO₂ permits; those without this power will find have to pay effectively higher prices.

12.2 This imbalance will reduce the political attractiveness of the scheme, and it will also tempt governments to print more currency in times of economic hardship to buy more permits and help out their polluting industries.

12.3 Proposal: The Committee should investigate the possibility of creating a new global currency for carbon trading. Such a currency would need to be backed by and administered by the UN.

13. EXERTING POLITICAL INFLUENCE ON THE USA

13.1 US policy in the energy field is dominated by oil interests. In the long run this will be to the detriment of the US economy, which will be left behind in the economic world of the 21st century, where low-energy systems and renewable energies will dominate. This argument already appears to have been understood by various sub-national political players and corporations in the US. Negotiations to reduce CO₂ emissions are likely to be more effective at this level for the foreseeable future.

13.2 It is frequently stated that European nations are powerless to exert influence on the USA to reduce its carbon dioxide emissions. We do not believe this to be the case. We would propose the introduction of import duties to reflect the CO₂ content embodied in goods imported from the USA. This would remove the unfair competition that would exist between countries that were attempting to meet Kyoto and other CO₂ reduction targets and those which were not.

13.3 Such carbon-balance tariffs could be formally negotiated at the WTO, which is the body charged with ensuring fair international trade. They could also be introduced unilaterally by the EU and her other trading partners, especially former colonies, such as members of the British Commonwealth.

13.4 Proposal: The UK and the EU should introduce carbon-balance tariffs to prevent high-polluting countries gaining any unfair advantage in trade.

13.5 In terms of political pressure, countries from the poorer world may begin to refuse to recycle US foreign debt, in response to both US foreign policy and the risk the USA poses to sustainability by its refusal to reduce CO₂ emissions. Foreigners now own 38% of US Treasury securities, which is more than twice the

amount a decade ago, and gives them considerable leverage over the US economy. The inherent weakness of the US's position is made clear in the following quotation from a recent article by Janet Bush in *New Statesman* ("America's Foes Prepare for Monetary Jihad", 4 October 2004):

One of the curious features of US hegemony is that it depends on the apparently limitless willingness of US allies—and even of some future competitors, such as China—to finance the apparently limitless budget and trade deficits of the US. Over the past 20 years the US has become the world's leading debtor, its net foreign debt rising from \$250 billion in 1982 to \$2.2 trillion in 2001, 23% of GDP—almost equal to the \$2.5 trillion owed by 5 billion people in the whole of the developing world.

13.6 Japan, China and the newly industrialized countries of East Asia have invested their trade surpluses in US Treasury bonds to underwrite the value of the dollar. If they did not do this the US dollar would fall, making their exports more expensive in the US. They might also face more barriers to trade with the US.

13.7 However, the US relies on this purchase of Treasury bonds to remain solvent and is thus dependent on the Asian economies. Thus in spite of the apparent omnipotence of the US and its currency the dollar, it is possible for the Asian economies to exercise leverage, and it is vital to bring them on board for any trading system.

13.8 The EU should focus on increasing the amount of binational trade that is conducted in euros, pounds and other non-dollar currencies and should encourage Asian economies to do the same. Rather than using the value generated through this use of their reserve currencies to fund deficits, EU nations should use it to purchase carbon permits from countries with a CO₂ surplus (ie countries which are currently emitting less than their per capita allowance under C&C), thus effectively using it for the benefit of poorer countries.

13.9 Proposal: Those countries in the G8 and EU committed to genuine carbon dioxide reductions should negotiate with the Asian and Middle Eastern economies to trade goods and oil for non-dollar currencies, especially the euro and the pound.

14. UK EMISSIONS TARGETS—LEADING BY EXAMPLE

14.1 The UK government has continually asserted that it "leads the world" on climate change due to its support for Kyoto. The Green Party believes this is highly misleading propaganda which serves to defuse public concern by sustaining the false impression that the UK is playing the necessary part in tackling climate change.

14.2 The IPCC, the RCEP and more recently the UK government have accepted the need for global CO₂ reductions of 60% by 2050. However, if these global reductions are to be made in an equitable fashion, the higher-polluting countries like the UK must make bigger reductions. This would translate into a UK target more like 90% by 2050 at the very latest, with clear and definite targets at stages along the way.

14.3 Proposal: The UK government should immediately adopt a target of 85% CO₂ reductions by 2030, including a 50% reduction by 2020, and a comprehensive package of policies to achieve this target.

15. CONTRIBUTION FROM UK GOVERNMENT DEPARTMENTS

15.1 It is still commonplace to imagine that environmental protection is some kind of threat to business *per se*. There is therefore an unhealthy tension between the government departments dealing with environment on one hand and business on the other. The desirable situation is that the entire government acknowledges ecological imperatives and all of them support the requisite action—the most urgent being climate change. Although the term "sustainable development" is now common usage, it is entirely clear that a number of crucial aspects of current economic development are far from sustainable.

Department of Trade and Industry

15.2 We note that the DTI is not explicitly mentioned as a department with a major responsibility in the area of climate change in the remit for this inquiry. We would suggest that the priority for government action must be focused on this department and the Treasury to implement policies to encourage the development of a low-energy economy.

15.3 Proposal: The DTI must be charged with the responsibility for switching the emphasis of business support away from trade-related initiatives and towards the strengthening of local economies.

15.4 The British government plays an important role in influencing the structure of foreign trade via the payment of Export Credit Guarantees. These export-supporting grants could be used to encourage the transfer of technologies to developing countries that would enable them to gain a head start in creating sustainable economies. We would suggest that the support grants currently paid to arms industries, currently around 30% of the total, which are a destructive influence on poorer countries' economies, should be switched towards industries which would help these countries build sustainable economies.

15.5 Proposal: The proportion of Export Credit Guarantees currently paid for the export of arms should be switched with immediate effect towards support for the export of renewable energy technologies.

HM Treasury

15.6 The Climate Change Levy (CCL) is too complex. Its main problem is that the reduction targets are allowed to be either reductions in absolute energy use or in emissions, or reductions in energy or carbon intensity. Intensity reduction is unsatisfactory as it permits improvement to be swamped by emissions growth induced by economic growth, and the Green Party would remove that option. There are also many complications in trying to focus on carbon emissions rather than energy use, such as exemptions for CHP use. Since industrial response to the CCL seems to be more in terms of actually reducing emissions rather than finding other ways round it, overall the Green Party is cautiously in favour of it—but it is no substitute for a comprehensive package of policies calculated to achieve the above targets.

15.7 Road fuel duties are important in encouraging drivers to become mileageconscious and to choose more fuel-efficient vehicles. As far as is practical the costs of motoring should rise in line with increased car usage, to make increased car use less attractive and to encourage the use of public transport. Fuel taxes should therefore be increased to incorporate Road Fund Licence (the tax disk).

15.8 We would also propose, as a short-term measure en route to a full system of ecotaxation, the reintroduction of the fuel tax escalator, which was removed for reasons of political expediency that ignored the requirements for CO₂ reductions.

15.9 Proposal: The UK government to immediately reintroduce the fuel tax escalator and scrap the tax disc.

15.10 We would also propose the introduction of a package of aviation taxes. While the US government remains a barrier to amending the Chicago Convention—under which no country may tax aviation fuel—other steps may be taken nonetheless, to begin addressing the problem pending complete international agreement.

- (a) The Green Party proposes that the EU abandon any Chicago Convention commitments and introduce an EU-wide aviation fuel tax.
- (b) The Green Party proposes that even before this is agreed, the UK government introduce a package of aviation taxes not strictly related to fuel:
 - (1) An emissions charge based on that in force at Zurich airport, which places higher charges on the more highly-polluting aircraft. This is revenue-neutral but serves to encourage airlines to introduce cleaner technology sooner.
 - (2) An “externalities charge” set at a percentage of a given airport’s estimated annual external costs (including the cost of its contribution to climate change—which for UK aviation as a whole is estimated at more than £2 billion a year). Revenue would be ringfenced for investment in alternative infrastructure. (It must be noted that 45% of air trips within the EU are under 500 kilometres, and many could be replaced by rail.) While in the short term providing such revenue, in the longer term it would serve to discourage avoidable air transport.
 - (3) Increased landing charges and “air traffic congestion charges” would provide additional tools for reducing air travel.

15.11 Proposal: The UK government should:

- (a) Immediately introduce a package of charges intended to reduce air transport.
- (b) Lobby the EU for the introduction as soon as possible of an EU aviation fuel tax.
- (c) Lobby the G8 and other countries for a comprehensive international agreement on aviation fuel tax.

Department for International Development

15.12 The DFID should promote C&C to developing countries.

15.13 Aid payments must be evaluated for their effects on CO₂ reductions or increases. In general, there should be no aid payment which would increase emissions, if it were possible to fund an alternative equivalent project which would reduce emissions. Eg there should no aid to help pay for a coal-fired power station, because such a project would lead to greater emissions than an equivalent non-nuclear renewable energy project.

15.14 The UK, EU and G8 countries, as a short-term measure, must assist sustainable development in poorer countries by transferring, free to the recipient, technology associated with energy conservation and non-nuclear renewable energy production. As climate change poses a major threat not merely to developing countries but to rich countries as well, this should be seen not merely as aid but as an investment in the donor country’s own protection against the economic impacts of climate change.

15.15 Proposals:

- (a) The DFID should promote C&C to developing countries.
- (b) Aid payments must be evaluated for their effects (and potential effects) on emissions.

- (c) The UK, EU and G8 must invest in the free transfer of emissions reduction technology to poorer countries, to help set them on the road to low-emissions development.

The Department for Transport

15.16 The DfT is quite simply a major offender in terms of climate change and is decades behind the leading thinking on sustainable transport. This subject deserves a major paper in its own right. However, two issues are especially pressing: roadbuilding and aviation.

15.17 The national roadbuilding programme is set to spend £30 billion over 10 years in building and widening roads. It is very well established that providing more road space generates more traffic. Despite repeated promises of traffic reduction before it came to power in 1997, Labour's first transport white paper abandoned the idea of traffic reduction. Instead we have been promised 17% traffic growth during the term of the 10-year plan. As road transport directly contributes at least 20% of CO₂ emissions, this is entirely unacceptable. The government must cancel the roadbuilding programme and invest in a proper package of emissions-reducing transport measures. These measures must be tailored to achieving CO reductions from road transport commensurate with its contribution to the overall targets (including 85% by 2030). We are confident that, as a first step, suitable measures could be undertaken to achieve a 20% traffic reduction within 10 years.

15.18 Proposal: The national roadbuilding programme must be scrapped, and the resulting £30 billion saving invested in a package of emissions-reducing policies including 20% traffic reduction within 10 years.

15.19 For the longer term, there must be a significant reduction in the routine transportation of people and goods. This will be achieved partly by economic policies aimed at challenging globalisation, and partly through specific policies aimed at economic localisation, ranging from the maintenance of local abattoirs and the provision of local shopping facilities, to the production of goods relatively locally for local need wherever practicable.

15.20 To help reduce routine transportation, the planning system must be geared to:

- (a) Reorienting work patterns to reverse the current trend by which people are accustomed to travelling further to work than they used to.
- (b) Reorienting the pattern of planning decisions so that they contribute to a progressive reduction in per capita passenger kilometres and freight kilometres.

15.21 Proposal: The DfT in close cooperation with other departments must develop and implement policies for a significant reduction in the routine transportation of people and goods.

15.22 In terms of aviation, the UK should simply not be encouraging growth, but should be actively engaged in assessing how much air transport is feasible in a world threatened by climate change.

15.23 We note that:

- (a) All developments in engine technology which bring about reduced emissions per passenger kilometre are easily outstripped by the rate of growth of the industry.
- (b) Whereas various alternative fuels are proposed for road transport, there is no credible evidence in the public domain that technology will be capable of reducing aviation's contribution to climate change in a manner that would allow for anything like the currently predicted growth.

15.24 Proposal: The DfT should support the measures referred to above relating to aviation.

23 November 2004

APPENDIX 8

Memorandum submitted by the Institution of Civil Engineers

INSTITUTION OF CIVIL ENGINEERS

The Institution of Civil Engineers (ICE) is a UK-based international organisation with over 75,000 members ranging from professional civil engineers to students. It is an educational and qualifying body and has charitable status under UK law. Founded in 1818, ICE has become recognised worldwide for its excellence as a centre of learning, as a qualifying body and as a public voice for the profession.

1. INTRODUCTION

1.1 The ICE welcomes the opportunity to present the following statements and evidence as part of the inquiry. As an international organisation, the ICE represents members drawn from a number of constituencies—UK members and residents, British engineers working throughout the world, and foreign members working through out the world, and of course in the UK. Although impossible to canvass the views of all members, we take a position of arguing both for the UK economy and its engineering profession. Engineers have a key role in the team that will deliver a low carbon future.

1.2 Climate change is a key part of the debate on sustainability and it is now commonplace to ascribe exceptional weather conditions as being caused by global warming. The evidence suggests that these issues affect all parts of our lives. Climate change is not a national problem, or even a regional problem; the impacts will change conditions for everyone on the planet. Although individuals can try to reduce their own production of climate change emissions, their decision is for a large part swamped by the actions of all mankind.

1.3 Climate change gases arise directly from the various energy industries as well as transport, other industries, including construction and mining, commercial operations and domestic life. Nature itself can also produce climate change gases in such examples as volcanic eruptions and coal bed methane. So the problem is widespread and must be considered in terms of the sum of many parts.

1.4 The UK has accepted the policy of prevention, or reduction in climate change, but as the UK only contributes about 2% of climate change gases, we must use international persuasion to influence the producers of the other 98%. Of course, energy supply and associated processes are one side of the coin; on the other side is energy demand. Both need to be addressed if the problem is to be resolved.

1.5 We urge an international response to the issues of climate change based on the themes of limiting overall global emissions and setting equitable emission rights between nations—the “Contraction and convergence” model. Engineers, members of this Institution and the other engineering Institutions are well aware of the importance of sustainability. Our education, training and professional responsibilities place our duties towards the environment at a high level in our work. The engineering profession is prepared to face the challenges of climate change.

2. FEASIBILITY OF AN INTERNATIONAL ETS

2.1 CO₂ reduction

2.1.1 The purpose of an international ETS is to attempt to reduce the production of GHG (in particular CO₂) or at least to maintain the production at current levels.

2.1.2 First, we must look at the demand for energy, and consider the ongoing demand, especially in the developing world.

2.1.3 We are concerned that energy efficiency and energy use reduction needs to be developed and understood. Energy consumption per capita is increasing at an annual rate of about 0.7% across the EU, and at a much higher rate in the recent accession countries to the EU. We expect this trend to be reflected amongst other regions in the world—in Asia, South America and Africa—as development relies on energy. Table 1 shows the increase in electrical consumption in the EU and USA. Data on electrical production is an indication of the growth in energy production. Total energy use is approximately three or four times higher than electrical production alone.

Table 1

ELECTRICAL ENERGY CONSUMPTION IN THE EU AND USA 1985–2002

	EU 1985	EU 1997	EU 2001	EU Increase 1985–2001	EU ² candidates 1985	EU candidates 1997	EU candidates 2001	Increase 1985–2001	USA 1985	USA 1997	USA 2002	Increase 1985–2002
Generating capacity per inhabitant kW/person	1.34	1.5	1.56	16%	0.55	0.77	0.87 ³	32%	2.94	2.95	3.5	19%
Electricity generated per inhabitant kWh/person	5,355	6,487	7,029	31%	2,883	3,012	3,181	10.3%	10,659	13,754	13,778	29%
CO ₂ emissions per inhabitant Tonnes/person	8.3	8.1	8.3	0	7.5	5.5	7.5	0	19.6	20.7	21.3	9%

Source: EU, Eurostat, EIA and Private estimates.

2.1.4 The UK Government’s policy to meet its targets for CO₂ reduction depends for a large part on increasing the proportion of renewable generation for the production of electricity to 10% by 2010 and onwards. Engineers, recognising the significance of climate change, have a major part to play in driving towards these targets, but the targets are challenging and will not be reached without a major re-appraisal of short term and medium term policy in a number of areas.

² Accession countries and candidate countries.

³ Estimate.

Increasing Energy Consumption

2.1.5 Overall energy consumption is increasing. Almost as fast as energy efficiency is introduced, more and more demands are placed on the electricity network, both domestically and in the work place. The National Grid has had to revise upwards its forecast for generation capacity.⁴ Renewable sources of generation offer a diverse portfolio—and all must be considered if we are to meet these targets. Although significant, the growth in windpower alone will not be able to satisfy the UK's increased demands for electricity. Other forms of renewable generation must also be considered as part of our plans. Solar pv will make a contribution, biomass and geothermal offer more controllable energy sources.

Renewable Generation

2.1.6 Other large-scale renewable generation needs to be considered in order to extend our energy resources. The next wave of renewable energy sources is in the marine sector, in particular tidal flow and wave energy. The UK should be persuaded to invest heavily in this area and bring forward commercially viable technologies. This will not be possible without significant investment and R&D into this fledgling industry—with significant long-term downstream benefits to UK's civil/marine engineering industry as well as to the nation's energy resources. We welcome initiatives to increase the adoption of solar photo-voltaics (pv), both in the UK and world-wide, as well as the greater use of biomass as a fuel source. In any case, the Institution continues to press for a debate on the longer-term security of supply issue. This debate must give serious consideration to the use of tidal power barrages and the renewed use of nuclear power alongside increased use of renewables. Most of the UK's existing nuclear power capacity will be retired by 2025. The UK should take steps to ensure that skills and process are maintained so that, should new nuclear capacity be required, the licensing and construction processes can be completed expediently. A more equal emphasis should be given to both nuclear and renewable technologies than at present.

Centralised Power & Combined Heat and Power (CHP)

2.1.7 The model of centralised power systems has served the UK well for more than 80 years. Significant progress is now being made in restructuring power systems to include more distributed generation and combined heat and power projects. Flagship projects such as the CHP in Woking illustrate modern thinking. Their benefit is three fold: first a reduction in overall energy consumption as higher efficiency generating plant is used, secondly a reduction as losses in transmission are reduced and thirdly, encouragement of the attitude that focuses on the sustainable long term use of energy use. Similar projects are limited in their take up because of the need for them to meet rigorous cost benefit analyses before project money is available.

2.1.8 We should beware of the false promises that sometimes spring from the merchants of new technology. Micro and distributed generation may offer apparently lower cost energy when compared on a metric such as pennies/kWh taken on an annual basis, whilst quietly ignoring the true cost of “load following” the demand of the individual consumer. We see micro-generation as part of the solution, but, for the most part users of micro-generation will remain connected to power networks for provision of energy management and ancillary services.

The Relationship Between Energy & Power

2.1.9 Some other countries are making good progress towards installation of renewable energy resources, but we need to look behind the first layer of the figures. For while wind generating capacity has increased in many European countries, actual energy production from wind is much lower because of the relatively low capacity factor and the intermittent nature of wind energy.

2.1.10 We must differentiate between energy production and power requirement, especially when we debate wind energy. A power network needs generating capacity, expressed usually in MW or GW, but the users of the network require energy to be available, usually varying with the time of day. To meet the instantaneous demands requires all the wind generators to be operating at rated output, hence an allowance must be made for low- or no-wind days. Even if the UK could produce more than 20% of its electrical power from renewable resources, there would need to be major changes in the electrical infrastructure and more electrical energy storage to make the power available when required. To put this simply, more generation is required than would be calculated directly from the theoretical annual production from renewable resources.

Generation from Gas

2.1.11 The UK's reliance on imported natural gas is an insufficient response. It was a fortuitous coincidence that a large proportion of power generation switched from coal to natural gas during the early 1990s. This brought together several threads: improved combined cycle gas turbine efficiency (CCGT), the lifting of the embargo on generation from natural gas and the privatisation of the power industry. The

⁴ National Grid Transco, Seven Year Statement 2004.

reductions in emissions have now been obtained, and there will only be marginal gains from natural gas. The UK is close to its 12.5% Kyoto target. CO₂ decreased by 7.5% between 1990 and 2003 despite an 8% rise in consumption. We do note that there was a 1.5% increase in CO₂ emissions in 2003. The switch to natural gas is also reflected in the average figures for the EU.

2.1.12 The UK Government's aim of reducing CO₂ by 20% by 2010 hinges crucially in reducing coal burnt in power generation. Reductions to date have all come from a switch from coal to gas burn for electricity generation—the other sectors totalling 82% of energy use, in commercial and domestic heating and transport have achieved no real savings. The split of the latter two is roughly 40% each of the total. CO₂ from domestic and commercial heating and vehicles are rising inexorably with no likely curtailment in the short term.

Other Sectors

2.1.13 Indeed, the environmental audit committee of the Commons reported in August 2004 that the Government's energy strategy was now "seriously off course" and "that more imaginative and radical" policies were needed for transport. Transport's share of UK emissions are expected to rise from 18.7% to 26.3% in 2010. Air transport has almost doubled between 1990 and 2002. The large increase in regional aviation might reduce emissions and wasted energy involved from travel between major hub airports, but much of the increase appears to have made from the increase in the overall market for aviation. There has been a 17% increase in road traffic since 1997. There is very little enthusiasm within the UK for the preparation of liquid fuels such as bio-diesel made from renewable resources, which might show some small savings. Such bio-fuels are however being used in other countries, such as France, showing a welcome link between agricultural policy, EU subsidy, transport action and action for sustainability.

The Hydrogen Economy

2.1.14 The hydrogen economy is still many years away. Hydrogen should be seen as an energy vector, and not as a fuel source. As an energy vector it is currently has a low through efficiency. Unless the hydrogen is produced from very low carbon-emitting sources, such as hydrolysis using nuclear⁵, wind power or hydro-power there is little to be gained. We are also concerned that the effects of hydrogen in the upper atmosphere are not understood. Estimates of hydrogen leakage vary from 0.1% to as much as 10% when transported. We also note that despite widespread research on the development of the hydrogen infrastructure, there has been little attention paid to the use of the oxygen that is also produced during the hydrolysis process. It is claimed that hydrogen would offer a credible form of energy storage, but there is not yet sufficient evidence to conclude that problems would be solved by use of a hydrogen infrastructure. The PIU reported⁶ that to produce sufficient hydrogen for transport in the UK would require more energy than our present electrical consumption. Even a small proportion of the world-wide speculative investment in fuel cells and hydrogen infrastructure would make a significant difference to stimulating development of other more near term renewable resources.

2.1.15 Low cost energy storage would be an essential enabling technology to support large-scale integration of renewable generation. Electrical energy storage is available—for example, pumped hydro and many types of batteries. However large-scale battery storage is still viewed as an emerging technology, and large scale demonstrations of battery storage and renewable generation should be encouraged with a similar level of enthusiasm and financial support that is given to hydrogen storage.

2.1.16 Although hydrogen is seen as replacement fuel for road transport, care needs to be taken that the problem is not simply shifted from the city centre to an electrolysis plant. For unless the hydrogen is produced from surplus nuclear or renewable energy, its value in displacing CO₂ is doubtful. There is a small societal credit to be gained from encouraging individuals to behave more responsibly, but large savings in CO₂ production are not likely in the short term.

2.2 National ETS

2.2.1 Before an international ETS can be considered, we should examine the feasibility of a more local or regional ETS.

2.2.2 We do not believe that it will be credible to persuade individuals to join an ETS. There would need to be real financial incentives to persuade individuals to buy and sell rights to emissions—and in any case, it would probably have to be restricted to those fuels which can be measured, such as mains supplied electricity, gas and road fuel. Solid fuels are likely to be excluded from the market. The initial allocation of emission rights would be open to debate. For example, should it be based on historic rights or on a uniform allocation? We suspect therefore that incentivising individuals will need some form of economic signal, with

⁵ Nuclear technology can be used to produce hydrogen through electrolysis and also thermochemical routes.

⁶ Cabinet Office, Performance and Innovation Unit, Energy Review, February 2002.

a social bias to reduce hardship and fuel poverty for the most vulnerable. It is likely that the most vulnerable are using the most inefficient forms of heating, although as a total proportion of national energy use, this may be a very small fraction.

2.2.3 The challenge arises when one considers the commercial, transport and industrial sectors. If an allocation is made on the basis of historic use of fuel, then there is a danger that older, less efficient industries can continue to pollute, and thereby make it harder for new entrants to the market to offer cleaner processes. If the allocation is made purely on economic signals—for example purchases of rights to emit, then older industries may find themselves stranded.

2.2.4 Such considerations need to be weighed against international activities. Each nation will look at its economic growth and standing in world markets, and consider whether it wishes to stunt growth or even curtail it.

2.2.5 International agreements are therefore a necessary activity. However the record of participation in international agreements is not good. Several countries are seeking to increase their emissions under the Kyoto agreements, and many countries are taking little action to participate. This means that if the UK takes its responsibilities seriously, it is penalising itself through additional economic and technical burdens against its competitors who are avoiding such action. This should not mean that the UK withdraws from these agreements, but we should re-double our efforts to not only meet the targets, but also persuade other countries so to do, and furthermore, encourage British industry to benefit in the process.

2.2.6 Radical agendas require radical measures. Wide ranging legislation across a wide variety of topics appears to lead to widespread avoidance of compliance. Using EU directives as a means of stabilising climate change simply adds to the burden of red tape affecting industry and commerce. Changing the industrial lifestyle will require more than restrictive directives. Leaving choice to the market is also likely to be ineffective.

3. ALTERNATIVES TO AN ETS

3.1 An ETS might not be necessary if there was a substantial switch to cleaner energy sources, coupled with a dramatic reduction in energy use. Carbon sequestration might also make a small impact on the total production of CO₂.

3.2 The UK Renewables Obligation Certificate (ROC) has had a major impact on the planning of the UK's power industry. Although imperfect, it has many desirable features and the ICE will support its retention in the longer term. European or International adoption of ROCs (or very similar schemes) would be a simple, yet effective means of increasing the proportion of non fossil-fired power generation, provided that such schemes were extended to all low carbon technologies.⁷ At present, ROCs cannot be claimed by nuclear generators. A step change, allocating ROCs to nuclear generators would distort and disrupt the present market, but nevertheless the scheme should eventually cover all non CO₂ emitting generation.

3.3 An extension of the ROCs project to other industries besides electricity would also be desirable. It could for example be applied to road fuel. Railway systems (using electric traction) already have to subscribe to the ROC's scheme through their power purchases, but are not covered for their supplies of oil for diesel traction.

3.4 We would also propose consideration of “negative ROCS” to be earned by reforestation or other CO absorbing projects.

3.5 There would be strong benefits in extending a ROCs scheme internationally. An international ROCs project, operating with common rules should simplify international actions. Emissions are not subject to frontiers and it would be unfortunate if a polluting producer on one side of a frontier is able to continue in business, while restrictions in a neighbouring country limit production from a competitor. As more electricity is traded internationally, there should also be international trade in ROCs.

3.6 Applied uniformly and fairly, the ROCs could and should be extended internationally. There will always be minor anomalies, but these should not be insuperable. The risk is that heavy CO emitters will continue to move to non-enforcing countries, but this threat should not be used as a counter argument.

4. THE APPROACH AND OBJECTIVES OF THE UK GOVERNMENT DURING THE PRESIDENCY OF THE G8 AND EU

4.1 There are many worthy issues for today's political agenda. Issues rise to the top of the sheet when they gain public awareness and public ownership. Public confidence can just as easily be lost when hypocrisy and bureaucracy override the underlying issues. We recommend against large worldwide conferences to discuss climate change. Numerous large national delegations travelling to central locations are inherently environmentally inefficient. Some other way of gaining international consensus should be found.

⁷ ROCs have helped promote renewables in the UK, but they cannot be used by nuclear generators. As the focus of this consultation is reduction of CO₂ emissions we believe nuclear should be included.

4.2 As the UK is only in the Chair for a relatively short period, the UK should push for a policy that can be followed in successive rounds. Overall, all countries should reduce their emissions by improving the efficiency of energy conversion and reducing energy demand, and there should be equality between nations with convergence of emissions measured in terms of production of CO₂/person.

4.3 We urge the UK government to focus on some simple messages:

- Reduce energy use at source—energy efficiency in lighting, heating, industrial production and transport.
- Reduce indirect energy use—encourage sustainable communities: reduce unnecessary transport costs, waste disposal costs.
- Increase the proportion of energy produced from non-GHG sources.

4.4 As the world becomes smaller and international co-operation increases, climate change issues should be an integral part of the consideration of multi-national policy such as the WTO/GATT forum. The links between climate change and health, poverty, food shortages, weather related natural disasters should be a priority part of any international agenda.

4.5 These messages are as relevant to the UK as they are to the EU and to the world in general.

4.6 Sharing these common values should be the international objective. Actions to promote ETS or ROCs are only necessary because these messages have not been accepted internationally.

5. CONTRIBUTIONS OF INDIVIDUAL GOVERNMENT DEPARTMENTS

5.1 The messages from government departments should be consistent. Often they are overlapping and at worst contradictory.

5.2 Example a) New building regulations such as Part L for the commercial and domestic sector, do not ensure a minimum energy profile for any new building. The developers still build to the lowest cost and not the lowest energy consumption. Current building projects and approved developments as part of the massive UK expansion in Town Centre developments (supported in most part by English Partnership funding) do not come anywhere near the low energy options that are well-tried and available now. This includes, better low energy lighting systems, better control and the use of natural ventilation and free cooling options. The planning process does not allow for the selection of low energy options, it just relies on Part L which is definitely not the only solution. Energy options and energy reductions in new buildings will need to re-addressed during the buildings' lifetimes and constraints imposed now are reducing the opportunities for improvements later.

5.3 Example b) The integration of local CHP based on the development of both gas fired and renewable energy are not being fully explored or implemented.

5.4 Example c) The Department for Education & Skills should reconsider the specification for new school buildings. At present the specification is too prescriptive and encourages LEA's to hide behind the regulations rather than opening up the design to include best practice and future innovation.

5.5 Example d) Local authority planning guidance does not encourage best practice for siting new houses, offices, shops and schools with respect to long-term sustainability. Business premises are closing at a large rate in many communities and being turned into high value homes, which rely on individuals commuting by cars to work in new business premises on out-of-town industrial estates. More generally, transport links to new businesses and infrastructure need to be assessed at an earlier stage in the planning process. Transport needs must also include waste recycling and disposal.

5.6 Example e) DFID policy (which rightly targets poverty reduction first) is not wholly consistent with trends pushing for increased sustainability of UK infrastructure (eg Integrated Travel Plans, Sustainable Buildings) and (increasingly) renewable energy to lead to long term commitment to 60% CO₂ reductions in the UK by 2050.

5.7 Example f) The omission of air travel from the Kyoto agreement, and the contradiction between the Aviation White Paper and the UK climate change commitments is not co-ordinated policy. A real debate on what mobility is achievable within a framework for climate change emissions reduction is needed.

5.8 There continues to be a discontinuity between road and rail. While the South East is served by a good infrastructure of surface and subsurface lines and interconnecting bus services, this is not the case elsewhere. Railway lines follow routes laid down by the engineers of former centuries and provided connections into centres of population. Transferring people to rail requires new railway stations to be opened in accessible places, park and ride projects are to be commended in this regard.

5.9 The use of energy within both domestic and commercial buildings is largely un-controlled. With the growing use of home computer based systems and additional domestic electrical appliances, electricity consumption will continue to rise without any foreseeable controls.⁸ Government policy is to encourage the use of broadband domestically—which is invariably left to run continuously.

⁸ Many domestic devices are designed to be "on" or "standby" continuously, which adds to the demand for both energy and capacity. Standby domestic power consumption is about 10% of the total. *Source: IEA 2001.*

5.10 Substantial reductions in CO₂ and other GHG can only be achieved by substantial switches to other fuel sources in all sectors. Nuclear power is one such obvious choice. Tidal barrages should also be considered. The UK government's support for large-scale generation switches to alternative technologies should be reflected by an increase in industrial activity in the nuclear and tidal engineering industries, both to service the home and overseas markets. There is a requirement not only to plan future capacity to meet increases in generation, but also improved capacity to match plant retirements.

6. CONCLUSIONS

6.1 Meeting the UK's own targets to reduce GHG will be challenging. Increasing renewable generation to provide 10% of energy by 2010 requires a thorough commitment by both Government and industry. The target should be seen as part of a sustainable strategy for energy policy that takes the country through to the government's targets for 2050. We wish to see a greater informed debate about other generation sources, such as tidal barrage and nuclear in order to balance the stochastic generation from wind and other renewable sources.

6.2 We believe that the current use of ROC's is providing a workable means of identifying non-GHG generation and shows the right incentives to producers and consumers. We would encourage extension of the ROCs project to include all types of non-GHG generation. The principles of ROCs should be applied in other areas such as road and rail fuels.

6.3 The power industry is only one part of the energy industry. Equal attention must be given to industrial, domestic and transport sectors.

6.4 Our national energy policy should encompass reduction of consumption, reduction of emissions as well as fuel sources and security of supply. The energy policy should be in the context of an overall framework, linking targets to policy through a network of consistent and achievable actions. We should be prepared to stand by our principles, let them carry weight in the international arena and encourage their adoption by other nations as well.

1 November 2004

APPENDIX 9

Memorandum submitted by the International Emissions Trading Association

IETA—THE ASSOCIATION, ITS MEMBERS, AND ITS ROLE

The International Emissions Trading Association (IETA) is a non-profit organisation created in June 1999 to promote a functional international framework for trading greenhouse gas emission allowances, as a market solution to address climate change.

IBTA members are around 100 major international corporations with global reach that have formed the association to support the objectives of the UNFCCC convention and ultimately climate protection. We believe business and market-based trading systems for greenhouse gas emissions can make major contributions to these objectives if they are fair, open and combine environmental integrity with efficiency and accountability.

While our membership is global with substantial representation from developed and developing countries, IBTA has a substantial UK representation amongst its members as well as within its Board.

LETA has been active in contributing to implementation and development of the EU Emissions Trading System (ETS), based on the expertise of our members, ranging from industrial companies, law and accountancy firms, traders and market makers, and also companies with expert services, such as auditing and verification.

ETS is particularly important in helping to ensure emission reductions are delivered both environmentally effectively and economically efficiently, especially when the UK and EU are showing leadership in both international debate and domestic action, inevitably raising issues and concerns for international competitiveness of companies.

The UK will shortly take leadership of the G8 group, and then in mid 2005 Presidency of the EU, at crucial stages in preparing to discuss a long term global framework for addressing issues of climate change. A global framework is needed to be effective.

We believe market approaches, including emissions trading, can be an important part of a global approach to controlling greenhouse gas emissions that the world needs for the post-2012 period. Such a global approach is needed both to ensure environmental effectiveness and economic efficiency, so also minimising competitive distortions.

It seems clear already that a global approach will need to be based on diversity, taking account of different national circumstances. We believe that an ability to link trading systems will be an important strategic option in dealing with such issues of diversity, whilst ensuring companies receive signals that will encourage the investment needed.

For this reason, one of JETA's main objectives is to work for the development of an active, global greenhouse gas market, consistent across national boundaries, and with scope for all the flexible mechanisms. We believe these mechanisms have a valuable role to play in any future global regime, with trading having the potential to form an essential link, providing price signals to focus business engagement with these issues.

IETA RESPONSES TO THE COMMITTEE'S SPECIFIC QUESTIONS

Q: Whether an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject?

A: The current architecture has provided the framework and the incentive for the creation of the EU ETS as well as other current efforts to create Domestic Emissions Trading systems (DETs) in other jurisdictions, such as Canada, where business can take part. The EU Linking Directive leaves the door open to the linkages between systems inside and outside jurisdictions that have ratified the Kyoto Protocol. IETA's objective is to encourage the linking of DETs and effectively create a global GHG market.

The work that has been done over the last few years has shown that, to be linked, these DETs do not have to be identical, but can in many aspects reflect the circumstances in each jurisdiction. It is important that these diverse trading systems have similar fundamental characteristics that allow linking through a similar price for a ton of carbon dioxide equivalent. Fundamental are effective measuring and monitoring of emissions, a transparent compliance regime, and installation targets related to absolute national targets expressed as tons of carbon dioxide.

Like the DETs, the future international framework may have to allow for variable geometry and will certainly have to recognize the competitive pressures, especially on those industries that compete globally. An international trading system is feasible provided that it can recognize national circumstances. Over time, such an international trading system would need to move to greater consistency of target setting, compliance, and above all of transparency, that are supplemented by policies and measures also moving to greater consistency. Crucial to progress and political acceptance at international level will be that developing countries will be engaged effectively.

DETs, while sufficiently rigorous to ensure the integrity of the international system, will also have to be sufficiently flexible to recognise individual circumstances of companies, capital turnover cycles, and technological innovation potential. In these respects, the UK DET should serve as an example to the rest of the world. These elements must not be lost, as the UK system is integrated with the EU ETS.

Q: What other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries?

A: In principle, control of greenhouse emissions from industrial installations might be by targets and allowing the flexibility of trading, or issuing permits/targets that do not allow any flexibility, or by market signals that apply taxes and/or charges for emissions. IETA believes the flexibility trading offers is crucial for business response and to ensure economic efficiency. A tax or charge can in theory be efficient, but is a blunt instrument penalising rather than motivating business responses and accentuating competitiveness concerns. But trading has a key further advantage in linking to and encouraging projects. It is important that the Clean Development Mechanism can fulfill its promise of contributing to commitments made in 2002 at Johannesburg to sustainable development of developing countries. We need to ensure that this will happen.

The challenges to development of an effective CDM are increasingly evident and it is not clear that it will be an adequate inducement to the adoption of Best Available Technology in developing countries. The world should consider ways to facilitate this transition with arrangements parallel to, but fungible with DETs and the CDM.

Q: What approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005?

A: The UK Presidency objective should be to seek to shape an acceptable global approach to a global problem, rather than the partial results we have had up to now. Without an effective global approach, the environmental objective will not be achieved, since the EU represents less than 20% of global greenhouse gas emissions. An effective global approach will need to recognise diversity, taking account of different national circumstances, cultures and interests. We believe the ability to link trading systems will be an important strategic option in dealing with such issues of diversity, offering a single clearing price for a ton of carbon.

The need to recognise diversity, however, will put at risk emissions intensive industry in capped countries, while encouraging its replacement with higher emissions intensive production, with much larger production volumes, in non-capped countries. Hence, there is a need to engage global industry coalitions with global standards and long term time frameworks (well beyond 2012). Furthermore, effective treatment of consumption, as well as production emissions and their consideration in the full life cycle context, is fundamental to long term success. Therefore, a means must be found to bring energy consumption into the international trading system.

Q: What contribution individual departments can make (eg FCO, Defra, HMT, DtT, and DFID), and whether they are sufficiently "joined-up" in delivering a coherent UK agenda?

A: It is important the UK Presidency ensures a coherent approach in assessing policy options for EU climate change strategy post-2012. Discussion at Spring European Council will be just a start of assessing costs and benefits of options, on which the UK Presidency will need to build in EU, UN and G8 discussions. The UK's own coherent policy analysis can set an example in the EU and G8.

International Emissions Trading Association

Members as of October 2004

1. Accord Energy Ltd.
2. AES Corporation
3. AgCert International LLC
4. Alcan
5. American Electric Power (AEP)
6. Anglo American plc
7. Baker & McKenzie
8. Barclays Capital
9. Berkemeyer Attorneys and Counselors
10. BC Hydro
11. BlueSource LLC
12. BP
13. Brazilian Mercantile & Futures Exchange
14. Carbon Management Group
15. CDC IXIS
16. Cemex
17. CER Inc.
18. ChevronTexaco
19. Chicago Climate Exchange (CCX)
20. CO2e.com
21. Companhia Vale do Rio Doce (CVRD)
22. ConocoPhillips
23. Davies Ward Phillips & Vineberg LLP
24. De Brauw Blackstone Westbroek
25. Det Norske Veritas (DNV)
26. Deutsche Bank
27. Deutsche Boerse Computershare GmbH
28. Dow Chemical Company
29. DuPont Inc.
30. Ecosecurities
31. EDF Trading
32. Electricity Supply Board (ESB)
33. EmC Emission Control s.r.l.
34. Encana

35. Endesa
36. Eni S.p.A.
37. Entreprises pour l'Environnement (EPE)
38. Environmental Resources Management (ERM)
39. Environmental Software Providers (ESP)
40. Eskom
41. Essent
42. Evolution Markets
43. Forexster Ltd
44. Fortis Bank
45. Freshfields Bruckhaus Deringer
46. Gaz de France
47. GreenStream Network Ltd
48. Gujarat Fluorochemicals Limited
49. Holcim
50. Iberdrola Generacion
51. ICF Consulting
52. Industrial Technology Research Institute (ITRI)
53. International Paper
54. International Petroleum Exchange (IPE)
55. Japan Quality Assurance Organization (JQA)
56. JGC Corporation
57. J-Power (Electric Power Development Co., Ltd.)
58. Kansai Electric Power Co. Inc.
59. KPMG
60. Lafarge
61. Lahmeyer International
62. Lloyds Register
63. Macleod Dixon LLP
64. MGM International Ltd.
65. Mitsubishi Research Institute (MRI)
66. Natsource
67. Morgan Stanley & Co. International Limited
68. Nexen Inc.
69. Norr Stiefenhofer Lutz
70. Norsk Hydro ASA
71. Nuon
72. Ontario Power Generation
73. Pacific Consultants Co., Ltd
74. Petrobras
75. Point Carbon
76. PricewaterhouseCoopers
77. PT. Indonesia Power
78. PT. PLN Persero
79. Repsol YPF
80. Russian Carbon Fund
81. RWE
82. 5G5 Société Générale de Surveillance SA
83. Shell International Limited

84. Statoil
85. Stora Enso
86. Suncor Energy Inc
87. SwissRe
88. Tokyo Electric (TEPCO)
89. Total
90. Toyota Motor Marketing Europe
91. Toyota Tsusho Corporation
92. Tractebel
93. TransAlta Corporation
94. TransCanada PipeLines
95. TUV Süddeutschland
96. Unica
97. Unocal
98. UR5 Corporation
99. Vattenfall AB
100. Woodside Energy Ltd.

1 November 2004

APPENDIX 10

Memorandum submitted by the Met Office

1. The Met Office is the National Meteorological Service of the United Kingdom and leads the world in weather and climate prediction. It is an Executive Agency of the Ministry of Defence and became a Trading Fund in 1996. The Met Office's Hadley Centre for Climate Prediction and Research was established in 1990, building on 20 years of research into climate variability and climate change prediction. The work of the Hadley Centre on which this submission is based, is largely funded by the Global Atmosphere Division of Defra, with additional resources from the Ministry of Defence and the European Commission. The scientific results have been published in the peer reviewed literature (eg Nature) or are being prepared for publication. Related evidence has also been submitted to the Select Committee for Environment and Rural Affairs review of climate change.

EXECUTIVE SUMMARY

2. The Met Office's Hadley Centre is able to provide some key scientific results that inform the main questions raised in the Environment Audit Committee's inquiry into climate change. In summary, the issues covered below are:

(a) *The acceleration of climate change by interaction with biological processes*

3. The last Inter-Governmental Panel on Climate Change (IPCC) report concluded that the world is committed to some change in climate over the next 40 years (and beyond) due to man's emissions of greenhouse gases in the past; because of inertia in the climate system. The choices that we make over the next 20-30 years will determine changes in climate in the latter half of this century. It has been recognised for some time that the sensitivity of the climate system to changes in emissions is likely to depend on how the natural carbon cycle responds to climate change. The Hadley Centre were the first to include the feedbacks between climate change and the carbon cycle in a realistic climate model. We showed that the rise in global mean surface land temperature between 2000 and 2100 could be around 3°C greater when the climate is allowed to interact with the carbon cycle, compared to the previous model estimates, which omit the link. These results are some of those that underpin the UK Government's policy on Kyoto and succeeding negotiations. They are also relevant to the practicalities of carbon monitoring. Understanding the feedback of biological processes on global warming will be important in deciding whether the greenhouse gas "safe limit" required by UNFCCC is scientifically valid.

(b) *The impacts of forests on climate change*

4. The beneficial effect on climate of the additional carbon sinks created by afforestation and reforestation may be, at least partially, offset by changes in the surface reflectivity as dark trees replace land cover that is lighter in colour. Consequently, in many areas, the climate benefits of planting extra trees will not be as great as their carbon “sink” potential suggests. This is an important consideration in designing a regulatory framework and in assessing the feasibility of emissions trading.

(c) *Analysis and modelling of carbon for the European land surface*

5. Through a number of EU projects, scientists at the Hadley Centre and throughout Europe are working to provide the best estimates of carbon sources and sinks both historically and in real time. This information will provide key support to those monitoring and managing greenhouse gas emissions.

(d) *Responsibility for mitigation*

6. The Brazilian proposal and other similar mechanisms provide frameworks that could be used to assign future responsibility for mitigation to those with greatest responsibility for past climate change. The Hadley Centre and other scientists around the world are working together to come up with a robust methodology to quantitatively estimate how future emissions reductions might be divided between nations in an equitable way, should such approaches be adopted by the international community. This information will underpin negotiations post Kyoto, and inform negotiations on contraction and convergence.

7. We would be able to present some of these and other new results at the forthcoming Defra G8 scientific conference at the Met Office’s Hadley Centre, as recently announced by the Prime Minister.

(a) *The acceleration of climate change by interaction with biological processes*

Introduction to the carbon cycle

8. Carbon is continuously cycled between reservoirs in the ocean, on the land, and in the atmosphere, where it occurs primarily as carbon dioxide. On land, carbon occurs primarily in living biota and decaying organic matter. In the ocean, the main form of carbon is dissolved carbon dioxide and small creatures, such as plankton. The largest reservoir is the deep ocean, which contains close to 40,000 Gt C, compared to around 2,000 Gt C (Gigatons of Carbon) on land, 750 Gt C in the atmosphere and 550 Gt C in the upper ocean. The atmosphere, biota, soils, and the upper ocean are strongly linked. The exchange of carbon between this fast-responding system and the deep ocean takes much longer (several hundred years).

9. The ocean takes up carbon dioxide when it is cold, at higher latitudes, and releases it near the tropics. Photosynthesis takes carbon dioxide from the atmosphere and transfers it to vegetation, while respiration releases carbon dioxide back into the atmosphere. Although natural transfers of carbon dioxide are approximately 20 times greater than those due to human activity, they are in near balance, with the magnitude of carbon sources closely matching those of the sinks. The additional carbon resulting from human activity has raised levels of atmospheric carbon dioxide by 30% over the last 150 years.

10. Changes in climate have a significant effect on the carbon cycle. Increases in atmospheric carbon dioxide concentration increase plant photosynthesis and the amount of carbon stored in vegetation. However, increases in temperature also lead to increases in plant and soil respiration rates, which tend to reduce the size of the terrestrial carbon store. In some regions, the changes in climate can also reduce plant photosynthesis and reduce the ability of vegetation to sequester carbon.

Model predictions

11. Climate models predict that, as future atmospheric carbon dioxide concentrations increase, due to fossil fuel emissions and deforestation, the temperature of the planet will also increase. This temperature increase is currently estimated in two stages. Firstly, a model of the carbon cycle is used to calculate the future atmospheric concentrations of carbon dioxide. Secondly, the climate change is calculated using a separate global climate model. However, in reality, climate change will alter the, much larger, natural carbon cycle (see above) and this can feed back on the climate change itself. Warming soils may emit more carbon, and die back of vegetation may return carbon dioxide to the atmosphere. A warmer ocean will take up less carbon dioxide from the atmosphere. Furthermore, vegetation patterns move in response to climate change. For instance, the tree line is predicted to move poleward in the northern hemisphere. For the first time, the Hadley Centre has coupled a representation of the carbon cycle to a full climate model and made predictions of climate change that incorporate climate-induced changes in the carbon cycle. This has led to some radical new insight into the climate system.

12. Fig. 1 shows the atmospheric carbon dioxide concentration predicted by the coupled carbon-cycle climate model using greenhouse-gas emissions prior to present day and IPCC business-as-usual (IS92a) emissions thereafter.

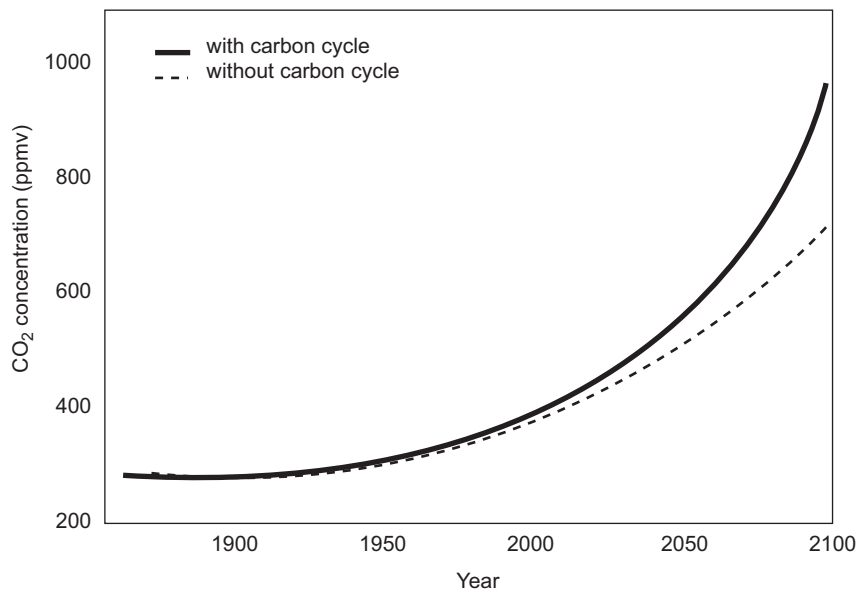


Fig 1 Simulated atmospheric concentrations (parts per million by volume) of carbon dioxide when the two-way interaction between climate and the carbon cycle is included. For comparison, the results obtained when climate is not allowed to feed back onto the carbon cycle are also shown. Prior to 1990, historical emissions were used. Beyond 1990, emissions followed those in the IPCC IS92a scenario.

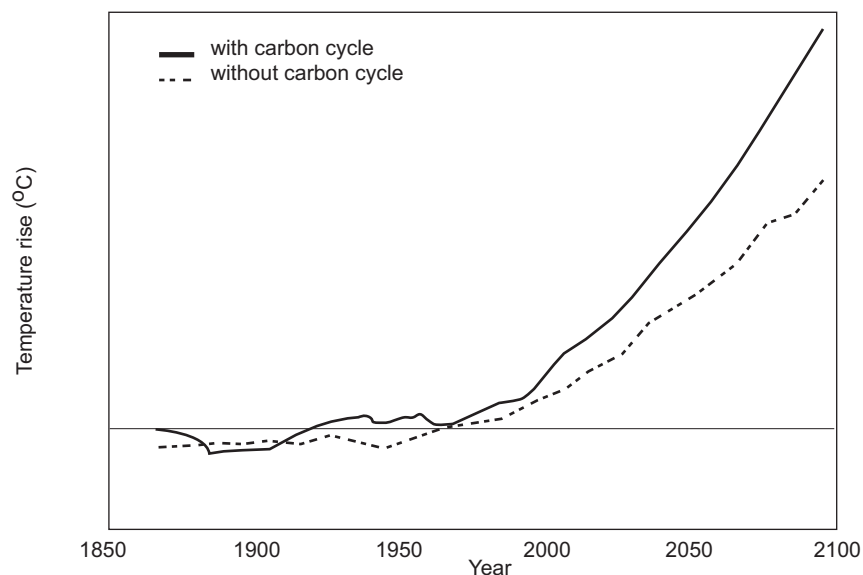


Fig 2 Simulated global-mean temperature rise over land with and without carbon-cycle feedback, as described in the figure above.

13. The present-day carbon dioxide concentration simulated by the model is in good agreement with observations and the seasonal cycle of atmospheric carbon dioxide is also well simulated, providing confidence in the future projections produced with this new model. During the 21st century, the carbon dioxide concentration in the coupled carbon-cycle climate model increases faster than that predicted by previous models which neglected carbon-cycle feedbacks. As a result, the rise in global mean surface land temperature between 2000 and 2100 (below) is around 3°C greater when the climate is allowed to interact with the carbon cycle.

14. The total global changes in soil and vegetation carbon are shown in Fig 3. Maps of the change in terrestrial carbon content between 1860 and 2100 are shown in Fig 4. The model predicts that, in the second half of this century, vegetation carbon storage in South America will begin to decline as a result of the die back of the Amazon forest, which is caused by regional warming and drying (direct anthropogenic deforestation is not included). Around the middle of the century, the land biosphere as a whole switches from being a weak sink for carbon to a strong source, mainly due to the rapid loss in soil carbon beyond 2050. In total, between the middle of the 19th century and the end of the 21st century, the combined effects of climate change and increases in atmospheric carbon dioxide concentration are predicted to reduce global soil and vegetation carbon storage by around 100 Gt C.

15. Approaches to the UNFCCC require greenhouse gas concentrations to be established at levels that prevent dangerous anthropogenic interference with the climate system. As we have seen above, the concentration of the main anthropogenic greenhouse gas, carbon dioxide, is dependent not only on anthropogenic production but also on complex carbon cycle interactions. Furthermore, the choice of levels will depend on decisions about land use, and no choice can eliminate natural climate variability. The choice also needs careful scientific scrutiny so that the implications of the choice on land use, climate variability and climate change are fully understood.

16. Because this is the first time the two-way interaction between climate change and the carbon cycle has been included in a full climate model, there is much uncertainty in the results. Future work will look at the sensitivity of the model to the representation of vegetation, soils and ocean carbon, and improve these to increase the confidence in our predictions.

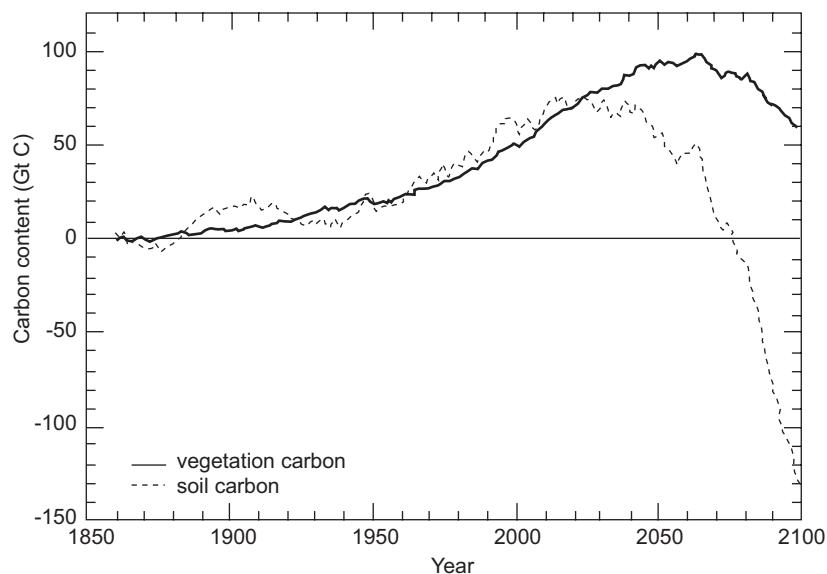


Fig 3 Simulated changes in the global total soil and vegetation carbon content (Gt C) between 1860 and 2100

Fig 4 Patterns of change in the carbon content of soil (top) and vegetation (bottom) predicted by the carbon cycle-climate model between 1860 and 2100 (Not printed, information is available from <http://www.met-office.gov.uk>)

(b) *Climate effect on forestation*

17. The Kyoto Protocol allows emissions of greenhouse gases to be offset by the establishment of new forests planted since 1990. However, will these forests actually slow down climate change? The Hadley Centre climate model has been used to quantify the effects of growing dense evergreen coniferous forests at all the locations north of 30°N that are capable of sustaining them (Fig 5).

18. The results were compared with a situation in which these locations were instead used as arable cropland. The amount of extra carbon stored in the newly forested areas (the sequestration potential) is shown below (Fig 5a). However, trees not only absorb carbon dioxide, they have other effects on climate. In particular, because they reflect different amounts of sunshine than the underlying surface, they can alter the amount of sunlight that is absorbed. Dark green forests absorb more of the incoming solar radiation than arable cropland and will tend to warm the planet. Estimates have been made of how much the new forests would alter the climate through this mechanism.

19. The effect is greatest during the winter months when large unforested areas are covered in highly reflective snow, but when much of a forest canopy would remain above the snow line. To compare the effect on climate of surface reflectivity changes with that due to the capacity of the trees to sequester carbon, the reflectivity effect has been expressed as equivalent amounts of carbon emissions. A map of the equivalent emissions is shown in Fig 5b.

Fig 5 (a) Estimated carbon uptake if suitable arable land north of 30°N were to be replaced with trees. (b) The additional effect on climate of the changes in surface reflectivity when trees are planted on suitable arable land north of 30°N, expressed as equivalent carbon emissions. (c) The difference between the two diagrams above. Negative values show where the net effect of planting trees is to warm climate. (Not printed, information is available from <http://www.met-office.gov.uk>)

20. As expected, regions where the surface reflectivity effect is most important are at high northern latitudes in areas that have a winter covering of snow. In some boreal forest locations, the changes in reflectivity reverse the beneficial effects on climate from the uptake of carbon dioxide from the atmosphere. In many other areas, the changes in reflectivity still offset a large fraction of the sequestration potential.

21. These estimates have many uncertainties, notably, the predictions of snow amount and surface reflectivity. The calculations are also for a present-day climate, and changes in temperature and atmospheric carbon dioxide concentration will alter the results. However, the results do clearly show that the beneficial effect on climate of the additional carbon sinks created by afforestation and reforestation may be, at least partially, offset by changes in the surface reflectivity as dark trees replace land cover that was lighter in colour. Consequently, in many areas, the climate benefits of planting extra trees will not be as great as their carbon “sink” potential suggests.

(c) *Carbon Assimilation and Modelling of the European Land-Surface (CAMELS) and ocean (CASIX)*

22. Under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, Annex I countries are permitted to offset emissions of CO₂ by changing land use and land management to increase carbon accumulation. Methods include: establishment of new forests (afforestation or reforestation), forest management, cropland management, grazing land management and revegetation. Losses of carbon from deforestation are also accounted for. The related sources and sinks of CO₂ must be reported in a “transparent and verifiable manner”. The Met Office’s Hadley Centre is leading an EU project called CAMELS, which will provide key support to EU countries in meeting their obligations under Kyoto, through the following products:

- (i) Best estimates and uncertainty bounds for the contemporary and historical land carbon sinks in Europe and elsewhere, isolating the effects of direct land-management.
- (ii) A prototype carbon cycle data assimilation system (CCDAS) exploiting existing data sources (eg flux measurements, carbon inventory data, satellite products) and the latest terrestrial ecosystem models, in order to produce operational estimates of “Kyoto sinks”.

23. CAMELS will pioneer a highly innovative method of estimating contemporary carbon fluxes, involving the assimilation of observed data into terrestrial carbon cycle models. The new scheme will be used to address the following questions:

- Where are the current carbon sources and sinks located on the land and how do European sinks compare with other large continental areas? The aim is to provide a consistent estimate of the European land carbon sink by making intelligent use of all of the existing data-sources.
- Why do these sources and sinks exist, ie what are the relative contributions of CO₂ fertilisation, nitrogen deposition, climate variability, land management and land-use change?
- How could we make optimal use of existing data sources and the latest models to produce operational estimates of the European land carbon sink?

24. One of the main products, which will be made available to EU policy makers, will be high-resolution maps of the European land carbon sink, which can be broken down into the relative contributions arising from land management (as covered under the Kyoto protocol) and other environmental factors.

25. A parallel system is also being developed to estimate oceanic carbon uptake in real time. This is being done as a close collaboration between the Met Office and the NERC Centre of Observation of Air-Sea Interactions and Fluxes (CASIX). It will exploit the Met Office’s world-leading capability in operational ocean modelling by assimilating real-time observations into the Met Office FOAM (Forecasting Ocean-Atmosphere Model) system. In combination with estimates of the terrestrial carbon cycle from CAMELS, it will eventually be possible to establish an integrated, near real time assessment of carbon sources and sinks on global and regional scales.

(e) *Using past responsibility for climate change to estimate the share of future mitigation efforts*

26. Future negotiations will require agreement on how to divide effort on mitigation. One suggested method of doing this is contraction and convergence. Another is the “Brazilian proposal” (suggested by the Brazilians during negotiations of the Kyoto protocol). Although this proposal was not adopted, the Subsidiary Body on Scientific and Technical Advice (SBSTA) requested that the methodological and scientific aspects of the proposal be further studied.

27. The basis of the Brazilian proposal is that future mitigation burdens should be divided up according to past responsibility for climate change, evaluated using one of a variety of indicators (such as temperature). The ad-hoc group for the modelling and assessment of contributions to climate change (MATCH, which includes Hadley Centre participation) is following this up by improving the robustness of the calculations and assessing the uncertainties more rigorously. The Hadley Centre has developed its own simple tool for estimating the proportion of responsibility to climate change indicators. The results are found to depend on a range of scientific parameters and policy choices.

<i>Policy choices</i>	<i>Scientific parameters</i>
Start year for emissions	Chemistry model
End year for emissions	Climate model
Year for responsibility calculation	Type of responsibility calculation
Choice of greenhouse gases	Choice of greenhouse gases
Choice of climate indicator	Selection of historic emissions dataset
	Inclusion of aerosol

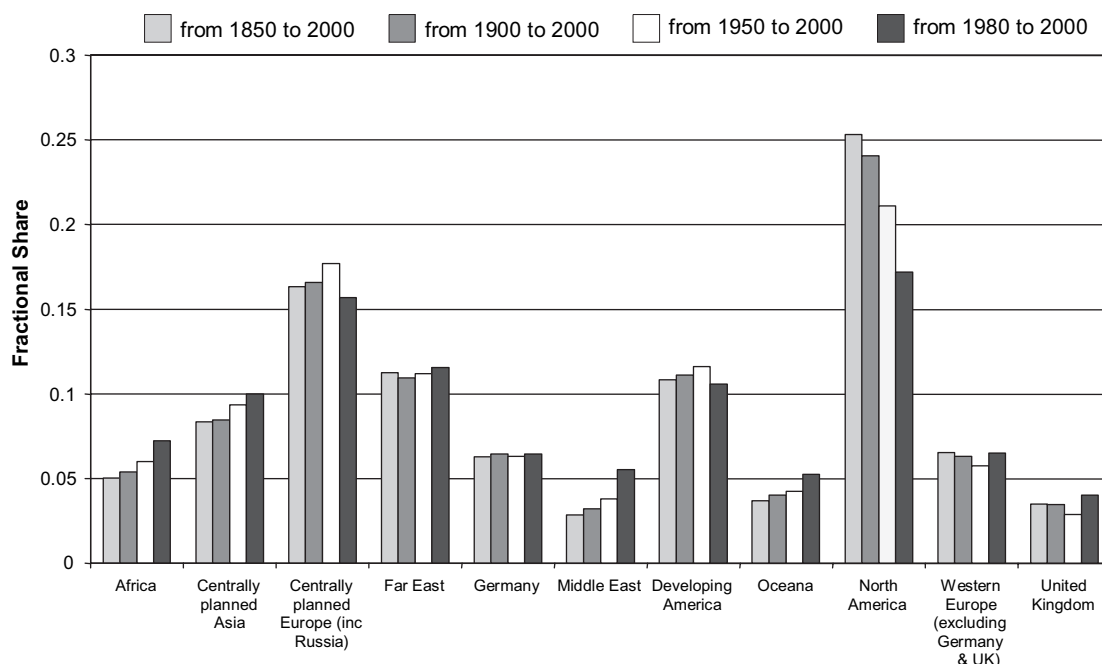


Fig 6 An illustrative calculation of responsibility based only on carbon dioxide emissions, mid-range (Bern) carbon cycle parameters and a climate model tuned to HadCM3. The chosen indicator is global mean temperature rise. It is important to recognise that the values listed in the Figure are for a single set of scientific and policy parameters (apart from emissions start year, of which four are chosen). Choosing different but equally valid parameters would alter the results.

28. In the illustration shown in Fig 6 the indicator is temperature, and one parameter (namely the year for the responsibility calculation) is varied. These results are affected by the timing of emissions from each country or country group and delays in the carbon cycle and climate system. Other parameter choices would lead to different results. For example, if non fossil fuel greenhouse gas emissions are included then the contributions of less developed nations, with a greater reliance on agriculture, tend to be increased. Another complexity is choosing the time lag between the last year that emissions are included and the year of the responsibility calculation. For indicators such as temperature there is a delay between emissions and their effect on climate change so that making the time difference between the last emissions and the year for the responsibility calculation too short means that not all of the climate change resulting from past emissions will have been realised. Work is currently taking place to look at the sensitivity of the result to a greater number of parameter choices and to better understand the robustness of the assumptions and datasets on which the method is based.

(f) *Other relevant work*

29. The Hadley Centre is involved in three new EU projects, GEMS, CarboEurope and CarboOcean, which will use observations and models to develop monitoring systems for CO₂ and other environmental variables. The ultimate aim is to have an operational monitoring system. As part of this and other developments models will be improved, enhancing our capability to predict future changes. The Hadley Centre’s climate models are being extended to allow a fuller, more quantitative understanding of the earth system as a whole, than has so far been possible. For example, the models are currently being developed to allow the impact of changes in mineral dust and oceanic iron to be assessed over the 21st century (see section d above). By including such processes in climate models it will be possible to better quantify and reduce the uncertainties in climate projections and so provide focused advice to policymakers on a wider range of issues and options.

30. It has been suggested that fertilisation of parts of the ocean with a solution of iron could reduce atmospheric carbon dioxide by enhancing phytoplankton growth and so increasing the drawdown of carbon dioxide into the ocean. However, modelling studies show that this approach is unlikely to significantly reduce global atmospheric carbon dioxide, as other factors would quickly come into play to limit phytoplankton growth. There is also good reason to be concerned about side-effects of iron fertilisation on the marine biosphere, for example reduced oxygen levels would have an adverse impact on fish and other marine animals.

31. There is reason to believe that the natural supply of iron to the ocean from mineral dust may change as a result of global warming. The resulting phytoplankton changes may feed back on the climate through emission of organic sulphur compounds which modify cloud properties. The Hadley Centre's climate models are currently being developed to provide a well-founded quantitative estimate of the importance of this effect.

32. Aviation is not yet a major contributor to climate change; however, aircraft emissions are growing rapidly. Furthermore, although the contribution to climate change from aircraft carbon dioxide emissions may be relatively straightforward to calculate, aircraft also affect climate in many other ways, which are much more uncertain. At the altitude where commercial aircraft cruise, they will create condensation trails, which can either disappear quickly or linger for hours depending on the meteorological conditions, or, in many circumstances, develop into cirrus clouds. Contrails and cirrus clouds have a warming effect on climate, but its magnitude is very uncertain; IPCC show a range of 20 between the low and high estimates of radiative forcing due to aircraft in 1992. It will be important that this range of uncertainty is narrowed, using a combination of experimental observations from aircraft, theoretical calculations (for example of cirrus ice crystal radiative properties) and climate modelling.

33. Other work in the Hadley Centre is directly relevant to:

- Calculating the allowable greenhouse gas emissions that would lead to various levels of climate change.
- Determining the impact of mitigation actions on future climate (including stabilisation).
- Predicting dangerous climate change.
- Quantify the uncertainty in the predictions, which will enable adaptation and mitigation ideas to be combined more effectively with risk assessment methodologies.

28 October 2004

APPENDIX 11

Memorandum submitted by the National Insulation Association Ltd

Thank you for inviting us to contribute to the inquiry. To some extent we are not qualified to comment in detail on international implications of emissions trading schemes. The insulation industry, however, strongly believes energy saving is as important an issue as carbon saving. The twin targets are both closely linked and completely divergent.

The potential to save energy offers major financial savings to participating ETS countries: carbon savings are a bonus to the financial benefits of more efficient use of energy.

To reduce the carbon content of energy is a cost which countries have to acknowledge and accept. To save energy is an investment capable of substantial financial return. For instance, many building fabric insulation measures return savings in energy use in the range of 8% to 30%, on investment cost, consistently year by year (generally tax-free savings in comparison with typical central bank rates of 2% to 6%). To save energy is highly beneficial to countries importing energy, assisting their balance of payments position and reducing the twin needs to invest in energy infrastructure and in security of energy supply.

Investment in building fabric insulation is generally for the life-of-the-building, adding equivalent value to the building.

We would request your consideration of this contention, to the extent that UK government is influenced to adopt an energy reduction target as well as the carbon saving target.

We thank you for your consideration.

27 October 2004

APPENDIX 12

Memorandum submitted by the Policy Studies Institute

INTRODUCTION

The authors of this Memorandum have largely drawn its contents from their book *How we can save the planet* published by Penguin Books in the summer. The book records the extent to which current lifestyles measured by the contribution they make to global climate change is way beyond the planet's limits; the inadequacy of the responses of Government (in terms of its setting of insufficient targets for greenhouse gas emission reductions), of the business sector (in exaggerating the role it can play), and of the public (in finding excuses for inaction). After analysing the range of policy frameworks intended to provide a pathway for limiting the degree of damage from climate change, the book identifies the Global Commons Institute's Contraction & Convergence framework and, logically, within that framework, the application of carbon rationing, as the only way ahead that is assured of success. It then proceeds to set out how this rationing would be applied and used in practice.

SUMMARY

1. Developing sufficiently effective policies on limiting damage from climate change is the most urgent and challenging issue facing political leaders around the world. Policies to date have proved to be wholly inadequate. The Global Commons Institute's framework proposal, Contraction and Convergence appears to be the only one with an assured prospect of delivering the degree of reduction in greenhouse gases that climate scientists consider essential to prevent ecological catastrophe. The introduction of per capita carbon rationing is required to put this into practice at the national level. Whilst pursuit of the goal of economic growth in its conventional form is incompatible with carbon rationing, governments around the world, and in particular those within the EU and G8, must recognise their responsibility in seeing that their most important objective lies in preventing devastating consequences for the planet from continuing with energy-profligate lifestyles. In light of this, the Environmental Audit Committee can play a vital role in urging the UK Government to take the lead during its temporary period of international influence next year by promoting the adoption of the C&C proposal, and by developing the mechanisms for introducing domestic carbon rationing at an early date.

CHALLENGES POSED BY CLIMATE CHANGE

2. In light of the accumulating evidence of alarming climate change already occurring, not least in recent data on the speeding up of CO₂ concentrations in the atmosphere, and its links with human activity, it is very apparent that the populations of the developed world are engaged in energy-intensive lifestyles that are way beyond the capacity of the planet to safely absorb the consequent greenhouse gas emissions. In these circumstances, the Kyoto targets of a reduction of about 5% by 2012—even if met (and the prospects for this are not encouraging)—can be seen to fall far short of the rate of progress that must be achieved if devastating impacts on the ecology of the planet and its populations are to be avoided.

3. Apparently courageously, the UK Government has set a target of a 60% reduction for the reduction of greenhouse gas emissions by 2050. However, the 2050 date for the reduction presupposes, quite unrealistically in the opinion of a growing body of climate scientists, that feedback mechanisms accelerating global warming beyond human control will not have been set in train well before then. Likewise, the ceiling set for the concentration of carbon dioxide in the atmosphere of 550ppmv (recommended by the Royal Commission on Environmental Pollution) presupposes that this does not exceed a “no-regrets” limit. (At present, that concentration is about 380ppmv—a level already 40% higher than it has been for the last 600,000 years, and one already associated with serious climatic change now). Just because the UK is among a small vanguard of countries with its sights set on a more ambitious target than most other countries does not justify an implied view that the 60% target will be sufficient to achieve a safe, sustainable, lower carbon, future.

4. There is an obvious danger that, with the choice of a target date of 2050, the impression is then given that an annual reduction of a little more than 1% will be needed to deliver the 60% target. In practice, a more substantial reduction over a shorter time frame to avoid feedback mechanisms coming into play may well be needed. To put this percentage into a different perspective, a year-on-year 10% reduction over the previous year for the next 20 to 25 years could be required to minimise that risk.

5. Analysis in our book points strongly to the conclusion that the technological-based solutions:

- making more efficient use of energy;
- using less carbon-intensive fossil fuels;
- increasing substantially the availability of renewable sources of energy;
- switching to a hydrogen economy based on these sources; and

— capturing and storing the carbon emissions from using fossil fuel energy, although having considerable potential, will be insufficient to reduce carbon emissions to the extent needed and indeed that support for them is inspired by a disturbing degree of wishful thinking.

6. It is not that technological changes cannot help reduce the impact of energy use. Our analysis indicates that they are unlikely to do so sufficiently in a “business as usual” world where forces for growth continue to dominate. These changes will only be able to play their full role in supplying energy services with lower impacts under a regime of substantially reduced energy demand. Otherwise the notional energy and carbon savings achieved by these means will carry on being largely irrelevant against a background of ever-increasing energy use—and carbon dioxide emissions.

7. Attention therefore needs to be given beyond these solutions towards measures of sufficiency, of social and institutional reform, and of modifications to lifestyles with much lower energy inputs and lower carbon emissions. To this end, it would appear that solutions for more effective action than has been contemplated to date will require an alternative international framework to succeed Kyoto, one which will assuredly deliver the degree of cutbacks in greenhouse gas emissions, particularly limits on carbon dioxide concentrations in the atmosphere. Moreover, given the fact that, in the UK, air travel already accounts for one-sixth of CO₂ emissions (taking account of the warming effect equivalent of other greenhouse gases in the upper atmosphere), it is essential that the detrimental contribution of aviation, especially in overseas travel, is incorporated within the calculus of any proposal.

CONTRACTION AND CONVERGENCE

8. Future treaties will need to involve all countries of the world, not just the developed countries currently committed to reductions under Kyoto. This means agreeing a framework for a global sharing of the finite capacity of the planet to absorb greenhouse gases without serious damage to the climate. In looking at mechanisms that have been proposed for delivering the degree of reduction in emissions to prevent ecological catastrophe, including the Kyoto approach, we concurred with the conclusions of a New Economics Foundation report that the Global Commons Institute’s Contraction and Convergence (C&C) proposal is the only one which reliably offers first, arrival at a scientifically-informed safe atmospheric concentration of these gases, second, equitable allocations that developing countries have rightly stated to be an essential part of any agreement, and, third, the potential for immediate implementation. Other alternatives to C&C can only be reconciled as reliable solutions when they are seen as falling within the framework of C&C.

9. As the overall purpose of the Inquiry is “to assess the feasibility of emissions trading systems as a framework for negotiating a post-Kyoto agreement”, we assume that the Committee is sufficiently well informed of the C&C proposal as a result of having taken evidence from GCI and seen the animations that form a central role in its justification for the call for its early adoption. We therefore consider it unnecessary to elaborate on it. Suffice it to say that its clarifying simplicity makes it possible to secure a global deal, with an agreed acceptable level of per capita emissions, that is at once comprehensive and comprehensible. The approach allows the developing countries to increase their emissions from their economic growth to the equitable level while developed countries are required to adopt environmentally-sound pathways and policies down to that level.

10. An essential component of the process of adopting C&C is that the population must be engaged. The Government cannot do it alone and technology will not provide the magic fix. This means devising a scheme to share out the allocation of carbon emissions for the world’s population and, within that, a national scheme. Clearly, education has a crucial role to play in ensuring that the public understands both the fairness of this strategy and the growing risks associated with not adopting it at an early date.

PERSONAL CARBON RATIONING/DOMESTIC TRADABLE QUOTAS

11. We have examined how the C&C framework would be put into practical effect—in the UK for obvious reasons. We have also attempted to identify any practical difficulties of doing so, including those of enforcement, and how these can be overcome.

12. The only logical way is by the introduction of personal carbon rationing, which would cover the 50% of total UK emissions which come from household energy use and personal transport, including international air travel. (The Tyndall Centre study on domestic tradable quotas discusses methods of “rationing” the remainder of emissions in the economy). Personal carbon rations would have to be mandatory, imposed by Government in the same way that food rationing was introduced in the UK in 1939. A voluntary alternative to carbon rationing would be highly unlikely to make significant savings as recent history suggests that individuals would be unwilling to start taking action for the common good unless they saw others doing likewise—and the “free-rider” would have far too much to gain. Appeals to reason and conscience have not been effective in achieving major changes in our irresponsible consumption patterns. In circumstances such as this, when the wider public interest is at considerable risk and the fact that the changes are made is of critical importance to the welfare of the community and, in this case, future generations, Government intervention is in our view imperative.

13. The administration of carbon rationing should be simple. Each person would receive an electronic card containing their year's carbon credits (see the Tyndall Centre's study on "domestic tradable quotas" and their recent establishment on the political agenda in Colin Challen's Private Member's Bill). The card would have to be presented when purchasing energy or travel services, and the correct amount of carbon deducted. The technologies and systems already in place for direct debit systems and credit cards could be used.

14. There are relatively few sellers of gas, electricity, petrol, diesel and other fuels, and flows of fossil fuels are already very well recorded and tightly regulated in our economy. Introduction of such a scheme therefore would affect few businesses, and those involved would be large ones able to adapt fairly easily. In addition, given the existence of the "white market" for trading that we propose, there should be little opportunity for a "black market" to develop.

15. One objection to personal carbon rations is that it is unfair to put all the responsibility on individuals for making lower carbon choices when they have limited power to act. Their emissions are determined by many factors and some, such as the carbon intensity of electricity, the choice of lower carbon fuels available, the types of efficient cars and equipment on the market, are not necessarily within their power to change. For this reason, society and the economy must enable, support and widen their opportunities for doing so.

16. There are a number of social, technical and policy innovations which would be needed to make it possible for people to live within their carbon ration. On the technical side, these could include "smart meters" which would inform people how much of their year's carbon ration was left; which equipment in the home used most energy; and how much carbon could be saved, for example, by only heating bedrooms in the late evening. Energy companies could install sophisticated carbon management systems which took these decisions automatically and guaranteed carbon savings for customers. In terms of policy, lower energy-using practices could be encouraged by lower rates for energy efficient buildings and appliances, improved energy labelling, the setting of higher standards that have to be adhered to, and government subsidy.

17. At present, the purchase of the most efficient equipment, such as cars, refrigerators and washing machines, is encouraged. In future, the emphasis will be on the lowest carbon option, with much better information available at the point of purchase on everything which uses energy, from new and existing homes to TVs and mobile phones. It will then become in the economic interest of manufacturers to supply goods which have the most appeal to potential customers because of their low use of carbon. Socially, one would envisage that attitudes would gradually change so that thrift rather than profligacy in energy use and carbon content become valued.

THE ROLE OF GOVERNMENT DEPARTMENTS

18. The process of implementing a policy based on per capita carbon rationing will of course involve the various Government departments that will be affected directly or indirectly following its adoption. At the heart of the matter in this critical domain of public policy lie fallacious interlocked assumptions that must be recognised as standing in the way. These include the belief that:

- the primary route to raising the quality of life is by improving our material circumstances, with no limits to this provided it is done "sustainably"; and
- the aim of policy can continue to be widening public choice, such as enabling "further and faster" travel by road, rail and air—with restriction only necessary where environmental protection cannot be absolutely relied upon.

19. At the outset therefore the incompatibility of many of the objectives of some departments must be acknowledged. In particular, there must be an early challenge to the view that economic growth can be decoupled sufficiently from energy use to prevent catastrophe by applying market forces combined with realistic pricing, and that existing and new technology can deliver sufficient reduction in emissions to allow a continuation of "business as usual".

20. On the other hand, whether directly through adopting more energy-conserving lifestyles and promoting energy efficiency and energy renewables, we see that the implementation of carbon rationing will substantially further the objectives of many other government departments such as those concerned with the promotion of health, support for domestic tourism, and the development of sustainable communities.

CONCLUSIONS

21. Personal carbon rations offer a positive, fair and effective way of making the carbon savings necessary to prevent "potentially disastrous climate change". They would provide a framework in which many different technologies and behavioural changes could combine to reduce personal emissions. They do not entail prescription about the path which must be chosen to reduce emissions, neither would they disadvantage the less well-off, as would an alternative policy of escalating the taxation of carbon to achieve equivalent savings.

22. Failure to win over the public, politicians and industry to support the concept of rationing—and to ending procrastination on this critical issue—can only have inexcusable outcomes (additional to the obvious one that the longer the delay in acting, the more difficult the task of limiting the consequent damage). Either we will have to witness an intensification of climate change or, by allowing market forces to prevail, we will be complicit in a process resulting in a very substantial majority of the world's population being denied the energy required to maintain even a basic standard of living. The issue of climate change now acknowledged by the Prime Minister to be “. . . very, very critical indeed” cannot be side-stepped, nor is there, in our opinion, any “softly, softly” approach that can allow for “business as usual”.

23. We therefore hope that this Committee can be influential in ensuring that the UK Government, during its presidency of the G8 and EU next year, takes the lead in the urgent task of persuading its respective partners in these two institutions, in partnership with many of the governments of developing countries, to adopt Contraction and Convergence as the comprehensive framework to succeed the Kyoto process. Moreover, as a clear manifestation of its grave concern on the issue, it must also make plans for the early introduction of carbon rationing within the UK.

29 October 2004

APPENDIX 13

Memorandum submitted by Tearfund

Tearfund is a UK Christian relief and development organisation, working with over 400 partner groups around the world to tackle the causes and effects of poverty. Tearfund has considerable experience in disaster management including disaster risk reduction. The following evidence is provided in answer to the question of “what approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005”.

INTRODUCTION

As a development agency Tearfund is particularly concerned about the effects that climate change will have on the poor. Climate change will increase the risk of extreme weather events, yet the communities with which we work are already struggling to cope with floods, droughts and cyclones. Climate change will also lead to food insecurity, reduced water availability, ill health, loss of forests and biodiversity, and economic decline, all of which will hit the poorest hardest. Therefore, Tearfund urges the UK government to take three specific actions on climate change in 2005 to help protect the poor and vulnerable:

1. Persuade the G8 to agree plans for a global, long-term, effective and equitable solution to climate change
2. Commit the UK government to mainstreaming climate and disaster risk reduction into its overseas development programming by a specific date, and urge the EU to do the same
3. Launch a plan of action to enable African countries develop in a way that is resilient to current and increasing climate-related risks

1. A GLOBAL, LONG-TERM, EFFECTIVE AND EQUITABLE SOLUTION TO CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC) was created for the purpose of “stabilising greenhouse gas (GHG) emissions in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system” (Article 2). Embedded in the UNFCCC is the principle of global equity, both intergenerational and international. As the first step in realising the Convention the Kyoto Protocol was very welcome, but it does not yet fully meet the principles of the Convention:

Preventing dangerous interference: The emissions quotas decided under Kyoto were a result of political haggling rather than any obvious correlation with the level of cuts that scientists believe are needed to prevent dangerous climate change. Kyoto will reduce industrialised country emissions to no more than 1–2% below 1990 levels, and developing country emissions are not limited at all—the result is that global emissions are set to rise by some 70% during Kyoto's lifespan (International Energy Agency). Thus the global community continues to generate dangerous climate change faster than it tries to avoid it.

Equity: The Kyoto protocol is currently only applicable to industrialised countries. The rationale was that developed countries “take the lead” in tackling climate change because they are mainly responsible for it: the G8 are responsible for around 50% of world CO₂ emissions. However, a global problem requires a global solution, and all countries now need to come on board if climate change is to be tackled effectively. Developing countries must participate in mitigating climate change within a managed and equitable framework.

The Kyoto Protocol is a reasonable first attempt at addressing the threat of climate change but it does not go far enough and a broader framework is needed. In order to mitigate climate change the international community must firstly set a cap on greenhouse gas concentrations in the atmosphere and then decide a plan of action for how to remain below the level that is decided.

2005 presents the UK government with a key opportunity for realistic thinking and positive steps forward in avoiding dangerous climate change. There have been numerous discussions about the problem, but a genuine concerted effort to tackle it effectively is now needed. The UK government should use its presidency of the G8 and EU in 2005 to push for a solution to climate change that is global, long-term, effective and equitable.

2. MAINSTREAM CLIMATE AND DISASTER RISK REDUCTION

The UK government should commit to mainstreaming climate and disaster risk reduction into its overseas development programming by a specific date, and urge the EU to do the same.

Climate change risk reduction

In order to help protect the poor from the adverse effects of climate change, climate change risks should be assessed and mitigated within the design and implementation of development initiatives. DFID recognises this, stating, “Development must be based on understanding existing and future vulnerabilities to climate risk if it is to be resilient to the risks of climate change. . .”⁹ In response, DFID’s Global Environmental Assets team is “seeking to promote the integration of climate change risk into development planning”.¹⁰ However, progress with this needs to be accelerated. DFID needs a clear, time-bound strategy for mainstreaming adaptation to climate change that reflects the significant threat that climate change poses to poverty alleviation efforts.

The EU has been attempting to make progress with integrating climate change considerations into EC development co-operation since 1998. It is only now, in 2004, that the EU is expected to adopt an action plan on mainstreaming climate change within development.¹¹ The EU must be committed to full and effective implementation of this plan in order to help ensure the success of sustainable development.

“Natural” disaster risk reduction

The number of disasters, and those affected by them in the developing world, is steadily rising. With each new disaster in developing countries, precious gains in poverty eradication are lost. Thousands of lives could be saved each year and economic losses prevented if governments placed more emphasis on helping vulnerable communities reduce disaster risks.

Disaster risk reduction needs to be mainstreamed into relief and development processes in order to safeguard gains made with poverty alleviation and ensure that relief, rehabilitation and development models do not exacerbate the problem. Climate change is expected to increase the risk of extreme events such as floods and droughts over the 21st century, so climate change increases the urgency of mainstreaming disaster risk reduction.

Tearfund research undertaken in 2003¹² reveals that many institutional donors, including the UK and EC, do not give a high enough priority to reducing disaster risks within their development planning and programming. DFID states in its first White Paper published in 1997 that “disaster preparedness and prevention will be an integral part of our development co-operation programme. . .”. Yet seven years on, DFID still does not systematically analyse and reduce disaster risks within its development processes. In November 2003 the National Audit Office confirmed this, recommending that DFID “make(s) sure strategies, particularly for disaster-prone regions, have explicitly consider the risks posed by humanitarian emergencies and whether prevention and reduction work could minimise those risks”.¹³ Since then DFID has commissioned a study on the role of disaster risk reduction within development, with the intention of developing a “forward strategy” based on the findings of this study. This is encouraging, but DFID still has no clear time-frame for mainstreaming, and in the absence of this we are concerned that DFID will continue to make very slow progress with it.

⁹ DFID (2004), *Climate Change and Poverty: Making development resilient to climate change*.

¹⁰ Secretary of State Hilary Benn’s written response to Parliamentary questions 186056–9, 22 July 2004.

¹¹ EU (2004), *EU Action Plan on Climate Change in the Context of Development Cooperation*.

¹² Tearfund (2003), *Natural Disaster Risk Reduction: the policy and practice of selected institutional donors* <http://www.tearfund.org/campaigning/policy>.

¹³ Department for International Development, *Responding to Humanitarian Emergencies Report by the Comptroller and Auditor General HC 1227 Session 2002–03: 5 November 2003*.

The European Commission has committed itself to “integrate disaster prevention into European Union development and environment policies”.¹⁴ Yet Tearfund’s research¹⁵ found that disaster risk reduction is not awarded sufficient attention outside of the European Commission Humanitarian Aid Office (ECHO). A recent working paper produced by ECHO confirms this, observing that disaster risk reduction is “not systematically enshrined in all EC external relations aid programmes and related legal documents. . . . As there is no coherent strategy within the Commission to address DPP (preparedness and prevention), the overall picture can therefore be described as piecemeal, ad-hoc, and partly overlapping”.¹⁶ As the world’s largest donor of development aid and one of the main donors of humanitarian assistance, the EU needs to make significant and speedy progress with developing a coherent, systematic approach to disaster risk reduction.

Unless the UK government and the EU fully integrate disaster risk reduction into development policy and practice as a matter of urgency, disasters, exacerbated by climate change, will increasingly prevent millions of people from escaping the poverty trap.

3. LAUNCH A PLAN OF ACTION FOR AFRICA

Sub-Saharan Africa is the world’s poorest continent: half of its 700 million people subsist on 65 US cents or less a day, and it is the only continent to have grown poorer in the past 25 years.¹⁷

The UK government should launch a plan of action to enable African countries develop in a way that is resilient to current and increasing climate-related risks.

The IPCC has predicted various climate change scenarios for Africa which include the following:¹⁸

- It is likely to get drier in the northern and southern latitudes, and wetter in the tropics.
- Climate variability and the frequency of severe weather events is likely to increase.
- Sea level is projected to rise by around 25 cm by 2050.

More data and research are needed to determine the precise impacts of these changes in climate. However there is no doubt that Africa is highly vulnerable to climate change, and its long-term effects will exacerbate poverty. Impacts of particular concern to Africa are related to the following areas:¹⁹

- Food security: the continent already suffers a major deficit in food production in many areas. Increases in extremes, changing rainfall patterns and desertification will worsen food security.
- Water resources: water resources are a key area of vulnerability for Africa. The combination of continued population expansion and global warming is likely to exacerbate water scarcity.
- Human health: temperature increases will extend disease vector habitats. Droughts and flooding would increase the frequency of water-borne diseases.
- Settlements and infrastructure: sea level rise and an increase in extreme weather events would degrade infrastructure and have a significant negative impact on African communities and economies.

Africa already struggles to cope with the impact of existing climate pressures. Adaptive capacity of human systems in Africa is low due to lack of economic resources and technology, and vulnerability is high as a result of heavy reliance on rain-fed agriculture, frequent droughts and floods, and poverty.²⁰ The question of how Africa will adapt to increasing climatic changes must be addressed urgently.

The following are suggestions for what could be included in an action plan for Africa, in line with the agreement made by all governments at the World Summit on Sustainable Development in 2002 to “Assist African countries in mobilising adequate resources for their adaptation needs relating to the adverse effects of climate change, extreme weather events, sea level rise and climate variability. . .”:²¹

- Support African governments to assess and reduce climate change and disaster risks in national sustainable development and poverty reduction initiatives.
- Strengthen the capacity of African institutions to understand current climate variability and predict climate change impacts, and to communicate effectively with national and local government and civil society groups.
- Provide adequate social protection for the most vulnerable groups in Africa, ensuring access to sufficient food and safe water.

¹⁴ Towards a Global Partnership for Sustainable Development. COM (2002) 82 final, 13.2.2002.

¹⁵ Tearfund (2003), Natural Disaster Risk Reduction: the policy and practice of selected institutional donors <http://www.tearfund.org/campaigning/policy>.

¹⁶ ECHO (2003), Disaster Preparedness and Prevention (DPP): State of play and strategic orientations for EC policy.

¹⁷ *The Economist*.

¹⁸ IPCC (2001), Climate Change 2001: The Scientific Basis. Summary for policymakers.

¹⁹ IPCC (2001), Climate Change 2001: Impacts, Adaptation, and vulnerability. Summary for policymakers.

²⁰ *ibid*.

²¹ World Summit on Sustainable Development, Johannesburg 2002. Plan of Implementation: section VIII, 56 (k).

We ask the government to take this proposal into account within its work with the Africa Commission, to ensure coherence between all of the UK government's work in 2005.

18 October 2004

APPENDIX 14

Memorandum submitted by the Tyndall Centre for Climate Change Research

The Tyndall Centre brings together scientists, economists, engineers and social scientists, who together are developing sustainable responses to climate change through trans-disciplinary research and dialogue on both a national and international level—not just within the research community, but also with business leaders, policy advisors, the media and the public in general.

The Tyndall Centre welcomes the opportunity to submit evidence and would like to be kept informed of the development of the inquiry and the committee's responses to it.

The overall objective of the inquiry will be to assess the feasibility of emissions trading systems (including Contraction and Convergence) as a framework for negotiating a post-Kyoto agreement. It will examine whether such systems can be enforced and the practical difficulties involved, taking account of what has been learned from the development of the EU ETS and the growth of carbon trading initiatives such as the Chicago Climate Exchange. From this perspective, the Committee will examine the objectives to be pursued by the UK during its presidencies in 2005 of both the G8 and the EU, and the contribution of the various departments involved such as the FCO, DEFRA, HMT, DfT, and DFID.

In particular, the Committee is interested in:

- whether an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject;
- what other alternatives to an international ETS exist; and whether an ETS would be more effective than such alternatives in maximising carbon reductions worldwide and in channelling investment in low-carbon technologies into less developed countries;
- what approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005; and
- what contribution individual departments can make (eg FCO, DEFRA, HMT, DfT, and DFID), and whether they are sufficiently “joined-up” in delivering a coherent UK agenda.

1. *Is an international ETS is feasible, given that targets and compliance penalties would need to be rigidly enforced and bearing in mind the political pressures to which an international ETS would be subject?*

The Tyndall Centre considers that the essential point here is that any effective international climate regime will need both “push” and “pull” elements.

By “push” we refer to policies that are able to promote the development and commercialisation of innovative low-carbon solutions in terms of technologies (but the same arguments may apply to the development of innovative new institutional and social arrangements). By “pull” we imply measures that will promote the uptake of such sustainable low-carbon solutions in the world economy.

Thus an international emissions trading system would play the role of “pull” on the global economy. The first thing that we can say then is that, based upon extensive scientific research, it is becoming increasingly apparent that a sophisticated suite of technology and innovation policies would be required in addition to an international ETS. The same point applies in the context of the EU's ETS incidentally.

An important and emerging area of debate and enquiry in both the research and policy communities is then about how an emission trading system can best be harmonised with technology policy, whether this should happen at a national, EU, or global level, and what some of the potential conflicts may be between an emissions trading system and technology policy on the one hand, and between these two and other international mechanisms on the other hand (such as WTO rules for example).

A second important point is that technology policy without a pull from carbon taxes, an ETS etc is unlikely to produce the rate of commercialisation of low-carbon technologies that will be required in the coming decades. (The Tyndall Centre would be happy to provide further evidence/briefing on this issue if required.)

Finally, we can ask whether the ETS rather other forms of “push” policy or measure would be most appropriate at the international scale. There is also the question of whether an international ETS would truly need to be “international” would it not be more efficient and practical to just include say the EU plus world 8–12 biggest emitters?

Further information is included in three annexes setting out: (A) specific analysis of the C&C proposal; (B) lessons from EU emission trading system; (C) elaboration of the technology policy issue.

2. What approach and specific objectives in relation to climate change the UK Government should adopt during its presidency of the G8 and EU in 2005?

Formal negotiations will start on a second commitment period at the SBSSTA (Subsidiary Body for Technical, Technological and Scientific Advice), a subsidiary body of the IPCC (Intergovernmental Panel on Climate Change) in 2005. We believe that Tony Blair and the UK Government have an historic opportunity to provide global leadership on these key issues, and present the USA with the undisputable case for ratification of the Kyoto Protocol and establish the path towards a post Kyoto framework.

The priority should be to ensure that the UK plays a constructive role in the negotiations and that crucially, it injects creative and far-sighted suggestions for an architecture that would genuinely address the concerns of developing countries, and as far as possible the concerns of the US and others who have not yet ratified.

It is also important at this time to take bold action on the adoption of a target for stabilisation (the ultimate objective of the convention)—the UK has an adopted target of a 2°C temperature rise. The UK should adopt this target (or a similar concentration-based target of 450–550 ppm) and make it clear that this is what the international climate regime should be trying to achieve.

Recently there have been signs of a debate within Europe over the burden of economic costs of meeting emission reduction commitments. Here the committee should be aware of the following:

We can afford climate change policy—A key intellectual debate in the academic community is the question of just how much emissions reductions will cost, and whether current economic and Integrated Assessment Models²² predict excessively high estimates of the long-term costs of GHG mitigation. Recent advances in the field of technology modelling and technology policy suggest that when models attempt to fully incorporate eg the fact that a new low-carbon energy technology may become much cheaper as its uptake increases, the predicted costs of mitigation can decrease drastically. Hence, this active area of academic research should be properly incorporated into the political discourse on what is possible both within Europe and in a second commitment period.

We believe that there were too many compromises made to the EU Renewables Directive for member state interest (eg UK’s non binding target of 10% by 2010). The UK should ensure that frameworks are established to allow renewables targets to be compatible with climate policy. We need to examine what mix of renewable energy and technological innovation is needed to reach emission reductions post 2010 under various policy scenarios. The Tyndall centre is actively researching in this area.

Various attempts are being made to engage with eg USA on diplomatic and scientific levels over the issue of climate change. Areas where efforts can be maintained include to: to encourage constructive engagement between UK and EU scientists and scientists from countries who have not yet ratified; for the UK to send out a very strong signal that it will meet its commitments under the protocol whether it actually enters into force or not. In terms of the US, the UK’s current approach of building bridges where possible is appropriate.

There are many proposals on the table but it seems likely that the way forward must be through differentiated categories of commitments, where eg: (most) developed countries signed up to quantitative emission reduction targets; a second group of countries sign up to carbon-intensity based targets; and a third group of countries (mainly the official Least Developed Countries) don’t make any emission reduction commitment but have adequate access to compensation funds (for adaptation to the negative impacts of climate change for example).

Serious pressure, possibly including trade sanctions, should be put on countries that refuse to ratify the Kyoto protocol and future agreements to limit GHG emissions until they do so. The UK needs to play a role in finding a way forward on a workable architecture. This might be a leadership role or it might also be to play a constructive role in supporting an emerging developing country-led proposal, as in the case of the UK Overseas Territories (UKOT’s). These are small low-lying island states, particularly at risk from the impacts of climate change. The UKOT’s have fallen through the gap (FCO-DFID-CPACC) in terms of preparedness for climate change. Also they do not receive any of the adaptation funds available to other countries as they are UK territories.

²² For more information on Tyndall’s IAM, see: http://www.tyndall.ac.uk/research/theme1/summary_it1_31.shtml

CPACC²³ does not extend to the UKOT's and FCO-DFID have not organised between themselves who is responsible to pay for the extension of the CPACC lessons to the OT's. The territories would like to extend the convention to their islands, but are unsure about their obligations to mitigate if it is extended.

The UK might also learn from the experience of allocating commitments within the EU—there is in effect a North-South divide within Europe, and the agreed allocation of GHG emission reduction commitments cannot be separated from the massive amounts of finance that has been put into eg the Cohesion Funds (for Spain, Portugal Greece and Ireland).

ADAPTATION: HIGH IMPACT POLICY

The types of adaptations that will enable the UK and other countries to confront climate change will vary considerably across geographic regions, economic activities and population groups. This “context specificity” means that adaptation is more likely to be successful if strategies are developed at the local level. The role of central government should therefore be to encourage meaningful, inclusive, devolved decision-making, and provide what support it can for local initiatives.

Adaptation and mitigation are intimately linked—the less emphasis is placed on mitigation, the more difficult adaptation will be. Adaptation may be impossible in the face of rapid and large-magnitude climate change associated with rapid increases in atmospheric GHG emissions.

Policies should recognise that adaptation is often reactive and somewhat ad hoc in nature—it is much easier to ensure mitigation through policy than to guarantee adaptation; mitigation is ultimately a technical issue (issues such as market penetration notwithstanding), whereas adaptation is much more of a behavioural one. Adaptation can be pursued through vulnerability reduction based on the mapping of climate hazards and social vulnerability to identify “hotspots” of high climate risk. Assessments of climate hazard based for example on a combination of future climate projections and assessments of local geographical factors (topography, geomorphology etc) could be incorporated into the planning process, identifying potentially high risk areas where industry, infrastructure and settlements might be particular exposed to the physical manifestations of future climate change (eg flooding, high winds, drought-induced subsidence etc).

3. *What contribution individual departments can make (eg FCO, DEFRA, HMT, DfT, and DFID), and whether they are sufficiently “joined-up” in delivering a coherent UK agenda?*

THE ROLE OF DFID

DFID's new focus on climate change as one of its four thematic areas is useful, but it should consider working closely with UK agencies as much of the knowledge about climate change adaptation is in the UK and this knowledge is transferable. Perhaps DFID could consider how it can transfer the lessons that have been learned in the UK to other locations.²⁴ We believe that it would be a mistake to ignore the work of UKCIP and other UK based agencies purely because of their UK focus.

The Foreign Commonwealth Office (FCO) works with the UK's Overseas Territories (UKOT's), but they have largely been ignored in the development of climate change strategies. Recent advances by DFID's Overseas Territories Division (OTD) suggest that the Mainstreaming Adaptation to Climate Change programme (MACC)²⁵ may be extended to the Caribbean OT's but there is still no activity in other areas.

For climate change to truly influence policy, all departments need to believe it is happening and it needs to become part of their discourse. DEFRA could coordinate this “profile raising” campaign across government departments.

DFID RESEARCH

What are the dangerous thresholds of climate change in different locations, particularly in the most vulnerable locations? The recent examples of tropical storm Jeanne and Hurricane Ivan reveal the differential vulnerability in different locations to differently sized impacts (eg Jeanne was very small storm—but led to three thousand deaths in Haiti; Ivan was biggest storm on record and killed only two people in Cayman). Understanding the threshold at which climate change becomes dangerous in different location depends on the vulnerability conditions.

²³ <http://www.cpacc.org/> Caribbean Planning for Adaptation to Climate Change

²⁴ Drawing on literature such as Gundel, S, Hancock, J and Anderson, S (2001) Scaling up strategies for research in natural resources management: a comparative review. Natural Resources Institute, Chatham, UK, pp 61.

²⁵ Mainstreaming Adaptation to Climate Change—<http://www.oas.org/macc/> Mainstreaming Adaptation to Global Change (MACC) is a five-year Global Environmental Facility (GEF)-funded project for the Caribbean region. Additional support for MACC activities is being provided through the Canadian, French and Dutch governments.

OPPORTUNITIES

Climate change is complex as a science and as a policy dilemma. DFID could assist in many ways: studentships for people in less developed countries to study climate change in the UK, capacity building courses such as those run at the Tyndall Centre/Overseas Development Group²⁶ could be useful. The International Institute for Environment and Development (IIED), the Netherlands Red Cross and the Tyndall Centre have discussed the co-production of PhD candidates with development NGOs. Candidates would be paired, one from a developing country, the other from a developed country. The research proposals would be co-developed by the two candidates and if the research was to be set in the developing country, both candidates would have to ensure that the research was ethical, met academic research standards and contributed to the development agenda in the host country.

Annex A

COMMENT ON THE GLOBAL COMMONS INSTITUTE'S CONTRACTION AND CONVERGENCE MODEL CC OPTIONS

SUMMARY

Amongst the emission reduction regimes requiring all nations to set targets, Contraction and Convergence (C&C), as promoted by the Global Commons Institute (GCI) (Meyer, 2000), has become the most popularly discussed, both academically and politically. The Tyndall Centre for Climate Change Research (North) has assessed GCI's C&C model CCOptions as part of research on the implications of C&C for UK aviation. This memorandum sets out our assessment to date. We find the model helpful for investigating the implications of C&C for economic sectors and nations and recommend the model for policy use, particularly for investigating the upper limits of national carbon dioxide emissions under a C&C regime. These (generally contracting) limits would need to be applied in any emissions trading system consistent with C&C. The revised version of the model, incorporating feedbacks from soil, vegetation and ocean, suggests that stabilisation of global atmospheric carbon at 550ppmv will require the UK to reduce emissions by nearer to 70% than the 60% target of the Energy White Paper. We do note, however, that there is not yet consensus on the size of these feedbacks.

INTRODUCTION

The GCI, with its “focus on the protection of the global commons of the global climate system”, has, since 1996, encouraged awareness of the contraction and convergence concept as the policy interpretation of their belief that every adult on the planet has an equal right to emit greenhouse gases.

Contraction and convergence is an international framework for sharing the arrest of global greenhouse gas emissions. To reduce emissions, the world's nations would work together to set and achieve an overall yearly emissions target—contraction. Furthermore, nations converge towards equal per capita emissions by a certain year—convergence. By simultaneously contracting and converging, such a policy requires all nations to impose targets from the outset (Cameron, 2003). Industrialised nations cannot escape from the fact that they are the main emitters, and will be required to make substantial cuts under any regime if the world is to stabilise carbon dioxide concentrations at a level that avoids global temperature increases of more than two degrees, (IPCC, 2001). Although it can be argued that some countries should be permitted to emit more than others, depending on their natural resources or particular circumstances, the GCI fear that any allowance made for such differences will further delay negotiations. As stabilising the carbon dioxide concentration at 450-550²⁷ ppmv demands a reduction strategy that is initiated as a matter of urgency, the GCI consider that the simplicity of their idea gives it an important practical appeal.

In light of the growing support for C&C, the GCI have produced a spreadsheet model—CCOptions—to facilitate the investigation of the impact of varying the contraction year, the convergence year and the target carbon dioxide stabilisation level. We have analysed the strengths and weaknesses of the CCOptions model with the aim of both aiding future users assess the relevance of CCOptions to their particular research, and raising awareness of its strengths and weaknesses.

STRENGTHS AND WEAKNESSES OF THE CCOPTIONS MODEL

The analysis of the CCOptions model has highlighted a number of key strengths and weaknesses. All of the workings and calculations are visible within the Excel worksheet, enabling the user to make modifications to the model and thereby offering a welcome degree of flexibility. Whilst data used within the model is taken from a reliable source, (the Carbon Dioxide Information Analysis Centre—CDIAC), it is currently based on year 1999 figures. It would therefore be desirable and provide more realistic results if the carbon dioxide and population data for 2003 were included.

²⁶ http://www.uea.ac.uk/dev/ODG/pages/course_vpsprog.html

²⁷ Reaching 450 or 550ppmv requires there to be a strict limit on the amount of carbon emissions released over the next 100 years. The long life-time of carbon in the atmosphere mean that any action taken today, will need to continue for at least 100 years.

Within the model, the cumulative 110-year carbon emissions value is inputted by the user, to enable the contraction profile to be calculated. Its value is crucial to achieving a desired stabilisation concentration level, and therefore choosing a suitable value has, in the past, required some guidance. In the original versions of the model, the version used in the early stages of our own project, a range of cumulative 110-year carbon values related to an atmospheric carbon dioxide concentration of between 330 and 750 ppmv were provided for the user. The range given was taken from data published in IPCC (1996). Our more recent analysis of CCOptions shows that the GCI no longer consider that such recommended values are appropriate, as their model now includes the addition of a second, and probably more accurate, relationship between the carbon dioxide concentration and carbon emissions (based on the latest Hadley Centre data (Hadley, 2002)). The inclusion of this data, which takes into account some additional feedback mechanisms that were previously ignored when calculating appropriate carbon dioxide stabilisation targets, encourages the user to choose their own 110-year cumulative carbon emission value, depending on whether or not they wish to meet the feedback or non-feedback carbon dioxide concentration profile. However, it needs to be noted that there is not yet widespread acceptance of the size of the vegetation feedback in the Hadley work, and thus that there is particular scientific uncertainty in this aspect of the model.

This uncertainty notwithstanding, according to the Hadley model (Hadley, 2002), the quantity of cumulative carbon dioxide emitted into the atmosphere that is likely to lead to stabilisation at 550ppmv is likely to be nearer to 680 GTC than the 870 to 990 GTC range published in IPCC (1996). The difference between the results is primarily due to the use of the more sophisticated carbon-cycle model to calculate the stabilisation concentration-emission relationship.²⁸ Within the latest version of the CCOptions model, the new relationship between carbon emissions and carbon dioxide concentration established by the Hadley Centre is used to calculate the contracted emissions. The results show that a much lower cumulative carbon dioxide amount can be released into the atmosphere if a stabilisation level of 550ppmv is to be achieved and if the feedback carbon dioxide profile is the target.

Within this new version of CCOptions, the emphasis has moved from ensuring that the user inputs a recommended 110-year cumulative carbon value (as suggested by the IPCC), and instead focuses on the concentration curves, encouraging the user to find suitable cumulative carbon values, depending on the stabilisation level required. The difference between the 110-year cumulative emissions required within the new version of the model for a non-feedback carbon dioxide concentration profile, and one that incorporates the feedbacks is as much as 460GTC for a stabilisation level of 550ppmv. This has a significant effect on any calculations carried out using CCOptions regarding the percentage cuts that individual nations may have to meet if they are to achieve a given stabilisation level.

It should be noted that in all cases, the actual relationship between carbon dioxide concentrations and emissions is far more complicated than is suggested in the CCOptions model, which reproduces these relationships using simple regression formulae. The CCOptions model is attempting to reproduce model data that incorporates many more variables than are available within its own structure. Equations within CCOptions are simply good estimates of the sophisticated climate model data, and only suitable for indicating the level of stabilisation required for particular emission paths.

The CCOptions model is further limited by its exclusion of any of the other greenhouse gases. Other simplifications in the model include the treatment of deforestation and bunker fuels which are both assumed to be world overheads; currently no data on bunker fuels is provided within the model.

EXPERIMENTS WITH CCOPTIONS

Having established the suitability of the model for our own investigation of the aviation sector, the second research phase produced a series of model runs, with differing carbon dioxide stabilisation targets, to appraise global carbon emissions between nations. One of these model runs replicated the RCEP's (RCEP, 2000), and subsequently the energy white paper's claim that the UK would have to cut its emissions by 60% by 2050 to stabilise carbon dioxide concentrations at 550ppmv. The 60% target was essentially derived from an earlier version of CCOptions with the relationship between the carbon dioxide concentration and global carbon emissions based on the Met Office's 2D modelling data, incorporating only basic carbon-cycle feedbacks.

More recently, we conducted model runs designed to reach the 550ppmv stabilisation target, using the latest version of CCOptions, which includes all the carbon-cycle feedback effects mentioned in the previous section. Using similar parameters to the original RCEP work, the results indicate a cut in carbon emission

²⁸ The atmospheric concentration of carbon dioxide depends not only on the quantity of carbon dioxide emitted into the atmosphere (natural and anthropogenic), but also on changes in land use and the strength of carbon sinks, such as the ocean and biosphere. As the atmospheric concentration of carbon dioxide increases (at least within reasonable bounds), so there is a net increase in the take-up of carbon dioxide from the atmosphere by vegetation (carbon fertilisation). Changes in temperature and rainfall induced by increased carbon dioxide affect the absorptive capacity of natural sinks. Climate change alters the geographical distribution of vegetation and hence its ability to store carbon dioxide. Changes in ocean circulation and mixing brought on by climate change also alter its ability to take up carbon dioxide from the atmosphere and a warmer ocean absorbs less carbon dioxide. To incorporate all of these feedbacks, the Hadley Centre used a simple climate carbon-cycle model which includes the feedbacks from vegetation, soils and the ocean (Cox, 2002).

of nearer to 70% will be required to stabilise emissions at 550ppmv. This indicates that less than 50MtC will be available for all sectors of the UK economy by 2050. If however, a stabilisation level of 450ppmv were to be chosen, the cut in emissions would need to increase to 84%, leaving just 25MtC for all of the sectors.

CONCLUSIONS

In short, CCOptions is a simple and useful tool for policymakers investigating the upper national limits of an emissions trading scheme, but it is a tool that needs to be used with a knowledge of its workings and assumptions (as with all models). Not only is it written using a familiar software package—Microsoft Excel, but its results are presented in a plain and relatively unambiguous manner allowing the user to make a quick evaluation of their thought-experiments and scenarios, without involved data manipulation. Experiments are easily set up and modified and the model successfully predicts sensible emissions profiles for different nations between today and 2200 based on a contraction and convergence regime. The model generally avoids making over complicated assumptions, but rather attempts to show the most basic apportionment of emissions between nations, thereby minimising the need for policymakers to go into more detailed, lengthy and possibly fruitless debates in setting carbon emission targets. Discussion between researchers at Tyndall (North) and the model designer is on-going and it is likely that the model equations will continue to evolve as climate science itself progresses.

Annex B

EUROPEAN EMISSIONS TRADING

The biggest weakness of EU ETS is the relatively limited use of allowance auctioning. A maximum of 5% of allowances can be auctioned in Phase one and 10% in Phase two. Moreover, Member States are able to choose whether to use auctioning or not. This will create a bias against auctioning, since a decision by one Member State to use auctioning will be challenged by industry as a distortion to competition if other Member States choose to allocate all their allowances free.

With free allocation, the economic rent is captured by the participating firms, thereby increasing their market value. With auctioning, the rent is captured by the government and may be used in a variety of ways throughout the economy, including compensating affected groups and reducing other forms of taxation.

The economic arguments in favour of auctioning are overwhelming and an extensive literature is available. Use of free allocation protects the interest of some of the affected industries at the expense of the overall competitiveness of Member States. It could be rationalised that the governments of the UK and other Member States were captured by industrial interests. A pragmatic response would be to auction a fixed percentage of allowances at the beginning of the scheme, and to increase this percentage over time. But by making auctioning voluntary and by fixing a maximum ceiling of 10% in Phase two, the scope for this has been greatly reduced.

Other weak areas include:

- lack of harmonisation on the banking rules;
- lack of harmonisation of the definition of eligible installations (eg what is a combustion plant?);
- ambiguity in the Annex III allocation criteria and the consequent scope for legal challenge

Energy users in all sectors should pay for carbon emissions, whether through taxation or emissions trading. In the long term, organisations in the public, commercial and industrial sectors should either be paying a carbon tax or participating in a trading scheme. The CCAs should be seen as a transitional measure only. Supplementary policies will be required to address other barriers to energy efficiency and to achieve other policy objectives (eg promoting renewables). But for each target group, only a single instrument should be used for carbon pricing.

Since the electricity generators are participating in the EU ETS, the price of electricity includes a carbon price. Hence an additional tax on electricity (such as the CCL) may be difficult to justify.

The aviation industry and DfT appear to believe that bringing aircraft emissions within the European Emissions Trading Scheme will allow the UK aviation industry to grow by providing a larger market within which aviation can buy emissions credits (ie permission to emit). However, if the aircraft emissions of other European countries increase at rates similar to those projected for the UK (as average medium-term Eurocontrol traffic forecasts imply), while at the same time European countries also contract their economy-wide CO₂ emissions to meet effective long term target climate change targets (as they must if the UK's efforts are to have any meaningful effect), then the same problem will arise on a European scale.

In terms of climate policy, there is no effective short or medium term substitute for including UK international aviation emissions, voluntarily allocated on a 50:50 destination/origin split or similar, as part of the UK's energy White Paper target. While the International Civil Aviation Organisation (ICAO) is investigating international emissions trading for aviation, it favours an open (multi-sector) international system, which would take many years to agree and in the medium term would be unlikely to be consistent

with stringent climate change targets because of the required international consensus on the targets. Domestically and internationally, we are at a critical stage in international climate policy. The UK cannot reconcile a near-trebling of air passengers (by 2030) with any effective post-Kyoto climate policy.

Annex C

TECHNOLOGY POLICY

The UK's renewables policies, are fundamentally inadequate to realise the very large investments required in new, low Carbon energy technologies and energy efficiency programmes that are necessary to meet the 60% reduction target. There is no indication of a large scale adoption of distributed CHP, or of solar power, or of energy efficiency measures. The wind energy programme is gaining pace, but is still not of a scale to meet the UK's intermediate goals of 10% reduction by 2010 and 20% by 2020.

It should be emphasised that in the area of energy demand and supply, together with energy efficiency measures, the technologies required are already available. The policy problem is to persuade, and to provide regulations and economic incentives to industry and households to take up these technologies on a mass scale. The construction industry is a particular problem; 50% of GHGs come from buildings, but the UK continues to build houses and offices that are of a low standard in terms of energy use and energy efficiency.

It is imperative that the UK Government and other governments provide massive support for "clean" energy technologies, without which GHG stabilisation at acceptable levels will be impossible. The incorporation into new homes and other buildings of micro heat and power generation systems based on a combination of solar, wind and other sources should be made mandatory. Market and regulatory/tax mechanisms should be introduced to encourage individuals and businesses to take more responsibility for energy efficiency. This will be more successful if it is based on "positive" incentives to reduce energy use (eg tax reductions for efficiency) rather than negative, punitive policies that add additional tax burdens to individual households and businesses. Grants should be available that cover the full installation costs of domestic micro-power systems, rather than a proportion of the cost as is currently the case. There is very limited public awareness of the Energy Savings Trust and measures such as National Energy Savings week are not sufficient in raising its public profile. The Government should invest in a larger scale engagement programme.

Motor vehicles are continuing to increase GHG emissions at a rapid rate. The growth in road transport far exceeds the projected increases in efficiency for conventional petrol and diesel powered vehicles. Therefore, stronger policies are required to encourage low-carbon power systems, such as petrol/battery hybrids or fuel cell vehicles. Patterns of settlement, work, leisure and transport should be examined—the current growth of private car use, for example, is unsustainable. Transport policies should reduce dependence on private car use by improving public transport. Issues of transport associated with the distance between homes and work places should also be examined. Could future planning reduce the distances people travel between home and work by rethinking urban development?

Commercial, particularly food, distribution, is another area where emissions could be reduced. Many foodstuffs are transported to distribution and food processing centres before being redistributed to point-of-sale outlets closer to the original sources. Incentives for a more decentralised and efficient distribution system that reduces "food miles" could reduce GHG emissions and possibly also traffic congestion. Greater emphasis on local food production, compatible with current social trends towards the consumption of local, often organic, produce, could improve efficiency of national food production systems.

29 October 2004

APPENDIX 15

Memorandum submitted by the UK Business Council for Sustainable Energy

INTRODUCTION

The UK Business Council for Sustainable Energy welcomes this opportunity to submit a memorandum to the Committee's inquiry into a longer-term international regime to tackle climate change particularly focused on international emissions trading. We commend the Committee for undertaking the inquiry at a crucial time in the development of the UK's climate policy for the G8 and EU Presidencies.

The UK Business Council for Sustainable Energy was formally launched in January 2002. Its role is to create and sustain a framework for high level policy engagement across the energy sector on climate change, sustainable development and the transition to the wider use of sustainable energy. It is one of an emerging number of similar Councils with others being in the United States of America and Australia.

The UK Council brings together major energy businesses focused on the delivery of sustainable energy technologies and services including renewable energy, energy efficiency and energy efficient technologies such as combined heat and power (CHP). The Council is working to build a broad consensus on many of

the issues surrounding the development of sustainable energy in the UK. Business supporters of the Council include: Centrica, EDF Energy, E.ON UK, National Grid Transco, RWE npower, Scottish and Southern Energy, Scottish Power, United Utilities, Shell UK, BP, and CE Electric Ltd.

PROGRESS TOWARDS EMISSIONS REDUCTION GOALS

President Putin's signing of the Kyoto Protocol on 5 November, 2004, means that the Protocol and its binding targets will now enter into force. The complex negotiations to define the "post-2012" phase of the Protocol will commence in 2005. This, together with the UK's Presidencies of the G8, and the EU in the second half of 2005, give the UK Government an important opportunity to reinforce the momentum and support that will be required to provide solid foundations for agreements made through the UNFCCC process.

The Business Council supports the Kyoto Protocol entry into force, based upon a firm domestic foundation for achieving UK commitments, and a clear sense of the direction of policy.

Considerable investment by industry will be required to meet domestic near term goals, as well as the tougher longer term targets which will be necessary in the future, noting support by the Prime Minister for a 60% cut in emissions by 2050. Within the electricity sector the lead-time for these investments is typically three to five years, with payback periods often in excess of 15 years.

Therefore, from the energy industry's point of view, decisions about the future direction of climate and energy policy—nationally and internationally—should be made early, and clearly, to enable confident investment planning.

This is particularly the case in the UK where investment decisions are expected in the next five years on new generation assets and infrastructure for the country.

EMISSIONS TRADING

The EU Emissions Trading Scheme (EU ETS) is likely to be the leading climate change policy instrument with the greatest impact on the energy sector over the next decade. The Council fully supports the introduction of EU-wide emissions trading as an effective means of delivering emission reductions.

The emergence of the EU ETS is already having an impact on the energy sector as it develops the systems to respond. Significant attention, within companies, is being given to carbon management and commercial strategies for achieving mandated emissions reductions within the company. The success of the overall scheme will ultimately depend on the long-term signal it sends to industry.

However it is important that expectations are realistic: the EU ETS in its first three year phase (2005–07) should be viewed as a learning phase. Companies know the second phase will be much tougher than the first.

Currently only the rules for the operation of the first phase are known. This is too short a time-period to make a real influence on industry's investment decisions. Decisions that create clarity on the structure and rules of the second and subsequent phases of the trading scheme are required if trading is to make a meaningful contribution to the Government's targets.

In terms of emissions trading as a mechanism for achieving emissions reductions internationally, the Business Council would prefer to build on the existing EU ETS market structure rather than re-negotiate an international trading regime that is not directly compatible. This is to avoid creating a perception that commercial decisions, made in response to the EU ETS, are at risk, due to a changing overall global framework for trading.

The Business Council would prefer to retain the existing structure of the Kyoto Protocol, rather than commence negotiation of a "post-2012" regime from a blank piece of paper. We raise this point again below. The Protocol also provides the framework in which the EU ETS has the opportunity to engage with other national nations and companies internationally, in a structured and accountable manner, utilising the Clean Development Mechanism (CDM), and potentially other avenues in the future.

Whatever trading regime finally evolves internationally, the importance of early clarity on the details of rules, allocations and liabilities cannot be overstated. In this context it is worth pointing out that the delay in providing final details of the UK National Allocation Plan at company level until is frustrating the efforts of UK companies preparing their approach to the scheduled start on 1 January 2005.

EMISSIONS TRADING—SCOPE

In terms of emissions trading as a core means of implementing emissions reductions, it is important to note that:

Firstly emissions trading alone is not sufficient to drive investment into sustainable energy—energy efficiency, renewable energy or CHP. These technologies require specific frameworks to stimulate investment and overcome barriers—the UK's Renewable Obligation Certificate market being a case in

point. The EU ETS, for example, will not be sufficient to revitalise the CHP industry in the UK. This means that while emissions trading may play an important role in ensuring that carbon is taken seriously at company level; it is not a substitute for effective sustainable energy policy, and this is a key point to be aware of in terms of the weighting given to different mechanisms and approaches.

Secondly, to meet UK's domestic and longer term goals it will be necessary to ensure that other sectors become as fully engaged as the energy sector currently is. In particular action needs to be taken to ensure that the transport sector (including aviation) is playing its part in delivering emission reductions. At present, the gains made in the last few years from the power sector are being largely negated by rising emissions in the transport sector.

As such we welcome the Government's intention to explore options for bringing aviation into the EU Emissions Trading Scheme, and we also believe it must be tackled internationally through the UN climate regime. We would note, however, that the aim of any trading scheme is to incentivise cost-effective emissions reductions. This means that the air transport industry will require technologies and strategies for reducing their emissions, otherwise a situation may arise where the aviation sector becomes a major purchaser of allowances in the market, increasing the overall price of carbon, without delivering actual emission reductions itself. This could then mean additional effort from other sectors in the scheme.

More must also be done to engage the road transport sector. This is not an area where the Council has particular expertise but we are aware of the work being done to promote the use of bio-fuels, which would appear to present a practical opportunity to make substantial emissions reductions from the use of transport fuels.

EU AND INTERNATIONAL CLIMATE CHANGE POLICY

With its role as Chair of the G8 and President of the European Council in 2005, the UK Government has an important role to play in taking forward the Kyoto and post-Kyoto agendas.

The Council supports a clear long-term approach to emissions reductions which is consistent with the level of effort required for climate protection, but under which new targets should be achievable, and sustainable.

The Council has already provided input to Government on the G8 and EU presidencies. In particular we highlighted the existing agenda and interest in technology, and proposed that a Sustainable Energy Investment Initiative be developed. This could progress understanding and action on key "pre-conditions" needed by investors to accelerate markets in energy efficiency, renewable energy and CHP. It is particularly important as a very significant investment will be required in the coming decades for new energy generation and infrastructure internationally, and getting the policy frameworks and other elements established that ensure money goes to the least carbon intensive energy pathway possible will be vital to achieve climate protection goals. This kind of initiative could also look at the role that carbon markets will play in this regard.

More generally we support the development of a renewed international consensus, including dialogue with those countries with increasing energy demand and emissions, such as India and China, on the scale, direction and timeframe for global emissions reductions. This will be central to achieving the Prime Minister's goal to cut emissions by 60% by 2050. We believe this should build upon the Kyoto Protocol architecture in order to build confidence and stability in new low carbon investments.

Lastly we support the Prime Minister's three pronged approach to climate change under his G8 Presidency. This covers: securing agreement as to the basic science on climate change, accelerating a the science, technology, and other measures necessary to meet the threat and engagement with other countries with growing energy needs—like China and India.

The Council is working to build a strong progressive business voice with respect to the low carbon technology agenda the Prime Minister intends to advance. Governments do have a crucial role in building and sustaining the market confidence needed to secure the investment by energy businesses, and other players, that will be essential for delivering real outcomes on the ground.

CONCLUSION

The Council welcomes this opportunity to submit written evidence to the Committee, and would value the opportunity to present oral evidence to the Committee.

We believe that sustained, innovative and effective action is needed to tackle climate change.

The UK has had an outstanding record to date. The challenge is now to see this through for the long-term, and build towards the major carbon reductions that the Royal Commission on Environmental Pollution has so clearly indicated are needed, and to which the UK Energy White Paper committed.

APPENDIX 16

Memorandum submitted by WWF

EXECUTIVE SUMMARY

WWF welcomes the opportunity to contribute to the Environment Audit Committee's inquiry into climate change. This opportunity is timely for WWF since we are shortly to launch our first global climate change campaign—*Powerswitch!*—designed to address climate change in over 20 countries across the world.

As part of this campaign in the UK, WWF will be intensifying its efforts in challenging the UK government, power sector and industry to deliver on domestic targets and take the urgent deep cuts in greenhouse emissions required to avoid dangerous climate change. The UK Government must deliver a robust domestic strategy for tackling climate change if it is to demonstrate credible international leadership on climate change next year.

We have chosen to orientate our submission explicitly around the issues of an international emissions trading scheme and UK leadership on climate change in G8 and EU. Our recommendations can be summarised as thus:

1. INTERNATIONAL EMISSIONS TRADING SCHEME AND POST-2012

WWF considers that:

- An international “cap-and-trade” scheme is feasible and, in fact, already exists under the Kyoto Protocol Trading scheme up to 2012;
- While the Kyoto scheme may be deficient in various ways, its architecture can be improved without the need to design a new scheme and the alternatives look less promising in terms of their potential effectiveness;
- Kyoto's entry into force and implementation is an important first step in building the multi-lateral cooperation that addressing this serious global problem demands, and leaves the door wide open for new negotiations with the greater global community for the period beyond 2012. This must include re-engaging the U.S. and developing countries;
- Any “post-2012” framework for successfully delivering the significant climate change reductions necessary should build on Kyoto and incorporate a global equitable “cap-and-trade” system to include:
 - A multilateral agreement based on absolute mandatory caps for Annex 1 countries.
 - Appropriate enforcement and compliance.
 - A strong governance structure.
 - “Decarbonisation” strategies for developing countries ie decoupling economic development and greenhouse gas emissions.

2. UK LEADERSHIP IN 2005: G8 AND EU

WWF strongly advocates that the UK government use its leadership position first and foremost to achieve global political consensus for the need to stabilise the climate and to kick-start international negotiations on the climate regime post-2012. As part of this, it is important that the UK:

- Promotes and seeks agreement from parties to a “2°C ceiling” (staying below an average of 2 degrees C above pre-industrial levels) for avoiding dangerous climate change;
- Initiates discussions on the adoption of an international multi-lateral framework for climate change action post-2012, which builds on the Kyoto process, and ensures that G8 countries adopt mandatory absolute caps for the post-2012 time period;
- Engages with the larger emitters among the developing countries as part of the G8 process to assist them in decarbonising their development and limiting their emissions, and build new coalitions of Heads of State on deep emissions' reductions targets (eg in the form of a “G-12”);
- Ensures that the EU conducts a thorough review of its progress towards meeting its Kyoto targets and delivers deep cuts in the second commitment period (ie post-2012);
- Ensures effective implementation and enforcement of the EU Emissions Trading Scheme (ETS), and strong National Allocation Plans (NAPs) for the second phase;
- Calls for the EU to take on deep cuts in the second commitment period (ie post-2012);
- Calls for greater international investment in the development of carbon neutral technologies, including in developing countries, through ensuring that international sustainable energy initiatives (eg JREC and REEEP) result in measurable commitments;

- Engages with the most vulnerable developing countries to articulate the scale and urgency of climate change; and
- Leads the debate for redirecting agricultural subsidies and introducing stronger incentives to support biomass production.

INTRODUCTION

Climate change is the most serious environmental threat facing the world today. Climate change has far-reaching implications for the environment, poverty eradication, development, population migration, international relations and security worldwide. As such, the UK and other countries must treat climate change as a foreign and domestic political priority. Global warming is already having a huge impact and countries' decisions in the next 5–10 years will be crucial in avoiding long-term irreversible damage.

To avoid the worst impacts of climate change, WWF strongly advocates the need to ensure that, as agreed by the UK government at the European Council conclusions of May 2003, global mean temperature must be limited to a 2°C increase above pre-industrial levels, and that warming is reduced rapidly from that peak. The science clearly shows that to exceed this threshold would have tragic implications for people, ecosystems and species—jeopardising food security, with up to hundreds of millions more people at risk of hunger and poverty; significantly damaging or disrupting arctic ecosystems, boreal forests and mountain ecosystems, and threatening millions of species with extinction²⁹.

To limit warming to a 2°C peak, industrialized countries must reduce their emissions by at least 60–80% over the next few decades³⁰; Russia's recent ratification of the Kyoto Protocol is a welcome development in this regard. However, of greater longer term importance is the wider global debate on post-2012 negotiations—a key issue that the UK must address through its international leadership in 2005. The key objectives must be to ensure binding deep-cut targets for developed countries, and to engage larger developing countries in curbing rising emissions via low-carbon pathways. The most vulnerable developing countries, from Africa to Central America, largely mountainous or island states, must also play a role in the climate negotiations, particularly in terms of adaptation to impacts which are, in some countries, already occurring.

WWF is a leading international conservation organisation, working for the protection of the natural environment and quality of human life for over 40 years. WWF has a strong presence in other European and G8 countries, as well as many developing countries, and has long been actively involved in international climate change negotiations, including UNFCCC discussions surrounding Kyoto and emissions trading. WWF has been working on the policy front in the UK, EU and internationally via its network to ensure commitment for keeping below this 2°C ceiling, and that effective measures are implemented to achieve the deep cuts in emissions required. In this way, WWF considers emissions trading schemes as the most cost-effective means to deliver these outcomes. Therefore WWF is supportive of the overall objective of this inquiry in assessing the feasibility of such schemes as a framework for negotiating a post-2012 agreement.

Building on our policy efforts, WWF will be launching its first ever global climate change campaign—Powerswitch!—later this year, to elevate the profile of climate change in the public arena and challenge governments and industry to make a swift and major shift away from fossil fuels consumption. Globally and in the UK, Powerswitch aims to engage all stakeholders—energy utilities (ie power companies), financial institutions, the Government and consumers—to make the switch from fossil fuel to clean power, by using more renewable technologies and supporting greater energy conservation.

Through this campaign, WWF is specifically challenging the biggest global carbon dioxide (CO₂) emitter—the power sector in developed countries—to become CO₂-free by 2050. As part of this campaign in the UK, WWF is calling upon the UK government to deliver on its targets and take serious action on the power sector and industry to cut emissions.

We have chosen to orientate our submission according to the questions directly posed by the Committee.

1. *Is an International Emissions Trading Scheme Feasible?*

1.1 WWF considers that an international emissions trading scheme is feasible. Such a scheme already exists under the Kyoto Protocol's trading regime. It enables developed countries to buy and sell emission credits and co-operate in projects under a system of "joint implementation" where one developed country can finance emission reductions in another. The original Kyoto Protocol agreement does not prescribe any specific emission reduction targets to developing countries, based on the principle that the burden of responsibility for increased greenhouse gas emissions lies with the industrialised countries—an appropriate arrangement, in the view of WWF. Developing countries, at this stage, are involved through the "clean development mechanism", developed through the Protocol, whereby industrialised nations can fund

²⁹ See www.metoffice.com/research/hadleycentre/obsdata/globaltemperature.html; www.ipcc.ch/pub/SYRspm.pdf.

³⁰ Decision by the UNFCCC in Bonn in 2001 (decision 5/CP.6).

emission-reduction projects in developing countries and claim credit against their own reduction targets. The Kyoto Protocol Fund set up in 2001 also assists developing countries in sustainable development projects as well as guarding against the threat of climate change.

1.2 Kyoto is not without its flaws. However, its principles, rules of compliance and ways-of-working prove the best basic architecture from which to build any longer term framework for action on climate change. This includes setting absolute caps for industrialised countries supported by binding compliance and international emissions trading to ensure cost-effectiveness. A global emissions trading scheme that is implemented effectively with strong caps and rules should be at the core of any future climate change regime beyond the Kyoto period of compliance. It is the most cost-effective mechanism developed countries can use to deliver on their reductions targets. Giving an economic value to CO₂ will trigger the switch to cleaner forms of energy because the dirtier ones just become more expensive. This will play itself out in the beginnings of an international carbon market, where cleaner companies should have a clear leg-up, driving the energy sector to less carbon intensity in the future. Governments are free to choose how they may comply and may enforce policies which encourage efficiency, reform the energy and transportation sector, promote renewable forms of energy, phase out inappropriate fiscal measures and market imperfections etc. This system also sends strong signals to enable parties to move early, as they will reap the rewards of positive action taken in reducing their emissions.

1.3 There are several features that an ideal emissions trading regime should possess if it is to be environmentally effective, some of which are described briefly below. These include:

1.3.1 Strong absolute mandatory caps for developed countries (as defined as “Annex 1” by the UNFCCC) that reflects the magnitude of the longer term objective. These caps should be set centrally and independently from its participants to minimise dilution (for example, by the UNFCCC). We have already witnessed the inherent problems of inconsistent rule application, lack of harmonisation and the dilution resulting from the setting of weak NAPs by individual countries in the European ETS. Ad-hoc subsidiarity has resulted in a “race-to-the-bottom”, where the real environmental benefits have been largely compromised by the politics and industry lobbies in different countries. The UK has presented a classically appalling example with its decision on 27 October to provide an extra 19.8 million allowances to industry over the 3-year period due to the upwards revision of national emissions projections. This decision was damaging for both business and the environment: if the government’s climate change goals are to be achieved, these extra emissions will now have to be reduced through other measures such as taxation and regulation, with higher costs for industry than the economically-efficient emissions trading approach. The practicalities of determining caps and an international regulating body or bodies need serious consideration and further exploration. Building on the Climate Change Convention and Kyoto Protocol cap setting processes is likely to be the best place to start.

1.3.2 Strong compliance and enforcement is essential in providing certainty of environmental effectiveness for the scheme and verifiable delivery on commitments. This is a challenging task for all international regimes, particularly given the technical and reporting difficulties involved in assessing compliance. However, the Kyoto Protocol has a relatively sound reporting and review process, and could be the model for future compliance systems. Enforcement is also extremely difficult in any international agreement: since they are contracts between states, into which states enter voluntarily and from which they can withdraw, there is no way of enforcing them other than through the imposition of fines or by extreme measures, such as invasion or trade sanctions³¹. To date, most “enforcement” in international agreements has consisted of shaming recalcitrant states. There has been some exploration of enforcement systems under Kyoto. These and all other viable options demand full analysis for any future international emissions trading scheme.

1.3.3 Widening participation will strengthen the robustness of the scheme and delivery of long-term objectives for climate change. This should include the larger new and rapidly industrialising countries that are prepared to do so, such as China, India and Brazil. A post-2012 framework requires discussions to start on what such countries will accept in terms of binding carbon reductions or carbon intensity (linked to GDP) targets, and what is needed to support decarbonisation of their economies. The UK must lead on engaging these emerging economies in discussions on the most suitable options. This process must, however, recognise that any meaningful political engagement on this level with these nations will only happen once the UK and other industrialised countries first demonstrate that they are actually delivering on their commitments (eg in meeting Kyoto targets, in the first instance).

How and when other developing countries (except the most vulnerable countries) participate in terms of binding commitments will largely depend on a number of factors including their capacity to mitigate (eg per capita GDP), potential to mitigate (eg a measure of carbon intensity), total emissions, and historical responsibility for emissions. A multi-staged approach based on these principles has been suggested under the CAN framework, discussed briefly in 3.2 below.

³¹ Agreements that regulate trade can, and do, initiate or approve of sanctions.

2. *Are there alternatives to an international emissions trading scheme?*

2.1 There may be alternative strategies, however it is WWF's view that they are unlikely to be as effective. Emissions trading offers the most flexible cost-effective mechanism by which countries and their businesses can deliver reductions. This must be done at a global level to ensure that inconsistent "cap-and-trade" systems do not emerge in different countries, and to avoid the potential adverse competitiveness impacts that could arise if measures are not internationally coordinated. Unilateral "cap-and-trade" systems or bilateral schemes will in no way deliver the scale of emissions reductions required to combat climate change seriously.

2.2 In the absence of progress in the formal negotiations to date on a long-term climate change regime, the UK and other concerned governments have focused on sustainable energy initiatives involving "coalitions of the willing". Certainly, there must also be development of credible institutional arrangements to facilitate and support developing countries' efforts, such as the channelling of investment in low-carbon technologies, particularly to assist larger developing countries to follow low-carbon pathways in their economic development. These are further discussed in Section 3 below in relation to initiatives for the UK to take up in its presidencies of G8 and EU. The deployment of renewable technologies, however, is in itself insufficient to deliver the necessary emissions reductions.

3. *What approach to climate change should the UK Government adopt during its presidency of the G8 and EU in 2005?*

The UK Government has an unprecedented opportunity in 2005 to steer political discussions and negotiations on climate change internationally, particularly as Chair of the G8 and President of the European Council. The Prime Minister's commitment to use the UK's position to advance international action on climate change is vitally important. It is an opportunity that, if missed, will undermine UK credibility in this area. The Kyoto Treaty is now likely to become international law in early 2005, and must be implemented. The UK must now start discussions for a wider agreement beyond the Kyoto commitment period following 2012 that re-engages the US and developing countries. In so doing, WWF urges the UK government to prioritise the following objectives in its strategy:

3.1 *Commitment to staying below 2 degrees threshold:* The UK government promotes and seeks agreement from parties to the "2°C ceiling" for avoiding dangerous climate change. Countries must commit to keeping below a maximum global mean temperature increase of 2°C above pre-industrialised levels (ie not from present day), consistent with the current science and accepted thinking on thresholds and impacts.

3.2 *Post 2012 framework:* The UK should initiate discussions on the adoption of an international framework for climate change action post-2012, which builds on the Kyoto process. At the very least, the UK should be pushing for a future climate change action regime that is based on:

- (a) reduction targets that will avoid a level of global warming increases exceeding 2° above pre-industrialised levels, and
- (b) recognition that industrialised country targets need to be more aggressive than developing country targets from the outset.

For the G8 specifically, the UK should promote agreement for a multi-lateral "cap-and-trade" system for emissions globally, based on mandatory absolute caps from Annex 1 countries. Bilateral schemes will not deliver the emissions reductions required to stay within a 2°C regime. The sound low-carbon technology investment initiatives currently promoted by the UK government are unlikely to realise full business and economic potential without a strong international framework to incentivise uptake of such technologies. The two are interdependent.

In terms of the EU Council specifically, the UK should promote adoption by the EU of the Climate Action Network framework proposal, or similar, as an effective long-term regime for climate change action³². WWF supports this equitable "multi-track approach" which includes three elements:

- (a) continuation of the Kyoto process in ensuring deep cuts from industrialised countries;
 - (b) decoupling of economic growth and emissions in developing countries (ie decarbonisation); and
 - (c) an increase in resources for adaptation in vulnerable countries.
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³² A Viable Global Framework for Preventing Dangerous Climate Change—CAN Discussion Paper, COP9 (Dec 2003)—<http://www.climateactionnetwork.org/docs/CAN-DP—Framework.pdf>.

3.3 *Engage Large Emitters:* Through the G8 process the UK must engage with the larger emitters among the developing countries and build new coalitions of Heads of State on deep emissions' reductions targets. These countries include China, India, South Africa and Brazil. Their involvement will be crucial to achieving meaningful global emissions reductions in any future climate change policy and market regimes. Discussions must focus on decarbonisation strategies as a way forward ie decoupling economic growth from carbon emissions.

3.4 *US Approach:* The UK government should hold a firm position on its objectives for advancing climate change action internationally next year. The UK government will need to act more assertively in driving forward the agenda towards setting mandatory caps globally, and building coalitions with the aforementioned developing countries. The UK must ensure that re-entry of the US into the international climate change regime is based on strong US commitments to tough emissions reductions domestically.

3.5 *EU Targets:* A key task for the UK's Presidency of the EU should be to review its progress towards meeting its emission reduction targets (ie "demonstrable progress"). The review should identify areas where more effort is needed and initiate a process for ensuring that existing EU policies and measures are fully implemented in member states, strengthening those measures and developing new ones.

Effective implementation and enforcement of the EU ETS and the delivery of strong NAPs for the second phase (2008–12) is essential. The UK is in the best position to lead on this issue, since it implemented the first domestic trading scheme and has the experience and expertise to share on delivery of such systems. The UK must work with the EU towards tightening the rules governing the scheme to enable it to set far more challenging targets in the second phase of trading, and seek clarification and harmonisation of rules for consistent application across Member States.

The UK should drive discussions on increasing harmonisation of the system in terms of review processes for plans and verification procedures, in addition to the introduction of auctioning of allowances and the future inclusion of non-traded sectors (most notably transport and aviation) in the ETS for the second and subsequent phases. WWF believes the ability for participants to source allowances from outside the EU severely undermines the integrity of the system and recommends that this be disallowed from Phase 2 onwards.

However, the European countries' commitments much stretch beyond the ETS. The UK must also call for the EU to take on deep cuts in the second commitment period (ie post Kyoto) and adopt an emissions' reductions target by 2020, consistent with the long-term 60–80% cuts necessary to remain within the 2°C limit to global warming.

3.6 *Sustainable Energy Initiatives:* The UK must lead in developing a robust and coherent strategy to reorient global investment away from fossil fuel intensive and inefficient energy infrastructure and into low-carbon or carbon-neutral technologies, particularly in middle income countries. Sustainable energy initiatives—notably JREC³³ and REEEP³⁴, but also any initiatives aimed at implementing recommendations arising from Renewables 2004, the Extractive Industries Review and the G8 Renewables Task Force—must result in measurable commitments, be better integrated and far better resourced if they are to form the basis of a coherent and comprehensive plan to support decarbonisation in developing countries.

As part of this process, the UK should seek financial commitments via the Extractive Industries Review, countries' Export Credit Agencies, and International Funding Institutions for supporting investment in renewable energy development and energy efficiency initiatives in developing countries. The UK can also take a lead in influencing the spending decisions in EU budget discussions next year to favour such strategies.

The UK should promote a meaningful follow-up process to the Renewables 2004 conference to ensure that technology transfer and development approaches are better coordinated, and that voluntary commitments made at the Bonn conference are implemented. At present, the credibility of these programs in delivering meaningful outcomes is questionable.

3.7 *Engage the Most Vulnerable Countries:* Any international agenda must act to reduce the vulnerability of developing countries and poorer communities where climate change impacts are already occurring or will occur soon. The UK government could play a lead role in initiating engagement with these most vulnerable developing countries—drawing attention to specific climate change impacts and developing a longer-term global action framework. This development outreach could fit well as part of the climate change science conference proposed for February next year. The UK can uniquely bring to this forum the expertise on the "2°C science" and related impacts from highly reputable research institutes such as the Hadley Centre, and can articulate the scale and urgency of climate change, disseminate research on thresholds and impacts, and seriously start addressing adaptation needs.

³³ Johannesburg Renewable Energy Coalition.

³⁴ The Renewable Energy and Energy Efficiency Partnership.

3.8 *Agricultural Subsidies and Incentives for Biomass*: The UK is in a good position to lead the debate for redirecting agricultural subsidies and introducing stronger incentives to support biomass production. Such initiatives could provide an important contribution to reducing international and EU dependence on fossil fuels for energy and transport, as well as reducing commodity dumping on developing countries and facilitating greater market access and economic prosperity for African and other developing farming communities.

This initiative provides natural synergies between the UK government's Africa and climate change agendas for the G8, and is an issue the UK could work on under both G8 and EU presidencies. It could help deliver on both OECD biomass commitments and policy imperatives to assist developing countries as well as enable the UK to align multiple constituencies including the environment and development lobbies and farmers. Even in the US, environmentalists, agricultural states' representatives and farmers' lobbies have identified support for bioenergy as a potential "win-win" for climate and rural development.

This will coincide with the planned EU Biomass Action Plan and EU Biofuels Directive, and builds on progress already made by the UK in linking agriculture, trade and the environment in the EU. In particular, there is considerable scope under the current EU Common Agricultural Policy (CAP) reform to press for more support for a stable, environmentally sustainable biomass supply.

4. *What contributions can individual UK government departments make?*

4.1 All UK government departments must play a role in co-ordinating efforts in delivering a strong coherent UK package for international climate change strategy. The Department for Food and Rural Affairs (Defra) must be given the power and lead on such initiatives—given its expertise in science and policy areas—with key expert input from the other departments, especially where participation on environmental affairs has been lacking previously, as has been the case for Department for Transport (DfT).

4.2 In particular, DfT have a key role to play on the transport agenda and aspirations to include aviation within future EU Emissions Trading regimes. The Treasury must, at the very least, start participating on an international level with regards to supporting and facilitating the necessary economic instruments for bolstering sustainable energy technology initiatives, and adaptation efforts in developing countries. The Department for Trade and Industry (DTI) has industry expertise to feed into the UK agenda, but would do well to appropriately reflect the views of all business players, including the smaller and more environmentally progressive, and promote the benefits of competitiveness to UK and EU industry of strong national and international climate change policies.

5 November 2004

APPENDIX 17

Supplementary memorandum submitted by GCI

Since providing the previous evidence to the EAC, several developments have occurred that GCI would like to bring to the attention of the Committee:

1. COP-10 UNFCCC DECEMBER 2004 BUENOS AIRES

- This was an event marked by two things:—the first was Ratification of the completely inadequate Kyoto Protocol by Russia thus bringing it into force on 16 February 2005; the second was the continued refusal of the parties to commit even to discussions of adequate global arrangements, let alone the arrangements themselves.
- There was an agreement to a further meeting 16–17 May with a tentative agenda http://unfccc.int/files/parties_and_observers/notifications/application/pdf/notice_po_050216.pdf

2. URGENCY/DESPAIR FROM THE HADLEY CENTRE CONFERENCE

- Evidence of accelerated rates of climate change was presented at the government's stabilisation-2005 conference at the Hadley Centre in February.
- This evidence <http://www.stabilisation2005.com/outcomes.html> was considered so alarming by several UK journalists covering the event, that they publicly took the view afterwards that "the earth was finished": <http://www.gci.org.uk/articles/Tablet.pdf>.
- This in turn aroused a very considerable counter-blast calling for "Contraction and Convergence" (C&C) from the media watchdog media lens, which was picked up in the US media: http://www.axisoflogic.com/artman/publish/article_15998.shtml

3. DEFRA AND WHITEHALL C&C ACKNOWLEDGEMENT

- Publication of opinion about “Contraction and Convergence” (C&C) by Defra and the FCO: http://www.gci.org.uk/briefings/DEFRA_FCO.pdf usefully acknowledged that C&C was a clear example of a “full-term” framework.
- This reflects Defra’s observation at the time of publishing the Energy White Paper that their work builds on C&C as presented by the RCEP page 13: http://www.defra.gov.uk/environment/climatechange/ewpscience/ewp_targetscience.pdf
- This assists the clear C&C position taken by DFID last 24 November: http://www.gci.org.uk/speeches/Hilary_Benn.pdf
- It assists the position taken by IPPR in its new report, “Putting Our House in Order”: http://www.gci.org.uk/briefings/Putting_Our_House_in_Order.pdf
- It assists the clear C&C position constructed by the meeting of Africa Environment Ministers at the Climate Change conference in Nairobi on the 24 February. http://www.gci.org.uk/briefings/African_Priorities_2005.pdf and Ministerial statement http://www.gci.org.uk/speeches/Musyoka_Kenya_Minister_2005.pdf

4. THE CHURCH OF ENGLAND

- In February the Church of England published a C&C advocacy briefing “Sharing God’s Planet”: <http://www.cofe.anglican.org/about/gensynod/agendas/gsl558.pdf> and then passed a C&C resolution at Synod <http://www.cofe.anglican.org/about/gensynod/agendas/bdfeb05thursdaypm.rtf>
- The Catholic Institute of International Relations published a C&C advocacy document at the same time: http://www.ciir.org/shared_asp_files/uploadedfiles/5F3ACAB1-5BB4-4BF3-AC76-E942193DE853_climatechangeleaflet.pdf

5. CITY OF LONDON

- In February the Corporation of London awarded Aubrey Meyer a life-time’s achievement award, “*in recognition of an outstanding personal contribution to combating climate change at an international level through his efforts to enhance the understanding and adoption of the principle of Contraction and Convergence.*”

6. BYERS REPORT

- Coinciding with the above, the International Task Force on Climate Change convened by Stephen Byers MP published a C&C advocacy report in all but name advocating convergence to equal per capita emissions rights globally under a stringent cap: http://www.tai.org.au/Publications_Files/Papers&Sub_Files/Meeting%20the%20Climate%20Challenge%20FV.pdf
- A considerable array of literature based on C&C has been published contemporary with all this urging a variety of complex, confused, extreme and largely unworkable “alternative” convergence procedures.
- However, simplicity and diplomacy demands a recognition that the answer as agreed in Kyoto by major parties to the debate is that:

7. THE USA “BYRD HAGEL RESOLUTION” IS C&C BY DEFINITION

- Byrd Hagel <http://www.nationalcenter.org/KyotoSenate.html> and C&C.
- <http://www.gci.org.uk/briefings/C&C&ByrdHagel.pdf> is the only conceivable basis upon which a meaningful and effective consensus can now be built internationally to avoid globally dangerous rates of climate change and achieve prosperity with security. This formulation is the science-based precautionary template required by the UNFCCC with the global inclusivity rightly demanded by the US and the rights-based equity rightly demanded by Developing Countries. It is the global capping or carbon-enclosure of emissions that necessarily precedes the global trading of the entitlements to these.
- Our collective failure to establish this C&C-compliance prefigures drift into the nightmare conditions described in the Pentagon Report: http://www.ems.org/climate/pentagon_climate_change.html

8. ADVOCACY POINTS

- GCI urges the Environmental Audit Committee of the House of Commons to use the political capital of the C&C campaign—the recent evidence shown here and the accumulated evidence in GCI's earlier submissions—to make firm recommendations to HM Government and its agencies of Government.
- These are that internationally, we are on the eve of an historic opportunity. Tony Blair's role as Chairman of the G-8 and President of the European Union at this time, give him the position to fulfil his commitments to Africa and to us all to preventing the tragedy of unabated climate change, and making history by now establishing C&C as the over-arching framework within which this and the eradication of poverty will be achieved.
- The practical and achievable cross-party expression of this domestically is the exemplary proposals to establish Domestic Tradable Carbon Quotas by Colin Challen MP, and attention to this programme should be promoted as part of the forthcoming election agenda forthwith.

9 March 2005
