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Environmental Audit Committee

The Voluntary Carbon Offset Market

Sixth Report of Session 2006–07

Report, together with formal minutes, oral and written evidence

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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

Contents

Report

Summary

The challenge of man-made climate change requires speedy and significant action across all fronts. While the principal need is to reduce emissions directly through changes in behaviour or technological improvements, some emissions, at least in the short to medium term, continue to be unavoidable. Encouragement and assistance must be given to individuals, organisations and companies to offset because robust and credible offsetting can have a useful if limited role in mitigating current levels of, and projected short-term trends in, emissions.

There is at the moment very little evidence as to the effect of offsets upon the behaviour of those who purchase them. While it might be the case that offsetting beneficially exposes those who participate in it to a greater understanding of the challenge which climate change poses, it is clearly important that thorough and independent research be conducted into this area as a matter of priority.

The UK has the opportunity to lead the international field in developing robust and helpful guidance and codes of practice at a national government level which will endorse meaningful offsets and assist people in choosing the best way to offset their emissions. The UK's financial and carbon markets have much to gain from a rapid growth in what is increasingly seen as a vital component of commercial activity and corporate responsibility. The international offset industry, if managed responsibly, will only grow over the short to medium term as many governments, like the UK Government, develop their own guidance or best practice or perhaps themselves move towards offsetting their own emissions, for their official travel or for their activities, as is the case in the UK.

The recent DEFRA consultation is a well-intentioned attempt to help assist consumers and lend confidence to a market that has recently been assailed by critics for its lack of clarity and integrity. While elements of the market are no doubt less than robust, offsets as a whole currently risk this taint from a few failed projects. The suspicion that always dogs unregulated markets could affect its prospects for growth and curtail its benefits in reducing emissions globally.

The current consultation offers the opportunity for the Government to bring forward measures not just to encourage responsible and robust offsetting but also to set out clear criteria which offsets ought to meet. It must also work with the offset industry, with those businesses interested in offsetting, with those working in the international carbon market, and with NGOs, to establish an independent, authoritative body to vet and quality-mark those providing offsets, their credits and their projects. These criteria must also cover the provision of clear and accurate information by the offset industry to the public without which the act of offsetting will continue to lack the intelligibility the public require. The Government must act quickly, and the costs of this initiative must be borne principally by the offset industry itself which will only benefit from increased market confidence and increased sales.

The current restriction proposed within the DEFRA Code of Practice which limits the approval of credits to those from the compliance market unfortunately risks devaluing projects and credits which are not only as methodologically sound and verifiable as those within the Clean Development Mechanism but which also often carry greater sustainable development benefits outside their principal benefit to the climate. This unnecessary restriction could seriously affect the growth of the Verified Emissions Reduction market. This market will only prosper if the Government allows for the approval of both Certified Emission Reductions and Verified Emissions Reductions within its scheme as long as they all meet the correct criteria.

Although there is still uncertainty about the future of the Clean Development Mechanism post 2012, the Government must work as hard as possible to improve how it operates over the next few years. It needs to be less bureaucratic, less costly, and less restrictive in terms of the methodologies, and the scale and nature of the projects, which it approves and permits. The Government must also work to ensure that any successor to the Clean Development Mechanism embraces smaller projects, projects in the most poor and unstable countries, and also forestry and land-use projects founded upon preservation as well as planting. Avoided deforestation needs a much greater priority accorded to it both within and outside the Clean Development Mechanism.

In many people's eyes, offsets are connected principally with forestry projects of one sort or another, although there has in fact been a steady shift away from such projects by many offsetters over recent years, not least because of the reputational damage caused by media-reported project failures. However, some offset companies still retail only forestry credits; and it would be entirely wrong to consider this part of the market as either a cheap or a disreputable one. Some of the most rigorous and environmentally beneficial of all projects come from the stewardship of tropical forests and the well-judged re-forestation or afforestation of land in the tropics. Indeed, figures from the Stern and recent IPCC reports stress the significance of avoided deforestation, but also of reforestation, to avoiding dangerous climate change.

Recent scientific debate about the *albedo* effect and northern temperate forests and the related debased and largely inaccurate reports that have appeared in the general media have been a distraction from the undoubted good that forests provide for the climate. Well-managed forestry projects, while they can be expensive, not least on account of their lengthy timescale and the need to deal with the risks of impermanence and leakage, can be as robust as other projects and invariably carry with them many of the additional benefits and environmental extras that consumers want to buy into. The Government must commit itself to advance the cause of avoided deforestation in particular in international negotiations as a matter of the very greatest priority. It must also encourage and, where appropriate, assist those offsetters who wish to develop strong and worthwhile projects to preserve or increase the area and carbon intensity of our current biological carbon sinks.

The airline industry, in addition to its expected participation in the EU Emissions Trading Scheme from 2011 and its commitment to fuel efficiencies and to technological and 'procedural' developments and improvements, must consider itself duty-bound to develop robust and effective policies with regard to offsetting. Currently, the industry has a diverse

and generally unsatisfactory attitude towards offsetting. British Airways' initiative in this area, for example, has been risible. The decision of the industry to back out of discussions with the Government over its proposed Code of Practice may well in part have been motivated by its understanding that the DEFRA proposal was too narrow, but was in greater part down to confected outrage at the Government's rise in Air Passenger Duty. It may also be because offsetting only draws attention to the malign effects of air travel on the environment. The industry ***must*** engage with the Government and accept that it needs to do more now to mitigate emissions from its planes and to encourage uptake of offsets amongst its customers as a matter of priority.

Introduction

1. In December 2006 we launched an inquiry into the voluntary carbon offset market. The voluntary carbon offset market allows companies, public bodies and individuals the opportunity to choose to purchase credits generated from projects that either prevent or reduce an amount of carbon entering the atmosphere, or that capture carbon from the atmosphere. In the voluntary market, consumers can offset against a particular one-off activity such as a flight, or for something more long-term, such as their annual electricity consumption. Consumers can purchase offsets through either an offset provider, a project directly, or through a company offering offsets as part of their package of goods or services. This inquiry comes at a time of growing concern about the legitimacy of this market and amidst reports in the media about "carbon cowboys".[1]

2. The issues we sought initially to address in this inquiry included: whether there ought to be a compulsory accreditation scheme for carbon offset projects and providers; whether there is enough clarity and transparency of information within the market for consumers; whether the science is sufficiently accurate to measure carbon reductions—particularly in forestry and land-use and land-use-change projects; and whether there is evidence to show that offsetting has an influence on other carbon-saving behaviours of customers. We also sought to examine the relationship between the voluntary carbon offset market and the compliance market.

3. Shortly after we announced our inquiry, the Department for Environment, Food and Rural Affairs (DEFRA) launched its own consultation on a *Code of best practice for the provision of carbon offsetting to UK customers* (the code) in January 2007. As a result of this announcement, we extended our own deadline for the submission of written evidence to allow interested parties chance to consider the implications of the proposed code in their submissions. We received 45 written memoranda and took oral evidence from: the Energy Saving Trust; RSPB; the Corner House; FERN; the CarbonNeutral Company; Climate Care; the Co-operative Group; Energy for Sustainable Development; the Edinburgh Centre for Carbon Management; Sustainable Forestry Management; Virgin Atlantic; Silverjet; the

1 "Trading watchdogs put on the tail of carbon cowboys" *The Times* 19 January 2007

Climate Group; British Airways; Cheyne Capital Management; London Climate Change Services; and officials from the Department for Environment, Food and Rural Affairs. We are grateful to all those who gave evidence or who assisted otherwise with our inquiry.

4. One of the biggest challenges we faced in this inquiry was getting to grips with the complexities, technicalities, and acronyms of the different carbon markets and the resulting types of credits that they produce. The voluntary carbon offset market is not an island and is intrinsically linked to the compliance carbon market. To help to put this report into context, we will explain the different carbon markets and the credits they produce, as well as the role and current state of the voluntary offset market. **One of the clearest messages we received in our evidence was that there is a lack of general understanding about the voluntary carbon offset market. We hope therefore that this report, in bringing together the background, context and issues in the voluntary carbon offset market, will serve beyond its primary purpose as a report to Parliament to which the Government needs to respond and will help to assist and promote understanding and debate in this area.**

Understanding the compliance and voluntary carbon markets

The compliance carbon market

5. In 1997 the United Nations Framework Convention on Climate Change (UNFCC) adopted the Kyoto Protocol which established legally binding targets for greenhouse gas reductions by those countries which ratified the Protocol (predominantly 'developed' countries with the notable exceptions of the USA and Australia): these countries are also known as Annex I countries. To enable compliance the Protocol established Flexible Mechanisms to allow these countries to meet their targets by trading carbon credits or emission reduction units. The compliance market is the product of these Flexible Mechanisms established by the Protocol. These mechanisms are: the Clean Development Mechanism (CDM); Joint Implementation (JI); and Emissions Trading. In addition to this, several nations and groups of nations have developed their own trading mechanisms to help them meet their targets; the biggest of these is the European Emissions Trading Scheme (EU ETS).2

The Clean Development Mechanism (CDM)

6. The CDM is a mechanism that allows the Annex I parties to the Kyoto Protocol (such as the UK) to meet their emissions reduction targets by generating credits from emissions-

2 The Carbon Trust "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006

reducing or saving projects in developing countries. This allows for the reduction to be made at a lower cost than may otherwise be possible domestically. The projects generate emissions credits called Certified Emissions Reductions (CERs) which can then be bought and traded. One CER is equal to one tonne of carbon dioxide equivalent gases.[3]

7. In order to be recognised in the CDM, projects have to demonstrate that they create savings which are additional to anything that might have happened anyway—a concept known as 'additionality'. Additionality is proved by using the CDM toolkit, which provides stringent criteria for a project to meet and provides a methodology for calculating baseline emissions which then give a business-as-usual (BAU) scenario against which the project is compared. The amount of credits that a project is entitled to is the difference between the project emissions and the baseline emissions.[4] The methodology enables project developers to show that the emission reductions would not have happened but for the project. There are currently approximately 60 different methodologies to cover a range of different project types.[5] An authorised third party called the Designated Operational Entity (DOE) is responsible for the verification and certification of the project. Verification involves on-site inspection and review. The certification procedure provides written assurance that the project has achieved the claimed emissions reductions.[6]

8. A CDM 'Gold Standard' has been developed by a group of NGOs led by WWF-UK. This is built on the foundations of CDM standards and methodologies, but also incorporates guidelines to demonstrate a project's sustainable development achievements. Projects are restricted to renewable energy and end-use energy efficiency projects and are also assessed via a scoring system on their environmental, social and economic impacts on sustainable development. Although this standard is not strictly for CDM projects, the use of CDM standards as a foundation (which are costly to meet) means that few projects outside of the compliance market are attracted to it.

Joint implementation (JI)

9. Joint implementation allows developed, Annex I countries to meet their emission reduction targets through projects in other developed countries with legally binding targets under the Kyoto Protocol. These projects generate tradable credits which are called Emission Reduction Units (ERUs). As under the CDM, projects must demonstrate additionality and go through a similar verification and certification process. At the moment, the Government does not approve any JI projects in the UK, but it does allow companies to participate in JI projects abroad. JI credits can be used to meet UK Kyoto targets.[7]

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3 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers*, January 2007, p 50

4 The Carbon Trust "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006 p.12

5 www.unfcc.int

6 The Carbon Trust "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006

7 www.defra.gov.uk/environment/climatechange/internat/kyotomech/

Emissions trading

10. The Kyoto emissions trading scheme is a cap-and-trade scheme. In a cap-and-trade system parties are given an emissions allowance based on an emissions reduction target. In order to create scarcity a limited number of allowances are issued equal to the 'global' target below the business as usual emissions level for a particular period. In the Kyoto scheme each allowance is called an Assigned Amount Unit (AAU) which is equivalent to one tonne of carbon dioxide. At the end of a period each party must hold the equivalent number of AAUs equal to the amount of greenhouse gas it emitted. This allows parties to decide whether to reduce their emissions internally, or whether to buy credits from other parties, who may have been able to make an emission reduction more cheaply. Similarly, parties which have reduced their emissions below their target will be able to trade any surplus allowances they make to other parties who cannot, or who do not want to meet their targets internally. The rationale behind emissions trading is cost-effectiveness; that in theory, parties will choose the most cost-effective way to either make or buy their emission reductions.

11. The EU Emissions Trading Scheme (EU ETS) began in January 2005 and is the largest emissions trading scheme covering 12,000 installations in 25 countries.[8] The trading units in this scheme are called EU Allowances (EUAs). Parties in this scheme can buy and sell EUAs, or they can purchase—within certain limits—CERs from the Clean Development Mechanism or ERUs under Joint Implementation. Our recent Report on the EU ETS highlighted the importance of the Scheme to reducing emission across Europe, and also noted the links between the Scheme, carbon markets and the CDM.[9]

The voluntary carbon market

12. The voluntary carbon market (VCM) has developed independently of government targets and policies and is a place where anybody, from businesses, to NGOs, to individuals can participate in the business of offsetting. Carbon credits are also created in the voluntary market, but unlike the compliance market where credits are tradeable under the Kyoto flexible mechanisms (that is to say, they are 'fungible'), credits in the voluntary market are generally non-fungible—they are not tradeable between schemes.

13. There is a legally-binding voluntary market where parties can set self-imposed, legally binding greenhouse gas emissions reductions targets: an example of this is the Chicago Climate Exchange. The focus of this report is the non-legally binding voluntary carbon offset market. In this market, people invest in emissions reductions for a variety of reasons from meeting their own self-imposed emissions reduction targets, to helping to address climate change, or to help reduce the impact of their carbon footprint. Some credits in this market are verified according to certain standards, others do not meet any identifiable verification standards.

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8 The Carbon Trust "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006 p.8

9 *The EU Emissions Trading Scheme: Lessons for the future*, Second Report of Session 2006-7, HC 70

14. Customers in the non-legally binding voluntary market are able to purchase both credits which originate from the compliance market and credits which originate from the voluntary market. When compliance market credits are used for voluntary offsetting they do not go towards assisting or meeting any legally-binding reduction targets. An important point which will be addressed below is that it is not always very clear to consumers exactly which type of credit they are buying. In the voluntary market there are no overarching or compulsory standards or methodologies for creating credits. There are however, a number of voluntary standards emerging in an attempt to bring greater robustness and harmonisation to the voluntary offset marketplace. Two of the biggest of these are the Voluntary Gold Standard (VGS) which was launched in May 2006 and the Voluntary Carbon Standard (VCS). Version 1 of the VCS has already been released and version 2 is currently under development. There are also standards which have been created for other types of offset projects; an example is 'Plan Vivo' which is created for projects in rural communities which promote sustainable livelihoods.

Emerging voluntary market standards

The Voluntary Gold Standard (VGS)

15. Launched by WWF-UK in May 2006, the Voluntary Gold Standard is a simplified version of the CDM Gold Standard. The methodology is only available for voluntary emissions reductions and creates Voluntary Emissions Reduction Units (VERs).[10] The VGS is only available for projects in developing countries and whilst it uses the basic methodologies of the CDM Gold Standard, its hope is that it will make them easier to apply to the smaller project types more generally found in the voluntary market.

The Voluntary Carbon Standard (VCS)

16. The Voluntary Carbon Standard has been developed by The Climate Group and the International Emissions Trading Association (IETA). Version 1 of the VCS was released for consultation on 2 March 2006. The comments from this consultation were incorporated into version 2 of the VCS which is still in its consultation stage. The VCS has created a unit called the Voluntary Carbon Unit (VCU). VCUs issued under version 1 will be grandfathered (allowed to continue to operate as per version 1); the final version of the VCS has yet to be finalised. The Voluntary Carbon Standard aims to ensure that all voluntary emission reductions projects that want to trade in VCUs are independently verified to meet specific criteria and that these will represent "real, quantifiable, additional and permanent project-based emission reductions".[11] The VCS will provide protocols and criteria to certification entities and project developers on the specifications for creating, verifying, and registering VCUs. The VCS has created a registry managed by the Bank of New York which is used to register, transfer and retire VCUs from the market.

10 www.panda.org/about_wwf/what_we_do/climate_change/solutions/business_industry/offsetting/gold_standard/index.cfm

11 www.v-c-s.org/uploads/VCS_V2_consultation_letter_final.pdf

Other developed standards

17. The Climate, Community and Biodiversity Standards (CBB) developed by the Climate, Community and Biodiversity Alliance, are for "land-based projects that can simultaneously deliver compelling climate, biodiversity and community benefits."[12] There are three levels of CBB validation: approved; silver; and gold. There are 23 possible standards to meet of which 15 are compulsory for "approved" validation with the remaining eight being optional. Depending on the number of optional standards met, the project may get either silver or gold validation. An independent third party evaluates whether the project merits approval, and if so, at what level. The standard uses the methodologies of the Intergovernmental Panel on Climate Change Good Practice Guidance (IPCC GPG) but can also used approved CDM methodologies for calculating carbon reductions/ savings.

18. Similarly the Plan Vivo System provides a standard for "managing the supply of verifiable emission reductions from rural communities in a way that promotes sustainable livelihoods."[13] The Plan Vivo System is managed by BioClimate Research and Development which is a not-for-profit organization and is responsible for development and maintenance of the Plan Vivo system. It contracts the Edinburgh Centre for Carbon Management (ECCM) to provide the systems maintenance resources needed for the development of Plan Vivo. ECCM provides a technical team to assist with the development of technical specifications for the project alongside the project developer and the host organisation. Projects are usually monitored using local experts and credits are registered on a database.

Proprietary standards

19. Voluntary offset retailers have developed their own standards which create credits which use the generic term of Verified Emission Reductions (VERs). They share their acronym with Voluntary Emission Reductions and the two are often using interchangeably which can cause confusion as in one, the emissions reduction or saving has been verified, whereas in the other, this is not necessarily the case. Here, the standards for these verified emissions reductions vary widely in many respects including how the project baselines are calculated, how additionality is tested and how verification is carried out. For some projects, this is not done at all, which reflects the cheaper cost of some of these credits in the voluntary market. It is up to the buyer of credits to determine what standards they want their credits to meet. Consequently these sorts of credits are neither comparable nor tradeable.

Proposed Government Code

20. In January 2007 the Department for Environment, Food and Rural Affairs (DEFRA), launched its consultation on establishing a voluntary code of best practice for the provision of carbon offsetting the UK customers. Its purpose in establishing the code is to "ensure

12 www.climate-standards.org/images/pdf/CCBStandards.pdf

13 www.planvivo.org/

consumer confidence in an emerging market and continued growth of that market through that confidence."[14] The code would not create a new tradable unit in the voluntary offset market but would be applicable only to compliance market credits being traded in the voluntary market, principally, CERs. The code would define standards for offset providers trading in these credits, who in return for meeting these standards would be awarded a quality mark. The code proposes standards for: ensuring accurate calculations of emissions to be offset; providing clear information for consumers about the mechanisms and projects supported; transparent pricing; and a timetable for cancelling or retiring credits.[15]

The role and purpose of offsetting

Defining and communicating the role of the voluntary offset market

21. The evidence we received revealed a plethora of strong views as to the purpose and significance of the voluntary carbon offset market in reducing carbon emissions. At one end of the spectrum were organisations such as The Corner House and FERN who told us that: "carbon 'offset' schemes are a dangerous distraction from generating public support for policies that will help avoid climate crisis and lead the way into a swift and just switch to low-carbon economies."[16] Similarly, the World Development Movement told us that:

> It is nonsensical to suggest that climate change can be tackled by cutting emissions from poor people, whilst allowing activities of the rich, such as flying, to continue unabated. Yet this is the basis on which offsetting projects in developing countries are supposed to work.[17]

Those opposed to offsetting stress that the concept of offsetting itself is incoherent, that the claim of equivalence between emissions and offsets is "[…] rooted in the technical requirements of the market rather than science […] Making a chemical plant more efficient is not the same as supplying efficient light bulbs to Jamaica."[18] They also argue that there are unsolvable measuring and accounting problems and that the technicalities and jargon of carbon offsetting present an obstacle to public debate.

22. At the opposite end of the spectrum, rather unsurprisingly, are the offset providers themselves such as Climate Care and The Carbon Neutral Company, who told us that offsets:

14 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting the UK customers*, January 2007 p 2

15 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting the UK customers*, January 2007 p 11

16 Ev57

17 Ev227

18 Ev21

> [make] a significant contribution to the fight against dangerous environmental change driven by global warming […] [they] deliver real reductions in carbon emissions in a cost effective way and that, by taking a market driven approach, […] [and] foster the implementation of innovative solutions to the problem of reducing carbon.[19]

23. The views of the majority of organisations from whom we received evidence fall somewhere in-between these positions. The Co-operative Group told us that they: "see offsetting as an important part of the solution to climate change, rather than a panacea."[20] The Energy Saving Trust told us that offsetting has a role to play after UK citizens and businesses have worked to reduce their own carbon footprint first.[21] The Carbon Trust has a three stage carbon management strategy whereby offsetting comes at the bottom of a hierarchy of actions, below reducing direct emissions and then indirect emissions.[22] **We support the view that it is primarily individuals who have to take steps to avoid and then reduce their own carbon emissions. In parallel to this, however, we believe that the voluntary carbon offset market does have a role to play both in reducing carbon emissions and raising awareness of climate change issues to the general public. Moreover it can provide a much-needed source of funding for the development of low carbon technologies and innovations in developing countries.**

24. The Government position on the role of offsetting is currently rather understated. The DEFRA consultation asserts rather wanly: "when it is not possible or easy to avoid and reduce emissions consumers can consider offsetting."[23] The position set out in its memorandum is more energetically expressed, but reads more as a promotion for the CDM than as a useful source of guidance.[24] **There are many divergent and often loud opinions about the role of the voluntary offset market. Both individuals and businesses are very likely to be confused by the mixed messages available. They need clear guidance about the extent to which offsetting can help meet their responsibilities to reduce carbon emissions. We recommend strongly that the Government grasps the opportunity to show leadership here. It must set out its own view on the role that the voluntary offset market can play in reducing emissions and why offsetting is a positive thing. The view should be unambiguous, well-publicised and prominent in all Government communications concerning offsetting and climate change.**

19 Ev70

20 Ev89

21 Ev1

22 Ev189

23 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers*, January 2007, p 2

24 Ev161

Encouraging and understanding emission reducing behaviour

Individuals

25. Carbon Clear told us that the number of individuals who choose to offset is very small: only 1-2% of individual consumers.[25] In their oral evidence to us, the Co-operative group told us that growth in the personal sector of this market is "tiny" and that the market here is worth only £2-£3 million.[26] The Energy Saving Trust suggested that these people are likely to be either those already concerned with "green" issues, or the more affluent.[27] **If the voluntary offset market is going to fulfil its potential as part of the drive to reduce carbon emissions and raise awareness about climate change then there needs to be a considerable increase in the numbers of individuals choosing to participate.** In its oral evidence, Climate Care told us that industry has an important role to play here with its huge marketing outreach potential.[28] It went on to suggest that a small incentive from Government to industry to encourage its customers to offset would be an effective way to achieve this.[29] DEFRA told us that a way to achieve this would be to "empower" people to make informed decisions, making them more responsible for their actions[30]. It suggested that when procuring goods and services linked to offset schemes people could be made automatically choose to offset unless they choose to opt-out. **We urge the Government to explore measures which would incentivise businesses to encourage their individual customers to offset. We recommend that Government make it compulsory, for more carbon-intensive activities, for associated businesses to offer offset services either themselves or through a provider. In connection with this it should be mandatory for individuals to be given a compulsory-choice option for offsetting when procuring such goods and services.**

26. Many of the submissions we received highlighted a lack of authoritative research concerning the nature of the link, if any, between an individual's decision to offset and any consequential behavioural change either more detrimental or beneficial to the environment. Energy for Sustainable Development (ESD) told us that it is also difficult to tell whether people who have made carbon reductions are also the same people who offset.[31] In its submission, the RSPB raises the problem that offsetting could be seen as a way for the rich simply to salve their guilty consciences about emitting carbon.[32] The Environment Agency took a more optimistic view when it said: "We are unaware of any evidence that voluntary offsetting reduces the individual's effort to reduce emissions. It

25 Ev181

26 Q 125 Mr Monaghan

27 Ev1

28 Q 107 Mike Mason

29 Ibid

30 Ev164

31 Ev87

32 Ev4

may well have the opposite effect—sensitising and educating the user about climate change and allowing them to take a positive action."[33]

27. It is often argued that offsetting might be seen as validating polluting behaviour. The Co-operative Group made the point that no substantial evidence is offered to support this thesis.[34] Indeed out the of the 45 submissions we received, we found little substantial evidence to support the view that offsetting encourages ethical carelessness. What we did find, however, was evidence that offsetting does not necessarily have any effect on further changing carbon behaviour. The World Development Movement cited the example of HSBC who in 2005 claimed to be 'carbon neutral' having offset its emissions but that whilst doing this, its monthly emissions actually rose from 585,000 tonnes of CO_2 in 2004 to 663,000 tonnes of CO_2 in 2005.[35] They also cite a similar example from Barclays Bank: "Whilst encouraging their customers to offset CO_2 emissions, the latest figures for Barclay's CO_2 emissions show a rise from 200,145 tonnes in 2004 to 207,650 in 2005."[36]

28. **There is clearly a need for more research to be done in understanding what exactly encourages people to reduce their emissions; on the extent to which the practice of offsetting has an effect on such behaviour; and on how much it can play a role in educating people about climate change**. Many of those involved with the voluntary offset market stressed how useful they would find such research: ESD said: "[…] publicly funded research in this area would be invaluable."[37] **We recommend that the Government commission independent research to evaluate and understand the behaviour of individual consumers in the voluntary offset market and publish it as soon as possible.**

Business

29. The biggest-spending consumers in the voluntary offset market are businesses. As with individuals, the motivation for offsetting varies: some companies argue that they recognise the threat of climate change and try to act responsibly; but also some of the motivations for offsetting here will be strategic—they might be to meet Corporate Social Responsibility (CSR) obligations, to generate goodwill, or to attract the growing number of customers attracted by environmental action. **It is important that the Government seeks to understand better the reasons why businesses use the voluntary carbon offset market and what motivates them. We recommend that the Government commission independent research in this area and publish it as soon as is practicable.**

30. One of the ways that companies advertise themselves as being environmentally responsible to their customers is by claiming to be 'carbon neutral'.[38] The voluntary offset

33 Ev204

34 Q 125

35 Ev226

36 Ibid

37 Ev87

38 Companies announce regularly in the media their intentions to become 'carbon neutral'. See www.marksandspencer.com *Marks & Spencer launches "Plan A"- £200m 'eco-plan'* 15 January 2007 and www.avica.com *RAC to go carbon neutral* 6 March 2007 for examples.

market often has a big role to play here as it is used to offset any remaining carbon emissions that a company cannot eliminate in its quest for 'neutrality'. One of the problems is that there is no formal definition or standard as to what carbon neutrality means. There are no standards as to how robustly a company claiming to be 'carbon neutral' has quantified its emissions, whether these are direct emissions only or whether they include indirect emissions, or how far along its supply chain it takes responsibility for emissions. Nor does the term 'carbon neutrality' take any account of whether a company has made any attempt actually to reduce its emissions, or whether it simply quantifies its emissions and decides to offset them.

31. **Claiming 'carbon neutrality' is clearly a growing draw for businesses and will consequently change the behaviour of some companies and bring them into the voluntary carbon offset market.** The Government recognises the need to keep legitimacy and credibility in the voluntary carbon offset market. It is important that the term 'carbon neutral' is also seen to be credible. As with other advertising claims, consumers need assurance that these claims are genuine and mean something. **We recommend that Government engage in a dialogue with business to develop a consensus definition of what 'carbon neutral' means. It is essential that standards should be developed to allow for audit and verification of this status to bring legitimacy to any claim to be 'carbon neutral'.**

The current state of the voluntary market: a summary

Growth and strengths

32. The voluntary carbon offset market is still a new, emerging market, but it appears to be growing rapidly. The Climate Group told us that the market doubled to trade in approximately 20 megatonnes (Mt) CO_2e in 2006, a figure it expects will grow to approximately 400 Mt CO_2e by 2010.[39] Defra told us that the market was valued at £60 million in 2006 and that it predicts it to grow to £250million by 2009.[40]

39 Ev128

40 Ev163

Scale of the compliance and voluntary carbon offset markets

While the voluntary market in carbon offsets expects very rapid growth over the next few years, recent reports suggesting that demand could reach ~400 million tonnes of CO_2-equivalent each year by 2010 from a 2006 figure of ~20 million tonnes, it is still a smaller market than the compliance market which currently totals, in terms of the CDM, ~155 million tonnes each year, and which is expected to have delivered close on 2 billion tonnes of CO_2-equivalent in offsets by 2012. Any tougher carbon/GHG targets accepted internationally following the expiry of the first Kyoto phase in 2012 would probably serve to increase the scale of the CDM or its successor still further.

33. One of the strengths of the voluntary market highlighted to us in evidence is its ability to be a source of 'innovation' for the credits and projects operating outside the compliance market.[41] The rules and regulations of the compliance market are strict and often problematic for many smaller projects which do not have the funds, time or expertise to cope with the burden of administration. Methodologies for new project types are slow to develop and evolve. Away from these constraints, the voluntary market is able to develop projects in different countries from where most of the compliance market projects are based, in particular in Africa where currently only 1% of CERs originate.[42] Often, voluntary market projects have more 'value-added' characteristics than those found in the compliance market, such as additional environmental or sustainability benefits.[43]

34. The voluntary market also supports a diversity of projects and can act as a testing and learning ground for new projects wanting to enter the compliance market. This is particularly the case for forestry and land-use change projects. There are very few such projects in the compliance market at the moment, but developers are working on methodologies which they hope will allow them to be part of the CDM. The market also allows for smaller-scale projects to develop, which would otherwise find the costs and administration required for the compliance market too burdensome. Furthermore the Co-operative group told us that:

> Perhaps the greatest benefit of the voluntary market is that it achieves CO_2 savings in addition to those achieved under the Kyoto protocol. This guarantees to consumers that their offsetting goes above and beyond what is legally required of governments and industry.[44]

41 Ev86

42 Ev75

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The market is far from perfect however, and recently its shortcomings have been highlighted in the media.[45] It is vital that if the voluntary carbon offset market is going to be seen as a credible and legitimate way to assist with reducing emissions that these problems are identified and addressed.

Current problems

35. Problems with the voluntary carbon offset market fall broadly into two categories, those associated with the offset projects themselves, and those associated with offset provision to consumers. Many of the problems, particularly those relating to projects, apply both to those within the compliance market and the voluntary market. However, these problems often become more significant in the voluntary market as there are no overarching, enforceable standards by which to assess them or mitigate them.

Problems with offset projects

36. One of the problems most commonly cited is project failure. A number of submissions highlighted the case of the mango plantation offset project sponsored by the music band Coldplay and their fans to offset the emissions from their concerts.[46] Here 40% of the plantation died as there was not enough water made available to support the project. Some of this can be attributed to lack of expertise on the part of the project developer. Carbon Trade Watch also told us that part of the problem is that nobody is willing to take responsibility for project failure, particularly where offset companies and project partners work together.[47]

37. Another similar problem is where a project causes an unintended, but detrimental effect on something either inside or outside of the project boundary. For example, if a forestry project used up a significant amount of a local water supply, then this might have an effect on local agriculture and the ability to grow crops outside of the project. As with project failure, this can be caused by a lack of responsibility or 'ownership' of the project which in turn causes bad management of the project, or it can be that the project was either planned badly or implemented too quickly. Similarly 'leakage' can occur when the carbon emission being reduced in one area, for example by protecting an area of forest from deforestation, is displaced to another area. In this example the effect of protecting one area of forest might mean that more trees are consequently felled in another and thus transferring the carbon emission to this other area.

38. One of the major points of contention around all offsets projects, is that of 'additionality'. Only credits emerging from the compliance market or voluntary standards have formally to prove additionality, but it is a concept that should apply to all projects

45 "Carbon offsets that couldn't be less green", *The Sunday Times,* 15 April 2007; "National: Science: How trees might not be green in carbon offsetting debate", *The Guardian*, 10 April 2007; "Offsetting your carbon footprint takes decades", *The Sunday Times*, 11 March 2007; and "Companies revolt over carbon offsetting", *Independent On Sunday,* 25 February 2007.

46 Ev17 The Corner House; Ev57 FERN; and Ev185 Carbon Trade Watch

47 Ev188

whether explicitly or not. As WWF-UK told us: "additionality is key to the environmental integrity of offsets".[48] Additionality means that a project has to demonstrate that it goes beyond what would have happened anyway. For example, if a project funded the installation of energy-efficient light bulbs in a school in Africa where there was no chance of this happening otherwise, then it could be said to be additional. If however, the Government in that country were planning install such light bulbs in a similar timeframe itself, then the project could not claim that it was additional, or that it went beyond 'business-as-usual'. Proving additionality is a contentious issue and it is not always clear-cut what business-as-usual is, or will be in the future. There are also a number of different standards governing additionality, particularly in the voluntary market where some are stronger and more difficult to meet than others.[49]

39. Calculating an accurate carbon reduction or saving is another problem, particularly so for projects which sequester carbon from the atmosphere. The evidence we received revealed a strong debate around how to calculate carbon savings from such projects and whether or not the science is robust. Another issue, often associated with forestry projects, is that of permanence. For example, during the life-cycle of a tree it will absorb a certain amount of carbon. However, if the tree were to burn down, some of this stored carbon would be re-released into the atmosphere. As with all 'carbon-sink' projects, it is very difficult to guarantee absolutely the permanence of the carbon saving.

40. For credits emerging from voluntary projects in particular, verification of the emissions reduction can also be a problem. Verification ensures that the claimed emissions reduction by the project has been achieved. To ensure integrity of the resulting credits this should be done by an independent third party to an established protocol or standard.[50] Many voluntary market credits are verified, but some are not. This means that the claimed emission reduction of some credits emerging from the voluntary market can be 'dubious'.[51]

Problems with offset provision to consumers

41. The evidence we received revealed that there was often very low availability and transparency of information from offset providers about the nature and type of credits for sale. RSPB told us that:

> We have had an interest in this area for about a decade yet we would find it very hard to make a fully informed choice. For the non-expert it is a minefield, with some excellent credits delivering climate change, biodiversity and social co-benefits and others delivering little or no benefits. There are no reliable, unbiased sources of information on the subject.[52]

48 Ev231

49 Ev231

50 *The Carbon Trust* "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006 p.13

51 Ev214

52 Ev6

Different providers produce varying levels of information about the types of project a consumer is investing in (whether it is one project or several), any certification scheme the project has gone through, any standards that the credit meets, and how emissions savings or reductions have been calculated. It can be unclear what type of credit a consumer is purchasing: whether a consumer is buying a compliance market based credit, or a voluntary market credit. It can also be difficult to gain information about how much money a consumer spends goes towards the project or how much goes simply towards meeting the offset providers' overheads.

42. Another problem in the voluntary market is that the price of an offset for a set amount of carbon can vary depending on the provider used. The quantity of carbon that a consumer needs to offset for the same activity can also be calculated in a variety of ways. WWF-UK highlighted a study in Nature,[53] where three different offset providers calculated three different quantities of carbon to be offset for the exact same flight. This issue was also focused on in the Tufts Report, *Voluntary Offsets for Air-Travel Carbon Emissions*, April 2007. The difference in prices occurs in the voluntary market as there is no standard approach towards calculating quantities or pricing structures. In calculating the emissions for a flight, for example, some calculations take into account the emissions from the ground vehicles which service the aircraft before take-off, other calculations are taken only from the flight between A and B itself. In the compliance market the United Nations Framework Convention on Climate Change (UNFCCC) lays down standards for calculating emissions. In the voluntary market however there is no such standard and consequently a variety of calculations and prices for what is essentially the same activity. This leads inevitably to confusion for the consumer.

43. Double counting is an issue which can arise when several people try to take the credit for a carbon saving from one project. This can occur unintentionally through bad management of a project with a bad audit trail, or, it can occur intentionally through somebody trying to commit the fraudulent act of selling a credit more than once. To guard against this, compliance market credits are recorded in a registry and are 'retired' once they have been used to offset emissions. In the voluntary market there is no formal requirement to register or retire credits although some of the voluntary standards do have their own registries. In addition to double counting at project level, it can also occur where voluntary reductions are counted against national or international mandatory targets.[54] To guard against this national and international registries are required to keep account of credits.

44. Another issue with offsets is future value accounting. Future value accounting is where somebody is sold an offset today, but due to the nature of the project from which the offset derives, it will actually take several years before the emission saving is made. This can lead to the situation where somebody buys an offset thinking that they have thus offset their emissions, but in reality their emissions would not be fully offset for a number of years. Often the issue is that people do not realise that this is the way some offset projects work.

53 Ev232

54 The Carbon Trust "The Carbon Trust three stage approach to developing a robust offsetting strategy" 17 November 2006 p.13

Also, the longer the project takes to make the reduction, the more chance there is that something might go wrong and that the already purchased offset may never actually occur.[55] Some people see future value accounting as a fundamental problem, while others, however, see it as a necessary way to do business and raise project finance. In their evidence to us London Climate Change Services said that investors putting money into a project which they expect will yield emission reductions in a number of years is a valid risk, but that they see it as unacceptable when this risk is passed on to the consumer.[56] It is not always clear however in the voluntary market exactly who is bearing the risk. The need for clarity and transparency in the offset market is paramount. **The Government must ensure that, by means of its proposed code or quality mark, or by other related measures, greater transparency is brought by offset providers to what is anyway a complex and currently an opaque market. Without transparency consumers will have little confidence in purchasing or otherwise dealing in offsets, confidence that the market needs in order to grow.**

The Government's consultation on establishing a voluntary code of best practice

45. In January 2007, aware of these problems and in particular of the increasing damage to consumer confidence in the offset market, DEFRA launched its consultation on establishing a voluntary code of Best Practice (hereafter, the code) for the provision of carbon offsetting to UK consumers. In its memorandum Defra said:

> Government considers that establishing a code will provide a framework to support the development of robust, transparent, reliable and timely carbon offset products that offer consumers genuine value for money.[57]

It went on to explain that it did not think at this stage that a regulatory or legislative code would be appropriate given the early stage of development of voluntary offset market. It is felt that a voluntary code will allow for flexibility and innovation in the market place. The deadline for responses to the consultation was April 2007 and DEFRA hopes to have the code in place by autumn 2007.

46. Although we have not produced a formal response to the DEFRA consultation on establishing a voluntary code of best practice for the provision of carbon offsetting to UK customers, important and often contentious issues and considerations raised in the

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56 Q 390

57 Ev162

course of our own inquiry overlap in many areas with the questions raised by the consultation. We have conducted a detailed and comprehensive inquiry into the voluntary carbon offset market and we expect therefore the Government to take serious and active consideration of the conclusions and recommendations of this report in the further development of its code.

47. The consultation asks for interested parties to submit their views on a number of questions about the proposed code. The first of these concerns whether people think that the Government should publish a code at all, whether parties agree with the proposed aims of the code and whether the Government ought to consider making it mandatory. It then goes on to talk about the different types of credit available in the market. It sets out the arguments against using VERs, citing the lack of overarching internationally agreed project approval and verification procedures and the lack of an international registry for tracking and cancelling VERs as reasons for their exclusion from the code's standards. It follows with the arguments in favour of using mainly CERs and EUAs, and "less easily" ERUs as "appropriate credits to demonstrate best practice in offsetting".[58] These arguments include the fact that compliance market credits only allow for credits to be created after an emissions reduction has actually been made, that there are set standards for assessing and approving projects and an international registry for tracking credits and that they "better reflect the cost of carbon." The consultation then asks for views about whether parties agree that CERs, EUAs and ERUs are the most appropriate credits to use, but somewhat surprisingly does not specifically ask for views on whether VERs are at all appropriate or not. The consultation leans strongly in favour of CERs being the credit of choice in the proposed code.

48. The possibility of double-counting issues with EUAs is also raised. The consultation proposes that where an offset is already accounted for under one of the Kyoto mechanisms, that consumers are made aware that their 'emissions reduction' is more akin to a charitable donation that may or may not be additional. It asks for views of whether parties agree that this is the best way to deal with this issue.

49. The code proposes an accreditation quality mark. This would allow offset providers to advertise the "quality" of their offset to customers and "provide assurance that their service meets the government code."[59] DEFRA proposes that the quality mark would apply to the offset product, rather than the business supplying or buying the offset product. There is no invitation to submit views specifically on this question. An accreditation body is proposed to administer the code which will ensure that the quality mark is used correctly by an initial assessment and then by annual auditing. It raises the question for consultation of what evidence the offset provider should have to show to demonstrate compliance with the code, but does not offer any suggestions itself. The consultation also discusses the characteristics of an accreditation body which is says will be an "appropriate third party". This will have the characteristics of being independent, trusted, technically and commercially competent,

58 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers*, January 2007, p 16

59 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers*, January 2007, p 23

with the ability to provide a communicative and advisory role. No further organisational detail is professed.

50. The consultation proposes the introduction of a 'carbon calculator' a database of Government-agreed carbon emissions and factors for households, private road transport and aviation. Offset providers would have to use this database when calculating the effects of their activities order to comply with the code. Business emissions will remain outside the scope of this database. Offset providers selling credits to offset emissions from this sector would have to use the relevant emissions factors in the Government's guidelines for Company Reporting of Greenhouse Gas Emissions instead. The consultation asks whether parties agree with the database being the approved method of calculating emissions and whether there should be any guidance on how to calculate emissions from businesses. The Act on CO_2 Calculator has very recently been introduced by DEFRA but it is as yet too early to say whether the accuracy and fairness of its calculations for emissions has received critical approval. DEFRA has also pointed out that a final version of the Calculator will be launched at the end of the year following any useful feedback received. Moreover, the department also stated that the standardized set of emission factors and calculations for use within the Code of Practice for offsetting would probably be informed by the Act on CO_2 Calculator but would involve a separate process.[60]

51. The consultation invites views on whether the Code should apply to companies providing offsets as part of a package of goods and services, and whether companies which offer offsetting at the point of sale should be required to make it an opt-out rather than an opt-in choice—also referred to as a "compulsory choice option". It proposes that the quality mark should be for accredited offsetting products only and should not be used to label businesses that have offset their own emissions. It asks for views on this, and on whether any other conditions should apply to the use of the quality mark.

52. The consultation proposes that the code will require offset providers to provide six pieces of "necessary information" for consumers purchasing an offset. This includes: a clear and simple explanation of offsetting; information on climate change and the importance of reducing energy consumption; an explanation of the mechanisms which have been used to source the carbon credit; details of the projects supported; a statement of whether the credits come from the provider's portfolio or through a third party broker; and confirmation that the credits have been purchased and cancelled. Views on whether these six points are necessary, whether consumers should be allowed to choose the projects that they fund from an offset provider's portfolio and whether written confirmation of credit purchase and cancellation should be provided to all customers, or on request only, are invited.

53. The proposed code also sets out stipulations for providing pricing information to consumers at the point of sale. These include: the volume of emissions being offset; cost per credit being purchased; total cost of credits purchased; any charge for processing and administration; and total cost of offsetting service being purchased. It asks whether this

60 Defra press release, 20 June 2007.

breakdown of prices should be provided to consumers and whether it should be provided at the time of purchase or by request only.

54. Timescales for purchasing and cancelling carbon credits are also discussed. Offset providers will have to set up an account in the UK emission trading registry in which credits can be stored and cancelled and transactions recorded. It suggests that providers should have six months after a purchase by a consumer to buy the necessary amount of credits. When credits are purchased, the appropriate number of credits from their account must be cancelled within 48 hours and removed from the UK registry. Here, the consultation asks whether more guidance is needed on how the process of purchasing and cancelling credits works, and whether the timescale for purchasing and cancelling credits is appropriate. The consultation then ends with "housekeeping" questions about how the administration of the code might be financed, whether the code should be reviewed on a regular basis and if so, how frequently. It also asks for views on whether industry could have a role in promoting the code.

55. The consultation is accompanied by a partial regulatory impact assessment which explores the options which were considered when formulating the code. These options were: option 1, do nothing; option 2a, produce a voluntary code based on all credit types; option 2b, produce a mandatory code based on all credit types; option 3a, produce a voluntary code based on CERs, EUAs, and ERUs; and option 3b, produce a mandatory code, based on CERs, EUAs and ERUs. It examines the reasoning behind why the Government has produced the code as presented in the consultation and weighs up the different timescales, costs and benefits of all of the options. It examines the impact on the carbon market that all the options might have, looks at the potential business take-up of the code and effects that it might have on competition in the voluntary carbon offset market.

56. It concludes that option 3a is the preferred option and that a number of "significant players" would be willing to adopt the code's standards without the burden of it being mandatory. It argues that this option minimises the potential competition impacts of the other options and that it could encourage the market to develop a "robust system for the quality control, verification and tracking of VERs."[61]

61 Department for Environment, Food and Rural Affairs, *Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers*, January 2007, p 49

The compliance market: a benchmark for voluntary market credits?

57. The Government's consultation shows a clear distrust of VERs and a strong preference for CERs from the CDM as the credit of choice for consumers in the voluntary carbon offset market. Indeed if the code is produced as proposed in the consultation, then offset providers will only be able to hold the Government quality mark for their sale of compliance market credits. The Government is clearly worried the about robustness and accountability of some VERs and sees CERs as a way around these problems.

58. The compliance market is strong where the voluntary market is not in several areas: it guarantees that its resulting credits have emerged from a project which has met stringent criteria for approval; the emissions savings or reductions have been calculated in a transparent manner according to a specified methodology and are certified by a Designated Operational Entity (DOE) which gives a level of independence and reliability to the process; and credits which result from this market are officially registered and retired, thus reducing the risk of double-counting.

59. However, throughout our inquiry we received persuasive evidence that pushing the market for voluntary offset credits towards CERs as the benchmark credit might not be the best solution and that it might actually cause more problems than it solves. Our predecessor Committee's report, *The International Challenge of Climate Change: UK Leadership in the G8 and EU*, noted concerns with the CDM, particularly in relation to the slow rate of project approval, the kinds of projects being approved, and the lack of expertise and resources in less developed countries to partake in the CDM.[62] The '*2006 State of the CDM*' report by the International Emissions Trading Association (IETA) again brought to the fore these problems and in doing so highlights that they are still prevalent within the CDM.[63]

60. One problem raised in evidence to us and in the IETA report is the lack of technical expertise within the CDM administration to understand and deal with new technologies, particularly with the 'Meth Panel' who are responsible for developing methodologies to calculate emissions savings and reductions from new projects:

> IETA's membership frequently expresses concern that requests for clarification from the Meth Panel reflect a lack of technical competence relative to the technology and processes associated with proposed new methodologies. These questions contribute to unnecessary delays and the creation of a lack of confidence between the regulator and those that it seeks to regulate.[64]

62 The Environmental Audit Committee, Fourth Report of Session 2004-05 *The International Challenge of Climate Change: UK Leadership in the G8 and EU*, HC 105, para 70

63 International Emissions Trading Association, *2006 State of the CDM*

64 International Emissions Trading Association, *2006 State of the CDM,* p 13

On a very basic level the solution to fix this problem seems clear: the IETA report suggests that simply by encouraging more dialogue by telephone and email between the regulator and those being regulated many technical questions could be answered easily and some technical questions could be "disposed of entirely". It also recommends that the Meth Panel in developing new methodologies should be required to draw upon experts at each stage of the review process.[65] **The recommendations of the IETA Report on 2006 State of the CDM for resolving the issue of a lack of technical expertise in producing new methodologies for new technologies are clear and uncomplicated, yet would resolve an important problem. If the voluntary carbon offset market continues to grow at the rates predicted then the development of new methodologies for new technologies will become increasingly important as those projects considered to be 'low hanging fruit' are exhausted. We recommend that the Government press for immediate action to be taken to ensure that the Methodology Panel can draw upon the advice of experts quickly and easily and that regulators and those being regulated are encouraged to, and are given the means to, communicate in a direct and efficient manner.**

61. The lack of technical expertise also relates to and serves to exaggerate two other significant problems with the CDM, namely the timely development of new technology and uneven distribution of projects in some of the least developed countries. The IETA report recognises that only 2% of the total number of projects registered are based in Africa and less than 1% of CERs generated originate from Africa. It explains that the delay in small-scale methodologies for non-renewable biomass significantly reduces the opportunity for Africa to benefit from the CDM. The Co-operative Group also raised this point in its memorandum: it sees providing a methodology for non-renewable biomass as a "critical" concept for projects in the least developed countries.[66] It is estimated that 2.4 billion people rely on biomass as their primary energy source for cooking and heating. The demand on non-renewable biomass resources could be greatly improved by the use of biogas digesters and improved stoves: although under development, there are not currently any approved methodologies for projects which would support this. Such problems were further acknowledged by DEFRA officials in their oral evidence to us:

> We have done things like encouraging the smaller scale projects to be subject to more simplified methodologies but that has not been entirely a success, and we have looked at particular methodologies where there has been a problem about small-scale cooking stoves and proposing solutions for these […] We have made a proposal for particular project types which have not been accepted, it is true.[67]

62. **If Government is determined to encourage the voluntary carbon offset market to move towards the sole use of compliance market credits, then it is vital that this does not draw money away from the least developed regions such as Africa which currently benefit from the sale of VER credits, but which remain largely excluded from the compliance market, in part for methodological reasons. We recommend, therefore,**

65 International Emissions Trading Association, *2006 State of the CDM,* p 13

66 Ev90

67 Qq 423–424

that as a matter of urgency, the Government redoubles its efforts to address the proposals of the IETA report on the 2006 State of the CDM in relation to resolving the disproportionate regional and sectoral distribution of projects: it should help to identify the systematic or systemic barriers to equitable distribution of CDM project activities and promote more regular meetings between the Executive Board and designated national authorities of under-represented regions such as Africa. It should also make a priority its efforts to assist and influence the development of a simplified methodology for projects which support the switch from non-renewable to renewable biomass.

63. There are also wider problems with methodologies and processes within the CDM which apply to all and not just to those countries which are currently under-represented: one of these is the time that it takes for new methodologies to be approved. New projects and technologies can only create CER credits once a methodology for them has been developed and approved under the CDM. On this matter, the IETA report states:

> Unfortunately, the new methodology approval process is creating a serious bottleneck that is needlessly delaying or discouraging these new types of project activities. At present, approval of a new methodology can take two years or longer […] Continued delays of this magnitude will cause investors and developers to become disenchanted with the CDM process, and lead to quality projects, with significant sustainable development benefits to go undeveloped.[68]

Given that one of the stated aims of the CDM is to achieve sustainable development in developing countries, this is certainly a significant issue. By pushing the market for voluntary offsets towards CDM credits, the Government risk destroying the only opportunity that projects with other sustainable development benefits have to sell credits in the voluntary market. Furthermore, not only does it take a long time for such methodologies to be developed, but the flexibility to clarify or revise methodologies is also constricted and subject to delay. Again this causes considerable uncertainty and can cause a risk to project developers. We were encouraged by the work that Defra officials have done recently to improve this situation which they highlighted to us in their oral evidence.[69] This has included increases to the numbers of UNFCCC staff designing methodologies and more work undertaken to consolidate methodologies. This has been particularly important for small-scale renewable projects where 512 projects are now using the same methodology. **We applaud the recent work that DEFRA has done to reduce time delays and methodological problems broadly in the CDM. However, still more needs to be done particularly in regard to developing new methodologies. We recommend that the Government take further steps to address the issue of the delay in developing new methodologies by putting pressure on the CDM Executive Board to expand and streamline its methodology development and revision process to make it easier to define and produce methodologies for projects with sustainable development benefits.**

68 International Emissions Trading Association, *2006 State of the CDM,* p 17

69 Q 425

64. Another related issue highlighted to us was the heavy burden and administration costs, particularly for smaller-scale projects of obtaining CDM accreditation. Climate Care told us in their memorandum, that under the current rules of the CDM a modest project is often not viable in the CDM because of high transaction costs. Here, it highlighted the example of a South African low cost housing energy upgrade project which was only viable in the voluntary market where transaction and administration costs were lower.[70] On a positive note, DEFRA officials told us that registration is now free if a project is worth below 15,000 tonnes of carbon,[71] but we feel that this area is one in which much more can, and should, be done. **The strength of the voluntary carbon offset market is its ability to support a diversity of projects: including those that are small; those that bring additional sustainable development benefits; and those found in countries which are currently under-represented in compliance market projects. Despite seeming to have done some work to try to improve the situation here, DEFRA, in its memorandum and in the consultation, fails to explain or even acknowledge that there are problems with these types of projects in the CDM. We recommend that in further stages of developing the code these problems are addressed in an open and transparent manner and that the code is adapted in light of them. Primarily however, we recommend that DEFRA continues and expedites its work on further reform of the CDM in order to break down the barriers that prevent these important project types from succeeding. It should press for reform of the CDM in these areas at every available opportunity at an international level.**

65. A growing problem with the CDM is the uncertainty of its existence beyond 2012. Whilst many of our witnesses felt sure that the CDM would continue as part of any post 2012 framework agreement,[72] others felt that the lack of firm commitment caused problems which were solved only by the existence of the non-compliance offset market:

> The absence of a long term signal for commitments within the CDM has deterred investment and created substantial uncertainty for project developers. By providing reassurance of a market demand, the voluntary market can continue to stimulate project development past 2012.[73]

In their oral evidence to us DEFRA officials were optimistic that they thought that the CDM, would "definitely continue",[74] but at the same time they highlighted that this is not yet official and that widespread uncertainties in the international frameworks remain:

> Clearly, there are uncertainties about the period post-2012, and they relate not just to the CDM they relate to the whole international structure and to the EU Emissions Trade Scheme […][75]

70 Ev75

71 Q 425

72 Q389 LCCS

73 Ev75

74 Q248

75 Q247

66. **If the Government is serious about making CERs the credit of choice in the voluntary carbon offset market, then firm decisions about the future of the CDM need to made, and made quickly if further investment in the CDM is not to trail off as 2012 approaches. Consumers need reassurance that investments that they make in projects that take several years to produce the expected carbon savings or reductions will be guaranteed past 2012. The Government needs to expedite decision-making at an international level to resolve officially the issue of a post-2012 CDM.**

67. Another point of contention with the CDM, raised by the Energy Saving Trust, is with some of the types of the projects that the CDM supports.[76] In the CDM some of the approved projects and methodologies work towards reducing the carbon emissions from polluting companies. The Co-operative Group makes the point that many consumers in the voluntary market would not want to see their money going to the companies which are actually a cause of pollution.[77] The media has recently reported credits being sold from projects which eliminate the gas HFC-23, a by-product of a chemical used to make refrigerants. It has been suggested that some companies have actually started producing this gas deliberately in order to get money from the CDM which allows them to both destroy it and make a profit whilst doing this.[78] A report in the Guardian suggested that 53% of the existing CERs come from just six "monster projects", in India, China and South Korea, all of which engage in HFC-23 reduction.[79] Clearly such a situation is untenable and goes against the entire ethos of carbon trading. **We recommend that the Government push for reform of the CDM to ensure that profiteering from polluting behaviour becomes impossible. Consumers need to be confident that their money is being spent on projects which meet the highest ethical standards. Until this is achieved we recommend that the Government should require offset providers selling compliance market credits in the voluntary market to list the types of the projects from which their credits derive. This should be done as soon as is practicable and regardless of whether it decides to proceed with the proposed code.**

68. Another potential problem for private consumers being pushed into using compliance market credits arises from the EU Emissions Trading Scheme. The EU ETS was established to reduce emissions from EU countries. However, the EU ETS currently allows credits from the CDM to be used to meet part of its target. CDM credits, CERs, originate from projects all over the world, and so the reductions are not necessarily being made solely in the EU. As we have stressed in our report *The EU Emissions Trading Scheme: Lessons for the Future*[80] and as the RSPB explained in its memorandum, this has the effect of "inflating the EU cap—making the already weak targets even weaker."[81] The Co-operative Group

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77 Ev90

78 "Producers and traders reap credits windfall", *Financial Times*, 27 April 2007 and "British 'carbon swap' is£300m of Indian hot air", *The Sunday Times*, 22 April 2007

79 "Global warming: Truth about Kyoto: huge profits, little carbon saved", *The Guardian*, 2 June 2007 p 6

80 The Environmental Audit Committee, Second Report of Session 2006-07, *The EU Emissions Trading Scheme: Lessons for the Future,* HC 70 para 19

81 Ev4

explained further in their memorandum how this is detrimental to the voluntary offset market:

> […] using the EU ETS model will involve the transfer of money from individuals and households to the 12,000 or so industrial installations across Europe participating within the scheme. This would provide ample opportunity for the media to point out that, in effect, the well-intentioned charitable donations of UK working families were ending up in the coffers of big European companies who were selling pollution permits. Such developments would result in greater levels of cynicism over the benefits of offsetting and therefore significantly damage consumer confidence.[82]

69. **It is unacceptable that private consumers in the voluntary carbon offset market be put in the position where their money is effectively being spent to purchase permits for large installations to pollute. Until the EU ETS cap is tightened up and becomes more efficient and effective, it is vital that offset providers are required to provide a 'health warning' to consumers about what could happen to their money if they invest in compliance market credits. The Government should take steps actively to dissuade offset providers from providing EUAs to private consumers given that, as we have concluded in previous reports, EUAs from phase I of the EU ETS are as good as worthless in carbon terms, but yet continue to be retailed.**

70. The evidence we received revealed a difference of opinion about the precise effect that the voluntary market would have on the compliance market and vice versa. Some, such as the RSPB, thought that the voluntary market would have little impact on the compliance market and that eventually compliance market credits would dominate the market place as consumers, particularly businesses, sought to mitigate the reputational risk that buying a VER could bring in the absence of any formal standards.[83] The Energy Saving Trust told us that it thought the two markets could continue to co-exist, the compliance market supporting larger projects and the voluntary market supporting smaller projects with additional benefits.[84] Similarly, Energy for Sustainable Development told us that the voluntary market has an important role to play in enhancing and complementing the compliance market. It sees the role of the voluntary market as acting as a training and testing ground for projects before they enter the compliance market and that it plays a critical role in educating and engaging individuals in climate change.[85]

71. **Given the many unresolved problems with the compliance market, particularly surrounding methodological issues and uneven distribution of projects, we urge the Government to take swift action to resolve these problems regardless of whether or not it chooses to it introduce its code. The CDM remains significantly flawed and this needs to be addressed. We recommend strongly that the Government think again about its proposed code: of the options set out by the Government in its consultation it must**

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produce a voluntary code based on all credit types which will recognise the important role that the voluntary market has to play in counter-balancing the flaws of the compliance market.

Regulation and offset criteria

72. Our inquiry was announced before publication of the DEFRA consultation and our call for evidence as to the future regulation of the industry went wider than the consultation. While the responses often addressed whether the voluntary market could or should be regulated (and, if so, how), some responses focussed their attention on the specifics of the DEFRA consultation and the proposed DEFRA Code alone. It was clear from the tenor of such responses that the Department had tried to do what was widely perceived as the right thing – gentle intervention on the basis of a voluntary code was welcome – but that it was perceived to have gone about it the wrong way, principally in the proposed endorsement of CERs alone. However, there was no consensus on approaches to regulation.

73. Some of those involved in offsets felt that it was too early to regulate for what they considered to be an immature industry. Paul Monaghan of the Co-operative Group stressed the importance of the Government allowing the market to self-regulate—as happened with fair-traded and Forestry Stewardship Council goods— so that "the cream come[s] to the top": he also expressed the fear that early intervention by the Government might well be "counter-productive".[86] This view was echoed by other witnesses who told us that the industry was too young and too diverse to regulate successfully, although some suggested that gentle Government intervention may help mature and consolidate this emerging business.[87]

74. It was not just those whose scepticism concerning offsets verged on hostility who wanted more strict regulation of the voluntary offset market. The two major offset companies who gave oral evidence to us, Climate Care and The CarbonNeutral Company, both wanted regulation to drive the carbon cowboys out of the market and to lend confidence to what they realised was a maligned and misunderstood industry.[88] This was also very much the view of Cheyne Management Capital Ltd. and London Climate Change Services (LCCS) which saw the need for regulation to ensure the probity of companies with whom they might deal and the robustness and verifiability of those credits which they handled.[89]

75. The carbon offset market is a business where one company may retail forestry credits alone—or help establish forestry projects—while another might eschew forestry as of

86 Q125

87 Q270, for example.

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doubtful benefit (or profit); it is a place where one company happily sells credits for retirement which represent future (and thus unproven) reductions while another will retail for retirement only those credits which represent savings already made (and verified). Some companies adhere to CDM-approved methodologies for projects while others have vague proprietary standards which are not subject to any robust external audit. Some companies insist on the credits they retail (or projects they support or establish) having additional, sustainable development or environmental, benefits while others happily look no further than the direct GHG/carbon benefits, even if other benefits are not only lacking but the projects concerned possibly carry detriment to their local environment or society. In such a market there is a risk that mandatory regulation could either be so light and unspecific as to be ineffectual or so heavy and specific as to stifle innovation and retard growth.

76. It has also to be borne in mind that some of those who sell offsets have no connection with the projects from which they derive their credits. Other bodies are responsible for projects and sell on the credits which they produce to others who then retail them to their 'final' customer. Some companies of course do both, and many companies who retail credits to a final customer also have some involvement in the projects which generate the credits they sell. Regulation, to be meaningful, must cover not only the selling of credits for retirement but also the nature of the credits and the projects from which they are obtained.

77. DEFRA's proposed Code of Practice seeks to create a voluntary scheme for retailers of credits from CDM or CDM-related projects. Compliance with such a Code would also of course be open in a partial way to those who retail a mix of VERs and CERs. **Those who deal only with offsets from outside the compliance market would fall outside the DEFRA scheme. This would, we believe, leave unregulated those portions of the market where there is greatest innovation and greatest environmental or sustainable development benefit—and would also leave unregulated and unconstrained the activities of 'carbon cowboys' peddling flimsy VERs, the phenomenon most likely to destroy the credibility of all schemes, good or bad. This position is one with which almost no-one who gave evidence to us appeared happy.** While it is practically impossible to imagine some form of voluntary regulation that would not have had its opponents, and no doubt fierce opponents, the DEFRA proposal seems to have alienated both those who see in VERs the future of a burgeoning and beneficent market and those who see VERs as unreliable and uncertain. The former group will point out the uncertain benefits from many CERs which will be peddled under the DEFRA Code and will point to the equally robust carbon/GHG benefits of VERs and also stress the additional benefits from many VER schemes; while the latter group will see DEFRA doing nothing to remove the taint from offsets caused by the VER market being left unregulated.

Need for offsets to be robust

78. We believe, on the basis of the evidence to this inquiry, that, while the industry may indeed self-regulate itself in a robust and helpful way over the years ahead and common standards may emerge for credits and projects, it is important that greater confidence be encouraged in the voluntary offset market now. This will maximise the potential for

carbon abatement through the growth in the sale and retirement of offset credits. Climate science deals with considerable time periods, but the current assessments stress the need for quick action. If we are to encourage companies—and individuals—to offset their emissions then the voluntary market must quickly be given the sort of validation it needs to facilitate this. DEFRA needs to signal clearly what criteria it thinks any scheme needs to meet to be effective, rather than rely upon the CDM to do that job for it.

79. The CDM is developing—albeit slowly—and we have already noted some of the improvements which the Government is keen to see in terms of how it functions and in the range and scale of the projects it supports (and the pace and cost of its approvals process). The CDM will not, in a short space of time, be able to support an increasing number of small-scale projects in the poorer African countries, for example (that is, outside of where it is currently dominant, namely China and India). Were the CDM able to assure extra sustainable development benefits or at least assure no environmental detriment from projects, and prove itself more flexible, while still rigorous, in setting methodologies, then there might be a case for suggesting that over the next few years the expansion of the CDM would take in the best schemes in the voluntary offset market. If this were the likely scenario then the Government's current proposals would read more reasonably.

80. However, we do not find from the evidence that this is likely to be the case. Progress with reform of the CDM will inevitably take time, and many projects will inevitably be delayed as a consequence. Moreover, offsets, wider and more innovative, need to be encouraged now. DEFRA's proposed Code of Practice will encourage customers into the CDM market and away from the market for VERs. It is our belief that this will result overall in less carbon being offset. The Government needs to set out the effective criteria for its own approval so that projects outwith the CDM can also seek the DEFRA 'stamp of approval'. The specific and detailed criteria for inclusion within the CDM are very complex and it would be pointless to ask VER projects to comply with them in every dot and tittle. Rather, the Government needs to establish a range of criteria which projects and credits, and those who retail the credits, need to meet, analogous in a broad but robust way to the worthwhile elements of the CDM. These criteria should be within reach of small projects as well as large and should not be prohibitive for those wishing to set up offset projects in some of the poorest and most politically unstable developing countries in Africa.

81. Moreover, the Government ought to take seriously its duty to ensure whether or not the projects and credits it approves, whether within the CDM or without, at least carry no overall net environmental or sustainable development disbenefits, notwithstanding their GHG or carbon benefits. Preferably, it should seek to ensure that credits which will carry a DEFRA stamp of approval should also have additional benefits beyond those for the climate. The Government has ensured that the offsets it purchases, currently to cover its official flights but in the future no doubt also to cover its pledge to make its central government estate carbon neutral by 2010, come from the more expensive end of the CDM scale at which those extra benefits are guaranteed. It would be appropriate for the Government to encourage this approach through its Code of Practice and proposed quality mark.

Criteria and approval

82. The two issues that immediately arise from our recommendation that the Government establish criteria rather than simply adopt the CDM approval as grounds for its own quality mark are: (i) how to establish what criteria should be applied, and (ii) who should assess which projects or credits, from within or without the CDM, match these criteria.

83. In regard to the first of these two points, the VALID criteria set out by the Carbon Trust in their excellent guide, *The Carbon Trust three stage approach to developing a robust offsetting strategy,* from the evidence we received, now seem to be gaining broad acceptance across the market.[90] The VALID acronym stands for verification, additionality leakage, impermanence, and double counting, and broadly includes those criteria essential for those who seek assurance of the quality of particular credits or offset schemes. Broadly . these mean:

Verification: as the Carbon Trust says in its guide, "emission reductions [resulting from a project] should always be verified by an accredited independent third party according to an established standard or protocol".

Additionality: For CDM projects additionality is 'proved' by recourse to an 'additionality tool'. Projects outside the CDM sometimes also have voluntary recourse to this same tool or to other methodologies—all of which are trying to prove the same thing. Certainly, there is room for flexibility here—and for some play of fine judgement—in order reasonably to certify that, but for a particular project, the emissions savings or sequestration concerned would not anyway have happened.

Leakage: all projects may suffer from some leakage—that is to say that the GHG emission they mitigate or sequestrate may be displaced to somewhere outside the project boundaries so that the full benefit of the project is in broader terms at least in part reduced. Although this problem is usually associated with forestry or land-use projects (where, for example, illegal logging or clearance simply shifts to another area when one part of a forest is preserved and protected) is not exclusive to that type of offset project. Clearly, every attempt should be made to prevent leakage, and where that is not possible to minimise it and ensure that its extent is calibrated and subtracted from the project's benefits so that an accurate overall assessment of a project's final or net GHG benefit can be made.

Impermanence: This is an issue particularly connected with forests and land-use projects which are intended to sequester carbon in a permanent way. Credits which arise from forestry projects can only be considered to be of real value if the sequestered emissions they represent remain sequestered.

Double counting: simply put, this means that no credits ought to be sold twice to a final customer. Once they are sold to their final customer they must be permanently retired and therefore cannot be sold again.

90 The Carbon Trust, "The Carbon Trust three stage approach to developing a robust offsetting strategy", 17 November 2006.

The Carbon Trust suggests that a number of current VER standards meet these criteria—namely the Voluntary Gold Standard, the Climate Group's Voluntary Carbon Standard, the Plan Vivo Standard (which is exclusively for forest-based projects) and Climate, Community and Biodiversity standards. In other words, the Government's current proposal only to quality mark CERs would rule out projects and credits which the Carbon Trust believe meet these essential five criteria

84. Beyond this set of useful criteria there are in our view two other key criteria, which are critical to the acceptability of credits. The first is that credits are only sold for final retirement when the emissions reduction or sequestration they represent has taken place and has been verified as having taken place. This is the case within the CDM but is not always the case within the VER market, where credits representing future reduction are sometimes sold to their final customer. This of course is not always clear to the customer. It may also mean that a credit is retired which represents an emissions reduction which may not in the end—should the project fail, for example—ever take place at all. Although this problem is most often associated with forestry and land-use projects it is not unique to them. Any project maker can calculate the emissions from his project over, say, ten years and decide to sell them all before they have all eventuated, no matter what the nature of the project might be. It ought to be the aim of any quality mark to ensure that the final sale does not take place before the emissions reduction has occurred.

85. The second key criteria we would add to the five encouraged by the VALID scheme is that no project from which credits are to be retailed with the DEFRA quality mark should carry any overall net environmental or other sustainable development disbenefits, no matter what their climate benefits might be. Perhaps a second, higher, quality mark could be given for those projects which not only avoid related or additional disbenefits but which carry definite additional benefits, whether in terms of social development, biodiversity or economic good. These seven criteria in total should form the standard by which projects and their credits are judged to be acceptable, robust, worthwhile and valid, and should be applied rigorously but with enough creative flexibility, so that they do not simply reproduce criteria in the CDM, but rather provide a benchmark for projects from within the compliance and voluntary markets which should receive the DEFRA or Government seal of approval.

86. If these criteria are to be accepted as appropriate, **a trustworthy and independent regulatory body will be needed to decide or advise on the quality mark to be awarded to offset companies for their projects and credits. The body involved in assessing companies' projects and credits would need to be authoritative, independent, and well-resourced. The only just and equitable solution to the question of who should pay for such a body,** and one which both TCNC and Climate Care seemed to accept in evidence to us,[91] **is that industry pay out of its profits for its establishment and upkeep.** Mark Kenber of the Climate Group also felt that this was a sensible proposition which would ensure that the increased confidence within the offset market – both within the compliance and voluntary models—would lead to increased sales which would more than justify—and

91 Q113

cover the cost of—such an independent body.[92] **Appointments to the body would have to be within the remit of Government rather than the industry, and key NGOs may also have a role to play in participating in this function of oversight and approval.**

Land-use, Land-use Change and Forestry

87. One of the questions we raised in the press release announcing our inquiry concerned the coherence and certainty of the science underpinning assessments of carbon/GHG gains and losses and general climatic effects from reforestation or afforestation schemes. This question was inspired in part by an awareness of a general deepening of scientific understanding concerning non-carbon GHG emissions—principally methane—from forests but also by recent reports in the general and specialised media about the albedo effect which seemed to cast doubt on the climate benefit of at least some temperate forests. There have also been anxieties expressed about how accurate measurements of carbon stored by new forests can be for the purposes of guaranteeing robust offsets. Beyond the realm of this scientific debate, afforestation and reforestation schemes were often singled out for particular criticism by those unimpressed either by the theory or elements of the practice of carbon offsetting, on account of poor biodiversity or other environmental impacts, land ownership issues, the instability and impermanence of forests as a long-term 'sink' for carbon, and matters connected with the propriety of selling future credits from forest projects to meet current demand. Many of these issues were raised, at least peripherally, in many of the memoranda we received. Several of these issues predominated in memoranda from those involved in forestry projects or offsets, or from those whole-heartedly opposed to offsetting.[93]

88. Interestingly, land-use issues other than those connected with forestry were hardly mentioned at all, despite their continuing importance in terms of climate change. For example, the deterioration of peatlands across the world is currently a great cause for concern, since they store carbon that is now, because of their degradation, being released into the atmosphere: although peatlands cover only 3% of the world's land area they are the largest terrestrial store of biomass carbon. No doubt this lack of profile for non-forestry land-use issues is in part a function of the sort of offset projects currently in place or under preparation, and a function also of the prominence of forestry in international negotiations. It will be interesting to note if peatlands, many of which are currently under threat, see their profile rise and become beneficiaries of carbon finance and a source for offsets in the future.

89. Although the issue of the precise climate benefits of forests is complex and still the object of intense scientific and political debate, we felt that it was necessary to look at it in

92 Q273-7

93 For example, the memoranda from Sustainable Forestry Management (SFM) Ltd., Ev98-107; from Forest Carbon, Ev209-10, from FERN Ev57-61, and from Carbon Trade Watch, Ev185-9.

some detail and try to separate the facts from the propaganda in some of the claims made about forestry offsets. Land use issues (bundled up together under the unlovely acronym of LULUCF—land-use, land-use change and forestry) are for good reason currently a focus for international negotiations under the Kyoto Protocol and features prominently in talks about the successor to Kyoto's first phase from 2012 onwards. Many tropical countries are keen to increase the profile for forests in the next international climate change agreement, not least in order to benefit from carbon finance for avoided deforestation. Other countries are more sceptical about this approach: those countries which will benefit most from credits for avoided deforestation are likely to be those which have had poor records in that regard. The CDM has so far also not been flexible or effective in encouraging forestry projects. Sustainable Forestry Management (SFM) Ltd pointed out to us, "to date not a single wholly commercial CDM forestry project has been approved and those projects backed by multi-lateral institutions that have been approved represent less than 1% of all CDM carbon credits".[94] There is growing political pressure for the CDM to incorporate forestry more than it does at the moment. The UK Government is doing a considerable amount to help improve the way in which the CDM Executive Board works and the way in which the CDM operates,[95] and we expect that it will focus within this on the need better to integrate forestry projects into the CDM, and into whatever mechanisms obtain post-2012.[96] Unfortunately, the position of forestry as a point of controversy in international negotiations casts something of a shadow over its place in the voluntary carbon offset market.

Avoided deforestation

90. There is no dissent about the need to keep the forests we have. Recent figures from the Global Canopy Programme's report *Forests First in the Fight Against Climate Change* have highlighted the massive contribution to GHG emissions from deforestation. The GCP report shows how deforestation accounts for 18-25% of global carbon emissions; and how emissions for deforestation between 2008-2012 are expected to be greater than the total of aviation emissions from the invention of the flying machine until at least 2025.[97] Indonesia has very recently become the third biggest emitter of GHGs largely on account of deforestation there. Brazil is another country whose emissions are massively dominated by those produced by deforestation. The McKinsey Quarterly recently noted that in terms of abatement potential for GHGs by sector by 2030, forestry ranked highest: it went on to suggest that such abatement could be carried out by a balanced combination of forest conservation and new plantation.[98]

91. **Slowing and halting the current rate of deforestation is key to the struggle to avert climate change: continuing deforestation on current scales will not only make more**

94 Ev101, para 9

95 Q425

96 Qq437-8

97 Global Canopy Programme, "Forests First in the Fight against Climate Change", May 2007

98 The McKinsey Quarterly No 1 2007

difficult the work to move towards accepted targets but will also present the definite possibility that such targets will never be reached. Anything that can be done through the mechanisms of offsetting—in the voluntary or compliance markets—to preserve existing forests, so long as the projects or methods are robustly grounded in good science and good practice, and allowances or credits made available are properly audited, has to be encouraged.

Forestry projects in the voluntary market

92. While forestry's place in international efforts to avert climate change is becoming more and more prominent in climate change negotiations, the voluntary offset market is seeing something of a shift away from forestry projects towards renewable energy projects or other areas of carbon saving. Most major offset companies (many smaller companies still rely exclusively on forestry credits) now retail portfolios of credits of which frequently no more than 20% are drawn from forestry schemes. Additionally, many of those establishing projects or schemes relying on forestry now as a matter of course plant more than they need to to allow for losses or insure against under-performance.[99] If this trend continues, perversely, an increasing proportion of CERs in the future may represent forestry savings while a *decreasing* proportion of VERs might do so.

93. Undoubtedly there has been bad publicity—and bad practice—concerning a number of forestry based offset schemes or the way in which they were sold. The Advertising Standards Authority had cause in October 2006 to order the cessation of the offset claims made by the Scottish and Southern Energy Group (SSE) about its tree-planting schemes.[100] Much press coverage has also centred on the Coldplay-promoted project in Karnataka, India, where for various reasons the number of mango trees that should have been planted were not, and many of those that *were* planted died through lack of water.[101] Clearly, the message has got out that forestry projects are unreliable, while being supposedly inexpensive, superficially attractive to consumers, and thus a 'quick earner' for unscrupulous companies. Concerned individuals or commercial bodies interested in offsetting may as a result be seeking to avoid this sector of the market in favour of renewable energy or energy efficiency projects. Offset companies themselves, aware of this perception, and themselves anxious about other aspects of forestry projects (such as costs and permanence), may continue to develop more and more alternative, non-forestry, projects as a result.

94. Many of these suspicions raised about forestry projects are unfair. For example, the most recent uncertainties expressed in the general media about the merits of forests in mitigating climate change have been founded upon an imprecise understanding of the scientific studies into the balance of GHG and climatic impacts from temperate forests. None of the science for the relationship between forests and climate is simple, but the current state of research unequivocally indicates that, despite methane emissions, tropical

99 Q161

100 *The Carbon Neutral Myth*, Carbon Trade Watch, February 2007, chapter 3

101 Ev188-9, paras 15-19

forests store more GHGs than they emit. This is also the case for temperate forests, although the figures are less pronounced, partly on account of trees storing carbon more slowly in colder climes.

95. Recent studies for temperate forests have revealed that, due to what is known as the *albedo* effect, some forests in climes where there is otherwise ample snowfall end up storing more heat than the land around them and thus produce local warming.[102] In essence the issue is not one of the balance between methane emissions and carbon retention but of the reflectivity of light from snowfields as opposed to its non-reflectivity from forests. The greater the area of unforested zones where there is a high prevalence of snow cover the greater the amount of light and heat reflected: the greater the area forested in such zones the more heat is stored and climate change subtly encouraged. The afforestation or reforestation of land currently unforested and thus open to snow cover might have deleterious climatic effects, although no-one appears yet to be encouraging the deforestation of those northern temperate zones where snow abounds in order to encourage greater reflectivity and local cooling. While the overall effect is seen as marginal (and temperate forests in such colder areas evidently have other benign effects from which this possible, marginal impact should not detract), uncertainty has been thrown up in the minds of many of those who purchase or consider offsets since the extensive reporting of this scientific information began at the beginning of the year.

96. Other issues of uncertainty over the *exact* magnitude of the carbon or GHG benefits from forests (rather than their existence) are certainly more real than concerns over the *albedo* effect. Carbon credits need to represent definite amounts of carbon stored or saved in order to be the sort of commodity which companies and individuals will want to purchase, in which financial and other bodies will want to invest, and which will be acceptable within an international framework for meeting national GHG targets. Methodologies for measurements of carbon saved by or stored in forests are complex and there is clearly a lot of unease about how precise the calculation is of the number of credits produced by forestry schemes really is. Although there are CDM methodologies available which some voluntary schemes or projects can decide to follow, voluntary offset schemes often follow their own, proprietary methodologies: not all of these can be considered sufficiently robust to create and maintain the confidence that the voluntary offset market needs to prosper. In evidence to us, Mitch Feierstein of Cheyne Capital Management Ltd. said that at present his company did not invest in any forestry credits, but would consider so doing once it was convinced about the solidity of the methodologies and audit processes involved. Some of those connected with offsets do not seem to consider imprecision in the measurement of GHG savings from forestry (or other schemes) a problems since they believe that some people offset in the same way in which they give to charitable body – they are not concerned for precise measurement but for general benefit.[103]

102 For example, the research recently carried out by Govindasamy Bala of the Lawrence Livermore National Laboratory, which can be found in the 9-13 April online edition of the Proceedings of the National Academy of Sciences.

103 Qq144-5

97. While the absence of rigorous methodologies plays a part in anxieties about the validity of credits from trees and forestry offsets in general, there is perhaps greatest concern over the impermanence of forests. Clearly, a forest can only act as a carbon sink for as long as it exists. While the carbon locked in the tree may be preserved if the timber is felled and the wood used in buildings, furniture or other goods, and a successor tree may continue to store carbon, trees are often razed and then disposed of and their carbon released back into the atmosphere and no successor tree planted. This is particularly the case with tropical forests, although it is not a phenomenon exclusive to the tropics, nor within the tropics is it an issue only in countries with high profile forest loss, such as Brazil and Indonesia.

98. For some, the impermanence of such carbon sinks is an absolute bar to the acceptability of the offsets which they provide.[104] Those opposed in principle to offsets argue that it is unfeasible to prove, or assure, permanence without which carbon sinks are more dangerous than useful and their funding a waste of money. While marginal losses to forests by small-scale illegal logging, natural disasters, poor growth, and such may be able to be dealt with by insuring the forest, by planting more trees than needed for the offsets claimed, or by other means, the issue of assuring permanence over longer periods of time, especially in developing countries where the political climate can be volatile, is much more difficult.

99. Another problematic aspect of forestry or land-use offsets is connected to future value accounting or future reductions. In the CDM, offsets can only be sold to be retired when the carbon savings they represent have already taken place—in other words when their value is verified and their effect certified. In the voluntary market, for schemes and offsets that do not adhere to CDM methodologies or practices, offsets can be sold for retirement before the savings they represent have actually occurred. While such offsets may represent a minimum of current forestry offsets, and are certainly not characteristic of the way in which VERs are used, it is an important issue. A company which quantifies the carbon savings, say, over ten years from a newly planted forest and then retails such credits for retirement, receives often the full value for something that has not yet happened and allows present emissions to be "offset" by a future saving that in fact may not eventuate. Even if all future emissions thus sold and retired did eventuate, it would still represent a problem for the way in which such offsetting works—because the timescale for mitigation is thus stretched out dangerously. There has to be clarity here. In relation to forestry offset projects, **it is essential that no credits should be retired which do not represent carbon savings already made. Credits should all be vintage marked and while future credits may be sold on to others they should not be retired until that vintage date is reached.**

The importance of forestry offset projects to the climate

100. Without any pressing need urgently to deal with the imminent risk of major climate change these difficulties with forestry offsets might be more persuasive, and an effective counsel for caution. Unfortunately, as two of our witnesses in particular made clear, so urgent is the need to act in whatever way possible to preserve forests, soak up more carbon,

104 Ev18-19, paras 6-15 (evidence from The Corner House)

and fund and invest in the longevity of new and existing forests, that ensuring support for planting of sustainable forestry and the preservation of existing forests is more persuasive. [105] The Stern Report was very particular about the importance of forestry and land use to the climate debate and to climate change mitigation.[106] Forestry schemes must be intended to provide offsets are properly sustainable, do not over-ride the claims of those local to them, are properly measured and audited. Beyond that, forestry schemes may also provide many other benefits to local communities above and beyond the global carbon benefit they provide. All possible attempts must be made to ensure the longevity and/or permanence of forests. Benign, well thought-out and effective forestry schemes are not an inexpensive source of offsets: the sort of monoculture, plantation style schemes which often rode roughshod over local claims to land or ecosystem services, and which often underperformed significantly or failed to last, are hopefully a thing of the past.

101. It has to be admitted that the very large-scale forestry schemes which will make most difference in the fight to avert climate change require significant amounts of funding and political support. It has also to be admitted that at the moment neither of these things appears to be widely available. However, inside the CDM and outside it there are signs of progress towards the realisation that a great deal can be done quickly to ensure that contributions to climate change from changes in forest cover can be minimised, and that some progress can be made in reversing the recent trend in deforestation. International agreements need to be sought quickly, either within the UNFCC framework or elsewhere, to guarantee countries' co-operation and progressive activity in this area.

Aviation

102. We asked for evidence on whether or not offsetting should become compulsory for some of the more carbon-intensive activities, such as flying. Although there is an absence of analytical data in this area, anecdotal and other evidence points to air travel being a principal area in which individuals in particular are more likely to want to offset. As one of the most carbon intensive activities in which a member of the general public is likely to engage, it is something on which the carbon offset industry focuses both on its websites and in its literature. Indeed, several companies exist to offset flights and flights alone.

103. As several of our previous Reports have emphasised,[107] aviation's peculiar contribution to carbon emissions and to climate change represents a key target in any strategy to tackle the problem of global warming. International emissions from aviation are still rising at an alarming level, and between 2000 and 2005 carbon emissions from UK

105 Q243-4 (RSPB) and Q146 (SFM Ltd)

106 *The Stern Review on the Economics of Climate Change*, Part VI, Chapter 25

107 See, for example, EAC's Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport*, HC 981; and also EAC's Ninth Report of Session 2002-03, *Budget 2003 and Aviation*, HC 672

aviation alone (domestic flights and international departures) rose by 16%. [108] Even under the Department for Transport's "best case" projections (with which we have taken serious issue in the past), aviation will grow from around 5% of the UK's carbon emissions today to 24% in 2050.[109] Under other projections, aviation emissions will consume all of the carbon permissible by 2050 if there is a 60% target in place for that date as the current draft Climate Change Bill before Parliament proposes. Any way in which the use of offsets for air travel could contribute to mitigating the problem of climate change would be well worth encouraging.

104. There was no clear consensus in the written evidence we received on the question of making offsetting mandatory for aviation and other carbon intensive activities. Some considered the question to be largely irrelevant. Some evidently believed that offsets were an inappropriate and possibly counter-productive way of dealing with a phenomenon that needs to be directly reduced.[110] The more desirable advice in their view was to travel by air less often.[111] Some pointed out that with aviation due to be included in the EU ETS from 2011 (that now being the earliest possible date for inclusion) it may not be equitable to require offsets from an industry (or its customers) the emissions from which are shortly to be covered by a comprehensive cap and trade system. Others favoured considering, encouraging or mandating offsets for air travel.[112] The Energy Saving Trust for example conceded with some reluctance that "there may be a specific role for offsetting to play in the case of aviation".[113]

105. DEFRA, in its consultation, did not single out aviation, but had two significant suggestions for how some businesses, such as the airline and travel industries, might wish to participate more fully in the Government's plans for offsets: by offering carbon offsets at the point of sale as a 'compulsory choice' (that is, something that will automatically be added to the purchase of an air ticket unless the consumer explicitly asks otherwise), or by making the default option for the price of the ticket inclusive of an appropriate offset—both suggestions conceived as means of encouraging the take-up of offsets.[114]

106. The key to encouraging take-up is to stress that action is needed now regardless of whether or not the aviation industry is able to deliver carbon reductions on a greater scale over the medium to long term. Mr Lawrence Hunt, CEO of Silverjet, set out this timescale clearly in his evidence to us.

> "I think long term we need better technology and that is 20 to 30 years, and that is fuel technology, it is aircraft engine technology, it is composite technology…[that] is

108 Environmental Audit Committee , Fourth Report of Session 2006-07, *Pre-Budget 2006 and the Stern Review*, HC227, para 63

109 Environmental Audit Committee, Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport*, HC981, para 116

110 see, for example, Ev5 (RSPB memorandum)

111 see, for example, Ev227 (WDM memorandum)

112 see, for example, Ev73-4, p19, answer to Q2 (Climate Care memorandum

113 see, for example, Ev2, Para 11 (EST memorandum)

114 DEFRA Consultation, p19, Q10

> the long term solution but we cannot sit around and wait for that. Then we have the Emissions Trading Scheme and we are promised the date of 2012… and that is clearly a good interim solution, but, until such time as that happens, then I think the airline sector needs to address the short-term issue and the only way to address that is with offsets."[115]

No-one can be certain about the rate of technological and 'procedural' improvements (the better management of flight, holding and descent paths, for example) or the speed of impact on emissions brought about by the EU ETS. In our view, as much as possible has to be done before these occur to address the continued accumulation of atmospheric carbon caused by aviation. We accept that the highest priority needs to be reducing emissions directly, but where this is not possible or is improbable—and transport is a notoriously intransigent sector in this regard, and aviation is perhaps the most truculent mode within it—then some compensation for or offsetting of emissions needs urgently to be undertaken.

107. We have often had cause to criticise the Government for not acting with sufficient urgency or for not taking effective enough measures to deal with the problem of aviation emissions. The Government developed the Government Carbon Offsetting Fund (GCOF) in order to deal with its own aviation emissions, in line with the UK Sustainable Development Strategy launched in March 2005. This Fund, which covers all Government departments with the exception of the FCO (which has its own, older, scheme in the form of REEEP[116]), will offset all official flights between April 2006 and April 2009. The Government's recognition of the importance of offsetting to compensate for its travel emissions is to be welcomed. No doubt this endeavour will continue beyond 2009 when the Government is likely to extend its offsetting activity to help render the central government estate carbon neutral as set out in its announcement of June 2006.[117]

108. The airline industry was invited, alongside others, prior to the public announcement of the DEFRA consultation on offsetting, to indicate its support for the proposed Code and to suggest the involvement of the industry in supporting publicity for the proposals.[118] Whole-hearted co-operation between the airline and travel industries and the Government over promoting the take-up of offsets may have had a significant impact on the growth of the voluntary market over the next few years.

109. Unfortunately, the Chancellor's proposed increase in Air Passenger Duty (APD) announced in the 2006 Pre-Budget Report, which appears to have surprised DEFRA and OCC officials as much as it startled the airline industry,[119] led to most of the industry pulling away from even contemplating co-operation with the proposed DEFRA Code: it is

115 Q186-7

116 Curiously, as we have reported in our Fifth Report of this Session, *Trade, Development and Environment: the role of the FCO*, HC 289, overseas posts' travel has to be offset *voluntarily* by each post and is not covered by the general FCO scheme

117 June 2006 announcement on the Sustainable Operations on the Government Estate (SOGE)

118 Q214 and Q320

119 Q245 and Q324-6

only fair to add that some airlines explicitly stated to us that they may not anyway have wished to support the DEFRA Code because of its exclusion of VERs. While we have some reason to be sceptical of the likelihood of the airline industry enthusiastically promoting a product that highlights its own poor environmental impact, there is clearly increasing demand from passengers—and possibly from airline staff[120]—for offsetting or other environmental initiatives.

110. We welcomed the increase in APD announced in the 2006 PBR, which we felt did not go far enough.[121] Obviously the coverage of APD is only partial—air freight lying outside the APD regime—and it is clearly a blunt instrument. We are pleased to see that the Government has recently issued a consultation on the application of APD in order to mitigate some of its perverse effects,[122] but we hope that the outcome does not lessen the already marginal impact of the measure. One possible benefit of the consultation would, however, be to re-establish co-operation between the industry and the Government and perhaps to marshal the industry's support for whatever improved proposal on offsetting follows on from what has clearly been a flawed consultation, in terms of the process and the proposed Code.

Airlines' diverse approach to offsetting

111. We decided to take oral evidence from a number of airlines, despite not having received any written submissions from them. The airline industry taken as a body has no corporate view on offsetting and we therefore considered it important to speak to companies who handle offsets differently, or not all, as well as some of the key players in the market. We thus took oral evidence from British Airways, which directs those wishing to purchase offsets to a BA page on the Climate Care web-site; from Virgin Atlantic, which currently does not offer an offsetting service but which plans some initiative in this area later in the year; and from Silverjet, which claims to be the world's first carbon neutral international airline, and which matches its aviation-related emissions with offsets delivered by The CarbonNeutral Company (TCNC).

112. The three airlines were still not disposed to consider whole-hearted co-operation with the Government over offsetting on account of the unexpected increase in APD. As the current use of offsets by all three companies varies, there was also clearly a lack of consensus on the value of offsetting with regard to air travel which may anyway have obstructed such corporate cooperation. British Airways launched its offsetting initiative which it conducts with Climate Care with some fanfare in 2005 but the profile of the scheme since has been, to put it kindly, almost non-existent. In a previous Report we drew critical attention to the very poor uptake of offsets for BA flights which seemed to reveal a certain reluctance to advertise an activity that only focussed attention on the fact that air

120 Q199

121 Fourth Report of Session 2006-07, *Pre-Budget 2006 and the Stern Review*, HC 227, para 68

122 HMR&C, Air Passenger Duty: Consultation on the Definition of Class of Travel, 1 May 2007

travel was damaging to the environment.[123] Anecdotal evidence has revealed a widespread ignorance of the scheme amongst BA staff.[124] The British Airways web-site for a long time revealed the continuing low profile accorded to offsetting.[125] Mr Alan Buchanan, Company Secretary, and Mr Andy Kershaw, Climate Change Manager, British Airways, did however both stress the work being done to make air travel more environmentally benign, whether through encouraging technological improvements (lighter air-frames and more efficient engines, for example) or advocating procedural adaptations, such as reducing holding times.[126]

113. Since its offsetting scheme with Climate Care was launched in 2005, British Airways has encouraged the purchase of only 1,600 tonnes of offsets on average each year, approximately the emissions from "four return flights to New York on a 777".[127] This is risible. The company clearly recognises this, and during our evidence session announced its intention to improve the prominence and accessibility of offsetting on its website from the beginning of May. At the time of our agreeing this Report, this simple change had not yet been made.

114. Virgin Atlantic currently offers no offsets of its own to its customers, nor does it point them towards an offset provider or allow them to calculate the emissions for their flight. In evidence to us, Barry Humphries, Director of External Affairs and Route Development, Virgin Atlantic, concentrated on the future impacts of the EU ETS and on the other ways in which its airline was helping to mitigate emissions. The various environmental initiatives initiated by Sir Richard Branson were outlined, such as the towing of aircraft at airports and allowing continuous descent.[128] Mr Humphries did however allude to Virgin Atlantic's intention to launch an offsetting initiative later in the year,[129] since offsetting "ticks all the right boxes".[130] We look forward to the launch of this initiative and hope that it is pursued with greater vigour than was the case with BA's pioneering launch of its own offset initiative a couple of years ago.

115. The position taken by Mr Hunt of Silverjet was at some remove from those of his bigger rivals. The decision taken to make Silverjet carbon-neutral through the purchase and retirement of offsets was put forward as the most direct and appropriate response by an airline to the environmental damage with which it was associated. He believed that "the airline industry, frankly, has been pathetic in its response to [its environmental impact] over the last four or five years."[131] The responsibility to offset was thus removed from the

123 Environmental Audit Committee, Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport,* HC981, para 138

124 Q309

125 Offsetting was not advertised on the BA UK home-page, nor could it be easily found except by entering it into the web-site's search engine: Q299-300. Shortly before this report was agreed, the otherwise obscure BA link to Climate Care's BA offset page was moved to the BA UK home page.

126 Q314-5

127 Q301

128 Q210

129 Q184

130 Q199

131 Q183

customer and borne by the airline. Silverjet is to be congratulated for its stance towards its own emissions, although the scale of its operations makes such integral offsetting more practicable than is the case for its larger competitors. It was not clear, however, which of its non-aircraft related emissions were offset. Silverjet could make more clear in its literature the exact nature of its carbon neutrality. It also needs to do as much as it can, offsets notwithstanding, to improve its carbon efficiency. It has nothing to lose by this as it is clearly pioneering a more environmentally sound and speedier response to aviation's harmful climate impacts than other airlines.

The EU ETS and offsets

116. Even if air travel enters the EU ETS in a limited form in 2011 (to include CO_2 emissions from all intra-EU flights) the pressure on airlines to reduce their emissions will in two respects be diluted. In all probability, the impact of the first cap proposed for aviation emissions, set at the average level of emissions for years 2004-2006, will be countered in first instance by the allocations being in their vast bulk issued for free rather than auctioned (even if the airlines accept the cap, which seems unlikely), thus permitting the airline industry to benefit from the sort of windfall profits seen in the energy industry earlier in the Scheme, as airlines pass the costs of compliance (which may anyway be negligible) onto their customers. Secondly, airlines will be able to match their emissions, whatever the cap, with spare EUAs from other participating industries: while Phase II of the EU ETS will no doubt be more stringent than the lax initial phase, the number of available allowances is unlikely to be low enough to make their cost prohibitive. The nature of Phase III of the scheme which will follow from 2012 and which it is planned will include aviation more fully (all flights departing or arriving at EU airports) is of course still under consideration.

117. Although there are a number of initiatives underway which may well lead to *per capita* rather than absolute reductions in emissions from aviation, the timescale for these is fairly lengthy and in the more immediate future most commentators and the Government agree that the upwards projection for air travel and its emissions is still steep. Although the airlines' own figures for sales since the price of tickets rose on account of increased APD are not yet in, it is extremely unlikely that the Government's increase in APD announced in December 2006 will have any real effect on this trajectory, and even an unprecedented upsurge in offsetting, while very welcome, will only flatten a little the real impact of the curve's ascent. Again we stress to the Government that it needs to do more than tinker with the blunt instrument of APD and place unrealistic hopes in the timely impact of aviation's entry into the EU ETS to level off the airline industry's emissions trajectory. While we commend the Government's attempts to bring the airline industry together in a more co-operative and active way, and to encourage their giving greater prominence to offsetting, there is clearly an urgent need for the Government to re-think its entire aviation strategy, notwithstanding its apparent belief in the over-riding social and economic merits of ever-expanding air travel.

118. We were a little dismayed during the evidence sessions, both with Virgin Atlantic and Silverjet and with British Airways, that the difference in effect between offsets and carbon

trading seemed less than clear to the airlines. Clearly, there is a connection between the two, given the capacity for the use of a variable proportion carbon credits from CDM projects to help match emissions totals under the EU ETS. As some doubts had been raised in memoranda to us as to whether it would be appropriate to continue to mandate (if that became the case in the interim) or even encourage offsetting for flights once aviation entered the EU ETS, since such may involve elements of double-counting or issues of non-additionality, we put these points to the airlines, adding a question concerning the airlines' own perception as to how customers would react to the expectation to offset for flights when aviation was also covered by emissions trading. Mr Lawrence Hunt of Silverjet appeared to believe that the advent of the EU ETS would make all participating airlines carbon neutral, and so he would presumably bring to an end the current scheme his airline runs with The Carbon Neutral Company to provide offsets for its current activities.[132] British Airways has also stated that carbon offsetting is "a close relative of carbon trading and in many cases amounts to the same thing"[133] and Mr Alan Buchanan told us in evidence that the EU ETS will, if the cap is set at a sufficiently strict level, "mean that the cost of the emission offset is included in the fares". [134] Mr Humphreys told us that if "the ETS… works efficiently, then that should cover all of the airlines' emissions".[135]

119. These statements appear to represent a misunderstanding of the nature of the EU ETS. While a carbon offset is intended to represent the compensatory saving of an amount of carbon dioxide equal to that released into the atmosphere by a particular activity, the EU ETS will set limits for carbon emissions against BAU forecasts which are expected to encourage airlines to emit less than the limit set or to purchase allowances or credits to cover any excess emissions beyond that limit. Some of the allowances or credits purchased will be excess EUAs (allowances representing emissions below the allowable limit) sold on by other bodies in industries covered by the EU ETS which do not need them (as their emissions have reduced below the limit set for them) or may be CERs from CDM schemes. The overall effect will not be to ensure that all aviation emissions are offset but rather that they do not rise beyond the limits set (one way or another) and are effectively offset if and when they do. For example, if on entering the EU ETS Silverjet were to abandon its current scheme for carbon neutrality then while its absolute emissions might not be able to increase as expected, and may over time be encouraged to fall, none of the emissions permitted within the level or cap set will be offset and thus Silverjet will become a net contributor to global emissions having until then been a carbon neutral presence. An airline which decides to offset all of its emissions is arguably doing more to tackle the problem of climate change—at least in the short-term—than an airline which under the EU ETS meets the cap. The EU ETS may over the medium term flatten the trajectory of rise of aviation emissions, and may even, in the long term, cause the trajectory to level out or dip: but at the moment those emissions below the cap will not be offset or compensated for unless airlines or passengers choose to do so voluntarily.

132 Q259-60

133 Ev147, para 18

134 Q337

135 Q258

120. Both British Airways and Virgin Atlantic were optimistic that aviation would indeed enter the EU ETS in 2011, and would be happy with earlier incorporation if it were possible.[136] As we have explored in our recent report on the EU ETS,[137] we are not entirely convinced that the UK airline industry's conversion to the EU ETS was founded upon its expectation of tough limits shortly after entry, and, **although we have some concerns about the timeliness and actual impact of the EU ETS on aviation emissions, we consider it essential that the EU ETS should be structured in such a way as to bring about an early decrease in emissions from air travel, and to enforce a continuing trajectory towards a substantial cut in emissions.**

Mandating offsets for flights

121. In this particular context, some mitigation of the effects of the current trends in emissions from air travel could be achieved were offsets to be mandatory for all airline tickets bought in the UK, or for all flights commencing in the UK, or for all UK airline tickets bought. We recommended in our recent Report on transport emissions that the Government should make offsetting payments a compulsory charge on all airline tickets.[138] The Government's response stressed the awareness-raising effect of offsetting, despite the fact that it clearly offsets its own aviation emissions in the belief that it truly compensates for the damage otherwise caused to the environment.[139] The Government must have the courage of its own convictions to recommend its own course of action as one that must be adopted by others responsible for air travel. **Although offsetting alone will have only a minor impact at best on increases in global emissions as a result of air travel, the action of offsetting air travel may encourage better carbon behaviour overall.**

122. Of course there are possible practical difficulties with mandating the purchase of an offset with each air ticket. Some commercial bodies offset in advance (or in retrospect) their total emissions, for travel or for all their activities, and thus in principle might be forced to offset twice. The Government itself falls into this category, of having its own comprehensive and multi-departmental offsetting scheme for air travel: and other public or charitable bodies do likewise. A small if increasing number of individuals also take care to offset their carbon footprint annually or otherwise outside of the act of purchasing an airline ticket. For that reason **we support the Government's proposals to require all those selling air tickets within the UK to include in the price offered the cost of an offset, and to retail that offset along with the ticket unless the customer requests otherwise.**

136 Q256-7 and Q327

137 EAC, Second Report of Session 2006-07, *The EU Emissions Trading Scheme: Lessons for the future*, HC 70

138 Environmental Audit Committee, Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport,* HC981, para 137

139 Currently unprinted, but available on the EAC website at http://www.parliament.uk/parliamentary_committees/environmental_audit_committee/eac_EU_ETS_Gov_response.cfm

Variation in offset price and radiative forcing

123. Aviation is an area in which there is great variance in the price of offsets which. While some variations in price are not only to be expected but to be encouraged, since there is a great variety of schemes from which offsets spring and differing schemes inevitably have differing costs, a major cause of the variation is differing calculations of carbon emissions from flights of equal length. These variations cast doubt in the eyes of many considering offsets on the rigour of the calculations used to measure offsets and the validity of the array of figures quoted.

124. The airlines cite, amongst other things, different routes, different engines and different load factors to account for the variations given for carbon released into the atmosphere from journeys of similar or identical length by different airlines and/or calculated by different offsetting companies or other online carbon calculators. Recent research has highlighted the significant number of relevant factors: flight distance, occupancy efficiency, type of plane/engine, class of seat (since business seats are more spaced out they have more carbon impact per seat than economy seats), inclusion of a radiative forcing factor, and the simplicity of the calculator used (ease of use as opposed to accuracy). Research has also revealed that for identical journeys, calculations of carbon released often differ considerably and the costs of an offset to cover the carbon released differ even more. A paper released in December 2006 from the Tufts Climate Initiative sets out neatly how for a return flight from Boston to Washington DC there were variances between calculations even in flight distance of up to 10%. Calculations of emissions from the return flight varied from 0.19 to 0.44 tons; and the cost of the appropriate offset was cited from a low of $1.31 to a high of $18.40.[140] Recent European research published in the Journal of Sustainable Tourism has confirmed these variations: the amount of CO_2 emissions calculated for a flight from Amsterdam to Barcelona by various offset companies varies "by at least a factor of 3 between companies". The costs of offsetting 1 tonne of CO_2-e vary by a factor of 15, and thus the cost of an offset for the flight concerned can be as low as €1.92 or as high as €20.33.[141]

125. There is a need for an authoritative evaluation so that the average consumer, whether individual or commercial body, can assess the robustness of the various avenues for offsetting available. **We welcome the launch of DEFRA's Act on CO_2 Calculator and hope that the data, methodologies and assumptions upon which it is based prove acceptable to the airlines. We also note that DEFRA is content for its work to be used by companies in their own proprietary calculators, and we welcome the effect this may have in helping standardize the currently too great range of calculations for carbon emissions from flights. We also hope that where airlines do not themselves offer a carbon calculator they will be happy to refer customers to the Act on CO_2 Calculator.**

140 Tufts Climate Initiative, Voluntary Offsets for Air Travel Carbon Emissions, December 2006,http://www.tufts.edu/tie/tci/pdf/TCI_Carbon_Offsets_Paper_Jan07.pdf

141 Journal of Sustainable Tourism, May 2007, *Voluntary carbon offsetting schemes for aviation: efficiency, credibility and sustainable tourism*

126. While it ought to be fairly straightforward for DEFRA to provide some sensible average for CO_2 emissions for a given length of flight, the issue of radiative forcing has the capacity to make aviation offsets more complicated and variable still. As we stated above, one of the reasons for differing calculations for aviation offsets—in terms of carbon effect and thus in terms of cost—was down to whether or not an RF factor was used: even if an RF factor was used the size of the factor also varied considerably, from just over 1 to almost 4. The original IPCC RF factor was set at 2.7 but consensus until lately was concentrating on 1.9 following research under the TRADEOFF project. The Treasury and the DfT, amongst others, have themselves over time used different factors in their own calculations, of 2.5 and 2, the later being used in calculations for the GCOF.[142] There is still no scientific consensus on the factor, its size or temporal impact, and recent research indeed points towards its likely inappropriateness for the calculation of climate effects above and beyond those delivered by carbon. This research, which has in effect been accepted by the Tyndall Centre for Climate Change, but on which a broader critical consensus has yet clearly to emerge, argues that non-CO_2 multipliers based on a radiative forcing index are a misapplication of science as they fail to account for the resident timescale of emissions. British Airways brought this research to our attention during oral evidence and robustly stated its dissatisfaction with any automatic expectation for offsets (or emissions trading) to take formal account of radiative forcing: rather, appropriate calculations should be based purely on CO_2 emissions. The European Commission has itself recently decided that the EU ETS is not an appropriate mechanism for taking account of the effects of RF; and it may be the case that over the next few months fewer and fewer offset companies or schemes use an RF multiplier of any sort and thus some slight parameters may appear around the range of offset cost for flights.

127. We believe there is clearly a need for new research until some appropriate successor system to the current use of the Radiative Forcing Index is identified and agreed upon. The European Commission is engaged in drawing up an instrument that will take account of aviation's non-CO_2 effects, and we support this approach whole-heartedly. Given the complexities of climate change science, and the number of often conflicting climatic factors for which aviation is responsible, it may well be the case that no consensus emerges, or that there is insufficient basis in science to conclude that aviation's impacts extend significantly beyond its CO_2 impacts. Nonetheless, the pure CO_2 effects of aviation are sufficiently challenging to make the climatic effects over and above that more grave still if they exist, and actions to reduce carbon impacts will clearly likewise mitigate other impacts should there be any. As the current use of RF factors for offsets may be a source of confusion in the marketplace, and as we agree that lack of agreement on a definite figure makes the inclusion of such factors in the RF mortally problematic, there is nevertheless a clear need for those who purchase flights to understand that aviation's climate impact is not down to carbon alone—and that even the most robust and accurate carbon offset will not compensate fully for the climate effects of a flight. **We are pleased to see that DEFRA's assumptions for aviation emissions on its Act on CO2 web-site, while making no direct**

142 Environmental Audit Committee, Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport*, HC981, para 139

allowance for radiative forcing, do explicitly deal with the issue, and that there are clear statements in its Frequently Asked Questions section and in relevant Action Plans that the effects of aviation on climate are greater than its carbon impacts alone. It is also good to see that the web-site refers to the Government's use of a radiative forcing factor in its own calculations. We hope that such statements appear even more explicitly in whatever calculator is agreed later in the year for use with the DEFRA Code of Practice for offsetting.

Conclusions and recommendations

1. One of the clearest messages we received in our evidence was that there is a lack of general understanding about the voluntary carbon offset market. We hope therefore that this report, in bringing together the background, context and issues in the voluntary carbon offset market, will serve beyond its primary purpose as a report to Parliament to which the Government needs to respond and will help to assist and promote understanding and debate in this area. (Paragraph 4)

2. We support the view that it is primarily individuals who have to take steps to avoid and then reduce their own carbon emissions. In parallel to this, however, we believe that the voluntary carbon offset market does have a role to play both in reducing carbon emissions and raising awareness of climate change issues to the general public. Moreover it can provide a much-needed source of funding for the development of low carbon technologies and innovations in developing countries. (Paragraph 23)

3. There are many divergent and often loud opinions about the role of the voluntary offset market. Both individuals and businesses are very likely to be confused by the mixed messages available. They need clear guidance about the extent to which offsetting can help meet their responsibilities to reduce carbon emissions. We recommend strongly that the Government grasps the opportunity to show leadership here. It must set out its own view on the role that the voluntary offset market can play in reducing emissions and why offsetting is a positive thing. The view should be unambiguous, well-publicised and prominent in all Government communications concerning offsetting and climate change. (Paragraph 24)

4. If the voluntary offset market is going to fulfil its potential as part of the drive to reduce carbon emissions and raise awareness about climate change then there needs to be a considerable increase in the numbers of individuals choosing to participate. (Paragraph 25)

5. We urge the Government to explore measures which would incentivise businesses to encourage their individual customers to offset. We recommend that Government make it compulsory, for more carbon-intensive activities, for associated businesses to offer offset services either themselves or through a provider. In connection with this

it should be mandatory for individuals to be given a compulsory-choice option for offsetting when procuring such goods and services. (Paragraph 25)

6. There is clearly a need for more research to be done in understanding what exactly encourages people to reduce their emissions; on the extent to which the practice of offsetting has an effect on such behaviour; and on how much it can play a role in educating people about climate change (Paragraph 28)

7. We recommend that the Government commission independent research to evaluate and understand the behaviour of individual consumers in the voluntary offset market and publish it as soon as possible. (Paragraph 28)

8. The biggest-spending consumers in the voluntary offset market are businesses. As with individuals, the motivation for offsetting varies: some companies argue that they recognise the threat of climate change and try to act responsibly; but also some of the motivations for offsetting here will be strategic—they might be to meet Corporate Social Responsibility (CSR) obligations, to generate goodwill, or to attract the growing number of customers attracted by environmental action. It is important that the Government seeks to understand better the reasons why businesses use the voluntary carbon offset market and what motivates them. We recommend that the Government commission independent research in this area and publish it as soon as is practicable. (Paragraph 29)

9. Claiming 'carbon neutrality' is clearly a growing draw for businesses and will consequently change the behaviour of some companies and bring them into the voluntary carbon offset market. We recommend that Government engage in a dialogue with business to develop a consensus definition of what 'carbon neutral' means. It is essential that standards should be developed to allow for audit and verification of this status to bring legitimacy to any claim to be 'carbon neutral'. (Paragraph 31)

10. The Government must ensure that, by means of its proposed code or quality mark, or by other related measures, greater transparency is brought by offset providers to what is anyway a complex and currently an opaque market. Without transparency consumers will have little confidence in purchasing or otherwise dealing in offsets, confidence that the market needs in order to grow. (Paragraph 44)

11. Although we have not produced a formal response to the DEFRA consultation on establishing a voluntary code of best practice for the provision of carbon offsetting to UK customers, important and often contentious issues and considerations raised in the course of our own inquiry overlap in many areas with the questions raised by the consultation. We have conducted a detailed and comprehensive inquiry into the voluntary carbon offset market and we expect therefore the Government to take serious and active consideration of the conclusions and recommendations of this report in the further development of its code. (Paragraph 46)

12. The recommendations of the IETA Report on 2006 State of the CDM for resolving the issue of a lack of technical expertise in producing new methodologies for new technologies are clear and uncomplicated, yet would resolve an important problem. If the voluntary carbon offset market continues to grow at the rates predicted then

the development of new methodologies for new technologies will become increasingly important as those projects considered to be 'low hanging fruit' are exhausted. We recommend that the Government press for immediate action to be taken to ensure that the Methodology Panel can draw upon the advice of experts quickly and easily and that regulators and those being regulated are encouraged to, and are given the means to, communicate in a direct and efficient manner. (Paragraph 60)

13. If Government is determined to encourage the voluntary carbon offset market to move towards the sole use of compliance market credits, then it is vital that this does not draw money away from the least developed regions such as Africa which currently benefit from the sale of VER credits, but which remain largely excluded from the compliance market, in part for methodological reasons. We recommend, therefore, that as a matter of urgency, the Government redoubles its efforts to address the proposals of the IETA report on the 2006 State of the CDM in relation to resolving the disproportionate regional and sectoral distribution of projects: it should help to identify the systematic or systemic barriers to equitable distribution of CDM project activities and promote more regular meetings between the Executive Board and designated national authorities of under-represented regions such as Africa. It should also make a priority its efforts to assist and influence the development of a simplified methodology for projects which support the switch from non-renewable to renewable biomass (Paragraph 62)

14. We applaud the recent work that DEFRA has done to reduce time delays and methodological problems broadly in the CDM. However, still more needs to be done particularly in regard to developing new methodologies. We recommend that the Government take further steps to address the issue of the delay in developing new methodologies by putting pressure on the CDM Executive Board to expand and streamline its methodology development and revision process to make it easier to define and produce methodologies for projects with sustainable development benefits. (Paragraph 63)

15. The strength of the voluntary carbon offset market is its ability to support a diversity of projects: including those that are small; those that bring additional sustainable development benefits; and those found in countries which are currently under-represented in compliance market projects. Despite seeming to have done some work to try to improve the situation here, DEFRA, in its memorandum and in the consultation, fails to explain or even acknowledge that there are problems with these types of projects in the CDM. We recommend that in further stages of developing the code these problems are addressed in an open and transparent manner and that the code is adapted in light of them. Primarily however, we recommend that DEFRA continues and expedites its work on further reform of the CDM in order to break down the barriers that prevent these important project types from succeeding. It should press for reform of the CDM in these areas at every available opportunity at an international level. (Paragraph 64)

16. If the Government is serious about making CERs the credit of choice in the voluntary carbon offset market, then firm decisions about the future of the CDM need to made, and made quickly if further investment in the CDM is not to trail off

as 2012 approaches. Consumers need reassurance that investments that they make in projects that take several years to produce the expected carbon savings or reductions will be guaranteed past 2012. The Government needs to expedite decision-making at an international level to resolve officially the issue of a post-2012 CDM. (Paragraph 66)

17. We recommend that the Government push for reform of the CDM to ensure that profiteering from polluting behaviour becomes impossible. Consumers need to be confident that their money is being spent on projects which meet the highest ethical standards. Until this is achieved we recommend that the Government should require offset providers selling compliance market credits in the voluntary market to list the types of the projects from which their credits derive. This should be done as soon as is practicable and regardless of whether it decides to proceed with the proposed code. (Paragraph 67)

18. It is unacceptable that private consumers in the voluntary carbon offset market be put in the position where their money is effectively being spent to purchase permits for large installations to pollute. Until the EU ETS cap is tightened up and becomes more efficient and effective, it is vital that offset providers are required to provide a 'health warning' to consumers about what could happen to their money if they invest in compliance market credits. The Government should take steps actively to dissuade offset providers from providing EUAs to private consumers given that, as we have concluded in previous reports, EUAs from phase I of the EU ETS are as good as worthless in carbon terms, but yet continue to be retailed. (Paragraph 69)

19. Given the many unresolved problems with the compliance market, particularly surrounding methodological issues and uneven distribution of projects, we urge the Government to take swift action to resolve these problems regardless of whether or not it chooses to it introduce its code. The CDM remains significantly flawed and this needs to be addressed. We recommend strongly that the Government think again about its proposed code: of the options set out by the Government in its consultation it must produce a voluntary code based on all credit types which will recognise the important role that the voluntary market has to play in counter-balancing the flaws of the compliance market. (Paragraph 71)

20. Those who deal only with offsets from outside the compliance market would fall outside the DEFRA scheme. This would, we believe, leave unregulated those portions of the market where there is greatest innovation and greatest environmental or sustainable development benefit—and would also leave unregulated and unconstrained the activities of 'carbon cowboys' peddling flimsy VERs, the phenomenon most likely to destroy the credibility of all schemes, good or bad. This position is one with which almost no-one who gave evidence to us appeared happy. (Paragraph 77)

21. A trustworthy and independent regulatory body will be needed to decide or advise on the quality mark to be awarded to offset companies for their projects and credits. The body involved in assessing companies' projects and credits would need to be authoritative, independent, and well-resourced. The only just and equitable solution to the question of who should pay for such a body, is that industry pay out of its

profits for its establishment and upkeep. Appointments to the body would have to be within the remit of Government rather than the industry, and key NGOs may also have a role to play in participating in this function of oversight and approval. (Paragraph 86)

22. Slowing and halting the current rate of deforestation is key to the struggle to avert climate change: continuing deforestation on current scales will not only make more difficult the work to move towards accepted targets but will also present the definite possibility that such targets will never be reached. Anything that can be done through the mechanisms of offsetting—in the voluntary or compliance markets—to preserve existing forests, so long as the projects or methods are robustly grounded in good science and good practice, and allowances or credits made available are properly audited, has to be encouraged. (Paragraph 91)

23. It is essential that no credits should be retired which do not represent carbon savings already made. Credits should all be vintage marked and while future credits may be sold on to others they should not be retired until that vintage date is reached. (Paragraph 99)

24. Although we have some concerns about the timeliness and actual impact of the EU ETS on aviation emissions, we consider it essential that the EU ETS should be structured in such a way as to bring about an early decrease in emissions from air travel, and to enforce a continuing trajectory towards a substantial cut in emissions. (Paragraph 120)

25. Although offsetting alone will have only a minor impact at best on increases in global emissions as a result of air travel, the action of offsetting air travel may encourage better carbon behaviour overall. (Paragraph 121)

26. We support the Government's proposals to require all those selling air tickets within the UK to include in the price offered the cost of an offset, and to retail that offset along with the ticket unless the customer requests otherwise. (Paragraph 122)

27. We welcome the launch of DEFRA's Act on CO2 Calculator and hope that the data, methodologies and assumptions upon which it is based prove acceptable to the airlines. We also note that DEFRA is content for its work to be used by companies in their own proprietary calculators, and we welcome the effect this may have in helping standardize the currently too great range of calculations for carbon emissions from flights. We also hope that where airlines do not themselves offer a carbon calculator they will be happy to refer customers to the Act on CO2 Calculator. (Paragraph 125)

28. We are pleased to see that DEFRA's assumptions for aviation emissions on its Act on CO2 web-site, while making no direct allowance for radiative forcing, do explicitly deal with the issue, and that there are clear statements in its Frequently Asked Questions section and in relevant Action Plans that the effects of aviation on climate are greater than its carbon impacts alone. It is also good to see that the web-site refers to the Government's use of a radiative forcing factor in its own calculations. We hope that such statements appear even more explicitly in whatever calculator is

agreed later in the year for use with the DEFRA Code of Practice for offsetting. (Paragraph 127)

Formal minutes

Tuesday 3 July 2007

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton	Mark Lazarowicz
David Howarth	Dr Desmond Turner
Mr Nick Hurd	Joan Walley

The Committee deliberated.

Draft Report (*The Voluntary Carbon Offset Market*), proposed by the Chairman, brought up and read.

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

Paragraphs 1 to 127 read and agreed to.

Summary read and agreed to.

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

Ordered, That the Memoranda reported to the House on 20 February be appended to the Report.

Ordered, That other Memoranda received by the Committee be reported to the House.

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

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No.134.

[Adjourned till Tuesday 10 July 2007 at 9.30am

Witnesses

Tuesday 20 February 2007

Tuesday 27 February 2007

Tuesday 6 March 2007

Tuesday 13 March 2007

Tuesday 20 March 2007

List of written evidence

Past reports from the Environmental Audit Committee since 1997

2006-07 Session

First	The UN Millennium Ecosystem Assessment, HC 77
Second	The EU Emissions Trading Scheme: Lessons for the Future, HC 70
Third	Regulatory Impact Assessments and Policy Appraisal, HC 353
Fourth	Pre-Budget 2006 and the Stern Review, HC 227
Fifth	Trade, Development and Environment: The Role of FCO, HC 289

2005-06 Session

First	Greening Government: the 2004 Sustainable Development in Government Report, HC 698
Second	Sustainable Timber, HC 607
Third	Sustainable Procurement: the Way Forward, HC 740
Fourth	Pre-Budget 2005: Tax, economic analysis, and climate change, HC 882
Fifth	Sustainable Housing: A follow-up report, HC 779
Sixth	Keeping the lights on: Nuclear, Renewables, and Climate Change, HC 584
Seventh	Sustainable Development Reporting by Government Departments, HC 1322
Eighth	Proposals for a draft Marine Bill, HC 1323
Ninth	Reducing Carbon Emissions from Transport, H C981
Tenth	Trade, Development and Environment: The Role of DFID, HC 1014
Eleventh	Outflanked: The World Trade Organisation, International Trade and Sustainable Development, HC 1455
Twelfth	Transport Emissions: Government Response to the Committee's Ninth Report of Session 2005-06 on Reducing Carbon Emissions from Transport, HC 1718

2004-05 Session

First	Housing: Building a Sustainable Future, HC 135
Second	Corporate Environmental Crime, HC 136
Third	World Summit on Sustainable Development 2002: A UK Progress Report, HC 381
Fourth	The International Challenge of Climate Change: UK Leadership in the G8 and EU, HC 105 (*Reply Cm6617*)
Fifth	Environmental Education: Follow-up to Learning the Sustainability Lesson, HC84 (*Reply Cm6594*)
Sixth	Sustainable Public Procurement , HC 266
Seventh	Pre-Budget 04 and Budget 05, HC 261 (*Reply HC 528*)

2003-04 Session

First	Annual Report 2003, HC 214
Second	GM Foods – Evaluating the Farm Scale Trials, HC 90
Third	Pre-Budget Report 2003: Aviation follow-up, HC 233
Fourth	Water: The Periodic Review 2004 and the Environmental Programme, HC 416 *(Reply, HC 950)*
Fifth	GM Foods – Evaluating the Farm Scale Trials, HC 564
Sixth	Environmental Crime and the Courts, HC 126 *(Reply, HC 1232)*
Seventh	Aviation: Sustainability and the Government Response, HC 623 *(reply, HC1063)*
Eighth	Greening Government 2004, HC 881 *(Reply, HC 1259)*

Ninth	Fly-tipping, Fly-posting, Litter, Graffiti and Noise, HC 445 *(Reply, HC 1232)*
Tenth	Budget 2004 and Energy, HC 490 *(Reply, HC 1183)*
Eleventh	Aviation: Sustainability and the Government's second response, HC1063
Twelfth	Environmental Crime: Wildlife Crime, HC 605 *(Reply, HC 438)*
Thirteenth	Sustainable Development : the UK Strategy, HC 624

2002-03 Session

First	Pesticides: The Voluntary Initiative, HC100 (*Reply, HC 443*)
Second	Johannesburg and Back: The World Summit on Sustainable Development–Committee delegation report on proceedings, HC 169
Third	Annual Report, HC 262
Fourth	Pre-Budget 2002, HC 167 (*Reply, HC 688)*
Fifth	Waste – An Audit, HC 99 *(Reply, HC 1081)*
Sixth	Buying Time for Forests: Timber Trade and Public Procurement - The Government Response, HC 909
Seventh	Export Credits Guarantee Department and Sustainable Development, HC 689 (*Reply, HC 1238*)
Eighth	Energy White Paper – Empowering Change?, HC 618
Ninth	Budget 2003 and Aviation, HC 672 (Reply, Cm 6063)
Tenth	Learning the Sustainability Lesson, HC 472 *(Reply, HC 1221)*
Eleventh	Sustainable Development Headline Indicators, HC 1080 *(Reply, HC 320)*
Twelfth	World Summit for Sustainable Development – From rhetoric to reality, HC 98 (*Reply, HC 232*)
Thirteenth	Greening Government 2003, HC 961 *(Reply, HC 489,2003-04)*

2001-02 Session

First	Departmental Responsibilities for Sustainable Development, HC 326 (*Reply, Cm 5519*)
Second	Pre-Budget Report 2001: *A New Agenda?*, HC 363 (*HC 1000*)
Third	UK Preparations for the World Summit on Sustainable Development, HC 616 (*Reply, Cm 5558*)
Fourth	Measuring the Quality of Life: The Sustainable Development Headline Indicators, HC 824 (*Reply, Cm 5650*)
Fifth	A Sustainable Energy Strategy? Renewables and the PIU Review, HC 582 (*Reply, HC 471*)
Sixth	Buying Time for Forests: *Timber Trade and Public Procurement*, HC 792-I , (*Reply, HC 909, Session 2002-03)*

2000-01 Session

First	Environmental Audit: *the first Parliament*, HC 67 (*Reply, Cm 5098*)
Second	The Pre-Budget Report 2000: *fuelling the debate*, HC 71 (*Reply HC 216, Session 2001-02*)

1999-2000 Session

First	EU Policy and the Environment: An Agenda for the Helsinki Summit, HC 44 (*Reply, HC 68*)
Second	World Trade and Sustainable Development: An Agenda for the Seattle Summit, HC 45 (Including the Government response to the First Report 1998-99: Multilateral Agreement on Investment, HC 58) (*Reply, HC 69*)

Third	Comprehensive Spending Review: Government response and follow-up, HC 233 (*Reply, HC 70, Session 2000-01*)
Fourth	The Pre-Budget Report 1999: pesticides, aggregates and the Climate Change Levy, HC 76
Fifth	The Greening Government Initiative: first annual report from the Green Ministers Committee 1998/99, HC 341
Sixth	Budget 2000 and the Environment etc., HC 404
Seventh	Water Prices and the Environment, HC 597 (*Reply, HC 290, Session 2000-01*)

1998-99 Session

First	The Multilateral Agreement on Investment, HC 58 (*Reply, HC 45, Session 1999-2000*)
Second	Climate Change: Government response and follow-up, HC 88
Third	The Comprehensive Spending Review and Public Service Agreements, HC 92 (*Reply, HC 233, Session 1999-2000*)
Fourth	The Pre-Budget Report 1998, HC 93
Fifth	GMOs and the Environment: Coordination of Government Policy, HC 384 (*Reply Cm* 4528)
Sixth	The Greening Government Initiative 1999, HC 426
Seventh	Energy Efficiency, HC 159 (*Reply, HC 571, Session 2000-01)*
Eighth	The Budget 1999: Environmental Implications, HC 326

1997-98 Session

First	The Pre-Budget Report, HC 547 (*Reply, HC 985*)
Second	The Greening Government Initiative, HC 517 (*Reply, HC 426, Session 1998-99*)
Third	The Pre-Budget Report: Government response and follow-up, HC 985
Fourth	Climate Change: UK Emission Reduction Targets and Audit Arrangements, HC 899 (*Reply, HC 88, Session 1998-99*)

Oral evidence

Taken before the Environmental Audit Committee

on Tuesday 20 February 2007

Members present:

Mr Tim Yeo, in the Chair

Colin Challen
Mr David Chaytor
Mr Nick Hurd
Mark Lazarowicz
Mr Graham Stuart

Memorandum submitted by the Energy Saving Trust

The Energy Saving Trust is pleased to respond to the Environmental Audit Committee's Inquiry into the Voluntary Carbon Offset Market. The Energy Saving Trust was established as part of the Government's action plan in response to the 1992 Earth Summit in Rio de Janeiro, which addressed worldwide concerns on sustainable development issues. We are the UK's leading organisation working through partnerships towards the sustainable and efficient use of energy by households, communities and the road transport sector and one of the key delivery agents of the Government's climate change objectives. Our response focuses on the key areas of the Energy Saving Trust's activities and related issues that are relevant to the inquiry including those specifically identified by the Committee. Please note that this response should not be taken as representing the views of individual Energy Saving Trust members.

Summary

1. The Energy Saving Trust believes that carbon offsetting, combined with robust accreditation, can have a role to play in reducing global carbon emissions. However, it is important that offsetting is not seen as an alternative to UK citizens, or indeed businesses, implementing specific actions that reduce their own personal carbon footprint.

2. For UK citizens, we believe that the priority should be to develop personalised carbon footprints for each citizen that is accompanied by a personalised list of carbon saving opportunities and actions. Individuals need to be supported and encouraged by Government through effective policy measures and through the Energy Saving Trust's delivery mechanisms. Once identified carbon saving measures are implemented, then citizens and business should be provided with a further opportunity to become carbon neutral by offsetting residual emissions through a robust and verifiable scheme.

3. However, we recognise that some people will want to explore carbon offsetting mechanisms before taking personal action. Therefore it is important to ensure that both carbon offsetting projects and retailers are subject to robust accreditation to ensure additionality, prevent double counting and/or leakage and to provide market confidence. In this respect, offset retailers should clearly detail the level of carbon savings and the percentage financial contribution that actually goes to the carbon saving project as opposed to administration or marketing costs and retailer's profits. Currently these overheads can total over half of the offset investment. Whilst these will inevitably be higher in a nascent market, we note that in Germany some offset retailers are capped at 30% overheads. Clearly the greatest carbon benefit will be delivered by those offset providers with the lowest overheads.

4. Whilst we believe that carbon offsetting by individuals will steadily increase in popularity, particularly with the launch of Government's proposed carbon calculator, this will initially be limited to those who are already green or more affluent. In isolation, we do not believe that carbon offsetting on its own will result in behavioural change although there is a major opportunity in encouraging those who do offset to invest in carbon saving measures that tackle their own personal carbon footprint if not already doing so.

Specific Inquiry Issues

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

5. Yes, accreditation schemes are required for both projects and companies to provide confidence in the market for UK individuals and companies. They should be operated on an independent, robust and transparent basis to ensure additionality and prevent double-counting and not as self-certification schemes.

6. Currently there are real doubts about the credibility of some carbon offsetting schemes with their actual impact on reducing carbon emissions particularly around such activity as tree-planting. There are

also concerns that projects developed under the Clean Development Mechanism (CDM) such as "gas capture" or bioenergy projects may have a carbon benefit but have other unsustainable environmental impacts and that the CDM is not achieving one of its objectives in establishing sustainable technologies in less developed countries. As a consequence, non-governmental organisations have felt the need to develop a "Gold Standard" certification scheme to recognise the best projects in the CDM, Joint Implementation (JI) and voluntary offset markets. The only eligible carbon reduction projects must utilise renewables and energy efficiency technologies that provide long-term benefits for the host country.

7. It is instructive to examine the recent experience in the field of renewable, or "green", electricity tariffs. In 1999, the Energy Saving Trust launched the Future Energy accreditation scheme, to ensure that the developing market for such tariffs was backed by the credibility of independent scrutiny, and that the various offerings provided additional benefits in terms of supporting the renewable energy market. With the onset of the Renewables Obligation in 2002, the scheme was closed as it proved impossible to gain stakeholder agreement as to what constitutes additionality in the context of mandatory renewable targets for electricity suppliers. The absence since then of effective independent scrutiny is amply demonstrated by the NCC report,[1] published in December 2006, which concluded that many of the tariffs available today do not deliver the claimed environmental benefits. Furthermore, the best tariffs reduced a household's carbon footprint by only 6%.

8. UK citizens need to be guided to the best schemes by trusted and independent parties that are proactively involved in the reduction of carbon emissions and encouragement of energy efficient behaviours. We believe that such accreditation schemes are required now and therefore advocate that these are developed specifically for offsets sold and traded in the UK, although the goal should be a common EU-wide scheme. In this respect, an EU scheme should provide at least the equivalent degree of market confidence to the UK. We believe that the Energy Saving Trust is well-placed to help sign-post UK citizens to robust carbon offsetting schemes.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

9. The more carbon-intensive activities are generally best addressed through the EU Emissions Trading Scheme (ETS) provided it is developed into a more robust mechanism that delivers real carbon emission reductions in the EU that are consistent with existing Kyoto commitments and those made thereafter. Ideally the majority of carbon savings should come from within the EU.

10. The specific issue of aviation emissions is particularly difficult to tackle. It is important to facilitate the adoption of the lowest emission and most fuel efficient technologies and practices by aircraft/engine manufacturers and airline operators. It is not clear that this will happen if aviation is included in the EUETS as operators may just buy into compliance and pass through additional costs to passengers, although airlines are already keen to minimise fuel costs. These additional costs may or may not deter some people from travelling by air, although we suspect this will not be the case. Therefore there may be a specific role for offsetting to play in the case of aviation.

11. Of course the existing UK Air Passenger Duty, which is an extremely blunt fiscal instrument, could readily be ring fenced for emission reduction projects ie essentially transformed into a mandatory offsetting instrument. We believe further work is required to develop an integrated approach to minimising aviation emissions that could include mandatory offsetting as well as the incentivisation of alternative forms of travel to short haul flights, smarter-working to avoid business travel and the reduction of freight and food miles. The potential inclusion of air travel in any form of personal carbon allowance (PCA) trading system also needs to be considered accordingly.

12. For other sectors, including households, we strongly advocate specific policy measures designed to deliver carbon savings within the UK. This should be the first and foremost priority to ensure UK carbon reductions and greater personal responsibility ultimately resulting in behavioural change ahead of offsetting schemes. Similarly the proposed introduction of the Energy Performance Commitment is preferable to mandatory offsetting for those business sectors outside the EUETS. A mandatory offsetting scheme would increase UK energy costs without necessarily reducing UK carbon emissions or energy demand due to the relative price inelasticity.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

13. No. It is very difficult for individuals to make informed choice about the different carbon offset schemes available or to establish the level and longevity of additional carbon savings that their investment would finance. There is also little or no linkage between offsetting schemes and the requirement for individuals to implement actions to reduce their own carbon footprint. Without the implementation of appropriate accreditation, this is likely to become more confusing in the future as new offsetting schemes are developed to take advantage of increased consumer and business demand. Proprietary standards that

[1] http://www.ncc.org.uk/responsibleconsumption/green-tariffs.pdf

can include self-certification and random-sampling are of particularly concern. This is clearly illustrated by the wide market variation in pricing offset projects €3-30t CO_2e. The average UK citizen will not understand the reasons for the price differential and will therefore choose the lowest priced option.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

14. No. Such projects are dependent on many variables which make exact science difficult and ultimately an increased risk that projects will not deliver the carbon saving benefits that they claim. However, we recognise that standards such as those being developed by the Climate, Community and Biodiversity Alliance are being developed to address this. In our view, projects that invest in actual carbon saving technologies are far more preferable than carbon storage projects such as afforestration or reforestration.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

15. Inevitably this depends on the type of scheme. In the case of carbon-saving technology, sufficient data should theoretically be available to a reasonable degree. This is generally not the case for carbon storage projects such as afforestration or reforestration. Key to ensuring credibility is an effective methodology for assessing project savings, undertaken by an independent third party.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

16. The impact of a growing voluntary carbon offset market on the compliance market is unclear. Theoretically it could remove potential credits from the compliance market thereby increasing market prices if sufficient additional projects failed to be developed. This in turn could lead to greater investment by companies in carbon saving technology in their own operations. However, the compliance market is based around those accreditation processes that are perceived to be more robust, for example the CDM (but note our earlier comments in this respect), than the current voluntary offset market so prices are higher. It is also difficult to buy small volumes of compliance credits for voluntary offsetting so the level of actual impact may not be that great for several years.

17. The significant costs associated with CDM compliance means that such projects tend to be larger. Smaller projects, which cannot justify the compliance costs, are then available for the voluntary market, so it is possible that the two markets can coexist.

18. The rate of growth will inevitably depend on the nature of the market (eg project standards, verification requirements etc) and the degree of interaction with other UK, European and post Kyoto policy instruments. If the rate of growth continues, then without appropriate accreditation carbon offsetting risks being discredited and could ultimately stall.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

19. There is little robust evidence available that offsetting on its own changes carbon behaviours. Indeed, the promotion of schemes in isolation risks conveying the message that offsetting alone is an adequate route to reduce one's carbon footprint, and that lifestyle changes are not required. Carbon offsetting by individuals is currently limited to those who are already green or more affluent. In the case of the former, offsetting is unlikely to change carbon behaviour as positive behaviour already exists. In the case of the latter, it is dubious that behavioural change will result as individuals can afford to pollute and are unlikely to sacrifice holiday or business flights. Carbon offsetting is far more likely to help change behaviours if it is perceived as an integrated part of reducing an individual's carbon footprint or in achieving carbon neutrality than as a stand-alone action. Similarly, if offsets are purchased by business as a small part of a specific carbon reduction programme then there is more likely to be some benefit.

20. In the case of individuals and smaller businesses there is a risk that they invest in the cheapest offset option whilst still getting a "feel-good factor". This may be a lower risk with larger businesses in the public eye that have to protect their brand. We recommend that further work is required to establish the evidence base for different market sectors.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

21. This is not clear and will be extremely variable depending on the nature of the schemes and projects, the accreditation approach used by the offset companies and how such projects are utilised, if at all, as part of wider carbon reduction actions by individuals and companies purchasing those offsets.

January 2007

Memorandum submitted by the Royal Society for the Protection of Birds

Summary

1. Although carbon offsetting is increasingly popular, it is a highly contentious area of climate change mitigation policy. Not only are there many types of offset of highly varying quality but there is dispute over whether they are effective in promoting the types of behavioural change needed to limit climate change. The RSPB thus welcomes the recent Government initiative to define criteria to bring greater clarity to the offset market and we are generally supportive of the criteria proposed, ie to recognise only internationally agreed credits.

2. We are, however, concerned that although some offsets deliver social or biodiversity co-benefits together with carbon savings, there is currently no way of recognising these benefits. Clearly, it would not be possible to claim extra carbon credit for projects that have more general sustainability benefits but explicit identification of such benefits would be advantageous in promoting projects that are environmentally benign over ones that are adequate solely in carbon terms—but might be damaging in terms of the broader environment. Currently, for example, the forestry-related credits recognised by Kyoto do not adequately discriminate between projects that have both carbon and biodiversity value and those that may save carbon but could harm wildlife, such as plantations of fast growing monocultures.

Introduction and Background: Some Pros and Cons of Offsets

3. 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 196 nature reserves, covering more than 131,000 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.

4. The role of offsets in mitigating climate change is the most hotly disputed area of climate change policy, giving rise to fierce, often acrimonious disputes amongst those involved in the climate change debate. The RSPB's situation is typical of many other environmental and nature conservation organisations. On the one hand, many of our nature conservation activities, both in the UK and abroad, either sequester carbon dioxide or prevent the degradation of natural land, such as the felling of forests, and thereby avoid the generation of emissions. We are thus in a strong position to mitigate climate change by our conservation activities and hence to generate carbon credits from them, the proceeds of which could be used both for further mitigation and for nature conservation.

5. On the other hand, we are concerned about the use of project-based carbon credits as a tool for the mitigation of climate change because of the effect that this might have on behavioural change. Whilst it clearly does not matter to the atmosphere where greenhouse gases are emitted or sequestered, it can matter in policy terms and begs a number of questions. If, for example, a core policy objective of an organisation such as the RSPB is for individuals and nations to reduce emissions at home—because this is ultimately the only solution to climate change—does it make sense to allow them to continue to emit, or even increase their personal emissions, and to purchase cheap offsets from abroad? If an individual offsets their emissions, will they also try to cut their own emissions, or lobby government to legislate for emission cuts? Is offsetting a cheap and easy way of salving the conscience of rich people and rich countries, but not an option for then poor?

6. Concerns about the use of offsets, both voluntary and officially sanctioned, also arise in national and international policy-making. For example, both the Kyoto Protocol cap and trade scheme and the EU Emissions Trading Scheme (EU ETS) allow the use of Certified Emission Reductions (CERs) from projects conducted under Kyoto's Clean Development Mechanism (CDM). Yet if the EU ETS is intended to reduce emissions in the EU, which was clearly the intention when it was conceived, then should it include emission reductions from outside the EU, from countries that have no international emission limitation commitments? Allowing project-based credits from uncapped countries into the EU ETS not only has the effect of inflating the EU cap—making the already weak targets even weaker—but it has implications for the development of the post-2012 climate regime. Under Kyoto and the Climate Convention, developed countries are obliged to take the lead in reducing emissions, and developing countries are only likely to take on commitments when the developed countries have manifestly reduced their own emissions. But, if the developed countries have reduced their emissions largely, or even partly, by buying emissions reductions from developing countries, it is debatable whether this constitutes "taking a lead".

7. Conversely, proponents of Kyoto-approved credits argue that CDM projects help developing countries on the path to sustainable development by providing much needed funding for low carbon projects that would not take place otherwise. Whilst most of the projects are in the most developed countries (respectively, India, Brazil, Mexico and China) rather than the most needy countries they are, on the other hand, being conducted where emission reductions are most needed. This is in contrast to many "voluntary" projects which are often driven by social or environmental factors other than climate change and are conducted in countries that emit very little—and arguably need to take no action.

8. It is noteworthy that the volume of credits in the official and voluntary markets is on a quite different scale. Whilst voluntary markets are said to be booming, they are dwarfed by the officially sanctioned market where more than 26 million CERs have already been issued, 710 million will arise from existing projects and

more 1.5 billion are expected to be issued by the end of 2012. In our opinion, this trend for the official market to dominate the voluntary one is likely to continue, if only because the officially recognised credits have a realisable value, as is outlined below

9. Prices and costs are markedly different for voluntary and official offsets and the differences are likely to become more marked when the Kyoto market starts full-scale operation in 2008 and the value of CDM and Joint Implementation (JI) credits is likely to rise. This price differential arises because official credits are required by developed countries to comply with legally binding emission reduction targets under Kyoto and thus have a value linked to the cost of meeting those targets—not simply the cost of the projects. The projects also have to bear costs associated with formal validation and approval processes. The sole purpose of a voluntary offset, however, is to provide a lowest cost emission reduction, often with minimal accreditation costs, and so their sale price is always likely to be lower. (It can be argued that all offsets should be priced so as to reflect the damage costs of climate change, rather than being as cheap as possible, but this seems unlikely because it would significantly raise the price of offsets. DEFRA's recommended social cost of carbon (damage cost) is £70/tonne carbon but other estimates range as high as £1,000 tonne C.)

10. On balance, the RSPB considers that only those offsets approved by the agreed international system, the Kyoto Protocol, should be employed in "voluntary" markets. These obey rules which were agreed by experts from nearly all countries in the World and, although they are deficient in some respects, they are the best that there are. To use other credits, obeying other sets of rules, if any, would seem perverse.

11. We recognise, however, that there are certain types of emission saving activity that are not, at present, recognised by the international system—notably emissions avoided by not felling tropical forests (so-called avoided or reduced deforestation) but also emissions from other land-use change, such as peat extraction. Halting activities such as deforestation not only has huge value in terms of combating climate change (20% of global emissions arise from tropical deforestation) but has a similarly large value in terms of conserving biodiversity and protecting indigenous people. We consider that recognising such co-benefits is imperative and we will therefore strive to bring such activities within the remit of the international climate regime and participate in pilot projects in order to gain greater knowledge of the subjects.

In the remainder of this response, we answer the questions posed by the Committee in the order that they were set in the call for evidence.

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

12. Yes. It should be the same as that agreed under Kyoto, allowing only those projects approved by Kyoto, ie Certified Emission Reductions (CERs) from the Clean Development Mechanism (CDM) and Emission Reduction Units (ERUs) from Joint Implementation (JI) projects in developed countries.

13. There are already mechanisms in place for the approval of projects under Kyoto; in the case of CDM credits approval is by the CDM's Executive Board.

14. As avoided deforestation and other land use change activities are included in Kyoto, they too should be included eligible for accreditation under any UK or EU scheme.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

15. No. The way to reduce emissions from aviation is to do just that, by managing demand and, making aircraft more efficient in terms of their greenhouse gas emissions.

16. The key to reducing emissions nationally and internationally is by means of constantly diminishing carbon budgets covering all emissions, linked, where possible, to trading schemes that allow personal or institutional choice over which emissions to cut, as long as overall emissions where reduced. Aviation emissions might then continue to increase, within limits, so long as commensurate cuts where made elsewhere within the capped system. A draft amendment to the EU ETS, issued by the Commission in December 2006, aims at this type of solution. Aviation emissions would be opted into the EU ETS, covering about 50% of all EU carbon dioxide emissions. Emissions from large combustion plant and aviation would then be capped but emission allowances could be traded, allowing aviation emissions to rise if aircraft operators purchased allowances from the operators of large combustion plant that had cut emissions by more than their target. In principle, we welcome this type of approach although we have reservations about the details of the Commission's proposal. (The key test of the effectiveness of any cap and trade scheme is that it will cut emissions in line with national and international targets yet, as it stands, the Commission proposal does not ensure that this occurs.)

17. Offsetting aviation emissions, or emissions from other sources, with credits from uncapped nations does not, ultimately, solve the problem of rising emissions in capped countries like the UK. Emissions in most developing countries, especially the rapidly industrialising ones continue to rise apace and unchecked. A few offset projects, even if they amount to many millions of tonnes of carbon will do almost nothing to slow this rise. If we are to tackle the problem of climate change much more stringent action is needed, perhaps in the form of commitments to limit the rate of increase of emissions in some sectors in the most rapidly industrialising developing countries.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

18. No. We have had an interest in this area for about decade yet we would find it very hard to make a fully informed choice. For the non-expert it is a minefield, with some excellent credits delivering climate change, biodiversity and social co-benefits and others delivering little or no benefits. There are no reliable, unbiased sources of information on the subject.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

19. Whilst there is considerable uncertainty in estimates of the take up of carbon dioxide by forests and other land use change, this is not necessarily a severe problem as long as conservative estimates are used when claiming credit for carbon stored. This is a standard means of addressing uncertainty.

20. A more intractable problem is the fact that all biological sinks for carbon can reverse. That is, they can release the carbon that they have stored. Carbon sequestration projects are fundamentally dissimilar to emission avoidance projects, such as those involving energy. Once emissions are avoided, for example by replacing a diesel generating set with a hydroelectric one, then they are avoided forever, the emissions never reach the atmosphere and never cause any damage. Forests typically store carbon from the atmosphere but if it is later released then the initial storage is negated; the atmosphere is harmed as much as it would have been in the first place. To be effective as a mitigation measure, sequestration projects thus need to ensure that carbon is stored forever.

21. However, forest fires, pests and climate change can all cause forests to change from net sinks for carbon to net sources and it is obviously impossible to forestall all such occurrences indefinitely. The Kyoto Protocol's Clean Development Mechanism (CDM) circumvents this difficulty by introducing the concept of a temporary Certified Emission Reductions (tCER) which expires after five years but can be renewed it is demonstrated that the forest remains unchanged. This "solution" works in accountancy terms but does not repair any damage done to the atmosphere if a carbon sink reverses.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

22. The voluntary market varies enormously with some offsets being rigorously scrutinised and others not, according to widely varying sets of voluntary rules.

23. In the CDM there are suitable provisions, except if a sequestration project reverses. CDM project developers have to prepare detailed plans and methodologies that are scrutinised by the CDM Executive Board of independent experts, and projects are regularly verified. All estimates of carbon saved are conservative so that, if anything, the emission savings are underestimated. Project details and CDM Executive Board proceedings are published, and Board meetings can be viewed live on the web.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

24. Very little or perhaps none. The market in compliance-related project credits will be increasingly driven by the need to generate credits that can be used to demonstrate compliance in the 2008–12 period of both the Kyoto Protocol and EU ETS, for which voluntary credits are useless.

25. The market in voluntary credits is driven by individuals and institutions that wish to green their lifestyles or modes of operations and, in the case of institutions, to publicly demonstrate that they are doing so. However, because of ongoing disputes about the value of voluntary credits, companies are increasingly using compliance credits (CERs) to protect their reputations and, because the corporate sector is potentially so valuable to them, offset companies are tending to do the same.

26. In the longer term, we consider that the market for voluntary credits will decline, being substituted largely by official compliance credits—largely to avoid reputational risk. This decline is likely to be accelerated by the UK Government proposals for an accreditation scheme that only recognises compliance-related credits (CERs, ERUs and EU ETS allowances).

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

27. We are unaware of any definitive evidence. Individuals that employ offsets tend to be environmentally aware and keen to do something to mitigate their unsustainable lifestyles, especially flying. They are probably not, therefore, representative of society as a whole and it is hard to say whether they would alter their carbon behaviour anyway, because they are "green", or because they choose to offset.

28. There is a concern that using offsets will tend to prevent individuals, or institutions, from taking practical action themselves because, if offsetting is truly effective, why should they alter their behaviour or encourage others to do so? If, for example, a company offsets the emissions from flights taken by its staff, would it also cut back on flying and lobby government to reduce demand for aviation? We think not.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

29. Many projects in the voluntary market are specifically designed to be more broadly sustainable, certainly in the sense of being more generally environmentally friendly and more socially just. Indeed, voluntary offset projects were originally conceived as forest conservation projects or schemes to assist poor people in developing countries and also happen to save carbon.

30. Whilst projects that deliver multiple benefits are clearly highly desirable, it can be hard to marry the different benefits effectively. For example, one of the longest and most acrimonious debates in the detailed negotiations on the Kyoto forestry provisions was around the climate and biodiversity benefits that might accrue from afforestation and reforestation projects. On one hand, there was a desire to support projects that would lead to the regrowth of natural forests in developing countries, with considerable benefits for biodiversity and indigenous people but sequestering carbon at a low rate. On the other hand, there was a desire to maximise carbon sequestration rates, which would be best achieved by fast-growing monoculture plantations, delivering considerable carbon benefit but with potentially disastrous effects on biodiversity and indigenous people.

31. In the end, it was not possible to find a way of excluding monoculture plantations and encouraging the greater environmental and social good—because the Kyoto Protocol basically deals in carbon saving and not with more general sustainability as well. There are thus likely to be more bad than good forestry projects, in general environmental and social terms, in spite of the best intentions of many negotiators. This situation clearly needs to be rectified. Any accreditation scheme should identify and support projects that bring biodiversity or social co-benefits whilst ruling out those that have adverse effects upon sustainable development. It might, for example, be appropriate for international agreements such as the Convention on Biological Diversity (CBD) to provide biodiversity criteria for land use change-related projects conducted under the Kyoto Protocol.

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Witnesses: **Ms Ruth Davis,** Head of Climate Change Policy, **Mr John Lanchbery,** Principal Climate Change Adviser, Royal Society for the Protection of Birds, **Mr Brian Samuel,** Head of Policy Research and **Ms Brooke Flanagan,** Strategy Manager, Energy Saving Trust, gave evidence.

Q1 Chairman: Good morning, welcome and thank you very much for coming in. Thank you for your written submissions as well. Can I start off on a general basis and ask you to say what you think is the role the voluntary offset market should play, and in the light of that whether you think it is something that should be actively promoted? I would like to hear both of you on this.

Mr Samuel: From the Energy Saving Trust perspective my first point would be that what we actually require is for individuals to take action and save carbon rather than to rely on other methods to do so. So it is important for individual actions. That said, once people have taken those actions open to them there may be a role to play for offsetting those emissions that they cannot do by other means. So we believe that once action has been taken there is a potential role for offsetting.

Ms Davis: If I can pick up on behalf of the RSPB, two or three things really. I think our major scepticism about the role that voluntary offsets play is the overall message that is associated with those going out to the consumers of those offsets, and with the best will in the world it is very hard to convey to people when they are buying an offset that they are not actually neutralising their impact on the global environment; they, I think, quite understandably, think that what they are doing is buying something which means that they are relieved from the responsibility of taking further action. And the science is telling us that we cannot have an either/or solution; we cannot have action somewhere else in the developing world and no action in the developed world—we have to have both. The voluntary market does not give that very, very important message to its customers.

Q2 Chairman: Are you saying that it is actually harmful thing in that case?

Ms Davis: In terms of its overall messaging, yes, I think it can be, and I think if you look at the way in which it is used by particular sectors in their conversations with their customers that will give you an indication of how it is harmful. So if you have an airline selling an offset alongside a flight I really do think that that is a proposition being put to those customers to say, "It is okay, you can carry on doing this and you can still rescue us from the current crisis."

Q3 Chairman: If you have an airline passenger who is genuinely concerned about climate change and recognises that it will be at least five years before aviation is inside the EST in any kind of meaningful or effective way, is it not better that those people should be facilitated, the opportunity for those

people to buy an offset rather than just do nothing? You are not going to stop people flying; in the real world we are going to go on flying. Parliament has just been to America to discuss climate change and we flew there. Is it not better to promote offsets in those circumstances?

Ms Davis: I think it would be better to give people an opportunity to make a contribution to projects which will help manage climate change either here or abroad, but the messaging that goes with the concept of offsetting and the idea of carbon neutrality does specifically convey the idea that you can neutralise the environmental impacts of your activity by paying for somebody else to take responsibility for that.

Mr Lanchbery: Could I just add a bit there? There are other actions you can take at home, as EST has just said. What people do not tend to do is think, "I really do need to fly to there so I ought to take some compensatory action in another sphere in which I operate at home," using the car less or something, and offsetting provides them with an excuse for not taking those compensatory actions elsewhere. That is our concern. If people wanted to buy a whole load of emission reduction credits of some sort from the vendors of these products, then, fine, it is just the way they use them to specifically offset particular activities that is troublesome. It is the concept of carbon neutrality: that in some way you can take action and then be excused for taking it. Because you do not reduce emissions overall what you use offsets for is to keep emissions the same—you do not actually use them to reduce anything. So we are very keen to encourage people to take action at home, which is ultimately the only solution. Your question obviously is a very good one; people will continue to fly, but if they do continue to fly then they should think what they can do somewhere else.

Q4 Chairman: This is rather the WWF view, that if you are going to have offset it is at the bottom and there are other things you should be doing first.

Mr Lanchbery: Yes.

Q5 Colin Challen: In the light of that, can I ask whether either of your organisations have made a policy decision not to use offsets yourselves?

Ms Davis: Yes.

Mr Lanchbery: Yes.

Mr Samuel: No. What we have tried to do is to try and end up with a zero carbon footprint for all our operations. At the moment we have not been able to achieve that and so, in the meantime, whilst we continue to try and work towards that goal of being a zero carbon organisation we are considering offsetting with one of the schemes that the government has recommended in its consultation. In the meantime we will still try to get down to zero carbon for our organisation.

Ms Davis: We have decided that we do not want to go down the route of offsetting in order to be able to take the money that we would in offsetting and reinvest it in reducing our emissions at home. So we have a commitment to try to match our own target within the NGO community of a three% annual reduction per person per year within the business, and we expect to do that by absolute emission reductions and not through offsetting.

Q6 Chairman: I fully understand your arguments but, notwithstanding, offsetting does seem to be a growing activity. Why do you think that is?

Mr Lanchbery: There are two reasons. Firstly, there are people who are pretty green and feel that they ought to do something and they feel that offsetting in some way empowers them to do something. Then there is the business case where businesses, either through moral principles or just for publicity purposes, want to look good and will offset their emissions. So there are two main types. It is ironic, though, that in the case of personal offsetting the offsetting tends to be done very much by the green community—although it is growing it is growing really within a green community, which is interesting given the controversy around the subject. So there are two main thoughts—business and personl.

Mr Samuel: If I could add to John's comments? We are also finding that within individual consumers there is also another category, those who are able to pay and therefore appear keen to buy their way out of their personal responsibility. That said, if there is a consumer demand then businesses will develop products for that consumer demand and with the focus on aviation emissions and the fact that there are not any aviation emission reduction policies, or major ones in place at the moment, therefore businesses will develop products—and we have seen that, there are now over 60 companies offering products in the market place for individuals and businesses. So I think there will be offsetting because people are demanding it.

Q7 Mr Chaytor: If there are over 60 companies now offering offset schemes, how do you envisage that it will develop over the next five years, the next 10 years? Do you expect continuous growth? How do you see the voluntary market developing?

Ms Flanagan: I think it will continue to grow at the moment. Over the last three years we have seen in the offsetting schemes a 60% growth per annum in those which are available, which is quite substantial, and it seems to be that that will continue on for some time. Whether it continues to grow beyond that will depend on whether there is some sort of accreditation scheme put in place.

Mr Lanchbery: It looks as though it will continue to grow. Whether it will continue to grow indefinitely is another matter. As more Kyoto credits come on to the market I suspect that they will tend to be used anyway, whether or not there is an accreditation scheme, because they have more credibility in many ways. They are inadequate in some ways but at least they abide by a set of internationally agreed rules that are drawn up by the entire world and experts around the world, so people tend to prefer those, I think, given the choice. I am sure you will come on to this, but there is really no way of choosing between credits on the voluntary market; it is very difficult to get accurate information about precisely what carbon value and other co-benefits in terms of social

development and biodiversity they might bring. So it is a terrible market. We have been looking at the market for ages now and we, frankly, would not be able to draw up a list of which ones were best. So it does need regulation.

Ms Davis: I think there is also a question as to the growth in the market partly depends on credits being a lot cheaper than the activity they are offsetting. At the moment we are in a situation where it is possible to buy an offset for a price which is a tiny fraction of what Nicholas Stern believes to be the price of carbon, for example. In a regulated market with a cap on it you would expect at some point that that would change, and we would hope it would change. As that becomes the case more and more people would probably find themselves in a position where financially they may choose to forego the activity rather than buy the offset, but that really is contingent on actually having a market which reflects the value of its major product—it does not at the moment.

Q8 Mr Chaytor: Just to pursue that point a moment. If both of your organisations feel that growth is inevitable, although not infinite, what is the likely pattern? John, you said that at the moment this is an activity entirely within the affluent green community. If Ruth's point is the case that sooner or later the cost of offsets will need to rise towards the government's view of the real cost of carbon then it is likely to stay within the green affluent community. The prospect of the voluntary offset market extending out to millions of ordinary people is constrained by the price of purchasing the offsets, which are going to increase.

Mr Lanchbery: Probably, yes. The value of Certified Emission Reductions and the Clean Development Mechanism will almost certainly increase once the global trading market opens in 2008. It is difficult to see how they will not, and they will probably increase over that period as the end of the first Kyoto commitment period looms and states will need credits in order to come into compliance. So I suspect the price will go up, yes. The price is an interesting thing because the whole point of an offset in the voluntary market is to keep it as cheap as possible. A chap called Brendan Sewell, an ex civil servant and now an NGO, did a series of sums and worked out that if you paid the equivalent of the taxes on a motor car for a flight to Australia you would be paying about £750 to pay the equivalent taxes for going by road. So that is perhaps indicative of the sort of value that an offset to Australia ought to be, just about £700 to £800.

Mr Samuel: I think I would agree with the fact that prices will increase if this scheme is robust. I think the problem is that if you have lots of entrants in a scheme where there are not any rules, then who knows what would happen? At the moment you have a massive divergence of prices—€3 to €30. You have a massive difference in the carbon calculations behind the whole offsetting process as well. So there is a lot of uncertainty. The risk is that you can have even worse products and projects than there are now on the market to try and keep the price as low as possible for others to participate. From our perspective what we would be keen to encourage is that with Defra planning to launch a carbon calculator, we would look to encourage every single household in the country to take advantage of that tool and then to implement the mechanisms required to reduce their own carbon footprint. Hopefully that may then drive them to look at what else they can do, and that may or may not include offsetting if it is a robust scheme.

Q9 Mr Chaytor: The market is going to grow and therefore the regulation is crucial?

Mr Samuel: Regulation is crucial.

Ms Davis: I think also there is a very important point about the difference between a functioning cap and trade scheme, and what we have here, which is a voluntary market, is that there is no cap. The point about a cap and trade scheme is specifically that it sets an environmental limit on emissions and then you trade within that context. We all know that we are not there with the Kyoto Mechanism yet because we do not have the right level of participation, the right number of sectors, even the right cap operating, but the principle behind that is that we do have an environmental limit. No environmental limit exists in the voluntary market, and in essence that creates a situation where you are really not trading to reduce, which is the point that John was making. If we were to get into a situation, for example, where we did have personal carbon calculators, and perhaps a suggestion from government, if not a regulation from government—I cannot see us going down that route yet—of, say, a limit, a five tonne personal allowance for carbon, if we were to take the same approach that we have taken in, for example, the EST, then we should be saying to people, "You can only meet a small proportion of your carbon requirements through offsetting." In the EST we set a limit on the number of credits that can be used and traded from CDM mechanisms for precisely the reason that we know it is necessary to achieve reductions within the European Union, rather than simply trade across global power blocks. The same would need to apply to a personal carbon allowance for this to have any real environmental benefit. We have to remember all the time that the point of this market is to achieve benefits for the climate, and we will not get those without a cap.

Chairman: Graham Stuart.

Q10 Mr Stuart: There have been reports in the Press about projects not being truly additional, of double-counting, of leakage, and I wondered how serious and widespread you thought these problems were in the market, or is it just a small number of bad apples giving the rest a bad name?

Ms Flanagan: I think without an accreditation regulation or regulatory scheme in place it is really hard to know. It is widely variable.

Mr Lanchbery: We would agree with that but there have been some real horror stories. Some of the projects have actually been approved by—not the CDM—but the World Bank have run into big

trouble, especially the big Plantar project, for example, in Brazil, about which many horror stories are told. So there are a lot of projects that have gone wrong; but, as you say, it is very difficult to quantify them because there is no regulation, so it is just what people can find out or happen to find out. The Defra project is way behind time, of course; it has not gone wrong, as such, but Defra are still flying around whilst not actually offsetting that much in their project in South Africa.

Mr Samuel: One of my major concerns as well is how much of the financial contribution is actually going to go to projects, even the good ones. So the margins that have been extracted by the market by some of the suppliers of the offsetting projects are very high. So that is another concern.

Q11 Mr Stuart: Before we move on to talk about validation I want to ask you about who is best to regulate the market, or indeed to provide the accreditation that is felt to be necessary, because you both agree that some form of accreditation should be mandatory. Could the industry, rather than the government, run such a mandatory scheme, perhaps with government support and with outside independent regulation and verification?

Ms Flanagan: I think if you are looking for a consumer based programme it needs to be a very trusted, transparent and robust system that is put in place, and I think that needs to be run by an organisation that is seen to be trusted by consumers. I am not sure that necessarily they would see the industry self-regulating as meeting those requirements.

Ms Davis: There is also an issue about the fact that many charities, environmental charities, development groups and others have seen the voluntary market as a means of attracting funding in a very difficult funding environment, which means that you have a plethora of different kinds of projects in the voluntary market. I think it would be very difficult to get those very different groups to agree to a single accreditation system; they would all fight for their specific projects, and we know this very clearly because within the conservation community there are many people who see this as a means of accessing funds and will argue for maintaining all kinds of land use projects in a context where many others might actually see those as not being appropriate or valid. So I think it might be very hard to achieve commonality.

Mr Lanchbery: I think you do need an independent verifier. Like the EST has done that on renewables projects in the UK at one time, and did it very well. The CDM executive board does sort of fulfil that function—it is composed of experts appointed by governments but acting in their own capacity, scrutinising projects, and most of them are very good, very expert experts. It may be a bit clunky in the way it operates—it is rather cumbersome—but they are very expert and very independent. They are almost bound to be because of the diversity of countries and the different states of development that they come from. So they do give pretty unbiased judgments, even if people sometimes do not like them.

Q12 Mr Stuart: Is it not possible though that as the market develops the market is going to suffer because of the bad Press stories we have already mentioned, and often markets do seem extremely diverse and unable to come to any common standards together, but actually market pressures themselves bring them together until you develop a stamp of approval, without which you do not really have market credibility. Is it not possible that that could develop, given time, rather than some central regulatory regime?

Mr Samuel: I think it could possibly develop given time, but how long and what damage is done in the meantime and how long would it take to recover, I think it is far too risky an approach to let the market manage itself.

Ms Davis: I do think as well in a context where you are not talking about firms necessarily adapting their existing business to meet regulatory standards, but changing fundamentally their whole business. So, for example, if we had a context where we said that actually the regulation suggests that forest projects in temperate regions are inappropriate, you have whole businesses whose entire offsetting practice is around temperate forests and they cannot adapt because they are doing something completely outside of what would then be the regulated market, which means that they will fight tooth and nail against that kind of regulatory proposition. I do not think they can be expected to self-regulate in that context.

Q13 Mr Stuart: Again, market pressure might mean market knowledge develops and they are simply—

Ms Davis: Wiped out.

Q14 Mr Stuart: They either move to other areas or go out of business. What makes offsets different from "buy-a-goat" or "water-a-farm" projects undertaken by overseas aid and development charities that do not, at least for now, require accreditation? Is it just that you do not think the offset industry is to be trusted?

Mr Lanchbery: It is probably the fact that they do purport to deliver a certain amount of carbon saving which has a specific value, and in the voluntary market they do not have a highly specific market value. But that is what is valued, and it has led, as Ruth implied just now, a lot of companies to set up offset marketing exercises for reasons other than climate because they see this as one way of getting money for environmental or developmental goods. So, a lot of the projects they run are actually very good in terms of biodiversity or social development—the wood burning stoves projects, for example, in India and Nepal that are Practical Action run. They are excellent projects but they are not primarily designed as carbon projects. Because they are designed for something else—many of the offsets, anyway—this tends to distort how they function. So you can have a perfectly good

biodiversity project, say, from Conservation International, and they will have worked out the biodiversity aspect brilliantly, but not necessarily the carbon aspects. I think that is what makes it so difficult; there are lots of different types of projects that bring about social or environmental good in some way, and they are piggy-backing on the top of the carbon market, and for carbon markets you really want something different.

Mr Samuel: I would perhaps turn the question around and liken the carbon market to perhaps a financial market. We have seen quite a lot of instances of mis-selling of financial products, even within the FSA framework, so I would turn it around and say it is more similar to a financials market.

Q15 Colin Challen: Mis-selling is perhaps a good word for me to come in on because the CDM has been criticised by a number of our contributors to this inquiry on the grounds that it is inflexible, delivers projects which are very large-scale and, as we saw recently in a report about China, does not even necessarily deliver what we really want; it does not look at the social and other developmental aspects and so on. So would it be the best thing to lock ourselves into that kind of system which effectively locks out, as we have seen with the CDM, many African countries—only South Africa seems to be getting anything from the CDM. What are your views on that?

Mr Lanchbery: The CDM market being part of the Kyoto cap and trade market again delivers carbon benefits and inevitably it was designed in that way: to deliver carbon benefits and absolutely nothing else. It is meant to deliver sustainable development benefits but in practice it does not—sustainability is assessed solely by the host country of the project because that is the only way to do it in an international regime. So you are right, it is a clunky mechanism, like many international mechanisms, and it is designed solely to deliver carbon benefit. So if you are an investor it has always been recognised that the CDM was likely to become the Chinese development mechanism because China is a big country, it has infrastructure, you are going to invest in it, or you are going to invest in India; but you are probably not going to invest in small countries. Also, the transaction costs are quite high, it costs $50,000 to $100,000 to go through the compliance procedures, so that tends to mitigate against small projects in developing countries. There was an attempt to fast track such projects, to have some sort of streamlining, but it fell by the wayside. Yes, it certainly has a large number of flaws, but it is hard to see how to get around that. There is a lot of biodiversity stuff written into the agreements on afforestation and reforestation but it is not binding—only the carbon bits are binding.

Q16 Colin Challen: If you have VERs operating who can deal with the smaller projects and also take into account other social developmental aspects, provided that was properly regulated, surely that would fill that gap?

Mr Lanchbery: That could be a valuable function, yes.

Ms Davis: I think that is a very good point because the danger of regulating so that you limit the choice to Kyoto projects is that you do exclude things which are socially very important, you exclude poor countries and you exclude stuff which is very close to our hearts as a conservation organisation, which is managing impacts of deforestation. I am not sure, though, that in deciding because the CDM mechanism does not work in the way that we want it to that the right approach is then to decide that the responsibility for dealing with those issues and for providing that funding should fall to the voluntary market. I think we would probably take the view that over time we have to try to make carbon savings within the context of a cap and trade scheme. That means really doing everything we can to improve what is still a very new international process. We have never had a market in environmental goods before; we cannot really expect it to operate immediately in the most perfect way. But I would have said from our point of view that most of our time and investment will probably go into trying to do the best we can to improve both the CDM mechanism itself and also improve wider provisions around Kyoto and post-Kyoto to be able to take into account some of the things that are currently neglected through that process. That is in the end because we have to keep concentrating on the fact that the purpose of the carbon market is to allow us to cap carbon emissions, and we should bring everything we can within the context of that cap and not manage outside the cap scheme.

Q17 Colin Challen: From that would the most important thing in your view be to remove doubts about VERs if they were somehow included in a robust cap and trade system, but still allowed themselves the flexibilities that the CDM does not offer?

Ms Davis: I think that is one way of looking at it; I think that is an interesting question. What government is trying to do, very intelligently, is to make sure that what cap and trade schemes exist actually have a relationship with each other so that they sit within an overall framework. That is why the EST is essentially embedded inside the Kyoto process and why any trading schemes that we develop further down the chain should have that relationship. That may be quite problematic if you have a context in which you are trading with VERs in a situation where you also want to have a relationship with other trading schemes further up the system. The preference has to remain, difficult though it is, to try and create a context in which the international agreement under which we are operating allows flows of capital to developing countries to manage their emissions through whatever route, and recognises the value of standing forest, through whatever is an appropriate route. Relying on the voluntary market to do that is not, in the end, going to solve the problem; it is not a long-term solution to the problem.

Q18 Colin Challen: Do the EST share those views?
Mr Samuel: I fully agree with the fact that where we should end up is a cap and trade system. However, I am not convinced that a personal carbon allowance scheme of caps on individuals is going to happen very quickly. I would like to think that progress towards that goal would be taken. Therefore, I think there probably is a role for a mandatory regulated market for smaller projects that are more difficult to deliver under the CDM mechanism. And within that you could have product differentiation where you would have the products within the market, such as an African offset fund, you could have an Asian offset fund, a fuel poverty offset fund, technology transfer offset fund, for instance, which is more difficult to be achieved under CDM. The point is, though, that you do need to have regulations in order to make that happen. I do not know if those regulations can be developed to be sufficiently robust to guarantee and deliver sufficient carbon savings, but I think that it is something probably worthwhile exploring. Going back to my earlier point, if consumers demand offsetting then companies will develop schemes anyway.

Q19 Colin Challen: Can I ask a broader question about the issue of equity because, as we have heard, Africa is generally excluded from the CDM so clearly the CDM, which is about trying to reduce carbon emissions, only focuses on those people who have the infrastructure to release carbon and, since most African countries do not, do you think that that should be an issue discussed in any form of the CDM?
Mr Lanchbery: Yes. It has been discussed in the context of avoided deforestation that Ruth mentioned. There is a proposal from Papua New Guinea and Costa Rica to limit emissions from deforestation where they would take on what is known as sectoral commitment to limit their rate of deforestation, preferably to zero, and they would gain credit from anything in excess of that. The trouble with that is that for countries in Africa, particularly the Congo Basin people, they are not actually deforesting much at the moment and so they cannot really deforest any less, and yet they need the funding to preserve their forests and prevent emissions from deforestation. You have another problem, in addition, which is basically a capacity problem. We had quite a good meeting with the Congo Basin Group—which is the Congo, Cameroon and neighbouring countries—and they pointed out that what they really need at the moment is some sort of capacity building programme that would enable them to take on this sort of commitment and do projects on avoided deforestation, and I know it is a very common difficulty in Africa. South Africa can do these projects but in many other countries it is probable initially, that some sort of form of overseas aid is needed from DFID to enable people to development such projects.

Q20 Colin Challen: Finally, how is this argument between CERs and VERs being played out in the wider European Union? I am aware of a number of companies that offer carbon neutrality in Germany and elsewhere. Are they as much into this debate as we are, particularly in terms of state regulation or self-regulation?
Mr Samuel: I am not an expert on this by any means. The one thing I would say, I believe in Germany that there is a cap on the margins that companies are allowed to make and the amount of funding that they invest in advertising, marketing, administration, et cetera, back office functions, I think that is limited to 30%. So in some areas they are clearly ahead of us.

Q21 Mark Lazarowicz: We have been talking about regulation, but obviously we are talking about a voluntary offset market at the moment and both of your organisations in your response to our questions agreed that there was not sufficient clarity in the offset market now to allow consumers to make an informed choice. Is there any reason to believe that most consumers do not have any idea what they are getting when they pay for their offsets? What kind of information should they have and is it going to be possible to give them that information?
Ms Davis: I think very many people who are buying offsets do not understand what it is that they are buying. The point that we were making at the beginning about the fact that they are not buying emission reductions and they are not actually buying neutrality is one which is completely lost on the vast majority of people, and I think people will also be horrified if they thought that what they were buying in a lot of contexts was a carbon project which could not guarantee that it had suitable, social or environmental safeguards or, indeed, associated benefits, because most people who buy in on a voluntary basis probably are people who are socially and environmentally concerned already. There are some proposals in the government consultation document about the kind of information you might expect to go with accredited offsets, which are very good and very worthy but I think at this stage are probably a little too complex to try and fit into the email or the packaging or whatever that you are going to get out to people. I think that is really a genuine challenge but, if nothing else, if we were able to convey to people the fact that whilst they may be making a contribution to manage the climate problem by buying an offset we cannot fix the problem without reducing emissions at home. That one piece of messaging would be a useful and constructive thing to do.
Mr Lanchbery: I think most people sell their offsets on the back of something else. I know a lot of people who do buy offsets buy them on the basis of their biodiversity value or their social benefit value or something like that, and they just assume that the carbon value comes with it. They just assume that if they buy a tonne of carbon it is a tonne of carbon and it is there now and they can use it immediately

as an offset. So I think they mainly scrutinise the social and environmental benefit, but not the carbon. Certainly people I know do that.

Mr Samuel: I think from the Energy Saving Trust perspective that, yes, more information and greater transparency and clarity is required. I think we are also finding that more people are considering investing in offsetting, mainly from the aviation perspective. Historically those people are perhaps more environmentally aware and would be prepared to do more research into what they are investing in. As the market expands less and less people, as a percentage, will be prepared to do that; therefore, I think it is important to have far greater clarity, particularly as the demand for offsetting increases.

Q22 Mark Lazarowicz: Do you think also that people's willingness to enter into voluntary offsets will be affected if they were more fully aware of the timescale in which the supposed benefits for offsetting were to take place? It has been suggested, for example, that even if carbon offsetting works the benefits of an offset purchase, say, take a flight to the USA, are not going to be felt for 100 years or so. If people actually realise that they are not going to be providing the benefit they think they are going to be providing in anything equivalent to the timescale in which they are causing the damage, this will harm the market.

Mr Lanchbery: I do not think most people realise that at all, no.

Mr Samuel: That is why it is important for people to take responsibility for their own actions first. So, yes, do whatever you can in your own home or with your own vehicle, but then there may be a role for offsetting after that, and that is what we would like to link into. The fact that people do offset but you ought to be doing more now in your own home and in your everyday lives.

Q23 Mark Lazarowicz: Does that not also point to a vulnerability in the system? If there becomes a greater public awareness—take that example of your offset for a flight to the USA is not going to reap the supposed carbon benefits for 100 years, then people might understandably decide it is not worth entering into those voluntary arrangements, and that could have quite a serious effect on the market. Does that not illustrate that there is a real danger of having a market that is very vulnerable to media comment, to informed information on these issues and that in itself illustrates a problem of developing this type of approach?

Ms Davis: I think that is true because in a very kind of *vox populi* way, if I go through a process of talking to my informed lay colleagues about their purchase of an offset, generally by the time they have understood exactly what it is that they are doing they will make a different choice. The choice might be to reduce more in their own homes, or it might be to say, "I would prefer, because I think it is more honest and straightforward, to make a contribution to a sustainable development project in a small African country . . ." let us say, ". . . rather than buy through an offset provider where I do not know what the mark-up is going to be, I am not sure that I can guarantee that I understand what the product will be at the end of it, and the proposition is that I am being sold some kind of neutrality which does not really exist." So, coming back to why we had some fundamental issues with the market altogether, and our agreement with the proposition to regulate the market, it is simply that it is there now and does exist. But I do not think we should necessarily see the promotion of the voluntary offset market in itself as something which is going to make a huge contribution to managing climate change. I do not think it is.

Q24 Mr Stuart: Could timing be key to saving offsetting if the rules were such that the carbon had to be saved before it was sold? It would certainly doubtless lead to a transformation of the cost base.

Mr Lanchbery: That would certainly be helpful, yes. It would certainly make it much clearer to the consumer, and it would also deliver more climate benefits.

Q25 Mr Hurd: Ruth, can I pick up on your point? Are we in danger of getting this issue a bit out of perspective? Yes, the voluntary market is growing but it sits at the margin of the compliance block. At the end of day are we not just talking about a bunch of well meaning people who are prepared to spend a bit of money to do their bit for the planet? They are probably exactly the same sort of people who doing the right things in their home or thinking about doing the right things and we are missing the main point, which is that two-thirds of the population are not thinking of doing anything at all? Should not we get this a little more into perspective as an issue? It is pretty harmless, is it not?

Ms Davis: I think that is a really good point, that because it is complex and difficult we can spend an enormous amount of time worrying about it and, in a way, it is a distraction which is partly why I get a bit exasperated with it, precisely because it is a distraction in a sense. But I think the messaging underneath that, maybe, is slightly more important than you are implying by your question, because precisely the people who may buy an offset or want to buy an offset are the people who are potentially catalysts for change because they are potentially those people who are aware of green issues, will engage with yourselves on the doorstep when you come round to talk to them about things, and will talk to their neighbours. So that group of people is rather precious and it is, I think, very important to keep telling people the truth about the climate, and the truth about the climate in the end is that we will not avoid dangerous climate change unless we change our own lives dramatically. It is unpalatable, it is difficult but we are going nowhere unless at least the engaged part of the population understand and realise that and express that as a message to others.

Q26 Mr Hurd: Transparency standards, we have received some evidence from people like the Co-Operative Group warning that quite honestly transparency information will not work and is in

danger of being too onerous on the offset providers, and last week I heard evidence of one large budget airline that was going to scrap its offset programme because it felt that what the government was pushing it towards to run were too stringent requirements in terms of transparency standards. Do you think that there is a risk of overkill here? Would you not rather have that budget airline with an offset in the market rather than absolutely nothing today?
Mr Samuel: I would rather that budget airline was actually taking its own steps to improve the fuel efficiency of its fleet.

Q27 Mr Hurd: I know; of course you would say that, but you know the reality of the situation is that that is not going to happen overnight and would you not prefer to have some mechanism in the market which enable passengers using that airline to do their bit, even if it is just in five years' time?
Mr Samuel: If you ask me the question would I prefer to have robust carbon offsetting that delivered carbon reductions in the future or nothing then I would go for the former.
Mr Lanchbery: I do not see transparency as being that hard. They must have developed a set of rules whereby they have developed their products, and they can publish those and they could have periodic reviews—not necessarily terribly frequently, but say once a year. The CDM is very good on transparency—at least its decision-making process is. Almost nobody takes advantage of it but all of their board meetings are on the web, so if you really want to know what goes on at the CDM you can watch all of their meetings live on the web, which is one way of achieving transparency.
Mr Samuel: Companies are used to dealing with regulation, it is an everyday issue for them. I do not see it being that great a problem.
Ms Davis: Forgive my cynicism in that situation as well, but I cannot help feeling that perhaps the bit of the transparency that they have a problem with is actually on the mark-up that they are making between the costs that they have to face in the market and the prices that they are giving to their customers. Anecdotal evidence from talking to colleagues who work on the carbon market last week suggested that projects generating credits to do with avoided deforestation were selling them at €3 or €4 a go, and the same credits were being sold on to customers by car hire companies and airlines at about €20 to €30 a go. With the best will in the world, I cannot believe that that is administration costs and if I were in that situation I would not want to be transparent either.

Q28 Mr Hurd: Is there a more fundamental problem about the possibility or impossibility of proving additionality? We have received evidence from people like Corner House and the World Development Movement who basically say that the whole basis is fundamentally and intrinsically flawed and that you cannot prove additionality and if you cannot then it is not worth having. Is this a fundamentally imprecise product?
Mr Lanchbery: There have been quite long debates about that in the Kyoto process. Ultimately, no, you cannot prove additionality because you can never prove what would have happened when it does not and you do something else. So, philosophically, you cannot prove additionality. But you can, in most energy-related products, get a good proxy for it. If, for example, you were going to build a new type of power plant you would know that the type of power plant in, say, a poorer African country, would be a diesel generating set, and you know that the emissions from standard diesel generating sets. So if you build, say, some sort of renewable generation then you will save the emissions from a standard diesel generating set. Other things are more difficult to estimate. Again, anything to do with land use change is often much more difficult to estimate, but you can get around that. You can take the conservative estimate so that if there is an uncertainty band on it you take the maximum uncertainty and only claim credit for the bit that is left. So there are ways of dealing with that. But, in practice, you can normally find a reasonable proxy that most people will accept.
Mr Samuel: It is never going to be perfect but, as I say, it is what is an acceptable degree of risk and you can minimise that degree of risk by erring on the side of caution on the carbon savings. As John says, it is easier to do it with energy efficiency renewable projects than carbon storage projects.

Q29 Mr Chaytor: Can I ask about the relationship between offsetting schemes and behavioural change? Do you think—accepting your scepticism—that there is a value in terms of the long-term effects on behavioural change?
Ms Flanagan: I think that is a little unclear at this stage. As I think everyone has stated, it can be seen as a bit of buying my way out of my guilt rather than taking responsibility for my own behaviour. We would obviously prefer to see the focus on energy efficiency, renewables and behavioural change in the home and in transport choices.

Q30 Mr Chaytor: Are the two mutually incompatible? Is an interest in offsetting in itself—and this seemed to be Ruth and John's argument earlier—a step towards a wider understanding of the need to reduce net emissions within the household.
Ms Flanagan: I think that depends on who you are talking to, really. You have a lot of environmentally green conscious consumers who will look at offsetting as part of a range of other things. You also have your affluent consumers who are looking at it as a process of taking a flight and things like that; it is not cost-prohibitive to them to do that. Whether they have thought of that as part of a range of other behaviours is not really clear. The other thing is just having information and awareness does not automatically mean that people change their behaviour—it is part of it and can be part of it but it does not necessarily follow that once they are aware of their carbon emissions from a flight, for instance,

they will go and insulate their home. But it could be used as a means of attracting their attention to a wider carbon saving debate.
Mr Samuel: There is definitely an opportunity to do so.

Q31 Mr Chaytor: Again, this is the function of any accreditation scheme, is it not?
Ms Flanagan: Putting it in its rightful perspective I think is a very important part of that.

Q32 Mr Chaytor: It is a bit like the government health warning on a packet of cigarettes, is it not? Offset schemes could be required to have some kind of additional information that made the point about net reduction of emissions.
Mr Samuel: Like the Energy Saving Trust help line number and website!

Q33 Mr Chaytor: This is precisely one of its functions. What is the role for the EST and RSPB? Ruth, earlier you were critical of the market but do the RSPB have any plans to intervene in the market? Surely there is an opportunity here for you? You sell all kinds of goods and services.
Mr Lanchbery: It is a market in which to intervene and we do intervene in one climate related market, we do provide a renewable energy product where the service provider purchases ROCS and retires them—Renewable Obligation Certificates. We have thought of doing that in the context of the EU ETS or possibly the Kyoto Protocol, but it is more difficult there because retiring EU allowances, although it does tighten the cap very slightly it is very, very, very slightly, given the huge amounts. So we are not thinking of developing a product *per se*. What we do instead is we do work within the international and European systems to try to bring on more officially recognised credits, so one of our main themes at the moment is to try to bring avoided deforestation into the international system and have that recognised in an appropriate way. So we tend to work that way around rather than doing our own little products.
Ms Davis: We experience it as a very painful internal dilemma because there is money out there in the carbon market. As I say, it is the only market that exists for environmental goods and as a consequence of that those people who have been looking desperately for many years for funds to support decaying, fragile ecosystems all over the world cannot help but look with greedy eyes at this one functioning environmental market. It is extremely hard to resist doing that and it is even harder in the context of tropical deforestation where there is an overwhelmingly good case to make to say that that is making a huge contribution to climate change. So we do struggle with this and, as John said, in the context of the forest projects that we are developing we are looking to try and bring those on alongside the development of some sort of formal mechanism, to get those within a post-Kyoto process. I do think that there is a really, really important point here, that we should not wonder, in a sense, that everybody is desperately trying to load their social and environmental benefits on to the carbon market in a way that perhaps the carbon market cannot withstand, and it is simply a reflection of the fact that it is globally the only place in which we have actually managed to create a market with flows of government and private capital into a payment for environmental goods, and until we find ourselves in a similar situation with biodiversity projects or with social projects we are always going to find that people will treat the carbon market as an opportunity in a desperate situation.

Q34 Mr Chaytor: Could I come back to Brian and the EST, briefly? Again, is there some scope in an accreditation scheme for the EST to get its logo in there and provide further handy information to people?
Mr Samuel: There is certainly a potential for the Energy Saving Trust to be involved. I think what I would like to see as a starting point is for us to target those people who are taking offsetting measures and see if we can convert them into taking their own actions as well. Obviously some people are already doing that. Again, if you then have robust schemes as a minimum we would be looking to signpost people to those robust schemes ahead of other ones. We have undertaken, as John mentioned earlier, accreditation activities on renewables prior to the renewables obligation and green certificates. That is far easier than doing so in a carbon offsetting market, but if the opportunity arose we would consider the opportunity of being involved.

Q35 Mr Hurd: We talked a bit before about the pricing in the voluntary market and the links, if any, to the social cost of carbon, about which opinion varies enormously about what that social cost should be, ranging from the Defra £70 to the Stern whatever it is and to Richard Tol's £5. In theory do you think that there should be some explicit linkage between whatever figures we come up with, with the social cost of carbon and the price of the offset market?
Mr Lanchbery: In theory, yes, it would be nice to have a link to the social cost of carbon. What you really get in markets, which is what we are looking at, even in a capped market, is the cost of reaching the cap. That is what you get in a cap market. So although it would be really nice to get the full social value of carbon I do not see how you get it through some sort of regulation. You could get it from perhaps green consumers of these products who might want to pay the full damage cost, if you like. But I cannot see it catching on more broadly somehow because it is very difficult to regulate in that sort of way.

Q36 Mr Hurd: Is there a risk in the current market that people are being taught a false price for carbon?
Mr Lanchbery: I think people get very confused about carbon prices because there are several costs. There is the damage cost, the cost of meeting a target and they are quite different; if the target is lax then the price is low. In an unregulated market, where there is no cap at all then the price is always likely to

be low because the lowest price in the market will tend to prevail. So, yes, it is a nice theoretical idea but I do not know how you achieve it.

Ms Davis: I agree with John, but to perhaps pick up on some of the discussion earlier about what health warnings could go with offsets, one health warning that could go with offsets is that a conservative estimate of the social cost of carbon is around $70 a tonne, or whatever, and just remember therefore when you are paying $20 that you are actually paying for something which is cheap because the world at the moment does not recognise that cost. That may make people aware of the fact that actually they should be looking for more expensive and higher quality products.

Mr Samuel: I think all you have to do is look at the price in the EU ETS at the moment, which is not much more than one and a half euros.

Q37 Mr Stuart: Could you explain why you feel that mandatory offsetting might be appropriate for aviation?

Mr Samuel: There is a gap in aviation at the moment, so there is an argument, perhaps more so for aviation then other sectors. You do have the air passenger duty at the moment, which is a very blunt instrument. Would it be better to have a mandatory offset at that level and that then being ring fenced and going into robust carbon saving activities that might actually be taking place now? That is one angle. I am not convinced that the mandatory offsetting for aviation is a good thing. There is an option around that and it is certainly better than what we have at the moment.

Q38 Mr Stuart: If, after including aviation in the EU ETS, it became apparent that airlines were simply passing compliance costs on to consumers, rather than making efficiencies themselves, do you think that there would then be a role for mandatory offsetting in that case?

Mr Lanchbery: Not really. We were not in favour of mandatory offsetting for aviation. We have been pushing—like we do internationally—for aviation emissions to be opted into the EU ETS, and we are on several Commission groups looking into that. Whether that works or not is another matter, it depends whether the Council and the Parliament have the guts to put a tight cap on aviation emissions. In that case, of course, they will still be able to buy credits from elsewhere, almost certainly, although not for a while because the aviation emissions, as you probably know, are not included in the Kyoto Protocol, and all EU allowances are backed by Kyoto Protocol credits, so the aviation allowances will not be backed by Kyoto credits. They will have to set up a little scheme, which is actually separate from the rest with no net flow of credits in and out of it, otherwise they may go out of compliance with Kyoto. So it is interesting—all of the NGOs have been trying for a little separate system. In fact, in practice, that is probably what we will get because there should not be any net interchange. They will have to have what is known as a gateway, and from past experience gateways have always acted as completely closed doors in that sort of instance.

Ms Davis: I must say that the idea of mandatory offsetting is quite a strange one really because what are you actually doing? You are applying, effectively, some kind of tax on top of what people are paying, which then instead of going to government goes to a wide range of schemes and there is probably quite a substantial mark-up and the tax itself is not going to be set at any level which encourages behavioural change because the tax is actually set by the price or cost of a tonne of carbon on the voluntary market. So I am a little confused as to how we could see that as being a particularly effective or appropriate, or, indeed, cost effective way of tackling aviation emissions.

Q39 Chairman: Do you have any reason to suppose that the government it is more cost effective in the way it uses the revenue from air passenger duty?

Ms Davis: It is a very good question, but I think if you were to ask me about air passenger duty as a policy instrument I would say that it needed to be substantially higher and if the government wants to retain credibility over its green taxation programme it has to demonstrate transparency in where that goes.

Q40 Chairman: I understand that point entirely but I am slightly questioning your view that bureaucracy in the private sector is automatically going to be higher than the cost of bureaucracy in the public sector.

Ms Davis: In this context I do not necessarily think I was saying that, I think I was saying that in this context the nature of this market is such that we believe it to be quite chaotic and unregulated, very difficult to guarantee that where the money is going is actually where people want it to go, and we have had that discussion. The level at which you would be setting this *de facto* tax is not one which actually relates in any way to the environmental and social costs associated with it or has any demonstrable impact on people's behaviour, and we know that there are substantial mark-ups being made by the companies involved. So I think in this particular specific case I can legitimately point to the way in which that would operate and say that it does not feel like it would be an effective or cost effective policy instrument, which is effectively what it would become.

Q41 Chairman: So is this worse than doing nothing?

Ms Davis: I do not say that I would say that it was worse than doing nothing but I think it is the bottom of the list of things that one might do, and as an airline passenger I would be quite a lot happier to see a straightforward tax in that situation where I knew, for example, that that would go into developing public transport alternatives.

Q42 Chairman: Which is not much chance that we have at the moment, of course.

Ms Davis: Absolutely.

Q43 Mr Chaytor: Can I ask about forestry? At the moment it seems that the voluntary market is trying to reduce the proportion of credits through forestry, whereas the CDM board is under some pressure to increase its involvement with forestry. What is your view of this and does forestry provide some viable opportunities for climate change and deviation?

Mr Lanchbery: It does, particularly avoided deforestation, that is avoiding the emissions from deforestation; but also reforestation and afforestation have significant benefits. The reason why they have been taken out largely from the voluntary market and are still progressing in the CDM is really because in the voluntary market it is very difficult to provide the guarantees that you are actually saving carbon. Because of course there is a distinct difference between storing carbon in growing forests and not releasing it at all in the case of an energy efficiency of renewables project. Because the carbon that is stored in any sort of land use can always reverse, as they put it, it can go back into the atmosphere. So somehow you have to give some long-term guarantee that this does not happen, and that is quite hard, particularly in a voluntary market because somehow you have to monitor forever, and if there is a fire you have to give all the money back, and the carbon credits. So it is really hard to do. In the international market they have coped with rather better, although not perfectly; they have an accountancy solution for the so-called non-permanence problem. The thing we are doing now, avoided deforestation, which is an avoided emission thing, is easier and it has become easier only recently because of the Papua New Guinea/Costa Rica proposal that I mentioned earlier, which is a proposal for a sort of national commitments to limit the rate of deforestation, and there is therefore a baseline from which to measure any projects. One of the many reasons why it failed to go through Kyoto before was that no developing countries were willing to take on any commitments to anything, so there was no baseline from which to measure projects. So you could be in the ridiculous situation of preserving one bit of forest whilst the country razed all the rest of its forest to the ground. There is a prospect of avoided deforestation being recognised now and gaining credit. It is still difficult though, again, from a price point of view, because one of the primary drivers for tropical deforestation is agriculture. People chop down the trees and sell them of course but then they grow plants on them and Soya in Latin America and oil palm in much of Southeast Asia, and they get a continuing return for that. So somehow if you are going to have credit for avoided deforestation you have to give them enough money—the landowners, the peasants, or whatever—to give them an income for the indefinite future, and it is hard to see how you can do that. So the credits would probably need to be quite expensive.

Mr Samuel: From our perspective, as John has so eloquently put, there are major issues around carbon storage and certainly from our perspective we have a strong preference for carbon saving projects rather than carbon storing projects in any voluntary offset market.

Q44 Mr Chaytor: Could I finally ask John, you do not make any distinction between forests in the tropics and forests outside of the tropics because this seems to be an issue that is emerging at the moment, that reforestation outside the tropics is a waste of time, some people say.

Mr Lanchbery: There is a big debate about that, yes. That is one of the reasons why the tropical deforestation stuff is going ahead because there is a debate about the precise amounts, but it is not whether it works at all. There is a lot of firm scientific evidence that forests can emit as well as sequester. Hadley always outlined that if the north east Amazon dries out, as it is likely to do with climate change, it will convert from being a net storer of carbon to a net emitter, which is partly why Brazil is always a bit cautious about forestry projects because they could be the proud owner of a large source rather than the proud owner of a large sink. It is a difficult area and the temperate forests are a particularly difficult area.

Chairman: Thank you very much that is a very useful and interesting session. I am very grateful to you. We have an interesting task with a lot of divergent views from people who want to do the right thing. Thank you for coming in.

Memorandum submitted by The Corner House

Executive Summary

1. Carbon offsets make no verifiable contribution to climatic stability. Indeed, their effect is likely to be negative and damaging to efforts to address global warming.

2. These are not fixable "design flaws" or mere problems with fraudulence in individual projects. Offset trading is inherently:

- conceptually incoherent;
- characterised by unsolvable measurement and accounting problems;
- damaging to attempts to effect a just transition away from fossil fuel dependence;
- afflicted with irresolvable property rights conflicts; and
- harmful to the cause of public education about climate change.

3. Carbon offsets should not form any part of official climate policy, and the UK government should avoid their use in other government or government-supported climate programmes. Further, the claims made for them in the voluntary offset market should be, at a minimum, carefully monitored and regulated.

Introduction

4. 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 many 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, as well as 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.

5. This Memorandum draws on data compiled by many researchers and comments by many critics. Among them are Soumitra Ghosh, Hannah Wittman, Tamra Gilbertson, Cynthia Caron, Javier Baltodano, Anna Pinto, Patricia Granda, Timothy Byakola, Trusha Reddy, Ricardo Carrere, Winnie Overbeek, Marcelo Calazans, Jutta Kill, Adam Ma'anit, Heidi Bachram, Ben Pearson, Daphne Wysham, Isaac Rojas, Nadia Martinez, Graham Erion, Esperanza Martinez, Olle Nordberg, Elisabeth Bravo, Ida Aroonwong, Chris Lang, Sajida Khan, Raj Patel, Wally Menne, Rehana Dada, Ponglert Pongwanan, Robert Osterbergh, Les Levidow, David M Driesen, Harald Eraker, Veronica Vidal, Patrick Bond, Michael K Dorsey, Jorn Stave, Niclas Hallstrom and Ruth Greenspan Bell. Some of these researchers are associated with the Durban Group for Climate Justice. Many others have also contributed to the analysis that follows, but they are too numerous to name.

Factual Information and Analysis

Carbon Basics

6. Like many other social problems, climate change is closely tied to the burning of oil, coal and gas. Fossil carbon is being taken out of the ground, run through combustion chambers, and transferred to a more active and rapidly circulating carbon pool in the air, oceans, vegetation and soil. Some of this active carbon builds up in the atmosphere the form of carbon dioxide, trapping more of the sun's heat, warming the earth and destabilising the climate. The carbon build-up—up to 90% of which has come from the North—has been made worse, especially over the last century, by unchecked land clearance and the spread of industrial agriculture.[2]

7. Fossil carbon easier to burn than it is to make. It took millions of years for plants to extract the carbon from the atmosphere that makes up today's coal, oil and gas deposits. It has taken only a few centuries to burn it. Today, the world combusts 400 years' worth of this accumulated, compressed biological matter every year, three to four times more than in 1950. This carbon will not be able to lock itself safely up underground again as coal, oil or gas for many, many millennia.

8. The carbon that comes out of the ground stays out of the ground for a very long time. Once it makes its way to the surface in large enough quantities, there exists no way of stopping it from building up in the atmosphere. Before the industrial revolution began there were only around 580 billion tonnes of carbon in the atmosphere. Today the figure is closer to 750 billion tonnes—the highest in hundreds of thousands of years.

9. Trees can absorb some of this carbon. So can oceans, grass, soil and fresh water. But they are unable to absorb enough of it, fast enough, to keep it from accumulating in the atmosphere. Nor can they hold onto it for very long. Once above ground, carbon constantly flows back and forth among vegetation, water, soils and air. The oceans, for instance, can take up just so much of the new carbon pouring up from underground. They have already absorbed a third of their ultimate potential, and the new carbon dioxide dissolving in them is turning them more acid. Plants and soil are an even more limited receptacle for fossil carbon than the oceans. Their storage potential is far less than the carbon content of the coal, oil and gas still underground. Living and dead biomass hold on the order of 2,000 billion tonnes of carbon, while fossil fuel companies are still planning to transfer around twice as much fossil carbon to the surface. In addition, plants and soil can only hold onto carbon for a short while before releasing it again to the air, water or soil. Finally, how much carbon land vegetation will absorb or emit in the future is highly uncertain.

[2] For full references see Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power, the Dag Hammarskjold Foundation, the Durban Group for Climate Justice and The Corner House, Uppsala, 2006.

THE EARTH'S CARBON POOLS (billion tonnes)

Atmosphere	720–760
Oceans	38,400–40,000
Rock (mainly underground)	75,000,000
Land biosphere	
living biomass	600–1,000
dead biomass	1,200
Fresh water	1–2
Fossil fuels	
coal	3,510
oil	230
gas	140
other	250
Annual transfer of fossil carbon to above ground carbon pools	7+

Sources: P Falkowski *et al*, "The Global Carbon Cycle: A Test of Our Knowledge of Earth as System", *Science* 290, 13 October 2000; US Energy Information Administration. Estimates of the amount of unmined fossil fuels are all highly controversial. Much higher estimates for oil (670 billion tonnes) and gas (503 billion tonnes) are given, for example, by Hans-Holger Rogner. The US Geological Survey estimates about 360 billion tonnes of carbon to lie in "recoverable" oil.

10. The above-ground carbon pool in the oceans, vegetation and soil is like a bathtub with the drain plugged. As long as the tap stays on, the water keeps overflowing. Or to employ a slightly better comparison, the earth's above-ground carbon-cycling capacity, minus the atmosphere, is like a dumping ground that has the ability to recycle a certain amount of the waste that is put into it, but no more. According to one estimate, between 1850 and 1995, a total of 368 billion tonnes of carbon were released globally into the atmosphere through human activities. Some 208 billion tonnes were absorbed into the oceans and into vegetation and soils, leaving an extra 160 billion tonnes in the atmosphere. The current rate of accumulation in the atmosphere is over 1.6 extra billion tonnes of carbon every year. And on current trends, many times more fossil carbon will be added to the atmosphere over this century than has been added since the industrial era began.

11. There is already far more carbon dioxide in the atmosphere than there has been at any other time in the last half million years—380 parts per million, as compared to pre-industrial levels of 280 parts per million. According to the Intergovernmental Panel on Climate Change (IPCC) in 1990, in order to stabilise atmospheric concentrations at a level less than double that of preindustrial times, greenhouse gas emissions would have to be reduced by 60–80%.

12. It is not possible to estimate with any certainty the earth's capacity to recycle transfers of fossil carbon with no remainder. But there is no question that the current rate of overflow is huge. As biologist Tim Flannery notes, "There is so much carbon buried in the world's coal seams [alone] that, should it find its way back to the surface, it would make the planet hostile to life as we know it". Combustion of even a substantial fraction of remaining fossil fuels—even a few more hundred billion tonnes—could be disastrous.

13. Conventional types of economic management, as well as cost-benefit analysis, rapidly become irrelevant in this type of situation. A different kind of precaution is needed, one matched to the particular nature of the climate problem. This kind of precaution would acknowledge and attempt to remove ignorance and uncertainty. It would try to maximise flexibility, resilience and possibilities for future learning. And in the meantime it would avoid irreversible courses of action that are potentially civilisation-threatening. Unavoidably, that means taking better care of the world's native biota, which constitute a large and volatile storehouse of carbon. But above all, it means slowing and halting fossil fuel extraction pending more research into gaps and blind spots.

14. This is the sole proven, secure way of stopping the world above-ground carbon dump from overflowing—to make sure that most remaining fossil fuels stay where they are. As Sheikh Zaki Yamani, the former Saudi oil minister, has acknowledged, "[t]he 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.

15. Continuing to take fossil carbon out of the ground and putting it in the above-ground dump is a one-way street, because it cannot safely be put back. Stopping the flow into the dump, on the other hand, is both possible and unavoidable. Keeping fossil fuels in the ground—and encouraging any democratic movements that already have this objective—must be the default, mainstream approach to tackling climate change. This is why petrol-fuelled cars, coal-fired electricity generation, and oil-based air travel are "sunset" technologies, to be phased out as soon as possible, and why carbon offsets, as one component of the current system of fossil fuel dependence, are not a useful approach to the problem.

Carbon Offsets

16. Broadly, there are two forms of carbon trading. The first is emissions trading. The second is trading in project-based credits, or "offsets". Often the two categories are put together in hybrid trading systems.

17. Emissions trading works as follows. Suppose you have two companies, A and B. Each emits 100,000 tonnes of carbon dioxide a year. The government wants to cut their emissions by 5%. It gives each company rights, or "allowances", to emit 95,000 tonnes this year. Each company must either reduce its emissions by 5,000 tonnes or buy 5,000 tonnes of allowances from someone else. The market price for these allowances is USD 10 per tonne. Company A can reduce its emissions for half this cost per tonne. So it is reasonable for it to cut its emissions by 10,000 tonnes: if it sells the extra 5,000 tonnes (for USD 50,000) it will be able to recover its entire expenditure. So the company saves USD 25,000. For company B, making reductions is more expensive. Cutting each tonne of emissions costs it USD 15. So it decides not to reduce its emissions, but instead to buy the 5,000 tonnes of surplus allowances that company A is offering. If company B reduced its own emissions, it would cost USD 75,000. But if it buys company A's surplus allowances, the cost is only USD 50,000. So company B also saves USD 25,000 on the deal. Both firms, in short, save USD 25,000 over what they would have had to spend without trading. If they are the only two companies in the country, this means the country's business sector winds up cutting emissions just as much as it would have under ordinary regulation. But by distributing the reductions over the country's entire private sector, it costs the sector as a whole USD 50,000 less to do so. Some emissions trading schemes allow companies to save any surplus allowances they have for their own use in future years, rather than selling them. Emissions trading is also sometimes called "cap-and-trade".

18. Trading in project-based credits, or "offsets", is completely different. Suppose you have the same two companies, A and B, each emitting 100,000 tonnes of carbon dioxide a year. Again, the government wants to cut their emissions by 5%, so it gives each company allowances to emit only 95,000 tonnes. But now the government tells each company that if it doesn't want to cut its emissions by 5,000 tonnes each, it has another option. It can invest abroad in projects that "reduce" emissions of carbon dioxide 5,000 tonnes "below what would have happened otherwise". Such projects might include growing crops to produce biofuels that can be used instead of oil; installing machinery at a chemical factory to destroy greenhouse gases; burning methane seeping out of a coal mine or waste dump so that it doesn't escape to the atmosphere; or building a windpower generator. The price of credits from such projects is only USD 4 per tonne, due to low labour costs, a plethora of "dirty" factories, and government and World Bank subsidies covering part of the costs of building the projects and calculating how much carbon dioxide equivalent they save. In this situation, it makes sense for both company A and company B to buy credits from abroad rather than make reductions themselves. Company A saves USD 5,000 by buying credits from projects abroad rather than cutting its own emissions. Company B meanwhile saves USD 55,000. The total saving for the domestic private sector is USD 60,000. Offset or project-based credit trading is sometimes also known as "baseline-and-credit" trading.

19. In hybrid trading systems, "offset" trading is added to emissions trading. Both the Kyoto Protocol and the EU Emissions Trading System mix "cap-and-trade" allowances and project-based credits, and try to make them mutually exchangeable. Such systems are enormously complex. Not only is it difficult to try to create believable "credits" and make them equivalent to "allowances". Mixing the two also changes the economics. For example, imagine that company A and company B above are allowed three options in any combination: cutting their own emissions, trading allowances with each other, or buying credits from abroad. For company B, the best option would be, again, to buy USD 20,000 worth of credits abroad rather than spend USD 75,000 to reduce its own emissions. For company A, the best option would be to cut its own emissions by 10,000 tonnes—but only if it could find a buyer who would pay USD 10 per tonne for the 5,000 allowances it would have to spare. Instead of having to pay USD 20,000 for carbon credits from abroad, it wouldn't have to spend anything. Unfortunately for company A, it cannot find any such buyer. If company B can save USD 5,000 by going abroad for credits, it won't buy company A's spare allowances. But company B is the only other firm in the emissions trading scheme. So without company B as a buyer, it is not worthwhile for company A to make any cuts at all, and it too will wind up buying credits overseas.

20. Offsets fall into many categories. Under the Kyoto Protocol, Clean Development Mechanism (CDM) projects are carried out in the South, in countries not subject to the emissions "cap" on industrialised nations. Joint Implementation (JI) projects are similar, but are set up in other industrialised countries, in practice mostly in Eastern Europe. Both occupy an immense slice of UN time and involve billion-dollar money flows and large bureaucracies despite the fact that their effect on the climate is likely to be negative. Voluntary-market offsets, meanwhile, are not traded for allowances issued officially under an emissions cap, are subject to even less effective oversight than CDM or JI offsets, and may be proportionally even more counterproductive in tackling climate change. The central features of offsetting are the same, whether it is used in official schemes such as the Kyoto Protocol or in the voluntary offset market. Accordingly, this Memorandum will review the lessons of all such programmes together. The problems it identifies with offsets used under the Kyoto Protocol, the EU ETS, and so forth, will be the same as those that crop up in the voluntary offset market. In the circumstances, it would be unenlightening and counterproductive to focus exclusively on the voluntary market in exploring the difficulties with offsets, and this Memorandum makes no effort to do so.

21. Prior to the late 1990s, "offset" pollution trading mechanisms had been tried out nowhere in the world outside of the US, where they failed (see *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power*, 2006, http://www.thecornerhouse.org.uk). Indeed, even when emissions trading without offsets is considered, the US experience with pollution trading is an argument not for, but rather against, using pollution trading mechanisms to control greenhouse gas accumulation. Yet as Michael Zammit Cutajar, the former executive secretary of the UNFCCC, signatories to the Kyoto Protocol were prevailed upon to follow a pollution trading approach that was "made in the USA". The pollution-trading mechanisms that formed the core of the Protocol (including emissions trading) were of a type proposed by North American economists in the 1960s; put into practice in US markets for lead, nitrogen oxides and sulphur dioxide and other pollutants beginning in the 1970s and 1980s; and successfully pressed on the UN by the US government, advised by US economists, US NGOs and US business, in the 1990s.

Incoherence

22. In theory, carbon offset projects could license the removal and burning of all the remaining fossil fuel still underground.Carried to its logical extreme, trading in credits from "offset" projects would thus result in a world in which all the coal, oil and gas had been burned up: a landscape full of wind farms, solar stations, and the carcasses of biofuel plantations and hydroelectric dams, all baking in an atmosphere inhospitable to human life.

Measurement Impossibilities

23. For carbon offsets to work, they have to be verifiably climatically equivalent to emissions; and carbon credits have to be climatically equivalent to carbon allowances. Carbon offset advocates go so far as to claim that the carbon projects they are promoting are not only "equivalent to", or "compensate for", emissions reductions, but actually *are* emissions reductions. They assert that planting eucalyptus trees, building hydroelectric dams, burning methane or instituting efficiency programmes are "reducing emissions" just as much as halting the flow of coal into a boiler, even if no emissions are being reduced.

24. However, emissions and offsets are different, and offsets are different from each other. Destroying the industrial greenhouse gas HFC-23 is not the same as investing in windmills. Making a chemical plant more efficient is not the same as supplying efficient light bulbs to Jamaica. Planting trees is not the same as refraining from flying to the Maldives for a holiday. Moreover, these things are different from one another in ways that entail that "offsets" do not, in fact, offset or neutralise industrial emissions. That is, they are not emissions reductions. The putative commodity produced by carbon offsets cannot be correctly referred to as "emission reductions", "carbon", "carbon dioxide equivalent", or any similar term. Unlike conventional dumps receiving industrial waste, mine tailings, or nuclear materials, the purported new carbon dumps carved out of the biosphere or the future cannot even be verified to be dumps at all. The claim of equivalence is rooted in the technical requirements of the market rather than science. The carbon offset market's requirement that so many diverse things be made numerically equivalent has proved self-destructive and has opened the field to innumerable unverifiable claims, to the short-term commercial advantage of both buyers and sellers but to the detriment of climatic stability *(ibid)*.

Blocking the Transition away from Fossil Fuels

25. Carbon offsets delay or slow the transition from fossil fuel dependence in two ways. In the North, they allow those polluters for whom change is most difficult or expensive, and who must start a shift in investment soonest, to put off action. In the South (or wherever the offset projects are located), they divert investment into projects that provide the largest block of the cheapest credits, which are almost invariably those that do not verifiably contribute to a long-term structural shift away from fossil fuel dependence. A complex structure of perverse incentives are entrenched at both ends of the market against which standard-setting or improved regulation is powerless and which makes the offset option worse than nothing (*ibid*).

Regressive Effects on Property Holding

26. Like emissions trading, carbon offsets involve a regressive transfer of assets and are damaging livelihood, employment, health and welfare in a range of countries from India to Nigeria to Brazil. Making property ownership dependent on access to expertise among countries in which offset projects are located, it also damages welfare in communities affected by purchasing industries.

Damaging Effect on Public Education among Offset Buyers

27. Carbon offsetting teaches both that the climate problem is due to individuals and that it can be solved by individual consumer action. Reinforcing the belief that collective action is difficult and that climate action is highly technical, it transforms a political problem into a drama of individual redemption (*ibid*). The technicalities and jargon of carbon offsetting also present an obstacle to public debate.

Country Case Studies

28. The large group of global citizens whose livelihoods, jobs, health and land have been damaged or devastated by fossil fuel exploration, extraction, refining, transport, use and all the institutions that surround them is currently in the process of being augmented by groups whose welfare is threatened by the new "carbon-saving" projects that generate the credits bought and sold in the carbon offset market. Such projects—tree plantations, industrial gas destruction projects, and many others—not only help perpetuate the old problems of coal, oil and gas; they often bring new problems as well.

29. The reasons why the carbon offset market is directly damaging people's livelihoods are not obscure. In order to generate carbon credits from trees or energy crops, plantation companies have to maintain their hold on land that ordinary people may need for other purposes. In order to generate carbon credits from burning the methane bubbling out of landfill sites, authorities have to fight to keep them open. In order to keep track of the carbon their agroforestry schemes generate, rural development organisations have to divert resources from their traditional work. In order to get carbon credits for halting flaring, oil companies have to go on drilling and polluting.

30. The indirect damage done to livelihoods of people far away from offset projects must also be kept in mind. Every Clean Development Mechanism or Joint Implementation project set up under the Kyoto Protocol, or carbon offset scheme launched by a private firm, helps perpetuate the fatal flow of fossil carbon out of the ground and into the air just as surely as any drill bit or transcontinental pipeline. Carbon offsets, the fossil fuel economy's new frontier, in short, has become a new battlefield. Added to classic local conflicts over extraction, pollution, and labour abuse are now, increasingly, local conflicts over "carbon offsets"—the projects that license and excuse the extraction, the pollution and the abuse.

31. Carbon offset markets, like the Kyoto Protocol and other carbon permit schemes springing up around the world, in globalising the defence of fossil fuels in a new way, are also globalising conflicts and movements over fossil fuels in a new way. In the past, the deeper meanings of dependence on fossil fuel could be understood by coming to grips with the experience of oil wars, polluted farmland, lung disease, militarisation, strip mines, disappearing forests and degraded ice caps. Today, anyone who wants to understand what fossil fuel dependence means also has to look closely at "carbon offset" projects as well. What follows is a summary of a selection of case studies of such projects carried out by a number of authors around the world.

GUATEMALA

32. The first forestry project funded explicitly to offset greenhouse gas emissions was set up in Guatemala in 1989. Applied Energy Service, Inc. (AES), a United States-based independent power producer, had been looking for a cost-effective technique for reducing carbon dioxide emissions at a new 183-megawatt coal-fired power plant in Connecticut in order to make the plant more acceptable to state regulators. On the recommendation of the Washington-based World Resources Institute (WRI), AES decided to try to "mitigate" the plant's carbon emissions by offering USD 2 million to finance 10 years' worth of "land-use activities and multiple-use forestry projects" in Guatemala.

33. The activities would be undertaken by the organisation CARE with the help of USAID and the Guatemalan Directorate General of Forests. CARE had been working in agroforestry since 1974 in the Western Highlands—one of the country's few remaining highland areas with existing forest and the potential to offset significant quantities of carbon—and it was hoped that the AES money could leverage additional funds from other sources (debt-for-nature swaps) as well as volunteer services from groups such as the US Peace Corps. Some 40,000 smallholder farmers would plant 50 million pine and eucalyptus trees in the course of establishing 12,000 hectares of community woodlots, 60,000 hectares of agroforestry and 2,880 kilometres of live fences. Some 2,000 hectares of vulnerable slopes in local watersheds would be protected and training provided for forest fire brigades to reduce the threat of fire and potential CO_2 release. During its first 10 years, the project would also train local communities so that its activities would become self-sustaining. In all, AES finance would make possible the sequestration of 15.5 to 16.3 million tonnes of carbon in Guatemala—more than enough, it was claimed, to cover the 14.1 million tonnes the Connecticut plant would emit over its 40-year lifetime.

34. However, in 1999, an external evaluation of the AES-CARE project showed that, even by its own carbon-accounting standards, it was falling far short of the 1 million tonnes of carbon it was supposed to have "offset" to date. The project was built around the assumption that using the area for carbon production would be compatible with improving local quality of life through increasing agricultural productivity, watershed protection, and improved fuelwood access. But the designers didn't sufficiently grasp what the project would mean for farmers in their local political context.

35. First, many of the mainly indigenous subsistence farmers in the project area in the Western Highlands had been pushed to the edge of the agricultural frontier as land in the fertile lowlands became concentrated in the agribusiness sector. The Western Highlands encompass the country's poorest communities and most environmentally degraded areas. More than 90% of rural households live in absolute poverty, and with population densities exceeding 100 people per square kilometre and a deforestation rate of 90,000 hectares

per year, erosion and land degradation have led to an intensification of rural land use even as poverty rates increase. The average family in the Western Highlands has access to less than one hectare of land for farming.

36. Yet at the same time, land with official forest status was often declared off-limits to continued agricultural use under Guatemala's 1996 forest law. The government was trying to re-locate control over communal forests into the hands of municipal authorities, and the law criminalised subsistence activities such as fuelwood gathering. In short, ordinary people began to lose access to trees. One result was that conflict grew between municipal and village authorities and individual landowners. Another was that reforestation looked less attractive, since it provided fewer local benefits. A third result was increasing distrust of government forest offices, some of which were partly funded by the CARE/AES Agroforestry Project.

37. In addition, in the early years of the project, the tree species promoted were often inappropriate for the climate and for degraded land areas. Damage by animals and sabotage of replanted areas also limited the expansion of reforested areas. Agroforestry systems were more attractive to local farmers, as they serve multiple purposes (grazing, fodder and fuelwood provision, and subsistence or cash-crop components). But they typically take three to five years to become productive. That also makes them a difficult option for families with limited land. In short, it was hard to reconcile local people's needs with the goal of carbon production.

38. Another problem was CARE's need to channel more and more of its limited personnel and finance into monitoring and measuring carbon instead of trying to improve people's lives. In the past, CARE had had a respectable record of promoting sustainable agriculture and agroforestry, and even some success in protecting water sources through reforestation, although less so in the Western Highlands. The organisation had a great deal of experience in training local community extension agents, providing seeds and tree nursery supplies, and training local people in soil conservation, fodder production and watershed management. CARE extension agents also provided advice and materials for improving grazing areas and soil recuperation, services that local project participants continue to evaluate positively. The new carbon focus for its work, however, meant that finance and staff time began gravitating away from agroforestry towards reforestation, and away from farm extension work towards unfamiliar work in modelling and monitoring carbon emissions benefits. Carbon accounting is specialised, complicated work; the market needs "hard" carbon numbers and attention to growth rates, soil changes, interaction with local communities, attempted measurements of how much greenhouse gas the landscape would have released compared to what would have happened without the project, and so on. As argued above, such calculations, since they are logically and scientifically impossible, are bound to eat up a fair amount of time if undertaken at all.

39. The complexity (or rather impossibility) of this new job played havoc with CARE's original mission. CARE was used to training and agricultural extension, not carbon monitoring. In 1999, the organisation still didn't have a methodology in place for measuring and monitoring carbon in agroforestry plots and forests. An external evaluation conducted in 1999 by Winrock International demanded that the project's certified carbon production be improved to make it "more acceptable as a CDM-type of project". A land-use mapping system using a Geographic Information System had to be developed together with remote sensing technologies that could track project changes. "Proxy areas" had to be identified to serve as a "without-project" baseline, and a carbon-monitoring programme for all project activities for which carbon credits would be claimed had to be set up.

40. In short, the Winrock evaluators, mindful of the requirements of the carbon market, reversed CARE's own emphasis on livelihood over carbon sequestration. By 2000, CARE officials were openly discussing the possible need to redirect resources formerly channelled to extension activities to pay outside consultants to develop carbon accounting methodologies. Also, the new carbon rules were an incentive to CARE to shift its reforestation focus to larger farmers, who had more resources available to undertake reforestation projects and were thus better equipped to help CARE comply with its carbon sequestration commitments.

41. The new carbon focus of CARE's work also made its objectives and premises harder to share with farmers. Even as of 2000–01, farmers were not being told what the project was about, nor how their reforestation and fire brigade efforts contributed to carbon mitigation, nor what the impacts on them of a changing climate might be. Nor were they even directly paid for their reforestation activities. That, of course, made it impossible to discuss with them their role in, or rewards for, offsetting Northern carbon emissions, or to ask them how their own knowledge might improve carbon sequestration design or dissemination. This was not "participatory" carbon sequestration.

ECUADOR

42. The Dutch FACE Foundation, or "Forest Absorbing Carbon Dioxide Emissions", was established in 1990 by the Board of Management of the Dutch Electricity Generating Companies. The original idea was to establish 150,000 hectares of tree plantations to compensate for the emissions from a new 600-megawatt coal-fired electricity generation plant to be built in The Netherlands. "For reasons of land availability and cost-effectiveness", FACE explained, "greater emphasis has been placed on collaboration with developing countries and countries in transition".

43. Since 2000, the FACE Foundation has been producing and selling carbon credits from tree plantations as an independent, non-profit organisation. It trades the credits through two Dutch companies: Business for Climate (set up by FACE in 2002 jointly with Triodos Bank and Kegado BV) and Triodos Climate Clearing House. The FACE Foundation has five projects worldwide: in Malaysia, the Netherlands, the Czech Republic, Ecuador and Uganda.

44. The FACE Programme for Forestation in Ecuador S.A., or PROFAFOR, currently the largest, was set up in 1993. PROFAFOR has not been approved as a UN Clean Development Mechanism (CDM) project. But it does see itself as "potentially CDM-compliant"—as sequestering carbon over and above what would have been the case otherwise, as providing social, economic and environmental benefits, and so on.

45. PROFAFOR originally thought to plant 75,000 hectares of trees, but later revised this goal downward to 25,000 ha. So far contracts have been signed for the plantation of 24,000 ha, and 22,000 ha have actually been planted. Initially, PROFAFOR activities were focused on the Andean region, or Sierra, and 8,000 ha have been planted under contract with 39 indigenous mountain communities. However, since 2000, contracts have also been signed in Ecuador's coastal region.

46. The Sierra sites used by PROFAFOR are located in a biome known by the colonial Spanish term *paramo*—which denotes high altitude plains or barren plateaus without woodlands. This zone was never forested, although it does support some trees. The dominant vegetation is Andean grasses from the genuses *Festuca, Stipa, Calamagrostis* and *Deyeuxia*. The dark, volcanic *paramo* soils have a complex particulate structure that, in the cold, moist climate of the Sierra, enables them to retain a great deal of water and organic matter. The soils have a far greater capacity to hold water than the vegetation covering them, although a layer of plants is important to keep moisture in the soils during dry seasons. In the humid but not high-rainfall Sierra environment, *paramo* soils are believed to be the main water reservoirs for the local inhabitants.

47. Although indigenous agriculture has been practised for hundreds of years up to 3,500 metres (the Sacred Valley of Cuzco, a centre of indigenous agriculture, lies at around 3,000 metres), the ecological balance of the *paramo* above 3,200 metres is very fragile. If the plant cover is removed even temporarily, evaporation from the surface increases and organic matter in the soil begins to decompose, resulting in reduced capacity to hold water. Once dry, the soils cannot recover their original structure and organic content, even when they get wet again.

48. The monoculture tree plantations PROFAFOR sets up to fix carbon are a bizarre and damaging innovation in this environment. The species used are exotics commonly used in industrial plantations elsewhere. Some 90% are pine, either *Pinus radiata* (particularly in the provinces of Carchi and Chimborazo) or, to a lesser extent, *Pinus patula* (mainly planted in Cañar and Loja). Eucalyptus and cypress species make up another 4%.

49. PROFAFOR's non-indigenous pines dry out and crack the soils, not only because they disturb the existing vegetative cover, but also because they use a great deal of water. Organic matter and biological activity decline, uncompensated for by the fall of pine needles. Soils tend to be transformed from water retainers to water repellents, and surrounding flora and fauna are deprived of food and habitat.

50. The threat is not only to local hydrology, but also, ironically, to local carbon storage capacity. Subject to less extreme variations in temperature and humidity than the drier Southern Andean zone known by the indigenous term *puna*, the *paramo* stores in its thick layers of soil vast amounts of carbon—perhaps 1,700 tonnes per hectare in the case of Carchi province, more than a tropical forest—but only as long as the soils are not exposed to the air and to increased erosion through planting operations and firebreaks.

51. In addition, the carbon in the trees is at risk from fire. In the community of SigSig in Azuay province, fires have already killed or stunted the growth of many pines. And fires are likely to recur continuously, given a fire-prone natural flora, traditional burning practices used to encourage fodder regrowth, strong winds, firebreaks that are too few and too narrow, and the lack of permanent wardens or fire-fighting equipment. The yellowish needles appearing on numerous local stands of *Pinus patula* signal the species' poor adaptation to the Andean environment, possibly indicating lack of a crucial micronutrient or of the mycorrhizal fungi that facilitate the tree's nutrient absorption in its native environment. Animals have meanwhile broken off many terminal shoots, giving rise to a bushy growth, which may prevent the trees from developing trunks suitable for the sawmill. Growth is slow.

52. In short, a project that was designed to absorb carbon may actually be emitting it. Scholar Veronica Vidal found not only that the soils in PROFAFOR plantations are releasing more carbon than the firm takes account of, but also that the pine plantations are capable of absorbing less carbon than the firm claims. She concluded that the net carbon balance in PROFAFOR plantations may well be negative: "We are facing a lose-lose situation, in which those who most lose are the future generations that will have to face the problems of climate change."

53. But according to PROFAFOR, local soils have been "degraded by extensive use", and planting pine and eucalyptus in the paramo will restore them and prevent erosion. Although some of the sites used by PROFAFOR, situated between roughly 3,200 and 4,800 metres, have been used for grazing, they have not usually been cultivated, due to their remoteness and the harsh climate. The idea that the soils on these sites,

which still fulfil their original functions, are being degraded in any way that pine plantations could remedy is simply false. As for erosion, it is the pine plantations and their firebreaks themselves that are likely to create the greater problem.

54. While PROFAFOR claims to an international audience innocent of local realities that local land is so degraded that farming is just "not profitable and the land is not suitable for subsistence activities". making pine trees both an ecological and an economic improvement and a way of "taking advantage of land that is not being used and that could generate income to the local economy", local people are concerned at this deeply colonialist implication that their paramo commons is "waste", "degraded", "idle", "unused", or "unproductive".

55. PROFAFOR says that it would have liked to use native species but that "the majority of native species have almost disappeared, and local knowledge of indigenous tree species has been lost with the trees." Again, however, such statements are misleading. Although the paramo zone has never been thickly forested, people there retain a knowledge of native trees. In one PROFAFOR area, San Sebastián de SigSig in Azuay province, villagers are easily able to name and describe uses for a dozen native species. Yet the only Andean tree species used by the PROFAFOR project, and on a very small percentage of its sites, is *Polylepis incana*. This is a sub-*paramo* species and it too is being planted in monoculture.

56. Meanwhile, PROFAFOR's claims that the communities would get both income and employment from the project have proved to be misleading. The project insisted that, in addition to payments per planted hectare, local villagers would get seedlings, technical assistance and training. They would have work for many years. They would have access to the plantations to collect mushrooms, resins, firewood and wood from thinning. And after 20–30 years they would be allowed to harvest the trees and sell the timber. All PROFAFOR asked in return was 100% of the rights to the carbon fixed in the trees.

57. The reality, however, is revealed by an examination of what actually happened in three communities that signed contracts with the company between 1997 and 2000. Communities were offered payments of between USD 165 and USD 189 per hectare planted. But the cost of plants and technical assistance during the first three first years of plantation was then deducted, leaving the communities with about half of what they were initially offered.

OFFERED AND ACTUAL PAYMENTS FOR PLANTATIONS

Community	*Area leased*	*Payment agreed per hectare (in USD)*	*Total amount offered (in USD)*	*Deductions for plants and technical assistance (in USD)*	*Amount disbursed to the community (in USD)*	*Percent deducted*
San Sebastián de SigSig	400 ha	$189	$75,600	$36,800	$38,800	49%
Pisambilla	300 ha	$165	$49,500	$22,500	$27,000	46%
Mojandita Avelino Dávila	130 ha	$165	$21,450	$9,750	$11,700	46%

Source: PROFAFOR Forestation contracts.

58. When SigSig community asked how much technicians were being paid for this technical assistance, they were told that PROFAFOR did not have the "capacity to ask for these reports . . . it is an administrative matter". Meanwhile, the price of the planting stock doubled or tripled. And in the end it was the commune, and not PROFAFOR, as specified in the contract, that had to transport the stock from the nursery.

59. One SigSig community member noted, "At an assembly this engineer told us that thousands of dollars would enter the commune [for tree-planting] . . . that afterwards we were going to have sources of work till after the harvest, that we were going to collect who knows how much money. And the assembly signed . . . you know, sometimes we country people, we don't know, we fall for it naively."

60. After having deducted the cost of the seedlings and technical assistance, PROFAFOR was obligated to pay 80% of the remainder in three instalments during the first year after the contract was signed—as long as it wasn't necessary to replant more than 25% of the seedlings. The remaining 20% was then to be handed over to the community "following complete fulfilment of the activities foreseen" by the company for the second and third year after the contract was signed.

61. This raised several problems that villagers were not prepared for. First, when trees die because they "do not adapt", the community has to take on the cost of new seedlings for re-plantation. This happens quite frequently, because of the quality of the plants, the cold and windy conditions of the high-altitude plantation areas, or for other reasons. According to Mary Milne of the Centre for International Forestry Research, the re-plantation rate for PROFAFOR is "between 15 and 30% and costs range between USD 865 and USD 5,820, which have to be absorbed by the communities."

62. A bigger problem is that because of the necessity of guaranteeing a long lifetime for the carbon sequestered in PROFAFOR's trees, each community has to maintain the trees itself for 20–30 years before being allowed to harvest them and sell the timber. (More recent PROFAFOR contracts demand even longer

terms, of up to 99 years.) But the money runs out long before that. Nor are the communities given any information on where or how they might market the timber. But it is not only a financial matter. The PROFAFOR contract also ensures that the community turns over communal land and labour to the company for free. Under the contract, PROFAFOR gets—rent-free—large tracts of community land, which then cannot be turned to any other purpose than the production of carbon credits for the international market for 20 or 30 years. This is not farmland. Cultivation goes on in other zones of communal property where the land has already been divided up among families. But PROFAFOR is wrong to say that the land is "degraded", "is not being used" or "is not suitable for subsistence activities", and that it is idly waiting to be transformed into an asset by being "incorporated into the national economy". In addition to having important hydrological functions, much of the land is used for grazing or could be rented out for that purpose. When the plantations are set up, families owning cattle may have to rent other lands for their animals, purchase fodder, or reduce their herds. This has an impact on family savings, not only because the monetary compensation villagers get from PROFAFOR is too small and must be used immediately for plantation expenses, but also because, by its nature, cash cannot play the role of the more stable, less liquid, traditional savings embodied in family cattle. Small wonder that local people feel that they have essentially transferred the land and its potential to generate savings for exclusive PROFAFOR use. As one said, "We cannot touch or do anything on the area signed over."

63. Many of the jobs that PROFAFOR claims to provide for local communities, in addition, are, in fact, onerous and unremunerated tasks that the communities find themselves unwillingly taking on because of debt. In fact, PROFAFOR has not only failed to provide the number of jobs it has offered, but has also forced communities to hire people from outside to carry out PROFAFOR work. Local people, it turns out, often do not possess the necessary technical skills PROFAFOR management plans require. PROFAFOR's training—workshops for two leaders from each community, held in hotels or other venues in nearby cities—is widely seen as insufficient and too theoretical. In addition, the plantations are often too remote or subject to too extreme climatic conditions for local people to work on themselves.

64. Where tasks remain incomplete, the community has to fall back on its own unpaid labour pool—a system called *minga*—to fulfil its contractual obligations. Through this system, villagers are forced to exploit their own system of free communal labour in order to escape debt. *Minga*, a communal pool of non-marketed labour typical of the indigenous communities of the Andes, is directed at specific collective material objectives: planting and harvesting, or building or maintaining access routes, irrigation channels, schools or health centres. It is a complex mechanism for social interaction in which, generally for one day each week, both men and women, adults and children, are mobilised. People working under *minga* receive no money. Rather, the system is one of reciprocity and mutual help. When *minga* is granted to achieve individual purposes, the *mingado*, or beneficiary, enters into an obligation to return *minga* to the *mingueros*, or workers, at some point in the future. The PROFAFOR project, however, as one villager from Chuchuqui said: ". . . paid for dibbling for pine only, not for eucalyptus. And they did not pay me, I worked under *minga* . . . Where we could not work, they hired people from Quito and Chimborazo and the community paid the workers."

65. Local communities have actually lost rather than gained income from the PROFAFOR carbon project. SigSig, for instance, was to receive about USD 75,000 for 400 hectares of *Pinus patula* plantation to be sited on land a three- to four-hour walk from the settlement's centre, at approximately 3,700 metres. Plotting, dibbling, planting and construction of the firebreak were carried out between June 1998 and December 1999. But some of the seedlings didn't take, and the community had to hire outside labour to replant, using the funds supplied by PROFAFOR. The community built a house in the area of the plantation in mid-1999 and a guard was hired for the first two years. In 2000 and again in 2004, fires swept through large parts of the plantation. The community had to take on most of the costs of replanting—including labour, transportation and food—with PROFAFOR picking up only the costs of seedlings. The community has also had to take responsibility for replanting, due to maladapted trees dying. Yet the 20% of the funds that should have been disbursed to the community three years after the contract was signed in 1998 have still not been received. And the plantation has to be maintained for nearly 15 more years until harvest. To top it off, if the community decides not to continue carrying out PROFAFOR's plantation work at that time, it must hand over 30% of the income from the sale of the timber to the company.

66. In a workshop conducted with SigSig residents, an attempt was made to draw up a balance, showing how much the community had gained and lost from its agreement with PROFAFOR, although much of what the community put into the plantations cannot be satisfactorily quantified, such as the *minga* and the work of the community leaders. Calculations were made for plotting, dibbling, firebreaks, right of way, replanting, seedlings, maintenance, management, training and so forth. The community concluded that, even without taking account of the value of the environmental liabilities the project has saddled local inhabitants with, or the cost of the plantations for another 15 years in terms of labour, inputs, insurance, security, tools, harvest and timber marketing, its losses already amount to over USD 10,000. As one community member noted, "We made an assessment and . . . it was like a bucket of cold water. On doing our accounts, we realised how much money we have put in, and the trees are still small . . . Although we have no money left . . . we have to look for a warden to look after the plants and pay him, we have to prune, we have to put down manure, all the care and then the harvest . . . we ourselves have to find a [timber] market . . . How can that be? We are depleting our land, we are providing labour, doing harvesting and also giving 30%." Unfortunately for communities, once a contract is signed, there is not much they can do to

modify it, even when, as in SigSig, the agreement with the company was signed by only 50 community members when there were over 200 registered. PROFAFOR can even claim payment of compensation if its staff decides that a community has not fulfilled its obligations. This compensation can amount to up to triple the original payments to the communities, or many tens of thousands of dollars.

PENALTY AMOUNTS IN RELATION TO PAID AND OFFERED AMOUNTS

Communities	*Amounts initially offered (USD)*	*Amounts disbursed to community*	*Amounts of penalty clause*	*Penalty/ disbursement ratio*
Caguanapamba	n/a	$15,716	$42,660	271%
San Sebastián de SigSig	$75,600	$38,800	$108,000	278%
Pisambilla	$49,500	$27,000	$81,000	300%
Mojandita Avelino Dávila	$21,450	$11,700	$35,100	300%

One villager reported: "When I told the engineer Franco Condoy that we wanted to undo this agreement, he told us: 'You cannot rid yourselves of the agreement, the commune is mortgaged.'"

67. According to Ecuadorian law, Condoy is wrong. Communal property of indigenous communities is not subject to mortgages or land tax. Mortgages can only be contracted with private estate and land-holders, individuals or corporate bodies. In practice, however, Condoy is right, since even contracts involving common property are subject to penalty clauses and fines in the event of a breach, and PROFAFOR is well able to enforce mortgage-like arrangements by taking advantage of the inter-ethnic power relations that are a legacy of the colonial era in the region.

68. In one community, Caguanapamba, where the leaders who had signed the contract mismanaged the PROFAFOR funds they were entrusted with, community members did not get paid for the first planting operation and many seedlings were lost. The leader who succeeded them will now have to use the last instalment of funding in order to pay off the people who did the original planting. To complete the firebreak, he has had to rent a machine with community funds and rely on labour from *minga*.

69. To sum up, carbon offset theory says that Southern countries have a hitherto unrecognised and unpriced resource in the form of spare or unused carbon-absorbing potential. By bringing this dormant, unexploited resource into something called "the market", the theory goes, the South will be able to transform it into living capital or exchange it for cash or other things, adding to its wealth and to that of world society as a whole. Over hundreds of square kilometres of the Ecuadorian Andes, new transactions involving carbon are indeed being made. But for the most part, they are not textbook "market" transactions, nor do they address climate change, nor have they resulted in communities' realising new value from formerly unused assets. Instead, common land, community labour and much of the paltry but crucial savings of peasant communities have been transferred to a private firm for production of a new commodity which, although largely notional, has the material effect of shoring up an anachronistic pattern of fossil fuel use in The Netherlands. While claiming to "absorb" carbon, PROFAFOR has in fact been absorbing Andean wealth while helping to enlarge the North's ecological footprint in the South. Indirectly, it is also transferring wealth from future generations to the present, through its failure to address climate change.

70. The mechanisms that have done the real work in making this perverse transfer possible are not the abstract, benign "wealth-creating" trade mechanisms of economics textbooks. On the contrary, they are mechanisms that compel, discriminate, narrow choices, increase dependence, reduce transparency, and centralise power and knowledge in bureaucracies and expert institutions—just the sort of thing that "markets" are commonly seen as combating.

These mechanisms include:

- Unfamiliar tree species planted in exclusive monocultures and requiring extensive technical intervention.
- Non-transparent and exploitative written legal contracts backed by historically-ingrained unequal power relations, through which a private company retains 100% of the carbon sink credits from plantations while local communities take on debt and responsibilities for maintenance and managing environmental impacts.
- An internationally disseminated discourse, according to which the lands to be used for plantations have been "degraded" by excessive use and cannot be "profitably" used for subsistence activities such as cattle-raising.
- Expert procedures of "verification" of carbon flows that by their nature are resistant to public scrutiny.

71. One last technocratic mechanism that makes PROFAFOR's manufacture of carbon credits possible is "forest certification", a seal of environmental and social approval that was granted to 20,000 ha of PROFAFOR's plantations in 1999 by the Forest Stewardship Council (FSC). The FSC is an independent international body with membership from both industry and NGOs, but the actual job of deciding whether

a plantation meets FSC standards falls to private firms hired by the plantation company. In PROFAFOR's case, this was the Societé Générale de Surveillance (SGS), which has also certified PROFAFOR's carbon sequestration.

72. These certifications reassure buyers who will never visit the Andes that PROFAFOR's product is a valid, environmentally-friendly commodity from plantations that "strive to strengthen and diversify the local economy" and "maintain or enhance the long-term social and economic well-being of forest workers and local communities". Ironically, the SGS certifiers noted as one of PROFAFOR's strong points the "participation of local communities in decision-making", as well as PROFAFOR's continued "commitment" to use native species. Local communities' lack of power to object to such claims helps lubricate PROFAFOR"S international trade in carbon credits. No community member interviewed for the 2004 study on which this discussion is based, by researcher Patricia Granda, even knew of the existence of the FSC, nor of its Principles and Criteria, nor how they might be enforced. Here, too, environmental markets have failed to live up to their image in economics textbooks.

UGANDA

73. A Norwegian project to grow carbon credits in Uganda has similarly been described as a case of "CO_2lonialism". This project was closely tied to the construction of conventional gas-fired power plants in Norway by Naturkraft and Industrikraft Midt-Norge corporations. The plants were supported by Norway's Labour Party, Conservative Party and Progress Party on the ground that they could be made environmentally-friendly through the purchase of carbon credits, some of which were to be provided by Tree Farms, a Norwegian forestry company operating in Africa. In 1995, Tree Farms (or Fjordgløtt, as it was then called) had received a grant from NORAD, the Norwegian aid agency, to explore the scope for activities in East Africa. The following year, the company set up in Tanzania and Uganda, and, later, in Malawi as well.

74. In Uganda, Fjordgløtt obtained from the authorities an extremely low-cost 50-year lease on 5,160 hectares east of the town of Jinja in the Bukaleba forest reserve on Lake Victoria, which it planned to plant mainly with eucalyptus and fast-growing pines. Bukaleba is one of more than 700 large and small state-owned central forest reserves set aside for forestry and forest protection, covering in all 7% of the land area of Uganda. Shortly after the Kyoto Protocol was adopted in December 1997, Fjordgløtt increased its capitalisation and invited outside investors to buy shares. By 2000, Tree Farms controlled at least 20,000 hectares of land in the region and was in the process of acquiring a further 70,000 in Tanzania. The firm had planted 600 hectares, mainly with fast-growing pines (*Pinus caribaea, P oocarpa, P tecunumani*) and eucalyptus (*Eucalyptus grandis*), with Industrikraft Midt-Norge securing a first option on the associated carbon credits.

75. In return for turning over its land to the company for 50 years, the Ugandan government gets a one-off fee of USD 410 and an annual rent of about USD 4.10 for each hectare planted with trees. The rent, paid in fast-depreciating Ugandan currency, is adjusted every 10 years according to the index of inflation as defined by the Bank of Uganda. No rent is paid for areas that the companies have not planted with trees. For six square kilometres of plantation established by 2001, then, Tree Farms had paid Uganda, when inflation is factored in, less than USD 11,000. For 50 years' use of the same area of land, given current rates of inflation, it was set to pay less than USD 110,000. Several years after the deal was made, the deputy commissioner for forestry in the Ministry of Water, Lands and Environment, Ignatius Oluka-Akileng, told NorWatch, an independent news service monitoring Norwegian business activities abroad, that the authorities had recently realised that investors were "taking advantage of the system" to get cheap land.

76. The fact that no rent is paid for areas not yet planted with trees makes such arrangements particularly attractive to land speculators. Yet it has proved hard for the Ugandan authorities to negotiate better terms. According to one reliable source, when Ugandan officials tried to negotiate a higher rent for 12,000 hectares in the Kikonda forest reserve with the Institut für Entwicklung und Umwelt, a German company headed by a former politician in the European Parliament, the company refused, saying: "Our plane to Germany leaves tonight; if you don't sign now, there will be no deal."

77. One problem is that forest authorities often simply do not know how much foreign companies might profit from carbon trading or how long they plan to keep plantation land out of other uses to ensure that carbon continues to be stored on it. Forest authorities, to say nothing of local people, are also poorly equipped to confront ministers, politicians and government climate negotiators who take advantage of their position and inside knowledge of European corporate and governmental carbon plans to get funding that helps them gain control of "degraded" state forest land.

78. What makes the situation worse is that the land is used for other, livelihood purposes. Since the 1960s and 1970s, local farmers and fishermen have moved in and out of Norwegian as well as German concession areas in Bukaleba. In fact, many people had migrated into the area already by the early 20th century. Although an outbreak of sleeping sickness then caused people to flee, when the tsetse fly vector was brought under control in the 1970s, people moved back to Bukaleba, and Idi Amin authorised a cattle-herding project in the middle of the reserve. Politicians under the Milton Obote regime in the 1980s also supported settlements in the forest reserve, one minister observing that "trees don't vote, but people do." People were once again evicted in 1989–90. Crops were destroyed and houses torn down. Most evictees settled just

outside the borders of the forest reserve, but then slowly started venturing back into the reserve to farm and fish. By 2000, five fishing and farming villages were inside the Tree Farms area in the Bukaleba forest reserve, and people from at least eight villages outside the reserve were cultivating the earth on Tree Farms' lease. Iganga district, the location of the reserve, was densely populated with migrants from other parts of Uganda, as well as from neighbouring countries. With scant opportunities for work outside agriculture, and with growing numbers, pressure on land was strong.

79. Many residents are claimed to be on the land in question illegally. But some farmers claim that they are the rightful owners, having bought the land they are now working back in the 1980s, or that the land they are farming has been owned by their family for generations. In 2000, forest authorities told Tree Farms that farmers and fishermen living in or using the Bukaleba reserve had been served notice to vacate. Tree Farms' managing director had left the job of evicting farmers to the authorities, stating that the company would not do "the dirty job of throwing them out" itself. Apart from the people from the fishing village Walumbe Beach, however, no one interviewed by NorWatch in 2000 said that they had been given notice to leave the reserve. Several had heard rumours about it, while others were clearly surprised at the news. Some hoped that they might be allowed to stay—a hope perhaps based on the fact that the environmental impact assessment comes close to recommending that fishermen be allowed to stay to avoid social unrest. Almost every farmer and fisherman told NorWatch that they had no other place to go, let alone land to farm. All expressed fears for the future, and asked NorWatch to convey to the Norwegian owners of Tree Farms their request that they be allowed to stay, or at least to farm or fish in the reserve.

80. Tree Farms originally employed several hundred people to manage the Bukaleba plantations. In 2000, however, only 43 were left, according to the assistant administrator at the company's forest station, with only 20 working on the plantations themselves. Tree Farms did allow farmers to grow maize, beans, and other products between the rows of planted trees during the first few years, until the trees grew too high for other plant life to grow beneath them. According to an EU-supported study, however, this scheme "resembles a Middle Age feudal system but without the mandatory "noblesse oblige" and with the farmers paying for the bulk of the investment cost of the plantation establishment". Local farmers clear, plough, weed and manage the plantation areas, providing free labour for ground clearing and weeding. Many farmers reported having to pay the firm cash or a share of their crop to be allowed to farm on the company's lands. One extended family with five adults working on one acre told NorWatch that the previous year they had had to pay 100 kilograms of maize to Tree Farms out of a harvest totalling 250 kilograms.

81. Conflicts over land and unpaid labour were seen by several locals as threatening the project's future as a provider of both wood and carbon credits. Farmers have reportedly over-pruned trees, uprooted seedlings, and neglected weeding in efforts at surreptitious sabotage. The Ugandan forest authorities, meanwhile, reprimanded Tree Farms for low technical standards and demanded that the company "do some real investment to produce quality tree stands". The eucalyptus plantations have also suffered termite attacks. By 2001, the Tree Farms project was far behind schedule and suffering from lack of funds. To raise some quick money, the company was even forced to clear 50 hectares for commercial maize crops, arousing further criticism from the forestry authorities.

82. Tree Farms' original management plan called for their plantations in the Bukaleba reserve to cover some 4,260 hectares of the company's total area of 5,160 hectares by 2005. The firm anticipated being able to sell 500 tonnes of CO_2 credits per hectare, or 2.13 million tonnes of carbon dioxide in all. The accounting that resulted in this figure was, however, wildly optimistic. For one thing, proper carbon accounting for the project would require following around thousands of evictees, many of whom would probably have to clear land elsewhere, resulting in carbon emissions attributable to Tree Farms. This would be impossible, particularly in a country such as Uganda, where poverty, landlessness, and political instability keep people constantly moving from one end of the country to the other. Second, advance sale of carbon credits would require that the long-term political future of Bukaleba be known in advance, so that any re-invasion of the area could be predicted and its effects on carbon storage precisely quantified and insured against or compensated for. No basis exists for deriving numbers of this sort. The future investment climate for such projects would also have to be calculated, as well as the probability of fires; the ecological effects of plantations on local patches of native vegetation through hydrological or other changes; the soil carbon loss attributable to clearing, ploughing and erosion caused by the project. Even to attempt to do all this would drive the costs of the project through the roof.

83. If the original easy numbers posited by Tree Farms were accepted by the market, however, they would translate into carbon profits of the order of USD 10 million, well over a dozen times Tree Farms' outlay on land. This would not include possible income from timber and wood sales. Turning Bukaleba into a Norwegian carbon plantation, moreover, would mean that its lands would not be available for long periods either for agriculture or for plumping up Uganda's own carbon accounts.

84. In sum, the project was not just a "lose-lose" initiative for forestry and local people, as concluded by the EU-funded study, but in fact a "lose-lose-lose" state of affairs. The forestry effects of the scheme were unhealthy, local villagers were suffering, and, as Trygve Refsdal, advisor to the Ugandan forest authorities, warned, Uganda was in danger of being subjected to a "new form of colonialism": "Forest-planting in Uganda and other poor countries must, firstly, aim to meet the needs of the country and the local people, not

the needs of the "international community." If these can be combined, it's OK, but experience from similar initiatives show that local interests, local needs, and traditional land rights are easily pushed aside, and that land conflicts arise when outside commercial interests enter.

85. Growing international criticism ultimately prevented Tree Farms from claiming carbon credits for the project. But trees continued to be planted. After lengthy negotiations, the Norwegian owners conceded a little under 5% of the land they had leased from the government to local people, but locals complained that they were still paid badly and that most of the labour was not sourced locally.

86. The international carbon economy has since played a big part in stimulating land grabs by private developers in Uganda's state forests. In 2003, several officials of the Ugandan government, including not only former vice-president Dr Specioza Kazimbwe but also officials familiar with the international climate negotiations, received large concessions for land suitable for afforestation and reforestation, while communities applying for concessions were left empty-handed and may be excluded from access to the forests in the future.

87. In addition, a carbon project of the Uganda Wildlife Authority (UWA) and The Netherlands's FACE Foundation to plant trees in a national park has contributed to a raft of social and environmental problems. The project concept was to plant mainly native trees in encroached-upon areas inside and along the 211-kilometre-long boundary of Mount Elgon national park near the Kenyan border. Mount Elgon was first gazetted as a Crown Forest in 1938 and became a central forest reserve in 1968 and a national park in 1993.

88. But the area has a long history of human occupation and use. Already in the 1930s, many families were living within the boundary, with about 70 heritable licences issued to families living and cultivating the forest reserve. In 1954, when the first working plan for Mount Elgon forest reserve was written, there were still around 30 licensed families living there. Forest boundaries were originally marked by holes. In 1962, the forest was resurveyed and live boundary markers, including trees of exotic species, were put in place. However, the boundaries were not plotted on the national land grid, making it hard later on to establish where they had been when the markers were destroyed. Between 1970 and 1985, during an era of breakdown of law and order, high levels of industrial timber exploitation and confused forest policy, some 25,000 hectares of prime high montane forest between 2,000 and 3,000 metres in altitude were destroyed or degraded through clearing for agricultural activities. Pit-sawing combined with swidden cultivation reduced the densely-forested lower slopes to barer landscapes colonised by Kikuyu grass (*Pennisetum clandestinum*). In 1993, Mount Elgon was designated as a national park. But local people were not consulted, in violation of the law. Families found inside the 1963 boundaries—some of whom had occupied the land for over 40 years—were given nine days to vacate, despite the understanding among many of them that the land was theirs and that such arbitrary evictions are in breach of land laws as well as the subsequent 1995 Constitution, which recognises customary ownership. In August 2003, the Uganda Land Alliance started proceedings against the Attorney General and the UWA on behalf of the Benet people (also known as Ndorobo), who are indigenous to Mount Elgon. The Benet, who had been evicted in both 1983 and 1993, had decided to take the government to court to claim their land rights, and accused the UWA of harassment. The government cut off education and health services to the area and forbade local people from working the land. In October 2005, however, Justice J.B. Katutsi ruled that the Benet people "are historical and indigenous inhabitants of the said areas which were declared a Wildlife Protected Area or National Park". Katutsi ruled that the area should be de-gazetted and that the Benet should be allowed to live on and continue farming their land.

89. In 1994, FACE undertook planting of 25,000 hectares in the Mount Elgon area and in return was given rights over the carbon supposedly sequestered—expected to amount to 2.11 million tonnes of CO_2 over 100 years. UWA's role was to manage the plantations, protecting biodiversity, safeguard park borders and so on. In 2002, certifiers for the Societé Générale de Surveillance (SGS) found that a bit over 7,000 hectares had been planted.

90. As documented by Timothy Byakola of the Ugandan NGO Climate and Development Initiatives, no one denies that the project has had some good effects. It is acknowledged by locals as having improved regeneration on the boundaries of the park, particularly in areas that had been badly encroached on by agriculture, and as having increased streamflow from the forest. In 2003, the UWA-FACE project was even certified by SGS as a well-managed forest according to Forest Stewardship Council (FSC) principles.

91. But according to local council officials, the project employs few people, and even then only during the planting period. And the evictions have made many homeless and hungry. In 2002, for instance, 300 families were evicted from disputed land by park rangers in Wanale, Mbale district. Complaining that they had lived on the land for 40 years, with some even holding government land titles, the families said that they were forced to seek refuge in neighbouring villages where they now live in caves and mosques. Fires have to be kept burning the whole night in the caves to protect against cold, and school-going children have had their studies disrupted. Dodging armed ranger patrols, children slip back to their families' former gardens to steal what they regard as their own food. Local people have lodged a case seeking compensation for destroyed property and the return of their land with the Mbale district court. Sentiment is running high among many affected by the project. According to David Wakikona, Member of Parliament for Manjiya,"the boundaries were made unilaterally, displacing over 10,000 people. The wildlife people who operate the park are very militarised, and have killed over 50 people. People feel that the government favours

animals more then the people." Said Cosia Masolo, evicted village elder and father of 20 now living on a 0.3 hectare piece of land in Mabembe, Buwabwala sub-county: "When the UWA people came with their tree-planting activities, they stopped us from getting important materials from the forest. We were stopped from going up to get *malewa* (bamboo shoots), which is a very important traditional food in the area and is a source of income. There were certain products that we used to get from the forest for the *embalu* ceremony (circumcision ritual) to be performed in the proper traditional way." "The biggest problem is how to secure food for the family. All our gardens, where we used to get food, have been taken over by the park rangers," said Amina Gidongo, a widow and mother of seven children living in a cave as a result of having been evicted.

92. Hundreds of families have also been evicted in other locations, increasing social tensions. In 2003, villagers disgruntled at UWA's militarised approach destroyed over 400 hectares of eucalyptus plantations in one night. In February 2004, *New Vision* newspaper reported that police were holding 45 people "suspected of encroaching on Mount Elgon national park and destroying 1,700 trees" planted by the UWA-FACE Foundation project. At a November 2004 community meeting held in Luwa trading center, Buwabwala sub-county, evicted locals insisted that they would go back to the forest rather than face starvation. The park warden, for his part, promised that anyone caught in the forest would be shot. In fact, so tense has the atmosphere become that Members of Parliament from eastern Uganda have appealed to the government to de-gazette Mt Elgon's boundaries to ease the suffering. Further disturbing findings have been detailed in a report released in 2007 by the World Rainforest Movement.

93. The failures of the carbon offset market in Uganda are not just a matter of temporary social dislocation, but also farmland shortages, environmental damage outside the park, and disrupted relationships between local people and the forest. Today, with a population density of over 450 people per square kilometre in the farmlands around Mbale town and 250 per square kilometre in Kapchorwa district, the village areas bordering Mount Elgon national park are the most densely populated in Uganda, partly due to UWA evictions. Communities living close to the forest mainly grow food crops such as bananas, yams, sweet potatoes and vegetables at bare subsistence levels with few surpluses remaining for sale in local markets. Production of a few cash crops such as coffee and wheat is fast dwindling due to fragmentation of land. A typical peasant holding in the area averages between 0.25 and 1.0 hectares, with a household having an average of 10–15 members.

94. One result is that soils are quickly losing fertility. Most trees and other vegetation in the villages outside the park have been cut to provide fuelwood for cooking and building materials, leaving open denuded slopes. Deforestation has left land open to erosion as more areas are being converted to agriculture. In 1996, a one-kilometre landslide killed nine people in Budesi and Buwali parish, and during the heavy rains of the 1997 El Niño, another five by landslides in Bunabokha village in Budesi parish. Many locals are concerned that rivers flowing from the mountain are now carrying higher sediment loads, especially during rainy seasons. Communities and community development organisations note that fisheries have suffered.

95. Land scarcity in the area is partly a result of the "encroachment" of the national park on longstanding farmland, and the hand of the eviction authorities has unquestionably been strengthened by the carbon offset deal. Social networks have also been endangered when UWA cuts off villagers' access to intact forest and its animals, bamboo shoots, firewood, mushrooms, vegetables, herbs, medicines, building materials, and wood used in circumcision ceremonies. In Bubita sub-county, council officials reported that firewood is now hard to find and that people have resorted to using banana leaves to prepare food, meaning they can no longer eat foods that require long cooking, such as beans. Goats and cows have to eat banana stems because the forest where they used to graze on grass is now a no-go area. In Buwabwala, many young girls are crossing over to neighbouring Kenya to earn money to buy land for their parents. Some have moved into prostitution and contracted HIV.

96. Local people indignantly reject FACE Foundation claims that the project has increased incomes, improved standards of living work, provided jobs in planting and nurseries, and given out seedlings for villagers to plant on their farms. Communities living close to the UWA-FACE carbon plantation project near Mount Elgon, moreover, said that they knew nothing about the project's carbon credits, and members of the Bubita sub-county local council and top district officials were also in the dark. Residents wanted to know about the financial benefits FACE Foundation receives, particularly because the project encumbers their land for a long time, and planned to take the matter up with their local parliamentarian. The Ugandan acting deputy commissioner for forestry in the Ministry of Water, Lands and Environment, Ignatius Oluka-Akileng, told an interviewer in 2001 that his forestry directorate knew little about carbon trades involving state forest lands, nor how much foreign companies were to gain from them, and begged the interviewer to help find information.

TANZANIA

97. In addition to its project in Uganda, Norway's Tree Farms company was also, by 2000, trying to acquire savannah land totalling over 70,000 hectares in Tanzania. Between 1996 and 2000, some 1,900 hectares of trees were planted in Mufindi and Kilombero districts at about 2,000 metres above sea level, where a seasonally moist climate provided lots of water for thirsty industrial monocultures of *Pinus patula* and *Eucalyptus saligna*.

98. The land had been leased from the government at USD 1.90 per hectare per year for a 99-year period on condition that it be used solely for forestry. Industrikraft Midt-Norge, the Norwegian power utility, meanwhile signed an options contract to pay Tree Farms nearly USD 4.50 per tonne of carbon dioxide supposedly sequestered. Over a 25-year period, this would give Tree Farms a carbon profit of about USD 27 million for one plantation complex, Uchindile, compared to USD 565,000 paid to the Tanzanian government in compensation for losing the opportunity to do anything else with the land.

99. Yet according to Tree Farms Managing Director Odd Ivar Løvhaugen, the firm would have invested in Tanzania's forestry sector regardless of possible carbon money. Løvhaugen emphasised that the company considers any trade in carbon credits merely as a supplement to those from conventional forestry. The Tree Farms carbon project would thus be in breach of the requirements for carbon projects outlined by the Kyoto Protocol, which disallow credits from activities that would have been undertaken without special carbon finance.

100. Promising various social benefits, the company had succeeded in overcoming villagers' reluctance to cede their uncultivated land to the project, but in the end pledges to provide health and education services were not kept. Up to 500 local villagers were hired to plant and nurse the trees, build roads, or watch over the plantations. But planting took place only between December and March, so the work could not replace agricultural or animal husbandry occupations. In addition, the promised wage was too low—USD 1 a day, less than the government's recommended minimum—for anything other than daily subsistence. Many workers were not paid at all. Some workers interviewed by NorWatch in 2000 had eight months of wages owing to them. "When we asked about the salaries", commented the residents of Uchindile village, "the company told us that the money came from a place far away and that there was nothing that could be done about it".

COSTA RICA

101. Costa Rica has always been one of the countries in Latin America keenest to host carbon forestry projects and other "environmental services" market schemes. In the mid-1990s, looking for new ways to derive value from its forests, it decided to become the first country to bring its own government-backed and -certified carbon forestry credits into the global market, and even before Kyoto was signed was selling them to the Norwegian government and Norwegian and US corporations on the voluntary offset market. To work on the scheme, Costa Rica hired Pedro Moura-Costa, a Brazilian forester with experience in early Malaysian carbon forestry projects backed by New England Power of the US and The Netherlands' FACE. Moura-Costa in turn convinced Societé Générale de Surveillance (SGS), one the world"s leading testing, inspection and certification companies, to use Costa Rica as a test site for learning how to make money as a carbon credit certifier. On the back of his own experience, Moura-Costa then set up a new carbon consultancy, EcoSecurities. Also significant was an early Costa Rican project called CARFIX, implemented by the voluntary organisation Fundación paragraph el Desarrollo de la Cordillera Volcanica Central and funded by US Aid for International Development (USAID), the Global Environmental Facility and Norwegian financiers. CARFIX earned its North American sponsors carbon credits by promoting "sustainable logging" and tree plantations on "grazed or degraded lands", claiming to provide local people with income they would otherwise have to earn through export agriculture and cattle production that endangers forests. Following the emergence of the Kyoto Protocol in 1997, Costa Rica pushed for the certification techniques it had pioneered to be adopted around the globe, and signed further carbon deals with Switzerland and Finland.

102. The boom in carbon forestry in Costa Rica fits into an existing trend of support for monoculture tree plantations that has aroused concern among local environmentalists. Between 1960 and 1985, about 60% of Costa Rica's forests disappeared due to cattle farming. Then there was a "wood shortage" scare, and the government subsidised monoculture tree plantations extensively between 1980 and 1996. Helped by government incentives, over 130,000 hectares have been covered by the plantations over the past 20 years. By 2000, plantation monocultures covered over 3% of Costa Rica's territory.

103. The Clean Development Mechanism (CDM), Costa Rican environmentalists fear, may help spread the monocultures even further. In the late 1990s, a government official active in the climate negotiations helped promote a new law supporting monocultures. Half of a 3.5% fuel tax went into an "environmental service programme" designed largely to give incentives to private landowners to be "green" in a country in which 20% of the land is national parks, a few per cent indigenous territories and the rest private land. Under the programme, a landowner might get, for example, USD 90 per hectare per year to conserve forest, or USD 500 per hectare over five years to establish a plantation. In return, the state gets rights to the carbon in the plantation, which it can use to bargain with in international negotiations.

104. Most payments under the environmental services programme go to forest conservation, but 20% is used to subsidise monoculture plantations and agroforestry. This has provoked objections from ecologists, academics and indigenous peoples who argue that monoculture plantations, often lucrative in themselves, can damage the soils, water and biodiversity that the programme is supposed to protect. The programme may also soon be supported by a tax on water and electricity. Overall, Costa Rica is today putting USD 1.5 million annually into financing 4,000–6,000 hectares per year of new plantations—a not insignificant figure when compared to Costa Rica's total territory of a bit over 5 million hectares. A UN Food and

Agriculture Organisation consultant's study has suggested that the country set up even more plantations, up to 15,000 hectares per year, using carbon money. Another study estimates that, during the period 2003–12, some 61,000 hectares of monoculture plantations, or 7,600 a year, could be established in so-called "Kyoto areas". That is well above the current rate, implying that plantations could start competing aggressively for land that might otherwise be given over to secondary regeneration and conservation of native forest.

105. In addition, because CDM or other offset forestry projects, for economic reasons, would probably have to cover 1000 hectares and upwards, they could well threaten the land tenure of people carrying out other forest projects in Costa Rica. The average landholding in the country is less than 50 hectares, with most parcels belonging to families.

106. The Costa Rican case helps confirm the impossibility of determining whether the climate would in fact benefit from a policy of pushing such carbon offset projects. It also clarifies the problems of fulfilling the conditions set out in the Kyoto Protocol for reforestation and forestation carbon projects. A study on carbon projects done by the Forest and Climatic Change Project (FCCP) in Central America, for example, jointly executed by the Food and Agriculture Organisation of the UN and the Central American Environmental and Development Commission (CCAD), shows that available soil use maps are not precise enough to show how carbon storage in prospective carbon sink areas (or "Kyoto areas") has changed since the 1990s, and are also hard to compare with each other. That would make accounting for increased carbon storage over the period impossible.

107. The study also suggests that it would be impossible to show to what extent carbon projects were additional to "those that the country implements as part of its forestry development projects": "it is not possible to predict in what exact proportion these activities will be in or out of the Kyoto areas and any assumption in this respect is enormously uncertain". In addition, carbon projects could find it hard to factor out the anthropogenic activities to encourage natural seed nurseries that are being promoted and funded without carbon finance. Above all, the FCCP study reveals the conflict between convenience and accuracy in measuring carbon. Measurements of soil carbon before and after the start of any carbon forestry project, it says, would be too costly, even though such measurements are a key to carbon accounting for plantations, which disturb soil processes considerably. Similarly, the study accepts for convenience a blanket carbon storage figure of 10 tonne per hectare for grassland sites that could be converted to carbon forestry. However, Costa Rica boasts too wide a variety of grasslands and agricultural systems—most of them comprising a lot of trees—for such a figure to be used everywhere.

108. The FCCP study proposes a 20% deduction from the figure designating total potential of carbon sequestered in order to compensate for political and social risks and a 10% deduction to compensate for technical forestry risks. However, the accounting strategy of appealing to such "risk-discounts" faces the difficulty that carbon sequestration is characterised by far more than just risk (see above). Biological carbon accounting also has to cope with uncertainty and scientific unknowns. In these conditions, it is scientifically impossible to be sure whether any particular numerical risk factor is conservative enough to compensate for the unknowns involved.

109. In Costa Rica, for instance, most monoculture tree plantations are less than 20 years old, with a trend towards planting just two species—*Gmelina arborea* and *Tectona grandis*. Pest or disease epidemics can therefore be expected, but their extent is incalculable. Furthermore, El Niño climate events may propagate enormous fires whose extent, again, cannot be calculated in advance. During the dry season of 1998, in the humid tropical zone where uncontrollable fires had never been reported before, over 200,000 hectares were burned. Part of this territory is under monoculture tree plantations. Given such realities, it is unsurprising that the FCCP carbon project study could give no reasons for its "technical" risk figure of 10%.

110. At present, there is also little basis for guessing how much carbon sequestered in Costa Rican trees will re-enter the atmosphere and when. The FCCP study simply assumes that 50% of the carbon sequestered by a given project will remain so once the timber has been sold and used. However, the most common plantation species in the country (*Gmelina arborea*) is logged at least once every 12 years and most of the timber is used to manufacture pallets to transport bananas. The pallets are thrown away the same year they are made and probably store carbon no longer than a few years—though no one has done the empirical studies necessary to be sure.

111. The FCCP study also assumes that anthropogenic activities to foster natural seed nurseries will result in secondary forests that will be in place for at least 50 years. Accordingly, they make no deductions for re-emission of carbon. However, although current forestry law prohibits transforming forests into grasslands, both legal changes and illegal use could result in large re-emissions whose size would be impossible to determine in advance.

112. To try to overcome such problems, the Global Change Group of the Tropical Agronomic Centre for Research and Teaching (CATIE), has been studying ways of putting non-permanent biological carbon in the same account as fossil carbon emissions, so that the two can be added and subtracted. One proposal is called "tonne-year" accounting. The first step in tonne-year accounting is to determine the period that a tonne of carbon has to be sequestered in order to have the same environmental effect as not emitting a tonne of carbon. Because the lifetime of greenhouse gases in the atmosphere is limited, this time period should be finite. If the "equivalence factor" is set at 100 years, then one tonne of carbon kept in a tree for 100 years

and then released to the atmosphere is assumed to have the same environmental effect as reducing carbon emissions from a fossil-fuelled power plant by one tonne. The second step is to multiply the carbon stored over a particular year or decade by the complement of this equivalence factor to find out what the climatic benefits are of that project for that year, and to limit the carbon credits generated accordingly. So the forestry project doesn't have to be permanent to generate carbon credits; it will just generate fewer credits the more short-lived it is.

113. However, it is still necessary to measure the carbon stored by a project over a particular year or decade. That runs into the same problems with ignorance, uncertainty and all the rest mentioned above. Second, no one knows how long the "equivalence time" should be. Figures ranging all the way from 42 to 150 years have been mentioned. Another difficulty is that even if one settles on a figure of, say, 100 years, it does not necessarily follow that carbon sequestered for 10 years will have one-tenth the climatic effect of carbon sequestered for 100 years. Again, the problem is not that any given patch of trees is temporary, but that there's so much uncertainty and ignorance about how to measure its relevance to climate. It is not a matter of calculable "risk", but something far more recalcitrant to market accounting.

114. In addition, tonne-year accounting can make what allowances it does make for uncertainty only at the cost of generating carbon credits slowly. That makes it unattractive to business. It also militates against small projects. The CATIE study found that at prices of USD 18 per tonne—more than actual prices as of 2006—the tonne-year methodology would allow profits only in projects of over 40,000 hectares.

115. A method has also been proposed for generating credits more quickly, called "average storage adjusted for equivalence time" (ASC). Other methods include the UN's "temporary" Certified Emissions Reductions (tCERs), which expire at the end of the Kyoto Protocol's second commitment period and must be replaced if retired for compliance in the first commitment period; and "long-term" credits (lCER)s, which expire and must be replaced if the afforestation or reforestation project is reversed or fails to be verified. None of these approaches, however, address the basic problems of uncertainty and ignorance described above. In fact, not even the atmospheric lifetime of carbon dioxide emissions can be pinned down with any precision, as also mentioned above. For business, this translates into accounting obstacles and high economic uncertainty.

116. In the end, CATIE came to the conclusion that CDM forestry projects had to be big in order for it to be worthwhile to fulfil all the accounting and other requirements. Out of a total of over 1,500 simulated scenarios, only 8% made it possible for projects under 500 hectares to participate. The mean size of a profitable project was 5,000 hectares. One way out would be to bundle smaller projects together and employ standardised assumptions and procedures, but again that would magnify accounting mistakes and also would be hard to achieve, given the Costa Rican land tenure system.

117. The Costa Rican government has recently declared that it will put more effort into non-forestry projects such as windmills and hydroelectric schemes, on the grounds that they are less complicated and yield higher-priced carbon credits. Yet companies such as the US-based Rainforest Credits Foundation continue to be eager to set up new carbon offset projects in Costa Rica, often without much prior consultation with the government.

INDIA

118. One of the countries to attract the most long-term interest among carbon offset investors has been India. By August 2006, the country led all others in number of CDM projects registered with 82, followed by Brazil with 58. Many more are in the pipeline. The Indian government is also pressing for nuclear power and large hydroelectric dams to be allowed to receive CDM funding, and, according to some observers, hopes to use carbon money for developments in the country's Northeast that would dispossess local people of water, land and forests.

119. With about 350 projects at various stages of registration, the potential for non-plantation CDM projects is estimated by one source at more than 170 million tonnes of carbon dioxide equivalent per year, including 90 million tonnes from renewable energy schemes, while the potential yield of land-use and plantation projects is put at about 78 million tonnes of carbon dioxide equivalent annually. A CDM National Strategy Study predicts that India could take 10–15% of the global CDM market. As social activist Soumitra Ghosh and researcher Hadida Yasmin explain, a "friendly and indulgent" national CDM authority which "clears CDM projects in India almost as soon as they are submitted", a "'clean' and aggressive corporate sector", and a "happy band of new-age national as well as transnational validators, consultants and project developers have made India a veritable paradise for CDM projects." News about CDM projects and the income they will supposedly generate is boosting stock prices in even some of the worst-polluting sectors, such as sponge iron (see below).

120. Accordingly, many of the big names of the Indian corporate world—Reliance, Tata, Birla, Ambuja, ITC—are moving in, in spite of earlier apprehensions that market uncertainty and the complex procedures that CDM involves would put off big companies. Some of these firms are coming up with smaller-scale projects in renewable energy and energy efficiency. At an ITC paper and pulp operation in Andhra Pradesh, for instance, six separate CDM projects are being arranged inside the same factory. Bundled hydro and wind projects—and biomass—are also industry favourites due to a less risky registration procedure. However,

nearly 85% of Indian carbon credits are being generated by only two projects. Both projects—set up by blue-chip corporations SRF in Rajasthan and GFL in Gujarat—destroy HFCs, which are extremely powerful greenhouse gases used in refrigeration, air conditioning, and industrial processes.

121. Inevitably, social activists are raising questions about whether such one-off gas destruction projects provide "any credible sustainable development" to local communities. First, because HFCs are so bad for the climate, projects that destroy them can generate huge numbers of lucrative credits merely by bolting a bit of extra machinery onto a single existing industrial plant. As a result, there are no knock-on social benefits other than providing income for the machinery manufacturer and some experience for a few technicians. Second, such projects don't help society become less dependent on fossil fuels. They don't advance renewable energy sources, and they don't help societies organise themselves in ways that require less coal, oil or gas. Third, by ensuring that the market for credits from carbon projects is dominated by large industrial firms, they make it that much more difficult for renewable energy or efficiency projects to get a foothold.

122. Such projects also provide perverse incentives for governments not to do anything else about pollution. A government trying to help the industries in a country sell carbon credits from destroying HFCs is likely to hesitate to pass laws to clean up HFCs. Such laws would not make industry any money. In fact, they would cost industry. This again calls into question the capacity of carbon offsets to lead to less pollution.

123. Another danger is that HFC projects could undermine the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. While this Protocol mandates phasing out of HFCs in Southern countries by 2010, the CDM has now provided a perverse incentive to hike production of HFCs in order to cash in as much as possible on credit sales. Although the CDM board has raised the issue with governments, no decision has been made to limit the number of HFC credits or bar new plants from entering the CDM market.

124. In addition, it is not clear how such projects can benefit local people. Near Gujarat, at Fluorochemicals Limited, proprietor of one of India's first projects to be registered with the CDM, villagers complain of air pollution's effects on their crops, especially during the rainy season, and believe the plant's "solar oxidation pond" adds to local water pollution.Villagers near another factory hoping to benefit from CDM credits, Rajasthan's SRF Fluorochemicals, believe that their aquifers are being depleted and their groundwater polluted, leading to allergies, rashes, crop failure, and a lack of safe drinking water.

125. A carbon offset industry which is even more clearly encouraging pollution, including carbon dioxide pollution and with it global warming, is that associated with India's notoriously dirty sponge iron sector. Sponge iron is an impure form of the metal obtained from removing the oxygen from iron ore. Its manufacture requires a lot of water and energy supplied by gas or, more frequently, coal. In Chhattisgarh state, the most polluted in the country, sponge iron factories have contaminated drinking water and, by lifting huge quantities of water from rivers and irrigation canals, lowered water tables. Sponge iron works, which are subsidised by the state, also cause heavy air pollution, often in breach of pollution control norms, affecting health and agriculture. As of 2005, 33 out of 48 sponge iron units in Chhatisgarh were operating without having obtained statutory clearances from the state's Pollution Control Board. According to a report of the State Pollution Control Authority, 36 of the units are in violation of environmental pollution laws. A closure order was slapped on many plants in December 2006.

126. In Siltara area of Raipur district, land near 18 sponge iron units has become barren. Government soil tests from 30 separate sites in various villages found the soil to be contaminated with iron, affecting crop yields. Stored paddy seeds fail to regenerate, and even 50 kilometres away, production has suffered. Vegetables grown in the area turn reddish due to excessive air pollution.

127. In the last eight years alone, 17,200 hectares were acquired for industrial purposes in the state, displacing many villagers. Entrepreneurs typically acquire their first parcel of land through official channels such as the State Industrial Development Corporation, which in turn acquires its holdings from private owners at below market rates. The entrepreneurs are then are able to buy adjoining parcels at bargain prices after the pollution from their factories renders them useless for farming. Sellers are often left with few resources to restart their lives elsewhere, and are seldom able to find employment at the factories. And many new plants are contemplated or under construction. Here, rather than helping to clean the industry up, the official carbon offset market is providing new finance and a pleasant image for a socially and environmentally-damaging status quo.

128. One example is the biggest sponge iron operator, Jindal Steel and Power Ltd. (JSPL). JSPL runs what it claims to be the largest sponge iron plant in the world near Raigarh city, where it is developing not one but four separate CDM projects that have already been approved by India's government and validated. JSPL's carbon projects are likely to make it one of the largest energy CDM operations anywhere in the world, generating many millions of tonnes of so-called carbon dioxide "reductions". Spread over 320 hectares, the plant has simply wiped out the once flourishing agricultural village of Patrapali, which it still gives as its address.

129. Concerned citizens and a voluntary organisation have filed a case against JSPL in the state High Court over a proposed expansion of its existing facilities. City dwellers object to increasing air and water pollution and ill health. Rural dwellers are angry at losing their lands. JSPL's plans include a 20-billion-rupee expansion over three surrounding villages which, with a population of close to 3,000, are located on fringe of mixed deciduous, sal, bamboo, and teak forests. Agriculture is a major occupation, and villagers are also engaged in the collection of non-timber forest produce. In 2005, villagers from 22 communities submitted written resolutions that they did not want to sell or donate their land to industry.

130. For more than a decade, villagers from 18 communities have also opposed a dam JSPL wants to build on the Kurkut river to cater to its needs for water and power, managing to halt construction when various village heads wrote to the Chief Minister. Having already lost 240 hectares of their revenue land to JSPL, farmers in Khairpur village in Raigarh are meanwhile refusing to surrender any more, and complain about musclemen and touts sent by JSPL to pressure them to capitulate. They are also concerned about a new reservoir JSPL is constructing that would inundate their entire agricultural area (which is irrigated and yields two crops a year) and force them to migrate in search of other work.

131. A public hearing on the JSPL expansion—mandated by Indian law—was scheduled for 4 January 2005. But local people's concerns and objections could not be heard, because JSPL brought a large number of supporters and the proceedings were disrupted. The meeting was rescheduled for 18 January 2005 and then 29 January. An alliance of local civil society organisations pointed out that both postponements were made without the statutory 30 days' notice period, and that the Hindi version of the report and executive summary had not been made available. In the event, no actual public hearing was conducted on 29 January, in spite of the fact that more than 10,000 people showed up. Instead, people were asked to queue up to register their complaints and opposition without interacting with the public hearing panel. The environmental impact assessment prepared for the expansion does not properly address the project's impact on local forests or the dumping of solid wastes and fly ash and the associated heavy metal contamination of water sources. A "no objection" certificate JSPL claimed to have obtained from the village council of Tamnar for a thermal power plant has meanwhile proved to be a forgery.

132. Villagers are also protesting the officially-sanctioned acquisition of 21 hectares by Monnet Steel Industries, another CDM sponge iron beneficiary, in Singhanpur, saying that "we will die but will not give up our land and homes". In May 2005, Nalwa Sponge Iron, MSP Steel, Salasar Industries, Shivshakti Factory and Anjani Steels—all CDM beneficiaries—were issued a notice by the local forest officer regarding soot pollution damaging trees and crops. None of the industrial units in the area is following environmental laws of the country and the state, the notice said. All of the firms have seen resolutions passed against their land acquisitions in local village assemblies.

133. MSP Steel, whose CDM project has already been approved by India's government, has meanwhile illegally occupied reserved forest in the Jamgaon area of Raigadh next to its plant, stirring protests and resolutions from the assemblies of nearby villages. According to a doctor from the Jamgaon Primary Health Center, in the year since the plant went into operation, cases of asthma and other respiratory and gastric diseases have increased 20 times. MSP has also felled trees and started building a factory and road on farmland in Manuapali without proper permission. In March 2005, local villagers blocked a national highway in protest against Monnet's plans to acquire 120 hectares of their land. Villagers have also protested and petitioned against land acquisition by Ind Agro Synergy Ltd., another firm with an already validated CDM project in the works. Many firms are also in breach of the law stating that electrostatic precipitators have to be in operation to curb air pollution.

134. In West Bengal, a sponge iron plant run by Jai Balaji Sponge Limited of Kolkata in Ranigunj, Burdwan has a waste heat recovery project set to generate over 400,000 tonnes of carbon dioxide equivalent in credits through the Kyoto Protocol's first commitment period. In 2004, angry residents of nearby Mangalpur village forcibly closed the gates of the factory in a symbolic protest against pollution. They claim that the firm dumps fly ash on open fields, agricultural land, and a children's playground, and that emissions have increased. Old people and children, the worst sufferers, complain of breathing problems and persistent colds and coughs. Walls and windows of hutments in the village are covered with black spots. According to one villager, paddy production is decreasing each year. Numerous fines have been levied against the plant for pollution since 2001. Union leaders say that pollution has been reduced, but charge management with running the plant's electrostatic precipitator only during the day, to save money.

135. Some 90% of the factory's workers, mostly illiterate and from neighbouring states, are temporary. Non-unionised workers get only USD 1.50 per day and sometimes have to work 16 hours a day on a no work-no pay basis. No drinking water or toilets are available. Most workers, permanent staff and union leaders interviewed at the factory were unaware of the CDM project and of carbon trading and its financial implications. One local NGO worker had learned about the CDM project only from the *Telegraph*, a newspaper published in Kolkata.

136. Another offset project of about the same size, aimed at using waste heat from kilns and blast furnace gases from pig iron production to generate electricity, is run by SRBSL in Durgapur, Burdwan. Most of the 1,700 workers are contract labourers, who get only USD 1.30–1.50 for 12 hours' work, without the medical benefits provided for the 30 staff. Releases of dust, smoke and gases from the plant again result in respiratory problems among local residents, especially the very young and very old. Workers' living quarters are covered with a thick layer of coal dust. Water tables and paddy yields have declined, and ponds or ring wells always

remain covered with a foul, thick layer of black dust. Local farmers and labourers have also been deprived of what was common land used in part for cultivation. None of the people interviewed—the management representative, the union leader, factory workers or villagers—were aware of carbon trading.

137. West Bengal polluting firms in other sectors are also cashing in on the opportunity to get carbon money. Jaya Shree Textiles in Prabasnagar, for example, has upgraded boilers and modified motors to reduce energy use, but still pollutes the locality. Its workers remain uninformed about the extra finance supplied by its CDM project. A senior legal officer at the West Bengal Pollution Control Board, Biswajit Mukherjee, was surprised to learn about CDM support for sponge iron industries in his state. How, Mukherjee wondered, can companies with long records of pollution, including some still paying penalties to the West Bengal government, start "clean development" projects?

138. Some of the many biomass carbon offset projects planned for India are also rousing local concerns. One example is the 20-megawatt RK Powergen Private Limited generating plant at Hiriyur in Chitradurga district of Karnataka, which is currently preparing a Project Design Document for application to the CDM. According to M. Tepaswami, a 65-year-old resident of nearby Babboor village, RK Powergen is responsible for serious deforestation. "First, the plant cut the trees of our area and now they are destroying the forests of Chikmangalur, Shimoga, Mysore and other places. They pay 550 rupees per tonne of wood, which they source using contractors. The contractors, in turn, source wood from all over the state." Another villager claimed that "poor people find it difficult to get wood for cooking and other purposes". Jobs promised by the firm, Tepaswami complains, were given to outsiders.

139. Meanwhile, employees at the Karnataka Power Transmission Corporation claim that its "equipment is adversely affected due to the factory's pollution", while local villagers complain of reduced crop yields and plunging groundwater levels. Project managers deny the allegations. "If there is deforestation", said plant manager Amit Gupta, "then local people are to be blamed because they are supplying the wood to us".

140. Biomass projects have generally not been designed to benefit the agricultural sector or increase farmer incomes, and money from sale of crop residues or the produce of energy plantations on wastelands do not accrue to landless households. Nor do biogas projects necessarily benefit rural residents. The Bagepalli CDM Biogas Programme proposed for Kolan district of Karnataka state is to set up 5,500 two-cubic-metre biogas digesters for households that have an average of two cattle each or more. That excludes the ordinary rural poor, who, on average, own fewer livestock.

141. Revealingly, the Project Design Documents of four different Indian offset projects associated with biomass power schemes each repeated, word for word, alleged favourable comments made by a village head. All of the projects—Rithwick, Perpetual, Indur and Sri Balaji—are located in Andhra Pradesh state, but all have different characteristics and are spread over hundreds of kilometres. Even spelling mistakes were repeated in the documents, suggesting that consultation was not genuine. The private consultants who prepared the documents, PricewaterhouseCoopers and Ernst & Young, responded lamely that identical projects in similar geographical locations were likely to have similar Project Design Documents.

142. Another project, the FaL-G Brick Project, aims to promote fly ash bricks as an alternative to burnt clay bricks in the Indian construction sector. Fly ash, a waste product from thermal power plants, is mixed with lime from the acetylene industry and gypsum from chemical plants to form a material for making bricks that requires less fossil energy than conventional materials. The process is unsustainable in that it relies on a fossil fuel-intensive industry, whose lifespan it would extend through sales of carbon credits. In addition, fly ash poses a health hazard to the workers who handle it. The project thus adds to the numbers of people suffering health risks due to fossil fuels in two ways: by prolonging fossil fuel pollution around thermal power plants buying the credits, and by bringing a new group into contact with hazardous fly ash. The FaL-G project would ordinarily be subject to the same market handicap as small solar projects, since the brickmakers to be included tend to be small operations and the "volume of emission rights generated by an individual plant is clearly not sufficient to treat an individual plant as a separate small-scale CDM project". The World Bank's Community Development Carbon Fund, however, has stepped in to make it possible to "bundle" together hundreds of these tiny plants—located in states as distant from each other as Tamil Nadu, Karnataka, Orissa, Uttar Pradesh and Punjab—under a single project umbrella, streamlining costs.

143. The case suggests an important lesson: the preference for CDM and, ultimately, other carbon offset buyers for cheap credits must inevitably bias them against small community-based projects, which tend not to be able to afford the high transaction costs necessary for each scheme. In India, for example, the Barefoot College has trained 20–30 solar engineers, who have installed grid solar power stations and solar lanterns across the country. Such projects "have difficulty accessing CDM finance," according to Bunker Roy of the College, due to the need for "upfront financing" and "bundling" projects together to save on transaction costs.

144. Carbon forestry projects, meanwhile made a late start in the CDM offset market because they are so controversial. The necessary legal framework, laid out in the Marrakesh accords of 2001, was agreed only in late 2005 at the Montreal climate negotiations. But forestry offset projects are definitely on the cards for India in increasing numbers. The World Bank, forestry and other private sector interests, academics and the government are all busy laying plans and calculating wildly different figures for the carbon credits India

could get from trees. In 2003, the Indian pulp and paper lobby issued a blueprint for "Re-Greening India" as part of its longstanding campaign to be allowed to lease "degraded" forest land on which to grow industrial plantations. The possibility of the plantations earning carbon credits was discussed in detail. A National Environment Policy Draft circulated by the Ministry of Environment and Forests (MoEF) in 2004 meanwhile confirms a new, "liberalised" environmental policy that promotes carbon trading and other environmental services trades. The move towards carbon forestry also chimes with a grandiose existing plan on the part of the MoEF to bring 30 million hectares of "degraded" forest and other lands under industrial tree and cash crop plantation by 2020, through a new type of collaboration with the private sector, state governments and local communities.

145. Among the scores of CDM projects being contemplated for India are forestry projects in Madhya Pradesh and Andhra Pradesh states. Here, an organisation called Community Forestry International (CFI) has been surveying opportunities for using trees to soak up carbon. CFI declares that it helps "policy makers, development agencies, NGOs, and professional foresters create the legal instruments, human resource capacities, and negotiation processes and methods to support resident resource managers" in stabilising and regenerating forests. Its work in Madhya Pradesh has been supported by the US Agency for International Development and the US Department of Agriculture's Forest Service, and in Andhra Pradesh, by the Climate Change and Energy Division of Canada's Department of Foreign Affairs and International Trade. CFI suggests that, in India, the CDM would be a viable income-generating activity for rural indigenous communities.

146. There are, however, strong reasons to doubt this. In India, as elsewhere, it is not abstract theory, but rather the institutional structure into which carbon offsets fit, that provides the key clues to social and climate outcomes. Take, for example, a CDM scheme investigated by CFI that would be sited in Harda district, Madhya Pradesh state. Here CFI sees the CDM's role as providing financial support for Joint Forest Management (JFM), an institution that has been the subject of much celebration of late in India and which would be a likely medium for a great deal of Indian carbon forestry.

147. Joint Forest Management is supposed to provide a system for forest protection and sustainable use through the establishment of village forest protection committees (VFPCs), through which government and development aid funds are channelled. Formalised by state governments and largely funded by the World Bank, JFM was designed partly to ensure that forest-dependent people gain some benefit from protecting forests. It's already implemented in every region of India. Long before carbon trading was ever conceived of, JFM had become an institution used and contested by village elites, NGOs, foresters, state officials, environmentalists and development agencies alike in various attempts to transform commercial and conservation spaces and structures of forest rights for their respective advantages.

148. Joint Forest Management, however, is highly controversial. CFI sees the JFM programme as having improved the standard of living in Adivasi villages, as well as their relationship with the Forest Department. It also found that JFM had helped regenerate forests in Rahetgaon forest range, resulting in higher income for VFPCs, although admitting that in Handia forest range, social conflicts had resulted in decreased JFM-related investment by the Forest Department. On the other hand, many indigenous (or Adivasi) community members, activists and NGOs see JFM as a system which further entrenches Forest Department control over Adivasi lands and forest management, although the practices of different village committees vary. Mass Tribal Organisations, forest-related NGOs and academics have published evidence that JFM village forest protection committees, composed of community members, function principally as local, village-level branches and extensions of state forest authority. Communities interviewed in Harda in 2004 said that VFPC chairmen and committee members have become to a large extent "the Forest Department's men".

149. These local JFM bodies are accused of imposing unjust and unwanted policies on their own communities, of undermining traditional management systems and of marginalising traditional and formal self-governing local village authorities. In one case in Madhya Pradesh, forest authorities and the police shot dead villagers opposing JFM and VFPC policies, in an echo of hostilities between the Forest Department and various classes of other forest users that go back a century (see below). According to many Mass Tribal Organisations, communities and activists, JFM was effectively imposed on them without appropriate consultation and has resulted in the marginalisation, displacement and violation of the customary and traditional rights of the Adivasis in the state. Many state governments implemented JFM programmes on disputed lands. Many Adivasis have lost land and access to essential forest goods. Current problems with JFM in Madhya Pradesh, according to many local people and activists, include:

- Conflicts within communities as a result of economic disparities between VFPC members and non-members.
- Conflicts between Adivasi groups and other communities generated by the imposition of VFPC boundaries without reference to customary village boundaries.
- Curtailment of *nistar* rights (customary rights to local natural goods).
- Conflicts over bans on grazing in the forest and on collecting timber for individual household use.
- Indiscriminate fining.

150. According to some Harda activists, JFM has opened deeper rifts within and between Adivasi villages and between different Adivasi groups, and has engendered conflict between communities and the Forest Department. Although funding for the local JFM scheme is now exhausted, VFPCs are still in place in many villages, recouping salaries from the interest remaining in their JFM accounts and from fines imposed on members of their own and neighbouring communities. Communities interviewed also claim that VFPC financial dealings are not transparent. In July 2004, non-VFPC villagers in Harda reported that they would like to see funding of VFPCs stopped and, ultimately, the committees disbanded. They also wanted to see forest management returned to them and their rights to their traditional lands and resources restored. In the words of anthropologist K Sivaramarkishnan, "when environmental protection is to be accomplished through the exclusion of certain people from the use of a resource, it will follow existing patterns of power and stratification in society".

151. According to one activist, "Joint Forest Management and Community Forest Management are being used as tools to exclude the Adivasis from their survival sources, and are compelling them to slip into poverty and migrate in search of work. Instead of . . . recognising Adivasi rights to the forest, the government is seeking their eviction through all possible means." Stephen Bass of the International Institute for Environment and Development meanwhile observes that "If large protected areas or plantations are managed for long-term carbon sequestration and storage, local people may lose access to other products such as fibre or food . . . [whereas] governments and companies are best placed to benefit from such schemes . . . [T]he frequently weak organisation (or high transaction costs of improving organisation) of the rural poor and landless will reduce their access to the carbon offset market, particularly given the many complex requirements of carbon offset interventions. Other barriers to the involvement of rural people centre on their prevailing small-scale and complex land use practices, without clear tenure systems." A Madhya Pradesh activist highlights the relevance for the carbon offset market: "Government figures show that there are about 5 crore (50 million) hectares of "wasteland" in India, land which . . . now lies open to exploitation through carbon forestry schemes. What the central government does not say is that most of this "wasteland" belongs to Adivasis and other forest-dependent communities, who will be the first to lose out from the development of such schemes."

152. The controversy can usefully be seen against a longer context of disputes between the state and forest-dependent peoples about who precisely is "encroaching" on forest land. Milestones in the state's efforts to appropriate land from forest-dependent communities in India include the Indian Forest Act of 1878 and the 1980 Forest Conservation Act, which theoretically provided the central government with ultimate control over most forest land. In 2002, quoting a Supreme Court ruling, the Ministry of Environment and Forests issued a circular to all state/union territory governments to evict all "encroachers" from forest land. Between March 2002 and March 2004, it is estimated that "encroachers" were evicted from 152,000 hectares of forest land, although neither the Supreme Court nor the MoEF had clarified whether the term included people carrying out illegal, commercial logging activities, or Adivasi people, or both. In 2002, an estimated 10 million Adivasi people faced the threat of eviction. The new wave of evictions is helping to create conditions conducive for commercial carbon forestry. On 23 December 2004, however, the MoEF issued a further circular confessing that due to the lack of definition of "encroacher", many Adivasi people had been unjustly evicted from their lands. Moreover, following heightened protest by Adivasis and support organisations in late 2004, the central government agreed in early 2005 to introduce the Scheduled Tribes and Forest Dwellers (Recognition of Forests Rights) Bill before Parliament.

153. Furthermore, the fact that JFM projects are going forward even without carbon finance suggests that they cannot be justified on the ground that they are saving carbon over and above what would have been saved anyway. Still further problems include the fact that CFI and other carbon offset promoters don't take into account the changes in numbers of people and in community and family composition to be expected over project lifetimes. CFI's estimates of fuelwood used by communities in the Rahetgaon range are also inaccurate. CFI believes every family uses two head loads of fuelwood per week, but recent interviewees suggested that a more realistic figure would be 18–22, especially during the winter and the monsoon season. CFI also makes the questionable assumption that local communities would relinquish their forest-harvesting activities for the sake of very little monetary income from carbon sales, and that income flowing to VFPCs would be transparently distributed.

154. In order to assess how much carbon would be saved, CFI compared vegetation in forest plots at different stages of growth and subject to different kinds of pressure from humans. Yet while the total area of forest to be considered is 142,535 hectares, the total number of 50 square metre plots assessed was 39, representing a total study area of only 9.75 hectares. That may be an adequate sample in biological terms. But it's hardly enough to assess the range of social influences on carbon storage in different places.

155. In Adilabad, Andhra Pradesh state, meanwhile, CFI saw possibilities of sequestering carbon by reforesting and afforesting non-forest or "degraded" forest lands whose carbon content has been depleted by a large and growing human and cattle population, uncontrolled grazing of cattle in forests and "encroachment" on and conversion of forest lands for swidden cultivation. The best option, CFI felt, would be to regenerate teak and mixed deciduous forests. Clonal eucalyptus plantations would, it thought, accumulate carbon faster, and would have other commercial uses such as timber and pulp, as well as

incremental returns for any interested investor. Such projects would cost more to establish and maintain, however, and would also be sure to be condemned by Adivasi communities and activists as a new form of colonialism.

156. In Andhra Pradesh, CFI proposed, the best agencies for taking on forest regeneration would be women's self-help groups (SHGs), set up by the state-level Inter-Tribal Development Agency during the 1990s as a mechanism for improving the finances of households through micro-credit schemes and capacity-building, as well as linking households with financial institutions and government authorities. CFI claimed that these institutions are much more dynamic, accountable and transparent than other local institutions, such as forest protection committees, which are viewed as inefficient, untransparent, untrustworthy, and troubled in their relationship with the Forest Department. However, it is difficult to see how the virtues of the women's self-help groups could work for the carbon economy. For one thing, CFI states that only if the SHGs come together in a federation would carbon offset forestry projects be financially viable, given the high transaction costs involved in preparing and carrying them out. Yet it does not explain how such a federation could come about in rural communities, nor how SHGs could become involved in CDM projects and link themselves to the carbon market. Nor does it mention that SHGs currently work in relative isolation from the Panchayat Raj institutions (the ultimate village-level formal self-governing authority in rural India), the Forest Department and local forest protection committees.

157. Whether or not JFM is involved, many Indian activists fear that by creating a market for carbon, CDM and voluntary offset schemes will engender change in the relationship between Adivasis and their lands and forests. In order to avoid conflict, any carbon offset proponent will need to clarify who owns the land, the project and the carbon. This immediately militates against Adivasi peoples, since in India, the government claims formal ownership and control over indigenous lands and resources. Access and ownership rights are likely to be transformed into benefit-sharing and stakeholder-type relationships. Adivasi communities may lose their capacity to sustain food security, livelihoods, and fundamental social, cultural and spiritual ties. Lands Adivasis depend on could be classified as "wasteland" and turned over to carbon production. In short, it is unclear how CDM projects could do anything but further entrench discrimination against Adivasi communities by government authorities and rural elites.

158. CDM afforestation offset projects can be established on lands that have not been forested for 50 years, and reforestation projects on lands that were not forested on 31 December 1989. But forest conservation projects are also on the horizon. Although conservation schemes are not yet eligible for CDM, conservation financiers and the World Bank and Global Environment Fund are increasingly promoting the idea of protected areas as an additional source of carbon credits. And of course, the voluntary offset market is wide open to such proposals. Indigenous peoples will clearly be in for a fight should carbon sequestration and protected area projects come together on their territories.

159. Those voluntary offset projects which have already been implemented in India in the forest sector suggest that further failures are inevitable. Already in April 2006, the London *Sunday Telegraph* reported on the attempt of the rock group Coldplay to offset emissions associated with the release of an album by the planting of 10,000 mango trees in southern India. More than four years after the album's release, the newspaper reported, "many of Coldplay's good intentions have withered in the dry soil of Karnataka state, where the saplings it sponsored were planted." The middleman in Coldplay's initiative was the UK's Carbon Neutral Company, which in turn had contracted the task of planting the trees to a group called Women for Sustainable Development (WSD), who got GBP 33,000 for the deal. In the villages of Varlakonda, Lakshmisagara and Muddireddihalli, among the dozen that WSD said had received mango saplings, no one had heard of Coldplay. Most of those who received saplings said they had not been given the necessary funding for labour, insecticide or spraying equipment. One Lakshmisagara villager, Jayamma, managed to get 50 of her 150 trees to survive only because she had a well on her land. "I was promised 2,000 rupees every year to take care of the plants and a bag of fertiliser. But I got only the saplings," she said. Some other villagers were also offered saplings but didn't have enough water to nourish them. In nearby Varlakonda, about 10 families were given approximately 1,400 saplings. Of these, just 600 survived. Another farmer who took 100 saplings, said: "[WSD] promised us that she'd arrange the water." But villagers said a tanker came only twice.One of the few successes is the stretch of 300 mango trees owned by Narayanamma and her husband Venkatarayappa. They were apparently the only couple to receive 4,000 rupees from WSD. At the same time, they spent 30,000 rupees on tankers and labourers. "We were promised money for maintenance every year but got nothing", said Narayanamma. WSD blamed the Carbon Neutral Company of providing inadequate funding and said it had a "condescending" attitude. "They do it for their interests, not really for reducing emissions. They do it because it's good money," said the head of the organisation. The Carbon Neutral Company countered that WSD had a contractual responsibility to provide irrigation and support to farmers. Richard Tipper, the director of the Edinburgh Centre for Carbon Management, which monitored the project for Carbon Neutral, said that the Karnataka project had "experienced major problems" because WSD had not raised the necessary money to administer the project and because of a long drought. A source close to Coldplay said that the band had "signed up to the scheme in good faith" with the Carbon Neutral Company and that "it's in their hands. For a band on the road all the time, it would be difficult to monitor a forest."

160. In another carbon offset project in the voluntary sector, in 2004, the women's self-help group of Powerguda village of Andhra Pradesh, India, was given cash in exchange for planting *Pongamia* trees. The tree's seeds can be used to make a petrol substitute. The women were given a certificate and USD 645 for "offsetting" the emissions produced by a World Bank workshop on climate change held in Washington, DC. The Bank claims that 30 years of biofuel use by government authorities in Andhra Pradesh will compensate climatically for the workshop's emissions. The women didn't know why they had received the money. They were also unaware of the benefits that went to the carbon traders, releasers and agencies involved. Ironically, northern Andhra Pradesh has recently been hit by one of the most devastating droughts ever, very possibly as a result of global warming. In the summer of 2004, the number of suicides in the province among farmers driven to desperation by their crippling debts reached 3,000.

161. The case of India also throws into sharp relief the obstacle that offset projects present to efforts to foster public awareness and discussion about climate change. Anyone wanting to comment on planning documents for CDM projects (for example) has to learn English, find a computer, log onto a website, register, and then navigate hundreds of pages of technical jargon, usually under a tight deadline. CDM comment forms provide no spaces for discussing the reliability of the implementing companies or the indeterminacy and scientific ignorance that stand in the way of the projects" being verifiably climatically effective. Nor are there spaces for questioning the ubiquitous, and incorrect, assumption that such projects produce "emissions reductions". As one Indian social activist remarked on being confronted with an official UN form for submitting comments on a CDM project, "the form for public input is so full of technicalities there seems to be no space for general comments".

162. By their sheer bulk and repetitiveness, such documents entrench a "mainstream" discussion about climate change that sidelines thinking about how to halt the flow of fossil fuels out of the ground and limits the political choices a society can make to small, incremental variations on business as usual. As Adil Najam and colleagues concluded in 2003, "There is a danger that Kyoto has now become so much of a mechanism for managing global carbon trade that emission cuts for atmospheric carbon stabilisation could be neglected, or at least delayed." As elsewhere, few members of the general public in India have any inkling of proceedings in the bureaucracies that govern either the UN's or the EU's climate market, or what evasions, abuses and conflicts are afoot, or how India's own climate change bureaucracies fit into the picture. As elsewhere, few are even aware how far the attempt to set up a giant global carbon market has gone. Few, too, can make sense of the swarm of acronyms and technical terms Kyoto has spawned and continues to spawn, including AAUs, CERs, ERUs, DNAs, DOEs, NAPs, PDDs, AIEs, SBIs, COPs, MOPs, SBSTAs, LULUCF, additionality, model rules, meth panels, supplementarity, leakage, and so on. Not even many journalists covering climate are able to penetrate the associated politics.

SRI LANKA

163. Sri Lanka was host to one of the world's very first attempts to "compensate for" or "offset" industrial carbon-dioxide emissions using renewable energy, in the form of a rural solar electrification programme. In 1997, the legislature of the US state of Oregon created a task force that later legally required all new power plants in the state to offset all of their carbon dioxide emissions. When companies put in bids for the contract to build a new 500-megawatt, natural-gas fired power station in Klamath Falls, they also had to present plans for "compensating" for its CO_2 emissions. The winner of the contract, PacificCorp Power Marketing, proposed a diversified USD 4.3 million dollar carbon-offset portfolio, allocating USD 3.1 million to finance off-site carbon mitigation projects. In particular, the firm put USD 500,000 into a revolving fund to buy photovoltaic (solar-home) systems and install them in "remote households without electricity in India, China and Sri Lanka". In 1999, PacificCorp Power and the City of Klamath Falls signed the necessary finance agreement with a US solar-energy company called the Solar Electric Light Company, or SELCO.

164. In all, SELCO agreed to install 182,000 solar-home systems in these three Asian countries, 120,000 in Sri Lanka alone. The idea was that the solar systems would reduce the carbon dioxide emissions given off by the kerosene lamps commonly used in households that are "off-grid", or without grid-connected electricity. On average, SELCO calculated, each such household generates 0.3 tons of carbon dioxide per year. SELCO argued that the installation of a 20- or 35-watt solar-home system would displace three smoky kerosene lamps and a 50-watt system would displace four. Over the next 30 years, it claimed, these systems would prevent the release of 1.34 million tons of carbon into the atmosphere, entitling the Klamath Falls power plant to emit the same amount.

165. In the end, however, the project amounted to little more than a colonialist attempt to use decentralised solar technology to reorganise off-grid spaces in the South into spaces of economic opportunity that subsidised the generator's costs of production through carbon dioxide offsetting. The solar component of the Klamath Falls plant, in essence, attempted to "mine" carbon credits from off-grid areas in Sri Lanka. However, the existence of these off-grid areas was partially due to social inequalities within Sri Lanka. In this case, the project was taking advantage of one particularly marginalised community of Sri Lankan workers in order to support its own disproportionate use of fossil fuels. The PacificCorp/SELCO arrangement in Sri Lanka wound up supporting what one Sri Lankan scholar-activist, Paul Casperz, calls

a feudal system of "semi-slavery" on plantations. The carbon offset market's intervention in Sri Lanka's tea sector ended up perpetuating inequality, just as earlier schemes had done in the different but also socially unequal environment of Los Angeles (see above).

166. The kerosene-lamp users that PacificCorp/SELCO targeted earn their living in what is known as the "estate" or tea plantation sector. This is a sector in which nearly 90% of the people are without grid-connected electricity, compared to 60% of the non-estate rural sector and only 5% of urban dwellers. A large proportion of this off-grid population was—and is—from the minority estate Tamil community, which lives and works in conditions of debt dependence on tea and rubber plantations established by the British during the colonial period. Unfair labour practices in the sector have continued to keep estate society separate from and unequal to the rest of Sri Lankan society. Daily wages average USD 1.58 and the literacy rate is approximately 66%, compared to 92% for the country as a whole. The estate population is also underserved when it comes to infrastructure. A sample survey of 50 estates found that 62% of estate residents lacked individual latrines and 46% did not have a water source within 100 metres of their residence. Due partly to its cost, electrification, unlike health care, water supply, and sanitation, has never been one of the core social issues that social-service organisations working among the estate population get involved in.

167. Electrification could be highly beneficial to workers and their families. By displacing smoky kerosene lamps, it would provide a smoke-free environment that reduces respiratory ailments, as well as quality lighting that reduces eyestrain and creates a better study environment for the school-going generation who are eager to secure employment outside the plantation economy. Researchers have found clear connections between off-grid technology and educational achievement. But as tea estates are regulated and highly structured enclave economies, SELCO could not approach workers without the cooperation and approval of estate management. The chief executive of one plantation corporation, Neeyamakola Plantations, was willing to allow SELCO access to the "market" that his off-grid workers represented. He himself supported the idea of solar electrification, but for an entirely different set of reasons, having to do with the fact that Sri Lanka's 474 plantation estates had been privatised recently. Facing fierce competition from other tea-producing countries, they need to lower production costs and increase worker productivity in order to compensate for low tea prices on the global market and wage increases mandated by the Sri Lankan government. Neeyamakola had already introduced some productivity-related incentives and thought that solar-home systems could provide another. Furthermore, with a regular electricity supply, workers could watch more television. Seeing how other people in the country lived, they would want to raise their standards of living too. For that, they would need money. To earn more money, they would work harder or longer, or both.

168. Thus in 2000 Neeyamakola signed an agreement with SELCO for a pilot project on its Vijaya rubber and tea estate in Sri Lanka's Sabaragamuwa province, where over 200 families lived. At first, the pilot project was to be limited to workers living in one of the four administrative divisions into which the Vijaya estate was divided, Lower Division, and in nearby villages. Some four-fifths of these workers were estate Tamils living in estate-provided "line housing". The other fifth were Sinhalese who lived within walking distance. In the first three months, only 29 families decided to participate in the solar electrification project: 22 of Lower Division's 63 families and seven Sinhala workers who lived in adjacent villages. In the end, the project installed only 35 systems before it was cancelled in 2001. In the historical and corporate context of the estate sector, the SELCO project had wound up strengthening the already oppressive hold of the plantation company over its workers. Neeyamakola's idea was to use access to loans for solar-home systems to entice estate labourers into working additional days. The Neeyamakola accounting department would deduct a 500-rupee loan repayment every month and send it to SELCO. In order to qualify for a loan, workers had to be registered employees who worked at least five days a month on the estate. The loan added another layer of worker indebtedness to management. In this case, the indebtedness would last the five years that it would take the worker to repay the loan taken from the corporation.

169. From workers' point of view, the system only added to the company's control over their lives. Historically, the only way that estate workers have been able to get financing to improve their living conditions has been through loans that keep them tied to the unfair labour practices and dismal living conditions of estate life. To upgrade their housing, for instance, workers have to take out loans from the Plantation Housing and Social Welfare Trust. One condition of these loans is that "at least one family member of each family will be required to work on the plantation during the 15-year lease period", during which estate management takes monthly deductions from wages. Hampered by low pay and perpetual indebtedness, workers find it difficult to move on and out of the estate economy.

170. In addition, the project reinforced inequality and social conflict of many different kinds. First, as Neeyamakola offered solar-home systems primarily to estate workers, most of whom are members of the Tamil ethnic minority, the nearby off-grid villagers of the Sinhalese majority felt discriminated against and marginalised. Disgruntled youth from adjacent villages as well as from estate families who weren't buying solar systems threw rocks at the solar panels and otherwise tried to vandalise them. Second, local politicians and union leaders saw solar electricity as a threat to their power, since both groups use the promise of getting the local area connected to the conventional electricity grid as a way of securing votes. So they started issuing threats to discourage prospective buyers. Third, the village communities living around the Vijaya estate feared that if too many people on the estate purchased solar systems, the Ceylon Electricity Board would have a reason for not extending the grid into their area. And without the grid, they felt, small-scale industry

and other entrepreneurial activities, which would generate economic development and increase family income, would remain out of reach, making their social and economic disadvantages permanent. (Any delay in the extension of the grid to the area occasioned by the PacificCorp/SELCO Neeyamakola project, of course, would have its own effects on the use of carbon, and would have to be factored into PacificCorp/SELCO's carbon accounts. There is no indication that this was done.) Added to all of this was inequality within the community of estate workers themselves. One consequence of Neeyamakola's focus on getting more out of its workers was that many estate residents whose work is productive for society in a wider sense were ineligible for the systems. One example is the primary school teacher in the Tamil-medium government school that served the estate population. The daughter of retired estate workers, the teacher received a reliable monthly salary, could have met a monthly payment schedule, and was willing to pay, but was ineligible for a system because her labour was not seen as contributing directly to the estate's economic productivity and profit margin. Retired estate workers and their families were excluded for the same reason. SELCO, a firm new to Sri Lanka, was unable to ensure community-wide benefits or distributive equity within the community as a prerequisite in the design of the pilot project.

171. On the Vijaya estate, in short, the decentralised nature of solar power—in other contexts a selling point for the technology—had quite another impact and meaning in the context of Sri Lanka's estate sector. It provided the company that was controlling the "technology transfer" with a new technique to exert control over its labour force and ensure competitive advantage, while exacerbating underlying conflicts over equity.

172. Incidentally, solar projects in Sri Lanka often fall short even at the household level, where many families end up reducing their consumption of kerosene by only 50%. There are many reasons for this. Kerosene use is necessary to make up for faulty management while household members become acquainted with the energy-storage patterns of the battery and system operation. Households also face problems managing stored energy, with children often using it all up watching afternoon television. And local weather patterns and topography likewise take their toll. In some hilly areas with multiple monsoons, solar can supplement kerosene systems at best for a six- to nine-month period, depending on the timing and duration of the monsoon.

173. Given the geographical and cultural distances involved, it would have been difficult for PacificCorp's electricity customers either to learn about or to act on the failures of the Sri Lankan offset project with which they were involved. On the other hand, it seems unlikely that Northern consumers of electricity—if they are informed of such details—will, in the end, accept carbon-offset projects that involve not only dubious carbon accounting, but also blatantly exploitative conditions and the reversal of poverty alleviation efforts. This is another reason for doubting how long-lived undertakings like PacificCorp/SELCO's will be. From the beginning, they have been more about preserving the economic status quo and promoting short-term cost effectiveness among polluting Northern firms than about supporting equity in the South.

174. Proper regulation, of course, had it been possible, could have made some difference. For example, the solar technology could have been reconfigured so that an entire line of families could have pooled resources and benefited, rather than just individual houses. But setting up an apparatus to assess, modify, monitor and oversee such a project isn't by itself the answer. Such an apparatus, after all, would have brought with it a fresh set of questions about who would have carried out the social impact assessment, whether they would have been sensitive to local social realities, whether the resulting recommendation would have been acceptable to Neeyamakola or its cost acceptable to PacificCorp, and what kind of further oversight would have been necessary to prevent an assessment from merely adding legitimacy to a project whose underlying problems were left untouched. Just as a technology is never "just" a neutral piece of machinery which can be smoothly slotted into place to solve the same problem in any social circumstance, so the success of a social or environmental impact assessment is dependent on how it will be used and carried out in a local context.

175. Hence although the continued dominance of fossil fuel technologies does nothing to improve the position of disadvantaged groups such as Sri Lanka's estate Tamils, the addition of carbon offsets to the mix is likely merely to complicate the oppression. The necessary alternative involves acting on an understanding not only of the necessity halting the flow of fossil fuels out of the ground, but also of the fact that what keeps marginal communities such as that of Sri Lanka's estate Tamils in the dark, so to speak, is not only a matter of "suboptimal" use of technology, but also a deeper pattern of local and global politics.

176. While climate activists and policy makers have often told each other that "the essential question is not so much what will happen on the ground, but what will happen in the atmosphere", the example of the PacificCorp/SELCO/Neeyamakola rural solar electrification project shows why this is a false dichotomy. What happens on the ground in communities affected by carbon projects is important not only because of the displacement of the social burdens of climate change mitigation from the North onto already marginalised groups in the South. It is also important because what happens on the ground influences what happens in the atmosphere.

THAILAND

177. Other types of "renewable energy" projects may turn out to be of equally questionable climatic or social value when integrated into the carbon market as supports for a system dominated by fossil fuel technologies and corporate expansion. A good example is a "biomass energy" project seeking CDM support in Yala province in Thailand's troubled far south. There, an approximately 23-megawatt power plant fuelled by rubberwood waste and sawdust is being developed by a diverse group of companies linked by their interest in the carbon trade. They include:

— Gulf Electric, an independent power producer 50% owned by Thailand's Electricity Generating Public Company (EGCO) and 49% by Japan's Electric Power Development Company (EPDC).

— Asia Plywood (AP), a Yala rubberwood processor, next to one of whose factories the plant would be located.

— Det Norske Veritas (DNV), a Norwegian "risk management" consultancy which has managed to parlay its experience in certifying the credibility of pioneer carbon schemes such as Yala into a major share in CDM's consultancy market.

178. EPDC is a largely fossil-fuel-oriented company and the largest single user of coal in Japan. It operates 66 coal-fired and hydropower stations and burned USD 652 million in fossil fuels in 2001 alone. It also has an interest in six gas-fired power generating plants in operation or under construction in Thailand, totalling 2,733 megawatts. Nor, with a large new coal-fired power station under construction in Yokohama, does EPDC contemplate any change of direction in the future. "Coal offers stable supply and outstanding economical efficiency," says a company presentation, "hence we predict it will support world energy consumption throughout this century. Our great mission is to ensure that coal is burned cleanly, thus reducing the burden on the environment." Accordingly, EPDC's main response to global warming is coal gasification, which does nothing to halt the flow of fossil carbon to the surface, and the development of a nuclear power plant. For EPDC, the point of investment in Yala would be to gain carbon credits to help it, and Japan generally, maintain current levels of fossil-fuel combustion in the face of Kyoto pressures.

179. EGCO is also largely structured around fossil-fuel technologies. One of EGCO's gas-fired power stations, in fact, is operated in partnership with UNOCAL, a US multinational fossil-fuel firm that is anti-Kyoto Protocol and sceptical about climate change. Gulf Electric, meanwhile, with a mainly gas-fuelled generating capacity, has become well known in recent years partly due to the overwhelming defeat in March 2003 of its proposal to build a 734-megawatt Bo Nok coal-fired power plant on the Gulf of Thailand. Local people in Prachuab Khiri Khan province concerned about pollution and other potentially destructive effects of the project had mounted a successful regional and national campaign against it. Following their victory against Gulf, the company moved quickly to propose a gas-fired substitute plant further up the coast.

180. If any further evidence were required that the sponsoring firms are not treating the Yala project as a step away from fossil fuels, there is the fact that they had originally planned to build the power plant without any carbon finance at all. It is only since the depths of the Thai financial crisis, in 1998, that they have contemplated securing supplementary funding through carbon trading. Encouraging them to develop the idea have been subsidies from Thailand's Energy Policy and Planning Office's Energy Conservation Promotion Fund as well as portions of both a USD 30 million OECF loan under a 1999 five-year Global Environmental Facility (GEF) project and a GEF outlay of USD 3 million toward commercial risk premiums.

181. Given that the point of the Yala project is to help keep its sponsor corporations using fossil fuels, it is difficult to see how the credits it generates can be tokens of measurable climate benefits. The project's proponents claim that it would save a measurable amount of carbon by "replacing" some of the electricity in the Thai grid that is now generated by burning fossil fuels, but the validator, DNV, quickly realised it had no way of determining that the new project's power would be replacing either combined-cycle natural gas or oil-fuel electricity in the national grid. It was also told by Thailand's electricity authority that it was "often a mistake to see a direct link of displacement between an increase in one component of the grid and a reduction in another". So DNV looked at the "average" carbon intensity of electricity from the Thai grid. It then subtracted the figure corresponding to the projected carbon intensity of electricity from the project and multiplied that by the project's output. DNV argued that the resulting figure is conservative, since expansion plans by the Thai electricity authority featured a "higher carbon intensity than the grid average used by the project". This is in spite of the fact that the authority's figures were a subject of hot dispute in Thailand and carbon intensity per year varies by about 20%.

182. Nor was the additional use of fossil-generated EPDC electricity the project might encourage in Japan factored into the calculations, even though the project arguably helps reassure electricity consumers or investors in Japan that it is acceptable to keep using coal-generated electricity there. Assessing the many indirect carbon or climatic effects of the project, according to DNV, was "not necessary in our opinion".

183. The Yala project's proponents did have to produce some evidence that the project was not business as usual, but this too presented problems impossible to overcome. At first, project proponents claimed that, without carbon credit sales, the project's return on equity would be lower than "desirable" or "normal" but that the good publicity associated with a climate-friendly project would make up for this. When NGOs pressed DNV to provide evidence for these claims, DNV said that it did not have permission to make public the "confidential" financial analysis the project proponents had given it. Project proponents also asserted

that the planning needed for the project was a "barrier" that required carbon finance to overcome, and that the project was technologically novel in the Thai context. Later on, the project developer also noted that the project was sufficiently financially shaky that it had to be put on hold in 2002—a claim that, even it it were true, would be insufficient to prove that the project could be undertaken only with carbon finance. Indeed, there was a lot of evidence that, in fact, the prospective carbon income of the project had no weight at all with the investors. For example, uncertainty about whether the project would ultimately be allowed to be registered with the CDM, or about whether the Thai government would overcome its initially sceptical stance towards CDM projects, does not seem to have had any effect on the project's original construction schedule. What's more, Sarath Ratanavadi, managing director of Gulf Electric, was quoted in the *Bangkok Post* on 13 June 2003 as saying that Gulf Electric and EPDC "will go ahead with the 800 million baht project [Yala biomass] even without CDM". DNV's only response to that was that the project's business-as-usual status "is not as obvious as asserted" and said it had consulted with EPDC about Sarath's statement.

184. In short, the project would be hard put to show that it did not in fact amount to a net loss for climatic stability, since it would enable the Japanese government to write down its Kyoto commitment by half a million tonnes of carbon dioxide without providing anything verifiable in return. Nevertheless, the controversy over Yala is representative of the level of debate that still prevails in the carbon offset market.

185. Nor does the project provide benefits local people are seeking. Many local residents in fact quietly oppose the new development on Asia Plywood's Yala site as being likely to reinforce local imbalances of power over air and water quality. Many have long felt animosity toward AP for causing pulmonary health and other problems through smoke and ash pollution of local air, water and land, and profess "no trust" in the firm. Subdistrict officials even allege that the firm has not paid its full share of taxes. For them, the economic theory behind the project is correctly made subordinate to the question of who is going to carry it out. Many local people are likely to agree with DNV that the disposal of rubber wood residues at Asia Plywood and other installations is "one of the most serious environmental problems in the Yala community". But they view corporate reliability as a more important prerequisite for solving such problems than technical proposals. Refusing to abstract from the local political context, they see narrowly technical factors such as new equipment or CDM certification as irrelevant as long as underlying conflicts between company and community are not tackled. "If current problems are not solved", one local health official interviewed asked, "how are new problems going to be addressed?"

186. DNV was well aware of local people's view that AP should solve its existing problems with "noise, wastewater and solid waste" before attempting anything else, and should communicate the details of construction to the community as well as involve it in monitoring. Yet it had few incentives to take villagers' political and social analysis seriously. The firm did write about a "comprehensive public participation programme" to "accurately inform local residents, government officials and other concerned members of the public about the Project and expected impacts" and "obtain feedback, mainly from the local communities and concerned government agencies, with regard to their opinions and concerns about the Project". Those to be consulted included the subdistrict administrative authority's committee and residents in "surrounding villages".

187. Yet there is little evidence that this "comprehensive" programme was satisfactory to local residents. According to DNV itself, the meeting it claimed to hold with the Lam Mai subdistrict authority took less than one hour. Throughout, DNV presented the project and its participant firms as a "black box" or neutral machine into which formulas for environmental 1improvement, participation and good community relations could be fed with near-automatic results. Local environmental problems were seen as stemming from a mere technical gap—one that the CDM project would help fill. Similarly, when at an August 1999 public consultation few respondents agreed with the project, DNV put it down to "previous dissatisfaction with the dust caused by AP's operation" and claimed that, following the installation of a new boiler which uses sawdust, "Lam Mai [subdistrict] residents no longer disagree with the Project". This assertion is in some tension with opinions expressed by a number of local residents interviewed more recently. Several pointed out that the AP's "public participation programme" referred to so uncritically by DNV, instead of involving dissemination of useful information, has featured expenses-paid tours for local people to biomass power plants in Thailand's central region. Such tours, they reported, have included hotel accommodation, food and free visits for some male participants to local prostitutes, but no opportunities for close inspection of the plants in question or chances to meet local people. Local residents also pointed to AP's name on a pavilion that the company gave to a Buddhist temple adjacent to its factory after temple monks complained about pollution—an act incurring powerful reciprocal obligations. They noted that other modes of persuasion have also been used. One elderly resident interviewed reported receiving no less than three death threats as a result of voicing criticisms of the AP project. Throughout the process, most people have remained unaware of the AP project's projected role in the new global carbon offset trade.

SOUTH AFRICA

188. Durban Solid Waste (DSW), part of Durban's city council bureaucracy, manages a landfill site called the Bisasar Road dump. The largest such operation in South Africa and one of the largest in the Southern hemisphere, the dump has been in operation since 1980. Located in an area that was designated for people of Indian descent under apartheid's Group Areas Act of 1961, the dump is also a primary source

of livelihood for the mainly African, and poorer, Kennedy Road settlement, established in the late 1980s and now numbering nearly 1,000, who recycle materials from the dump while struggling with officials and business to gain more secure rights to the land their houses occupy.

189. Although the site is licensed only to receive domestic waste, medical waste, sewage sludge, private corporate waste and large shipments of rotten eggs have also wound up there. Cadmium and lead emissions are over legal limits, and limits for suspended particulate matter also often exceeded. Concentrations of methane, hydrogen chloride, and other organic and inorganic compounds including formaldehyde, benzene, toluene and trichloroethylene are high. Local residents report many health problems, with six out of 10 of the houses in one downwind block on the nearby Clare Estate reporting cancer cases. The causes of each such individual case of disease are notoriously difficult to pin down. They could include emissions from incineration practices, which stopped in 1997, other emissions from the dump either before or after, or other factors. Lindsay Strachan, Project Manager of eThekwini Engineering and Projects, claims, for example that the Kennedy Road settlement, which burns wood and other materials for heating and cooking, is just as likely as the Bisasar Road dump to be the source of health threats.

190. However, with some houses only 20 metres away from the landfill site boundary, many in the community want the dump shut down. Under pressure, the city council itself pledged in 1987 to close the site and turn it into sports fields, picnic areas and play areas for children. When, in 1996, the council reneged a second time on the promise, some 6,000 local residents signed a petition of protest, with many blocking the dump site entrance and staging demonstrations and marches. Yet the site was kept open and even started receiving rubbish diverted from a dump in a wealthy white-dominated Durban suburb, which was closing as it was "earmarked for up-market property development".

191. In June 2002, Clare Estate resident Sajida Khan filed a lawsuit against the eThekwini municipality and the federal Department of Environmental Affairs and Tourism for negligence in permitting the dump to stay open. After three years of delays, the case was due to be heard in the autumn of 2005, but due to Khan's poor health (see below), the case will remain in the docket until she is declared fit enough to participate. In the meantime, the Department of Water and Forestry at the provincial level has been delayed in rendering its decision on an appeal against keeping the dump open, estimated to have cost the city R40,000 to fight.

192. In 2002, the World Bank's Prototype Carbon Fund (PCF) signed an agreement with DSW to promote a prospective CDM project to extract methane from the Bisasar landfill and burn it to generate up to 45 megawatts of electricity for supply to the national grid. The idea was that the electricity generated by the project would "replace" electricity that otherwise would have been generated by burning coal. It was claimed that the project would generate enough power to light up 20,000 informal houses or 10,000 formal-sector houses. Because burning methane is less climatically damaging than simply releasing it, and better than burning coal (the dirtier fuel usually used) the project was held to be better than "the alternative".

193. Again, however, although the carbon credit market demands that there be only *one* alternative, to satisfy the need for a single number corresponding to the carbon "saved", there were in reality a plurality of alternatives, the bulk of which had to be summarily classified as "implausible". In this case alternatives included using the money to close the dump down and treat some of the waste; pumping the landfill gas into the nearby Petronet gas pipeline network so that it would not need to be burned on site; finding ways of using electricity more efficiently; exploring more non-fossil community-level power sources; and so on. None of these were in fact "implausible", but had to be categorized as such to make the accounting work. In this way, once again, a seemingly "technical" accounting system limited the political choices a society could make to a single small incremental variation on business as usual.

194. This one-sided view of the choices available was enforced in several ways. In the early phase of the project, authority for deciding what would and would not be possible in South Africa in the absence of the Bisasar Road scheme was quietly given to two individuals at the Prototype Carbon Fund in Washington, DC—Sandra Greiner and Robert Chronowski. Their decision was clothed in many pages of impressive numbers and reinforced through meetings and professional review—but only among peers already committed to the offset market;few had the opportunity to question why two technicians in Washington had the right to decide what the alternative energy future of the city of Durban might be. Information dissemination and public consultation on the project proposal were carried out over the internet, to which only a small minority of the local community had access. Time allocated for objections in late 2004 was a mere 10 days. Few outside the immediate area were aware of the proceedings. Durban officials meanwhile claimed that without the USD 15 million provided by the Prototype Carbon Fund, they would not bother trying to recover the methane as fuel, since the electricity generated in the process costs so much more per kilowatt hour than the local power utility charges for its coal-fired power.

195. The PCF maintained that improving the "financial position of DSW" would benefit local people and send a "clear signal" to them that "the environment is a number-one concern in South Africa and is being dealt with in the best way possible". This was, however, contested by Sajida Khan, a member of the Indian community on the border of the dump. Khan, who was diagnosed in 1996 with cancer, and whose nephew died of leukaemia, had this to say in 2002: "To gain the emissions reductions credits they will keep this site open as long as possible. Which means the abuse will continue as long as possible so they can continue getting those emissions reductions credits. To them how much money they can get out of this is more important than what effect it has on our lives." Khan and some other community members saw PCF support

for the methane project as having thrown a lifeline to the dump. They noted that the PCF's crediting period for the project is seven years, twice renewable, making a total of 21 years. According to the PCF, "because of the growing waste generation per capita in the municipality . . . there is no plan to close . . . the Bisasar Road site . . . during the PCF project life." To Khan and colleagues, this new lease on life for the dump, together with the PCF claim that Bisasar Road is an "environmentally progressive . . . world-class site" is unacceptable. "The poor countries are so poor they will accept crumbs. The World Bank know this and they are taking advantage of it," she said. Her view contrasts with that of one of the municipality's top officials responsible for the project, Lindsay Strachan. Because protesters "can't think globally any more," Strachan complained, "the project is literally slipping through our fingers."Strachan claimed that the city was committed to closing the dump and continuing to extract methane thereafter, although a carbon project document he helped write states that "it is not reasonable" to expect that the municipality would close the dump before it is full, and that no plans exist for construction of replacement sites.

196. But there are more than two sides to the issue. Most of the African residents of the nearby Kennedy Road settlement also support extending the life of the dump. For one thing, the dump provides most of their current livelihood. For another, the new World Bank carbon project has shrewdly promised to provide jobs and a few local scholarships. The Bank also pushed DSW to conduct "consultative exercises" in Kennedy Road, which constituted one of the few occasions that the community had been officially recognised. Kennedy Road residents could not help but contrast that recognition with what they perceive as the Bisasar Road community's lack of sympathy for their ongoing struggles to secure rights to the land they live on so precariously. Kennedy Road activists are no more under any illusions about the agendas of outside agencies than they are in the front line of international debate over climate change. But, as Raj Patel of the local Centre for Civil Society at the University of KwaZulu-Natal observes, when communities have been systematically denied dignity, "consultations" such as those staged by DSW under World Bank pressure may be the only "substitute for marginalisation" available. Patel also observes, however, that as of 2006 the dump "seems to have receded as a site of struggle" for Kennedy Road residents, "simply because there are new places and new ways to fight, and bigger things to fight for than the meagre prospect that a family member will get a job picking garbage on the dump."

197. The project could conceivably result in cleaner local air, although a lot of associated pollutants would still be released, including carbon monoxide and various hydrocarbons. Clean air, however, is a right South Africans are constitutionally guaranteed even in the absence of carbon trading schemes. In a sense, therefore, carbon offset commodity production is being staked here to the non-enforcement of environmental law. DSW, PCF and their consultants are helping to enclose not only local communities' air, but also their future. In the process the World Bank is also undermining its own stated concern with "good governance" and the rule of law, because it is providing an incentive not to enforce the constitution. "[The Prototype Carbon Fund is after] a cheap bang for their buck," Sheriene Rosenberg of SouthSouthNorth, an organisation that has been active in attempting to develop carbon offset projects, said. "They basically just get the low cost credits . . . they pillage the country and don't contribute to its sustainable development . . . you shouldn't be selling off your crown jewels so the North can keep polluting."

198. Other carbon offset projects in South Africa include a scheme associated with Sasol, a chemicals, mining and synthetic fuels company so huge—with nearly USD 12 billion in assets and USD 1.4 billion in profits in 2004—that it has a city named after it. Sasol is looking for carbon finance for an 865-kilometre pipeline that will carry natural gas from the Temane and Pande fields in Mozambique to its facilities in Sasolburg and Secunda. The gas will supplement coal as the feedstock for Sasol's liquid fuel synthesis processes at its plant at Secunda, a town 100 kilometres west of Johannesburg, and replace it entirely in Sasolburg, which lies 60 kilometres south of Johannesburg. Sasol justifies its bid for carbon money by claiming that since gas is a cleaner-burning fuel than coal, it will be releasing a massive 6.5 million tonnes less of CO_2 equivalent into the atmosphere annually than it would if it had decided to continue using coal. That makes the project one of the biggest CDM projects in Africa to date. The project would generate twice the credits of Bisasar Road, even though the emissions it is "saving" are of carbon dioxide, which is eleven times less potent a greenhouse gas than the methane seeping out of the Bisasar dump.

199. Without carbon money, Sasol argues in its CDM documents, it would have had to continue using coal as its only feedstock. While there is evidence that the firm was going to diversify its feedstock sources anyway, Sasol pointed to the fact that its coal mine in Sasolburg "reached the end of its economic life in 2001," and insisted that trucking in replacement coal from Secunda was not "economically sustainable". Yet the company also claims that the obvious choice for a new feedstock source was not gas from Mozambique but rather digging a new coal strip mine near Sasolburg. Although there was "public concern" over this proposed mine, which would have been sited on the banks of the Vaal river, as well as "a desire from Sasol and the South African government to reduce local air pollution", the company asserts that there was no incentive or legal obligation not to rely on coal. The pipeline option, on the other hand, was supposedly blocked by "numerous and difficult-to-manage barriers" including capital costs, political instability, and fluctuating gas prices—all of which needed carbon finance to overcome. The only trouble is that Sasol's claims are contradicted by several of its own executives' accounts of how the pipeline option was chosen. For example, at a June 2005 meeting of the South African National Energy Association at the Siemens Headquarters in Sandton, outside of Johannesburg, Sasol's Natural Gas Supply Manager, Peter Geef, noted that the Mozambique pipeline had already been "completely paid for" and that there were no outstanding financial inputs. Upon being questioned about the CDM, Geef responded that "yes, we are

indeed trying to get some carbon finance for this pipeline . . . you get a lot of pay-back in terms of dollars per tonne", but that "we would have done this project anyway". This suggests that Sasol is asking for carbon finance not to do something it would not have done otherwise, but as a bonus for what it has already done but just wished was more profitable. Even Richard Worthington of the South African Climate Action Network (SACAN), who supports carbon trading projects in theory, contends that the project merely entrenches Sasol's pipeline monopoly. He adds that the company's quest for extra income from carbon credit sales "is just baseless greed".

200. Another South African landfill gas CDM project is located at the Bellville South Waste Disposal (BSWD) dump in the north of Cape Town municipality. This project aims at capturing 70% of the site's methane, instead of the current 30%, which is merely flared. The methane would then be used as fuel by local industry. Used in the early 1930s for sewage disposal, the site has been a dumping ground since the 1960s. Originally far from human settlement, it is now surrounded by the largely coloured and Indian Belhar community. Although the site was closed for a time due to the "close proximity to residential areas and the risk of contamination to the underlying Cape Flats aquifer", it was later reopened, enraging local residents, who formed two separate organisations in opposition: the Landfill Monitoring Group and the richer and more Indian-based Belhar Development Forum. Both groups were relieved by the city's pledge to close the site in 2006 but alarmed at negotiations that are now under way to extend its life until 2009. Project developer Walter Loots, head of Cape Town Solid Waste, denies that the extension of the dump's life has to do with the carbon offset project. Cape Town "is running out of landfill space", Loots says, and "the only alternative would be a higher-cost regional landfill 60 kilometres out of town". It has not been revealed whether any increase in available gas caused by keeping the dump open was included in the CDM accounting for the project, as was the case at Bisasar Road in Durban.

201. Unlike the larger Bisasar Road scheme, Bellville is being developed under the close supervision of a non-profit consultancy, SouthSouthNorth (SSN), in a municipality in which climate change issues have their own office. It has also gained "Gold Standard" status as a project meeting the highest standards for environmental and social sustainability under a programme now administered by the Swiss-based organisation BASE. As discussed earlier, the Gold Standard gives a special certificate to CDM projects that deliver "real contributions to sustainable development in host countries plus long-term benefits to the climate" and allows the associated credits to be sold at a premium.

202. However, it's not clear how a project that is widely opposed by the local community could make a "by no means insignificant contribution towards local sustainability". The project can be considered "ecologically sound," moreover, only in a relative sense. As Walter Loots admits, current landfill practices are not sustainable. Organic material and non-organic material are not separated, even though waste sorting could conceivably create badly needed employment. This makes the capture of methane at Bellville "an inefficient solution to an avoidable problem". Yet the city can hardly spend money on waste separation and recycling when 155,000 families in informal settlements still have no roadside collection of waste.

203. An example of a more community-friendly project is the Kuyasa low-cost housing energy upgrade scheme. Certified by the CDM Executive Board on 27 August 2005, Kuyasa is the first Gold Standard project in the world to generate certified emissions reductions credits and has been widely applauded both nationally and internationally. What Kuyasa shows, however, is that such schemes are unlikely to survive in the carbon credit market and seem virtually incompatible with it.

204. Planning for the Kuyasa scheme, located in a neighbourhood in the township of Khayelitsha outside of Cape Town, got underway in 2002. Its pilot phase, launched in July 2003, involved retrofitting eight Reconstruction and Development Programme (RDP) homes and two crèches with insulated ceilings (where there would normally just be a corrugated steel roof), replacing regular lighting with low-watt compact florescent bulbs, and installing solar water heaters on the roofs. Partly because residents would have used grid electricity to heat their water in the absence of the solar heaters, the project is held to reduce demand for coal-fired electricity. The claim is that in total, 2.85 tonnes less CO_2 are generated per household per year as a result of the project. The project's next phase will see the target group expand from 10 to 2,309 RDP homes throughout Kuyasa. The scheme's pilot phase has been a source of great pride for the project developers—the city of Cape Town and SSN—as well as its beneficiaries. It is also, unusually, actively supported by local residents, who have been consulted from the beginning. Kuyasa's ward development forum put together a broad-based steering committee of community members who assisted in the design of the project, decided which households would participate in it, and mapped out how the project would move forward into its next phase. The steering committee also helped facilitate contacts and a flow of ideas between the community and the project developers.

205. The project has a particularly high Gold Standard rating in terms of "social sustainability and local development and has a minimal impact apart from the reduction of GHG on the natural environment". Kuyasa also creates jobs in installing and maintaining the solar water heaters, which are locally manufactured. Furthermore, the R625 average annual savings on electricity bills can go back into the local economy and create further economic spin-offs. One pilot project participant, Muzelli, an unemployed man in his thirties confined to a wheelchair, confirmed that he now saves over R600 per year on his electricity bills, which he is able to send back home to support his children still living in the Eastern Cape. When the weather gets cold at night (it can drop below 10 degrees Celsius during winter evenings), all of Muzelli's neighbours come over to visit, as his ceiling keeps the house much warmer than anywhere else in the

neighbourhood. Though he admitted that he did not know much about climate change, Muzelli made it clear that people support the project for many reasons, namely the money they save and having warmer houses. "This is a good project," he stated. "People are very impatient to get their homes upgraded; they really want this project." Thus Kuyasa has been held up as an example of the potential of carbon trading both to fight climate change and to improve living conditions in local communities.

206. Unfortunately, however, the project cannot survive off carbon finance. Instead, it is financed predominantly by one-off government grants, as an explicitly "public sector project". Project proponents estimate that carbon money can cover no more than 20% of the scheme's costs, depending on the spot market price of the Certified Emissions Reductions (CERs) it sells. (The first 10,000 CERs from the project were sold at 15 euros each to the UK to "offset" jet flights and other emissions associated with the 2005 G8 summit meeting at Gleneagles, Scotland. But "very few CER purchasers will pay upfront".) SSN staff member Lester Malengis, who has worked on the scheme for two years, has admitted that the scheme "is first a project that uplifts Kuyasa, not a carbon project . . . . That funding is not sustainable." The project is possible only because of generous funding from the national Department of Environmental Affairs and Tourism in Pretoria, the Western Cape provincial government, and Electricité de France (as part of their Corporate Social Responsibility campaign). In addition, SSN and the city of Cape Town have donated hundreds of hours of unremunerated labour. For Richard Worthington of the South African Climate Action Network, Kuyasa has only "got to where it got to because it's been treated as a charity case. It's been damned expensive and not at all an example of how to put a project together". Nor, according to Emily Tyler of SouthSouthNorth, who was closely involved in the development of Kuyasa, has registration as a CDM project helped. "The CDM actually adds little value (indeed, it adds costs) to the very sorts of projects it was designed to encourage," Tyler wrote in a whistle-blowing editorial in February 2006. There is, she said, "no financial value added by the CDM for the project types which most closely fit the CDM's avowed objectives."

207. Nor are there any prospects for such projects becoming able to stand on their own two feet as commercial propositions. Indeed, a special project has had to be set up by the international Renewable Energy and Energy Efficiency Partnership to help clean energy proponents find new sources of funding for Kuyasa-like projects. At Kuyasa, there has also been speculation about relying on community residents to cover some costs, allowing manufacturers to lease solar water heaters to low-income communities, and even of selling Kuyasa's carbon credits several times on the voluntary "offset" market as well as through the CDM. This last choice, however, would amount to fraud, since the more times Kuyasa sold each of its credits, the more greenhouse gas emissions elsewhere it would be licensing, and has been roundly rejected by SSN. Hence for the time being Kuyasa will have to be dependent on the largesse of taxpayers and politicians at a time when government has many other funding priorities. Housing activist Peter van Hausen notes, for example, that there is currently a backlog of 260,000 houses that need to be built in Cape Town, and 20,000 more are required each year. This backlog has almost doubled since 1994. In the long term, it is a great deal to ask of public authorities that they spend tax money on energy upgrades for people who already own their homes when hundreds of thousands do not.

208. Thus, while Kuyasa is exactly the type of project that many people hoped the carbon offset market could deliver, now that it exists, the carbon market simply cannot support it. Carbon credit buyers will naturally gravitate towards much less environmentally and socially desirable projects such as Bisasar Road, Bellville or Sasol—assuming any of them come on line. As Jack Cogen, president of Natsource, the largest private buyer of carbon credits, has put it, "The carbon market doesn't care about sustainable development. All it cares about is the carbon price."

209. There also exist, of course, South African projects generating credits for the voluntary market. For example, in Cape Town, a local energy consultancy was commissioned by Climate Care, a British company, to hand out free energy-efficient light bulbs to replace the more typical and wasteful incandescent variety. After having bought the bulbs (and convinced the city of Cape Town to pay to distribute them), Climate Care was then in a position to sell the CO_2 emissions estimated to have been saved to British consumers and companies who want to "offset" their own carbon emissions.

210. The neighbourhoods where the bulbs were distributed were afflicted with long-standing problems. Houses were crumbling, with faulty wiring, unpainted ceilings and damp walls. At USD 150 per month, when most residents earn considerably less—many from jobs such as selling loose cigarettes and sweets—the rent exceeds what the poor can afford. In this context, the light bulbs offered by the project would not ordinarily appear on shopping lists. While at 15 watts, the compact fluorescent bulbs are far more energy efficient than traditional higher-wattage bulbs and last about 10 times longer, they cost USD 2.80 each, as opposed to traditional incandescent bulbs at 50 cents, and are not sold locally. Thus while the uptake of the free bulbs was high, few local people will be able to afford to buy replacements. Nor can they depend on the project to supply new bulbs for ones that have been broken. Of the 69 low energy bulbs reported as broken from the households surveyed by Climate Care two months after the project started, none has yet been replaced.

211. Climate Care argues that the project is generating real carbon savings, since it would not have gone ahead without the firm's intervention and is "not required by legislation, not common practice (and) not financially viable without carbon funding". However, in the wake of electricity blackouts, power generator Eskom recently decided to provide five million free energy efficient light bulbs to low-income households,

among a host of other energy-saving measures. Among the target areas are precisely the neighbourhoods that Climate Care distributed bulbs in on its 10-day sojourn in Africa in 2005, and that were supposedly not going to receive such bulbs without Climate Care's money.

212. Among Climate Care's biggest customers for its carbon credits are British Airways and British Gas, both major contributors to climate change who, on the evidence of their annual reports and other documents, have decided to continue and indeed increase their fossil-fuel intensive operations. Yet Climate Care defends both companies as being among the "best environmental performers". "The climate crisis is so urgent that we should not worry about the motivation of our clients," the company declares in its 2004 Annual Report.

BRAZIL

213. In a carbon project in Minas Gerais, eastern Brazil, carbon offset trading institutions have used and exacerbated coercive power relations in yet another attempt to produce an imaginary carbon commodity. Here, the company claiming to be saving carbon and helping the climate is a pig iron-producing and plantation management company called Plantar SA. The iron is produced by burning charcoal and releasing carbon dioxide into the atmosphere, and is used to make commodities like cars, which of course release yet more carbon dioxide.

214. Although Plantar is an active part of the industrial system that is accelerating climate change, the firm and the World Bank have tried many lines of argument in an attempt to establish that the project is "saving" carbon. At first, the two organisations claimed that without carbon finance, there would be an "accelerated reduction in the plantation forestry base in the state of Minas Gerais, within the next decade, caused by harvesting of existing forests (now in the last cycle of their rotations) and lack of investment into replanting". In the absence of carbon finance, Plantar and the Bank insisted, "the company would not invest in the replanting of its forests for the pig iron production, abandoning them after the final harvest of the existing plantations". When reminded that CDM rules do not allow credit to be provided for "avoided deforestation", the Bank rewrote its design documents to emphasise other justifications. The first was that Plantar was not avoiding deforestation but rather preventing an otherwise necessary switch in the fuels for its pig iron operations from eucalyptus charcoal to more carbon-intensive coal or coke. Plantar claimed that without extra carbon finance for a 23,100-hectare plantation scheme, the charcoal-fired pig iron industry would face a "supply bottleneck". It said that current plantations were being depleted and the lack of forest incentives would render new plantations financially unfeasible without World Bank carbon financing. Plantation land would be "converted to pasture or agricultural land".

215. In other words, the company claimed that carbon credits for its 23,100 hectare project were the only thing that could ensure charcoal supplies, even though Minas Gerais alone boasts 2 million hectares of eucalyptus plantations. Plantar itself owns rural properties covering more than 180,000 hectares, mainly devoted to eucalyptus for charcoal and almost all located in Minas Gerais, and provides management services for more than 590,000 hectares of plantations for itself and other companies in Brazil spread across 11 large units. The firm also has large investments in the development and production of high-yielding clonal eucalyptus varieties and is reported to be producing over 40 million clonal seedlings per year, with yields of 35–42 cubic metres per year, contributing to its reputation as a committed, low-cost and highly competitive producer of charcoal and many other plantation timber products. In addition, Plantar has recently gone to the trouble of getting plantations it uses to produce barbeque charcoal certified by the FSC. The question thus arose of why the failure to get carbon credits for only 4% of the total area under the firm's management and 13% of its own direct holdings should result in a failure to invest in replanting, and why, if the financial prospects for new plantation development are so poor, Plantar purchased the lands in question before it was considering carbon finance.

216. Some 143 local groups and individuals put it more strongly in a letter to the CDM Executive Board of June 2004: "[T]he claim that without carbon credits Plantar . . . would have switched to coal as an energy source is absurd . . . Yet now [Plantar] is using this threat to claim carbon credits for continuing to do what they have been doing for decades—plant unsustainable eucalyptus plantations for charcoal . . . It is comparable to loggers demanding money, otherwise they will cut down trees . . . [The CDM] should not be allowed to be used by the tree plantation industry to help finance its unsustainable practices." Even the project's validator, Det Norske Veritas (DNV), a Norwegian "risk management" consultancy, admitted to being sceptical about Plantar's claim that it would not invest in replanting in the absence of the CDM project, "given Plantar S.A.'s relatively strong investment capabilities as one of the major eucalypt seedling producers in Brazil". All the consultancy did to check Plantar's claim, however, was to go to Plantar to ask them if it was really true or not. Unsurprisingly, Plantar executives assured them that the "internal rate of return for planting new trees today is not attractive in absence of the sale of CDM credits".

217. At the same time, the World Bank and its consultants admitted that there were several possible "land management scenarios for the Curvelo ranch in the absence of the carbon project". That implied, of course, that there were several possible baselines with different carbon profiles; that there were several different figures for how much carbon the project might save; that there could be no single number of carbon credits generated by the project; and hence that there was no scientific basis for assigning any particular number of carbon credits to the project. Even if Plantar were able to prove that it was avoiding the use of a

quantifiable amount of coal in Minas Gerais, it would still also have to prove that the coal would not be used somewhere else for 10, 50, 100 or 300 years or quantify the extent to which its local avoidance of fossil fuels was helping indirectly to build an alternative, non-fossil energy economy worldwide.

218. In January 2003, the CDM Methodologies Panel rejected the claim of another "avoided fuel switch" carbon project located adjacent to Plantar's that it was an improvement on "business as usual". In November 2003, the project submitted another accounting methodology. But the panel decided that the claim that carbon-saving projects that merely continue current practice are "additional" throws up problems of "moral hazard".

219. Plantar has also looked to get carbon credits for afforestation; improvements in charcoal production that minimise methane releases; and rehabilitating *cerrado* (savannah), the biome it itself has had such a hand in depleting; and improving grasslands. To local people, however, the idea that Plantar could secure extra finance for anything that falls under the rubric of "environment" or "development" is deeply ironic. "We were surprised and bewildered by the news", a group of over 50 trade unions, churches, local deputies, academics, human and land rights organisations and others protested in a letter of 26 March 2003. They see the company as having illegally dispossessed many people of their land, destroyed jobs and livelihoods, dried up and polluted local water supplies, depleted soils and the biodiversity of the native *cerrado* biome, threatened the health of local people, and exploited labour under appalling conditions.

220. As one local man who asked for anonymity out of fears for his safety noted in 2003: "Plantar has planted all over, even up to the Seu Zé do Buritim river spring. Thirty-five thousand 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 more suitable areas? Because there 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 them 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." "Eucalyptus has been grown with blood," added another local farmer.

221. Before the advent of giant eucalyptus plantations, local people emphasise, the inhabitants of the *cerrado* of northern Minas Gerais used the savannah for crops, cattle, wild foods, medicines and crafts. Small and medium-sized companies relied on *cerrado* products to manufacture pasta, leather, saddles, shoes, cotton oil, textiles, castor oil, textiles, sweets, and liquor and other products of the native *pequi* fruit. Rice, beans and maize were planted and traditional dairy farming and livestock-raising was practised. Under the dictatorship, however, lands that the *geraizeiros*, or *cerrado* inhabitants, had traditionally used and claimed ownership over, but which were not formally titled and were under the jurisdiction of the state (*devolutas* lands), were leased fraudulently for 20 years to eucalyptus-planting firms, who also received financial incentives. Many rural dwellers were expelled from the land, while others were persuaded to abandon it by promises of jobs and better living conditions; still others sold up after becoming isolated and seeing their water supply dry up or become contaminated with pesticides. The *cerrado* was cut down, fields were fenced and consolidated, and agriculture, stock-raising and food products factories, which depended on the biodiversity of the *cerrado*, collapsed, leaving many unemployed. Through dispossession and impoverishment, residents have been forced to accept low wages and dangerous working conditions, often as illegal out-sourced labour, or flee to *favelas* on the outskirts of cities, where they are also trapped in a cycle of poverty.

222. Exactly how much of Minas Gerais' monoculture of eucalyptus plantations today is on *devolutas* lands is disputed, but the area is large. An investigative commission of the Minas Gerais parliament found that iron and steel companies were granted "a large part of the *devolutas* lands in northern Minas Gerais". Whatever the exact figure, however, the question must be investigated, since according to Brazilian law, corporations cannot acquire this type of land, only peasants. By right, such lands should be given back to rural dwellers and used food production, and restoration of the *cerrado*. Many *geraizeiros* have brought a case against the state over their expulsion from their land when it was expropriated and leased to the companies. They want to convert plantations back into native *cerrado*.

223. While Plantar notes that it does not occupy more than 4.5% of the Curvelo Township area, local community members point out that the 4.5% figure does not include other companies' eucalyptus plantations in Curvelo, including those of Cossisa and Vallourec & Mannesmann Florestal (a company that is also trying to get carbon credits for maintaining a plantation operation that has displaced local people). In any case, knowing that Plantar has covered 4.5% of the municipality with eucalyptus does not change the plantations' impacts on the lives of people nearby. Local people add that the company hires outsiders

for most important jobs, and that unemployment has increased in many areas. In addition, while eucalyptus plantations may provide employment during the first two years—in preparation of the land, planting, pesticide application or irrigation—they provide very little work during the subsequent five years before cutting. While local people do not use *cerrado* areas under Plantar's control for fruit collection—these areas are very small and offer little—local communities have suffered from Plantar's restrictions on their tradition of letting their cows graze freely. Plantar has put cattle in fenced areas or taken them away to another area without informing the owner. This has led to cases of lost cattle. Land reform and small-scale agriculture are the only ways of creating a future for the Brazilian rural population. Tree plantations only worsen the unequal distribution of land in the country. In Espirito Santo, eucalyptus plantations expelled thousands and thousands of people into the poor neighbourhoods of urban centres and an uncertain future. Turning over the 23,100 hectares of the Plantar project to small-scale diversified and ecological agriculture would create at least 23,100 more human-friendly jobs, with salaries at least four times higher than those of the majority of Plantar workers, according to the concrete experience of the local Movimento dos Pequenos Agricultores (Movement of Small Peasants). The Movement is also developing an alternative reforestation project, using not eucalyptus but tree species with multiple uses and local environmental value.

224. Given the eucalyptus industry's transformation of local rural society, people often have no livelihood options other than small-scale charcoal production, and build clay ovens in the *cerrado* for the purpose. Collecting commercial eucalyptus is against the law, however, so independent producers often burn what is left of native trees, and the resulting charcoal is often eventually purchased by the corporations. Although the companies are legally allowed to use a certain percentage of charcoal made from native *cerrado* trees as long as it comes with a certificate, they are said to pay more for native charcoal *without* the certificate. This allows them to use more than the legal amount of native charcoal. Companies still use around 15–20% native charcoal.

225. Plantar also continues to destroy *cerrado* directly in order to use the land for plantations. For instance, Plantar bought *cerrado* lands in the Campo Alegre and Paiol communities in Minas Gerais and planted eucalyptus on it. As late as 2000, Plantar was felling *cerrado* in Lagoa do Capim. In December 2002, Plantar land was also cleared at the river spring of Pindaíba. Native tree trunks can still be seen there. Dozens of municipalities have declared a state of emergency over water. Near Paiol de Cima, one stream has completely dried up after having previously flowed 11 months of the year. In Felixlândia, a spring called Cabeceira do Buriti is degraded. Flows in the Buriti river are down and herbicides have been applied without consultation with local people, killing fish and birds. Plantar has planted eucalyptus at river springs, drying them up and also contaminating them with pesticides that kill animal life in the streams. Plantar's contamination of local drinking water sources with pesticides has also caused the death of many emas, large land birds related to ostriches. The communities of Cobú, Paiol de Cima, Canabrava and Boa Morte have been forced to dig artesian wells. Cattle-ranching does not cause such negative impacts on water, and produces a greater diversity of goods, including meat, milk, leather and manure.

226. A Minas Gerais Parliamentary Investigation Commission found in 2002 that Plantar was practising illegal outsourcing of labour that negatively affected the safety and livelihoods of charcoal workers. It cited "precarious labour relations, abominable working conditions, slave and child labour and deforestation of the *cerrado*" as well as "infamous" wage levels. It also found problems with housing, hygiene, drinking water, food and transport, and noted that Plantar was in breach of International Labour Organisation provisions regarding freedom of trade union organising. The Federal Public Ministry of Labour has sued Plantar for illegal subcontracting and forced it to sign an agreement to change its behaviour, which was subsequently found not to be in compliance. During the 1990s, the Montes Claros Pastoral Land Commission, a church-related organisation, also verified the existence of slave labour on Plantar property. In March 2002, the Curvelo Regional Labour Office (DRT) issued Plantar with a summons for using slave and child labour in timber extraction and charcoal production and fined the company after finding 194 workers without any registration on its plantations in Curvelo.

227. Plantar's agreement to manufacture charcoal with its own workforce needs to be evaluated to see whether it is improving conditions for workers, who in general earn a maximum of only USD 100 a month. As unemployment is rife, most workers are frightened of mentioning any problem that occurs, including the creation of new contracting companies nominally part of Plantar with names like Plantar Energética. Plantar charcoal workers are continuously exposed to smoke containing toxic gases as well as pesticides and are at a high risk of accidents. In Espirito Santo, the Attorney General for Workers' Conditions opened a confidential investigation in 2001 after the death of several former Plantar workers. One, Aurino dos Santos Filho, died with a pump filled with pesticides on his back while working on a eucalyptus plantation in Espirito Santo in 2001; he was only 34 years old. Aurino's family has not received any compensation from the company. Plantar does nothing for workers who become disabled as a result of their work for the company; many have already died. Plantar makes labour organising difficult by rotating workers among far-flung sites. Worker leaders are registered as "urban labourers" to prevent them from becoming rural union members.

228. When it built a new tree nursery, Plantar, without consulting local inhabitants, diverted a road that has always been used by the communities of Paiol de Cima, Meleiros, Cachoeira do Choro, Paiol de Baixo, Canabrava, Gomos and others, extending travel distances for local inhabitants, including 900 students from the Serfio Eugenio School, by more than five kilometres. Plantar also dammed up the local Boa Morte river

to supply the nursery with water, as well as polluting water with fertilisers and other agrochemicals, causing complaints from downstream water users. In 2003, the old road was fenced off, making it impossible even for pedestrians to use. Even for anyone daring to jump the fence, the road is unusable, since it is blocked by the company's nursery. By contrast, school buses never experienced problems with the old road.

229. But local residents oppose not only the way Plantar is trying to get paid for using former *cerrado* and farmland for a carbon dump. They also oppose the way the carbon offset project appropriates alternative futures that they are pressing for: "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, burning charcoal? What we really need are investments in clean energies that at the same time contribute to the cultural, social and economic well-being of local populations . . . We can never accept the argument that one activity is less worse [*sic*] than another one to justify the serious negative impacts that Plantar and its activities have caused . . . [W]e want to prevent these impacts and construct a society with an economic policy that includes every man and woman, preserving and recovering our environment."

230. Such are the obstacles, indeed, that the scheme probably could not have got off the ground without the help and sponsorship of the Prototype Carbon Fund (PCF) of the World Bank, which would feed any credits it generates to its roster of Northern corporate and government clients. Plantar was the Bank's first carbon sink project and the Bank expected it to "prepare the ground for similar projects in the future".

231. Many local people are of the view that the Bank's involvement merely legitimises environmental damage and the intimidation that Plantar uses to control local people—intimidation which, as in Thailand, is nowhere acknowledged in carbon project documents. Many local residents are afraid to let interviewers cite their names. Some receive death threats. When a representative of the Rural Union of Workers of Curvelo went to the climate negotiations in Milan in December 2003 to raise awareness about the negative environmental and social effects of Plantar's operations (which won a special ironic NGO award there for "worst CDM sinks project"), the company's directors bullied other union members into signing a letter of support for the company, threatening massive layoffs if carbon credits were not forthcoming. (One longstanding union opponent of the expansion of eucalyptus plantations in Minas Gerais did manage to insert the legible notation "under pressure" beside her signature.) Unbowed, the local movement has subsequently appealed directly to European investors not to put money into the Plantar carbon project. Peasant and trade union representatives travelled to Cologne to intervene in the Carbon Expo trade fair held there in June 2004, in which the Bank participated. Throughout the disputes over the carbon project, the World Bank has taken the side of Plantar. For example, in 2003 it posted on its website a letter from Plantar to PCF investors replying to dozens of local groups, without posting the original letter to which it was a reply. Yet responsibility remains asymmetrical While one of the buyers of Plantar's carbon credits, The Netherlands, insists that if more than 30% of its credits are delivered late, Plantar will have to pay a penalty, the World Bank would not have to pay anything.

232. Plantar's carbon scheme also gains legitimacy from the involvement of the FSC, as do similar schemes in Ecuador and Uganda (see above). FSC has certified only 32,232 hectares of Plantar's operations—less than 18% of its landholdings. These hectares are used to produce barbeque charcoal, as well as charcoal that would be used for the PCF project. However, Plantar has not hesitated to announce on its website that certification "ensures that our forest is managed in an environmentally responsible, socially beneficial and economically viable way". This gives the impression that FSC's certificate is valid for all of the company's plantations. It also claims in a letter to PCF investors that "100% of the Project Area is being and will be certified". As in Ecuador, FSC thus has a hand, if only an indirect one, in producing a fictitious commodity claiming to be "carbon".

UNITED STATES

233. Before the carbon offset market got under way, the impossibility of measuring pollution "offset" credits was already obvious from the US's earlier pollution trading programmes. The US even had a term for meaningless pollution credits handed out to industry for actions that would have happened anyway: "anyway tonnes".

234. One instance was the Los Angeles Regional Clean Air Incentives Market (RECLAIM). The South Coast Air Quality Management District (SCAQMD) allowed factories and refineries to avoid installing pollution control equipment if they purchased credits generated by licensed car scrappers who destroyed old, high-polluting cars. The idea was that it would be cheaper to reduce overall pollution by buying up and destroying old cars than by forcing stationary sources to make technological changes in their plants. It was an early example of the reasoning that is so prominent in today's carbon offset market.

235. Unfortunately, car scrappers often generated fraudulent pollution credits by crushing car bodies without destroying the engines, which they then sold for re-use. More to the point, the pollution credits generated by scrapping cars were based on the assumption that if they were not scrapped, the cars would be driven 4,000–5,000 miles annually for an additional three years and that their owners would then replace them with automobiles with "average" emissions. Yet a SCAQMD audit found that many of the cars were at the end of their useful lives, and would have been destroyed through natural attrition. Some 100,000–200,000 old vehicles are scrapped or abandoned in the Los Angeles area annually in this way without the intervention of pollution trading programmes. Most of the 23,000 cars that were destroyed

under the pollution trading scheme during its first five years were arguably among those that would have been destroyed even without the programme. After all, why sell your old car for its USD 50 value as scrap metal when you can obtain USD 600 for it through a pollution trading scheme?

236. Moreover, of the cars that were not at the end of their lives, in addition, many were not regularly driven and would not have been driven for another three years. Inoperable cars were often brought to car scrapping facilities and minor repairs made solely for the purpose of obtaining the USD 600 payment from the scrapping program. Such cars were not generating any pollution, but merely collecting dust. Non-existent automobile pollution was transformed, through the market, into real pollution released from oil tankers or other sources. The end result was to increase aggregate emissions across the region.

237. In the "bubble" trading system instituted by the US Environmental Protection Agency, similarly, polluters almost never undertook fresh pollution control projects to satisfy regulations. Instead, they claimed credits for reductions that presumably would have occurred without the regulation. For example, polluters often claimed credits for routine business decisions to slow down production or shut down facilities. In the 1970s, states lured new industry by providing firms with "offsets" that the states themselves created—in one case credits for "an asphalt substitution process that already was occurring for non-environmental reasons". In the 1980s, similarly, Ashland Oil didn't want to comply with a requirement that it lower emissions from certain storage tanks. Instead, it petitioned to be allowed to reduce the allowable emission rate from a gasoline truck loading facility from 50.7 to 19.0 tonnes per year—even though the facility was already emitting only 4.4 tonnes per year. Not surprisingly, such gambits were heavily criticised by environmentalists.

238. In 2002, two environmental groups, Our Children's Earth and Communities for a Better Environment, sued nine Los Angeles organisations for purchasing pollution "offset" credits, including the city of Burbank, Southern California Gas and United Airlines. The groups pointed out that the credits had not been approved by the Environmental Protection Agency. The offset credits—awarded for activities such as replacing standard buses with vehicles fuelled by natural gas—had become particularly attractive when prices for credits from stationary sources climbed as high as USD 62 per pound during the California energy crisis of 2000–01. Prior to the crisis, stationary source credits had cost around USD 1 per pound.

239. The NGO plaintiffs argued that allowing such credits into the market defeats its fundamental purpose. "Credits are supposed to become so expensive that it forces some companies to put on controls," they said. "We"re just enforcing the programme."

240. The one pollution trading scheme generally cited by carbon-trading advocates as a success story—the US's sulphur dioxide trading programme—had the advantage that it *excluded* project-based "offset" credits. What were measured and traded were emissions, not purported "emissions reductions" derived from projects claimed to be improvements on "business as usual". This is in sharp contrast to the voluntary carbon offset market as well as the Kyoto Protocol (a programme that is supposed to have been inspired by the sulphur dioxide scheme), which has fully embraced "offset" projects in its trading programme.

241. An additional lesson of the US experience with offsetting is that, by licensing more pollution in already-polluted areas, offsets reinforce a pattern of inequality worldwide. Some of the biggest buyers of carbon credits, after all, are industries that badly pollute their local communities—utilities, oil refineries, chemical firms, pulp and paper companies and the like. In fact, throughout the world, polluting industries and poor communities suffering discrimination of various kinds tend to be found together, for reasons including weak pollution zoning restrictions and low real estate costs. Cheap carbon offsets help allow these industries to go on damaging their local environments through carbon dioxide co-pollutants that are toxic. Carbon offset trading tends to treat the worst climate offenders as climate heroes, while failing to support many of those who are addressing the problem at its roots. Worse, a polluting industrial installation often gets a new lease on life by buying cheap carbon credits from a project that damages the lives and livelihoods of local people elsewhere. In this way, the trade in carbon credits can use the oppression of local people whose land is being used for industrial plantations in Brazil, say, to prolong the oppression of other local communities in the vicinity of oil refineries or power plants in Europe. Communities that should be uniting in their battles for a transition away from the hydrocarbon economy are being pitted against each other by the trading system that pretends to offer a solution. In the future, it may even happen that an indigenous community fighting an oil company's exploitation of its territory will find itself at odds with another indigenous community down the river providing carbon sink credits to the same company.

242. In Los Angeles County, minorities are more than twice as likely as Caucasians to be living in a census tract located within a one-mile radius of at least one large-capacity toxic site, and a majority of facilities emitting toxic pollutants are in "Hispanic-dominated" census tracts. The Los Angeles RECLAIM offset trading programme described above reinforced this pattern. The pollution prevented by RECLAIM's programme of destroying decrepit cars would have been spread over a wide four-county region. But the industries that bought the resulting "offsets" are densely clustered in only a few communities, or "hot spots". So the car "offset" scheme effectively concentrated more pollution in communities surrounding stationary sources, particularly those associated with the four oil companies who were the biggest buyers of the offset credits generated by scrapping cars: Unocal, Chevron, Ultramar and GATX. All these companies used their "offsets" to avoid installing pollution control equipment that captures toxic gases and vapours released during oil tanker loading at their marine terminals, including benzene, which can cause leukaemia,

anaemia, respiratory tract irritation, dermatitis, pulmonary oedema, and haemorrhaging. The surrounding communities were overwhelmingly Latino, three of them populated between 75 to 90% by people of colour (compared to a figure of 36% for the entire South Coast Air Basin).

243. Much of the historical pollution burden of these underprivileged communities was thus maintained through a programme advertised as "controlling" pollution. In a trade of like for unlike, the continued release of highly toxic chemicals into certain communities was exchanged for small area-wide reductions in much less toxic chemicals. Nor is this case unique. A trading programme in the San Francisco area "unfairly gave up toxic emissions reductions from a petroleum refinery in a community of colour facing high cancer risk, in exchange for credits from reductions in auto use throughout the Bay Area".

244. Also evident from the US experience was the way trading in pollution offset credits adds to the forces blocking the technological and social innovation needed to address climate change. Under the RECLAIM program, beginning in 1997, the local air quality management authority offered to award marketable credits to businesses or individuals who repaired emissions-related components in high-emitting vehicles, bought clean buses or other vehicles, electrified truck stops and tour bus stops to prevent engine idling, bought battery-operated lawn mowers and so on. Whether or not these "offset" technologies are themselves regarded as innovative, they were used to relieve pressures on large emitters to make other, more substantial technological changes.

245. Similarly, as also mentioned above, "offsets" used in the US Environmental Protection Agency's "bubble" programmes removed big polluters' incentives to innovate to control their own emissions, usually through use of credits generated by an already-existing technology. Firms also claimed credits for shutting down emissions sources or for production slowdowns, even when such actions were undertaken for business reasons. Writing of such "paper credits," environmental lawyer David Doniger wrote in 1986 that "in practice . . . there has been far more innovation in shell games and sharp accounting practices than in pollution control technology". In a similar way, carbon offsetting is designed in a way that allows industries or individuals in the wealthiest countries to avoid or delay innovation in their own ways of operating as long as they fund the installation of off-the-shelf technology in Southern or Eastern European countries. As suggested above, these mechanisms have been a particular failure in promoting renewable energy, in which innovation is especially desirable. Older industrial plants whose emissions are supposedly "compensated for" by carbon credits bought from abroad will more easily undercut newer, more efficient technology, reducing incentives for change.

246. In addition, this effect is another factor making carbon offset accounting impossible. Because it allows the North to delay urgently-needed social and technological change, each block of carbon credits from the South has a long-term climatic cost. Carbon accountants need to quantify such "opportunity costs" when adding up the effects on the atmosphere of each carbon project. Logically speaking, that is a prerequisite for accurately calculating how many carbon credits a project should be allowed to sell. However, no offset validators or verifiers ever make such calculations. No one has any idea how to figure out how much carbon a project will "lose" by depriving a buyer of an immediate incentive to innovate. Nor is it possible they ever will, although in the long term the amount could be enormous. This failure of the carbon "offset" market is only one example of the many paradoxes which result when conventional economic thinking is uncritically applied to issues such as climate change mitigation. As legal scholar Robin Paul Malloy explains, efficiency analysis "is incapable of adequately addressing creativity because creativity is indeterminate."

NEW ZEALAND

247. In New Zealand, plantation owners joined battle with the government in 2003 over who owns the carbon in 200,000 hectares of trees planted after 1989, which are eligible under the Kyoto Protocol to count as "carbon sinks" that soak up the country's industrial emissions. The owners claimed the government was trying to steal NZD 2.6 billion from them with a stroke of the pen, "possibly the largest private property theft in New Zealand's history." They vowed to "take whatever action is necessary" to ensure just compensation for their purloined property.

BRITAIN

248. In the UK, meanwhile, trouble is brewing between firms that sell rights over the carbon-absorbing capacity of trees to the public and some of the local or state organisations that raise the trees. The marketing firms, it is alleged, are manoeuvring the forest-planting organisations into signing contracts relinquishing these rights for a period of 99 years for a pittance. The marketing firms then sell these rights on to the public for a huge mark-up, claiming falsely that they can make consumers' jet flights or home heating "carbon-neutral".

249. In the UK, as well, offset trading is clouding public debate over the roots and solutions to climate change. To take a simple example, an executive trainer from Reading, UK named Charlotte Robson recently learned for the first time from the Carbon Neutral Company's carbon calculator that her personal carbon "footprint" was 24 tonnes of carbon dioxide per year. "I am astonished I have been such a monster," Robson wrote in the London *Daily Telegraph*. However, it is not clear what was really being discovered here.

The cause of climate change is not that individuals like Charlotte Robson are "monsters". Charlotte Robson is not personally responsible for the historical lock-in of heavy fossil fuel use in industrialised societies, for the government's decision to use her tax money to subsidise oil extraction and road and airport construction rather than renewable energy or to invade Iraq. More importantly, individuals do not participate meaningfully in the political change that is required to combat destructive climate change by making a few different personal lifestyle choices to transform themselves from supposed "monsters" to virtuous consumers.

250. Carbon offsets purveyed by companies such as the Carbon Neutral Company may encourage individuals to calculate their "carbon footprints", but the misleading term "carbon neutral" conveys a scientifically incorrect message: that any emissions that people happen to be personally unable or unwilling to reduce can be compensated for by buying carbon credits instead, since buying credits is climatically "just the same" as reducing fossil fuel use.

251. Moreover, you can use carbon credits, the Carbon Neutral Company says, for those areas in which your emissions are "unavoidable". But what are those areas? What are the criteria for being "unavoidable"? Who decides what is "unavoidable"? What it is about the way society is organised that makes these emissions "unavoidable"? How might they ultimately be made "avoidable" through political action and planning? The answers to these central questions are left mysterious. Indeed, the questions themselves go unasked. What's left is a feeling of personal guilt and resignation, not a sense of history, politics or economics. The commercial recasting of climate politics as a drama of individual guilt and redemption tends to poison public discussion, not promote it. It makes criticism of, say, air travel or car-centred societies seem like a moral critique of the "rich and privileged" for being "self-indulgent" and a call for government to "punish" them. That only provokes defensive reactions against calls for long-term social action.

THE GLOBAL ENVIRONMENTAL FACILITY

252. The Global Environmental Facility, which serves as a financial mechanism for both the UNFCCC and the 1992 UN Convention on Biological Diversity, early on ran into similar accounting problems. The GEF was supposed to fund only that element of a project that resulted directly in the reduction of greenhouse gas emission and so would yield a "global environmental benefit". Under this methodology, a project proponent had to describe what would have happened in the Southern host country "but for" the GEF investment. Only then could the GEF provide the funding that made the alternative or additional climate-friendly activity possible.

253. But this approach turned out to be "fraught with political and methodological difficulties". For one thing, it "excluded the participation of recipient country officials in most cases, because of the lack of understanding of the concept and methodologies".[308] For another, it "tempted governments to lower a domestic environmental baseline to become eligible for a larger GEF grant". The result was that Northern governments decided that no one could receive GEF funding just by claiming their project was better than "what would have happened otherwise". They had to try to show that it was better than what *should* have happened in the project's absence.

Recommendations for Action

1. The secretariat of the All-Parliamentary Committee on Climate Change should be immediately removed from the Carbon Neutral Company.

2. Ministers should be very strongly discouraged from proposing that civil servants offset their airline flights' emissions.

3. The UK government should avoid using carbon offsets to meet its Kyoto Protocol commitments, in the EU Emissions Trading Scheme, and in other government or government-supported climate programmes. Instead, emphasis should fall on measures effective in fostering a just transition away from dependence on fossil fuels, including large-scale public works, subsidy-shifting, conventional regulation, taxation and other non-trading market mechanisms, and support for movements in the UK and abroad which are already helping to slow the movement of fossil carbon out of the ground (see *Carbon Trading*, cited above).

4. The UK should use its position in the World Bank, the Asian, African, and Inter-American Development Banks and the G8 to prevent those institutions' promotion of, and subsidisation of, offset programmes.

5. In the absence of an impartial scientific review of the false assertion that offsets represent "emissions reductions", the claims made for offsets by actors in the voluntary market should be, at a minimum, carefully monitored and regulated.

January 2007

Memorandum submitted by FERN

1. FERN[3] is a European non-governmental organisation focused on forests and climate change. We work to achieve greater environmental and social justice in the policies and practises of the European Union, with a focus of FERN's work on forests and forest peoples' rights. FERN's SinksWatch initiative (www.sinkswatch.org) has been created in 2001 with the aim of tracking and scrutinising carbon "offset" projects. Initially, SinksWatch's main focus was on "offset" projects using tree planting, particularly in areas where land tenure and land use rights are in dispute. Our area of work however has broadened since, in recognition that achieving the goals of the initiative required a wider critique and monitoring of carbon "offset" schemes. In this context, FERN has pursued research into climate policies and carbon trading. Our research has been carried out in close collaboration with advocacy organisations in the Global South. FERN has also provided submissions and discussion papers on the Kyoto-related carbon "offset" market and specific carbon "offset" projects. In relation to forests and climate change, FERN 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.

In October 2004, FERN was among the principal organisers of a major international conference on "Carbon Trading: Consequences and Strategies" held in Durban, South Africa which led to the formation of the Durban Group for Climate Justice. The Memorandum submitted here draws on the analysis developed jointly with researchers and activists associated with the Durban Group for Climate Justice, academia and NGO networks.

2. FERN welcomes the Environmental Audit Committee's present inquiry[4] into the voluntary carbon "offset" market. We are grateful for the opportunity to comment on the following issues in the Committee's remit:

- Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects;
- To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense;
- Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices; and
- Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

Executive Summary

The principal conclusions of this Memorandum are as follows:

- Carbon "offset" schemes are a dangerous distraction from generating public support for policies that will help avoid climate crisis and lead the way into a swift and just switch to low-carbon economies;
- Carbon "offsets" are undermining efforts to educate the public about climate change;
- Carbon "offset" schemes are unable to verify their claimed contribution to slowing climate change;
- The problems with carbon "offset" schemes go beyond "design flaws", "teething problems of an emerging trading instrument" or fraudulence in individual projects. "Offset" trading is based on conceptual incoherence, is characterised by measurement and accounting problems that are unsolvable and is giving rise to significant property rights conflicts;
- Tree planting "offset" projects are faced with an additional set of measurement and accounting issues and carry a particular risk of exacerbating local land use conflicts. Accounting and measurement issues have been discussed in many published, scientifically robust studies showing that our current scientific understanding of the carbon cycle and its impact on climate change *does not* permit an accurate assessment of the overall long-term carbon gains and losses form tree planting or forest conservation "offset" projects;
- Research into "offset" tree planting projects by FERN and partner organisations has revealed significant shortcomings of the projects' wider sustainability and cases of serious human rights abuses by actors involved in carbon "offset" tree planting projects;

[3] This document constitutes a memorandum submitted to the UK Parliament's Environmental Audit Committee and will be made available only with its permission. The information presented in the memorandum cannot be taken to represent the views of the Committee or in any way indicate the conclusions and recommendations which the Committee may come to in the course of its inquiry.

[4] FERN has previously made submissions to the Environment Audit Committee's inquiry into the International Challenge of Climate Change: UK Leadership in the G8 and EU in October 2004 and the inquiry on sustainable timber in September 2005.

— In FERN's view, the relative paucity of documented cases of fraudulent claims and conflicts over individual projects is not indication of critics of "offset" schemes overrating the problem but rather a result of near total lack of project scrutiny on the ground combined with a situation in which for the time being, both sellers and buyers/brokers of "offset" credits benefit from the limited scrutiny of projects and credit volume claims;

— Customers are being led to believe that offset activities they pay for "neutralise" their emissions in close proximity to the time of their "offset" payment. Though the intransparent nature of the voluntary "offset" market makes it difficult to assertain this indication, close proximity of "offset" activity to the emission people pay to have "offset" appears to be the exception rather than the rule;

— In this circumstance, the "offset" market is based on "future value accounting" whereby carbon "offsets" that are expected to be made in the future are presented to customers as having been offset in the present or immediate future;

— Customers are not being presented with accurate information as to the effectiveness or the efficiency of the offset projects;

— Government commitments to address climate change must refrain from using carbon "offsets" and "offset" claims in the voluntary carbon market must, as a minimum, be regulated and carefully scrutinized.

Knowledge gaps in terrestrial carbon cycling make measuring and monitoring of carbon fluxes relevant for tree planting "offset" credits impossible

3. Currently, fossil fuel equivalent to 400 years' worth of accumulated, compressed biological matter are burned every year. This is roughly three to four times more than in 1950. This carbon will not be able to lock itself safely up underground again as coal, oil or gas for millennia and a large part of this fossil carbon is accumulating in the atmosphere. As a consequence, carbon dioxide concentrations in the atmosphere have been rising from approximately 580 billion tonnes pre-industrial revolution to roughly 750 billion tonnes today—the highest in hundreds of thousands of years.

4. The build-up of carbon dioxide in the atmosphere has been exacerbated by the release of carbon from land use changes, and in particular deforestation and destructive forest management practises.

5. The climate impact of biological carbon released through deforestation and other land use changes differs significantly from fossil carbon however. Biological carbon is part of an active carbon pool in which carbon circulates between vegetation, atmosphere and oceans. Whilst deforestation and land use changes have upset the balance within the active carbon pool, the overall amount of carbon circulating between the three pools has remained largely constant over very long periods of time. Burning fossil carbon, on the other hand, increases this overall pool of active carbon. Due to this difference in their climate impact and the different nature of interaction with the atmosphere, claims of compensating the climate impact from release of fossil carbon with increased storage of biological carbon are unsubstantiated. On this basis alone, tree planting "offset" claims are misleading and it should be unacceptable to treat credits from tree planting "offset" projects as equivalent to fossil carbon releases. Annex 1 illustrates this difference.

6. In addition to this basic flaw of tree planting "offset" claims, this particular "offset" project category is faced with significant measurement and accounting issues. These arise from the fact that current knowledge about terrestrial carbon cycling is far from complete. As a result mathematical formulae used to calculate carbon values in tree planting "offset" projects make widespread use of default values which may or may not reflect the true nature and volume of carbon interactions triggered by a tree planting "offset" project. In fact, the gaps are so significant that accounting for the true fluxes of carbon in complex ecosystems like forests and over long periods of time is not possible today. A steady stream of new research and publications in scientific journals re-iterates this:

7. In January 2006, research published in *Nature* magazine revealed that the planet's plant-life was responsible for far greater methane emissions than had previously been anticipated. Methane, as one of the most potent greenhouse gases, is a serious contributor to climate change. This finding upset a lot of the assumptions that had been made about climate models and undermined the calculations that were being made by offset companies about the net climate benefit of trees.[5]

8. In December 2006, a study was published by Ken Caldeira of the global ecology department at the Carnegie Institution of Washington in Stanford and Govindasamy Bala, of the Lawrence Livermore National Laboratory, California, which documented that planting trees in northern latitudes reduces the reflection of heat from light surfaces, the so-called albedo effect. The report showed that outside a thin band around the equator, tree planting results in more heat being trapped than would have had the surface remained in its natural tree-less state. The co-author Ken Caldeira commented that, "[t]o plant forests to mitigate climate change outside of the tropics is a waste of time."[6]

[5] Quirin Schiermeier, "Methane finding baffles scientists," Nature 439, 128–128 (12 January 2006).
[6] A Jha, "Planting trees to save the planet is pointless," *The Guardian* (15 December 2006).

9. Table 3 of FERN's joint submission to the EAC enquiry into the international challenge of climate change (October 2004) provides reference to scientific publications between 1998 and 2003 showing that including emissions and gains from tree planting and forests in the Kyoto Protocol would render the accounting unverifiable. The same applies for the use of tree planting in "offset" projects: the credit claims are unverifiable because of the significant gaps in human understanding of terrestrial carbon fluxes. Table 3 is included for ease of reference an Annex 2 to this submission.

10. In fact, scientists cannot even know in advance all the factors related to biotic carbon that will affect climate, and all the nonlinear or non-continuous ways in which they may interact, making the problem even worse than mere uncertainty (Annex 3). The biological carbon fluxes are not only much less stable but also, more importantly, much less predictable, than the paths taken by fossil carbon left under the ground.

11. No matter how much additional biological carbon could be cultivated, moreover, it could never be of an order of magnitude remotely comparable to what would be required to "soak up" the emissions from releasing into the atmosphere the remaining unmined fossil fuels. As Cambridge University forest historian Oliver Rackham stated in this context, to tell people to plant trees to help the climate is "like telling them to drink more water to keep down rising sea-levels."

Examples of environmentally and socially detrimental "offset" projects abound

12. It does not come as a surprise that carbon "offset" projects carry a high risk of causing or exacerbating existing local conflicts and are in many cases environmentally and/or socially detrimental. In order to generate carbon credits from trees or energy crops, plantation companies have to maintain and expand their hold on land that ordinary people may need for other purposes. In order to generate carbon credits from burning the methane released from of landfill sites, authorities have an incentive to keep them open. In order to keep track of the carbon their agroforestry schemes generate, rural development organisations have to divert resources from their traditional work. In order to get carbon credits for halting flaring, oil companies have to go on drilling and polluting.

13. The Durban Group for Climate Justice, the World Rainforest Movement and several others have provided a significant number of case studies documenting the detrimental environmental and social impact of "offset" projects. The conflicts generated or exacerbated by tree planting "offset" projects are particularly worrying. Extensive documentation of and reference to these cases is provided in Chapter 4 of the recently published book "Carbon Trading. Critical Conversations on Climate Change, Privatisation and Power"[7]as well as in the October 2006 publication "Trouble in the Air".[8]

14. The World Rainforest Movement and FERN have further documented serious human rights abuses, land use conflicts and poor working conditions in several carbon "offset" projects. At least one of these, the Kibale project in Uganda, sells carbon credits to UK based consultancies and their clients. The question of due diligence assessments of these carbon "offset" outfits arises mot acutely in such cases where projects directly or indirectly pose a threat to the well-being of communities affected by the project. The Uganda example also featured in the BBC Inside Out London area programme on 12 January 2007. The author of this submission visited the communities affected by the said project in summer 2006. A copy of the programme is available on request.

Lack of transparency in the voluntary offset market leaves door wide open for fraudulent accounting practises and unsubstantiated claims

15. When the rock-band Coldplay promoted their successful album, "A Rush of Blood to the Head" in 2002, they bought the services of the Carbon Neutral Company (CNC) to fund the planting of 10,000 mango trees by villagers in Karnataka to offset the emissions brought about in the recording of the album. Fans of the band were also encouraged to "dedicate" a tree in the plantation. For £17.50, fans could acquire the carbon absorbing rights to a specially dedicated sapling in the forest.

16. In April 2006, the *Sunday Telegraph* exposed that many aspects of the project had been disastrous and that the emission reductions sold to Cold Play had not materialised. Anandi Sharan Miele, head of the NGO Women for Sustainable Development (WSD), CNC's project partner in Karnataka, admitted that of the 8,000 saplings she had distributed, 40% had died. In the village of Lakshmisagara, only one person out of a village of 130 families received saplings, as the rest did not have the water resources to support them. This person was able to sustain 50 saplings out of the 150 she received due to a well she had on the land, but complained that "I was promised 2,000 rupees (£26) every year to take care of the plants and a bag of fertiliser. But I got only the saplings". A number of other people from other villagers told similarly disgruntled stories; "We were promised money for maintenance every year but got nothing," and "[Ms Mieli] promised us that she'd arrange the water," but the water tanker visited only twice.[9]

[7] Available at www.dhf.uu.se; hard copies are available on request from FERN.

[8] Available at www.carbontradewatch.org. Of particular relevance is the chapter "Low-hanging fruit rots first" by Graham Erion.

[9] A Dhillon and T Harnden, "How Coldplay's green hopes died in the arid soil of India," 30 April 2006, *Sunday Telegraph.*

17. The case highlights one of the most pervasive problems in the voluntary "offset" market: While carbon consultancies are keen to claim the credit for a success story, their willingness to take responsibility for failure pales in comparison. Most offset companies issue legal disclaimers absolving them legally from responsibility for their project partner's inability to implement projects in such a way that the carbon savings / extra carbon storage is ensured. In the Cold Play case, while Ms Miele claims that CNC has a "condescending" attitude and that "they do it for their interests, not really for reducing emissions. They do it because it's good money," CNC claims that it funded only part of the programme and that WSD were contractually obliged to provide water and ongoing support for the plantations. By June 2006, two months after the report in the *Sunday Telegraph*, the CNC was still offering on its website dedicated mango trees at this location to Coldplay fans and the project continues to be presented as another of the company's success stories. There has been no transparency or accountability to the people who have paid to see this project realised that things might not have been going according to plan.

18. A BBC Radio Five Live programme "Trading Trees" in November 2006 exposed how tree planting "offset" projects in Britain were claiming carbon credits for the planting of trees that would have been planted anyhow. A copy of the programme is available on request.

19. In its 2005 Annual Report, carbon consultancy Climate Care state that they sold

20. Kollmuss *et al* document in their December 2006 report "Voluntary Offsets For Air-Travel Carbon Emissions" that for-profit "offset" companies invest only a mean of 43.4% of the income from "offset" sales into projects.[10] The actual figures may well be even lower as calculations were based on aggregate figures provided by the "offset" companies.

21. The following *aide memoir* from a conversation by the author with a carbon market analyst highlights the risk of projects in the voluntary "offset" market selling credits more than once. The conversation had focused on the risk of a client being sold a credit that a project developer has already sold to someone else (see also comment by carbon "offset" project developer SouthSouthNorth in "Low Hanging Fruit", ref 5): "Recycling of voluntary offset credits: According to [source] there are several examples of projects that have been around on carbon retailers' websites for years, and should therefore likely have sold their credits long ago. One example is the Desi Power biomass project in India. It has been promoted on [carbon consultancy name] website but also in relation with several events. There is no established standard for voluntary "offset" projects, and no registry, therefore there is no transparency and no way to see whether credits from the same project are sold more than once. Since there are too many retailers in the market and too strong competition it has not been possible to agree on one standard or registry. [name of consultancy] is among the most serious players. Nevertheless, projects appear and disappear from their website and there is no clear trace of what happened to them. Also, the same consultancy sold what it claimed to be Gold Standard credits from a Brazilian project to [UK charity], although [source] had never heard about the project. Brazilian NGOs protested fiercely against the project. [source] agreed with my claim that although retail carbon sellers have an incentive to maintain credibility, they might not have that much money and the incentive to recycle credits is clearly there. There are also examples of projects financed by government funds that have subsequently sold "offset" credits. Then they are not really additional."

22. The absence of a database or any other form of requirement to report that would allow the public to trace which project is used to cover which "offset" sales provides a breeding ground for fraudulent accounting and overselling.

Bad apples or underlying system failure?

23. To sell carbon credits, every "offset" project has to make the case that if the "offset" project did not exist, more carbon dioxide would end up in the atmosphere. In other words, every "offset" project calculates the volume of credits it can sell as the difference between the emissions that "would have happened if the "offset" project had not taken place" and the emissions in the presence of the "offset" project. In order to determine the volume of credits that can be sold, each carbon "offset" project thus has to answer the question of "what would have happened without my "offset" project. As Chris Lang, author of the World Rainforest Movement report on the Mount Elgon "offset project in Uganda explains: "Anyone who has ever watched a game of football knows that this question is impossible to answer. What would have happened if Zinedine Zidane hadn't headbutted Italy's Marco Materazzi in the chest and been sent off in the 100th minute of the 2006 World Cup final? Would France have won?" Fascinating question for any football fan to discuss and speculate about the many ifs and buts—impossible however to know the answer to the question "what would have happened if . . ." Every carbon "offset" project does not only pretend to know the answer to this unanswerable question—they pretend to be able to give an exact figure. This figure will determine how many carbon credits the project can sell as saving over "what would have happened otherwise" and evidence is plentiful of projects inflating this baseline figure in order to maximise the volume of credits the project will be entitled to sell. Mathematical formulae that have been developed to determine this number may reduce the range of possible answers and reduce the range within which a guess must be made—but an unverifiable guess it will always remain. Consequently no carbon "offset" project can verify the claimed reductions.

[10] Kollmuss *et al* (December 2006): "Voluntary Offsets For Air-Travel Carbon Emissions". *Tufts Climate Initiative.* Page 19.

24. This "additionality" conundrum has been recognised by many architects of the carbon market but the impossibility to verify the claimed credit volumes was reduced to "difficulties", "problems" and "risks" and a series of "additionality tools" were developed. None of these "tools" and mathematical formulae however addresses the core of the issue: Carbon "offset" projects rely on reducing a multitude of possible scenarios of "what would have happened without the "offset" project" to one single number. There however is no magical formula which could be employed to verify whether the assumption made is correct because the answer to the "additionality" question is one of political decision, not mathematical deduction.

25. This conceptual flaw of carbon "offsets" cannot be remedied by increasing project scrutiny or by addressing what is other described as "offset market design" shortcomings. There is no remedy to this underlying flaw and emission reduction claims made by "offset" projects will always remain unverifiable.

26. Additional questions about the climate benefit of "offset" projects arise from the often significant time lag between the occurrence of an emission and the subsequent purchase of an "offset" credit and the implementation of the project activity that will deliver the emission reduction. Searching through the websites of different "offset" companies, it is virtually impossible to get a clear understanding of how the issue of time lag between emission and emission reducing activity is addressed.

27. Employing a carbon calculation method best referred to as "future value accounting" allows "offset" companies to nonetheless argue that they provide carbon "neutrality": Carbon savings expected to be made in the future are counted as savings made in the present. This is the same method used by Enron to inflate its profits.

28. In closing we would like to draw your attention to the often-heard assertion that carbon "offset" schemes help raise awareness about climate change. One crucial question to ask in this regard is that of the message of "offset" schemes. What are these schemes teaching the public?

29. It is our experience that carbon "offsetting" teaches both that the climate problem is due to individuals and that it can be solved by individual consumer action. Reinforcing the belief that collective action is difficult and that climate action is highly technical, it transforms a political problem into a drama of individual redemption. The technicalities and jargon of carbon "offsetting" also present an obstacle to public debate.

Recommendations for Action

30. The secretariat of the All-Parliamentary Committee on Climate Change should be immediately removed from the Carbon Neutral Company.

31. Ministers should be very strongly discouraged from proposing that civil servants offset their airline flights' emissions.

32. The UK government should avoid using carbon "offsets" to meet its Kyoto Protocol commitments, in the EU Emissions Trading Scheme, and in other government or government-supported climate programmes. Instead, emphasis should fall on measures effective in fostering a just transition away from dependence on fossil fuels, including large-scale public works, subsidy-shifting, conventional regulation, taxation and other non-trading market mechanisms, and support for movements in the UK and abroad which are already helping to slow the movement of fossil carbon out of the ground (see *Carbon Trading*, cited above).

33. The UK should use its position in the World Bank, the Asian, African, and Inter-American Development Banks and the G8 to prevent those institutions' promotion of, and subsidisation of, "offset" programmes.

34. In the absence of an impartial scientific review of the false assertion that "offsets" represent "emissions reductions", the claims made for "offsets" by actors in the voluntary market should be, at a minimum, carefully monitored and regulated. The standard proposed by the UK government on 18 January 2007 would appear a step into the right direction in this regard.

January 2007

Witnesses: **Mr Larry Lohmann,** Research Associate, The Corner House and **Ms Jutta Kill,** Climate Change Campaign Co-ordinator, FERN, gave evidence.

Q45 Chairman: Thank you very much for coming in. We have read the written statement with great interest, and you have heard most of the previous witnesses' responses. I think your memorandum was the most critical that we received out of quite a large number—critical of offsetting generally. Are you strongly against offsetting because you are really against emissions trading?
Ms Kill: We are against offsetting because we believe it misleads people who buy carbon offsets, for one; secondly, we believe that it is a distraction from the real task at hand, which is reducing emissions. Carbon offset projects do not reduce emissions, and this was alluded to before—at the very best they ensure that emissions do not rise, but they will not reduce emissions. The perception in public, however, is that a carbon offset project is an emission reduction project. The atmosphere in the end, as I said before, is, at the very best not seeing a rise in greenhouse gas emissions, it will not see a reduction in greenhouse gas emissions as a result of a carbon offset project.

Q46 Chairman: Can I put to you what I was trying to say to the previous group? Is this actually worse than nothing?
Ms Kill: We do believe that it is worse than nothing because it creates the illusion or the impression in the public that action is being taken, whilst we are not really addressing the task at hand, significantly reducing greenhouse gas emissions. Therefore, my straight answer to is it worse than nothing is, yes, it is worse than nothing because it takes away capacity and it takes away the potential to make people aware of the changes that need to happen.

Q47 Chairman: Takes away capacity from what?
Ms Kill: Capacity from civil society organisations that get involved in monitoring or even setting up carbon offset projects, rather than being involved in creating or in educating a public about the need to reduce emissions and move towards low carbon economies; taking capacity away also from exploring much more effective means of reducing greenhouse gas emissions. What we see a lot of, which always baffles me, is that it is an unbelievably ineffective way of reducing emissions at the place where the project takes place, for a number of reasons. One is the full profit companies that sell carbon offsets on average only spent 43% of the revenue that they get from their clients on the project itself. The remaining 57% goes into overheads; a lot of that goes into carbon calculations, which ultimately cannot be verified. So if the intention was to have an effective way of promoting individual projects why spend 75% on average on calculations and on consultancy overheads, rather than aiming at straightforward donations to companies or to non-profit organisations, to charities who often have a long history in implementing energy efficiency projects and renewable energy projects? In fact, what we have been seeing in Britain is that some of the charities that have been involved in tree planting, actually engaging the public in tree planting have seen their donations dwindle because of carbon offset schemes. So we are taking away from a much more effective tool when it comes to engaging the public and raising awareness, both about the benefit of planting trees and maintaining forests, and in terms of addressing climate change, to spend a lot of that money on carbon calculations, which in the end cannot be verified.
Mr Lohmann: I think it is also instructive to look at the history of the CDM in the UN system, which Jutta and I have been following for many years, and in terms of taking away capacity, if you look at the amount of UN time that has been spent on trying to formulate and enforce these extremely arcane systems of carbon accounting, of compliance and so forth, and you ask yourself would this effort, would this finance have been better spent promoting systems such as shifting subsidies away from fossil fuels, promoting public investment, I think you have to come to the conclusion that, yes, it does take away a lot of capacity. This is one of the clear lessons from the UN's experiments with these offsets, with the compliance market.

Q48 Chairman: Before I pass on, if I could go back to the previous answer. I think if there was actual evidence that organisations could show that there had been a shift of donations it would be interesting to us because we have not received any evidence. It is an assertion, but we do not have any data, so if organisations have monitored that it would be interesting to have that. Just on the CDM, would you rather the CDM did not exist in that case?
Mr Lohmann: The problem with the CDM, as with all of these offset projects, is occasionally you will find a small project which is worthwhile for other reasons, which promotes local use of land and local use of trees and so forth, which is beneficial. The problem comes when that is tied into a carbon market which gives the impression that something is being done for climate and in fact what it is doing is licensing the continued industrial emissions elsewhere, and the continued use of fossil fuels elsewhere. So, yes, I think the CDM is a problem in so far as it is connected with the carbon market, yes.

Q49 Chairman: If there was no CDM would a scheme like the EU ETS then become a purer market if you could not, as it were, opt out of doing things at home?
Mr Lohmann: It would become a different market. I have two responses to that. One response is if you look at the interests in having a CDM on the part of both the Kyoto Protocol trading system and the EU ETS where you find, for example, industry will always say, "We need the CDM because we need these cheap credits, we cannot survive otherwise." The trading system rises or falls on the CDM, which is a very disturbing thing to hear given our view about this type of offset trading. I think there are also problems with the cap and trade system, which I think we can also go into. There are problems on both sides of that market.

Ms Kill: So adding to this, the US sulphur trading scheme is often sited as the blueprint or the model for the Kyoto market. When you look at the sulphur trading scheme you will find that it excludes offsets. The emission reductions that it has been able to provide it has been able to provide because it is a pure cap and trade system which does not open the door for project based offset credits. So it is not really the model because the Kyoto Protocol with that, through the CDM, has a significant difference to that model, and that is that it opens the door for an unquantifiable or unlimited number of extra carbon offset credits, which cannot be verified. So that would be for maybe one important reason, if the objective is to have a somewhat effective trading scheme then the CDM is not helping that because it makes the whole trading scheme unverifiable.

Q50 Chairman: Unverifiable in what sense?
Ms Kill: Unverifiable in the sense that every carbon offset—and it does not matter whether we are talking about a CDM offset or a voluntary carbon offset—calculates the volume of credits it will sell based on a comparison with what would have happened otherwise. What would have happened otherwise is something that cannot be verified.

Q51 Chairman: There are certain probabilities actually. If you have a very cheap coal-fired belching power station, which costs a tenth of the amount of money of some other form of generating electricity, the chances are that in the absence of anything else that that would continue to operate.
Ms Kill: The chances are that that is the case; the chances are also that there would be a lot of other scenarios that could have been imagined, or that could be imaginable. The trouble is that for an accounting scheme to be based on chances are is an interesting basis for accounting for me. That is the very basis—are we willing to base an entire carbon accounting scheme on some carbon consultant who will have a financial interest as well in telling us what chances would have been? Because that is what carbon offsets are based on. Imagine what the carbon market would have looked like had it been around in 1989. East Berlin would have been a prime market for carbon offset projects because the household heating relied on very dirty brown coal. I would stipulate that not a single carbon offset project document would have foreseen the fall of the Berlin wall and a transformation of household heating in East Berlin within a decade. So that carbon market, had it been around at that time, would have provided a large quantity of carbon credits for something that did happen in the course of a decade after. And we see a large amount of examples in today's carbon offset market that fall into the same pattern—distributing energy efficient light bulbs in townships in South Africa, when only months later the energy utility company of South Africa is passing out millions of energy efficient light bulbs, including in the very same township. It would not have happened otherwise? It did, just a few months later.

Mr Lohmann: Let me add a couple of political points to what Jutta was saying. In fact, the reliance on this philosophy of "chances are" in carbon accounting for offsets is leading in fact to political conflict and other kinds of conflict, of which I think we are going to see more and more in the future. We see this conflict breaking out not only among the carbon accountants and the carbon consultants themselves: as you all know there is already all sorts of finger pointing in this community about, "We come up with different figures, we think something else would have happened otherwise; we think it is a different 'chances are'." This is completely endemic by now in this community and you are talking about figures for carbon credits or supposed carbon sales which are different by factors of two, three, four, five, any number you want—you can come up with any number you want. That is one kind of conflict which we can see developing within the CDM community already and certainly we are going to see it even more in the voluntary market. But the political conflict is not limited to the technical professionals, the specialists; it is also spilling over into political conflict at the grass roots. I remember a phrase from a community in Brazil, which was facing an offset project which was benefiting a local plantation company, a pig iron charcoal producing plantation company. Their response to this "chances are" type of accounting was that this is "a sinister strategy. We do not want to hear what the consultants say our future might have been, we want to decide our own future; we want to have a future with our own family farming; we want to have a future with renewable energy, we are not going to listen to a consultant who tells us that without this project which is benefiting this Plantar firm, this pig iron producer which has devastated our lives in the past, then things would have been even worse. We do not want to hear that." In practical terms—leave the logic aside—that sort of political conflict is definitely on the rise. Jutta and I were recently in India and we saw a lot of other projects in a rural outside Raipur in Chhatisgarh state, where enormously destructive sponge iron producing factories are being established in a rural area—there was recently a Channel Four report on this which you may have seen. These are Dickensian scenes, with black smoke pouring out into the countryside.

Q52 Chairman: These are directly a result of the CDM, are they?
Mr Lohmann: These would benefit from the CDM on the "chances are" rationale.

Q53 Chairman: The one that you have just described, that is financed through the CDM?
Ms Kill: Yes, it is.
Mr Lohmann: They are applying for additional finance to the CDM, using the "chances are" justification.

Q54 Chairman: I just want to know, is it an example of how CDM money is currently being used?

Mr Lohmann: Yes.

Q55 Chairman: That plant that you have described would not have been constructed if the CDM did not exist?

Mr Lohmann: What the companies are saying in conjunction with the consultants they hire is, "We would not make these efficiency improvements or these changes without CDM money. Therefore, give us the CDM money, we will make these changes; that will make things better than they would have been otherwise, chances are." From a local perspective—and we have talked to a number of activists and local people who actually have to live with these projects—this amounts to nothing more than a subsidy for what the companies were going to do already, which is very destructive and very much opposed by the local activists and the local people. This is an example of how the "chances are" method of carbon accounting is directly leading to political conflict, and I think we will see a lot more of that in the future. The other political point I would like to make is that the "chances are" method of carbon accounting, which is the only method there is for accounting for offsets—it is what you have to use—is also leading to perverse incentives. I think you all know the example which was mentioned earlier of China and the HFC plants, where there is a lot of concern now within the UN, within the professional community, within governments, that this is setting up perverse incentives to actually go against the very constructive results which were achieved by the Montreal Protocol, back in 1987 or whenever it was, because it is actually providing an incentive for countries to set up plants to produce ozone destroying compounds in order that they can bolt on a piece of machinery and say that they are saving greenhouse gases above and beyond "what would have happened otherwise". They are changing "what would have happened otherwise" as a result of this accounting procedure being given to them. It is an open invitation to bring about destructive change.

Q56 Colin Challen: It seems to me that what will change people's behaviour is to fully internalise the external costs of what we do, the environmental costs and carbon obviously being the principal issue at hand. There are three ways of doing that: to legislate and regulate; to tax; or to go to the market to find that price. Presumably, if you legislate that will, in effect, set a price on carbon. So it seems to me that you are saying that the market should be excluded and taxed and regulated instead, but given that we are in the world that we are in would it not be better to try and make the market as one of those three pillars efficient, rather than simply saying it does not play a role, because we are in the world that we are and not in some half-way house to Utopia?

Ms Kill: There is more to a market than trading and what baffles me is that of the different market instruments that are imaginable the most ineffective, i.e. trading, has been chosen. I have no problem imagining using the market to bring about low carbon technologies, bringing about the incentives for low carbon technologies, but I do not see how carbon trading as one market instrument—there are definitely others we could talk about—will bring about that change because it is based on an unverifiable baseline. And along the process of trying to verify this unverifiable baseline a lot of money is wasted on producing stacks of paper by one of the fastest growing industries in the discussion about climate change, the consultancy industry. How does that help us in bringing about a different type of producing and using energy?

Q57 Colin Challen: It is more a question in my mind—and reading your submission, which I thought was very good because it went into the details of projects—it seems that the problem is there with our governance. If you improve the governance of these things and improve the governance of some governments then you would perhaps address many of those practical issues about the failure of the market at the moment to deliver verifiable outcomes.

Ms Kill: You would address some of the worse misbehaviour, some of the worst creaming off of non-additional project credits. You would still be grappling, though, with the conundrum that you are calculating the volume of credits that you are selling on something that ultimately is not verifiable. So what I see happening with attempts to regulate this carbon offset market is to spend a lot of money, possibly public money, on an instrument that is not very effective to start with. So where is the cost benefit analysis of doing that? Where is the cost benefit analysis of regulating something, an industry that in the end is based on something that cannot be verified? Would that money not be better spent on promoting direct investments in energy efficiency projects, in renewable energy projects? Has anybody done a survey of whether people who do set by carbon offsets today would not also be willing to pay for those projects directly if they were properly informed about the unverifiable nature of carbon offsets? If people were properly informed about only less than half of the money that they give to the offset consultancy going into the project directly?

Q58 Mark Lazarowicz: That is not against the theoretical concept of offset, it is suggesting that there are problems in the operation, but it does not suggest that it is necessarily endemic or even inherent system; it is a question of how it is working.

Ms Kill: Those last things are definitely endemic to the system. What is the issue at the very heart is whether you want to spend money on trying to verify something that is unverifiable, and that is an issue at the very heart of whether offsets are a contribution to tackling climate change or not. That is the conceptual issue. The conceptual issue is, can you or can you not verify the volume of credits which are calculated based in comparison to what would have happened otherwise? That is the conceptual issue.

Mr Lohmann: Let me try to clarify the leap between the conceptual and the practical issues here. I think it is important not to fall into idealism about how we are going to be able to regulate or reform this

market, particularly the voluntary market, through, for example, saying that "We will try to make governments be more accountable; we will try to make various agencies be more accountable." There is a real danger here of becoming idealistic about the changes which are possible, and I think the conceptual point about what actually could be done in an ideal world is very important here because it shows that these practical problems are going to arise no matter what goes on, no matter what kind of idealistic system you postulate about government oversight and so forth, and we have mentioned some of those problems. We have to start with the world where we are—which world is that exactly? We have to keep in mind that emissions trading is an extremely idealistic, extremely "classroom" system developed very recently in a single country, the United States, my own country. It has been very little tested; it has failed in most of the places it has been tried out, and certainly these offsets are failing both in the voluntary and in the compliance market. What real world are we talking about here? If we are talking about the real world we have to look at that record and we also have to compare that with another part of the real world, the world we live in, which is a world which already includes regulation, which already includes campaigns and movements to shift subsidies away from destructive use of energy, destructive transport systems towards more renewable, more sustainable systems. This is also a part of the real world and it has been part of the real world for a much longer time, in fact, than these carbon offset systems. So I think we have to examine this notion of what the real world is very carefully and try to find out which real world we are actually talking about.

Q59 Mark Lazarowicz: I am unclear if your objection is to the offset concept or to emissions trading, cap and trade *per se*. All you are saying seems to be very powerfully directed towards carbon offset but does not seem to me to undermine to any significant degree the argument for cap and trade schemes. Yes, we know there are problems about how they operate and that has been an issue with the EU and the US scheme, but is your objection to cap and trade schemes as well as offsets or is it just to the offsets scheme that you are directing your criticisms?
Mr Lohmann: There are different sets of problems, or rather impossibilities, connected with both systems and I think you need to look at both of those systems and look at the specific objections which apply to each system. There are common elements; certainly there are common effects of both cap and trade on the one hand and offsets on the other hand. One of those effects is that both of these systems tend to slow down the specific type of social and technological change which is required to deal with the climate change problem. Cap and trade slows it down by giving incentives to delay action to the sectors in which structural change is most important and which investment has to take place the soonest. It is designed, in fact, explicitly to slow down that sort of change, to make it unnecessary for the time being. Offsets, on the other hand, do the same thing for different reasons. Offsets are designed also to allow the sectors that feel that they are unable to invest in long-terms structural change to put off doing so—they can buy credits instead, and if they are cheap credits all the better: why should you bother to undertake the immediate kinds of changes that are necessary? Offsets also are slowing down structural change of the type which is necessary in the South, in the countries in which the offset projects are being constructed. Contrary to hype, they are actually reinforcing the reliance on fossil fuels in those countries rather than trying to find a bridge away from that. So there are similar effects in slowing down the type of change that is necessary in both emissions trading proper, or cap and trade, in with offsets, but there are different sets of impossibilities and problems connected with each. There are more aspects than I have mentioned but we can go into that if you are interested.
Ms Kill: Briefly to add to this, there is definitely very different sets of problems and issues linked to both. The cap and trade market does not rely on an unverifiable baseline—carbon offsets do. That is a fundamental conceptual difference. The architects of the carbon offset markets acknowledged it readily. Their approach to this is, "We will reduce the spectrum within which guesses have to be made, but a guess it will remain." If you talk to people who have been involved in designing and setting up the carbon offset market they do readily acknowledge this, and their approach to this is, "We will try to reduce the guessing." This is an aspect that is not communicated to anybody who buys a carbon offset credit. For me this is a serious issue of misleading the public if you are not telling people that what you are buying is something that is not verifiable, and that those who have set up this offset market are fully and well aware of this very fact. I would like to come briefly back to the question of regulation and is regulation possible and at what expense is it possible? The CDM has a very elaborate system of checks and balances. There are questions of how effective they are, for certain, because they also go back to attempting to verify something that is unverifiable, but it does have a very elaborate procedure that comes at a very high expense, and governments keep complaining about having to foot the bill for this expense. The CDM executive board has in its short existence already started to conduct spot checks on three verifying consultancies, and two of them for which the spot checks have already been taking place have been found in significant non-conformance. In order to be able to attempt to regulate the voluntary offset market with anything approaching that level of continuity you are looking at a very elaborate system and you are then also looking at pricing out of this carbon offset market the very projects that do have social and environment core benefits, which we heard of earlier, and which will use the carbon offset market to gain some financing to go ahead. Those projects are not going to be able to foot the bill which will ultimately be passed on to those project developers, and that is precisely why, if you look at the spread of projects in the CDM sustainable development is not

what you are finding; small projects run by communities is not what you are finding. You are finding projects operated and benefiting large polluting industries and attempts to regulate the voluntary carbon offset market will ultimately lead to the very same. We can look at other voluntary certification initiatives, the Forest Stewardship Council, for example, which regulates and certifies good forest management. There also we have found that with increasing regulation and insurance to really check up on the certifiers small community run initiatives, ones of which we would like to see more, are struggling to meet the costs, and there is no reason to believe that if attempts at regulation are made there will be many small scale projects that will not be able to meet the costs that come with that. This brings me back to the question of: is it effective? If these are the kinds of projects that we want, also to make people aware of the need to have decentralised energy production, energy efficiency, why not directly finance these projects through charities that have a long track record of doing that and forgetting about the ultimately unverifiable calculations, which benefit not the climate but a burgeoning consultancy industry?

Q60 Chairman: What is the obstacle to those charities doing what you say at present?
Ms Kill: Because the interest in carbon offsets leads many people to pay for carbon offsets. People are not made aware, there is no drive from role models, from people present and standing in public and saying, "I think it would be much better if instead of buying an offset we would support this charity project." I have not heard that in the debate about climate change.

Q61 Chairman: One reason why you have not heard it might be that people do not think it; that the role models you would like to have advocating this do not actually believe the argument.
Ms Kill: Possibly. It may also be that those role models have not been very well informed about the reality of many of the projects they are buying credits from. There is as yet still a paucity of well documented cases. I would stipulate that that paucity of cases is not because we are overstating the argument, it is because nobody bothers to look. There was a big article today in the *Herald Tribune* referring to projects having gone wrong, and I do believe there was a BBC report recently about those projects. I do believe that if we start looking people will take a second look.
Mr Lohmann: I would add something in response to the question of what the obstacles are to charities carrying out this work anyway. I think the carbon offset market does interfere with them carrying out constructive projects. We are aware, for example, of one instance quite a long time ago actually where a charity was working in what seemed to be very worthwhile agri-forestry schemes, hoping to cash in on this carbon offset market, getting involved in it and finding that they had to spend a lot of time and a lot of energy doing meaningless carbon accounting which they could have spent doing other things.

Q62 Chairman: If the offset was the problem why do they not ignore the offset and say, "Let us get on with it"? You keep saying, as I understand it, that it is better for people to give their money to the charity, they go out and do a good scheme. Fine, but I cannot see where is the obstacle of that happening now.
Ms Kill: Why did they go in that case in Guatemala? Because they had signed a carbon contract and they were legally obliged to make sure that the offsets that they had already received the money for were happening.

Q63 Chairman: They involved themselves in the offset market; you are saying that people should not do that, but I am saying fine, if your alternative is the better alternative what stops these charities from choosing your better alternative now? There is no legal problem.
Ms Kill: I fully take your point and I would agree that it is ultimately the responsibility of anybody who wants to sign up to this, absolutely. What makes them go to this way is the enormous public relations campaign advocating carbon offsets.
Chairman: Hang on a minute, if you go to British Airways and try and offset it is almost impossible to do it. It does not sound like an enormous public relation campaign to me; every obstacle is put in your way. That is comment.

Q64 Colin Challen: I can see the point if the government itself says that it is going to carbon neutral or carbon offsetting then that is a big signal in the market place, which is bound to create a momentum. I was wondering if we look at the unverifiability aspects of perhaps your major critique of offsetting, if we simply eradicated this principle of future value accounting, which to me does sound a little suspect, I have to say, and simply said that in future offsets will only be measured on actual delivery, would that remove your major objection, if it could be somehow achieved in practice?
Ms Kill: It would be the end of a lot of the voluntary offset market because it would up the price for carbon offset projects by at least one if not two orders of magnitude. To use one example, if you look at the Climate Care Annual Report of 2005 you will find that they sold 90,000 credits in 2005; the projects, which are supposed to cover the liability only add up to roughly 70,000 credits, and that is based on the very optimistic estimates. So there is at least a shortfall of 20,000 carbon credits that have been sold, but the consultancy does not have a project—at least it does not mention them in its annual report—to cover those. It is not clear, at least to me, without being a financial expert, on whether the company has sufficient reserves to ensure that projects to cover these 20,000 credits it has sold already will come along in the future. Again, I have not seen a survey asking people whether they are aware that they pay today for an offset that will happen in the future, and sometimes a long way into the future. The government itself is faced with this situation after having promised to offset the emissions related to the G8 Presidency, through a

project based in South Africa. That project has not started yet. In fact the financing for the project is still uncertain, and this is nearly two years after the fact.

Q65 Colin Challen: Does not the mere fact of attempting to carbon offset actually get more people involved at the bottom end of this very steep learning curve about carbon? Most people, I suspect, are still ignorant about their own carbon footprint and anything at all that gets people to start auditing what they are doing is surely a good thing, because we do not have long to resolve the problem, so we must get more people involved. Even if we are starting with a fairly shaky mechanism, surely it is still good to do that?

Ms Kill: I often hear this very argument, that it is a first step, it is better than nothing, is it not? Why is that the only option to educate the public? Do we really believe that there is no other way of helping people understand that we need drastic changes? Calculating is not where I see the biggest problem—I do believe there is too much of a fixation on numbers in this whole debate, which comes at the expense of raising awareness about the value shift that we need and the quality shift that we need. But I can go along with helping people to measure how much emissions an activity causes, and that is where you gain some form of educational benefit. I do fail to see why that necessarily would have to lead to then going on to a carbon offset. Why? Are we then not entrenching the idea that if I know I have emitted, say, 10 tonnes, I am just fine because I am paying somebody else to reduce 10 tonnes? Is that not exactly the message that we are getting? The other message that we are giving people in this supposedly educational exercise is that climate change can be reduced to individual consumer choice problems, and therefore climate change can be tackled by individual consumers making different choices. I do not believe so; I do believe that we need a substantially different type of investment from society as well as from governments, and carbon offsets do not help us bring about that realisation that there is a limit to individual consumer choices in bringing about the changes in energy production systems that we need to really tackle climate change.

Mr Lohmann: Just to rephrase what Jutta was saying, I guess I would pose the counter question: what exactly does the carbon offset market teach, how does it educate? In looking at the problem we have seen that it teaches two things. First, as Jutta said, that the problem is a problem with individual choice; if we all make better individual choices then the problem will be solved. Second, it teaches that the solutions do lie with the individual and not with a social choice. I think this is a particularly pernicious type of mis-education in the area of climate change because if there is one lesson that the scientific analysis of the climate change problem teaches us it is that systemic change is required. It is not a matter of individual choices within a given set of limited options. Why is this? This is because the climate change problem, as the scientific consensus tells us, is a matter largely of fossil fuels and the solution to the climate change problem is not going to avoid having to limit and eventually halt the mining and the use of fossil fuels; the scientific consensus simply is that most fossil fuels, which are now in the ground, are going to have to stay in the ground, and any solution that overlooks that fact is going to be a problem. Any solution that says—and the offset solution is a good example of this—that we can forget about that and we can go ahead mining all the fossil fuels that remain under the ground, as long as we have enough windmills that will take care of it, that is a very misleading message to give. The problem with the offset market is that it overlooks the structure of the problem; it is a problem which is going to require structural change away from fossil fuels and that is not going to be achievable through carbon offsets.

Ms Kill: I would add one point which has rarely been heard in the debate, and that is what are the consequences of all those private entities signing long-term contracts with project partners in the south if an international negotiation about reducing greenhouse gas emissions is also going on? Southern governments are not asked to give approval of a voluntary carbon offset project, yet that carbon offset project may claim to reduce emissions for a long time in to the future. So if I am the Indian government and I in future accept some limitation of my emissions I will think very hard about why I should honour and give away any emission reductions to a mostly northern based carbon consultancy that has, without my approval, signed away and sold away those emission reductions. This is not an argument that is heard a lot but I would believe that from the perspective of northern governments wanting to convince major emitters in the south a little more attention would be paid to this aspect because there are legal contracts involved, legal contracts which will in future raise the question of who is the owner of those emission reductions when India—or take any other southern country—will have to report on its emission reductions. It is baffling that this is not a discussion that is taking place, if the ultimate objective is to have an international treaty on reducing greenhouse gas emissions that includes the larger polluters in the south as well as in the north. Baffling.

Q66 Mr Chaytor: Can I just clarify, you are not actually opposed to carbon offsets, you are opposed to a trading system for carbon offsets?

Mr Lohmann: Carbon offsets are a trading system, that is what they mean.

Q67 Mr Chaytor: You are not opposed to offsetting carbon emissions because you are in favour of charitable groups carrying out reforestation projects, which is a way of offsetting carbon emissions.

Ms Kill: Yes, except for they would not sell them as carbon offsets.

Q68 Mr Chaytor: That is right. The principle of offsetting carbon emissions, you are not opposed to?

Mr Lohmann: Offsets means you are neutralising, you are compensating, as John mentioned in the earlier session.

Q69 Mr Chaytor: The purpose of the reforestation conducted by a charity would be to compensate, surely?
Mr Lohmann: No. The projects which we are suggesting are worthwhile, if they could be disentangled from the carbon market, once they were disentangled, no, they would not be regarded as offsetting, they would not be regarded as compensating.

Q70 Mr Chaytor: So your support for charitable projects on tree planting or reforestation is nothing to do with carbon emissions at all, it is entirely to do with biodiversity?
Mr Lohmann: There are many beneficial projects and many projects which we would argue are beneficial in a climate sense, whose value we feel is just completely perverted and negated if they are made into this idea of offsets or equivalences or compensation. You can undertake all sorts of climatically beneficial action but once you start doing this fictitious accounting it becomes a real problem.
Ms Kill: In fact we have been advising companies who have contacted us, wanting to know and understand more what carbon offsets are, and who then made the choice to make a straightforward donation to a charity that supports decentralised energy production in some very rural, some very impoverished communities in Southeast Asia.

Q71 Mr Chaytor: I can understand your preference for direct investment in renewables is logical but I could not understand why what seemed to be your support for direct investment in reforestation is logical.
Ms Kill: Restoring degraded forests—

Q72 Mr Chaytor: So you are saying that it is absolutely impossible to calculate with any degree of certainty the impact of reforestation?
Ms Kill: Absolutely.

Q73 Mr Chaytor: This contradicts what the previous witnesses were saying.
Ms Kill: John was very cautious, I would believe. It was difficult to hear every word that he was saying, but I do believe that he pointed to the significant obstacles that are there in measuring carbon cycles in forest ecosystems.

Q74 Mr Chaytor: His argument seems to be that on balance this is worthwhile, in tropical regions as in non-tropical regions; your argument is that reforestation is nothing to do with offsetting carbon emissions but there may be other good reasons for reforestation, to do with wider biodiversity issues.
Ms Kill: And climate change issues. If you do want to have an effective buffer against floods or droughts an intact forest is a good thing to have. So even from a climate perspective there are a lot of good reasons to build up resilience in forest ecosystems. No doubt the problem comes when we attempt to put a number to the amount of carbon that is stored in a forest.

Q75 Mr Chaytor: But this building up resilience, the definition of building up resilience, surely, is the extent to which the impact of greenhouse gas emissions are alleviated. That is offsetting.
Ms Kill: No, it is not in comparison to the impact that it would offset. Forests are not only degraded because people fly, forests are degraded for a lot of other reasons.

Q76 Mr Chaytor: What I am trying to get to is, what in your view is the benefit of reforestation because originally you said it is nothing to do with carbon emissions, then we talked about biodiversity, so we can agree that there are advantages in biodiversity, but then you came back to the point that there are advantages in reforestation strictly in terms of alleviating climate change. Surely that alleviation is to do with alleviating the effect of greenhouse gas emissions and therefore reducing the likelihood of extreme climate conditions, increasing floods and doubts.
Mr Lohmann: I think there is confusion here between two different things, which often look like they are the same thing but actually are not. Carbon forestry offsets are designed to provide a licence for industrial pollution elsewhere, and in order to do that, in order to provide that licence which can be bought or sold they need to do accounting, they need to set up an equivalence, a compensation and so forth. What we are suggesting is that responsible reforestation projects conducted by local people who have an understanding of the situation and a value of the forest, and so forth, are very good, will be good for climate in the sense that they help prevent further deforestation—for example, they provide a carbon stock.

Q77 Mr Chaytor: Because they help offset the impact—
Mr Lohmann: No, that is the difference. The difference is between offsets and what we are talking about. What we are talking about does not offset in the sense that it does not provide a licence for industrial pollution elsewhere in the world. None of the carbon accounting needs to be done. There is no room for people to buy a licence to pollute and say, "Okay, I am carbon neutral now, I have purchased this." We are saying that that actually creates a whole different structure. It looks like it is similar but it is not similar; it creates a whole different structure.

Q78 Mr Chaytor: The impact of the new forest must be the same as to whoever plants the trees. Whether the trees are planted by a carbon trading company or whether the trees are planted by an indigenous group in the Amazon Basin, the climate effect must be the same. You are separating out the issue of how the company in the northern industrial country uses that for PR purposes but the impact of those trees must be the same whoever plants them, surely?

Mr Lohmann: The impact of the trees is not the same on climate because in the offset example you are connecting it with a system licensing pollution elsewhere. As Jutta pointed out, even in the ideal classroom world of carbon offset theory the net result of these projects will be zero if they are tied into a carbon trading scheme. However, if they are not tied into the carbon trading scheme then we do not want to make the calculations but we do want to support that sort of project.

Q79 Mr Chaytor: We are running out of time, but can I put this one final question? Surely if 1000 trees are planted by the indigenous group of people in the Amazon Basin the company in the northwest of England is still polluting.
Ms Kill: Right, but it is not saying, "I am not doing damage to the climate because 1000 trees"—

Q80 Mr Chaytor: This is a PR issue; it is not a substantial issue.
Mr Lohmann: No, it is a property rights issue.
Mr Chaytor: The net amount of pollution remains the same.

Q81 Chairman: In terms of trying to control the amount of carbon concentration in the atmosphere it is better if the trees are there than if they are not there, regardless of who paid for them, is that not the case?
Ms Kill: It is not the case because you take away the incentive from either the government regulating that industry in the north of England or the company itself to look into other carbon projects.

Q82 Chairman: Leave the company out of it. Do you want the trees or do you not want the trees?
Ms Kill: I do want the trees, or an intact forest.

Q83 Chairman: Is the benefit of the trees somehow reduced if someone outside has paid for them?
Mr Lohmann: Yes.

Q84 Chairman: It is. It does not absorb any carbon? The tree works out in its mind, "Gosh, someone wrote a cheque in Birmingham for these, and so I am not going to absorb any carbon", is that what you are saying?
Mr Lohmann: Let us look at this in a practical way.

Q85 Chairman: I am asking the question.
Mr Lohmann: It is not the same; it is providing a licence to pollute to someone who is polluting elsewhere. The climate effect is therefore different; the climate effect of planting the trees is different. This is very practical; you are giving away a property right which has all sorts of practical and long-term effects, to allow them to continue polluting in an industrial area. This has long-term climate effects, it has effects on the compliance with emissions reductions legislation because it changes the way a company will respond to that; it changes the way that investors will look at investment opportunities and the necessity of investment in industrial change. It has a long-term and very different climate effect—carbon effect—depending on whether it is connected with an offset scheme.
Colin Challen: Your point is that if you simply did the offset then the benefit of planting the trees, which is a positive in itself is neutralised because then you claim the right elsewhere.
Chairman: The word "offset" seems to be a bit of a fireball here. Thank you very much for coming in.

Tuesday 27 February 2007

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton
David Howarth
Mark Lazarowicz
Dr Desmond Turner

Memorandum submitted by The CarbonNeutral Company

1. Introduction

1.1 The CarbonNeutral Company is one of the world's leading climate change businesses, set up in the early 1990s with a vision captured in our CarbonNeutral trademark. We're proud to be helping thousands of people and 100s of major companies around the world, to measure, reduce and offset their CO_2 emissions.

1.2 TCNC conducts its business in accordance with the CarbonNeutral Protocol (CNP) which it developed and maintains through a process that involves a range of external stakeholders, including NGOs, users of carbon offsets, producers of carbon offsets, and experts in carbon management. Third-party verifiers review and report on our adherence to the requirements of the CNP. The CNP specifically combines action to reduce emissions supported by requirements for the selection of offset projects with requirements on assessing carbon abatement, transacting carbon (verification and registration), and communications (message and brand). The most recent version of the CNP can be found at Annex 1.

1.3 As a company, we strongly believe that we are making a significant contribution to the fight against dangerous environmental change driven by global warming. The Stern review reminds us that the aims set by Government, a reduction in carbon emission by 60% on a 1990 baseline by 2050 are challenging and that innovation is required in ensuring that carbon efficient technologies and practices are put into effect. Stern also recommends that measures should be implemented in order of their cost effectiveness with the most cost effective implemented first. We believe that the approach we have developed through our proprietary standards deliver real reductions in carbon emissions in a cost effective way and that, by taking a market driven approach, we are fostering the implementation of innovative solutions to the problem of reducing carbon.

1.4 In common with other reputable companies in this sector, we strongly deplore bad and sloppy practice and the activities of "cowboy" operators. We have developed our own stringent operating standards and we are working with other companies to produce international standards for carbon offsetting. We believe that these will provide a framework in which a mixed market of diverse instruments, including CERs and VERs can develop. This we believe is essential to maximise the scale of emission reductions achieved by voluntary carbon markets (VCMs) and will also serve to optimise the uptake of innovative solutions.

1.5 We therefore welcome the Environmental Audit Committee's inquiry and are pleased to offer evidence. Our responses to the questions posed by the Committee are as follows

2. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

2.1 We believe that a system of accreditation for companies and the products they offer is highly desirable. It is our experience that our corporate and government clients are concerned to ensure that the steps they take to measure, reduce and offset their carbon footprint deliver real carbon-neutral performance. They are highly conscious of the threats to their reputation should the investments they make in their environmental profile turn out to be underperforming. We believe that a system of accreditation would improve the overall confidence of business and consumers in the voluntary carbon market and the companies that work in it. We believe that this system of accreditation should cover the following key elements:

- that a company should offer third party carbon assessment services (so that there is an objective view of the amount of CO_2 to be offset);
- that the company should sell offsets which have a clear audit trail: that they are either credited against an international system (as CERs) or, in the case of VERs, that the company has a strong quality assurance scheme; and
- that the company's activities are independently audited—to prevent double counting of credits, proper insurance of credits and retirement (for example, TCNC commissions KPMG to audit the company's activities once per year).

2.2 We would see this operating in a way similar to the working of the Financial Standards Authority. The FSA's overall objective is *To promote efficient, orderly and fair markets and to help retail consumers achieve a fair deal.*

2.3 Its statutory objectives are:

- market confidence: maintaining confidence in the financial system;
- public awareness: promoting public understanding of the financial system;
- consumer protection: securing the appropriate degree of protection for consumers; and
- the reduction of financial crime: reducing the extent to which it is possible for a business to be used for a purpose connected with financial crime.

2.4 We see this as a possible pattern for a carbon markets regulator. In particular we would welcome the maintenance of market confidence and the suppression of fraudulent operators.

2.5 The FSA regulates companies and the instruments they offer. Consumers will have greater confidence in companies under FSA regulation and instruments regulated by the FSA. We note, however, that there are financial instruments, reversionary mortgages, for example, that the FSA does not regulate. In this case the regulation is not compulsory and we feel that this may have to be case in the instance of carbon markets, too. We believe that clients will be wary of non-regulated companies and instruments and that this would provide a measure of safeguard.

3. *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

3.1 We are very aware of the current debate about the climate impacts of some activities, notably flying and have considerable sympathy with those who see direct regulation of airline charges as a means of internalising the social impacts of flying into costs to passengers. We are also aware of a more general debate on ways of internalising environmental costs into goods and services. It is our experience that the setting of adequately robust targets creates a more secure environment for the development of solutions that combine high performance with cost effectiveness. We find that our clients achieve an excellent understanding of the costs of carbon by taking on the demanding commitments of the CarbonNeutral Protocol and that this has a profound effect on their practices as they try to reduce the costs of compliance with their targets.

3.2 We believe therefore that carbon-intensive activities should be subject to binding targets and that it should be for the businesses concerned to work out the most cost effective route to achieving them. This might include technology advance, trading schemes or offsetting, as examples. Experience suggests, however, that it will be difficult to set targets that fully offset the impacts of aviation on the climate system.

3.3 Some companies will wish to go further and to work towards carbon neutrality. Offsetting schemes offer theses companies the opportunity to do this in a controlled environment.

4. *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

4.1 No, there is not sufficient clarity at present. As a company TCNC is committed to providing clarity to its clients in the offsets we provide and we believe that we share this aim with other reputable companies. However, there are factors that work to make customer information less than transparent. For us the major factors are:

- The quality of the offset. This needs to be absolutely clear and we would welcome codes of practice to cover client information.
- Audit trails. All our offset instruments are fully audited: we believe that audit information should be expected by clients and that companies should expect to provide it.
- Practice in charging VAT. Some companies in this sector operated with VAT exemption and this makes offset price comparison difficult.
- Scientific uncertainty about offset calculations. There are some areas, notably in aviation, where the offsets required are difficult to calculate. We have reviewed the scientific literature, for example, on Radiative Forcing Indices in the case of aviation, and we find there is genuine divergence of opinion within the scientific community. A standard approach to issues of this kind would be helpful and improve clarity for clients.

5. *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

5.1 We believe that there is considerable merit in schemes involving land use and land use change as theses are the only means available for addressing the important issues of the performance of carbon sinks. We have considered the evidence on land use schemes carefully and it is our view that the science is robust and has shown which issues need to be addressed in the development of effective measures.

5.2 In particular we have noted that permanence is a major issue, both in the long-term performance of schemes, for example of reforestation and in the losses that might occur through ecological failure or accidental damage. In the light of this understanding, we advise clients to limit the amount of such schemes to 20% of their portfolio of offsets. We also take steps to back-fill failures and underperformance from our stocks of non land use projects. We believe this should be standard practice for all voluntary carbon market companies offering emissions reductions through land use and land use change.

6. *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

6.1 It has been our experience that it is possible to calculate carbon emissions savings for individual projects to a good level of accuracy. There are projects of which we are aware that, whatever their merits, make it difficult to calculate the carbon savings accurately and we would avoid these. We guarantee the quality of the offsets we offer by using recognised project evaluators who operate to recognised standards of calculation.

6.2 We believe, however, that other companies may not be so fastidious. This is why we have suggested that the project evaluation procedures should be part of the global standard for voluntary markets we are seeking to develop with other major players.

7. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

7.1 In our evidence to the Stern inquiry, we noted that it had proved very difficult for Government, both in the UK and at European level to set targets for compliance that matched the scale of the challenge of climate change. In the case of the UK, allowances to industry for phase one of the EU ETS had to be raised not once but twice in the face of industry objections. It is our assessment that, despite the improvement in the climate for tough targets, the compliance market will continue to fall short of what is needed. We therefore believe that there will be a continuing need to go beyond compliance and that the voluntary market will continue to play a vital role in managing carbon emission down.

7.2 Having said this, we believe that the development of the voluntary market will have a beneficial impact on the compliance market. At the outset it will allow legislators to set more ambitious targets. It will accelerate the implementation of innovative solutions that the compliance market may adopt at a later stage. It will also reveal prices, allowing Government a second source of data to assess impacts on industry of tough targets and, in the longer term, it will act to ensure that prices of carbon rise as low cost options are assimilated. This will have the effect of increasing the liquidity of the market in carbon reductions as a whole and in consequence its overall efficiency.

8. *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

8.1 Over the last 10 years we have worked with over 200 corporate clients to reduce their carbon footprint and the majority have agreed to the conditions of the CarbonNeutral Protocol. Clearly, different clients have responded differently to the challenges this has made for them. However, it has been our general experience that clients become far more carbon-aware as a result of working with us. There are clear financial implications for our customers and these are widely noted. The discipline of measuring the carbon footprint itself has made companies think carefully about the scale of their impacts and the options there are to reduce them to the extent that they can claim to be "carbon neutral". We believe that companies have generally been driven by cost effectiveness in reducing carbon footprints. Cost effective measures to reduce carbon are, in our experience, normally seen as a part of the company's compliance plan together with offsetting, the balance being driven by the availability and costs of measure and offsets.

8.2 We have also noted that the engagement of companies in the process of working towards carbon neutrality has caused them to think more widely about their environmental impacts. Communications group, St Lukes, for example, reduced their CO_2 emissions by 30% but they also reduced waste by 22%. Clients have begun to engage with their customers and supply chains on carbon management and some clients have considered extending this to their people and their families. BSkyB, for example, is actively encouraging suppliers to manage emissions—TCNC and Sky organised supplier presentations of Al Gore's film, *an inconvenient truth,* and follow up meetings. Three of Sky's suppliers have already taken the step to go CarbonNeutral. TCNC is also working with Sky to excite and enable consumers to reduce and offset their emissions.

8.3 Annex 2 contains some case studies showing how our clients have responded to the challenges of carbon neutrality.

9. *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

9.1 We are aware that the industry has taken different positions on this matter with some companies taking the view that it is essential to incorporate considerations of wider sustainability into offsetting and other taking the view that it is the carbon impacts that should be the key to pricing and project development and that wider issues should be addressed through other instruments.

9.2 We tend to the view that wider sustainability considerations are relevant to voluntary action on climate change. It is our view that the key question that arises is about the reputation of offsetting instruments and that project reputation is a major part of this. We would seek to ensure that the projects we use for offsetting carried no major negative externalities. We are open to arguments that it would be desirable to go further and seek positive externalities. This is very much at the heart of the discussions we have had on the development of a global standard for VCMs and we would welcome a wider debate on the matter.

January 2007

Memorandum submitted by Climate Care

Climate Care was set up in 1998 to tackle climate change by reducing greenhouse gases in the atmosphere. We do this by providing offsets to individuals and companies voluntarily choosing to offset all or part of their carbon footprint.

Over the last eight years we have established a robust mode of operation and are scrutinised by an independent environmental steering committee.

Climate Care's experience and presence in the market put us in an excellent position to offer meaningful input into this government inquiry.

1. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

Robust and common standards are vital to the voluntary carbon market.

Ideally the minimum benchmark would be European-wide and closely modelled on established procedures in the CDM to ensure quality in key features including additionality, baseline calculation, monitoring and verification. However, the standard must be appropriate for the market.

The voluntary market has an important role as a pioneer, and any accreditation scheme should ensure industry is encouraged to innovate, and not be restrained. Meanwhile, voluntary market consumer preferences are for "value-added" offsets which support additional benefits typically found in small scale projects often in the less economically developed countries. Standards should avoid restricting development of such important projects.

For these reasons specific failures within the CDM procedures must be addressed to be applicable to the voluntary market. In their "2006 State of the CDM" report, the International Emissions Trading Association identified the principal issues. Notably for the voluntary market these include issues related to bureaucracy and delay in decisions, transaction cost, barriers to new methodologies (particularly with reference to non-renewable biomass) and inappropriate procedures for small scale projects (outlined in the response to question 8).

Such project standards are critical to ensure offsets are genuine, not double counted, and at least not negatively impacting on sustainable development. However, accreditation need not only apply to projects. Offsets are an extremely complex subject. The only realistic way to provide consumers with the reassurance needed their purchases are genuine emission reductions is through recognition the retailer itself is approved. This accreditation should be provided by a formal body based on their established procedures and proven adherence to the formal project standards.

2. *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

A mandatory scheme for the more carbon intensive activities should be the ultimate aim. In the transition, such industries should be incentivised to voluntarily participate in an offset scheme, on an opt-out basis. This would ideally use voluntary emissions reductions (VERs), regulated to a strong minimum standard as outlined above. Certainly at this point in time, compliance credits are not appropriate as the only mechanism for a voluntary opt out scheme.

A progression should occur from participation by early adopters and pioneers, through education, persuasion and the voluntary opt-out schemes, with the objective being a broad mandatory scheme, like a

"domestic tradable quota" or similar personal allowance scheme. Such a scheme would automatically include carbon-heavy industries like aviation.

It is important to have a clear understanding of the progression, and how the different instruments and tools should be used towards this ultimate aim.

3. *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

Offsets are a virtual and intangible product, surrounded by substantial technical complexities and issues usually beyond the interest and comprehension of the general public. A common standard would impose a level of transparency needed to improve clarity, widely absent in the current market.

However, the only realistic way to provide sufficient, widespread reassurance is through government/ European accreditation of offset providers themselves. This would impose the necessary rigour (though appropriate to the voluntary market) without the need for consumers to individually research and grasp the many difficult issues. Differentiation above and beyond such a rigorous benchmark can then be achieved through normal marketing channels.

4. *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

With respect to land use change and forestry, the science is not the most important issue. Greater focus must be given to the issues of economics, permanence and timescales.

When an alternative land use is imposed (that of a carbon sink) to ensure its viability as a carbon store and its continuation into the future (its permanence) it must be protected. This applies not just to natural mechanisms such as fires and insect damage, but to use of the forest services by local communities. If the forest has previously been used for its economic services, such as for fuel wood or agriculture, demand for these services will be fulfilled from elsewhere leading to "leakage". It is only in very specific circumstances where the land use has not been used for an important economic purpose, that the issue of leakage is not applicable.

The crisis of climate change is no longer far in the future, but one to be faced in the next 10 to 20 years. Emissions reductions from forestry take too long to be realised, in the vicinity of 35–100 years, and attention should be given to more immediate methods.

Nevertheless, land use, land use change and forestry play an important role in global emissions. Given estimations that reductions needed are as much as 90% (eg Tyndall Centre "Decarbonising the UK" 2006), land use and forestry must play a role in overall efforts. Greater focus should therefore be placed on specific avoided deforestation projects, for example those which introduce high efficient stoves, and displace charcoal production (non-renewable biomass).

The CDM has yet to approve a suitable methodology and has procrastinated on the issue. However, the International Emissions Trading Association recently noted this as a critical concept, which must be addressed ("2006 State of the CDM"). Knowledge and science is sufficiently robust that an adequate methodology can be formulated, but it must be given the priority it deserves.

5. *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

There is no reason why voluntary market operations should be materially less rigorous than the compliance markets with respect to the key elements of baseline calculation and measurement of reductions. Within the CDM methodologies are being produced which ensure carbon reductions are measured to an acceptable level.

Currently *some* schemes in the voluntary market do not operate at a level of rigour that can sufficiently guarantee accurate amounts of emissions mitigation. However, with the introduction of an appropriate and common voluntary market standard, preferably a government or European led scheme, such projects should be eliminated.

6. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

Given the level of robustness needed within the voluntary market, it is likely the voluntary and compliance markets will begin to converge over the medium term. Furthermore, as the CDM Executive Board refines its processes and increases the number of approved methodologies, so the number of projects outside its scope, and therefore only viable in the voluntary market, decreases.

In the meantime, provided credits are of a high quality, the voluntary market's existence is great benefit:

— The absence of a long term signal for commitments within the CDM has deterred investment and created substantial uncertainty for project developers. By providing reassurance of a market demand, the voluntary market can continue to stimulate project development past 2012.

— It can also act to provide stability to the market by acting as an outlet in times of price turbulence, providing greater reassurance to project developers and again helping to stimulate projects. Climate policy is so difficult that attempting to address it with one market is unwise. As Stern recommends, a multiplicity of approaches is advisable, which can spread carbon pricing through the economy to the extent possible.

— With its greater flexibility the voluntary market can offer huge value in pioneering and refining methodologies and addressing new project types in anticipation of entry to the compliance market. Whilst the compliance market is still developing, the voluntary sector can therefore broaden the carbon market's scope to include new but important project types.

— The voluntary market offers great opportunity for those developing countries which remain outside the scope of the CDM, yet are in great need of finance to help them achieve a lower carbon development path. Countries such as East Timor (one of the least developed economies) and Turkey (one of the fastest growing economies) are not currently able to participate in the formal markets yet offer great potential for emission reductions.

— If offsets are to succeed, they must work for consumers. Consumer motivations differ between markets, from the compliance drivers of the CDM to the more altruistically or politically motivated voluntary participants, focused on a "value-added model" (Bayon *et al* 2006, "Voluntary Carbon Markets") of additional sustainable development benefits. The CDM has evolved in consequence to produce a much more commoditised product, suiting the compliance buyers focused on least cost. However, the voluntary market has adapted so it can meet its consumer preferences for greater variety and additional benefits.

7. *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

Behavioral change is a complex issue, but it is accepted that change will not happen until there is awareness and understanding. In a Climate Care survey to over 3,000 of its customers (with 33% response rate) almost 80% agreed that Climate Care's web calculator had increased their understanding of their own impact on climate change.

It also demonstrated that 90% had also done one or more of home energy efficiency improvements, driven less or flown less. Although the primary instigator cannot be determined, it at least shows that offsetting does not decrease the propensity to "do the right thing".

8. *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

In contrast to the compliance market, projects with additional benefits are extremely prevalent within the voluntary market and are often more aligned with the CDM's twin objectives than the dominant CDM project types.

This feature can be attributable to the voluntary market's response to customer preferences for additional benefits, and to certain design and procedural issues within the CDM which render the typically smaller projects with strong sustainable development unfeasible. The failure to incorporate sustainable development benefits is particularly clear in the absence of CDM projects in Africa, where less than 1% of CERs originate.

Key failings of the CDM have been outlined by the International Emissions Trading Association's report, "2006 State of the CDM". Of particular relevance to projects with strong sustainable development are:

— Lack of technical competence and institutional uncertainty, notably with reference to the key concept of non-renewable biomass. This is a critical concept for projects (often using biogas digesters and cookstoves) in the least developed countries.

— Failure to adapt the CDM's overly complex and bureaucratic processes to small scale projects. This is demonstrated clearly in SouthSouthNorth's cost comparison of their South African low cost housing energy upgrade project (http://ecosystemmarketplace.com/pages/article.opinion.php?component_id=4126&component_version_id=5905&language_id=12). Under the CDM the project is not viable whereas the simplified and appropriate procedures in the voluntary market lower the transactions costs and bring the project into profitability without losing its rigour.

— Substantial delays in the approval of new methodologies, which "lead to quality projects, with significant sustainable development benefits, to go undeveloped" (IETA, 2006).

What's more, projects in the least developed countries with strong sustainable development benefits often require upfront funding. In contrast the tendency within the CDM is to make the project developer assume delivery risk. This is exacerbated by the absence of a long-term signal for investment in the CDM beyond 2012, which has negatively impacted projects with long paybacks. In particular this affects smaller projects

which have high proportionate transaction costs and often rely on long paybacks as a consequence. It also impacts projects with a risk of delay in delivery, often in the less economically developed areas where infrastructure and resources are weak.

January 2007

Witnesses: **Professor John Murlis,** Science Adviser and Chair of the Technical Advisory Group to the CarbonNeutral Protocol; and **Mr Mike Mason,** Founder, Climate Care, gave evidence.

Q86 Chairman: Good morning, welcome to the Committee, thank you for coming in. A general question to start with: can you just say what role you think carbon offsetting can play in the UK's overall climate change strategy?

Professor Murlis: I think that there are several kinds of roles that offsetting can play. The first thing to say is that offsetting is an instrument that can, under the correct circumstances, produce real and permanent carbon reductions, and from that point of view is something to be encouraged. I also believe that it plays an important role in terms of bringing innovation into the arena of carbon reduction. We know there are technologies out there that can play a part—the Carbon Trust and Energy Saving Trust have pointed to them—and they do not appear to market, for a number of reasons, amongst which is that they come at a small premium compared with other technologies that deliver the same basic goods. We believe that offsetting enables there to be a flow of resources that brings those technologies rather earlier into carbon reduction than would otherwise take place. We also believe that by thinking about their carbon impacts and by trying to manage them, companies raise not only their own awareness and the awareness of their various employees but also have the opportunity to use it as a way of communicating with their clients and of course with their supply chains, so we feel there is quite a powerful way in which offsetting can signal, if you like, the cost of the carbon imprint and provide incentives for managing it down. For those reasons we believe that offsets are a thoroughly useful part of an overall strategy. In UK terms, obviously the UK, which is quite a market leader in terms of technologies, should be able to benefit very well from this kind of input.

Mr Mason: I would like to answer that by using a real example and I am going to draw the example from a book that George Monbiot wrote. Those of you who know George will know that he is a very forceful guy who is a journalist and he is a sometime fairly passionate critic of offsets. In his book he observed rather despondently that it would cost him something like £20,000 to turn his house from an ordinary Victorian terraced house into something that was environmentally friendly. My retort to that was, "Okay, George in the life of an energy-efficient light bulb, let us call it seven years, you are going to save three tonnes a year by doing that, so your 20,000 quid in those first seven years will do three times that, let us call it 20 tonnes, of emissions reduction. If you gave me that 20,000 quid and I put it into energy-efficient light bulbs in townships in South Africa, where there is a social benefit and an economic benefit as well as a carbon saving benefit, each of those lamps will save about a tonne of CO_2. £2 per lamp, £2 for monitoring, measuring, checking, all of the things that people would like us to ramp this with to guarantee certainty, and you are still saying £4 per tonne of reduction. I am going to do 5,000 tonnes of emissions reduction in those seven years and he is going to do 20. If we have got a crisis, if we are in a hurry, we have a real duty to do "cheapest, bestest, firstest", and so from my point of view, trying to wear a rational economic hat for a moment, I think that we are overly concerned about the priority of doing things at home, not that we should not be but that at the expense of doing the better things first. The other side of that is let us just take his home as being typical: there are 22 million households in this country, take £20,000 as a reasonable estimate of the cost of doing it; that is £400 billion we are going to have to spend. If 50% of that cost is manpower at £20,000, there are 10 million people we need to train. Physically we have not got the human resources or the financial resources to deal with the problem at the speed that we need to, and so for me I would be slightly more aggressive than John I think about the role of offsets and I would say if you are serious about dealing with global warming, you seriously have to have a position on offsets.

Chairman: Okay, that is helpful. We have heard evidence from other people, including WWF and I think more along the same lines from RSPB and the Energy Saving Trust and they say that they would like offsetting to be at the bottom of the hierarchy of responses to climate change, but what you have just said is clearly taking a completely different view; you are looking at it on a global basis and looking at what you can do most quickly and most cheaply and so offsets ranks higher, and that is a helpful contrast to some of the things we have heard recently. Des?

Q87 Dr Turner: You are obviously not going to like the tenor of my question because I think that those who would say that the great imperative is immediately to reduce carbon dioxide emissions in absolute terms would also say that there is a danger, certainly with offsetting, that it is treated as a sort of comfort zone for people who can buy their offsets and then carry on polluting as they did before, and that in effect you have business as usual and the actual carbon saving from offsetting comes along somewhat later because it is an emitted tonne of carbon today but it may be many, many, many years before that tonne is saved by offsetting.

Mr Mason: I think there are two important things I want to separate here. Let us leave the quality of the offset—and I am not talking about planting trees because I think planting trees is mostly a waste of time and energy—if we are talking about things that sit in the technology space, so for example we are

doing tens of thousands of energy-efficient stoves or light bulbs for people around the world, you are talking about the emissions reduction happening within one to six or seven years. In the context of global warming there is nothing magic about 365 days particularly and we are talking about something that is well within the time horizons needed to make the emissions reduction, so I do not think the multiple year argument is a material one. The other one is important though. The line that most people will take is that people will buy offsets and it is like selling indulgences because you can go out and carry on sinning because you bought a good crop of indulgences this week. To an extent I am not trying to make moral and behavioural judgments. I think society has to make its own choices. We absolutely need to change society but I am not sure that we can wait to change society; we are in too much of a hurry, and Parliament has never shown a great deal of interest in applying some teeth to make those changes happen. So I am saying the reason that I got into this was that in the absence of any either social bite or parliamentary teeth we had to do something. I do not deny that we would really like to do things and I think we should do them in parallel; they are not one or the other, they are one and the other. If we want to grow an oak tree we have got to start today. We have got to do both of these things right now but the evidence is that it does not stop people doing the right thing. We surveyed in the middle of last year 3,500 of our customers and we received a 33% response rate, so over 1,000 people came back, so it is a statistically significant sum. Let me give you some of the numbers that came back from that. "Our website helps improve 'carbon literacy'". 78% said that this was the first time they had measured their carbon emissions. 79% agreed that website calculators had increased their understanding of their own impact on climate change. 90% have done one or more of the following: home energy efficiency improvements, driven less or flown less. 22% have written to their MP about climate change. 70% have encouraged friends and family to take action. 59% have driven less. I have got a whole list that I am happy to put in. The data is there and we will happily make the survey data available. What I am saying is I think there is a immediate assumption that people are going to do the bad thing. The reality is that the climate does not care what is in their minds so long as the emissions reduction is made, and the evidence that we have does not actually point in the direction of your supposition.

Professor Murlis: The experience of the CarbonNeutral Company, as I understand it, is very similar. That is to say that companies that are looking for a carbon neutral accreditation find that they are faced with a protocol which demands that they do three things. One is to measure their carbon footprint; the second is to wrestle it down as far as they can; and the third thing is to deal with what is left. It is our experience that the first two steps are very salutary for those companies and quite apart from saying the third step is an indulgence, they see it as something that happens once they have been able to understand what their impacts are and deal with them insofar as they can. I think it is also worth remembering that there are some bits of impact that companies probably cannot deal with, they can only go so far. For example, if you are running a taxi company, quite clearly you have to have fuel and although in the longer run you could have renewable fuels, in the interim period until those are available to any substantial amount (and we know the RTFO is still a glimmer in the Government's eye) we know very well that there will be a need for fuel and consequently they will inevitably have a carbon footprint. Thinking about that bit is really important. I would also argue that in an economic sense, and I think Mike alluded to this earlier, one should really try to deal with the low-hanging fruit first—and this is something that Sir Nicholas Stern points out in his report—in taking an economics approach to this problem you really want to get the most cost-effective carbon reductions you can as early as you can, and the need then is to ensure that there is the investment to bring those in. I would argue that firstly, quite apart from allowing people to feel they can just continue polluting and continue sinning, that is not the evidence we have. Secondly, I would argue that it is worth trying to ensure that solutions appear in all of their cost-effectiveness and if it turns out that offsetting instruments are highly cost-effective you will need to grab them quickly.

Q88 Dr Turner: Even if you are right about people reducing their sinning, there is still an onus on carbon offsetters to demonstrate that they are actually making an impact in terms of carbon saving that could not otherwise be made. In other words, if you are spending X pounds on low-energy light bulbs in the developing world it is quite possible that they would do that anyway because there is an obvious saving for them in so doing anyway, so (a) you have got to demonstrate the additionality and (b) an awful lot of offsets that are on the market are things like forestry et cetera, et cetera, where the carbon savings are at best debatable and certainly long delayed. So how can you suggest that you establish the *bona fides* of carbon offsetting?

Mr Mason: I would like to persuade the Committee to separate again these two strands which have become conflated. The first is the principle: are we going to encourage, support, regulate and manage an offset market as an important instrument of policy? The second thing is can we make offsets that deliver because if we cannot make offsets that deliver then clearly there is no point in having them involved. The reality is that offsets may be a good thing and I would not want the idea to be corrupted by people doing them badly, so we do need to separate those two. The other thing that I would say is that of course we are dealing in a world in which we are trying to change the future and of course because we do not know what the future is by definition, anything that we aspire to have done has to be a matter of surmise and judgment. So, for example, we put 10,000 energy-efficient lamps into a township in South Africa recently. Subsequently Eskom the national electricity company, decided

that they would put a large number of lamps—one million or 10 million, I cannot remember what the number was—out there and people came to us and said, "Why was what you did additional because Eskom did this on top of you?" The retort was two-fold, I guess. The first is Eskom put in 10 million and we put in another 10,000 so there were more, but the second is sometimes you will be overtaken in life by things which are better than what you are doing. If you did not do anything for fear that someone might do something better and make it redundant I think you would be paralysed by indecision and inactivity. We are much better off doing things with a considered but small risk of getting it wrong and maybe doing twice as much, than doing nothing in case we make a mistake or misjudge it. I think there is a terrible danger that because we are unable to achieve certainty in our projections of what would have happened had we not been involved that we do not do anything at all.

Q89 Dr Turner: So it is fair to say that the actual impact of offsetting is very difficult to determine?
Mr Mason: I would not say that. I would say that it is very difficult to be 100% certain that what you did would not have happened anyway, but you can be reasonably certain within the bounds of normal commercial risk. We cannot be certain that global warming is going to happen but we are not all sitting here saying we will wait until we know before we do anything.
Professor Murlis: I think there is a little more to this actually. We do have some evidence of additionality and we have it in the United Kingdom, and that is the very slow uptake of these low-energy light bulbs again. We have had them around for a very long time. If you look at the scope there is for energy efficiency in Britain, according to the Carbon Trust it would deliver on current technology about half of the Government's 2050 60% reduction target, that is what the Carbon Trust is saying, and yet it does not appear in the market, so that anything that makes it appear in the market would be a helpful addition to what has historically been the case.

Q90 Chairman: Accepting that obviously one does not know what is going to happen next, additionality does seem to go to the very heart of the case for offsetting. Would you agree that at least to qualify for additionality it has got to be beyond what you can reasonably assume is going to happen in the foreseeable future?
Professor Murlis: Of course, and in fact every company that has a reputation and has a product that it wishes to defend has very complicated procedures for ensuring that, first of all, it understands to the best possible certainty what the likely "business as usual" future would be and then also calculates on top of that the addition that would be produced by the resources that fund the offsetting instrument. I know that in many cases the kinds of bodies that do this work are exactly the same kinds of bodies that are recognised in various international fora like the IPPC, and under the Clean Development Mechanism there are bodies that do this kind of thing, verifiers and so forth, and they are normally the people that are brought in to advise on this. Certainly it has been my feeling, looking at these instruments, that tremendous care goes into ensuring that the assumptions as to the future are treated as conservatively as possible, that is to say that they are as optimistic as possible, and that therefore anything additional is truly additional. Obviously we are working in the futurology area and certainly, as I have said, behaviour historically has been very slow to adopt these technologies, but where there have been resources, for example we have got photovoltaic projects going where clearly nobody is going to put money into those unless there is some extra source of funding for them.

Q91 Chairman: Staying on futurology for the time being, how fast do you think this voluntary offset market is going to grow in the next few years?
Mr Mason: Let me give you some of our statistics. We have expanded 700% in the last 12 months. Web sales, which are a small but growing proportion of what we sell, have increased 20-fold in the last 24 months.

Q92 Chairman: That is 1,900%.
Mr Mason: Thank you, Chairman. It is a lot; huge. Two years ago if we went to a company and made a pitch and sold 50,000 tonnes of emissions reduction we would be cock-a-hoop and we would be out partying for the next three months. These days people ring us up and say, "I made an error in my assessment." A bank recently rang us up, "We made an error in our carbon assessment for the year and we have not been as good at reducing (John's point again) as we thought. Please can we have another 50,000 tonnes?" 18 months ago this would have been utterly unheard of so it is going through a transformation which is vast. If you project it for more than a few years you have solved the world's problems, so clearly it not going to do that, but just at the moment it is going through a huge sea change.

Q93 Chairman: Given that the post 2012 environment is uncertain, would that act as any brake on the voluntary market or does it act as any kind of brake on the CDM market?
Professor Murlis: I would not have thought so.
Mr Mason: The voluntary market relies on people who have made a decision that this for them is something that is critically important, they do not write you cheques for £1 million just on a whim, and having made that decision and written it into the company's or individual's culture and their thinking it is a much more certain outlet for projects, I suspect, than the vagaries of the international regulatory market. We have seen in the European Union trading scheme, for example, prices wildly oscillate between €30 and €1 a tonne whereas in 10 years that Climate Care has been selling carbon offsets we started at a price of £5.45 10 years ago and our weighted average cost now is about £6.30 or £6.40, and the price has not moved very much, so we

provide a stability, interestingly enough, which the other market because it is a political instrument has not done.

Professor Murlis: Clearly the price of allowances matters greatly and the allowances provided under the first stage of the EU ETS were such that really they did not support very much of a market. There are technologies out there for the companies who come within EU ETS which would be waiting in the wings and waiting to be implemented. There are very high-efficiency ways of generating electricity for example and there is also carbon capture and storage, and I am sure the Committee has heard about that several times. Both appear at a premium but not at an outrageous premium. A good price on the EU ETS would certainly encourage companies to bring those technologies into use, there is no doubt about that, but historically it has been very difficult to get the correct level of allowances. Similarly, on the second period of the EU ETS there is a certain amount of discounting going on in investment houses to say, "Can we rely on it that these things will really appear and they will be tough enough to support a higher price?" However, when there is a vigorous voluntary market it is pretty clear there are a lot of people looking for cost-effective ways of using carbon and the technology developers may feel more confident. I think that Mike's experience is that that supports stability of price and I think that would be ours too. Looking forward, we can see the prices rising as investors are more confident and invest first of all in the development of the technologies and then in bringing them to market.

Q94 Mark Lazarowicz: My apologies for missing the start of your evidence, I was at another meeting, and so if the question has been asked already no doubt the Chairman will tell me, but on this question of the price, the general view of course on the price for carbon, and suggested by Nicholas Stern for example, is that it is well in excess of the figures you are talking about when it comes to people purchasing voluntary offsets. What is your assessment of the likely consumer reaction if the price were to start getting anywhere near the figure that is suggested is the real price for carbon? Your rapidly growing demand may suddenly become rapidly decreased demand unless there is a compulsory mechanism.

Mr Mason: Again we have to look at two different things. We have to separate price and cost and the cost of carbon in the short to medium term can be set by a number of things. Let us presume that the policy instruments make all carbon fungible around the world so an emissions savings here is equivalent to one there. At around €30 a tonne of carbon dioxide the big German coal producers switched to gas. There are huge savings to be made, so in the short to medium term I think we see a ceiling there. In the very short term there are huge zero cost savings to be made in the developing world where the problems are infrastructure, technology availability and knowledge. When Sir Nicholas talks about the cost of carbon, he is talking about the marginal cost of carbon at the edges as you get close to achieving the policy objectives. If I come back to the point that you made earlier about is it not better if we did things at home and insulated our houses and cut our emissions; the reality is that we will see the marginal cost of carbon driven up to the point at which people should be then persuaded that it would be better to do these things at home than to do those things overseas. I am very happy if the market gave way. I run a renewable energy business so I do not mind which way it goes, in truth. The offset market will be a useful policy instrument if once people start to get involved in this, there are strong encouragements, arm twisting, policy measures which keep them in so that as the price rises, which it inevitably will, they do not say, "Thank you very much but not now Josephine." I think you are right, the price will rise, and if we do not capture their willingness now while it is low and wrap that up in a series of measures, systems, protocols and encouragements, then we have missed a major opportunity to get the general public on board while they can afford to be on board.

Q95 Mr Caton: The Environment Agency told us in its memorandum to this inquiry what it does as an alternative to offsetting through organisations like yours. What it does is to calculate what it would need to spend to offset its emissions and then uses that amount to set up a number of funds to reduce its direct emissions instead. Is that not a better way forward?

Mr Mason: No, it is worse.

Q96 Mr Caton: Could you expand on that?

Mr Mason: It is worse because we are in a hurry. As a society we are constrained in resources. If we are in a hurry we should do the cheapest things first and by cheapest I mean we do not have to worry about financial discounting, in the timescales that we have to deliver—ten or 20 years—we have to reduce as much carbon as we humanly can do. There are two reasons why you might not want to do it internally in the way that they do. The first is that it is just more expensive. The second is that many of these expensive technologies will have fallen in price by the time the cost of offsets has risen so you have got the technology price curve doing that and the carbon offset price curve doing that. When they cross is the time to start doing it. The rational answer is to follow the economics. Do the most you can with the resources you have available and do not be too hung up about where you do them; the climate really does not care.

Professor Murlis: I think my view would be rather similar to that. I am not sure exactly what the Environment Agency is saying on what they do and how they actually do this job, but I come back to the idea that for the Environment Agency, first of all, understanding carbon impacts and then managing then down as far as possible is a very reasonable thing to do, but I suspect they will rapidly run into diminishing returns on investment, and as they run into those diminishing returns on investment if they wish to make further reductions in their carbon

footprint, then offsetting I think is a very reasonable way of doing that and, as I have said, is of enormous benefit in bringing innovation into this, so I would have thought from an Environment Agency point of view there would be a limit as to how far they can reasonably go before they run into either enormous costs or great operational difficulty. They have got a serious job to do and they therefore may be thinking of perhaps some kind of mixture of managing down as far as they can and then looking for other ways in which they can take an offset.

Q97 Dr Turner: You have both made play of the effect of your activities being just not to directly drive down but to change the awareness and behaviour of your customers. Indeed Professor, in your memorandum you place great emphasis on that.
Professor Murlis: Yes.

Q98 Dr Turner: Is there not a danger that companies that have an interest in compensating for emissions through buying offsets will not necessarily try too hard to reduce their emissions? Mr Mason, there was a hint of that in one of your earlier answers in which you talked of your great joy at a company ringing up and saying, "We have not done very well, we have got to buy another 50,000 of these because we have not done it for ourselves." You have yourself given evidence of that danger.
Professor Murlis: I do not think it is a danger, I think that is a very good thing. You could put that the other way which is that it is good the company is so aware and so concerned for its reputation that it wants to come back for another slice.
Mr Mason: Let me take that to its most extreme example that I can think. Members of the Committee might be aware that we offset 45,000 miles of emissions for every 2007 model of Land Rover, Range Rover, Defender, all of those. This was an interesting ethical decision for us. Here we have a car which by most accounts is a heavily polluting car; should we be associating ourselves with this? The logic is interesting. They have a number of choices. I know the management of Land Rover now from the top right downwards and I am beginning to know them quite well. They absolutely understand that they have got a very beautiful but fundamentally rubbish product. It is not a product designed for a highly carbon-constrained world, so sitting there, they have a number of choices. They can say, "Fantastic guys, we have made a big decision to deal with global warming and we are going to close the factory door and stop." Never mind the employment consequences, the reality is that as long as society carries on buying these and as long as Parliament does not stop people buying them, other people—Porsche will walk straight into the niche and say, "Fantastic, thank you very much," so that will not achieve anything. The next thing they can do is they can say, "We will wait until society changes." That course of action will not achieve anything either. You might say as a third course of action, "Let us invest £1 billion and develop new platforms and new technologies to reduce the emissions hugely." Great, and Ford are doing that, a lot of it in the UK (Ford is their parent) but that is going to have 10 or 15 years' gestation period before it finally comes to fruition. The fourth thing you do is say, "Okay, I really need to do something. I am utterly convinced that this is a problem. How can I get the emissions down?" They rang Climate Care and we ended up with a lot of conversations and what we now have is a vehicle whose net emissions—and I am talking about three to seven years from the date of the emission, actually that is not true, one to four years from the date of the final emissions—being 100% offset—not 50%, not 20%, not 10%: 100%. Let us accept some uncertainty. We might do a bit more and perhaps we might be a bit optimistic and we do 110% and 30% gets thrown away; it is still an 80% emissions reduction. In other words, we have achieved a huge amount whilst the technology is catching up because all of the alternatives in the absence of a legislative framework would not have achieved anything at all. It is not as simple as, "Oh well, they don't care so they aren't doing it." It is like the old saying "if I was going to go to Brighton I would not start from here"—unfortunately you are here and we have to move from here to there as fast as we can.
Professor Murlis: We at the CarbonNeutral Company provided some evidence to you of case studies of some companies that had actually gone through the process of accreditation through the Carbon Neutral Protocol, and that is a protocol, as I explained, where at these three stages companies are obliged to measure and to reduce insofar as they can and then as a third stage to deal with the residue through offset. Within that protocol there is quite a lot of detail and, again, we have offered you the copy of the document in its current form. It is always evolving and I chair a group of independent people whose job it is to essentially exercise governance over that protocol as to how it develops in the future to meet future challenges. It has been the experience of the list of companies that we provided you with that by going through this process they had actually informed themselves a lot and rather changed the way they saw the world. An interesting example is RadioTaxis who came to this thinking, "We ought to do something, we are not quite sure what it is, perhaps we will have a look at it," but came away from it much more enthusiastic and feeling rather positive about it and thinking, "What do we do about new fuels, how are we going to deal with the RTFO, and how are we going to make use of all these things that are coming down the line at us?" So essentially we have a management there now that has perked up and begun to listen to these messages about carbon. Similarly with Sky, Sky started off thinking it would be a very good thing to do and it would be nice to do it for the company but then began to think about why not do it to our supply chain, why not ask them to come in, and then we have got the customer base, why not ask them to do something and we can campaign and do all of these things. We have engaged what is a very large media player and I think that is very positive myself. We see this sort of change going on all the time. People come

along tentatively not quite sure how to think about this but go away, first of all, thinking that they have got quite a lot to do but, secondly, interested in it and thinking about it so it is not at the bottom of their mind any more, it is near the top.

Q99 Chairman: Coming back to the Land Rover example; how much does it cost them to do that?
Mr Mason: About 100 to 150 quid per car.

Q100 Chairman: How many tonnes are they buying for that? What are the expected emissions over 45,000 miles?
Mr Mason: Let me think about that. About 20 tonnes.

Q101 Chairman: Are any other car manufacturers doing this?
Mr Mason: Land Rover have simply made it impossible for you not to buy this. It is nominally voluntary but in practice the dealers are expected to pay the cost if you do not. I do not believe any other car manufacturer on the planet has got anywhere near that level.
Professor Murlis: Honda do something but it is not quite comparable.

Q102 Mark Lazarowicz: Could I ask you one thing about Land Rover; did you say that the extra emissions are offset within a four-year period or is that a period in which the offsets are purchased and the offsets then come into play over a longer period of time?
Mr Mason: When you buy a car, first of all, all Land Rover factory emissions associated with making that car are offset and in addition you get a certificate which says: "We, Climate Care, promise to offset the emissions equivalent to 45,000 miles of motoring," which we anticipate will take three years to happen.

Q103 Mark Lazarowicz: Three years is 45,000 miles of motoring?
Mr Mason: It is 15,000 miles a year.

Q104 Mark Lazarowicz: So it is not the period in which you would have offset the emissions?
Mr Mason: No, so we start today, and if we put in energy-efficient light bulbs or stoves or something, it might take three to five years, so we might achieve the final offset maybe two or three years after the 45,000 miles had come to an end, but in the context, as I was saying earlier, there is nothing magic about 365 days. If you are talking about offset periods of 20, 30, 40 or 50 years, you have got a problem. The difference between one year and five in the context of climate change, if it is as deep a cut as that at this stage it is not—

Q105 Mark Lazarowicz: To be clear, you are saying within if not four years then five, six or seven years that all the emissions in production over the first four years will have been offset by verifiable carbon savings?
Mr Mason: Correct.

Q106 Chairman: The Government is going to try and introduce a measure of regulation of some sort in this area. From what you have said and from the evidence we have taken it is clear that it is growing very quickly but it is also full of grey territory and there are very few absolutes here. Do you not think that is going to make it extremely hard to produce any kind of sensible regulatory framework?
Mr Mason: It need not.
Professor Murlis: The thing is that no industry that has got a reputation worth having is very fond of having free riders and cowboys out there, and you can take it that the carbon management industry is no different. It is very poor for the reputation to have schemes that are in any way dodgy, and we thoroughly disapprove of them. To an extent, I think what Defra is proposing to do is rather sensible, to produce a degree of regulation so that at least one can deal with the worst excesses. I think of it rather like the Financial Services Authority. The FSA is out there really to regulate financial instruments and it does it to ensure integrity in the market and so that consumers are aware of what they are getting. I can see that that is fine and that part of it is something that is helpful. Obviously we have put in our own evidence to Defra about what we feel about the way in which they have approached this, which we do not necessarily feel is the best way of going about it, but the general direction of the enterprise seems to us to be useful.
Mr Mason: I have spent 10 years trying to persuade Defra to pay any attention to this whatsoever. They did nothing for nine and three quarters of them and then suddenly they went from doing nothing to what I think was a rather rapid, ill-formed and prejudged consultation, which was a terrible wasted opportunity It is not difficult to do. We have to remember a couple of things. One is that we are in a global market here and we have a position of leadership and if we want to be effective we have to do something that works globally otherwise what we will do is create a plethora of standards. We are talking for example at the moment to some of the people who import flowers and vegetables from Kenya into the United Kingdom and they are saying, "Why can't we have a Kenyan Government standard?" Those kinds of cross-border issues will emerge if they are not carefully thought through, so there is no reason why you cannot have good regulation. I think we need some thought about it. I would also add that just like the Financial Services Authority, what we have is a requirement I believe to regulate the product and also the retailer because we are dealing with future events, we are dealing with having liabilities to be discharged. Companies need to have mechanisms that ensure, just as with company pensions for example, that the interests of future generations are not compromised by the commercial activities of today. I suspect the first stage is to look at the product but the second stage may well be to look at the organisations themselves.

I think if do that you can manage out huge swathes of risk which avoids you being too heavy-handed on the product, which could be counter-productive.

Q107 Mr Caton: You have mentioned how quickly the market for voluntary offsetting has grown but it is still a very small proportion of the population that goes down that road and even fewer commercial companies. Do you believe through awareness raising and education that you can expand your customer base and do you think government should have a role in raising awareness on this?
Mr Mason: I do not think that we have begun to see the edges of how much we could expand this customer base, but the truth of the matter is that the best marketers out there are not us but are the companies which have customers—British Airways, Land Rover, Honda, British Gas. All of these people have huge marketing outreach and if we are to persuade the population that we need to achieve what I think the climate realists are saying, which is perhaps a 90% emissions reduction over the next 50 to 60 years, these are huge changes and we have to engage the mass of the population, and to do that we have to engage the most competent marketing organisations and those are the ones that currently have huge budgets, infrastructures and capacity to talk to people, and those are industry. I think we can grow it but I do not believe that we can grow it anything like as fast as companies could grow it. In order for companies to grow it, I believe that they need some token of encouragement from government. The kinds of things that I am talking about are, for example, imagine a company that is bound under the Emissions Trading Scheme to reduce emissions by 10 million tonnes; you might say, "For every 10 tonnes of offset you sell to the public we will reduce your burden by one," or something like that. In other words, there are ways that we could amplify their willingness and ability to communicate that we have not begun to explore, and we should.

Q108 Chairman: Just on this point, when we were producing our report on transport last year BA said that they had offset between 1,000 and 2,000 tonnes of CO_2 to climate change in the past year, yet BA's own web site says a fully loaded jumbo jet on one return flight from Heathrow and Sidney and back accounts for 1,574 tonnes of CO_2, so it is not a very impressive achievement by BA or anyone acting on their behalf so far.
Mr Mason: Will you please tell them that! That is important because I know that they are coming in to give you evidence later and I would love you to ask them about it.

Q109 Chairman: We certainly will.
Mr Mason: The reality is that people like Land Rover have stood up and said, "Okay, guilty, your honour, this is a rubbish product from an environmental perspective but people love it and we are going to have to do something about it." I hesitate to speak for British Airways but I think the problem that they and a lot of companies have is the first thing they have to do is stand up and say, "My product is rubbish, it creates a lot of emissions," which of course does not give you a nice marketing conversation, it is not a good entrée, is it? The second thing is they have to occupy what they see as valuable retail web space. The consumer attention and the web space on which you have to grab it has a very high opportunity cost, and so for the time being it is difficult to persuade them that this is actually a cost that they should bear. Whether you do that by arm-twisting or by incentive or by taxation, I do not know, but it sure as hell needs doing.

Q110 Dr Turner: We have already touched on Defra's consultation about regulation; do you think the industry is up to self-regulation?
Mr Mason: No, but we may have very different views on this.
Professor Murlis: Up to a point. Industry has tried very hard and within the industry obviously there is very different practice. I can only speak for the CarbonNeutral Company and what I see in the CarbonNeutral Company, and bearing in mind I am their scientific adviser and I am not part of their executive chain and my job is to chair their technical advisory group, and the technical advisory group is there to ensure that the Carbon Neutral Protocol continues to provide a framework of state-of-the-art assurances about the quality of the process that companies have to go through in order to get their carbon neutral stamp and also the quality of the instruments that at the end of the day are used to offset residual emissions. I think that is quite an important job. I am really impressed, first of all, by the way in which the protocol has been developed and, secondly, by the care which has been taken in the governance of it. I also know that our companies together with a number of others are seeking to prepare what is an absolute basic standard, and that basic standard is something that will obviously gather a great deal of buy-in from the different parties and it will be an industry standard, so there is that kind of process in hand. There are examples in the world of good self-regulation and I suspect that the companies could achieve this. I suspect also that the kind of regulatory framework that would be suggested by Defra at the end of their consultation, and might look something like the FSA, would also be very helpful. I would not like to say that it cannot be done; I think it is rather tricky to do.

Q111 Dr Turner: There is obviously not agreement between yourselves on the issue of regulation and other companies in the offsetting business are very different from you and have a very different range of activities. Could I ask both of you very briefly to set out what you think should be there in the framework of regulation which clearly is going to need to be mandatory.
Professor Murlis: I feel that what should be in the framework of regulation is a set of principles which governs the standards. For example, the principle of additionality, which we have talked about, is an absolute and there should not be any kicking up to

that, so there has to be first of all additionality and a satisfactory way of demonstrating that. Another principle is transparency, so that people do know what they are paying for. You could imagine a number of principles of the regulation and there are principles of good regulation, for example, published on Defra's web site. For me the thing that we would like to see coming out of the Defra consultation and to see Defra proposing is a set of principles for those regulations rather than saying exactly line-by-line what they are.

Mr Mason: I think the barriers to entry for new entrants into this game are low and I think the opportunity for scamology is huge, and therefore whilst my instincts are John's, which is to have a set of regulatory principles, I think that there is a real danger that as long as you have a tension between shareholder and environment you will have companies being as imaginative as they can to shade those principles. There are lots of statements of principle that well-meaning people find themselves the wrong side of from time to time. We have an emerging very good (insofar as it can be good) set of standards coming from the United Nations through the Clean Development Mechanism. What Defra have proposed is that only certified emissions reductions, those created and certified by the CDM, should be allowed. I believe the principles and actually the practice of the CDM should form the foundation of the voluntary sector and I think we should depart from that where it is appropriate to do so by expansion. For example, there are countries like East Timor, the world's poorest country, which were not invented when the Kyoto Protocol was agreed. There are places like Turkey where for reasons of its own administrative—and I would not use the word incompetence but something managed to find themselves neither one side nor the other side of the protocol, so they are out of everything and they cannot do anything. There are technologies to which we would like to extend the CDM. The CDM is not very good at being innovative and bringing new technologies such as energy-efficient cocking stoves to the third world. There are all sorts of things happening. There is a whole swathe of opportunities that are being missed but the underlying principles are good. I think there is an extension in space, there is an extension in technology base, and the third thing that I think is critically important that we need to address, and the Defra consultation specifically denies, is we need some freedom on timing. The Defra consultation presupposes—and it is a wonderful consultation because they know what they have asked for already!—that you will need to have delivered the offsets with certificates within six months. The problem that you have is that if we are trying to grow this market hugely fast, which we are, there just are not enough people out there as engineers, as people to draft the design documents, as people to assess additionality, the whole thing is constrained by resources and those resources may not be money and often are not money. There are all sorts of other issues. When someone says, "I want to buy one million tonnes," should we say, "Sorry guys, you cannot have that until I have gone and got the project," or should we say, "Thank you very much, we will take the cash and mobilise the resources to get the project going." One is an enabling approach and the other is a restrictive approach, and I think we have to have an enabling approach. That is why I believe that the organisations themselves who offer offsets should be regulated. It is fine, if you are going to deliver something that has already been certified, anyone can do it because it is a certificate that someone has signed off, but if you are in the business of trying to develop things for the future enabling new technologies to happen, then I think we need to have some form of regulatory framework which means, like your pension, something in the future is not delivered by someone who has no responsibility.

Q112 Chairman: Is it not in the nature of the CDM for instance that that is restrictive rather than enabling? You have acknowledged yourself that there are both geographical and methodological constraints imposed by it. Other people I have talked to have said it is bureaucratic, it is slow, and the compliance costs are high, so it is the big projects rather than the smaller ones, so if you want to be enabling you have got to think outside the CDM box.

Mr Mason: I did not say we had to use the CDM. I said we should use the principles and the processes of the CDM. The CDM will get better. It has also been constrained by the fact that three or four years ago there was no-one in the world doing this and now it is a multi billion pound industry, but where do these people come from—the boring practicalities of getting the experience and training and so forth. Over the coming decades the CDM will undoubtedly—and I am looking beyond 2012—get better. Between now and then, which is a time of fast growth, it is not going to be able to deliver what we need. The project design document, the use of a designated operational entity to validate, the whole swathe of things that the CDM encompasses and which a certified emissions reduction requires should be replicated in an appropriate form in the voluntary market, so I think there is a huge amount of experience and thinking gone in. We should not knock it, we should not write it off; we should build on that and we should extend it rather than try to invent something new, but we should not be restricted by it.

Professor Murlis: I think that is right. Certainly the CarbonNeutral Company takes the view that the insistence on only CERs and similarly regulated instruments is an unfortunate mistake and that one should open this to VERs which actually are very fine emissions reductions where there is a verification procedure, and it is the verification procedures that actually are the key to it. Certainly there are faults with the CDM mechanism and those are pretty apparent, but one could also argue that in some ways VERs can be an improvement, they can carry other kinds of additionality, in particular when it comes to sustainability criteria. CDM projects have not been particularly good on those. Certainly our clients often say that we have got the carbon bit right but what about the rest of it? Could we show some

sustainability issue here that is improving local employment? Is it really managing another kind of environmental problem? Under those circumstances of course a VER stamp can have that kind of additionality and it can also be taken up in things like, for example, the gold standard, which is one and there are the Evo projects in the forestry management area which contain multiple benefits. I feel also companies, thinking about their reputations, will want to ensure that the kind of offset instruments that they buy are of good quality. They will want to almost compete for quality in these instruments, so many companies—and there are certainly companies which will come along to us and say, "It is more important to us that these are really absolutely solid and no-one can criticise us for these and there will not be any reputational problems." You gold-plate these things because that really matters to reputation in the longer term and then they will be looking for the other kinds of benefits that I have explained. I feel that in a way the CER bit misses the opportunity there is for the market to drive quality, and we know that markets do drive quality in some areas. You only have to look at safety for example. We know that safety in vehicles is driven by markets. Similarly here, we believe the quality of the offerings will be driven by a market which is able to have a certain amount of diversity and is able to pick the best.

Q113 David Howarth: Could I ask each of you a question to clarify what you have already said. Professor Murlis, you have mentioned the FSA a couple of times as a model but you have also talked about other ways of doing regulation. I am just wondering what your preferred model would be? What sort of body are you talking about? Who would pay for an independent regulatory body? Are you thinking about the industry paying for it or the state paying for it? Who would supervise it? Who would audit it? Who would regulate the regulator in effect?
Professor Murlis: As in the case of the FSA, if there were to be a regulatory apparatus, in the end it would (rather like the Environment Agency) fall to a degree on the industry because of course there would be a process of certification. I know that although the Environment Agency gets a certain amount of grant-in-aid, it also is expected to recover regulatory costs. It seems entirely appropriate that it should do so and I do not think there is a problem about that, that is perfectly well understood. I think also to have a regulator that is the guardian of these big principles is what is important, so they would be able to say here is a company which first of all is correct financially (as all our companies have to be) but also their offerings as they are expressed are correct, that it is a company that has the reputation and would attract accreditation and is able to meet the general standards and then there are the instruments that the company is dealing in as well. I think that Mike has made the distinction between companies being accredited and instruments being accredited. We note in the financial area that there are many instruments out there that the FSA does not accredit, for example deed reversionary mortgages, which I am sure you have seen from your postbag have been quite troublesome. Those are not regulated and companies are obliged to say "this is not regulated by the FSA" and then it is really for the consumer to take a judgment as to whether they want them or not. That is quite a reasonable pattern for us to look at.

Q114 David Howarth: Mr Mason, you might want to comment on that point as well but can I ask you a separate clarification point, which has just been raised in a way. I am not quite understanding what you are saying about the distinction between regulating projects and regulating providers. Presumably you would agree that both need to be regulated because of the additionality problem that Dr Turner raised for example and that goes more to the project than to the provider. Are you saying that we simply need to be aware that they need to be regulated in different ways and do you envisage separate regulatory bodies doing this or would it all be done under one roof?
Mr Mason: There is no need for separate regulatory bodies. I think that the Defra consultation really only envisages the regulation of the instrument, the emission reduction in tonne, and it envisages doing that by getting it certified by the United Nations, which conveniently avoids inventing a new regulatory agency. It avoids the need to regulate the organisation because it is a delivered tonne. In other words, there is no uncertainty; either you get the certificate or you do not get the certificate. If you do not get the certificate it is flawed, if you do get the certificate you have got it. If we are going to move from a restrictive to an enabling regime, then we have to have companies there who are, in effect, promising to do something for you rather than giving you a certificate to say they have done it. If I am promising to do something for you, you have to have some faith in my promise, so not only what I do has to be regulated, the instrument, but you have to have faith in me actually being able to deliver that and making up the shortfall. Projects in the developing world are risky, they go wrong, tonnages do not appear, costs over run, corruption happens, all sorts of things, and what you have to do is to have a methodology, an approach and a resource base which lets you say, "I am going to give you a tonne of emissions reduction regardless of what happens in this project." For example, we take on risk in-house, we run a portfolio which gives us portfolio diversity, so some projects do better, some do worse, and we have a strategy for managing risk which is explicit and we set it in the public domain. I believe everybody should do that and should have that strategy scrutinised, just like a pension fund, and there should be some rules as to what you can and cannot do in terms of taking on risk.

Q115 David Howarth: But how does the regulator of the instrument know that what you are saying about your guarantee to deliver is true without actually going to see the project? That is the point I am trying to get at.
Professor Murlis: It is the procedures. In the same way the Environment Agency has to give a certificate to a company that says that it is going to achieve a certain emissions performance that is the way it works. In fact, what happens as you know under integrated pollution

controls, is that the regime is such that it is up to the applicant to explain how it is going to achieve what it is expected to achieve. In the same way I am assuming that a regulator would expect a company to come along and say, "This is our procedure for ensuring that it all happens, which we will put in place."

Q116 David Howarth: That is a purely paper exercise. There has to be some capacity to audit a sample at least.
Mr Mason: Let us just look at these two things separately. If we put up a wind farm in India, the first thing we do is we create a project design document and that sets out what the project is going to do, how it is going to do it, why it is additional, what is going to happen to leakage, what is going to happen to local communities, and so on and so forth, and projects what those savings will be, so we write one of these. We then employ what is known in the jargon as a DOE—a designated operational entity—and these are consultancy firms appointed by the UN and we use these for the voluntary market as much as for the compliance market. They are not allowed to have a principal interest in any emissions reduction project and their job is to go and kick the tyres on the project, visit it, check it and all the rest of it, and say what they have written in the PDD is real and this is truly additional tonnage. The third step is we then have to have them go and verify by reading the electricity meter and saying that it has happened. That deals with the project and the mechanisms for doing that are in place and do not need fundamental change. They are UN mechanisms and we would go with those all the way along. What I am adding to that is an assessment of the organisation so you come to Climate Care and we say, "We have got this project and we are going to put this wind farm up in India," and all the rest of it, but the wind does not blow quite as much so we do not get as many turns on the meter and, hey presto, we are short of tonnes. However, I have promised you that I am going to sell you 100,000 tonnes and I might have paid for this turbine upfront and it has not delivered quite enough, so I now have a liability to go and source those emissions reductions from somewhere else. There are two or three ways you can do that. You can do it by insurance, and we are talking to one of the big insurers who expressed an interest in taking a position on this. You can do it by just having a big balance sheet, so I have £1 billion in the bank so if I am short I will go and buy some out in the market place. Or you can do it with a portfolio, so we say for example if you buy a tonne of offset from us you do not buy it from that project, you buy a tonne of emissions reduction and in our portfolio we have 10 projects and our job is to make sure that the portfolio as a whole delivers, and that gives us a huge amount more diversity than just having a single project.

Q117 Dr Turner: It also presents lots of opportunity for double counting.
Mr Mason: For that there is no question that what we do need is a public, transparent registry and I do not think there is any credible player in the industry who would argue otherwise. I would go further and say that we are prepared to fund it, in fact we are prepared to write it and put it in the public domain. We should not see this as an obstacle. Writing a registry is a piece of software, it is not difficult, it has been done before.
Chairman: On that happy note of harmony we will bring it to an end because we are running over time. There were a number of other issues that we had planned to raise with you and if you agreeable we will write to you with some further questions.

Q118 Mark Lazarowicz: Could I ask one brief question, just to clarify; in your accounting for carbon savings, do you operate the principle that a tonne of carbon saved in 100 years' time is of the same value as a tonne saved today?
Mr Mason: We do not do any carbon in 100 years' time.

Q119 Mark Lazarowicz: Whenever you do.
Professor Murlis: Over the project period there will be an amount of saving but that project period typically will be fairly short.
Mr Mason: It is a very short question with a very, very long answer.

Q120 Mark Lazarowicz: Perhaps you would send us the full answer.
Mr Mason: The technical reason is that discounting in this context is the triumph of numeracy over common sense. It makes you feel you have done something but there is no rational algorithm for working out what you should be doing and why you should be doing it because of the anomalies in the climate system. I am very happy to respond on that more fully but it is a fundamental issue.
Mark Lazarowicz: If it is a fundamental issue, it would be helpful to have that information.

Q121 Chairman: Related to the first answer, what is the longest period for your schemes? You said you did it over a period; do you have schemes that go on for longer than 10 years, for example?
Mr Mason: We have one. When we started, just like my colleague here, we started in the forestry game and we have one project which is a rainforest restoration project in Western Uganda which will be about five% of our total turnover over this year. It is rapidly falling away but people love it unfortunately, and there is this permanent tension between selling what people want and selling—

Q122 Mark Lazarowicz: Leaving that aside, what is the longest?
Mr Mason: Apart from that, seven years.

Q123 Mr Lazarowicz: Is that also true for the CarbonNeutral Company?
Professor Murlis: I will need to ask my colleagues and come back to you on that because I just do not know.
Mr Mason: The average will be five to seven years.
Chairman: Thank you very much for coming. It was a very useful and interesting session. As I say, we will pursue one or two other points in writing.

Memorandum submitted by Energy for Sustainable Development (ESD) and the Edinburgh Centre for Carbon Management (ECCM)

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

No: ESD believes that transparency, not prescription should be the key to shaping effective voluntary offsetting and other voluntary actions. We are concerned about potential confusion and negative consequences that might arise from combining initiatives for voluntary action with regulated emission markets.

(1) DEFRA's proposed linking of voluntary and regulated carbon offset markets will create confusion leading to weaker regulatory frameworks. The government's main role in carbon markets should be the strict allocation of compliance instruments to regulated entities. If the government also uses public funds to buy back GHG instruments for offset purposes, and if it expects business and the public to tighten the market through their own offsetting initiatives there is a danger that this will lead to calls by business for greater allocations. There is also the question of whether it is a good use of public money to purchase GHG instruments that have been allocated to regulated businesses.

(2) The potential for negative impact on existing standards currently under development.There are already several NGOs and industry groups working on schemes for international harmonisation and standards for voluntary sector projects. These initiatives should be encouraged, and one or more could be endorsed by the government, but there is no need for an additional standard to be added to the numerous ones already under development.

(3) The potential for hindering innovation and development in voluntary and regulatory standards for carbon projects. Currently the voluntary markets are providing projects for a number of different types of consumers, and are being developed to work slightly differently in different regions / parts of the world. This has encouraged diversity of approaches that can act as a testing and/or training ground for future regulatory models. It would be a waste to stifle this diversity and innovation by turning the voluntary market into a regulatory one.

(4) The probable outcome will be to reduce support for offset projects that have high poverty reduction benefits or other sustainable development benefits. These types of projects are generally more difficult to verify and assess in a precise way, but are eminently suitable for voluntary public and corporate support, so long as customers are aware of the risks and uncertainties.

(5) There is little clarity on what the UK government or the EU's mandate is to intervene in on voluntary actions. The government does not vet the effectiveness of aid donations, medical charities, or ethical investments—so it is unclear as to why they would see the need to intervene here. Would these governments not be better placed to use any additional resources to regulate sectors that are better served through government action? Examples include: aviation, public transport, energy efficiency in building/appliances etc.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

If offsetting is mandatory it is no longer voluntary—it becomes a regulation or tax on activities such as flying. In this case it would be sensible to apply regulated emission certificates and include this as a formal part of the EUETS.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

The clarity and accuracy of information provided to the public about carbon offset schemes is highly variable. We recommend the development of more standard classification of different types of offset offerings and better provision of supporting information.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

Current science can provide approximate estimates (20%) of the long-term carbon benefits from forestry and other land use activities (IPCC). However, individual projects cannot guarantee long-term performance. As long as purchasers or investors in forestry activities are aware of the margins of error and the risks associated with long-term delivery they should be free to support such activities. Some offset providers provide insurance or replacement guarantees that provide additional levels of assurance.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

Firstly it is important to determine what the goals of voluntary offsetting are, and then determine which level of information about a project is required. One reason why carbon offsetting excites so much debate is that offsetting means different things to different people and organisations. Here are three alternative definitions:

"Cancelling or neutralising my emissions"

- Implies an expectation that the act of offsetting fully cancels out GHG emissions associated with my actions.
- Implies that responsibility or guilt related to personal environmental impacts that may be resolved or absolved through compensatory action.
- May be interpreted as "I no longer need to worry about my emissions because I have offset them".

"Doing something to compensate for the effect of my emissions"

- Implies offsetting action may be approximate or partial in its effect
- Implies acceptance that my actions have an effect and that by supporting actions to reduce emissions, I am doing something positive about it.
- Does not suggest absolution from guilt or responsibility.

"Helping or co-operating with others to reduce emissions"

- Simply an extension of my personal efforts to reduce emissions.
- Implies that whether or not I reduce my own emissions, I can do some good by helping others to reduce emissions.
- Do not expect offset action to absolve any guilt or responsibility.

There are very few offset projects that can provide an absolute guarantee of carbon mitigation benefits. Those that are able to provide a strong guarantee are often less "additional"—less in need of financial support to achieve those benefits.

However, if a customer's aim is to achieve an approximate compensation or simply to co-operate with international efforts to reduce GHG emissions there may not be a need to provide an absolute guarantee. Analogies include:

- Pension schemes or share investments do not generally guarantee a certain level of return.
- Poverty reduction or environmental charities do not guarantee specific levels of social and environmental benefit.

In our view the customer should be provided with information of sufficient quality to be able to determine what it is they are supporting and how likely the activity is to succeed.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

The voluntary market if allowed to grow organically, and not regulated as is proposed above, will play two important roles in enhancing and complementing the compliance market:

(1) As outlined under the first question, voluntary markets can play a critical role in acting as a testing and/or training ground for future potential regulatory models/systems.

(2) The voluntary markets will play a critical role in engaging and educating individuals, and allowing them to participate in carbon markets. Governments at the federal or regional level are probably least suited to provide mechanisms for individuals to reduce their carbon footprints, and so voluntary markets play—and will continue to play—an invaluable role in this space.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

It should be recognised that the voluntary carbon market is very young and still very small (the UK voluntary carbon market is estimated at about £20 million per year.

There is little publicly available information on consumer understanding of climate change and the importance of carbon mitigation, but what proprietary research has been done shows that there is a great deal of confusion in the US and UK on both issues. One study by Halifax Travel Insurance showed that 10% of Britons would consider making a financial donation to offset their travel carbon emissions, and that the same percentage were prepared to fly less to reduce the impact on the environment. Those who are willing to change their carbon behavior MAY be the same as those who are purchasing offsets—but in order to get a clearer picture of public awareness and willingness to make behavior changes—further publicly funded research in this area would be invaluable.

In terms of corporates, one would assume that it would make business sense (in terms of cost savings) to first address and reduce the internal carbon footprint prior to embarking on an overall carbon neutral/ carbon offset strategy, and in the UK the majority of companies that are looking to offset some of their carbon emissions have also taken steps to identify, monitor, and mitigate their overall carbon footprint. However, more study into corporate behavior in this area would also be useful, and this type of publicly available research would be very valuable to the market.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

There is a great deal of variation. Some offset companies are providing projects that are virtually identical to compliance CDM or JI projects, but in countries or situations where formal compliance is not possible. Some companies are providing projects that have very strong poverty reduction or local environmental benefits with less accurate or less certain GHG benefits.

January 2007

Memorandum submitted by The Co-operative Group

1. Introduction

1.1 The Co-operative Group is one of the largest consumer co-operatives in the world, with revenue of £7.4 billion and assets of over £41 billion in 2005. The Co-operative Group operates significant food retail, insurance, banking, funeral, pharmacy, travel and farming businesses, and employs over 68,000 people.

1.2 The Co-operative Group—and its family of businesses including Co-operative Financial Services—has pioneered a number of renewable energy initiatives as part of a focus on climate change:

- 98% of our electricity is purchased from good quality renewable energy sources (exclusively wind, hydro and biomass), making it one of the largest purchasers of green electricity in the UK. This delivers annual savings of 300,000 tonnes of CO_2 per annum.
- The UK's largest photovoltaic and micro-wind power installations are on two of our Head Office buildings in central Manchester.
- We opened an eight turbine,16MW wind farm built on our own farmland at Coldham, Cambridgeshire in summer 2006 and will be submitting a further scheme for planning consideration in 2007.
- In 2003 Co-operative Insurance (CIS) became the first institutional property investor to transfer all contracts for its £2 billion investment property portfolio to green electricity.
- An energy efficiency strategy has been formally endorsed with the target of reducing energy consumption by 25% (based on 2005 levels) by 2012.

1.3 The CIS Ethical Engagement Policy commits Co-operative Insurance to encouraging investors to reduce their reliance on fossil fuels and to increase their usage of renewable energies and energy efficiency. The Bank's Ethical Policy includes a commitment not to invest in businesses that are considered to be integral to the extraction and/or production of fossil fuels. As such, we see the Co-operative Group, our members and customers as being at the forefront of tackling the effects of climate change.

2. Carbon Offsetting

2.1 The Co-operative Group has been involved in the voluntary emissions reduction (VER) market since 2000. Offset features are now part of Co-operative Bank mortgages (offsets represent 20% of an average UK household's CO_2 emissions), Co-operative Insurance Eco-insurance (20% of CO_2 emissions from an average UK car's annual mileage) and via Co-operative Travelcare (customers can now buy offsets at nearly four hundred branches across the country). By the end of 2006, the Group had funded over 250,000 tonnes of CO_2 offset. To date, we have been working with Climate Care to deliver all of our offsetting. The bulk of this has been through the following projects in developing countries:

- Reforestation (Uganda).
- Wind turbines and biogas digesters (India).
- Household energy efficiency (Pakistan).
- Energy efficient stoves (Madagascar and Bangladesh).

2.2 In early 2007, the Co-operative Group will become the first food retailer in the UK to sell offsets through its shops (some 1,700). Our financial services business also plans to go "carbon neutral" and will be using offsetting to counter the carbon dioxide emissions remaining after its purchase of electricity from renewable sources and the implementation of renewables and energy efficiency measures. The Group expects

to see a considerable growth in demand for offset products from its customers in 2007 due to rising consumer awareness of climate change. We see offsetting as an important part of the solution to climate change, rather than a panacea.

2.3 DEFRA has launched a consultation on its proposals for the voluntary carbon market. The Group is supportive of DEFRA's broad objectives. However, we have concerns about the content and direction of the consultation and will be submitting evidence to this consultation separately.

2.4 There are similarities between the DEFRA consultation and the terms of reference in this inquiry and as such, the Co-operative Group would like to take this opportunity to set out its broad position on offsetting:

— We believe that a strong and common voluntary market standard is vital, with due attention given to the rigour of monitoring and verification and to the key issues of additionality, permanence, double counting and leakage.

— However, we do not agree that the Clean Development Mechanism or EU Emission Trading Scheme models should be the sole basis for verifying and accrediting voluntary offsetting schemes. DEFRA's consultation suggests that the Government is in effect trying to signal the end of experimentation in the VER market, through the consolidation of VERs into Certified Emissions Reductions (CERs), at a time when:

  (a) the VER market is growing healthily and producing good sustainability benefits (as acknowledged in DEFRA's consultation); and

  (b) the compliance market itself is fraught with methodological inconsistencies and controversy.

  This, we strongly believe, will not enhance but damage confidence in the market.

2.5 This memorandum will set out the case that there are substantial benefits in building upon the strengths of the voluntary offset market rather than aiming for a "one-size-fits-all" compliance methodology. We will focus on the sustainability of existing schemes and how such successes can be built upon to continue to provide strong reliable offsetting options for our customers, without a need to negate this through mandatory accreditation.

3. Limitations of Compulsory/Accredited Carbon Offset Schemes

3.1 *Problems with exclusive reliance on regulated markets*

3.1.1 The Co-operative Group believes that compulsory exclusive reliance on regulated markets would be problematic and to the detriment of the positive impact this is steadily building through offsetting. We have identified a number of problems in applying the mechanisms of the regulated market for offsetting (such as the Clean Development Mechanism (CDM) or EU Emissions Trading Scheme (EU ETS)) to the voluntary market. These include broadly:

— the impact that that this will have when switching funding from small scale, community projects that have additional social and biodiversity benefits,

— difficulties that have been encountered in accrediting re/afforestation projections to CDM (currently only one forestry project is CDM accredited), suggesting that re/afforestation would be disadvantaged going forward; and

— the very small number of CDM projects being undertaken in Africa, suggesting that a requirement for CDM type accreditation for voluntary schemes would hinder development of further projects on the continent.

3.2 *EU Emission Trading Scheme (ETS) model*

3.2.1 The Co-operative Group retains serious doubts over the incorporation of EU Allowances (EUAs) from the EU ETS as a means of offsetting. As a cap-and-trade scheme, the EU ETS's success relies on the allocation of allowances by each country to incentivise adequate investment. Yet a lack of symmetry in the use of information between both emitters and governments, has produced weak objectives out of line with climate change targets and casts doubt on the legitimacy of the allocations.

3.2.2 Pushing consumers into the regulated market will create problems. For example, using the EU ETS model will involve the transfer of money from individuals and households to the 12,000 or so industrial installations across Europe participating within the scheme. This would provide ample opportunity for the media to point out that, in effect, the well-intentioned charitable donations of UK working families were ending up in the coffers of big European companies' who were selling pollution permits. Such developments would result in greater levels of cynicism over the benefits of offsetting and therefore significantly damage consumer confidence.

3.3 *Clean Development Mechanism*

3.3.1 Within the CDM, a number of design and procedural issues have led to failings in key areas:

- Without certainty that the CDM will exist beyond 2012, it is possible that future emission reductions will never attain certification. The absence of a long-term commitment to CDM has deterred investment, negatively impacting on any projects with long paybacks beyond 2012.
- This particularly impacts upon smaller projects which have high proportionate transaction costs, and often rely on long paybacks as a consequence.
- Projects with significant risk of delay in delivery past 2012, often in the less developed areas where infrastructure and resources are weak, are also significantly affected.
- Despite sustainable development being one of the mechanism's two stated objectives, arguably, projects with such attributes are not being delivered.
- Consumer perceptions of mainly large and industrial CDM projects are likely to adversely affect consumer demand for offsetting once consumers understand exactly where their monies are going.
- The failure to incorporate sustainable development benefits adequately is nowhere more obvious than in Africa, where less than 1% of CERs originate.[11]

3.3.2 This situation is the result of a number of inadequacies in the CDM set-up: issues and emerging trends which the International Emissions Trading Association considers to "threaten the continued viability of the Mechanism". There is, in particular, a lack of technical competence and institutional uncertainty with reference to the key concept of non-renewable biomass, where there is still no approval methodology. This is a critical concept for projects (often using biogas digesters and cookstoves) in the least developed countries, which can be closer to the ideal of the CDM than many of the prevalent project types.

4. Consumer Issues

4.1 The Co-operative Group agrees that it is important that clear and appropriate information is available for purchasers of offsets. However it is important that future recommendations do not go far beyond what is expected of other, comparable sectors. For example, green electricity suppliers are not expected to state exactly which generation site supplies each end-consumer but can point to a portfolio of projects. Furthermore, a supplier of an AAA rated domestic fridge would not be expected to demonstrate what proportion of its product's sale price is attributable to overheads and profit. In the same way, offset providers should not be required to disclose this information and further should not have to link the sale of every tonne of CO_2 to a specific project at the point of sale. Operationally, it is impossible to designate the exact offset project that will be the recipient of all funding streams given the vagaries of sales.

4.2 Partial regulatory assessment of the offset market as suggested by the DEFRA consultation would indicate a failure to fully understand the retail market for carbon offsets. We would clearly anticipate a decrease in consumer demand stemming from the projected rise in price (from £7.50 tonne of CO_2 to £16.90 tonne of CO_2) should the VER market be pushed towards the compliance market, yet the regulatory assessment in the DEFRA consultation suggests that compliance would increase off-set take-up by 100% to counter the price hike. No evidence for this scenario is provided and overall, such a move may in itself damage consumer confidence when consumers realise they are in effect subsidising "corporations" in many instances.

Guaranteeing accurate data eg a more robust calculation of CO_2 savings

4.3 The Co-operative Group welcomes proposals for the introduction of a carbon calculator for householders. We would also welcome guidance from Government on consistent ways to calculate business emissions through the development of a comprehensive emissions database. This would be of great benefit in ensuring that all offset providers are calculating levels of CO_2 to be offset in the same way and that the variation currently seen (that have resulted in bad publicity for offsetting) is avoided.

5. Benefits of the Voluntary Carbon Market

5.1 Beyond addressing failures within the compliance markets, the voluntary market also offers huge value as an innovative sector with an increasing capacity. The market's flexibility allows it to act as a pioneer in developing and refining methodologies and addressing new project types that can eventually be submitted into the compliance market. In this way the voluntary market is of great benefit to the compliance market, through its ability to act as a learning ground and to expand the scope and practices of the market.

5.2 If offsets are to succeed, they must work for consumers. Voluntary demand is currently focused on a "valued-added model",[12] which centres around additional sustainable development benefits. However, the compliance market tends to produce more emission reduction "commodities" which do not match these

[11] IETA (2006), 2006 *State of the CDM*. [Online] Available from: http://www.ieta.org/ieta/www/pages/getfile.php?docID = 1931

[12] Bayon, R; Hawn, A and Hamilton, K (2006 p 102–103) *Voluntary Carbon markets: An International Business Guide to What They Are and How They Work*. Earthscan, London, UK.

voluntary market preferences. Attempts to shift the voluntary offset market towards the large-scale, industrial projects that are prevalent within CDM and EU ETS therefore goes completely against customers purchasing motivations.

5.3 Perhaps the greatest benefit of the voluntary market is that it achieves CO_2 savings in addition to those achieved under the Kyoto protocol. This guarantees to consumers that their offsetting goes above and beyond what is legally required of governments and industry. At best, incorporating voluntary offsetting into the world of CDM or EU ETS could cloud this distinction in the minds of consumers. At worst, it could lead to fraudulent double counting of CERs and EUAs.

5.4 The innovation led by companies such as Climate Care has created a sustainable model of voluntary schemes, which adapts to the needs of the customer and offers all parties transparency and clarity. In order for this innovation to continue, robust common standards should be encouraged throughout the voluntary market and are a sensible recommendation for the Committee. The proposal by the government for a standard based around CDM and EU ETS certified credits, would be less effective and will shoehorn the voluntary market into an unnecessary framework without any tangible benefits for consumers.

January 2007

Witnesses: **Ms Shelagh Whitley,** Senior Consultant, Energy for Sustainable Development; **Mr Matthew Brander,** Project Team Member, Edinburgh, The Edinburgh Centre for Carbon Management, and **Mr Paul Monaghan,** Head of Ethics, The Co-operative Group, gave evidence.

Q124 Chairman: Good morning and thank you for coming in. I think you have probably heard most of the previous exchange. Could I start with the same sort of general question about what you think the role of the voluntary offset market should be in terms of Britain's overall response and our strategy on climate change more generally?

Mr Monaghan: We have heard some debate from the carbon offset providers to say that we should begin with carbon offset and we have heard submissions from the likes of the Carbon Trust that it should be the last thing people should do. The way we have always approached it is that it should be done in parallel because to leave it to the end probably means waiting 50 years. To take as an example, the Carbon Trust say when you address all your emissions do not do offsets until you have addressed all your direct and indirect emissions, and that means your supply chain. If you wait until you have addressed your supply chain you are talking 25 or 30 years. Look at Tesco: Tesco said they would put carbon labelling on their products. What they have actually said is that they will put money into research for three to five years and then consider the output and then think about it, so you are talking about five to seven years before you even see the labelling emerging before the carbon reductions take place. You have to have carbon reduction in parallel to energy efficiency, in our opinion. We say that as someone where arguably no corporate has done more on climate change than ourselves. In addition to the things we have put in our submission, we have just announced a £1 million investment in renewables for schools, we have announced money going into the creation of secondary workers' co-ops for biomass, we have announced all new format stores rolling out with voltage optimisation as a standard consideration. We are saying as well as all that you need carbon offset now. To me it is a bit of a common sense position and that applies whether you are a corporate or an individual.

Ms Whitley: I would agree with that in terms of the fact that both activities have to happen—real in-house reductions on the part of corporates and real individual reductions—at the same time as offsetting. Also, if you are thinking about it in terms of long timescales, there are a lot of measures that can be taken now that are cost-effective that both companies and individuals can be taking and there are long-term policy frameworks, and we know that there are a lot of technologies that will not be cost effective until quite a long way away in terms of carbon capture and storage and other major technologies that we think will be needed to have deep reductions, and offsetting plays a role in between those immediate actions that we can take and the long-term actions that we can take, both in terms of allowing individuals and sectors to take actions that they are not able to through existing regulation and also for technologies to be disseminated to countries that may not have access to them now. There are a lot of technologies that exist and are more common practice in the developed world which can be disseminated to the developing world through offsetting. A lot of that will be in the next 10 to 20 years when the big technology solutions have not been resolved yet; offsetting will play a role there.

Mr Brander: One thing I wanted to add, when you posed the question to the last panel it was in terms of the UK climate change programme and I just wanted to bring that up on a point of clarity. In terms of meeting the 12.5% obligation, the voluntary offset market is additional to that. Most of the projects that are funded by the voluntary offset market are outside of the UK and so are on top of that 12.5% target. I guess there are two things from that. It does not contribute to meeting the UK climate change programme target of 12.5% but it is a positive step in addressing global emissions.

Q125 Chairman: Following on from that point, how do you respond to the criticism, as we discussed in the previous session, that it validates people's polluting behaviour and people will buy the offsets and go on polluting?

Mr Monaghan: Can I say I do not think there is any evidence for that anywhere. I think it is one of those things that gets said and there is no evidence offered. We have heard people here previously talk about how there is counter-evidence to that. At the Co-op we have been tracking ethical consumers probably more than anyone over the years and we have produced the ethical purchasing index. The two things I would observe from that is that when we heard all the stats before how much the two businesses were growing here they never told you the absolute numbers, it was all about percentages. The sales to the personal sector in the UK are really tiny. The big growth is to corporates, it is to people like Marks & Spencer and HSBC who offset their operations. The growth to the personal sector is tiny. It is growing but it is tiny and I know that to be a fact. One of the things that worries me about some of the tone of the debates is the proportionality; regulation should be proportionate. I would suggest to you that the numbers of individuals who buy carbon offset in this country, the market for that is probably £2 to £3 million in terms of worth in the UK. That is not a big nut to consider. One of the things I would say from the Co-op is that we have been very good at kick-starting ethical consumers in certain markets and then when the big boys come along we tend to fall away and that is bad for us but it is good for society. If you take something like the Forestry Stewardship Council or Fair Trade, when they were set up there were lots of competing standards around for what was essentially sound sourcing and sustainable forestry, and then over time the NGOs came out with a standard. There was Fair Trade and the Forestry Stewardship Council. Then industry came up with their own standards and the different standards were all competing. We only reached that situation with the carbon offset market in late in 2006 when we had the Climate Group, which is essentially business providers, saying here is our standard. We have the gold standard which is the NGO standard, which is a tougher standard, and then we have offset industry itself coming up with its own little standards quite soon and then we have the Government coming in now with a potential standard. I would suggest if the Government came in seven years ago to the FSC debate or the Fair Trade debate it would have been counter-productive and I have a feeling if we let competing standards play their way through the market, like we have in other areas, we will see the cream come to the top and I would probably suggest it is the gold standard. One of the reasons we are having this debate is that the gold standard has not been out there long enough to have all the providers demand it as a way through. If we look at the gold standard, we have only got, the last I saw, anything between 10 and 15 signed-off projects in it, but they have got a pipeline of nearly 200 coming through because what is happening is people are now saying we need this. I think that all the projections that are taking place in the personal sector will not take place if a lot of the negative media coverage we have seen for carbon offset continues. I think it will kill the market and even the Government standard will not help with many of the problems with CDM such as the over-reliance on HFC 23, and all the debate that is going around that will kill it.

Q126 Chairman: The different stage which this market is at at the moment, though, there is nothing inherently unhealthy about having more than one standard kicking around. The Climate Group would argue that what they are proposing through the VCS is better than having nothing and in a sense it is up it the buyer to demand how robust the integrity of the schemes they are investing in is.

Mr Monaghan: From my perspective I have been buying offset since 2000 and for a long time until 2006 we were probably one of the biggest purchasers of carbon offset in the UK. There were no standards for us to work towards. What became necessary was when our primary provider, which was Climate Care, provided us with projects, we would choose the project and we would visit, so I spent last week for example in Uganda and the reforestation project in Kibale not just checking on the deforestation aspects but also the social aspects of the communities around those projects. The other thing that worries me slightly about some of this is a bit like the "food miles" debate which is very related, where we have seen Defra in many instances welcome Tesco and M&S and others saying they will reduce the amount of air freight coming into the country from two% to one% or whatever, and then we have seen a reaction from DfID which is, "Hang on a minute, that is cutting off exports from the likes of Kenya," and the whole debate has become a polemic in the space of something like two months. I feel that same has happened with the carbon offset debate. It is great that everybody is into carbon now and climate change, et cetera, but it is happening in many ways a little bit too fast, and we are all rushing around putting regulations on carbon offset that are not even being considered for things like micro generation. I sit on the Building Research Establishment's Sustainability Group and I am aware of all the claims that are out there that solar panels work on moonlight which are being marketed in this country right now. Passive solar has been around for 30 years and we are not talking about standards for passive solar but we are for carbon offset, even though the passive solar market to the personal sector is probably 50 times what the carbon market is in the UK, so it is a proportionality question in this whole debate; can we allow the varying standards emerging at the back end of 2006 some time to play out and see which way this goes. They are the people who know and ultimately the consumer will be king. Do not worry about the corporates looking after themselves. The corporates will do their own due diligence on products; I can guarantee that.

Q127 Chairman: That point is very well made. What do you think of the Environment Agency's decision? They have calculated what their footprint is and they have said they are going to put that money into a carbon reduction fund. Do you think that is a smart thing to do?

Mr Monaghan: Bonkers. I just do not understand the philosophical position. If what they are saying is you only do offset for the things after you have done everything else, implicit in that is that you have not done everything else because if you are creating a pot of money to do further energy savings, I guess they are setting a payback period of two or three years hypothetically for investment and what they are saying is, "Ah, we will create another pot of money if it goes to three and a half years we will invest in it." These are hypothetical decisions. I think that is about the Environment Agency being scared to buy third party carbon offset. That is what that is about.

Q128 Dr Turner: Ms Whitley and Mr Brander, you say in your submission that you believe the voluntary market will play a critical role in engaging and educating individuals about the carbon market. The RSPB do not entirely agree with that and they told us last week they were worried that the carbon offsets currently do quite the opposite of this, and that is certainly my personal experience of what people think when they talk to me about carbon offsets. They actually believe that when they buy carbon offsets they are directly reducing emissions whereas in fact that is not strictly the case at all. So how do you reconcile this with your own view of what work needs to be done to create public awareness of what carbon offsets actually mean in practice?
Ms Whitley: That is a point I was going to bring up because I think that in terms of a role that government can play there is a very wide variety in terms of carbon offset providers in terms of what information you can get about projects. You can get basic facts both about climate change and also about project accounting—future value accounting—which is an area that was touched on earlier. There is a potential role, perhaps not a regulatory role but some kind of educational role that government can play in terms of either requiring or asking retail offset providers to give that information. There was a study done by an NGO called Clean Air Cool Planet in the north-eastern US which did not rank offset providers but did a top 10 list and gave a comparison of one against the other. The main areas that it focused on was information provision of projects and information in terms of education on climate change. It is an important role that offset providers can play. It does not necessarily need to be regulated but it is something that could be asked of them. I think in terms of consumer awareness of the reductions that are achieved by offsets, it is a difficult point, and that is where it seems as though the Government is looking to leapfrog over a lot of areas. There is a real lack of understanding of the basic issue of climate change among the general public. There is a lack of understanding of carbon, carbon markets, what offset is, and it is a very small segment that are choosing to buy offsets and I would say they are probably quite a well-educated section of society in terms of carbon but there is a wide swathe of people—and there has been market research done—where there is very little understanding of the issue of climate change, and I think getting that understanding in place before looking to regulate the offset market is critical and also if the Government is thinking of personal carbon allowances or other forms of regulation that type of baseline education is going to be critical as well.

Q129 Dr Turner: Do you want to add to that, Mr Brander? Do you think your organisation should be contributing to this process a little more?
Mr Brander: One thing that ECCM does is build carbon calculators—and you will see them on things like the Sky web site and on the BP web site—where people can go on and put in details of their activities and they are given a quantification of their CO_2 emissions. Obviously offset companies use similar things to educate people about how much they are emitting and how much they may want to offset. Five years ago no-one really knew and generally a household would have no conception of how many tonnes of CO_2 they produced per year. Tools like that help people look at where emissions are coming from and build on carbon numeracy. Who knows, maybe in 10 years' time people will know the carbon cost of their activities in the same way that they know their monetary cost.

Q130 Dr Turner: Mr Monaghan, your submission states that you plan to become the first food retailer in the UK to sell offsets through your shops. It makes a change from being asked whether you have got your dividend card.
Mr Monaghan: Yes.

Q131 Dr Turner: What steps are you going to take to ensure that the public actually understand what they are buying?
Mr Monaghan: Currently we have started to retail at the back end of 2006 carbon offsets in our travel agents. We started there because if there is one area where you want to start thinking it is air obviously. What we do as part of the normal sales process where people are sat in the office as opposed to over the Internet, where there is a face-to-face conversation, we have trained our staff now as people are talking about the sale, to talk about whether people are aware of carbon emissions (and given that they walked in the shop to buy a holiday it is highly unlikely they are going to walk back out of the shop based on that conversation) and would they consider offsetting the holiday. We have done that. We are also later in the year going to start retailing it in all our 3,000 food stores. In this sense it is a different sales environment and we are selling fridge magnets and we will be saying if you want to offset a typical basket of food produce for a year, we will create unique points of sale. All of this for us is experimental. I would say since we have been doing this since 2000 we have learned a lot. We have learned that at first our language was overly jargonistic and we were missing the consumer. We have missed them so many times over so many years it is unbelievable. It really is quite difficult to have this debate. Do not imagine there is this massive

personal carbon offset market in the UK because there is not. You heard it from the British Airways anecdote; the sales are tiny.

Q132 Dr Turner: You also say that you see offsetting as a part of the solution to climate change but not a panacea. Therefore does it follow that at the same time as selling offsets to your customers you will be giving guidance about actually reducing their own carbon footprints, and how important do you think that is?
Mr Monaghan: I think both are equally important. For me, it is not one or the other, it is about being in parallel. As we sell offsets, we discuss energy efficiency and in eco insurance we discuss about making sure your tyres are properly blown up. We discuss energy efficiency with mortgage customers and we have produced free energy surveys for example since 2000 for our customers. When people take a mortgage it advises them on different ways to reduce emissions and energy efficiency and there are energy efficiency loans. These are all part and parcel of the offset package. I would defend offsetting to the hilt. It strikes me the position we are in, the numbers, if we do need a 90% reduction by 2060, which we do, we cannot wait 20 years for everyone to get their houses in order and consider offset at the back end. I will be honest with you, I am running round in our business now finding things to offset to put more money into carbon offset programmes to suck CO_2 out of the air. All I am interested in is that. The climate is not bothered where the CO_2 reduction comes from; I just want to get that CO_2 out of the air and I want to get as much possible.

Q133 Mark Lazarowicz: Could I draw your attention to the Declaration of Members' Interests and support from the Co-operative Group. On that point about the timescale does not that emphasise the argument that the calculation of the carbon savings should be linked to the activity which causes the carbon consumption either before that event takes place or alongside it or at least within a very short period o time, because if we need action now there is no point in having carbon savings over a longer period, and certainly they need to be valued in such a way as reflects the fact that the savings are required at the time of the emissions and not a long way in the future.
Mr Monaghan: Yes where possible, the timescale should be as short as possible and ideally the consumer should know where the money goes in an ideal scenario.

Q134 Mark Lazarowicz: Is that not quite essential to the consumer making informed choices?
Mr Monaghan: I think it is impossible to deliver in every instance because if I as a purchaser come to Climate Care and say, "There is a hundred grand, each year and every year for three years and you know it is going to happen and I want you to tell me the projects," the number is big enough and the continuation of business is long enough for me to have quite a strong leverage in that relationship. However, if an individual consumer walks into one of my shops and says, "I will buy a £7 piece of carbon offset," there is no way in a supply chain one can allocate that to a specific project and to a specific timescale. As a principle, what you have just outlined should be the starting point to aim for and, to be honest with you, every consumer would want that as a starting point. They would like to see which project it was. I envisage a time when people do not just choose carbon providers, they choose projects, but the market is nowhere near where it needs to be in terms of scale to deliver that right now.

Q135 Chairman: Technically you could have a situation where you build up little shares in projects. If you are a consumer who has only got seven quid to spend and you are rather keen on wind farms in Mozambique, you could go in electronically and add seven pounds to that one, and someone else could come along and says they want to do something in the Asian Pacific. There is no technical reason why they should not do it, it is just we have not quite got there yet.
Mr Monaghan: For example, when we started retailing we are not taking any profit out of this. We are doing this because we really believe in the market and we are going to start retailing these things. What Climate Care and other providers say to me is, "How much carbon do you think these people are going to buy, so I can have a project ready?" and I have to say I do not know. I can project what I think they will do but I do not absolutely know what the sales will be in which part of the country and at what point of the year. Because of that when I market my carbon offset projects now through the Co-op we talk about what things have happened historically as an example of a project, not where the money will definitely be going because I could not guarantee that and, rightly, I would be up before trades descriptions if I start saying X will go to Y and it does not transpire. There is a logistical difficulty with promising things in the future as with anything in life.
Ms Whitley: The idea is to model the voluntary market on CDM and we work both in compliance and voluntary markets. In terms of the CDM projects a lot of the additionality proof is financial additionality and you prove financial additionality because you needed the potential revenue from carbon credits to finance the project so a lot of projects have bank loans or shareholder loans that are contingent upon the funding coming in from carbon credits that have not been produced, verified or issued. The only way that the project can start and be additional is if that money is there, so you almost have to have this future timescale between when the money is paid and when the emissions are issued in order to get that additionality proof. It is important to keep that in mind for the voluntary market as well.

Q136 Mark Lazarowicz: Okay, that is another issue.
Ms Whitley: The projects are quite similar in terms of the financing of the voluntary and compliance markets.

Q137 Mr Caton: We have had conflicting evidence about Defra's consultation proposals with regard to transparency of information. I think you have argued that they are too onerous and do not compare with others like green electricity or ethical investments. However, the majority of submissions we have received point to a lack of consumer clarity and say that better information would lead to increased consumer confidence in the market. Do consumers currently have enough information and would what be the best way to guarantee and maintain the quality of that information if not through the Defra code?

Mr Monaghan: I personally think it will be through the emergence, the cream rising to the top, of NGO standards. If you look at ethical consumerism, the consumers go for the standard backed by an expert charity related to that, so if it is testing animals it is BUAV, if it is organics, it is the Soil Association, if it is the Forestry Stewardship Council or Marine Stewardship Council, it is the World Wildlife Fund, et cetera, et cetera. I think what has happened now at the end of 2006 is the gold standard has emerged. It is backed by WWF, Friends of the Earth, Greenpeace, et cetera, and I know I am pushing round now with Climate Cares and others saying how many of my projects can be gold standard going forward. I will not be asking how many of my projects will be government standard. I will not be pursuing this Government standard under any circumstances if it is what it is, which is certified emissions reductions if it means I am propping up the EU Emissions Trading Scheme because the way I see it is that the EU Emissions Trading Scheme is wrong because I could easily save money by buying a tonne of carbon through the EU ETS. It is trading at about €1.50, and I am paying £6 right now roughly, which is the full corporate rate, to Climate Care to buy my carbon. I could save masses by going to EU ETS but I refuse to do so. One thing that worries me is if we are all forced into ETS and the CDM are we propping up a market which the bottom is going to fall out of quite soon? Never mind the individual projects that that market is supporting—€1.50, that is a quid a tonne.

Q138 Chairman: That is a problem in phase one but looking at the prices of phase two that problem is going to go away.

Mr Monaghan: The Government standard is supposed to be in place by September. What if we have a Government standard in September that says you are all going to ETS and CDM and the bottom falls out? This is a standard that is supposed to build consumer confidence. It has not been thought through.

Mr Brander: One thing we have become aware of is offset providers who are already offering the Government-compliant offset standards and offering phase one EUAs. Obviously someone in the market has moved quickly and they have said this is what the Government is endorsing and they are offering that to the market. An EUA now does not represent any kind of emissions reduction, there is a glut and industry broadly has too many.

Chairman: We will have something to say about that when we publish our report on the ETS.

Q139 David Howarth: Can I raise a couple of other factors that might affect consumer confidence and whether you think there needs to be regulation to offset those problems, as it were. The first is we were told last week by FERN that the average administrative cost of an offset company is 57% and only 43% of the funds actually go on to projects. Does that not raise the kind of problem that charities have when people learn that their administrative costs are high, that people then start to lose confidence in that charity? In fact, in a way, the whole offset market is a sort of charitable enterprise. It sells feeling good in exchange for giving money. Is there not a case for some regulation there—there is the 30% cap in Germany—or at least compulsory information?

Mr Monaghan: I think yes and we have argued in the past that we think carbon offset sales to the personal sector should be VAT exempt across the piece because we do think, by and large, it is a charitable purchase and it would send a signal to stimulate the market much more than any government standard would, to my mind. I would take anything that FERN said with a pinch of salt, to be honest. They are absolutely anti-offset, even good offset. There is good offset and bad offset and I think we are all probably against bad offset and some of us, hopefully, are for good offset; they are against offset per se. I cannot say where they have sourced those figures. They sound dubious to me. I personally think it is too early for regulation and I say that as somebody from a corporate that is normally out there calling for regulation. There was the whole company law review and the OFR and we were the ones arguing for mandatory disclosure of CO_2 emissions in the business review, et cetera and I am sat here before you saying for this market at this point in time it is the wrong point for regulation. I really believe that quite strongly. I think it could kill and confuse the market and would stop the experimentation and it would kill all the projects in Africa right away and Africa would disappear off the offset map.

Ms Whitley: I would say that is something to keep in mind. I think is transparency is very important; not regulation but encouraging transparency. So if you have a sense of the administrative cost that goes into different projects, the problem is that it is in small scale projects in countries like Africa that have higher administrative costs per tonne of carbon. You are dealing with doing rural surveys as opposed to going to one meter in a factory and taking reading, so your administrative costs per tonne are much higher. As a consumer, I might go into a market and say, "I don't care, I want a tonne of carbon, I want low administrative costs, I do not mind if there is an HFC credit, that is what I am going to buy." There are other consumers who want to do solar PV in a village in Tanzania and they will be happy to have a 50% administrative cost if they know that is what they are getting and that is what required. It is about transparency and

understanding and having consumers understand that sometimes those administrative costs are required in order to get these good projects done.

Q140 David Howarth: The other area is future value accounting, which you have already mentioned and Mr Lazarowicz has mentioned. Is there not a paradoxical effect of the Defra code that people will suddenly realise that this is what has been going on? I think it is generally accepted that consumers have no idea this is how the thing works. That itself might lead to a crisis of confidence about whether people are really getting offsetting or it is only something that might happen in the future, and we might find that is a situation that they would not like and that would then led to some kind of argument for some regulation around that?
Mr Monaghan: I do not think it needs regulation; I think it needs further consideration, and in the same way we have a discount in the finance all the time, which I am sure is where the idea is coming from, we probably do need discounting of carbon projects which are going into the future if only because of the risk. The longer the project is in the future before it reaches fruition there is more risk of something happening—political risk or technology risk, et cetera, and disrupting it. So it is something the industry needs to tackle and I would see it being tackled in a gold standard mark two because if you look at the Fair Trade standard, the Soil Association standard, the Forestry Stewardship Council, where we are now with those standards is not where we began; they have progressively toughened over time. I can see that coming in in a mark two.

Q141 David Howarth: How would that work for the time question? There is a whole range of possibilities on the time question. You could say, taking an extreme view, that only already produced savings count. That would be a very strict view. Then you could have instead of that it has got to be saving within N years and N could be any number between one and 100. How would you see that standard developing?
Mr Monaghan: Personally I believe there is a role for reforestation in carbon offset and it should be around the 20% mark given that 20% of climate change emissions are due to tropical deforestation. I also think, and I know this is RSPB's position, that the Climate Change Convention, the Kyoto Protocol should start from a baseline for developing countries of what their current forestry emissions are and subsequently committing them to a net that it does not go below because otherwise you have could have a situation where one national park is being deforested whilst another is being reforested. As a system there is no additionality and until we draw forestry in that is not going to happen. It can happen and I have seen it happen in Uganda and the RSPB and others are quietly involved in these projects because if you go to things like the Bigodi Wetlands National Reserve their logo is all over the project because of all the revenues and the wetlands and what is happening there. I do not think it is fair to expect the gold standard by the NGOs to deal with everything right away like you would not expect micro generation, et cetera. Again it is proportionality. I could not believe it when I saw mandatory regulation actually being actually discussed given the size of this market and given what I know to be the abuses in other markets, whether it is micro generation, the Forestry Stewardship Council, organics—there is a massive dispute over organic salmon and whether it is worth buying and nobody is talking about regulation.

Q142 David Howarth: Regulation has two functions. One function is to stop abuses that already exist and you are right the market is not very big and therefore abuses are perhaps not that great in impact. The other function of regulation is to get markets going so that people have enough confidence to enter the market in the first place. Those are the two points I was trying to raise, problems which might come up where regulation might help to keep the market going.
Mr Monaghan: I am not aware of an ethical market that is growing without the backing of the NGOs. It will not be the governments that make people believe in the market; it will be the NGOs. Government can say what it likes, that is the truth. Whether it is BSE or salmonella, it will be what the NGOs say. The NGOs are saying it is a gold standard. If this government standard comes out—I find it quite difficult to understand why we are in the place we are, to be honest, and I am assuming it is just because of the temperature of the debate around climate change right now that everybody is rushing to be busy. It needs sobriety and we need to stop and think where we are taking this market. It needs time to experiment and to grow.

Q143 Chairman: You also say that you think that a Defra standard would impact negatively on the existing standards that have been developed by NGOs and indeed by the industry. Does that characterise your position correctly?
Ms Whitley: I think the idea of trying to create a Defra standard as the de facto standard in the market, so promoting a mark and promoting to the public that it is the best offset product; that is a danger. The developing of a standard in itself is not a danger in that there are a number of standards already out there, as has been mentioned before. I do agree that it will become one of many standards and the consumer will choose which standard they want to go with, so in that way it will not be damaging, but I think if the Government were to put a lot of marketing and educational campaigning around this one standard that could be damaging.
Mr Brander: One thing on the Defra proposal is it is trying to create a standard for people who are very interested in a very tight compliance-like voluntary offset market, so it is things like the tonne-for-tonne issue where people want to have absolute assurance that when they buy a tonne of carbon that is what they are delivered, and the Defra proposals are ignoring a potential other side to the offset market, it would probably be better termed as a reductions market, where there are consumers out there who

are aware of climate change, they want to do something positive about it and they want to invest, a bit like a charitable donation, in a project which reduces climate change or reduces emissions somewhere and forcing the whole market down a compliance like route ignores this other more charitably motivated side of the market where there are people who just want to invest in emissions reduction projects, and whether they are forestry projects that have high sustainable development benefits, that perhaps have 90% assurance of delivering the offset that they think they will deliver, there is that side of the market, and I think Defra has missed that with its one standard which is driving everyone down a compliance-type route.

Q144 Chairman: Is there much difference between making a charitable donation to an NGO which is carrying out generally good work in terms of sustainability and going into an offset which does not have any real kind of measure?

Mr Brander: No, they are very similar.

Q145 Chairman: That does not matter?

Mr Brander: It depends on your motivation for making that donation. If your motivation is to absolutely make sure that you have offset your emissions, then it does matter that there are those assurances, but if your motivation is that you just want to do something positive about reducing emissions and also your motivation is to do something climate change related which also has sustainable development benefits, then the fact that it is like a charitable donation fits perfectly with your motivation.

Chairman: Are there any urgent questions that my colleagues to ask the witnesses? We will draw it to a close in that case. We might just want to follow up one or two things in writing if we may to deal with points that we have not had time to deal with today. Thank you very much for coming in.

Tuesday 6 March 2007

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton	David Howarth
Colin Challen	Mr Nick Hurd
Mr David Chaytor	Mr Graham Stuart
Tim Farron	Joan Walley

Memorandum submitted by Sustainable Forestry Management Ltd

Sustainable Forestry Management Ltd ("SFM") was established in 1999 to demonstrate that reversals of tropical and subtropical forest degradation and mitigation of global warming can be accomplished by private sector investment meeting the highest commercial, environmental and social standards. As a developer of projects which generate carbon credits and offsets, SFM is concerned to ensure reliability and integrity in the voluntary carbon market. SFM commends the Environmental Audit Committee for its request for submissions on the issue of accreditation in the Voluntary Carbon Markets and concurs on the importance of ensuring credibility of carbon credits in this growing sector but cautions against repeating mistakes in regulation which have distorted the principal mandatory markets. Properly regulated the voluntary carbon offsets market can make a significant impact on global warming and greatly assist the achievement of other critical policy goals.

Summary

Sustainable Forestry Management ("SFM") commends the Environmental Audit Committee on its inquiry into the voluntary offset carbon market. SFM agrees that there is a need for accreditation of carbon credits to ensure integrity in the marketplace, but maintains that this should be done through endorsement of existing voluntary market standards. This submission highlights the necessity of the inclusion of forestry-based carbon offsets in meeting the 450ppm climate stabilisation goal needed to prevent the onset of irreversible and calamitous climate change. Forestry can and must make up a significant part of the required emissions reductions required to reach this target. The voluntary markets provide the necessary flexibility for achieving this by crediting forestry projects that are currently excluded in today's compliance markets. These include credits for avoided deforestation, assisted natural regeneration and sustainable forest management.

A recent consultation by DEFRA recommends that the voluntary carbon market only offer accreditation to carbon offsets which are certified either through the Kyoto Protocol or the European Union Emissions Trading Scheme ("EU ETS"). SFM opposes this recommendation. The existing rules in the EU ETS exclude forestry offsets from the developing world entirely and the Kyoto Protocol puts such severe limits on forestry in developing countries that they have had a like effect. The effect is a perverse incentive to continued deforestation, legal and illegal, in the developing world and a de facto non-tariff barrier to participation by the rural poor in the carbon markets. If the voluntary carbon market is regulated in this manner essential climate stabilisation goals will not be met and many other sustainable development benefits associated with forestry and currently encouraged through the voluntary carbon market will not be realised. Deforestation, particularly in the tropics and sub-tropics will continue at its current ruinous rate.

Rigorous scientific methodologies now exist to quantify and monitor carbon emission reductions generated through all types of forestry offsets programmes and are included in current voluntary market standards. In addition, these standards help to ensure that forestry and land use projects bring significant socio-economic and environmental benefits to the developing countries in which they are located. Forestry projects funded through the sale of carbon offsets are one of the only meaningful methods of offering sustainable livelihoods to rural populations in the developing world, preserving bio-diversity and fresh water resources, reducing deforestation, and assisting the world's most vulnerable people to adapt to climate change. The alternatives of continued land and eco-system degradation are already recognised sources of human distress and communal conflict. Forestry carbon offsets are not an indulgence of the rich they are essential to the planet, to the poor and to all of mankind.

I. *Introduction to the role of land use, land use change and forestry (LULUCF) in climate change mitigation*

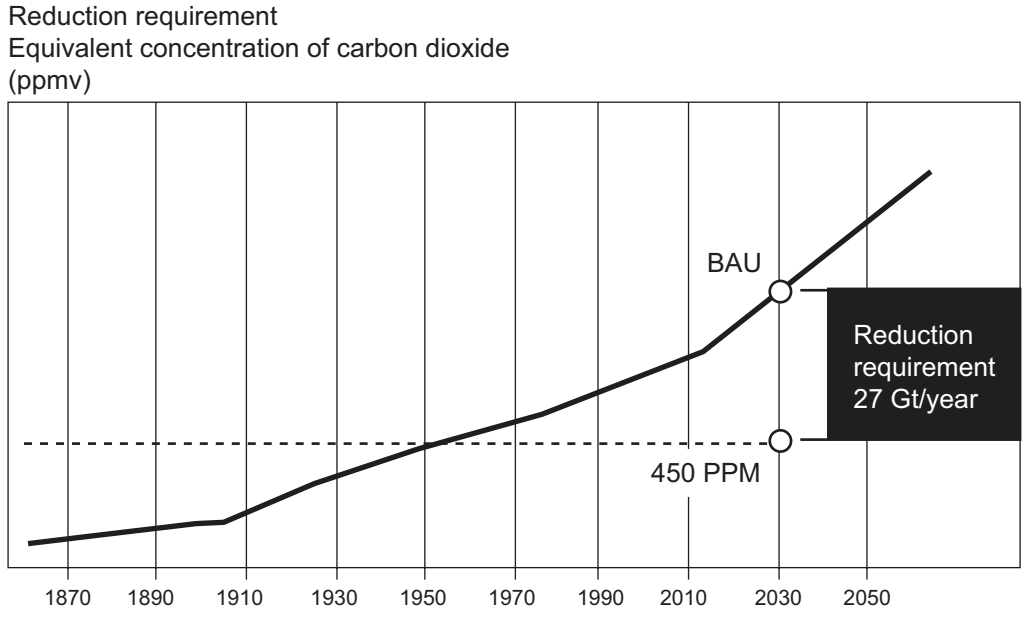
1. Land use, land use change and forestry ("LULUCF") activities are a major driver of climate change and a key focus for poverty alleviation, adaptation to climate change, and protection of bio-diversity and water resources. LULUCF activities are also, however, a serious example of market failure by the existing

mandatory regulatory regimes. The emergence of forest-based carbon offsets in the voluntary market serves as an example of the importance of allowing innovation and flexibility in addressing the problem of climate change and environmental services generally.[13]

2. Deforestation and other land-use activities account for 18% of annual greenhouse gas ("GHG") emissions, a share larger than that contributed by the global transportation sector.[14] Ninety per cent of the exchange of carbon between the atmosphere and the Earth occurs through photosynthesis primarily in the world's forests.[15] Deforestation is by far the largest source of emissions from developing countries, contributing an amount greater than total US fossil fuel emissions.[16] Sustainable forestry management, particularly in the tropics and sub-tropics, must play a crucial role in the mitigation of emissions,[17] particularly over the next few decades in which stabilisation of atmospheric CO_2 concentrations must occur if we are to avoid crossing critical thresholds.[18] Allowing and encouraging trade in carbon credits from tropical and sub-tropical forestry will enable swifter action to be taken to avoid deforestation and all of its repercussions than any other single policy measure.

3. Climate research has shown that to avoid catastrophic changes to the global climate and large scale irreversible systemic disruption, temperatures must not increase above a threshold of 2 degrees C above those in pre-industrial times.[19] A stabilisation around 450 ppm would imply a medium likelihood of staying below this threshold.[20] Stabilizing atmospheric concentration at 450ppm would allow cumulative emissions of close to 2100 Gt CO_2e between 2000 and 2100.[21] Recent analysis has shown to get on track for long-term stabilization in 2030, emissions should not exceed 31 Gt CO_2e /yr.[22] Achieving this target requires significant emission cuts against the business as usual scenario. (Figure 1).

Figure 1



Source: Vattenfall, 2007, Global Mapping of Greenhouse Gas Abatement Opportunities up to 2030.

[13] Swingland, I, 2002, Capturing Carbon and Conserving Biodiversity: The Market Approach, The Royal Society.

[14] Stern, Nicholas, 2006, "Stern Review: The Economics of Climate Change", November 2006: Watson, Robert *et al* eds. "Land Use, Land-Use Change, and Forestry. A Special Report of the IPCC", CambridgeUniversity Press 2000.

[15] J K Winjum, R K Dixon and P E Schroeder, "Forest management and carbon storage: an analysis of 12 key forest nations", *Water, Air, and Soil Pollution*, 70: 1–4, 1993, pp 239–57.

[16] Indonesia, for example, is now the third largest emitter of greenhouse gases in the world almost entirely as a result of deforestation. See Wetlands International: http://www.wetlands.org/ckpp/publication.aspx?ID=1f64f9b5-debc-43f5-8c79-b1280f0d4b9a

[17] IPCC, 2000, Special Report of the Intergovernmental Panel on Climate Change: Land Use, Land-Use Change and Forestry, Cambridge University Press.

[18] Stern, N, 2006, Stern Review: The Economics of Climate Change.

[19] European Commission Communication "Limiting Global Climate Change to 2° Celsius: The way ahead for 2020 and beyond.", Stern, N, 2006, Stern Review: The Economics of Climate Change, Meinshausen, Malte. "On the Risk of Overshooting 2°C." *Proceedings from International Symposium on Stabilisation of Greenhouse Gas Concentrations—Avoiding Dangerous Climate Change*, Exeter, 1–3 February 2005 at www.stabilisation2005.com/programme.html

[20] IPCC, 2001, The Scientific Basis, Cambridge University Press, Meinshausen, Malte. "On the Risk of Overshooting 2°C." *Proceedings from International Symposium on Stabilisation of Greenhouse Gas Concentrations—Avoiding Dangerous Climate Change*, Exeter, 1–3 February 2005 at www.stabilisation2005.com/programme.html

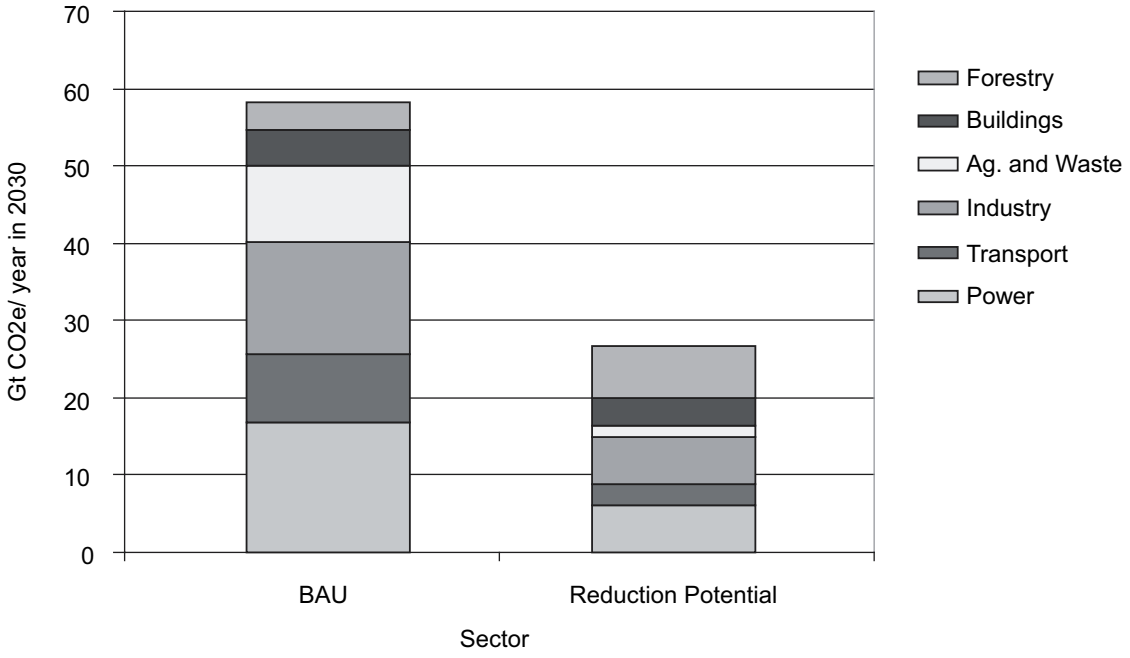
[21] Stern, N, 2006, Stern Review: The Economics of Climate Change.

[22] Vattenfall, 2007, Global Mapping of Greenhouse Gas Abatement Opportunities up to 2030 http://www.vattenfall.com

4. To achieve such a reduction requires the inclusion of emissions reductions from the forestry sector. Offsetting emission through forestry accounts for a larger share of potential reduction abatement than any other sector, including potential reductions from the power sector.[23] Recent analysis has exhaustively examined potential abatement scenarios for reduction of emissions to 31GtCO2e/yr at a cost below €40/tCO.2e[24] Forestry accounts for 25% of the additional reduction potential in emissions required to reach this target. It is clear that to achieve stabilisation at 450 ppm by 2030 requires both avoided deforestation and reforestation. The potential 2030 abatement from reducing deforestation is ~3.3 Gt CO_2e /year, and from reforestation a further 3.5 Gt CO_2e /year (see Figure 2). Without forestry carbon offsets achieving these emissions reductions targets at an acceptable cost is impossible. In other words, the alternative to achieving forest-based emissions abatement is the likely onset of calamitous and irreversible climate change by 2030.

Figure 2

BUSINESS-AS-USUAL (BAU) AND POTENTIAL REDUCTIONS IN EMISSION OF GHG BY SECTOR AT AN ABATEMENT COST LESS THAN €40 CO_2E /YEAR



Data source: Vattenfall, 2007, Global Mapping of Greenhouse Gas Abatement Opportunities up to 2030.

5. Research by the IPCC has demonstrated that the current potential of biological mitigation options is in the order of 100 GtC (cumulative) by 2050, equivalent to about 10 to 20% of projected fossil fuel emission during that period.[25] This analysis shows that emission reductions from the forestry sector, while essential to achieving medium term abatement goals, are also biologically constrained in their ability to mitigate climate change beyond a certain point. This should dispel fears of carbon offsets from forestry flooding the market for offsets and reducing incentives to technological change. It is clear that forestry carbon credits and offsets are necessary and it is also clear that they are not, by any means, sufficient, to dealing with climate change.

II. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects of companies? If so, how should this operate?*

6. SFM supports the accreditation of voluntary carbon credits to ensure both integrity in the marketplace and that real, measurable and long-term emissions reductions are being offered. SFM does not, however, endorse a mandatory scheme either in the UK or EU. As explained in greater detail below, the voluntary market corrects for failures in the mandatory markets and should be allowed to continue to serve as a source of innovation in the carbon markets. The voluntary markets have already developed and continue to develop, accreditation schemes such as the Climate, Community, Biodiversity Standards,[26] the Gold Standard,[27] and the soon to be released Voluntary Carbon Standard.[28] These standards, which are the result of extensive consultation with the private and non-governmental sectors, provide detailed specifications for

[23] *Ibid.*
[24] *Ibid.*
[25] IPCC, 2001, Climate Change 2001: Mitigation,Cambridge University Press.
[26] http://www.climate-standards.org/
[27] http://www.cdmgoldstandard.org/
[28] http://www.theclimategroup.org

certification of emission reductions. The emergence of these standards is an expression both of the demand for reliable carbon offsets and for greater flexibility than is currently available from existing mandatory regulatory schemes including the EU Trading Scheme and the Kyoto Protocol. The creation at this time of a mandatory accreditation scheme for voluntary carbon offsets, or a voluntary scheme based on the standards of the existing mandatory schemes, would be both redundant and counter-productive. It would repeat past mistakes, stifle necessary innovation at an important point in the evolution of the carbon market and risk defeating the achievement of significant additional efforts to mitigate global warming.

7. SFM applauds DEFRA on its consultation launched on 18 January 2007 on establishing a voluntary "Code of Best Practice" for the provision of carbon offsetting to UK customers. SFM does not, however, support the initial recommendation of the consultation which proposes the introduction of a voluntary code which will only accredit or give a "quality mark" to emissions reductions which meet criteria approved by the Kyoto Protocol or the European Union Emissions Trading System (EU ETS). This is not least as both systems create a perverse incentive for temperate forestry and deny any incentive for tropical forestry which is of far greater utility in dealing with climate change.[29] Each system credits temperate forestry in the rich North and excludes tropical forestry in the poor South. This results in a virtually total and indefensible exclusion of the world's most vulnerable people from the benefits of the carbon markets and their principal opportunity to adapt to climate change.[30] It also incentivises continued deforestation, legal and illegal. To replicate this in the voluntary market would simply compound already perverse outcomes.

8. SFM recommends instead the creation of a self-regulatory framework which would set out guiding principles rather than prescriptive rules. The experience of the Financial Services Authority (FSA) is instructive in this regard. The FSA initially sought to rely on detailed prescriptive rules. Experience demonstrated that it was far more effective and efficient to set out broad principles for market participants, leaving room for innovation and adaptation. The success of the London financial markets in competition with its principal competitors is largely a result of this approach to regulation.[31] London's current leading position in the greenhouse gas markets will be maintained only to the extent that it extends this approach to the carbon markets. Carbon offsets are, after all, hybrids of financial and commodity instruments traded on terms comparable to other financial instruments. Markets are excellent at developing qualitative and quantitative standards and impose discipline in an effective and efficient way. Fraudulent activity can be dealt with through existing legislation. There is therefore every reason to believe that a regime similar to that applicable to other financial markets would be most workable. This approach would allow an appropriate balance to be struck between increasing confidence in the environmental integrity of such instruments and the need for innovation both in products and market standards. SFM therefore urges the Environmental Audit Committee to endorse the existing voluntary market standards for accreditation and use them as a source of appropriate broad principles allowing the private and NGO sectors to continue to develop standards. Provision should be made for regular review and consultation as the market for carbon offsets evolves.

9. Examination of the regulation of forest carbon sequestration, by common consent a necessary element of mitigating climate change, by the EU and the Clean Development Mechanism ("CDM") of the Kyoto Protocol reveals their weakness as models for the voluntary sector. The EU ETS explicitly bans forestry credits from the developing world even if they conform to the regulations of the Kyoto Protocol. Forestry within the EU, in contrast, counts toward national compliance obligations.[32] In similar fashion, domestic forestry in Annex 1 countries to the Kyoto Protocol is included but the CDM excludes credits from avoided deforestation entirely and limits forestry projects in the developing world to afforestation and reforestation ("A/R") activities which must comply with impractical and arbitrary rules.[33] As a result, to date not a single wholly commercial CDM forestry project has been approved and those projects backed by multi-lateral institutions that have been approved represent less than 1% of all CDM carbon credits.[34] Unless and until the EU ban is lifted and the CDM rules are reformed, the voluntary carbon offset market is the only means by which the rural poor of developing world can gain access to and benefit from the carbon markets.[35] The positive incentives to reforestation and reduced deforestation which the voluntary market now offers would be excluded by modelling regulation on either of these mandatory systems. Such exclusion would also preclude the multiple benefits of eco-system restoration and preservation including protection of sources of

[29] Swingland, I *et al*, 2002, Carbon, biodiversity, conservation and income: an analysis of a free-market approach to land-use change and forestry in developing and developed countries, Phil Trans R Soc Lon A (2002) 360, 1561-1900.

[30] Wangari Maathai, Nobel Peace Prize laureate http://carbonfinance.org/Router.cfm?Page=FeaturedResources&FeatResID=26935

[31] See comments by Mayor Bloomberg, of New York and Senator Schumer: http://www.schumer.senate.gov/SchumerWebsite/pressroom/record.cfm?id=267787&&year=2007&, *Financial Times,* 23 January, Paulson backs efforts to tackle competitiveness threat to Wall Street http://www.ft.com

[32] See EU ETS legislation: http://ec.europa.eu/environment/climat/emission/implementation_en.htm

[33] See below at paragraph 11.

[34] http://cdm.unfccc.int/methodologies/ARmethodologies/approved_ar.html

[35] http://carbonfinance.org/Router.cfm?Page=FeaturedResources&FeatResID=26935

fresh water and bio-diversity, assisting adaptation to climate change and mitigating global warming These bans, exclusions and restrictions effectively preclude the very abatement projects which are essential to meeting emissions targets while penalising those most vulnerable to climate change.[36]

10. There is little indication of reform of either the EU or the CDM in this regard in the near term.[37] The CDM bureaucratic process is also notoriously slow and resistant to input from the private sector. The results are rules and procedures that impose unnecessarily high compliance costs and which create barriers to investment on a commercial basis. Many of the rules reflect a policy bias against the private sector as a whole and are a function of a deliberate refusal to consult with it. The result, ironically and tragically, is that the CDM, a mechanism created to assist the developing world, in reality serves as a non-tariff barrier to carbon exports from the developing to the developed world.[38]

11. Importing or copying the EU ban would, of course, largely destroy any possibility of the voluntary market making any contribution to emission reduction through forestry. Importing or copying the rules of the CDM would amount to virtually the same thing. The CDM rules restrict forestry credits in several ways that have made it almost impossible to invest in the sector on commercial terms. These restrictions include the following:

(i) *Capping at 1% of compliance requirement the use of A/R credits by Annex 1 countries*

The CDM forestry rules cap the use of A/R credits to just 1% of an Annex 1's country's annual compliance requirement over the first commitment period; equivalent to 120MtCO_2 annually. The principal justification for this restriction is that the inclusion of forestry credits in the CDM would "flood" the Kyoto trading system with "cheap credits". This argument never bore real scrutiny either in theory or in fact. As discussed earlier, the upper bound of emissions offsets from LULUCF activities is 10–20% of total demand for emissions reductions and the realistic level is much lower.[39] These calculations have been more than borne out in reality. In the first nine months of 2006, A/R projects accounted for just 2.1MtCO_2.[40] Annual credit delivery from A/R projects over the entire first commitment period (2008–12) is forecast to range from 7-14MtCO_2.[41] The 1% rule has clearly had a "chilling effect" on the market, discouraging investment in A/R projects which offer the only meaningful alternative to meeting timber and fuel demand by continued deforestation of natural forests. There is, importantly, no such cap on Annex 1 countries use of forestry credits from domestic or Joint Implementation ("JI") projects. The 1% cap is an artificial restraint that arbitrarily enhances the perverse incentive of encouraging A/R in the developed world while discouraging it in the developing world. The cap should be abolished and credit given for all activities which increase forest cover or reduce deforestation in the developing world. This would help promote a fair, comprehensive and environmentally effective global climate protection regime. The 1% cap should certainly not be adopted as a standard for the voluntary market.

(ii) *Limited A/R projects in location to lands deforested or in agricultural use prior to 1990.*

Restoration of land deforested since 1990 and restoration of degraded land is excluded under the CDM rules The original intention of this rule was to prevent "gaming" the then new carbon system by the cutting of natural forest to plant "carbon." The result has been to exclude from the system any credit for regeneration or replanting of forests destroyed since 1990. The FAO estimates that annual deforestation since 1990 has run at a rate of 13 million hectares per year, with a net forest loss of 8.9 million hectares per year from 1990–2000, and 7.3 million hectares annually from 2000–05.[42] Thus, 125–195 million hectares of deforested land is now ineligible for CDM forestry (an area three times the size of France) and the area is growing (not least because of the lack of any crediting of avoided deforestation and the lack of alternative supply from A/R projects) by an area the size of Greece every year. It is happening in the world's most bio-diverse areas and the home to many of the world's last remaining indigenous forest peoples. A major cause of deforestation is the result of "slash and burn" conversion to subsistence agricultural use by peasant farmers; they are not "gaming" the carbon trading system; they are simply trying to survive.[43] Unless such people are given an incentive to sustainably manage their habitat and deforestation is reversed, the forests of Indonesia and the Malaysian Archipelago, the Congo Basin, West Africa and the Amazon will be

[36] Bettelheim and d'Origney: "The Kyoto Protocol-A Legal Analysis" in Carbon, Biodiversity, Conservation and Income: An Analysis of a Free Market Approach to Land Use Change and Forestry in Developing and Developed Countries; Royal Society Transactions, July 2002.

[37] See Marrakech Accords Decisions, COP 7 of the UNFCCC, Decision 11/CP.7.

[38] Bettelheim, Eric, "The Case for Forestry Sequestration," in Environmental Finance, December 2005–January 2006.

[39] IPCC, 2001, Climate Change 2001: Mitigation, Cambridge University Press.

[40] See: World Bank, IETA, "State and Trends of the Carbon Market 2006: Update 1 January–30 September 2006", October 2006.

[41] Jung, Martina, "The Role of Forestry Sinks in the CDM—Analysing the Effects of Policy Decisions on the Carbon Market", Hamburg Institute of International Economics, 2003.

[42] FAO, Schoene, Dieter, "Reducing Emissions from Deforestation," Rome 2006, http://www.fao.org/forestry/webview/media?mediaId=11368&langId=1

[43] FAO, 2005, The Global Forest Resources Assessment, Rome.

destroyed by the middle of the century.[44] The 1990 Rule arbitrarily prevents efforts to restore vast and important areas degraded or deforested after 1990; it should certainly not be replicated in regulations for the voluntary market.

(iii) *Requiring the replacement of A/R credits after a maximum of 60 years.*

Forests are a long-term store of carbon. They have covered vast areas of the earth's surface for millennia, and contain 60% of the carbon stored in terrestrial ecosystems.[45] CDM rules require that A/R forest credits be either temporary ("tCERs") or long term ("lCERs") and that all of them be replaced at specific intervals which are unrelated to the forest harvest cycle, with a maximum duration of 60 years. This rule not only reduces incentives for forest restoration but actually encourages the liquidation of healthy forests after no more than 60 years in order to generate cash to buy replacement CERs on the open market. This folly should not be copied. Forestry is wrongly discriminated against with regard to the issue of permanence: there is no equivalent replacement rule for credits from industrial installations at the end of their much shorter life span. Other mitigation efforts, whether early stage technology such as wind or tidal power, geological sequestration or hydrogen fuel cells, are no more "permanent" than a well-managed forest; most industrial plants operate for only 20–30 years; well managed forests last for generations.

Investors in the voluntary and compliance carbon markets have a desire for fully fungible carbon credits. Other than the Kyoto CDM market, no other carbon market in the world creates a temporary credit in any sector including forestry.[46] Idiosyncratic temporary credits inhibit and distort the growth of markets particularly as they begin to link with each other. Robust methods are available to address or account for the permanence issue for LULUCF projects. These include: maintenance of adequate reserves or buffers to cope with unforeseen losses in carbon stocks, insurance, discount factors based on the assessed risk of carbon loss, and general strategies to reduce risk to carbon stocks such as pest control and fire management. The risk of loss from a natural event in managed forests is very small, averaging 0.04% of loss per year.[47]

12. The standards of environmental integrity which the rules referred to above were meant to deal with are already better catered for in the voluntary carbon market. Partly this is the result of increased knowledge since the CDM rules were developed; partly the result of innovations which neither the CDM nor the EU have yet caught up with. As described in paragraph 6 above, several highly respected organisations now provide standards with multiple safeguards dealing with all of the concerns of those sceptical of carbon offsets generally and of carbon credits from forestry in particular. Each of these standards has robust methodological and monitoring processes which ensure additionality, permanence, avoidance of leakage, verification, accurate measurement and avoidance of double counting. In addition, the CCBA Standards include evaluation of project impacts on communities and on bio-diversity a significant improvement on the EU and CDM rules. The voluntary market does not require a prescriptive, mandatory regulatory overlay beyond the standards now being developed and promulgated. It would, however, benefit from endorsement of those standards which conform to broad principles of integrity including a requirement for independent third-party verification. Attempts at prescriptive regulation of particular project sectors, such as that pursued under the CDM, should be avoided if the voluntary market is to continue to serve the critical function of providing an economic space for market innovation and broader public participation in addressing climate change.

III. *Response to comment in introductory text that " in terms of offsetting, some commentators have suggested that the practice allows prosperous Western nations to continue to enjoy carbon-intensive lifestyles at little extra cost whilst the most immediate effects of unabated climate change will be experienced in the poorer countries of the world*

13. The benefits of GHG concentration mitigation are identical regardless of where offsetting activities occur because of the even distribution of CO_2 in the atmosphere. This means that everyone, rich and poor, benefits from offsets; but the cost of adapting to climate change falls disproportionately on the rural poor of the developing world. It is both necessary and right to provide them with the resources to adapt to the impact of climate change and to do so by means of the carbon offset market. They cannot meaningfully participate in reductions of emissions from fossil fuel use as they use comparatively little. Most use wood as their primary source of energy.[48]

14. The Coalition of Rainforest Nations, with a membership of 26 different developing countries spread across Asia, Africa and South America[49], have made clear that they face a stark choice: either they receive compensation for the carbon sequestration services which their native forests provide to the world or they

[44] See: World Bank, IETA, "State and Trends of the Carbon Market 2006: Update 1 January–30 September 2006", October 2006.

[45] IPCC, Land use, land-use change, and forestry: a special report of the IPCC. (Cambridge & New York. Cambridge University Press, 2000).

[46] eg. See New South Wales Greenhouse Gas Abatement Scheme: http://www.greenhousegas.nsw.gov.au/Documents/syn101.asp

[47] Hancock Timberland Investor, 2nd Quarter 2003, Risk from Natural Hazards for Timberland Investments http://www.htrg.com/research_lib

[48] Around half of world's use of wood is as a source of energy: *Op Cit 32*.

[49] http://www.rainforestcoalition.org/eng/

must continue to exploit them as sources of energy and wood products.[50] The implications of the latter are all too clearly illustrated by the fact that Indonesia is now the third largest emitter of greenhouse gases in the world almost entirely the result of continued deforestation.[51]

15. To achieve reforestation, stabilisation of arid areas, transition to low-till agricultural practices, protection of watersheds and bio-diversity and compensation for preserving existing forests in developing countries, funding must come from rich nations in the form of payments for ecosystem services. It is not a "loophole" or the purchase of an "indulgence" to assuage guilt or preserve a wealthy life-style—it is essential to the future of the most vulnerable people and habitats on earth as well as to mankind as a whole.

IV. *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area to accurately assess overall long-term carbon (or other GHG) gains and losses from such projects?*

16. The science is both strong and coherent in accurately assessing long-term gains and losses of carbon, and other emissions, from the forestry and land use sector. For decades landholders and government agencies have been measuring and monitoring forest status and growth using a combination of techniques including direct field measurements, satellite and aerial photography and computer modelling. Many protocols for measuring and monitoring carbon project benefits already exist.[52] The Good Practice Guidance for Land Use, Land-Use Change and Forestry ("GPG-LULUCF")[53] produced by the Intergovernmental Panel on Climate Change ("IPCC") provides methods and guidance for estimating, measuring, monitoring and reporting on carbon stock changes and GHG emissions from LULUCF for reporting for the Kyoto Protocol. It is consistent with guidance for other sectors and can be used to quantify changes in GHG from a diverse range of forestry and land-use management practices. The guide assists in the production of inventories for the LULUCF sector that neither "over" nor "under" estimates, and which reduces uncertainties as far as possible. It supports the development of inventories that are transparent, documented, consistent over time, complete, comparable, assessed for uncertainties, subject to quality control and quality assurance, and efficient in the use of resources. The only scientific uncertainties are at the margin and there is an overwhelming scientific consensus on the measurable contribution that the world's tropical and sub-tropical forests make to the global warming equation.[54]

Crediting Avoided Deforestation and Sustainable Forestry Management

17. Credits from avoided deforestation and sustainable forestry management practices (such as low-impact logging and enrichment re-stocking of degraded forests) can be accurately measured and quantified, and should be encouraged in the voluntary carbon market. Methodologies are readily available. The guiding principles for inventory in the GPG-LULUCF apply to quantification of greenhouse gas reductions from sustainable forestry management and avoided deforestation. Robust and credible project-level methodologies have already been developed for avoided deforestation.

18. The Noel Kempff Climate Action Project (NKCAP) in Bolivia provides an excellent working example of how carbon sequestered in the living biomass of forests, and emissions reductions achieved through forest conservation can be scientifically quantified, monitored and certified. In November, Société Générale de Surveillance (SGS), an internationally accredited CO_2 certifier and Designated Operational Entity of the UNFCCC, validated the project design, verified and certified emission reductions for the project.[55]

19. Leakage has often been a key challenge associated with avoided deforestation projects. The NKCAP has demonstrated that active management can reduce leakage, and that which cannot be eliminated can be quantified and deducted from the project's total carbon benefits.[56] Methods are readily available for avoiding leakage; providing economic opportunities for local communities that encourage forest protection; providing replacement products that are less carbon intensive such as timber from plantations rather than native forests; and improving the productivity of agricultural lands. National rates of deforestation are available for most developing countries.[57]

[50] Stilts, Joseph, "Cleaning Up Economic Growth," Project Syndicate, 2005.

[51] See Wetlands International: http://www.wetlands.org/ckpp/publication.aspx?ID = 1f64f9b5-debc-43f5-8c79- b1280f0d4b9a

[52] Brown, S. O Maseru, J Sathaye. 2000. "Project-based activities" in R Watson, I Noble, and D Verardo (eds), Land Use, Land-Use Change and Forestry; "Special Report to the Intergovernmental Panel on Climate Change, Cambridge University Press, Chapter 5 and see The Revised 1996 IPCC Guideline for National Greenhouse Gas Inventories and MacDicken, 1997, A guide to monitoring carbon storage in forestry and agroforestry projects, Winrock International Institute for Agricultural Development.

[53] IPCC, 2003, Good Practice Guidance for Land Use, Land-Use Change and Forestry, http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.htm

[54] Stern, N, 2006, Stern Review: The Economics of Climate Change.

[55] SGS. Summary, Validation and Verification Report, Programa Nacional de Cambio Climatico Noel Kempff Climate Action Project. 27 November 2005.

[56] http://www.fan-bo.org/pacuk

[57] *Op cit 32.*

ADDITIONALITY

20. With deforestation continuing to increase on a global scale[58] one could argue that any reductions in deforestation through positive incentives offered through the carbon market are *per se* additional. Nevertheless with continued efforts through national regimes and over-seas development aid it will be important to illustrate that deforestation is being reduced by initiatives linked to climate change abatement and is truly additional to any reduction in deforestation that may have occurred as a result of other initiatives. This can be ensured by comprehensive reporting schemes documenting the origins of finance for avoided deforestation, sustainable forestry management and tree planting initiatives. Existing voluntary market standards, such as that of the CCBA, all require objective, third-party verification of additionality.

IV. *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

21. As explained above in detail, the existing mandatory schemes do not reach the rural poor of the developing world; only voluntary offset schemes and projects have the capacity to do so. As eloquently explained by Nobel Peace Prize Laureate Wangari Maathai, carbon forestry and agriculture are the only meaningful methods of offering sustainable livelihoods to these people; and they are simply not credited by the existing mandatory schemes.[59] Nearly 90% of the 1.2 billion people living in extreme poverty worldwide depend on forests for their livelihoods.[60] Natural and planted forest resources are an integral part of the habitat, economy and socio-cultural framework of rural communities. Almost all tropical forests have people living in them. Deforestation deprives the poor of their "natural capital." It degrades not only forest ecosystems but also the services they provide. While deforestation can provide short-term economic benefits from logging and short-term agricultural use, these are almost always outweighed by longer-term losses from soil erosion, flooding, degraded water quality, worsened water security, greater vulnerability to extreme weather events such as drought, and the loss of traditional livelihoods and culture.

22. The rural poor of the developing world are the people most vulnerable to climate change not least because their "economy" is dependent on the natural environment for food, fuel, fresh water, building material and traditional medicine.[61] Their ability to adapt to climate change is inextricably linked to the level of environmental degradation that they cause out of necessity as they have no other way to earn a living. Unless their natural environment is stabilized and their livelihoods made sustainable, they will inevitably first exhaust the land and then become environmental migrants putting further stress on urban areas and presenting increasingly difficult security problems for neighbouring countries and countries of destination.[62]

23. Deforestation threatens critical natural habitat for the world's plants and animals. Tropical forests cover less than 7% of the Earth's total surface area but are home to more than 50% of the Earth's species.[63] Protecting biodiversity by reducing deforestation and through forest restoration is important for local and global communities alike.

24. Forestry offset projects have many benefits which are found in no other carbon-based projects: They:

- address climate change through carbon sequestration in the short, medium and long term;
- enhance soil protection, erosion and flood control, water purification, agricultural pollination, and biodiversity protection;
- provide alternative, sustainable uses of forest and agricultural land, instead of forcing the liquidation of these natural resources for survival;
- provide access to capital that helps lift the local population out of poverty and into sustainable livelihoods;
- restore and protect ecosystem services upon which local people depend;
- preserve the habitats of the world's remaining indigenous peoples; and
- combine mitigation and adaptation activities in ways that make poor communities more resilient against the impacts of climate change, including extreme weather events, droughts, storms, wildfires and floods.[64]

In the absence of voluntary market carbon offsets for forestry projects this entire array of economic, environmental, social and cultural benefits will not be achieved.

[58] *Op cit 32.*

[59] *Op cit 19, op cit.* 21 *and* 26.

[60] http://www.nature.org/rainforests/explore/facts.html

[61] McCarthy, James J et al eds, "Climate Change 2001: Working Group II: Impacts, Adaptation, and Vulnerability: Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change," Cambridge University Press 2001.

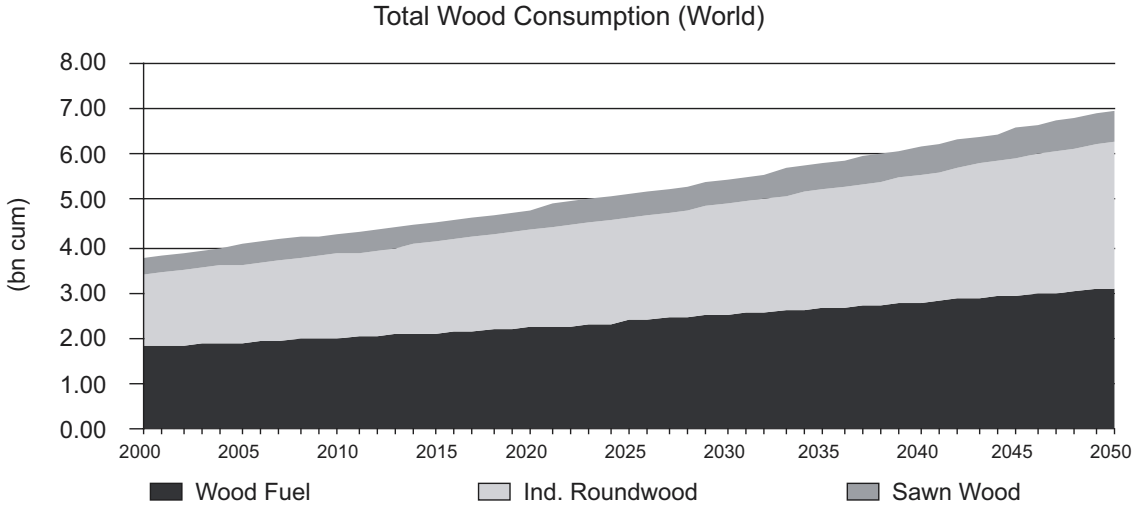
[62] Schwartz, Peter and Doug Randall, "An Abrupt Climate Change Scenario and Its Implications for United States National Security," October 2003.

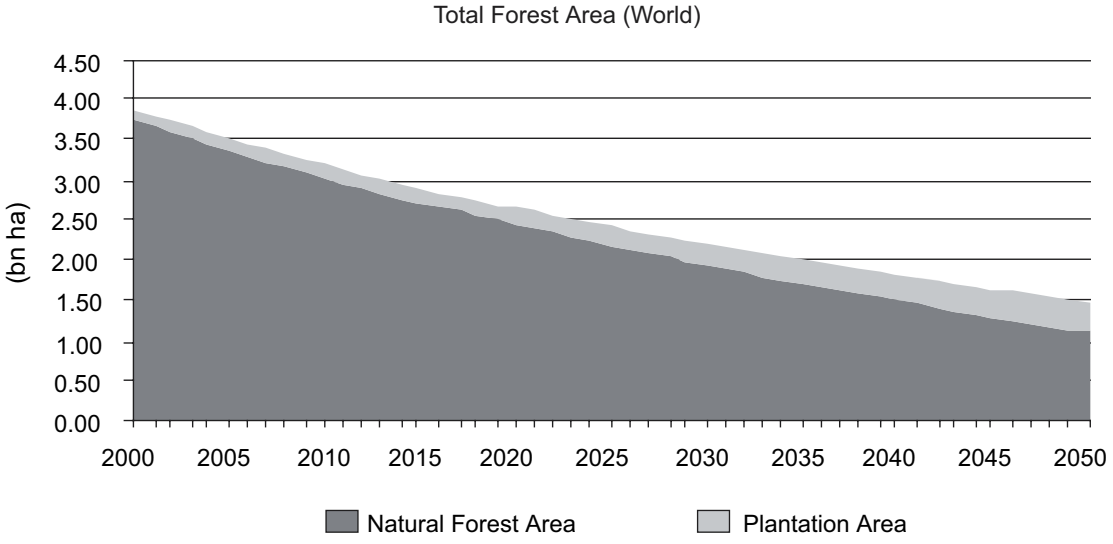
[63] Myers, N, 1988. Tropical forests and their species. In *Biodiversity,* E O Wilson ed. Washington DC: National Academy Press.

[64] Swingland, I, 2002, Capturing Carbon and Conserving Biodiversity: The Market Approach, The Royal Society.

25. In any assessment of the need for carbon forestry projects in the developing world it is critical to understand that without them the laws of supply and demand will overwhelm, as they have for decades, all other efforts to address the loss of native forests. Projected world demand for industrial round wood and sawn wood will be met partially by an increase in plantation forestry, particularly in the developed world; the balance of timber supply together with consumption of wood for fuel will, unless forest carbon offset projects are incentivised, continue to be met through the destruction of native forests. At current rates of exploitation the tropical forests will be largely exhausted by 2050 and will have ceased to be intact ecosystems.

Total Wood Consumption (World) **Total Forest Area (World)**





26. Illegal logging costs developing countries worldwide around US$15 billion a year in lost revenue.[65] It also causes deforestation, environmental degradation and biodiversity loss. It damages livelihoods and is associated with corruption, organised crime and the fuelling of armed conflicts. Crediting forests with payments for carbon emission reductions provides a sustainable alternative and can reduce the incentive for illegal logging and its negative repercussions.

27. If the rate of tropical deforestation is to be swiftly reduced and if we are to achieve atmospheric carbon stabilization in the medium term, the rural poor of the developing world must be provided with sustainable, alternative ways of life. To accomplish this it must be based on a reliable long-term supply of compensatory payments and incentives. At this time only the voluntary sector of the carbon markets and forest carbon offset projects in particular, offer them and us, this prospect.

[65] World Bank: http://web.worldbank.org

CONCLUSION

28. SFM supports the encouragement of the voluntary sector of carbon offsets by means of a self-regulatory system of accreditation. Such a system should be based on broad principles comparable to those adopted by the Financial Services Authority for the financial sector including a requirement for third-party verification. Such principles would be applicable to all sectors of carbon offsets allowing for market-based evolution of sector specific standards. The evolution of standards is best achieved by encouraging private sector interaction with the public and the NGO community and a regular review of progress and broad consultation. It is vital, from SFM's point of view that the voluntary markets are allowed to continue to develop appropriate standards for the forestry and land-use offsets sector. With tropical deforestation and degradation contributing a large proportion of greenhouse gas emissions and currently not included as part of the international framework established through the Kyoto Protocol or the EU ETS, it is essential that positive incentives continue to be provided through the voluntary carbon market both to reduce emissions from deforestation and to increase the terrestrial carbon sink to offset industrial emissions. Given the need for urgent action and the time it will take to find and implement new energy technology, we simply will not make it without forestry; and neither will the world's poorest people.

January 2007

Witnesses: **Mr Eric Bettelheim,** Chairman and **Professor Ian Swingland OBE,** Chief Science Officer, Sustainable Forestry Management Ltd, gave evidence.

Q146 Chairman: Gentlemen, good morning and welcome to the Committee. Thank you very much for attending. This is an inquiry which is attracting a lot of interest and we are grateful to you. If I could just kick off with a fairly general question. The voluntary offset market is clearly growing. Defra in the memorandum they have sent us suggested that it could go up from £60 million last year to as much as £250 million in three years' time. What role do you think forestry is going to play in the expansion of the market?

Mr Bettelheim: Chairman, first may I thank the Committee for giving us the opportunity to give evidence. My colleague, Professor Swingland, and I have been working together for over seven years in developing a business focussed on carbon forestry as we put it in general terms, and I hope we can be of assistance to you. In response to your question, I wonder if I might refer the Committee to a document, which I think has been handed up to you by the kind permission of McKinsey's recent quarterly report, which we are able to provide to you. On page 41 of that report, and it may be on page 7 of the bundle provided to you, there is exhibit 3, as they call it, a bar chart which illustrates the role that forestry, that is all forms of forestry but particularly forestry in the tropics and subtropics, can play in dealing with climate change over the next 25 years or so, that is, between now and 2030. As you will see from that forestry is by far the largest sector that can contribute to climate change mitigation in that period. In other words, forestry is available now, and forestry is essential to dealing with climate change over the near to medium-term. However mankind decides to deal with climate change in the long-term, what this illustrates is that if we are to stabilise carbon dioxide concentrations in the atmosphere at a level of between 450 and 650ppm—that is limit temperature rise to something of the order of ŽC which is what most scientists, certainly the IPCC, indicate is the limit beyond which we start to experience what might be referred to as significant quantitative change in the atmosphere and significant qualitative change in climate—if that is the goal, that by 2030 we are to try and mitigate climate change to the point where we can manage it without dramatic changes in our lifestyle and the lifestyle of all of mankind as well as to our environment, forestry must play not only *a* role but *the* leading role in doing so. I wonder if it might be helpful, Chairman, if I give a concrete example of what a forestry project really is, as opposed to many of the theoretical discussions that have permeated the debate about forestry both under the Kyoto process and up to today. At the end of last year in December we signed a deal, the first of its kind, with the Maori people in the North Island of New Zealand. The Maori people have agreed with us that we can lease their land for 20 years. This is land which has been completely degraded; it has essentially turned to pasture, but once was a natural forest which, over the last couple of hundred years, has vanished. We will pay them a lease payment for their land for 20 years, in exchange for the assignment to us of the carbon that we sequester on that land by planting trees. We will share in the profits, if there are any, of the carbon sales from that sequestration during that period in addition to the lease payments. At the end of that period the Maori will have their land back but they will no longer have a lessee, and they will have a new forest that they can keep perpetually. Indeed the legislation under which this is progressing in New Zealand is called a "Permanent Forest Sink Initiative", very innovative legislation which the Government has adopted in an effort to meet its Kyoto compliance obligations. In other words, within 20 years we will have re-established, managed and turned back to its owners a forest which will have sequestered carbon sufficient for us to justify an investment of (I think it is fair to say) very expensive money from the private sector. We have to achieve private equity levels of return, that is we take the highest and most speculative types of investment from institutions, like hedge funds, and we have to prove to them and even on their hurdle rates, that is the rates of investment that they need, we can achieve that in very limited periods of time. Many people have become concerned that

forestry only matters a hundred years from now—it is not true. As both the Stern Report makes clear and the McKinsey Report makes clear, to which I have just referred the Committee, forestry is the tool of today. It takes no technological innovation; it is available anywhere in the world; people can become involved in forestry, can restore their habitats and improve their lives as well as achieve significant benefits for the climate without additional skills. There is not a peasant farmer in the world who cannot maintain a forest, providing he has the capital and he has management skills provided to him so that he can successfully do so. This is the critical issue for the next 20-25 years. Can we harness the ability of the world to regenerate naturally, both in terms of afforestation and reforestation, but also in terms of avoided deforestation? In other words, the earth can recover naturally and we can help it recover and we can stabilise the climate if we focus on forestry as the leading element of what, of necessity, must be a portfolio of initiatives, including significant efforts at developing and distributing new technology, which is the only way that we will achieve climate stabilisation at anything like a reasonable cost over the near-term.

Q147 Chairman: I like your concrete example of a forestry project. That is a very bullish answer, but forestry is not without its controversial aspects, as you have acknowledged. Why do you think, for example, an organisation like Future Forests, who through an offset election campaign in 2005, decided to change its name to get away from forests? We are looking specifically at the voluntary offset market now. What is going to make it possible for the people who believe, as you do, to actually ensure that target quoted in the MacKinsey Report is actually achieved?

Mr Bettelheim: Chairman, without referring to any specific company, I think one of the difficulties that has been faced by the companies that have sought to offset carbon emissions with forestry have not really had the resources to do so. Forestry is not an easy business. If you are to do it on a significant scale it has to be professionally managed and requires very large amounts of capital. To give you an example: our experience over the last seven years (in which we have invested over $40 million, and by the end of this year we will have invested over $100 million in these kinds of projects) is that a project of any scale (and what I mean by that is something in excess of 10,000 hectares anywhere in the developing world, the tropics or the subtropics) at a minimum costs a million dollars to take from an opportunity to a bankable proposition—that is something that can be financed and implemented. This is a year-long process in most cases, sometimes longer. To actually implement forestry projects which are verifiable, which have environmental integrity in all the dimensions of that word not just in terms of climate mitigation, is a very complex, time-consumptive and capital-consumptive and, most importantly, expertise-consumptive activity. I think many people began to approach forestry offsets because they are inherently attractive. It is inherently attractive (to put it in my generation's terms) to save the rainforest; it is inherently attractive to help indigenous people; it is inherently attractive to help endangered species survive; but to actually do it is far more complex and far more expensive than I think many of the early pioneers (if I may put it that way) had in mind. If they did not have the resources to understand this, if they did not have the forestry expertise, scientific expertise and the management expertise, then inevitably they ran into difficulty. We believe that we have structured both internally and externally the resources necessary to implement projects on a large scale which will in fact meet all of the standards; indeed, our goal is to exceed all of the standards that are now established both by the voluntary sector and by mandatory markets. Chairman, I understand that well-meaning people made mistakes; I can understand also that there is a learning curve, and I think this is very important to the question before this Committee of what kind of regulation may be appropriate. The voluntary market is the only market today that allows forestry credits. The mandatory markets, both the Kyoto market so far and the European Union Emissions Trading Scheme so far, have not been able or not been willing to recognise the importance of forestry; nor have they created incentives for it. In the absence of those incentives from the mandatory markets then it is essential that the voluntary market be allowed to learn, to learn by doing. I am afraid markets are inherently a process of trial and error. They do work very efficiently that way; they learn very quickly. We have learnt a great deal by the failures of others. We are certainly going to learn and have learnt from our mistakes. If you want to develop appropriate standards for forestry, if you want forestry to thrive as I believe the leading authorities now indicate it must if we are to manage climate change over the next 20-30 years, then learning by doing is essential and that is what private sector businesses are very good at. I think it is fair to say there has been market failure by the mandatory systems thus far with, I may point out, one important exception to that, which is the mandatory market in Australia New South Wales; which, by the way, is the first mandatory market to start in the world (it started before the EU ETS) and they have rigorous rules about forestry projects and how they are accounted for, verified and how the credits are registered, accounted for and transacted. There are models in at least one mandatory market; and there are models from the IPCC which has a code of good practice for forestry and agricultural land use projects. It is not as though a great deal of thought has not been given to this by these organisations but, unfortunately, thus far that learning has not been adopted into the major mandatory markets of the European Union and Kyoto.

Q148 Joan Walley: I just want to come in and press you on one aspect of this. I very much agree with your stated philosophy that it should be all about learning by doing, but you are coming at it from the point of view of voluntary markets and the compulsory market and everything that comes out

of Kyoto; but parallel to that there is the whole debate that is going on in respect of forestry and the move to get legal and sustainable timber in terms of the whole supply chain, and in terms of properly managed forests. Where you are at the starting point, which is all to do with the carbon sequestration and so on, I just wonder how much that it is linked to the debate going on in Europe and elsewhere about the drive for legally and sustainably procured timber so that those two aspects become joined-up in terms of timber forest policy?

Mr Bettelheim: May I begin with your last phrase. One of the fundamental difficulties about the debate on forestry and the way in which it has been dealt with thus far in regulatory terms is that the thinking has not been joined-up. People talk about illegal logging in one context; they talk about afforestation and reforestation in another; they talk about avoided deforestation in the third; they talk about poverty alleviation in another; they talk about biodiversity preservation and protection in another; it also includes wetland issues; it also includes climate issues; and the fascinating thing to me, and I think to most people, is that forests somehow are the intersection of so many different environmental values. It is essential for example in our forestry projects that we meet FSC certification, because we do deliver timber on a sustainable basis to the market; and the market increasingly requires, and we frankly require of ourselves, that what we do is independently verified in every respect: in the respect of timber production; in respect of carbon sequestration; in respect of biodiversity and so on. These debates in my view, which I think are critical, are needed in a single forum, if you like. Oddly enough, in the voluntary sector people who are interested in offsetting their carbon emissions or their carbon footprint, whether they are companies or whether they are individuals, inherently know this—they know there are all these different aspects and that is what they are searching for; they are searching for opportunities, not only to offset the impact that they have on the planet, but to do some good and it is necessary, in order to do good, that you deal with all of these dimensions of forestry in an integrated way. This is what I meant when I said earlier that it takes a very long time, and a considerable amount of money, to get all of those elements, including independent certification of the sustainability, the audit trail and so on necessary for the particular issue you raise, but this is required for all of these dimensions simultaneously if you are to truly have a sustainable project which will accomplish the goals, not just the climate goals but including the climate goals, that we all want to see achieved. It is that complexity of forestry that has caused a great deal of confusion. There have been many ideological arguments about it; but the fundamentals are (and this is what I hope our company makes manifest to the Committee) you can do it. It is difficult, it is time-consuming and is costly and takes a great deal of expertise but when you assemble those resources, human as well as financial, you can do this. I think that the public and the marketplace indicate this repeatedly, not only by wishing to invest in forestry, but if you look at the advertisements in the major magazines, *The Economist* and others, big companies, oil companies, energy companies and utilities, when they want to illustrate to the public that they are green, that they are doing the right thing, invariably there is a picture of a tree. It is astonishing that you find the symbol all human beings understand as the right thing to do is to plant trees. There seems to be no other way of communicating in visual terms, in succinct terms, the importance of forests and the importance that they have for all of us, whether we are tourists to such forests as most urban people are, or we are someone who depends on that forest for their livelihood as over a billion people do on the planet today.

Q149 Mr Hurd: In relation to the drivers of the money you are investing specifically in relation to New Zealand, are these people who are looking to offset their carbon or are these people who are taking part of the carbon?

Mr Bettelheim: The investors we have are fundamentally institutional investors. They are looking at this as a financial opportunity. They are not greening themselves. Indeed, it is almost a principle with us that we do not take money from organisations of any kind, or individuals for that matter, who want to do that. We are not in the green-washing business. We are not in the public relations or marketing business. They may use their investments in that way; that is a matter for them. The reason they invest in us is because we put to them a compelling business case that investment in this sector suits their portfolio and that the returns over the medium to long-term are satisfactory from their own investment criteria.

Q150 Mr Hurd: Are those returns around possible trends in the carbon price or are there other attempts from timber sales?

Mr Bettelheim: I think it certainly includes a speculation, if you like, on the appreciating value of carbon; but our business model, which is what we have found is persuasive after a great deal of experimentation (trial and error, if I can put it that way), is that we have to show them a base return without carbon of between nine and 12% per annum. If we can show them that from the other activities of the forest, particularly sustainable timber operations, then they are confident that they will not lose capital and that they will get at least a modest return. These days nine to 12% is not too bad in comparison to other investments; and, of course, they have the possibility of significant additional return from carbon if that market materialises.

Q151 Mr Hurd: Is that a tough pitch in this marketplace, or are you detecting growing institutional demand for that sort of opportunity?

Mr Bettelheim: If you had asked me that question nine months ago I would have said it was extremely tough. It was very, very hard. I think there has been a sea-change. I think we have reached a point where now institutional money is looking for this kind of

opportunity, albeit that they have felt some of the chilling effects of press reports and speculative science reports and so on that had questioned the integrity of forestry. By the way, some of the world's largest non-governmental organisations have been attracted to doing business with us because they are confident we will deliver credits that bear real scrutiny and that are really laudable in every respect. I think it would be very hard to replicate in the near-term a company, the personnel we have and the track record we have for sticking to our knitting. We have not deviated to renewable energy or other aspects of the carbon or climate change marketplace. We have stuck to forests because we thought from the outset that they are essential to the welfare of mankind and to the welfare of the planet.

Q152 Mr Stuart: You have given a strong advertisement for your own company's particular strengths and weaknesses and pointed out the weaknesses of many others and their failures. I am struggling to understand what is scalable about this; if it is a unique set of skills that you have. I am also not clear—you have said that without carbon you can be returning nine to 12%. It should not be a particularly uphill task to sell that if it is credible and with carbon thrown in as well. I just wondered if you could briefly give us the financial picture again as if we were the investors because I do not quite understand it. It is 10% pretty well guaranteed on basic business as usual, with a huge upside for carbon price thrown in as a bonus. Tell me where the forms are, I want to apply!
Mr Bettelheim: I have the forms in my attaché case!

Q153 Mr Stuart: I bet you do!
Mr Bettelheim: I wish it was that simple. There are two critical hurdles to investors' interests in our business market. The first is the uncertainty about the future of the carbon market. There is enormous political uncertainty about this. To put it bluntly, right now to a investment institution the carbon market ends in 2012, and the only credits that count in that period are Kyoto compliant credits; and there is no Kyoto compliant commercial forestry possible; nor is there any under the EU ETS because they banned it. If you are an institution and you are being given the pitch such as I illustrated today, you are not going to invest in a forestry project which is going to yield its highest returns 10 or 20 years from now on the basis of a carbon market that may cease to exist well before that time. You may be convinced (I am convinced) that there is now the political will in the world to create a post-2012 regime of some sort.

Q154 Mr Stuart: You have said on basic business as usual, investing well with a proper skill base you can get a 10% return. That is not difficult.
Mr Bettelheim: I am sorry I said there were two points to my response to your question. The second is our focus is on the developing world. We are asking people, institutions, not only to invest in some of the poorest countries in the planet which have significant problems of governance, let alone other kinds of risks such as political risk, we are also asking them not to invest in the stock markets of the emerging world; we are asking them to invest in the rural areas of the developing world. We believe that we can manage those risks successfully. It takes a strong investor to accept that anyone can do it. The history of investment in the rural parts of the developing world is not particularly happy, except in some limited circumstances such as mining and the energy sector. We are proposing, with a relatively small initial balance sheet, to manage those risks on a relatively large scale; so it is a difficult sell for both those reasons. That is what has made it difficult, at least up until very recently. I think now there is increasing acceptance that forestry will ultimately be included in the mandatory carbon regimes. The question now really in most informed investors' minds is when. That affects your investment return significantly. When you discount that nine to 12% for emerging market risk and emerging market rural risk, and emerging market rural risk over 10 to 20 years, you find that people are not quite so confident that you can beat the US Treasury market.

Q155 Mr Stuart: The way you have put it, you should be putting in a $25 million bonus simply by applying to the Virgin Earth Prize!
Mr Bettelheim: It did occur to us but it does seem to be focussed on technological solutions as opposed to a natural one.

Q156 Mr Stuart: You have said there is a need for a quick stabilisation of 450ppm. Straightforwardly, how do you square the need for that quick action with a slow return on reforestation/afforestation?
Mr Bettelheim: As I tried to illustrate from our example, in fact the return over the next 10 to 20 years, which I think is the crucial period for climate stabilisation to reach that target, is sufficient in terms of forest sequestration and that is what is illustrated in the McKinsey Report; that over the period from now to 2030 (that is what this bar chart refers to) you can achieve something like 6.5 gigatonnes of climate abatement and mitigation through forestry. We are not talking about the long-term—

Q157 Mr Stuart: Is that reforestation, afforestation or are we talking about stopping deforestation?
Mr Bettelheim: All three.

Q158 Mr Stuart: The issue we are trying to get at here is, stopping current forests being lost is one thing, and one can see the immediate return on that and if you maintain a forest you can measure its carbon impact, but it is the slowness of reforestation and afforestation to deliver benefit?
Mr Bettelheim: The analysis is based upon the following separation between the two: you achieve about 3.2 gigatonnes over that period from avoided deforestation and the balance of about 3.4/3.5 from afforestation and reforestation. I think the reason is probably pretty obvious, that trees grow faster in their earlier periods of establishment, and mature forests do continue to absorb carbon and continue to hold carbon but they do not absorb it as quickly or at the rate that the new forest or a young forest

does. It is about a 50:50 split between the two if you want to achieve that goal. You need both; you cannot do one without the other.

Q159 Mr Stuart: One of our biggest problems with offset is, of course, it is all future-based and depends on the model sold at the beginning being delivered all through the life of the project. You have said any peasant can do it but you then suggested they needed capital, they needed training and they needed to make sure they did not have a better offer as time went on. Can you tell us how much money you think is needed in order to ensure that a tree is maintained and managed over the life of a project?
Mr Bettelheim: Forestry, if I may put it at its simplest, is a real estate business, and real estate various enormously from location to location. For example, the cost of reforestation in New Zealand is significantly higher than it is in, say, Brazil. You have to try and analyse in detail the actual cost curves and all the costs of the inputs both human and otherwise in order to come up with an answer. There is no single answer to your question. What I can say is that we are operating in 15 countries throughout the tropics which range from New Zealand and Australia at the expensive end, if I can put it that way, to Guinea in West Africa which I would put at the lower cost end.

Q160 Mr Stuart: Can you give us some idea of the difference, because as it is all about confidence in the market then the more expensive the project the more likely it is, especially when it is backed up by a western government, some Permanent Forest Sinks legislation, to be delivered? What are the price differences?
Mr Bettelheim: As I said, the spread is very large. If you think about poor tropical countries around the equator, if I can put it in land terms, the land acquisition cost is about $50 and that includes legal costs and so on. The comparable figure in a place like New Zealand is $3,000 and there are steps all the way through that curve in terms of acquisition costs. Generally speaking, the inputs necessary to manage the forest over the next 10 or 20 years until it is fully established or protected during that period are relatively modest after you have made the initial acquisition and investment, because the human inputs are relatively limited.

Q161 Mr Stuart: How are long-term guarantees to be enforced?
Mr Bettelheim: It depends what you mean by "long-term". Certainly there is insurance available for forestry. One thing that is interesting about managed forestry, that is professionally managed forestry of the kind we are involved in, almost all large timber companies self-insure because the rate of loss is so small; it is less than half of one% per year. It almost does not pay usually to buy insurance. In our case it probably does because of the places in which we operate. We do need to have insurance against nationalisation risk, against natural disaster and so on, but Lloyd's covers somewhere between 1.5 and 1.7% of the project's cost. It is not that expensive to ensure that the credits will be delivered and that the forests will remain in tact. There are, of course, natural disasters; there is human encroachment; these things do happen and you have to be in a position either through insurance or, as we prefer rather than paying our money over to the insurance market, to create buffer zones which are not counted as part of the return on investment, or not counted as the credits. Generally speaking, there is a standard used in the voluntary market and by the Chicago Climate Exchange. About 20% of the available land is put into a buffer that is not counted for these purposes to ensure that if there is a loss in the area that is counted the project area includes the offset for that.

Q162 Mr Stuart: Do you think it matters to consumers that the offset actually is in the future? Do you think they realise that?
Mr Bettelheim: I think it varies enormously from project to project. Forests, whether they are new forests or existing forests, store carbon constantly so there is a curve of carbon sequestration. It is not that you put a tree in the ground today and you harvest the carbon 20 years from now. The tree stores carbon every single year it grows. If you include avoided deforestation, which I think is essential to this, you are talking about carbon that is already stored. It is not a matter of waiting for it to be stored; you are trying to maintain the carbon store that exists. There is everything between that and taking a piece of pastureland and planting new saplings in it. Typically we invest in integrated patterns of forestry; so there is some young forestry, some middle-aged and some mature. If you look at forestry as an integrated business you need to have revenue throughout the period. It is not putting money in today and waiting for a return 20 years from now. Nobody will invest in that. We have to have revenue literally from the get-go in these projects.

Q163 Mr Stuart: One of the problems is that it is very hard to prove causation of that—perhaps philosophically impossible. When it comes to stopping deforestation the economic incentives are to create a sense of deforestation going to happen that is not going to happen and then take money for it. Would you agree with those who say that proper offsetting in forestry should consistent of new projects where at least you can see there are not trees there now and you plant them? You cannot share with someone else, especially if you can get a nine to 12% return without any carbon price. Leaving that to one side, at least you can make it robust by insisting that you plant new trees where there were not any, and you deliver the carbon savings only when you have independent certification. Are you allowed to sell that in the market, because at the moment we have a market which if the consumer knew the truth about it the bottom might fall out of it?
Mr Bettelheim: It is interesting, I am not sure that it is a consumer issue particularly; I think it is an issue of integrity for the entire marketplace. Do bear in mind that even under Kyoto, under its rules for

afforestation and reforestation, you have to build a scenario to a project which is essentially a projection over the lifetime of the project, measured in decades, of what is likely to happen. I do not think there is any difficulty really, no intellectual difficulty, in projecting such a scenario for deforestation. The patterns of deforestation in countries which are suffering from it are pretty well established and very well known. We know what happens when you drive a logging road into a tropical forest. We know the rate at which the landscape starts to deteriorate as migrants move into it. There are historical rates of deforestation available from all major countries. Yes, there is some scientific uncertainty at the margin. In some areas it is difficult to measure; some areas are very remote. The fact of the matter is that we have a very small margin of error for knowing what the rate of deforestation is. It is sometimes the view that deforestation occurs because of logging. It can be started by logging but the real damage is done by people at the margin; by people who are subsistence farmers; by people who have no other way of living. We, for example, have been doing a great deal of study of the charcoal market in Africa. Charcoal is the leading source of deforestation in Africa; it is not illegal logging. Illegal logging is an issue. We are of the view that appropriate economic incentives, not to mention increased enforcement, can reduce illegal logging; but when you look at the hundreds of millions of poor people who are dependent on charcoal for their fuel you have to consider what is their alternative. We know how fast they need the fuel. We know the rate of deforestation in areas in Uganda, Tanzania and elsewhere in Africa; so it is not that difficult to project, given population growth and given consumption by individuals of that kind of fuel, what the pattern is going to be. It is startling to know, but in Tanzania, for example, over 90% of the fuel used is charcoal. They do not have fossil fuel plants. They are not driving cars built by Mercedes—except a very few of them. The vast majority of these people have either themselves or have to have others go into the native forest, cut the trees down, burn them into charcoal and transport that charcoal to where they live so that they can eat. It is that simple. The charcoal business if it were changed from a native forest harvest to a reforestation process that is managed plantations (I know "plantation" is a dirty word to many people—I think wrongly), if you substitute plantations on a professionally managed basis that are sustainably harvested and provide the source, you will stop the deforestation. I do not think that quantifying this is really that difficult, and is no different in principle, in theory, from a scenario of a reforestation project. In fact, very often the two are intimately linked. One of the problems of lack of joined-up thinking is that everyone is in favour of avoided deforestation because it saves the rainforest, but what that means is you are going to reduce the harvest of native forests. If you do that, it does not change the supply and demand requirements of mankind; mankind still needs the timber and the human population is growing pretty quickly, so where are you going to get what you are not taking out of the native forest now? You have got to encourage substantial reforestation and afforestation efforts to provide that supply. This is one of my concerns, that the Kyoto regulatory debate is going on stimulated by the Rainforests Nations Coalition into coming up with a new currency for avoided deforestation, and I applaud that if it materialises, but they are not taking a similar step of creating rules for afforestation and reforestation which would allow significant commercial investment to offset the loss of timber products that is inherent in avoided deforestation.

Chairman: The level of carbon emissions per capita in Tanzania is one% of those in the United States so if we attack the charcoal problem it falls even lower per capita.

Q164 Colin Challen: I think you said earlier on it was cheaper to do projects in developing countries than New Zealand, say. Is that because they are simply poorer and, therefore, have less income to pay them?

Mr Bettelheim: Everything is cheaper. The land is cheaper; the labour is cheaper; inputs are typically cheaper. Look at it the other way round: from my perspective the developing world has an enormous competitive advantage over the developed world, and that competitive advantage is that it can grow carbon cheaper than the developed world. To give you an example, in terms of carbon sequestration alone, in the United States or in Northern Europe you can sequester approximately one tonne of carbon per hectare per year in typical pine or other type of plantation forest. The comparable figure in the tropics and subtropics is between 12 and 15 tonnes and the costs are significantly lower. That means, if the developing world could export stored carbon from its forests and its restored forests to the north, there would be a huge inflow of capital into the rural areas of these places, which is unheard of historically, and in a sustainable way provided it is appropriately structured and regulated.

Q165 Colin Challen: What I wanted to get to was when you described this business as "real estate". If your income goes up then the value of your mortgage proportionately tends to go down. I am just wondering how effective these sorts of projects are in actually being able to lift people out of poverty and create genuine sustainable development. Presumably you are pricing everything at today's prices and if the price of carbon goes up in, say, 50 years' time to then times what it is today your projects that are launched today will not pay them 10 times?

Mr Bettelheim: You would be surprised how sophisticated these people are when it comes to bargaining. In every transaction we do we provide a mechanism, a formula, which is negotiated by which they participate in the projected rise of carbon prices. In other words, every year we report to them what we have achieved by selling their carbon and they get a share of it. We are absolutely transparent about this. Just because people are poor does not mean they do not understand markets and they do not understand the resource.

Q166 Colin Challen: So the price goes up over time?
Mr Bettelheim: Yes, and they get more money.

Q167 Colin Challen: How can I offset a fixed price today when this is a one-off project? You say you have got flexibility of long-term price, but today if I am paying you in the euro markets about three euros a tonne at the moment (and I do not know what your price would be) I do not quite understand the relationship between what I do today and the flexibility you are building into it in 50 years' time?
Mr Bettelheim: The benefits to local people are immediate in that we employ them. Usually these places are of significantly high unemployment. We have in our budget the necessary elements for infrastructure improvements that they may need; and that includes everything from clinics, to schools, to roads and other kinds of transport they need and the tools they need to harvest the product. We think our investments from the very beginning benefit them, even before any carbon is realised, because we are investors first. We have to spend money first to get these projects developed. As I say, it takes at least a year of investment, including local investment, to generate and take an idea to a point where it is investable; then there are several years of capital-intensive investment in which we are paying local people for the use of their land and for their labour and for the other values they can put into the projects. They benefit from the beginning even if there is no carbon. It is our speculation that the carbon will be valuable.

Q168 Colin Challen: This is the point, is it not? Really when we are tackling the scepticism that surrounds this concept of future forests (and I know it used to be a brand name) does that not add to the scepticism? You might be doing something that is worthwhile in itself, but to say that you can offset somebody's activities today—particularly in this climate of urgency when we are told that everything that has to be done should be done in the next five or 10 years to really stop that growth in temperature—does that not lead to scepticism?
Mr Bettelheim: I do not see why it should. How is that different from saying we are going to build a wind farm? A wind farm does not immediately produce offsets. It takes time to construct; there has to be—

Q169 Colin Challen: A lot less time.
Mr Bettelheim: On the contrary, I can get a reforestation project up and running from beginning of idea to start of implementation in 12 months. I do not know if a wind farm can do that. By the same token, any other kinds of investment in other forms of climate abatement all take some measure of time to implement. As I was trying to make clear with the New Zealand example, and the balance of my testimony, we are not talking about reaping rewards of climate change 50 years from now; we are talking about doing it in the next 10 to 20 years. In most cases, as I say, when we have integrated forest projects we are acquiring the carbon rights to trees that are already growing; so there is carbon sequestration from the minute we have become involved. How we account for how we sell it, when we sell it and at what price, these are variables. There should be less scepticism about forestry than about other technologies because we know that forestry works.

Q170 Colin Challen: I am sure it does over time. It is not just me being a little sceptical, the Advertising Standards Authority rapped the knuckles of the Scottish and Southern Energy Group for the claims that they were making. The ASA was saying it was very difficult to match the number of trees planted with the exact amount of emissions offset. You have to have some form of exact issue because you are saying to somebody, "You're on a flight to New York. Four tonnes of CO_2 emitted, that's going to cost you £40, or whatever". That is a very exact thing to sell and they are saying of course you cannot match it so you cannot say it.
Mr Bettelheim: This comes up as one of the core subjects of the Committee which I have tried to address in my written evidence, and let me address here. I think it is very important that there are independent verifiers, that there are independent standards which these projects have to meet, including our own. I think it is important to deal with that scepticism and to also illustrate the reality of carbon sequestration through forestry. This is very important, and I think it has to be understood by any purchaser, whether it is a corporation or an individual. What is actually going to happen? What is the curve of sequestration on that project? It does not tell any particular buyer exactly when his CO_2 emission is going to be sequestered from the atmosphere. What it does say is, by putting money into this project, over this time horizon this much carbon will in fact be stored. If, as I think, it is important to focus on the next 20 to 30 years (by consensus most people believe it is essential) that is the relevant period for at least the voluntary market; because I think by that time, or I hope well before that time, the mandatory markets of the world will have developed standards for forestry, and integrated forestry completely in all of its aspects into those marketplaces.

Q171 Colin Challen: We know we will be locked into a temperature increase of 1.5, so it is likely to get to 2 and beyond that. Stern illustrates the impacts on agriculture even at 2. It seems we will exceed that. What impact will that have on the projects you are developing now? Say, in 20, 30 or 50 years' time are you likely to lose the potency, if you like, of this form of carbon sequestration?
Mr Bettelheim: First of all, let me make the admission that I am not a climate change expert, but even at those levels it is a gradual change to 2C in warming. What we are likely to see is a kind of general movement northward. It will vary from area to area and from location to location, and we may actually experience in some projects lower yields than we expected. For example, if we had expected to sequester 100 million tonnes in a project and because of climate change the rate of growth of the

trees is less than we expected, it may be we will only sequester 80 million tonnes instead of 100 million tonnes from the project. What we have to ensure in those cases is that we have adequate buffers against that anticipated change and that we have insured against that risk; and that our portfolio as a whole accommodates that risk. I have one of the world's leading scientists sitting next to me and perhaps he can help, but I think it would be a brave scientist who would say today, "We know what the effect of climate change is going to be on the rate of reforestation".

Q172 Colin Challen: On projects now you are already building this buffer into the system, so if some customer comes along and says, "I'm 100% emissions offsetting", you will say to yourselves, "Okay, because of the dangers in the future we'll plant 120%". That is what you are doing now?
Mr Bettelheim: That is exactly what we do.

Q173 David Howarth: There are a number of scientific problems which have been raised about forestry and Mr Bettelheim has dealt with one or two of them. One of the things that has been said to us by Carbon Trade Watch is that it is fundamentally a waste of time to attempt forestry projects outside the tropics; that in the tropics it might work in a thin band around the equator but outside that forests tend to trap more heat than they save by taking carbon out. There are other studies about the abedo effect that seem to confirm that. How do you react to that? Is temperate zone forestry worth it at all in carbon terms?
Professor Swingland: The answer is yes. There is work done by a man from the Carnegie Institute called Ken Caldiera. He published a paper using modelling and some of the more sophisticated remote technologies to achieve what he did. On 15 December last year *The Guardian* produced an article which said something along the lines of "planting trees is a waste of time". In early January Ken Caldiera published an article saying he was aghast at the misrepresentation of his data and everything else, and so it has gone on since then. The basic point is this: if you stand stark naked in the Arctic and the sun hits you, you will warm up a little bit. It is called the "albedo effect". If you painted yourself black you would heat up a little more. The scientific argument is that trees are fairly absorbent and, therefore, they absorb heat and that this overwhelms the beneficial effect of the sequestration of carbon that they can achieve in such colder climes. That is effectively the argument and that everything is the other way around in the tropics. That is basically the argument, so we are quite clear. The answer basically is that temperate trees do sequester carbon dioxide. Yes, there is an albedo effect. It is a marginal gain, I would suspect, in terms of climate change and essentially reducing the warming of the planet for temperate forests. Certainly in the tropics it is a major gain. He himself, when he wrote the article which says, "I'm absolutely aghast at the misrepresentation of my work", went on to say that not only would he vehemently defend the business of growing trees in the tropics, but that he would also defend the whole business of actually conserving those forests in such places. From my point of view, looking at what has happened, because I went to the climate change conference in Nairobi, I was absolutely aghast, having not really paid attention for the last 20 years, at the fact that we have got every incentive to grow a tree and protect a tree in the temperate areas, and no incentive whatsoever to keep any trees in the tropics. That is what we have managed to achieve through the Kyoto discussions which is counterintuitive and, frankly, scientifically not helpful.

Q174 David Howarth: Just quickly on the underlying science, is it the case that the relationship can reverse in a temperate zone forest between saving and creating heat?
Professor Swingland: Yes.

Q175 David Howarth: So there is a problem with temperate zone forestry?
Professor Swingland: There is the fact that the balance between the two is probably about equal. If the climate actually gets warmer I am afraid temperate forests are going to do increasingly better in terms of carbon dioxide sequestration.

Q176 Mr Hurd: The British Government's proposals in relation to accreditation, your submission seemed to argue that we should keep the voluntary and the compliance markets separate. Is there a risk if we went down that track and the voluntary market continued to grow, that the NGO-backed CDM Gold Standards would rise in that process, which I understand does not allow forestry projects? Are you concerned that even the voluntary schemes might force forestry projects out of the voluntary market?
Mr Bettelheim: Yes, I am very concerned with the initial recommendation of preferred alternative of Defra, which is that the voluntary market should restrict itself to Kyoto and EU ETS credits; that excludes forestry in its entirety virtually by definition. That I think is a bad thing for all the reasons I have illustrated, not least of all the essential role forestry has to play in dealing with climate change. As a student of some years of financial markets (and I think in many respects carbon needs to be understood as a financial market; it is a kind of commodity market or a kind of financial instrument market) there is a great deal of benefit in regulatory competition; that if you just try to create one system, a global system which some people are talking about, you will find that it will invariably have flaws and it will be very difficult to correct those flaws. I think the Kyoto process has demonstrated that, not least in the forestry sector but also elsewhere in the CDM. I am in favour of different regulatory systems and voluntary systems developing side by side and interacting with each other, because each one learns from the other. Right now the learning which has gone on in forestry is going on in the voluntary sector, and I think that needs to develop further. As I referred in my written evidence, CCBA is probably

the best standard in the world—better than Kyoto, better than certainly anything under the EU ETS. We try not only to meet those standards but to exceed them in terms of quality. I think the interaction between the voluntary sector and regulated markets and competition between regulated markets, for example the regulated market that is going to emerge in the United States, I have a feeling will lead to improvements in earlier stage regulated markets, like Kyoto, EU ETS, because they learn. We are all learning. This is an early-stage market and in forestry, in particular, there are a number of complexities which we have touched on, so the way to improve the product for the public and for the planet is for that kind of competition and learning by different approaches, some of which will fail, I have no doubt, and certainly the Kyoto system has failed as far as forestry is concerned and certainly the EU ETS system has failed as far as forestry is concerned. If it is accepted that forestry has to fit somewhere, at least allow it to grow in the voluntary sector and give examples ultimately for regulatory change in the mandatory markets as well as always being a pioneer because there are always going to be some things outside the regulation, and that is the nature of regulation, that it excludes. There will be other innovations in land-use, in technology and so on which regulated markets will need to catch up to, but which voluntary markets will stimulate, and I think that is a very important and very healthy process for what is, after all, a very urgent problem.

Q177 Mr Hurd: The specific question was that, as I understand it, the NGO-backed Gold Standard does not include forestry at the moment.
Mr Bettelheim: I think when you talk about "the NGO-backed", that is only one of them. The CCBA standard is an NGO and is backed by Conservation International, among others, and it has been the subject of widespread consultation in the NGO community and it is specifically focused on the issues of forestry, looking at the impacts on communities and on biodiversity as well as climate. That is a very useful development. Other standards have really been focused on the renewable energy sector and I think one of the startling results of recent work, particularly the Stern Report and the Mckinsey Report, is that it shows that the power and energy sector which has been the focus of so much attention and even the manufacturing and transportation sectors which have been enormous focuses do not, any of them, contribute or have the potential to contribute as much to climate change mitigation as forests.

Q178 Mr Hurd: In your business planning, have you given up on the prospects of forestry being included in the compliance market?
Mr Bettelheim: On the contrary. Because of the underlying science and because of the underlying economics, I think it is inevitable that it will. Indeed, we founded our business in 1999 on that premise, that ultimately, whatever the debates, whatever the ideological fixations of people, forestry had to be included if mankind was serious about dealing with climate change.

Q179 Mr Hurd: What view do you think the future US Administration might take to this?
Mr Bettelheim: I recently spent some time in Washington and I think there has been a sea change in the politics not least of all because of the change in control of Congress, but also not least because the individuals, through the voluntary sector, are making their wishes known, they are pushing their governors to deal with climate change and they are buying credits in CCX which is a voluntary marketplace. It is a grassroots rebellion, if you like, against established Administration policy and I think the consensus is, by informed observers of the Washington scene, that a national cap-in-trade emissions system will be signed into law no later than 2009.

Q180 Mr Hurd: I meant specifically in relation to forestry.
Mr Bettelheim: It will certainly include all aspects of forestry and agricultural sequestration.

Q181 Chairman: I think we are running up against our deadline today, so thank you very much. You referred to your project with the Maoris in New Zealand and I wonder if you can send us a note about the details. It sounds extremely interesting and, if we could get the different dimensions to it, it would be very helpful.
Mr Bettelheim: I would be delighted to, and on any of the other topics, if we can help the Committee, we would be very happy to.

Q182 Chairman: Thank you very much indeed.
Mr Bettelheim: My pleasure. Thank you all for your time.

Witnesses: **Mr Barry Humphreys,** Director of External Affairs and Route Development, Virgin Atlantic; and **Mr Lawrence Hunt,** Chief Executive Officer, Silverjet, gave evidence.

Q183 Chairman: Thank you very much for coming. Aviation and voluntary offsets, or perhaps in due course mandatory, are clearly potentially one of the biggest contributors to this market. Do you think at the moment that the airlines are doing enough to facilitate voluntary offsets by their customers?
Mr Hunt: I think we are. First of all, and I do not want to spend a lot of time on this, but I think the reality of how much contribution the airline industry makes to global warming is in some doubt, as you probably know. I am not going to sit here and pretend, like Mr O'Leary does, that we do not pollute the environment; we do. We produce 123.5 tonnes of carbon every time we fly with our aircraft and with you guys, Barry, it is similar and more dependent on the aircraft type, the engine type, the age of the aircraft, the number of passengers on board and so on. I think we have to get over the fact that we do pollute the environment and we have to do something about it and I think the airline industry, frankly, has been pathetic in its response to this over the last four or five years. IATA have done nothing and I think there have been moves by certain airlines, but overall those were all terminated before Christmas when the Chancellor put up APD, so the airlines that were going to do something all withdrew their programmes because of the increase in APD. Notwithstanding that, I think the airline industry has been fairly incompetent in the way it has dealt with this issue.
Mr Humphreys: I am afraid I cannot fully agree with that. As an airline, we have been around slightly longer than Silverjet and I think we have done a lot. From Virgin Atlantic's point of view in terms of offsetting, we see offsetting as a useful contribution, but not the answer to global warming, and we have been working on our own programme to be introduced. What we wanted to do was we wanted to get it right rather than rush in and potentially make a mistake. I think we have seen another airline do precisely that, and I do not normally like to criticise competitors, but, since it is British Airways, we thought the British Airways' scheme was very unfortunate. I am sure they have the best intentions, but it had the appearance of a PR exercise.

Q184 Chairman: That is something Virgin never do of course!
Mr Humphreys: Never! Well, when we do it, we get it right. We did not think it was very well thought through, it was hidden on the website and, not surprisingly, the take-up was rather poor, and that was exactly the road we did not want to go down, so we are working very hard at it and will be coming up with a proposal very soon and, for commercial reasons, I would rather not go into details of that, if you do not mind.

Q185 Chairman: Well, we look forward to it certainly and I hope it does have a greater take-up than the BA scheme, and we will be seeing BA next week. Just going back to the point that perhaps you were making when, Mr Hunt, you said there was a debate about the contribution from aviation to climate change, what is clear is that aviation is a growing industry—
Mr Hunt: Sure.

Q186 Chairman:—and it does have emissions. Even the moves, which we strongly support, for airlines to become more efficient, and clearly there is commercial pressure on any airline to be more energy efficient, but, despite all that, if the growth continues on anything like the sort of business-as-usual scenarios, emissions are going to grow from this industry. Against that background, do you think, therefore, that actually it should be quite a high priority to at least facilitate offsetting by your customers because, for the foreseeable future, there is going to be a continued growth in total emissions from flying?
Mr Hunt: I think there are three solutions and the reason there are three solutions is because they all have different time-frames, and it was interesting, the point you were making earlier about the longevity of forestation projects and so on. I think long term we need better technology and that is 20 to 30 years, and that is fuel technology, it is aircraft engine technology, it is composite technology and so on and, if you spend a lot of time with the aircraft manufacturers and the engine manufacturers, they are all doing things around that and I would say Britain needs to do something about that. It needs to invest in its aerospace industry in developing new technologies and, with the kind of skills that we have in this country in aerospace and with the most recent moves by Airbus and so on, actually I think there should be a programme to look at, in this country, investing in new aircraft technologies. We are in negotiations with Boeing at the moment about new aircraft which will reduce our emissions by 45% and that is a massive reduction. Sitting here at the moment as a little, start-up airline, we cannot afford to invest hundreds of millions in those technologies at this stage, but it is something I would encourage the Government and you guys to look at, and certainly Richard Branson's announcements about Virgin fuels and so on, I think, should be welcomed because he is actually putting his money where his mouth is, whereas other airlines are not, and investing in new forms of aircraft technology. That is the long-term solution, but we cannot sit around and wait for that. Then we have the Emissions Trading Scheme and we are promised the date of 2012, but we all know we will not hit that because Brussels is involved.

Q187 Chairman: I am glad you say that. We cannot get British Airways to admit that!
Mr Hunt: It is not going to happen, or it will happen, but probably not in my lifetime. That is to be welcomed and we should push that, and you guys should push that as hard as you can because that is clearly a good interim solution, but, until such time as that happens, then I think the airline sector needs to address the short-term issue and the only way to address that is with offsets, and then we get into this

ridiculous debate about CERs and VERs and all of that stuff. What we have done, as you know, is every fare includes a mandatory offset charge and we had the Edinburgh Centre for Carbon Management set our aircraft, our engines, our tow trucks and all of that, and at the end of each month we do a reconciliation with them, and then, with the Carbon Neutral company, and we chose out of 12 companies, we went to tender last year and, and 12 of those carbon-neutral companies, we felt, had the most verifiable projects and where the most amount of our money was going to go into actual projects and achieving short-term benefit for the environment.

Q188 Mr Hurd: How transparent is that for your customers in terms of the costs and some of the underlying dynamics and so on?
Mr Hunt: Extremely. When you book with us, you have the bit that goes into the Chancellor's black hole and then you have the bit that goes into the carbon offset projects and what we are doing is going one stage further and we are engaging Marks & Spencer, BP, HSBC and various other companies and what we are doing is issuing customers with carbon points, so we do not do frequent flier miles, and there are a number of reasons for that. What we do do, and we have had fantastic reaction from the media and customers on this, is that we issue them with carbon points, so, when you fly with us, you earn those carbon points and then you can use those points to invest in projects that sort of get you excited. For example, we have chosen a project in the USA because we have a lot of American passengers and the Americans like to invest in their own patch, if you like, so we have created a project specifically for them, but we have a project in New Zealand and we have a project in Jamaica, so we are trying to engage the consumer. At the moment, the consumer, frankly, is frustrated by the Government, is frustrated by the media, they do not understand it, and people like British Airways make it incredibly difficult for—

Q189 Mr Hurd: But, at the end of that journey, do I know how much carbon I have been responsible for, do I know how much I have paid to offset it, do I know where that money has gone and do I have a choice as to where the money goes?
Mr Hunt: We will either allocate it for you if you cannot be bothered and, if you want to engage with it, the MORI survey which was commissioned by Friends of the Earth showed that 67% of consumers would pay more for their flight to offset it. Let us get some facts into this. It is 90p per hour every time you fly to offset your flight. From Easyjet's point of view and Ryanair's point of view, the Chancellor puts ADP up by £5 and, on an average fare of £40, that is a big issue for them. For us, it is less of an issue because we are long-haul and our fares are higher and so on. It is still a problem, but it has not helped and that was a retrograde step on behalf of the Government and we were extremely annoyed about it. First Choice have pulled their entire carbon offset programme on the back of that. Another very major UK low-cost airline, which I cannot actually mention because they told me in confidence, were about to announce in January their offset programme and they called it off because of the APD increase.
Mr Humphreys: I think the APD increase was very unfortunate, especially the timing of it in a period when the Office of Climate Change were about to launch their own offset proposal. The increase was over £1 billion of extra taxation and, whilst Silverjet might criticise it, they actually get effectively a £40 per passenger subsidy because of the stupid way the APD is calculated. It is not widely known and it is not their fault, it is just the Treasury way of doing things, but their business-class passengers pay £40 APD tax less than ours do.
Mr Hunt: The whole APD system has actually been called into question as to whether it is legal under the Chicago Convention 1949 and I think it is another stealth tax, it is a tax designed to disguise a carbon emissions reduction programme that does not even exist.

Q190 Chairman: Well, all that may be true or it may not, but I do not think the airline industry can complain about being over-taxed, given the effective subsidy it gets on fuel, so we will not shed too many tears.
Mr Hunt: We do not get any subsidy on fuel.

Q191 Chairman: Well, compared to motorists, you virtually get it tax-free, do you not?
Mr Hunt: We do not pay VAT on fuel, but we cannot because we fill up in all sorts of weird and wonderful places around the world and you cannot get consistency, so you cannot solve that problem.

Q192 Chairman: Even with APD?
Mr Hunt: At the end of the day, if it is not convenient, it is reality. At the end of the day, consumers have to travel, business people have to travel and, the less they pay, the more they will travel, which is clearly not a great thing in climate terms unless we can invest in the technology, but, as we have seen from the low-cost airlines, the lower the fare, the more people travel and the faster the economy grows and, if you believe in economic growth and creating jobs and those things, people have to be able to travel.

Q193 Joan Walley: If I can just follow that up to try and find out from Virgin where we are in respect of offsetting, you said earlier on that you do not want to rush into things.
Mr Humphreys: Yes.

Q194 Joan Walley: In terms of your offsetting website, it is not there at the moment, is it?
Mr Humphreys: No.

Q195 Joan Walley: But it is expected soon?
Mr Humphreys: Yes.

Q196 Joan Walley: Do you know when it is likely to be launched?

Mr Humphreys: It is difficult to be precise, but it will be quite soon, I can assure you. We are working very hard and we are in discussions with various companies about that.

Q197 Joan Walley: In view of what has just been said by Silverjet, do you expect that every airline will need to have an offsetting arrangement which customers can book directly with?
Mr Humphreys: We expect more and more airlines to enter into this area. I do not think all of them will, but overwhelmingly.

Q198 Joan Walley: So you would see that as an extra that would perhaps make it easier for people to be wanting to support the way Virgin are tackling emissions and so on?
Mr Humphreys: Yes, and I think it is important to understand the role of offsetting. We see it as a way of engaging the travelling public's attention so that they can participate in identifying their own carbon footprint, but it does not solve the fundamental problem. We are not going to save the globe by offsetting. That will come in aviation primarily from technical advances, and there are enormous technical advances that have already taken place and will take place in the next 10 years or so, and, secondly, from emissions trading which we see as a far better way of addressing climate change than crude taxation.

Q199 Joan Walley: You say, "we say", so is that based on customer research that you have done and are you under pressure from customers to have your own direct website for offsetting?
Mr Humphreys: Yes, we are under some pressure from customers, corporate customers and the general travelling public. We are also under pressure from our own staff. We do regular surveys of our staff and in the last one, despite everything we do in terms of corporate social responsibility and the environment, there was a very clear message from our staff that they wanted us to do more and to be seen to be doing more as well and that came out very, very strongly. I think carbon offsetting, in a way, ticks all the right boxes.

Q200 Colin Challen: On the airport passenger duty, the Chancellor has actually calculated what he thinks the net reductions in CO_2 emissions from aviation will be. Coming to this 90p an hour figure, what kind of calculations substantiate that conclusion, that it is only 90p an hour?
Mr Hunt: I can only talk about our own assessment that we did. We used the Edinburgh Centre for Carbon Management, which is part of Edinburgh University, to do a bottom-up assessment of every aspect of our business down to the engine type, weather conditions on the north Atlantic, all of that stuff, so it was pretty vigorous and actually quite painful for us, but we got the result we wanted. If you look at the general industry figures, if you go on to the website of a number of the carbon offset companies now, most of them now have a calculator, so you can put in where you are travelling from to what the aircraft type is and they will give you a broad assessment of your journey. If you talk to those companies, as we spent a lot of time doing last year, they will tell you that it is about 90p an hour, on average. Now, it varies, as I said, on the type of engine, the number of engines you have, so four engines is worse than two, the load you have, the cargo load and the passenger load, et cetera, et cetera, so of course there are variations. We are slightly higher than that because we fly fewer passengers because we are business class only, so each airline has to take account of that which is why the assessment demands that we do a reconciliation for the Edinburgh Centre and of Carbon Neutral to make sure that we have assessed exactly how much fuel we have burnt. On Friday night, we had a passenger with a nose bleed and we had to turn back because he was losing so much blood, so we burned a lot more fuel, and that will go into the calculation and we will have to pay more this month as a result of a passenger having a nose bleed, but it is practical, it is simple, it is easily measurable and it is easy for us to calculate and independently verify that we are offsetting every single flight in that month.

Q201 Colin Challen: So you will be able to monitor it in real time and perhaps we will see that figure change?
Mr Hunt: Sure.

Q202 Colin Challen: Who should take the lead in selling offsetting, if you like? Who should promote it the most? Should it be the airlines or should the customer take responsibility? Should it be the Government that does it, do you think?
Mr Humphreys: I think everyone should take responsibility. I think people will approach offsetting in different ways and have their own criteria. The Government has a role, the airlines have a role and individuals have a role as well. We do not believe that passengers should be dictated to, that there is only one approach; there are a variety of approaches which suit different people in different ways.
Mr Hunt: I fundamentally disagree with that. I think the proposal we would have is that the Government sets up a regulator, a bit like the FSA, and they authorise and verify carbon offset companies, so they make sure they go through rigorous protocol checks and process checks to make sure they are setting up schemes. Then you have regulated carbon offset companies that the Government authorises and the airlines can then choose which offset companies they work with, providing that they are accredited by the Government, much in the same way as, as a public company, we have to have a nominated stockbroker to work with the Stock Exchange who is licensed by the Financial Services Authority. That works really well, which is partly why Britain has become one of the leading centres for finance because the regulatory framework works most of the time, though clearly there are examples where it does not, but most of the time, because it is a light-touch regulatory environment. I think the Government has to show some leadership on this

and at the moment my perception is that it is confused, it has different departments doing different things and the airline industry has not got its act together. IATA could play a role in this, although we are not all members of IATA if they were to come up with something, but I do not think they will because of the type of organisation they are. Therefore, I think the Government should take the lead on this, should make it light touch and simple for us, as airlines, to offset and make it easy for the customers to offset until emissions trading comes in, but not go down the path it has gone down to say that the Government kitemark and CERs is the way to go because, as Barry says, there is not one type of project that is necessarily right for every consumer.

Q203 Colin Challen: You may have heard that Defra is looking at another policy, personal carbon allowances, which would be annually issued, personal carbon allowances with a cap and tradeable, so that makes it more flexible, but that will put the onus on the customer and take it off your shoulders, perhaps even take it out of the ETS or not even have to go into it, not in your lifetime anyway, but would you think that would be a good approach, to put the responsibility on the consumer?
Mr Hunt: No, I think we need to make it simple for the consumer and the way that is going is that at the end of January every year we have to submit a carbon statement into the Department for the Environment and we will have all sorts of advisers and people getting involved to help people fill out forms, et cetera, et cetera, and I think it would be incredibly hard to police it, to say, "This is your allowable footprint", but how do you then measure an individual's footprint? It is more complicated than measuring a person's tax situation which is already, as you know, incredibly complicated and enormously bureaucratic.

Q204 Colin Challen: But, if you have already said that you can calculate very accurately this 90p figure, that has to measured in real time—
Mr Hunt: Sure.

Q205 Colin Challen:—so I do not see that it is very complicated at all.
Mr Hunt: Well, how do you make sure the consumer reports to the Government every time they fly?

Q206 Colin Challen: They do not have to report to the Government; the annual allowance is an efficient, self-policing thing in many ways.
Mr Hunt: But you are saying you would make it mandatory or not?

Q207 Colin Challen: This system would have to be mandatory, so, when a potential customer came to you, you would tell them the likely carbon footprint of that flight and they would have to decide themselves whether they wanted to take it.
Mr Humphreys: I thought the idea, first of all, of a carbon footprint was to cover all of your emissions, not just aviation. You are quite right in terms of a flight, that it is relatively easy to calculate, but whether it is as easy for the whole of your activity is another matter, and these ideas are so far off, at the very early stage that, to be honest, we do not understand them and, certainly from Virgin's point of view, we do not understand how they can be calculated. If there is a nice, simple way, then that is fine, but it is far too early really to jump to conclusions, I would say.
Mr Hunt: I would say for aviation specifically, if the Government were to say that it was the responsibility of the airlines to collect the carbon offset and to verify that they were collecting those offsets and it was under a lightly regulated scheme, then we would absolutely support that because at the moment, frankly, we have got enough to do without worrying about this particular issue. The amount of work we have had to put in to get our solution in place, for us as a small airline, is a big investment on our part, but actually, if the Government were to take the lead on it and say, "This is your flight, so this is how much you have to pay and the airline will collect it", we would actively support that, providing that as close to 100p in the pound went into the offset project and not into government coffers or into some bureaucracy, which is my worry with this and, secondly, that it was a level playing field for all airlines.

Q208 Tim Farron: Knowing what you do about your customers, what do you perceive over the next decade in terms of the increase in the number of offsets purchased to compensate for carbon emissions caused by flights? Will it be a significant increase over the next decade?
Mr Humphreys: Yes, I think there will, but, as ever, it is quite difficult to look far ahead in these matters; there are a number of different pressures. For example, if emissions trading comes in, how will individuals react to that? We have mentioned APD already and there was clearly a reaction on the part of the public against the doubling of APD, the feeling being that we are more than paying through taxation for our emissions, so why should we pay more, not by everybody, but by some, so it is quite difficult to forecast ahead how people will react, but I think there will be certainly more take-up as people are becoming more and more aware of the environmental issue.
Mr Hunt: I think there is demand for it amongst consumers, and I mentioned the MORI poll. I think the problem we have got is that the APD issue has really killed any offset work that was going on in the industry, limited as it was. More importantly, I think that the airline business and the Government have to make it easy for people and simple for them to understand and engage the consumer, and the reason the BA project has not been successful is partly because it is completely lost on their website and it is very difficult actually to work out how you make this contribution, whereas, with us, it is very simple because we just build it into the fare and there is a little button next to the fare which says to click it and you will find out more what your carbon contribution is. It is actually a relatively simple problem to fix and, if we keep going down this road

of increasing airline taxation and then introducing all these things, whether it is CERs, VERs or whatever, we are just going to switch the consumer off, which is what has happened.

Q209 Tim Farron: Your complaint about APD earlier on, is that because it is a lot more money or is it because it is not directly linked to environmental goods?
Mr Hunt: The low-cost airlines typically charge £40 for a flight, that is the average, so, if you stick £5 on top of that, that is a massive increase, it is four years' worth of inflation in one hit, and that is what the consumer sees. They do not care where it is going, they are just looking at the cost of their flight, so, if there are four people going on a business trip to Brussels or there is a family going on holiday to Spain, whatever it is, suddenly they have got to pay an extra £20 and that is the way they see it. The short-haul market is incredibly price-sensitive; it has a demand elasticity coefficient close to 1.0, so Easyjet sit around worrying about 75p increases on their fares and the effect that is going to have on demand. From the consumers' point of view, they are thinking, "Well, I'm paying £41 plus £5, so I'm paying £46 for my flight, but then, if I've got to pay £1.35", or whatever it is per passenger for carbon, suddenly maybe that flight has become marginal and, "I won't take that trip".
Mr Humphreys: Our fundamental objection to APD is slightly different. We were surprised at the doubling, I have to admit, but we think, and government ministers have admitted this publicly, that it is a very poor environmental tax; it does not achieve the objectives you would want an environmental tax to do. For example, the money is not used for any environmental purpose, but it goes into the general Treasury coffers, it provides no incentive at all to airlines to reduce their emissions and a passenger travelling on the dirtiest, noisiest, most polluting aircraft around pays exactly the same tax as a passenger travelling on a modern aircraft, so it is a poor tax from that point of view.

Q210 Tim Farron: I accept that, but would you accept, and the Government has not been very clear about this, that essentially offsetting is the last resort and that is all it is really? It is a bit like recycling, that we only do it when we realise that we have an unavoidable flight, for example, to take. If the Government's stated objective was actually to reduce demand for flights, and that in itself would of course reduce emissions far greater than any offsetting we go into, would you be happier?
Mr Humphreys: No, very unhappy because I do not believe the objective should be to reduce travel; the objective should be to reduce emissions. If we can achieve reducing emissions and allowing the economic and social benefits of air transport to remain, that surely has to be the best way forward. For us, offsetting is just a part of the total picture. We are working hard with industry to cut the pollution that aviation creates, and I think we are making substantial progress on that and we are also working hard as a company. You may have read in the press of various initiatives that we, as Virgin, have undertaken, such as the idea of towing the aircraft at airports rather than allowing them to travel under their own engines—
Mr Hunt: Which would reduce fuel by about 0.12%.
Mr Humphreys: I am sorry, but emissions at airports is a major problem and aircraft at Heathrow can sit on the tarmac for 30 minutes with their engines running and at Kennedy Airport in New York, it is very common to sit for 90 minutes. That is a lot of fuel, a lot of emissions. If we can avoid that, then the pollution around the airport will be greatly reduced. That is a Virgin initiative, we are working hard on that, we are putting a lot of resources into it, and it may not work, but at least we are trying to do something. We are working with air traffic control to introduce a continuous descent, but also governments have to do their bit as well. Just to give you one example, it has been estimated that, if the governments could sort out the air traffic control systems around the world so that airlines fly in a direct line instead of circuitously, 12% of all aviation emissions could be avoided. Now, that is a lot of emissions, a lot of fuel wasted, but that is not in our hands, there is nothing we can do about that; that is in the governments' hands.

Q211 Tim Farron: If offsets have a role to play in the short to medium term while we wait for the Emissions Trading Scheme, it has been put to this Committee that they should be made mandatory, possibly with an opt-out. Does either of you have any view on the merits of that proposal?
Mr Humphreys: From Virgin's perspective, we are against a mandatory proposal because there are a variety of schemes and people approach this subject from different perspectives. We think it is too early to talk about mandatory schemes. Let us introduce the schemes, get them up and running and see how they work. There is a risk of multiple off-setting, in a way, because individual companies might have their own schemes, the individual might do his own thing, the airline might do its own thing and so on. It gets extremely complicated, so, from our perspective, let us see how it works out first.

Q212 Tim Farron: And from yours, you are doing it, are you not?
Mr Hunt: I think the Government should make it mandatory and I think, providing that it is sensible, that we offer consumers choice in where those offsets get invested and that it is a level playing field, then I would absolutely and totally support the mandatory offsets.

Q213 Tim Farron: You are losing business because of your scheme?
Mr Hunt: We are gaining, I would say, from the feedback we have had. We have BA Gold Cardholders who say, "Fantastic, I'll give up my airmiles. Can I convert my airmiles into carbon points?" That is not everybody clearly, there are a lot of people who are addicted to their airmiles, I do not quite understand why, but they are, but, from the

feedback we have been getting, we have certainly picked up a lot of business as a result of being carbon neutral.

Mr Humphreys: We do not yet have a scheme, as I mentioned before, but we have just been found by a survey to be regarded by the public as the greenest airline. There may not be a lot of competition there, but we were the greenest airline.

Mr Hunt: Hang on! We are carbon neutral and you are not! I think what you should do is convert all your customers' miles into carbon points and offer that and BA should do the same.

Q214 Mr Caton: Can we return to the perceived impact of the APD announcement in the Pre-Budget Report on offsetting. One consequence of course was that at that time the airline industry was in negotiations with Defra about possible offsetting. Was what you were talking about along the lines of what has come out in Defra's consultation paper now or is it substantially different?

Mr Hunt: I think the issue we had with Defra, and we were very vociferous and so were Carbon Neutral who were our advisers on this, as were one or two other people we were working with, that certified emissions are not the best, the optimum. I understand the Committee's concerns about verifiable emissions and the opportunities for fraud and all that stuff and that is why I have proposed a regulator to make sure these things are done properly, but the problem I had with the Defra proposal, and, as usual, they would not even listen and we wrote to the Environment Minister, the Chancellor and the Prime Minister on this, is that certified emissions take out, on average, about 50p in the pound which goes into bureaucracy, it goes to the Government and to the UN to administer in order to prevent fraudulent schemes, like the forestation projects where the money does not actually go into forestation, it goes somewhere else. We have to protect against that, but at what cost? I think 50p in the pound is just ridiculous, frankly, whereas in a lot of cases 100% of our investment, based on the projects we pick, goes straight into the projects that we are offering to our consumers to invest their carbon points in. The principle of having a government scheme, I support, I think it should be mandatory for the airlines and I think it should be phased in because airlines need to be able to react and assess the impact over a 12- to 18-month period, but I think it should be based on voluntary emissions which are far more efficient, albeit that needs to be policed.

Mr Humphreys: The Office of Climate Change did consult extensively and we talked to them several times. I think we were a little disappointed with their approach. They were very enthusiastic, but, as Lawrence has said, they had almost a fixation on what they thought was the right approach, whereas we wanted a more flexible approach, so that was the key reason why we felt we were unable to sign up and I think, even without the APD increase, we probably would not have signed up.

Mr Hunt: I think what we are seeing is Tesco's going it alone, we are seeing Marks & Spencer's going it alone, BP, HSBC, all these businesses are now doing their own thing because the government scheme has failed and I think the Government need to wake up to that and realise they have made a mistake. They have been badly advised, I think. I have met various people who have consulted to Defra and I think it is a misguided policy initiative. Just can it and start again. That, I understand, is politically a very difficult thing to do for the Government, but there is no industry support. The only interest that I had was a phone call from the Minister's office, asking if I would turn up to a photo-shoot, having just written to him, saying that I was not supporting what they are doing.

Q215 Mr Stuart: Do you think Defra are going to go ahead with their proposals and are aiming to?

Mr Hunt: Well, they have. They have announced that is what they are doing. I think you guys have got to turn them around, and I am very happy to help with that.

Q216 Mr Stuart: Obviously Silverjet's response got a lot of publicity, but your views were less well known. I do not know whether you would like to expand on that.

Mr Hunt: Excuse me, but Richard got far more airtime than I did!

Mr Humphreys: I agree with what has just been said. As I explained, we were not very happy with the way that it was handled.

Q217 Mr Chaytor: Could I just ask you, Mr Humphreys, to clarify what you said a minute ago, which is that, disregarding the APD increase, the airlines would not have signed up to the scheme.

Mr Humphreys: Well, I can only speak for Virgin and, as I said, we were in extensive discussions with the Office of Climate Change. We made it clear to them that we did not agree with their general approach, their focus on CERs to the exclusion of VERs, so we were not at that moment inclined either to sign up or to appear at photo-shoots.

Q218 Mr Chaytor: Mr Hunt, would you have signed up to the scheme or not?

Mr Hunt: I would have done if they had gone with the VER approach, yes, but let us look at some bigger airlines that have more influence than we do, and First Choice has probably been the leading airline in terms of its whole approach to eco-tourism, to carbon-emission reduction, to offset management and all of that. They have been, I think, the leading light on the subject and they killed their entire programme on the back of the APD increase and Defra's announcement. They came out publicly.

Q219 Mr Chaytor: What we have got is different airlines giving different reasons for why they did not sign up to the scheme, so is the APD increase not a smokescreen? If I can put it another way, you are trying to create the impression that there was this massive consumer uprising against the APD

increase. Now, I represent 72,000 people, thousands of them fly every year, thousands write to me every year and two of them contacted me over the APD increase. One complained that it was outrageous that his business-class flight to Australia would now cost more and the other complained that the rise was insufficient because it would not serve any purpose, so my question is: why should our respective perceptions of the public response to the APD increase be so different?
Mr Hunt: I did not say anything about the public response to the APD increase; I said what the airlines' responses to the APD increase were. The consumer will reach a point where the increase in tax becomes so great that they will not travel.

Q220 Mr Chaytor: Is there any evidence that that point has been reached yet?
Mr Hunt: No, I do not think there is.

Q221 Mr Chaytor: Otherwise, you would not be in business surely? Presumably you made a judgment that the level of taxation has not yet reached that point, otherwise, you would not have established your business?
Mr Hunt: We are not in such a price-sensitive business, but, if you look at Easyjet and Ryanair, who have created huge economic wealth and development and allowed lots of small businesses and people to travel who would not otherwise have been able to do so, it is going to hit them hard and we have not seen the evidence yet because this has just come in. It only came in in February, as you know, but I do not think consumer reaction to the APD increase was what we were talking about. I was talking about the airline reaction to it, but please take the fact that First Choice was prepared to do something about its environmental footprint and is now not, partly because of the Defra announcement with CERs which they do not support, they were going down the voluntary route, and the second impact was the APD. You have to take those things together because it shows a lack of government joined-up thinking on the issue.

Q222 Mr Chaytor: So there is one airline that uses APD as the reason, but there is another major airline that would not have signed up without the APD.
Mr Humphreys: Can I clarify what I meant about the public's reaction. I think it is a question of timing and certainly our feedback, which was not scientific feedback, but there was some feedback, was that the announcement of the offsetting proposal and the doubling of APD created confusion in the public's mind and a feeling with some that we are more than paying for our emissions through the increase in APD, so why should we join an offsetting scheme. Now, that was a temporary issue and it has probably already passed and that is why we are going ahead with offsetting now, but there was some kickback from it.

Q223 Mr Chaytor: Is there any evidence that the number of people flying has reduced since the increase in APD?
Mr Humphreys: If you increase the price, there will always be a reduction in demand.

Q224 Mr Chaytor: Is there any evidence that the numbers have increased?
Mr Hunt: No, because it only came in on 1 February and we have not got February passenger stats yet. Actually, that is not true. The BA statement came out yesterday and showed a significant fall, but we do not know whether that, in the last quarter, is in Europe as well as long haul, but that may have been because they keep cocking up the baggage handling and all of that, but the reality is that you will see a reduction. Easyjet are livid about this and they know, because they understand their model far better than I do or you do, it is a different business from my business, Easyjet, but they are livid about it because it will significantly impact their demand and they are trying to invest in this country and grow their own demand.

Q225 Mr Chaytor: But if Easyjet and Ryanair are selling seats virtually for free, how can they argue that a minor increase in APD is going to stop people flying?
Mr Hunt: How many people have actually been on a Ryanair flight and paid zero for it? The average is £40 we are talking, that is the economic data, and the way the model works is that you start low and you build your price and you pay more, so some Ryanair passengers pay £200.

Q226 Mr Chaytor: So it is a small percentage of the actual cost of the flight.
Mr Hunt: Let us not return to people flying for free.

Q227 Mr Chaytor: But if your argument is that some of them are paying £200, then the rise in APD is a small percentage increase. My argument is that there will be some people who are flying for next to nothing and, therefore, how can they object, if they have got a free seat, to paying a slight increase in tax?
Mr Hunt: Because the average is £40 and it is a 12% increase which is four years' worth of inflation in one hit.

Q228 Mr Chaytor: Can I ask both of you the general question: what do you consider to be a reasonable system of taxation on airlines? As to the point about APD being a fixed rate, would it be preferable if it were a percentage?
Mr Humphreys: Taxation to take account of emissions or general taxation?

Q229 Mr Chaytor: Largely to take account of emissions.
Mr Humphreys: We very strongly support emissions trading.

Q230 Mr Chaytor: That is not taxation. What I am trying to get to is: do you think there is a role for taxation at all? Is it the structure of APD, is it the question of VAT on fuel? Leaving aside emissions

trading, do you think there is a role for taxation in addition to emissions trading and the technological improvements that we are all looking for?
Mr Humphreys: Airlines should pay for their emissions, there is no doubt about that; it is a question of how you pay for it. If you pay for it through emissions trading, then I would argue that there is no justification for additional taxation. If you do not pay for it through emissions trading, then alternative means should be looked at, but the APD is actually, as we have mentioned, a very poor environmental tax.

Q231 Mr Chaytor: Is there a way to make APD a better environmental tax?
Mr Humphreys: Yes, you could charge Mr Hunt more, for a start!
Mr Hunt: On top of my offset balance! You can give me a credit for that!
Mr Humphreys: However, it is quite complicated and it would need looking into, but, without a shadow of a doubt, there is a much better way of doing it.

Q232 Mr Chaytor: Have you made a submission to the Treasury as to how it could be improved as an environmental tax?
Mr Humphreys: No.

Q233 Mr Chaytor: Would it be a good idea if you did?
Mr Hunt: They do not listen.
Mr Humphreys: Well, the Treasury are listening to us at the moment on a different subject about APD and reforming it in other ways, but we have not addressed that particular point.

Q234 Mr Chaytor: From Silverjet's point of view, you are completely opposed to any kind of taxation and you think it should be your own offset scheme or emissions trading?
Mr Hunt: No, I think that, when it comes to emissions, the Government should take the lead. I think they should implement a mandatory offset charge based on a proper assessment and through a light-touch regulated scheme, as I have said, and I would completely support that. We also pay corporation tax, we pay National Insurance for all our staff, we pay obviously employment tax for all our people, we pay tax on all of our input costs, except fuel, et cetera, et cetera, so I am not in any way opposed to tax as a general principle, but I want to make sure it is efficient and it is fair.

Q235 Mr Chaytor: Yes, but, in terms of the environmental impact, are you saying that a mandatory offset scheme should be the only government measure to impact on emissions or is there a role for a form of taxation, an environmental tax?
Mr Hunt: What is the difference?

Q236 Mr Chaytor: That is the question I am putting to you. Is there scope for something else?
Mr Hunt: Ultimately, when you fly, your 90p an hour should go into a verifiable offset project, and that is what I want to see until emissions trading comes in. It is not difficult. That, we would actively support.

Q237 Mr Chaytor: You have made an issue of the overhead costs of the Treasury or of any state bureaucracy as one of your reasons for objecting to taxation. What are the average overhead costs of the carbon offset schemes that you support?
Mr Hunt: Minimal, one to two%. Depending on the project, one to two% is what Carbon Neutral cost and that is one of the reasons we chose them, so almost 100 pence in the pound when I invest in order to offset my flights goes into the projects, and that is what we should all make sure happens.

Q238 Mr Chaytor: Given that you are trying to position yourself as a green airline—
Mr Hunt: Silver actually!

Q239 Mr Chaytor:—should you not be taking on Michael O'Leary a little bit more aggressively?
Mr Hunt: I am not interested in taking on Michael O'Leary. I think it is great what he has done and the way he is running around telling people they should shoot cows, I do not think you can have really have debates with somebody with that mentality! I would much rather engage with you, with the Treasury, with Defra and the Environment Minister to talk about what my proposal is which is to implement the system of carbon points, light-touch regulation, and 90p per hour.

Q240 Chairman: You have made a point about the extent to which you, as a business, do pay tax. Can you name another business in the transport industry which does not pay tax on one of its three largest input costs?
Mr Hunt: Well, the global shipping industry, as you know, has the same situation as us in that they can fill up their fuel tanks wherever they want.

Q241 Chairman: Yes, we are going to have an answer out of them soon!
Mr Hunt: So the answer is yes. There are some more statistics flying around that the global shipping industry actually contributes twice as much as the aviation business. I would love to know what the hotel business contributes. There is a huge, grey market in the hotel industry, as you know, it is a cash business, and I would love to know. We have got lots of friends in the hotel business obviously, but I would love you guys to have a look at the hotel business and see how many emissions they produce because buildings are the biggest contributor.

Q242 Chairman: We have buildings in our sights too!
Mr Humphreys: Perhaps I may point out that aviation also pays for all of its infrastructure which many other modes of transport do not of course, so you cannot just look at the taxation element.

Q243 Chairman: Coming back to Virgin's enthusiasm for emissions trading as the best way to, as it were, tax the industry, do I assume from that that you, therefore, would support auctioning all the allowances for aviation because, otherwise, it would not be a tax at all? If they are going to be presented to you, we may be in a position we were with some of the power generators, that actually they made a profit out of the national grid(?), which is hardly a tax.
Mr Humphreys: The fundamental point is that aviation should be treated the same as other industries. A tonne of carbon saved is a tonne of carbon saved, no matter where it comes from, so the same system which applies to power generation, et cetera, should apply to us. There may be a role for auctioning. We will accept whatever system is introduced, but we do insist on being treated the same.

Q244 Chairman: You have obviously had quite a lot of contact with the Office of Climate Change and Defra in the last few months.
Mr Hunt: Not since January.

Q245 Chairman: No, prior to that. Was it your impression that the Office of Climate Change was aware that APD was about to double or not?
Mr Humphreys: I do not think they were. I do not think anyone else in Whitehall, including the Department for Transport, was aware. They seemed to be very surprised. That was my impression.
Mr Hunt: I think I had an email from someone in Defra and I pretty much concluded that they had no idea and they were very disappointed.
Chairman: Well, that is an interesting insight into the ways of Whitehall!

Q246 David Howarth: I have just one more point on what has happened. It is interesting that Virgin decided, despite what happened with APD and so on, that you were going to go ahead with your offsetting scheme which presumably is of benefit both from the point of view of customers and from the point of view of staff, which you mentioned, so what do you think is going to happen with the other airlines? Are they going to give way to customer pressure and pressure from staff or are we going to end up with a bifurcated airline industry where all the staff and the customers who are concerned about climate change end up with some airlines and the ones who do not care end up with other airlines?
Mr Humphreys: I am not sure. I think the trend is for airlines to introduce these schemes. There will always be some, and I suspect a certain Irish airline which has been mentioned will be one of them which will not, but I think the overwhelming majority will eventually do this.

Q247 David Howarth: So the long-term effect of this disagreement is not likely to be very great?
Mr Humphreys: I do not know that it is a disagreement, it is just that we have different approaches. In a way, it is good if you are a consumer, you can choose which airline you want to travel with, so this might be a factor in that choice.
Mr Hunt: I think the bigger debate is that, if an airline is based in Dublin, it does not have an offset charge and an airline based in Luton and which is orange does have an offset charge. We have got the same, both Virgin and ourselves, with American Airlines, United Airlines, Delta and so on and clearly the US Government is far more supportive of their airline industry than ours is, and I think it unlikely, in fact I know it is because we met various senior people in the US Administration, they have no intention of regulating the US airline business at the moment because the poor US airline business never makes any money anyway, so they will see this as a negative.
Mr Humphreys: I think I slightly disagree with that to the extent that I think the policy in America could well change over the next couple of years or so and we might see a dramatically different approach.
Mr Hunt: But, as we know and as you know to your cost, the aviation industry in the US always manages to wriggle itself out of, and is usually the biggest beneficiary of, any sort of tax change.

Q248 Mr Hurd: Is your fundamental objection to the CER route around cost or, more specifically, how much will a Silverjet ticket to New York have to rise in order to accommodate the Government's recommendations here?
Mr Hunt: Depending on the weight of the aircraft—

Q249 Mr Hurd: I understand the point in principle, but for commercial travel it is about cost, is it?
Mr Hunt: No, if I am paying £11 for every passenger I fly into an offset scheme, I want to see £11 going into the project. I do not want to see £5.50 going to a bunch of inspectors walking around with forms.

Q250 Mr Hurd: But, if you are paying £11 now, what do you expect to have to pay if the threshold is raised?
Mr Hunt: Sorry, what threshold?

Q251 Mr Hurd: If the Defra recommendation becomes the policy?
Mr Hunt: It is another 50p in the pound, so, instead of paying £11, it will be £16, but the point is that that additional £5.50 goes into something completely worthless, a bunch of bureaucrats.

Q252 Mr Hurd: But, if it is about another £5, it is another £5 or £6 in your pocket, but that is not a big deal for you in terms of your market?
Mr Hunt: Well, then you have got APD increases on top of it, et cetera, et cetera, and it does become a big deal, it has become a big deal and it made us think, "Do we really want to go down this route if we keep getting all these extra costs?"

Mr Humphreys: I think our issue with CERs is not only cost, it is also the type of project they undertake and the geographical areas they invest in, so there is a multitude of issues.

Q253 Mr Hurd: It is not just cost?
Mr Humphreys: No.

Q254 Chairman: Is there not some administrative or audit cost built into the voluntary offsets?
Mr Hunt: Sure.

Q255 Chairman: So there is an acceptable percentage?
Mr Hunt: Sure. As we said earlier, we have to police these schemes to prevent fraud and so on, and I absolutely support that, but I would encourage you to look at the way the FSA works. No, it has not always got it right and there have been some disasters with pensions and so on and that is not comfortable for anybody, but in general the FSA works very well and it is well regarded by its industry participants, it is pretty well regarded by the consumer and I think, interactive with the Treasury, it has been successful, and why we cannot replicate that for this kind of thing, I do not know. The other point I would make is that long term the emissions trading schemes and so on are all great, but actually what I really want this Government to do is to help us to invest in new technology because ultimately that is the answer. Boeing are talking about 75-80% reductions in emissions if they can develop certain engine and wing technology, composite technology and so on. In Britain, we have this huge skills base, particularly in wing production, which is going to disappear with the Airbus restructuring and we are going to lose another skills base in this country which we all know is a massive problem and we will lose a lot of jobs. There is a huge opportunity here actually for the Government to get behind the new technology projects and create breaks for people like BAE to invest in these new technologies, which is what is happening in the US. The US Government is actively participating in the development of new, lower-emission technologies.
Mr Humphreys: I would not disagree with those points at all, but I think it is important that we do not lose sight of the fact that the industry is doing an awful lot in this area. We are a member of Sustainable Aviation which is a group of manufactures, airlines, airports, et cetera, and we have entered into committed undertakings to improve fuel efficiency by 50%, reduce NO_x emissions by 80% and to reduce perceived external noise by 50% by 2020 compared with 2000. Those are very big reductions and we are committed to those as an industry.

Q256 Joan Walley: You implied earlier on that there has not been any joined-up thinking between the Treasury and Defra over the APD and the Defra consultation. You also said it would perhaps be unlikely to get an EU ETS by 2012, but nonetheless we could have, so where would that put each of you in terms of Silverjet wanting to be carbon neutral? Will you have an ETS and stay carbon neutral on your own things as well?
Mr Hunt: If you could find a way of accelerating the implementation of the ETS for our industry, fantastic.

Q257 Joan Walley: Well, that might be one of the recommendations that we are likely to make actually.
Mr Hunt: Yes, but in the meantime let us look at the history of the EU implementing these kinds of things and actually I think you are going to find the European aviation industry much more opposed and not as open as perhaps Virgin and First Choice are and so on.
Mr Humphreys: We have been very active in lobbying our fellow airlines in Europe and we have had a lot of success. It has not been universal, but there has been a sea change in approach on the Continent. I personally am not as pessimistic about the chances of introducing the ETS by 2011. I think it is less likely that we would have the wider ETS scheme by 2012 which is the proposal, but for intra-EU air services, I think there is a good chance of having it.

Q258 Joan Walley: Certainly when we were out in Europe, we got the distinct impression that EU officials felt that there was leadership from the UK in terms of taking that whole agenda forward, so I think the pressure is clearly not there, but how does that leave you in terms of the offsetting that Virgin wants or is intending to do within a very short space of time to those already very committed policies that you are going to have for offsetting? Will that sit side by side with the ETS when it comes in or will it be an additional thing that you will be doing, or will you carry on doing it in the same way so that you have a double bite at the cherry, as it were?
Mr Humphreys: That is one of the reasons why we favour a more voluntary approach because, if we have the ETS and it works efficiently, then that should cover all of the airlines' emissions. If individuals want to do something on top of that, then why not, but we do not think they should be forced to because that would be double counting.

Q259 Joan Walley: What about Silverjet, will you be wanting to keep your carbon neutral—***Mr Hunt:*** Well, by definition, the ETS will make us carbon neutral, so our strategy is to be carbon neutral and there is no ETS system that we can subscribe to at the moment that works for us.

Q260 Joan Walley: So you just transfer it to another heading, as it were?
Mr Hunt: Well, it is another system rather than a heading and it is a better system. Emissions trading is a much easier, much more efficient system, without doubt. Investing in these projects is all wholesome and so on, but actually it is not as efficient as we would like it to be.

Mr Humphreys: The big question for us, I think, is: will the Chancellor give up APD if the ETS comes in?

Q261 Joan Walley: So you want the joined-up thinking between APD and the ETS?
Mr Humphreys: Yes.
Mr Hunt: Yes, if the Government is serious about reducing carbon emissions, it has to do more to help us, and it is not right now.

Q262 Mr Caton: Can we talk about the criteria that you use, and are going to use, for designing your offset scheme. Mr Hunt, can you tell us how you came to decide on the Carbon Neutral company? Was it their reputation that sold them, was it the quality of their projects, and do you invest in particular projects or do you just go with the portfolio?
Mr Hunt: We went to 12 companies in total, some of whom are carbon trading companies, some of whom are just consultants. We have a couple of sustainable investors in our business who know a lot about the system and actually employ scientists, so we talked to them, we talked to the Edinburgh Centre for Carbon Management, et cetera, and we talked to several bodies in the United States about the subject. We had a number of criteria: the quality of the project; the efficiency with which our money is invested; the cost in its own right because, as you know, the cost of carbon emissions and offsets varies quite considerably; clearly getting maximum offset for every pound we invest; and also the creativity of their approach to this in terms of trying to engage the consumer. We think that engaging the consumer is as important as engaging the Government or anybody else in this, so we have actually got to get the consumer excited about this and that is the thing which will have the biggest impact. We went to 12 companies, we shortlisted down to seven, we got proposals from five and then we selected Carbon Neutral, so it was a six- to seven-month process. To answer your point about the projects, we allow Carbon Neutral to recommend projects. We ask them for a diverse range of projects because for our consumers, this is Barry's point earlier, let us have some flexibility and choice here and, if you want to engage the consumer, 50% of our passengers are American and they are much more likely to get excited and interested in this if there is an American project they can invest in, whereas, if we go down purely the Third World route, which is one of the suggestions that we had, we may switch certain people off. I was talking to a passenger the other day who said he absolutely hated wind farms. He said that they are an eyesore and that, if we had anything to do with wind farms, he would never fly with us again, but we do have a wind farm project in our portfolio, but maybe he does not want to invest in that.
Mr Humphreys: We have similar criteria. There is no shortage of companies with whom one can work in this area.

Q263 Mr Caton: Something which has not reared its head yet is radiative forcing. When you chose TCNC, did you take into account the different values of RF used by different companies, which I understand vary bifold?
Mr Hunt: Again we use the Edinburgh Centre for Carbon Management to verify the protocols and the processes that they implement in the selection and they got one of the highest scores, so again we had that independently, so we had, "We are the best at this, this and this", but we had it.

Q264 Mr Caton: Particularly with airlines and radiative forcing, do you think there should be some sort of regulation so that we can get a level playing field?
Mr Hunt: Sure.
Mr Humphreys: There is a lack of clarity, I think, scientific clarity about radiative forcing where you can have different numbers from different so-called experts. I think the Stern Report suggested a figure of 1.9, but you have other figures up to four and so forth. We are not scientists, we are not experts in this area, so we rely on the scientific community to come to a consensus view of the figure to be used, but I think at the moment that consensus view is not there unfortunately.
Mr Hunt: I think what the Office of Climate Change and Defra should be doing is setting themselves up as a regulator in this area, being advised properly and creating this level playing field, which Barry is talking about, to make sure that the science is right. We had to do that ourselves and it is very expensive. In fact, we are now advising, I am personally advising one of the aircraft manufacturers on this whole issue because the cost involved of actually going through the process of verifying this is complex, so there is no point in each of us, as airlines, going through that process ourselves, which is what is happening right now.

Q265 Mr Caton: Is not the danger at the moment, especially for companies and offset providers who give an RF value of one, that they are actually undervaluing the carbon emissions? You make an estimate of 90p per hour per year, but that might well not be appropriate if the real RF value, as I agree we do need to establish through science, is considerably higher than that, as seems likely.
Mr Humphreys: There is a risk, but equally, if you take a figure of four, you could probably overestimate the number, so you come back to the lack of clarity.
Mr Hunt: The 90p is an average, it is based on discussions with a large number of companies and it is not the lowest figures, there are lower figures and there are higher figures. Do not forget, my measure is per hour and the RF is a percentage of the overall, so they are different measures. The average flight in Europe is one and a half hours, the average long-haul flight is five and three-quarter

hours, so it will vary, but I think Defra and the Office of Climate Change should be saying to the industry, "Right, we've employed these people to work it out. This is what it is. Take it as read that that is right and then we are going to audit the carbon management companies to make sure they comply with that".

Q266 Chairman: So, if the science comes up with a figure such as 1.9, that would be accepted?

Mr Hunt: Sure, if that is what the science says, we will accept it.

Chairman: Well, thank you very much. It has been a very useful session from our point of view and we are very grateful to you both for coming in.

Tuesday 13 March 2007

Members present:

Mr Tim Yeo, in the Chair

Colin Challen
Mr David Chaytor
David Howarth
Mr Nick Hurd
Mark Lazarowicz
Dr Desmond Turner
Joan Walley

Memorandum submitted by The Climate Group

INTRODUCTION AND RELEVANCE TO THE INQUIRY

1. We welcome the Environmental Audit Committee inquiry into the voluntary offset market and are pleased to provide a submission.

2. The Climate Group is an independent, nonprofit organisation dedicated to advancing business and government leadership on climate change. We are based in the UK, the USA and Australia and we operate internationally.

3. The Climate Group believes that carbon offsetting can be a useful way to engage the public in efforts to combat climate change, increase investments in emissions-reducing projects and allow experimentation with low carbon technologies. However, it should be viewed as the third step in a comprehensive emission reduction strategy that starts with use of cleaner energy resources and greater efficiency at source. We recognise that, as legislation to reduce GHG emissions becomes more ambitious in coverage and depth, offsetting will eventually become mandatory or redundant.

4. For the past 18 months The Climate Group, in partnership with the International Emissions Trading Association and the World Economic Forum GHG Register, has been working with a range of business, government and non-government organisations to develop the Voluntary Carbon Standard (VCS). The objective of the standard is to provide a benchmark for ensuring integrity and harmonization in the voluntary carbon market, thereby offering confidence to buyers, sellers and other stakeholders in this growing market.

5. Version 1 of the VCS was released for consultation on 28 March 2006 and received written comments from 65 Climate Group and IETA members, partners and external stakeholders. Consultation meetings have also been held in the UK, Germany, US and Japan along with a series of teleconferences with interested stakeholders. A draft Version 2 of the VCS was released on 18 October 2006 and received comment from around 60 stakeholders. The VCS is currently being finalised by an independent Steering Committee with launch planned for May.

6. The Climate Group's experience developing the VCS and advising a number of organisations on the use and purchase of carbon offsets puts it in a unique position to comment on the inquiry. We would welcome the opportunity to discuss our experiences and views in more detail with the Committee.

Question 1: *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

7. The volume of voluntary offset trades has expanded significantly in recent times (doubled to ~20 Mt CO_2-e in 2006), and is expected to experience continued growth (up to ~400 Mt CO_2-e in 2010). International standardisation that guarantees certified offsets are real, additional, permanent and independently verified is required to increase business and consumer confidence in the market. This is the aim of the Voluntary Carbon Standard and we have attached a copy of Version 1 for your consideration. We believe that if adopted the VCS will ensure that voluntary carbon offsets are at least as robust as those generated by the Kyoto Protocol's Clean Development Mechanism. Given the international nature of VCS we believe that, if widely adopted, it has the potential to become the basic quality standard for carbon offsets.

8. An independent voluntary standard/accreditation scheme should be managed in a transparent manner by an independent organisation responsible for accreditation of verifiers and registries. This approach has been successful in a number of environmental areas in which standards and labelling have been used to develop a credible market. Examples include the development of the WRI/WBCSD GHG Protocol, the Forest Stewardship Council, Marine Stewardship Council, the GRI and the Soil Association. In the case of carbon offsets, we believe that the use of a standard, such as the VCS, will maintain environmental integrity and enable a wider range of offsets to be traded and used than if the market were restricted to Kyoto Protocol carbon units.

Question 2: *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

9. In general, The Climate Group supports flexible market based measures over direct regulation, although we recognise that in some cases the latter may be more appropriate. The recent proposals to include air travel in the EU Emissions Trading Scheme in 2011 are a good start and we would support inclusion of all flights originating or arriving in the EU to be included in the scheme. In parallel, airlines could be required to offer customers the opportunity to offset flight-related emissions, perhaps with some commitment to match the offsets purchased. This, however, should not be seen as a substitute for legislation and incentives to move the whole of the economy on to a low carbon basis.

Question 3: *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

10. The large and growing number of offsets and carbon neutral initiatives makes it difficult for consumer's to determine the legitimacy of schemes. Clean Air-Cool Planet's recent report "A Consumer's Guide to Retail Carbon Offset Providers"[66] is a good start, but this needs wider dissemination. Regular published assessment of the schemes on offer would help the public make informed choices.

11. The development of objective independent standards like the VCS and the implicit registries and transparency requirements will also provide some consistency to the market and help build confidence. The Climate Group has also recently begun a process to develop an international carbon neutrality standard and accreditation body—under the working title Carbon Stewardship Council.

Question 4: *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

12. The science surrounding measurement of carbon in afforestation/reforestation projects is fairly reliable when conservative estimates of carbon uptake and storage are used. Policy issues such as permanence, leakage and eligible project types are equally important and more topical than measurement techniques and require greater scrutiny. Also significant is the extent to which it is acceptable to use credits from future forest growth to offset current emissions. Generally the Climate Group would recommend the use of offsets from clean energy products rather than those involving forestry.

Question 5: *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

13. Data monitoring and measurement techniques have improved rapidly over the last few years due to:

(a) requirement for both Annex I and Non-Annex I countries to report national communications;

(b) requirements for Annex1 countries to report annual national greenhouse gas accounts;

(c) the growth in the CDM market;

(d) a number of efforts requiring and/or encouraging carbon disclosure by companies; and

(e) a growing in understanding of the need to measure emissions if we are to be able to reduce them effectively.

At the project level too, experience with the Kyoto Protocol's Clean Development Mechanism, Joint Implementation and other schemes means that we can now assess and measure the emission reductions achieved with acceptable degrees of accuracy. The use of an independent standard—again such as the VCS—specifying how such reductions should be measured, reported and monitored in the voluntary carbon market will enable users to be sure that the offsets they acquire have bean measured accurately.

At the macro level, the lack of common standards and registries mean that is currently difficult to assess the aggregate emissions reductions that are being achieved by different schemes. Again, the adoption of an international standard for the offset market, with a registry attached to it, will mean that these aggregate figures will become more transparent and reliable.

Question 6: *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

13. The Climate Group believes that the voluntary carbon market complements the compliance market by providing an additional way for organisations and individuals not yet covered by regulation to reduce their net greenhouse gas emissions. Voluntary markets have little or no impact on supply and demand in compliance systems, because of the relatively small size of the voluntary market, the higher $/tCO$_2$-e return in compliance systems and the use of projects that may be developed exclusively to generate voluntary offsets. They play a useful role in trialling new methodologies and approval processes, which can then be

[66] http://www.cleanair-coolplanet.org/ConsumersGuidetoCarbonOffsets.pdf

incorporated in compliance markets, and in demonstrating the range of emissions reduction options that are available. As stated earlier, progressively more ambitious legislation covering a wider range of emitters should reduce the scope of the voluntary market.

Question 7: *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

14. There is a lack of quantitative data comparing the carbon intensity of companies and individuals that offset versus those that do not. However, from an analytical perspective, offsetting requires users to measure and manage their emissions profile and thereby gain a greater understanding of the magnitude of their carbon impact and the opportunities for emissions reduction at source. Results from emissions reporting programmes (Climate Leaders (US), Greenhouse Challenge Plus (Australia)) are that the process of measuring emissions leads to identification and uptake of emissions reduction opportunities. We could expect companies that offset to demonstrate better carbon behaviour than those that do not and individuals to become more engaged with wider efforts to combat climate change.

Question 8: *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

15. Most offset schemes include some non-greenhouse gas indicators, though a lack to date of widely accepted standards means that these are not always applied or adhered to. As a minimum, projects generally have to demonstrate that they have achieved all relevant environmental approvals. More recent standards are requiring that project implementation has no negative impact on sustainable development. However, the extent to which this is assessed varies and more work is required in this area. The Gold Standard—which explicitly includes a sustainable development screen based on local stakeholder participation—provides a good model for stimulation of multiple benefit projects.

January 2007

Witness: **Mr Mark Kenber,** Policy Director, The Climate Group, gave evidence.

Q267 Chairman: Good morning. Welcome to the Committee. Thank you very much for coming in. You and I have already discussed some of these issues but you are now able to discuss it with the Committee as a whole. Could I kick off on a general point: the Voluntary Carbon Standard which you are promoting is one of several emerging standards in the voluntary offset market. What is going to happen? Is there room for more than one standard? Is one going to emerge, as the Co-Operative Group suggest, that will be the cream?

Mr Kenber: I would start by saying I am not absolutely convinced there are lots and lots of standards emerging in the voluntary carbon market though it is often suggested. I know of one that already exists, which is the Gold Standard which has been applied to the voluntary carbon market and the work we are doing on the Voluntary Carbon Standard. Then there are some proprietary standards that certain offset providers or certain schemes have, but they have no ambition to go beyond the remit or the scope of their own schemes. Then there are standards which are being developed in certain sub-national regulatory schemes, for example, in California or in the north eastern states of the United States. But I do not see a plethora of Voluntary Carbon Standards. Turning to the question, I think there is probably scope for more than one but what we are trying to do with the Voluntary Carbon Standard is have the base standard, and when I say more than one, I want to explain why. The basic standard, the Voluntary Carbon Standard, tries to say it is what it says on the tin. This is a certificate that represents 1 tonne of CO2 equivalent reduction and that is what you are getting. It is real, it has been measured, it has been independently verified, it is additional and it is permanent. It does not say anything about the sustainable development benefits, the social attributes, the environmental attributes; it is just a guarantee that what you are paying for, if you are buying a tonne of carbon dioxide reduction, that is what you are getting. That is where the other standards may be useful. For example, the Gold Standard focuses specifically on renewable energy and end-use energy efficiency, the idea being that is one area that people would like to channel investment into. There are others who are looking at the forestry attributes. Having spoken to the Gold Standard and also to the people working with the Climate, Community & Biodiversity Alliance, who are developing standards for forestry projects[1], their aim is very much to have players theirs as Voluntary Carbon Standard Plus. I think you will find that not only in standards across the board but companies themselves, buyers themselves, have their own requirements. One company may say, "We want to use the Voluntary Carbon Standard but only credits from Latin America or only credits from poverty alleviation projects in Africa" or whatever it may be. People will have extra standards that they will put on top but I do not think there are going to be many that try and do the same thing, which is to say it is what it says on the tin.

[1] Footnote inserted by witness 19.03.07: Our hope is that they will see their standards as Voluntary Carbon Standard Plus, ie use the VCS as the basis and then add other attributes as they see fit.

Q268 Chairman: Do you think people are nevertheless rather confused by all this? The voluntary offset market is itself pretty confusing, even to people who try and take an intelligent interest in it. Do you think that people who purchase an offset which meets the Voluntary Carbon Standard are clear that they have something distinctive and they understand what it is?

Mr Kenber: On a business to business level, absolutely. I think it is worth distinguishing that what we are trying to do is probably aimed more at the business to business market, the wholesale level. Were we to talk about going back to the question about other standards, I think there is some need for both education and protection of retail customers, you and I as individuals buying, because we do not know much about offsetting, or the average member of the public does not know much about offsetting and probably does not know how it fits into climate mitigation and emissions reductions more generally, and some sense of guarantee that they are getting what they are paying for. We would hope that the Voluntary Carbon Standard would be part of that in saying "This certificate represents a tonne of emission reduction" but, rather like the code of conduct that has been developed here and a standard that has been developed by an organisation in the United States, which does not look at the offset *per se* but if you go to a retail provider and you want to buy a tonne of emission reduction from wind farm X in India, you are actually getting a tonne from that wind farm and not from another project somewhere else because there are not enough left, a guarantee that they are being retired when they have been used, consumer protection rather than looking at the offset quality *per se*. There is certainly a need for education, there is probably a need for some sort of protection at the retail end, but I think the offset quality itself is being dealt with quite adequately in the regulatory market by the CDM rules and, with luck, in the voluntary market by the Voluntary Carbon Standard.

Q269 Chairman: If offsetting became mandatory for flying, for example, the need for a voluntary code would be eliminated, would it, or would it still be desirable?

Mr Kenber: If offsetting was mandatory for everything across the board, which I think is very unlikely, then yes. I often say, with the Voluntary Carbon Standard, if regulation and international negotiation is successful and we end up having a much more comprehensive legislative framework, then the need for the voluntary carbon market will be diminished. I would be surprised if it disappears altogether. It is unlikely we are going to regulate every sector and every facet of the economy and there will still be people who want to go beyond regulation, but at the moment, in a way, it fills a gap in regulation.

Q270 Colin Challen: You did not comment directly in your memorandum on the Government's proposals. What do you think of them?

Mr Kenber: I think it starts from a useful premise that there is a lot of confusion, as we were discussing before, in the market about what people are buying and how it fits into general emissions reduction and climate strategies. There are a number of questions about it that I would have. I am not sure why the Government has decided that it needs to intervene in this. It is a voluntary code of conduct. If it is a voluntary code of conduct in an environmental or social space, there are plenty of very functional examples of where industry and the non-government movement have worked together to develop standards, for example, the Forest Stewardship Council, the Marine Stewardship Council, organic certification, Fair Trade and so on and so forth, without the need of direct government intervention. If government feels that that sort of approach is not sufficient, then regulate. You can only have it one way or the other. I think there are enough non-governmental actors both from the private sector and the non-profit sector who know about this, who have worked on this for a long time, to be able to develop a code of conduct if such a thing is necessary. Secondly, I am not convinced about the way that the consultation process has been carried out. I think there is a lot of confusion. To give you an example, some of the work The Climate Group does is with banks, helping them develop their climate strategies going forward. One bank we were working with three weeks ago said, "We are going to buy our offsets to go carbon neutral from this company because it has government approval." We said, "Government approval of what?" "It was mentioned in the press release on the consultation," and of course, the Government would say "We have not approved anybody because it is still out for consultation." There is clearly confusion being sown in people's minds about who has been approved and who has not been approved. I think it would have made sense to have some pre-consultation with all those who are working in this space already, because it seems some of the consultation reflects some understanding of some of the issues but not all of them. I think it has been handled in a fairly heavy-handed way. I think it was acknowledged that the consultation this Committee was carrying out was going on in parallel and that seems to have been fairly poorly thought through as well. In terms of the standard itself, I think it is a fairly heavy-handed way of dealing with the problem of offset quality. Some of the up-front reasons for having a code that covers offset quality itself was because there are a lot of cheap tonnes that are available which are undermining the environmental quality but restricting it to the CDM and Joint Implementation, for example, does not solve that problem. There are plenty of industrial gas problems in the CDM and Joint Implementation. We could argue whether that is a good or a bad thing but if one of the objectives is to not have the public buying credits from industrial gas projects, doing it with the CDM does not solve that problem; all it does is make it more expensive for everybody, because the public who want to voluntarily offset are competing with businesses who are capped under the Emissions

Trading Scheme or countries that have Kyoto caps. It seems a blunt instrument for one, assuring the public of the quality and two, of channelling investments into new projects while just artificially raising the price. As mentioned in our submission, our main concern, apart from the process, which we felt, as I say, was poorly handled, was the artificial restriction of credits to only credits from the CDM, EU trading system and Joint Implementation.

Q271 Colin Challen: In that respect, do you think they are just being a bit heavy-handed and perhaps lacking in imagination because they do not understand the voluntary market so they say "Well, we have got the CDM style and that approach to doing things so we will just lob you all in there and have done with it"?

Mr Kenber: I think that is correct. If government is going to offset its own emissions, then I think it is perfectly reasonable for it to do it using the Clean Development Mechanism as it is a signatory of the Kyoto Protocol as a national government and there is no reason why it should not do that. In the voluntary market, as Mr Yeo was suggesting at the beginning, the Government believes there are lots of standards and therefore has said, "We are not going to look at all of the standards. It is too much time, too much like hard work. We do not know enough about it. They are emerging all the time"—that is what Defra has said which, as I say, I disagree with—"and therefore it is easier to go for something we know." What is true is that the CDM at the moment in particular does have an approval system, it has independent verification and it has a registry associated with it, so it has some advantages over other global systems, hence the reason why we are developing the Voluntary Carbon Standard, which will have independent verification by accredited verifiers, both CDM verifiers and others accredited under ISO standards. It will have a single registry where you will be able to track credits to make sure there is not double counting and so on and so forth. It was interesting that, given that this has been in the public domain, or early versions of the Voluntary Carbon Standard have been in the public domain for over a year now and that the Carbon Trust[2] in its own report on offsetting carbon dioxide, said, "Here are five principles for what an offsetting standard should look like and here are two or three standards that meet them, including the Voluntary Carbon Standard," they seem to have ignored that bit of advice from their own subsidiary, so to speak. What they have missed by ruling out the voluntary market is a number of benefits that other projects outside the CDM can have. One is scope for innovation, which I think is very important. One of the reasons there has been a lot of support for the Voluntary Carbon Standard is that people recognize that changing the rules of the CDM, perhaps rightly, is a slow process. There are lots of different countries that have to be involved in the decision-making process. It is not easy but there are lots of projects and new technologies are being developed, new approaches, that need trying out, may subsequently become part of the CDM, perhaps post 2012, and the voluntary market, provided it is within a robust framework, is a good place to innovate and try those out, both in terms of project types and methodologies but also the procedures, asking questions like: where is it possible to maintain environmental integrity while cutting costs or streamlining the timing involved? That is one reason to put some faith in the voluntary market, provided it is well managed, and that is what we hope to achieve. There are project types, as I have just mentioned, that do not go into the CDM. I am sure you have heard from other people and other submissions that, for example, project types that would substitute fuel wood use or innovative community reforestation projects that would not make it through the CDM just because in political negotiations at the outset they were not included. Then there is a question of timing and cost. Putting a project through the CDM is time-consuming, upwards of 200 days to get initial approval. It is costly if you have to use one of the large verification companies and that rules out a lot of smaller projects that are worthy of carbon financing but would not get it through the CDM just because they cannot afford the time or the delay. There are project developers who are not interested—well, of course they are interested in higher prices for their carbon but more of a concern is having liquidity, having cash flow, generating projects, having them certified to a decent standard and then reinvesting in new projects, and that is difficult under the CDM given the time process. This is not meant to be a criticism *per se* of the CDM, because it is evident that it is working quite well and there are a billion tonnes or so worth of projects already in the CDM pipeline and that is anticipated to grow quickly but it is true that for a lot of projects that do not fit into it, it does not work, it is time-consuming and there is a whole lot of demand out there. I was at a conference in the United States last week which estimated that the voluntary carbon market just in the United States could reach somewhere between 150–300 million tonnes a year within three years, and that chimes with a report you may have seen by ICF Consulting that suggests it might get to somewhere between 400 million and 1 billion tonnes globally in three to four years. Who knows whether those estimates are right but that is a sizeable amount of money wanting to be invested in emissions reductions projects that will be choked to a certain extent if they were required to go through the CDM.

Q272 Colin Challen: If you want to buy your offsets and you have a choice between the compliance model which has a government stamp of approval on it and something which is voluntarily regulated, as it were, are people going to say, "We'll have to go with the government approved scheme"? That is implicit, and what impact will that have on the voluntary market?

Mr Kenber: One, it depends on the elasticity of the demand for offsets but immediately you are pushing up the price of an offset. Two tonnes of emissions reduction coming from the same project

[2] Footnote inserted by witness 19.03.07 part funded of course through Defra.

can be sold at very different prices. The price through the CDM market will be much higher largely because of the competition with companies that have to have compliance with the regulations under the Emissions Trading Scheme in Europe or other countries. That does not say anything about the quality of the offset; it is just how the demand is being driven in that market. I think there will be some who balk at paying up to four or five times as much for the same tonne of carbon and there will be project developers who will wait to see what happens in the post 2012 framework, in terms of whether there is going to be some certainty after they have been through the CDM system. It will not choke the market off altogether but I think it will reduce the size of the market and it will restrict to a certain extent the interplay between the US and Europe and other markets. There has been some suggestion that the reason for restricting it to the CDM is not to reward countries like the US for not having joined up to Kyoto, and therefore people can buy credits cheaper that are generated in the US and that would be unfair on those of us who have made some sort of sacrifice under Kyoto. I think there is a very small amount of merit in that argument. The situation now, in 2007, is that we are not going to change decisions made by the US Government six or seven years ago. Getting them involved in carbon markets—and there is a lot of appetite for it at the moment—is a way of demonstrating that the arguments about the costs of compliance and the costs of reducing emissions are largely spurious, at least in the short term, and therefore having a thriving voluntary carbon market is a way of moving policy forward rather than impeding it.

Q273 Dr Turner: There are a lot of schemes out there now and clearly there comes an issue of accreditation, if not regulation, when you have so many, otherwise we will not know whether they are all actually giving us what they say on the tin, to quote you. You say in your submission that "an independent voluntary standard/accreditation scheme should be managed in a transparent manner by an independent organisation responsible for accreditation of verifiers and registries". Who do you suggest should do this?
Mr Kenber: Under the process that we are developing in the Voluntary Carbon Standard, once the standard is finally launched, we hope in June this year, a new NGO foundation will be created with an independent board drawn from stakeholders from different sectors, which will have no material interest in the carbon market itself. Accreditation of verifiers will be carried out carried out under the new ISO 14065 standard which regulates the accreditation of verifiers of carbon reductions or emissions generally. Accreditation will have to be carried out by a member of the International Accreditation Forum or the UN, so that is a well-known and respected process for accreditation, and the oversight of the standard and its development and implementation will be carried out by this independent body. That is the model that we have chosen. I think there are different approaches you could take.

Q274 Dr Turner: You say this would be an independent, new NGO set up specifically for the purpose, obviously altruistic but, however altruistic it is, it is still going to need some funding to operate. How is it going to be funded?
Mr Kenber: We have funding proposals in two foundations. We have received foundation funding for the work we carried out to develop the Voluntary Carbon Standard so far and have proposals which we are very confident will provide the initial seed funding. Then there will be a levy per tonne of carbon dioxide reduction registered within the approved Voluntary Carbon Standard registry, which will provide ongoing running costs.

Q275 Dr Turner: You can be quite sure, I hope, that the actual cost of accreditation is not going to add an undue amount to the overhead costs of running offsets?
Mr Kenber: For accrediting the verifiers or certifiers, that is covered by the certifiers themselves. They are paying to be part of a scheme which, we assume, will generate some income for them, otherwise they would not get involved in the first place. The costs the Voluntary Carbon Standard organisation will have to bear are auditing the implementation of the standard, a sample of projects in each year, an annual review and providing an independent website where, separate from the registry, individuals and companies wanting to buy and sell country carbon units will be able to see what projects have been verified, what emission reductions, and the serial numbers associated with them. That will be another job. It is intended to be a fairly streamlined process. The experience of the CDM executive board is suggesting that, given the expertise there is now, which perhaps there was not when the CDM started, a lot of that work can be outsourced.

Q276 Dr Turner: That is fine; if this works smoothly, we have a mechanism for regulating the actual doers of carbon offsets. What about the people who sell them, the independent operators who sell carbon offset schemes? Do you think they are going to need accreditation or regulation or do you think the existing legislation is sufficient? Is the Trade Descriptions Act, for instance, sufficient to monitor them or not?
Mr Kenber: This is something I mentioned before. I think the Advertising Standards Authority has a remit to look at whether offers are being falsely advertised. Trading standards officers perhaps may not have the training to look at this quite rarefied market but trade protection overall has an important role to play. The protection of the customer is important in this space because it is such a rapidly growing market, because it is such a thing of the moment. That is where some of the ideas involved in the Defra code of conduct about looking at who is selling the offsets, the retailers themselves, and, as I mentioned before, the Center for Resource

Solutions in the US, who have done a similar thing with green electricity retail sales in the US, are also developing a standard for the US but looking not at the offsets themselves. In this one in the US they say any emissions reductions that come from the Voluntary Carbon Standard, the Gold Standard or the CDM are fine; we will accept them as is, but some guarantees for the consumer that they are getting what they are paying for, given that many of the consumers will not even know what they are paying for in the first place, often will not understand the mechanics behind it, have been told that offsetting is a good thing to do as well as other strategies to reduce emissions but do not want to go into a detailed understanding, so some sort of consumer protection or consumer guidance, and it may not need to be a code of conduct *per se*, but guidance. There have been several publications in the last few months, a consumer guide to offsets and various others published around the world, which do have a checklist of "questions you should ask your provider", which you would do with any sort of financial services that you are being provided.

Q277 Dr Turner: We have already identified one or two ways in which there can be pressure on overheads for carbon offsets. What is your view on the maximum proportion of money being paid for carbon offsets that should go towards overheads and how do you think it can be restricted?
Mr Kenber: I am not sure I understand the premise of the question. Should they be restricted at all?

Q278 Dr Turner: You could reach a point where 95% of the money that people pay goes into overheads and only 5% actually goes towards abating carbon if you are not careful.
Mr Kenber: A company would only get away with that if they are selling poor-quality offsets that come at a very low price. There is that possibility. I think, looking at what people, what companies at least—there is not so much data on what individuals want to buy but companies are certainly not interested in just low quality—not low quality but basic quality carbon alone. They want to have a guarantee of the basic quality and then make their own decisions. For example, yesterday Barclays Bank announced that it had gone carbon neutral. It certainly did not buy the cheapest tonnes in the market. It bought a mixture of credits from the CDM, CERs, and voluntary emissions reductions and they were certainly above average market price because they wanted to both demonstrate for CSR reasons and also to gain experience in certain types of investments that there was a future in quality offsets. If you slap a 95% overhead on those sort of projects, you will price yourself out of the market quite quickly. The reason I asked the question back is that, apart from in the regulated electricity markets, which we do not have any more, I do not know systems whereby government says this is the maximum profit you are allowed to make.

Q279 Mr Chaytor: You are now on version 2 of the VCS. What are the main differences between that and version 1?
Mr Kenber: Let me be clear on this. Version 1 was a prototype standard which was both for consultation and for people to use and then feed back to us the pros and cons of how it had worked. Version 2 was purely a draft for consultation. It does not supersede version 1. Version 1 is still the prototype operating version but it drew some of the comments that we received from the first round of consultation last year. We are now working on version 3, which I hope will also be called version final, because we have been working on it for 18 months, and what we will see there is there will be some change in style, in that version 3—once the policy decisions on additionality, methodologies and so on and so forth have been made by the VCS Steering Committee, which meets on 28 March—will be drawn up by two expert standard setters (one from the Canadian Standards Association, one from Lloyd's Register, who will be formatting in a style that is consistent with the ISO standards), and reviewed by lawyers. ISO standards are designed to be policy neutral; you can apply them to any system, so we are developing the system requirements on the policy issues so they will be adapted to the ISO standard. So there will be a format difference. There will be some much clearer rules about how you deal with permanence with land use change and forestry. Whether they will be completed by June is open to question. There is quite a lot of discussion going on. Because it is a tricky issue both technically and politically, we need to make sure we get it right. The additionality tests have been refined.

Q280 Mr Chaytor: You have had some criticism that the additionality rules are too lax in version 2.
Mr Kenber: We had a couple of submissions in our consultation which suggested that. However, in a way, there was not anything to criticise there because it said, "Continue looking at version 1. We are still working on additionality." That is because, as you know, it is a fraught and hotly contested issue but what we have got to—and I chair the additionality working group of the standard—is that there will be an additionality test in addition to baseline setting. The initial debate was some of the members of the committee and some of the responses, although a small minority, said if you have a decent baseline you do not need an additionality test. That has been cast out. There will be an additionality test[3]. There will be one test that looks rather like the CDM additionality tool. There will be one that is a performance standard, so we will say all the three tests must be above and beyond regulatory requirements. Then you have a CDM-type tool. The second is a performance standard, so a project will have to be in the top decile of producing the service, top decile in terms of emissions efficiency, and a third one, which there will be a predetermined list of

[3] Footnote inserted by witness for clarification 19.03.07: There will be an additionality requirement with one or more tests. We will say that all the three tests must be above and beyond regulatory requirements.

technologies in certain regions that you can say with reasonable certainty are additional. The reason for doing that is that there has been quite a lot of research, both academic and less academic, looking at when you actually decide on additionality, there is a chance you will have false positives and false negatives. So you will decide something is additional when it is not but also say that something is not additional when it is. If you have this determined list of technologies which are likely to be top-end renewable energy technologies in certain regions they are likely to be additional, and it will be time-limited so we will have a review process every three years or so. So there will be three tools which are designed to be as equivalent and robust as possible.

Q281 Mr Chaytor: Three definitions of additionality and three sets of criteria, but those who are conforming to the standard can pick any one of the three?

Mr Kenber: Yes. The review we are going through at the moment of them is aimed to say, "Let's start with the CDM-type additionality tool. How can we design these other two so that, within reasonable bounds of certainty, they will be equally robust and have equal success and failure rates in terms of testing additionality?" That is one of the major changes.

Q282 Mr Chaytor: In terms of other criticisms of version 2, some people have said it was just too close to the CDM standard altogether.

Mr Kenber: That is another of the reasons why we have developed these separate additionality tests, because we have seen that they are the types of tools that have been used in other schemes and therefore it is an opportunity to try them out. There is another sub-group chaired by the World Resources Institute in Washington[4] looking at how you can harmonise the specific project-based approach that the CDM has with a sectoral or policy type approach, which has been discussed quite a lot in the context of the CDM post 2012 and they are working on whether you can certify whole programmes so that the offsets can qualify under the Voluntary Carbon Standard. We have had to commission some research into how it might be done, and we hope it will be finished by June. If not, it will be issued two or three months later. Those are the two major issues. The other is more to do with the streamlining of the process. Our aim is, if you have a monitoring process in the CDM, is there a way that we can achieve 90% or above of the quality at half the price or half the time. Where that is not possible, it will not be included. We are trying as much as possible to look at those sorts of questions because in the end, they will obviously help the CDM as well as the voluntary carbon market.

[4] Footnote inserted by witnesses for clarification 19.03.07: It is a member of staff from the World Resources Institute acting in a personal capacity here, rather than as part of the World Resources Institute.

Q283 David Howarth: One of the more striking aspects of the VCS is that you only allow reductions that have actually taken place. Your first guiding principle is that all emissions reductions that qualify as VCUs and the project activities that generate them must be proven to have genuinely taken place. For this reason, the VCS only allows certification of emission reductions that have already taken place. That is in contrast to what often happens in this market, that people are using future value accounting, that they are saying they are selling you a reduction that will happen in the future and they deal with the question of whether that would actually happen by saying they have a portfolio approach or they can insure or they have various discounts. What is your view of future value accounting?

Mr Kenber: The reason we have gone for only emission reductions that have taken place is because the principles of the Voluntary Carbon Standard which came through the first round of consultation is that you need something that is real and measurable, and it is only real if it has actually happened. Secondly, there is quite a lot of controversy about companies or people who are offsetting their current emissions by something that is possibly or probably going to happen in the future, or maybe with some reasonable certainty is going to happen in the future, but the issue about dealing with climate change is reducing emissions now. We need to reduce emissions in the future as well but, most importantly, we need to reduce emissions now, so having a system which allows you to effectively increase or maintain emissions now with a promise of reductions in the future seems to us inconsistent with what science and policy is telling us we need to do now. The reason why there is an issue around forward crediting or future sales is because there are projects, particularly in the community forestry sector and some of the more expensive renewables, that are clearly additional and so additional that they need the carbon finance to even get going. If you look at the CDM, there are a lot of forward sales, at least as far as 2012; there is a policy hiatus there. That does not mean that you can use 2009 or 2010 credits to meet current obligations. If you have your project validated, and therefore you have an independent verifier who says "Within bounds of reasonable estimation, we expect this project will generate 10,000 tonnes a year," then I, as a project developer or project owner, can sell that promise forward. The CDM will not give me credits, the actual certified emission reductions, until those emission reductions have taken place, and the same thing can happen in the voluntary market. If you have your project validated up front by an independent verifier with expertise who, you would assume, having been accredited by the International Accreditation Forum or the CDM board, have credibility in this area and says "We would expect that if the project is carried out as specified in the design document, it will generate X thousand tonnes a year", you can sell for future delivery, as you can in many other commodities. So I do not think there is a need to specify forward crediting, which I think

would undermine some of the issues of consistency, temporal consistency, but that does not prevent people from having future financing.

Q284 Joan Walley: You touched on this before in response to Dr Turner's question but when it comes to voluntary offset projects, should there be a minimum standard or should it be requiring more than just carbon, the sustainable issues? Should there be a higher standard than what is currently just about carbon?
Mr Kenber: Given that there are a wide range of projects and a wide range of buyers who have different requirements, I think, provided there is a guarantee that the carbon really is a tonne of carbon, which, as I said before, is what the Voluntary Carbon Standard aims to do, then you can leave what kind of carbon and what kind of projects to the buyers. There is a difference between having projects that have additional environmental and social attributes and ensuring that they do no harm. Doing no harm should be one part of the rules of any overseas investment, whether it be in carbon offset projects or any other kind of projects, whether it is carbon finance or not. In terms of sustainable development benefits, my concern is—I also developed the Gold Standard initially and the aim there was to find a channel not to supplant the rest of the market but to provide a channel for certified projects for those who wanted to invest in technologies which were part of the long-term solution and had a sustainable development basis.

Q285 Joan Walley: Should not those issues be part of the minimum standard?
Mr Kenber: The reason I think not is because we are dealing with climate change, which I would say is the most important environmental issue we have at the moment and the focus there should be on reducing emissions. To give an example, when the CDM was first created in 1997, in 1998 there were a wealth of papers saying the CDM was going to solve the world's sustainable development problems, the world's property problems, the world's climate change problem and everything else as well. Clearly, that was well-meaning fantasy at the time and I am just concerned that, if you bundle a whole load of other things on to carbon, you are detracting from the potential of reducing as much carbon as possible, in a genuine way, of course, as quickly as possible, which needs to be the objective. I think there should be some minimum environmental standards. You need to require environmental impact assessments for projects that fall into those categories where there is likely to be an environmental risk, and minimum social standards, which is what I would expect to happen in any investment or project finance-type investment around the world. If there are not standards that guarantee that, that is something that needs to be addressed but dumping it all on the carbon market rather than across the board seems to me not the appropriate way to do it.

Q286 Joan Walley: Just going back to the consultation and the contribution that you made in respect of the VCS version 2, that to avoid double counting, the project owner should provide a letter to the certification entity. Do you think that is really going to happen, given all the cowboys that there could be around? Are you really confident that people will be genuinely saying what is actually being provided? Do you think we need something greater than that verification?
Mr Kenber: I hope not. I think the verifiers' reputation and fact that they have to have insurance and financial backing because they may be sued if they are wrong suggests that they will do their utmost to get it right. The transparency that is it embodied in the VCS, as it is in the CDM, means that people can scrutinise if they want to, and, as you know, there are plenty of environmental and other groups out there who are scrutinising projects. We have canvassed a lot of opinion on this, especially in the verification community, and they say this should work. I am open to the fact that if it does not work, we will have to change it.

Q287 Joan Walley: How would anyone know whether or not something was working, that it had been properly . . . If there has not been proper validation, how would they know that what was said was actually the case?
Mr Kenber: There is proper verification by accredited verifiers who have the capacity and experience to do that kind of verification. To be able to submit the voluntary carbon units in a registry you have to have proof of ownership, title of ownership, and provide an affirmation that you have not sold those tonnes anywhere else. A verifier will visit a project, and examine the books. Obviously, a verifier cannot avoid fraud and there will be some organisations, companies, individuals who will try and defraud the public, as there are in any other sector. Having canvassed opinion, this seems to be a reasonably effective way or, we hope, a very effective way of dealing with this issue.

Q288 Joan Walley: So you do not think that the VCS would be more robust if it was properly validated?
Mr Kenber: I am not sure what you mean by properly validated.

Q289 Joan Walley: Other than through a voluntary route.
Mr Kenber: A CDM project will go through a similar procedure in terms of verification, has independent verifiers who are accredited, and so on and so forth, many of whom will be the same organisations in the voluntary market. It is perfectly possible for a CDM project to sell its CERs into the compliance market and sell the same reductions voluntarily somewhere else and there is less check of that in the CDM than there will be in the Voluntary Carbon Standard so I do not think the CDM will help prevent that any more than anything else. We have built this in because there is a requirement for the letter and it has to be verified by the independent verifier to try and

overcome this but, as I say, as it has never been done before, there are some precedents in the Forest Stewardship Council, but it is much easier because you are looking at logs of wood, though again, people can defraud if they want to. This is the first time this has been done in the carbon market and we will review it. We have a built-in review after a year and we will review that in the light of experience.

Q290 Mr Hurd: Do you expect forestry projects to be part of version 2 and what might that imply in terms of rules relating to permanence?
Mr Kenber: I do expect it to be involved. The consultation we had—though, as I think we all know, with consultations, people find their issue and then mass-produce responses but I am pretty sure there will be forestry included, I would say 95% sure. Whether it will be finalised in time for the June launch I do not know. We have been working with the Climate, Community & Biodiversity Alliance and some of the forest verification bodies, including some of the negotiators in the CDM, on how to deal with permanence. The permanence rules in the CDM are unwieldy and poorly understood. There are two options on the table at the moment. One is a mandatory insurance policy which automatically kicks in. If you lose some or all of the forest, that insurance policy kicks in immediately and provides equivalent offset from a technology project. The other is a risk-based discounting system which, as I am not a forester, I must confess I do not understand completely, and the working group on forestry is looking at that at the moment. They are also looking at rules for measurement, monitoring and leakage, though the permanence one is the one that is obviously exercising most of their time. What the Steering Committee has decided is that until we have full agreement on that, and there will be a sub-consultation amongst the forestry and carbon community to have a look at these rules because they will be quite innovative, we will not include it until there is some comfort with those permanence rules.

Q291 Mr Hurd: Do you think it is desirable that over time we seek to reconcile whatever we conclude is the social cost of carbon—and I know there are a lot of variables around that at the moment; there is a Defra number £70 a tonne. Stern thinks it is higher—with the cost of offsetting, which is much much lower? Should we seek to try and reconcile these gaps or just let the market work?
Mr Kenber: I am not suggesting you do this, but if you use the social cost of carbon as a tax which the government or some body collected and then invested in carbon, if you could get for that £70 a tonne 10 tonnes of emission reduction because there are opportunities out there, why on earth would you not do that? The price of offsets and emissions reductions generally will go up over time because the low-hanging fruit, as they are called, will disappear, although not as quickly as perhaps people expect. Experience from companies in particular is that, once they start finding emissions reductions, they find more and more efficiencies that they had not even thought about, often without the need for carbon finance. The price of carbon makes them think about it and they realise there are a whole lot of things they should have been doing years ago. It is the same in the project space as well. You may want to use the social cost of carbon as a way of doing parallel or perhaps mainstream financial assessment. You may want to use that as a target price over a period of time for either a carbon tax or a price in a carbon trading system, but I would not think you would want to say all offsets must cost £70. It goes back to the question of who is going to take the margin. If you are creating a margin for margin's sake, I am not sure there is any reason to do that.
Chairman: Thank you very much. It has been a very helpful session. I am grateful to you for coming in.

Witnesses: **Mr Alan Buchanan,** Company Secretary, and **Mr Andy Kershaw,** Climate Change Manager, British Airways, gave evidence.

Q292 Chairman: Good morning and thank you very much for coming in. I appreciate this is quite a busy period for your business, with a number of issues that you are addressing. You are very central to the subject of this inquiry that we are now doing into voluntary offsets. Aviation, clearly not just BA but aviation generally, clearly has to be a priority for the offset market as well as in the medium term abatement. Do you think that airlines generally are giving enough priority to offsetting?
Mr Buchanan: Thank you for inviting us to talk to you. Clearly, I can only principally speak for British Airways, where we have given priority to voluntary carbon offsetting along with a number of other measures that we believe are vital to climate change. Voluntary offsetting has an important role to play but is alongside measures to reduce emissions overall such as technological improvements in engines and airframes and operational improvements which will result in fuel burn efficiencies. It is part of a suite of things that need to be done. Offsets are very helpful in raising awareness about the impact of aviation. Having said that, the current levels of emission produced by UK aviation are not as dramatic as the media would sometimes have us believe.

Q293 Chairman: Nevertheless, they are significant and they are rising faster than most of the other sources. Although it is true, clearly, that airlines are taking a number of steps, things like technological improvements will only have an effect over a considerable period of time whereas offsets are something which are available right now given that people are going to go on flying for the next 10 years

and a lot of the progress that you refer to will take at least as long as that to become meaningful in its impact. Given that, are you satisfied with the progress that you are making as BA in getting your customers to offset?
Mr Buchanan: British Airways was the first major airline to introduce an offset scheme and we are proud of that. We still think we have a very good record and we have a very good story to tell in relation to climate change overall. The scheme that we have was set up in September 2005. At the time, I believe you spoke to my predecessor, Andrew Sentence, about this last year. Work was ongoing at the end of last year to improve the scheme, to improve its visibility and its attractiveness to passengers. For reasons that will be well known to you, that work was put on hold because it was felt that, in line with an increase in mandatory taxation, customers would not be willing to increase their voluntary offsets at that time, but I think the time has come for us to look again at the work we did back in December and make sure it is still relevant and begin to think about introducing it again.

Q294 Chairman: What has been the take-up so far?
Mr Buchanan: The take-up has been disappointing, and it has been largely flat throughout the period. So after getting to an initial level, it has been fairly stable.

Q295 Chairman: Given that the scheme has been operating for a year and a half now, what is the total number of offsets that have been taken up so far?
Mr Buchanan: It is about 1,600 tonnes a year.

Q296 Chairman: That it is an infinitesimal amount in relation to BA's activity, is it not?
Mr Buchanan: It is small, yes.

Q297 Chairman: Why do you think that is?
Mr Buchanan: I am not sure that a lot of passengers are as keen to offset emissions as we all hoped that they might be. We have evidence from the take-up that it is price-sensitive. We find that there is more offsetting in the short haul market than there is in the long haul market, for example.

Q298 Chairman: Did you discuss with your passengers in advance the way in which this scheme might be made available to them?
Mr Buchanan: I clearly was not responsible for it in September 2005 but as part of our wider corporate responsibility programme, we did some stakeholder research in October 2006 and included in that was a question specific to the offsetting offering that we were giving. We were looking at the time particularly at the question of whether or not we should make it an opt-out or an opt-in scheme. We have taken views from passengers.

Q299 Chairman: Are you aware of the experience of some of your customers who would like to offset that it is extremely difficult to do so, either electronically or in conversation with your staff?
Mr Buchanan: I am sorry if that is the case. I know that it is not foremost. It does not leap off the website at you but it can easily be found by searching in the website for "carbon" or "emissions" or any of those keywords.

Q300 Chairman: Given that any product or service that you do wish to offer or promote does leap off the website, the only conclusion I can draw from that is that you have no interest in promoting the scheme.
Mr Buchanan: I would not agree with that but we could do better. I am quite certain of that. When we go back to it we will, I am sure, in prove it. One of the things we are doing in the very short term is moving the main link, the main access to it, into a part of the website I assume you are familiar with called "Manage My Booking", which is where you would go to check in and the reason for doing that is because it extends the access to about 75% of our customers. As you know, British Airways sells through a variety of channels, not just on the website, unlike some of the smaller airlines, and some of the ways of purchasing our tickets, such as through travel agents, do not make it easy for people to access the offset scheme. Moving the link to "Manage My Booking" which will come live at the beginning of May, will increase the access and should help greatly.

Q301 Chairman: Just to wrap this up, it is in fact absurd really that the level of take-up is, I believe, less than a single return flight to Sydney. For possibly Britain's best-known airline, that is little short of scandalous, is it not?
Mr Buchanan: It is about four return flights to New York on a 777.

Q302 Chairman: How many do you do per week to New York?
Mr Buchanan: Rather more than that.

Q303 Chairman: A hundred?
Mr Buchanan: It is half that, is it not? About 50.
Chairman: After 18 months we would have to say that was a scandalous achievement.

Q304 Dr Turner: It has to be said that you may have been the first airline to do this, but you have been pretty faint-hearted about promoting it. Could this be because there is an inherent conflict here that, if an airline actually promotes carbon offsetting seriously, it is drawing attention to the fact that flying, by its very nature, is environmentally extremely damaging, so it may be counterproductive in terms of selling airline tickets and could in fact encourage fewer people to fly because they may get a bad conscience about it? Does this bother you? Do you see this conflict?
Mr Buchanan: I do not think we are running away from the fact that the airline industry causes emissions. We have fought very hard, for example, for the inclusion of aviation in the European Union Emissions Trading Scheme. I do not think as a

corporation it is a fair accusation that we are trying to pretend that there are not emissions from our core business.

Q305 Dr Turner: You are not worried then about people waking up to the fact that climate change is a damaging consequence of aviation and that this could in the future mean that fewer people fly less often if they take it seriously?
Mr Buchanan: Climate change is a global phenomenon. It is not solely as a result of the aviation industry.

Q306 Dr Turner: It is caused by a whole accumulation of individuals and airlines are playing a very serious part in it.
Mr Buchanan: We recognize that aviation has a part to play in that. Our customers, I am sure, do as well.

Q307 Mr Hurd: You know your customers very well from your research. What is your assessment of the level of understanding in your customer base about the impact of aviation on climate change?
Mr Buchanan: The feedback that we had was that customers were not sufficiently interested to come and seek information out but if we made it available to them, they would look at it and consider it.

Q308 Mr Hurd: My question was more general, about their awareness of the impact of flying on the climate. I am sure you have done plenty of research to explore attitudes towards that. I am not talking necessary about their attitude to offsetting; I am talking about their awareness of the link between their activity and the impact on the climate.
Mr Buchanan: I think you will find it in the UK there are few people who are not aware of the impact of aviation and a number of other activities that they engage in on climate change. As you move away from Europe, that awareness becomes less acute. We are as an industry in the forefront of offsetting and work on climate change, in this country in particular, as leading the European industry, we are well ahead of the industry, for example, in America. So we are a leader in this area. I recognize the criticisms that have been made and acknowledge that we could do better and we can do more.

Q309 Mr Hurd: I cannot let you get away with that. I am sorry. The reason why there is such low take-up of your scheme is because no-one knows about it. I am a customer of British Airways and I have tried five times to engage a member of staff at check-in, which is the natural point to ask about this, and was met with a completely blank expression on every occasion. They do not know anything about it. The people who are interfacing with your customers know nothing about your scheme at all. It is invisible.
Mr Buchanan: It is useful to hear that. I did not realise that front-line staff were not briefed on it. I can certainly take that away and get something done about it.

Q310 Joan Walley: Can I just go back to what you just said. What you just said was that people did not necessarily seek it out but if you made them aware of it they might be interested. That does not chime with it being so difficult to actually find out how to go about offsetting when accessing your website.
Mr Buchanan: I imagine most of the website users are familiar with search engines. The search engine on the website is very good. It is easy. There are a number of key words that will take you there.

Q311 Joan Walley: That assumes that people are going to seek it out. You just said it was only when you brought it to people's attention that they were more interested in pursuing it. It does not quite add up.
Mr Buchanan: There is more that we can do and we will do as and when we feel the time is right.

Q312 Chairman: I just wonder in relation to Mr Hurd's question whether you could let us know, perhaps if necessary in writing, what training your front-line staff, who interface with passengers, such as at check-in, have to make them aware that some passengers might like to buy an offset.
Mr Buchanan: I will find out and write to you, as you suggest.

Q313 Dr Turner: Mr Buchanan, it is clear that BA so far have not exactly been very adventurous in marketing carbon offsetting. It is something that customers can get if they can find it. It is a carbon offset company that they may be pointed to. That is not really very adventurous. Other airlines may be out-flanking you, may they not? Silverjet is marketing itself as a carbon neutral airline. Virgin Atlantic is announcing an offsetting initiative. Richard Branson is espousing all sorts of strategies for reducing emissions. What is BA actually doing to market itself as a green airline?
Mr Buchanan: As I said to you when we first started, offsetting is one part of a suite of things that we are doing. We have a multifaceted approach.

Q314 Dr Turner: What is it? We do not know.
Mr Buchanan: The other areas that we are concentrating on particularly are the work we have been doing in trying to bring aviation into the EU trading scheme. It is work that I think you will find other airlines have not been doing. The work we have been doing with, for example, NATS in reducing hold times or in reducing fuel burn in coming into the holding pattern, those kinds of things, generally speaking, are things that we do that other airlines are not doing. We were first in the market on voluntary offsetting but we have certainly led the whole industry in relation to emissions trading and the importance of that as the way forward for controlling emissions by the aviation industry in relation to climate change.

Q315 Dr Turner: But equally, it has been suggested that your fleet is older than some and therefore likely to be much less fuel-efficient than some. There are many aspects to this. Is the only work that you are

doing advocating the inclusion in the carbon trading scheme and collaboration with NATS? That obviously applies across the whole aviation sector and you are not the only airline which is happy to come into the Emissions Trading Scheme.
Mr Buchanan: As you may know, we have just announced the purchase of a small number of Boeing 777 aircraft. One of the things we would have liked to have done at this stage is to have found an aircraft with a significantly improved environmental performance but we recognized that to do that, to get that benefit, the delivery positions would have to be further away. That kind of major high-cost technological improvement is not something that we can generate ourselves. We are reliant on the manufacturers—Boeing Rolls-Royce, GE and Airbus but as and when it is available, we will. Our short haul fleet is not old, and neither really is our long haul fleet and I do not think you will find the performance of the long haul fleet is significantly worse than that of other carriers. You may be interested in the answer to a Parliamentary Question recently which showed that the CO2 emissions of long-haul aircraft were not a great deal higher than other forms of public transport.

Q316 Dr Turner: Coming back to carbon offsetting, it clearly is not working very well with individual private customers. Do you think there is a better prospect that in 10 years' time a great deal more of the corporate market will be offsetting the carbon?
Mr Buchanan: A number of our corporate customers are already offsetting.

Q317 Dr Turner: Is that where you are placing the most emphasis?
Mr Buchanan: We are in dialogue with a number of our corporate customers about offsetting. Part of that is how we can best achieve it.

Q318 Dr Turner: They are not buying much yet, obviously.
Mr Buchanan: They do not buy it through the Climate Care Scheme. For example, travel by Members of Parliament is all offset but it is not offset through the British Airways scheme even when they travel on British Airways. I hope you recognize that there is a great deal of offsetting goes on outside of the voluntary scheme that we offer on our website.

Q319 Dr Turner: You will not get a true effect until all of your economy class passengers buy carbon offsets, will you? The corporate market represents a fairly small percentage of your passengers.
Mr Buchanan: Yes. The best way to actually achieve a proper offset is through an organised Emissions Trading Scheme that would cover the entire flight. Voluntary offsetting has a place in this and is a bridge towards it but I do not think it is the absolute solution to the problem.

Q320 David Howarth: Moving to a different topic, the Government's voluntary offset consultations and the part that the airlines played in it. We gather that there were consultations between the Government and the airlines in December and then when the pre-Budget report came out and there was an announcement of an increase in Air Passenger Duty, which annoyed the airlines, they suddenly called off discussions and there was some falling out. Could I just ask you whether you were involved in these discussions and if you were, to give us a general account of what they were about, who they were with, what sort of topics were covered?
Mr Buchanan: We had discussions with Defra about the proposed launch of the consultation in December but, as you rightly point out, the climate for us changed with the doubling of Air Passenger Duty, which meant that it was not really for us a good time to be thinking about bringing out a new scheme which we thought our passengers might not be very happy about, having just found that they were paying twice as much APD as they had been previously.

Q321 David Howarth: The discussion was with Defra rather than the Office of Climate Change?
Mr Kershaw: Both. Obviously Defra is involved in the Office of Climate Change.

Q322 David Howarth: The topic that was consulted about, was it just the Government's voluntary offset scheme or did it go wider than that?
Mr Kershaw: It was a discussion about how to move forward offsets in aviation. It focused around the proposals that they were planning to look at in the consultation.

Q323 David Howarth: These were just offsets and not carbon emissions more widely from aviation?
Mr Kershaw: No, it focused on the offsetting.

Q324 David Howarth: At least you were consulted on that. Presumably you were not consulted about the increase in APD. There was no hint either direct from the Treasury or—
Mr Buchanan: We were not consulted about the increase in APD.

Q325 David Howarth: Can I just ask you what the reaction was of officials in the Office of Climate Change and Defra to the announcement of the increase in APD? Were they as surprised as you were?
Mr Buchanan: I really do not know the answer to that.
Mr Kershaw: I am certain that they felt some amount of frustration that they were not able to make more progress as they had hoped.

Q326 Chairman: Just on this point, we were told by someone else in your industry last week that their impression was that neither Defra nor the Department for Transport were actually aware in advance that APD was going to be increased, was that not right?
Mr Buchanan: It would only be hearsay if I were to agree with you.
Chairman: We are quite happy to accept hearsay evidence.

Q327 Colin Challen: I find it a little bit odd that your enthusiasm for offsetting waned when the APD was increased but this has not diminished your enthusiasm for the European ETS, but is that enthusiasm not simply a holding operation to hold off other measures and that is the real reason you do not like the APD, it is doing something now rather than hanging fire for five or 10 years possibly so you have five or 10 years of unmitigated growth?
Mr Buchanan: We are due to join the EU Emissions Trading Scheme on 1 January 2011. If there is anything you can do to bring that forward we would welcome it because we believe that is the best way to deal with this problem overall and we are happy to deal with that.

Q328 Colin Challen: But in the meantime should the Government not do something? That is still five years away and some people do not believe that is going to happen. If you are saying with absolute certainty that you will be in the ETS by that date, that is great, but in the meantime the Government still has to do something, surely. Is it not right that the Chancellor raises APD as an interim measure?
Mr Buchanan: Taxation is a blunt instrument when it comes to controlling demand for travel and it does not necessarily strike the right places at the right times. There are better ways of dealing with demand. As I say, we believe that emissions trading is a much better way but I recognise there is a gap between now and then. Offsetting has a role to play for the public in raising awareness of the issue as a bridge into a proper emissions trading scheme. APD is a blunt instrument. I recognise that it was brought in apparently on environmental grounds, although it is not clear to me that the proceeds are being used for environmental offsetting.

Q329 Colin Challen: Do you think that people generally see it as an environmental tax or do they take the Michael O'Leary view which is it is greedy Gordon's grab or something of that sort, a sort of stealth tax?
Mr Buchanan: Our customers are aware that the cost of APD is passed through, so they are aware of what it is. Do they really perceive it as an environmental measure, I am not convinced that they do.

Q330 Colin Challen: Would you support the hypothecation of the money raised from that tax for environmental purposes? Would that help sell the idea a bit more?
Mr Buchanan: After the Pre-Budget Report was made public our chief executive wrote to Gordon Brown and asked him to hypothecate 900 million of the additional money that was raised because at that time that would have been sufficient to offset the entire British Airways' emissions.

Q331 Colin Challen: Did you get a response?
Mr Buchanan: We did not immediately get a response so we have written again to see if Mr Brown will give us his views.

Q332 Colin Challen: We might see something in the Budget! Do you support the idea that your passengers, at the time they purchase a ticket, should be forced to make a decision on purchasing an offset, it is not just some sort of voluntary trail through a website but it is there right in your face, you have to do it, yes or no, tick the box? Would you support that approach?
Mr Buchanan: As I acknowledged earlier, there is a lot more we could to bring it to passengers' attention. One of the things that they have shown reluctance for is people to pass the problem on, so if customers believe that the emissions are, in fact, our problem then asking them to deal with it or forcing them to deal with it is going to be a very unpopular thing to do.

Q333 Colin Challen: If they were given the choice, perhaps, of paying the APD or an offset, what sort of impact would that have on the overall take of money, wherever it goes?
Mr Buchanan: It is an interesting idea that we might mandate an offset instead of APD, but for many people mandating, whether it is an APD or offset, comes to the same thing, it is money that they are paying, and in some cases unwillingly.

Q334 Colin Challen: How many people have decided not to fly because of the increase in APD?
Mr Buchanan: As you may know, we have had a few difficulties of our own since December so it is rather difficult for me to give an accurate assessment on that. I am sure some other airlines will have been able to.

Q335 Colin Challen: Are you anticipating being able to provide a report because some of the airlines are very unhappy about the decision so I assume you are monitoring it as best you can and perhaps after six months you will be in a better position to provide that answer?
Mr Buchanan: We can do that if that is what the Committee wishes. At the moment, as I say, with the difficulties we have had since December we are not in a position to give that answer.
Colin Challen: I only ask because the Treasury have put a precise figure on tonnes of carbon to be saved from the increase in this duty, so presumably they will be coming along asking for the same information.

Q336 Chairman: What you are saying is if people thought there was going to be a strike they might have diverted to other airlines and it cost money.
Mr Buchanan: Why we cannot give an accurate figure is because we lost four days of flying in December due to extraordinary fog; we have had a number of baggage belt breakages in Terminal 4 which we have had leased from the airport; and we had the threat of industrial action which caused huge disruption, and even still we can see in forward bookings the effect of that disruption. Really we cannot compare this year with last year and, therefore, we cannot give you those figures.

Q337 Chairman: I want to just probe for a second your enthusiasm for the ETS. If the ETS is to have any bite in terms of the impact on aviation it will surely mean that you have to raise the fares.
Mr Buchanan: It will mean that the cost of the emission offset is included in the fares, that is correct.

Q338 Chairman: So, given your previous answer, as far as the customer is concerned that seems to be rather similar in its impact to raising APD.
Mr Buchanan: APD does not work in quite the same way. As I said to you, it is a much blunter instrument. As regards our enthusiasm for emissions trading, you will be aware that we were the only UK airline to join the voluntary UK Emissions Trading Scheme which ran for four years.

Q339 Chairman: If I can breach the Committee's own confidence for a moment, we are going to issue a report next week which refers to APD specifically and suggests that it could be made more sophisticated relating, for example, to the flight rather than the passenger so that a half empty aircraft would have to pay the same amount of tax as a full one. If APD was reformed in a way that made it more sensitive, would that make it acceptable to BA?
Mr Buchanan: Clearly it would depend on your proposals. We will look at them and let you know once we know what they are in detail. There are a number of areas where it needs to be sorted out, for example some airlines that have only one class of travel, which is normally business class only, pay a lower rate of APD than business class travellers on other airlines.

Q340 Chairman: We have heard from one of those airlines recently.
Mr Buchanan: There is plenty of scope for improvement and I wish you well on that project.

Q341 Mr Hurd: Would you anticipate continuing to offer offsets once aviation is inside the ETS?
Mr Buchanan: When the ETS is initially formed it will apply only to intra-EU flights, so there is definitely a role for voluntary offsetting in relation to flights that leave the Community. There will be an ongoing awareness role and there will be customers who just want to do that, whether they choose to do it through a scheme offered by the airlines or whether they choose to use other schemes. For example, the RSA has a carbon initiative at the moment and it invites you, as an individual, to assess your entire year's emissions in relation to travel, heating and all that sort of thing and to pay a one-off once a year offset and many people would find that much more attractive than an airline scheme on a per flight basis. Yes is the answer to your question.

Q342 Mr Hurd: In relation to the ETS some concerns have been expressed to this Committee that you will be in a situation in the future where you will be buying EUAs from people who have either been over-allocated their allowances or have been able to make efficiency cuts. It has been put to us that in terms of environmental benefits those will be much less than a requirement for mandatory offsetting through VERs. Do you have any view on that?
Mr Buchanan: To work properly an emissions trading scheme has to be well run. Behind your question may be an implied criticism of Phase I.

Q343 Mr Hurd: Phase I has not reduced emissions at all so there is a concern that if the mechanisms roll into Phase III we are going to miss a great opportunity as far as your industry is concerned.
Mr Buchanan: I think if the allocations were appropriate this scheme would be more effective. In order to be effective the guiding minds behind it have to get the allocations right, in which case if you can create a perfect market then emissions trading will work extremely well and it will drive down emissions by eliminating the lowest cost way of doing that.

Q344 Mr Hurd: A final question on emissions trading. I think this Committee is aware that British Airways has been a leader within Europe in terms of pushing for emissions trading as a solution. Could you update the Committee on what you sense the state of play is within Europe in terms of consensus with the French and Germans in particular? Finally, do you have a view on the issue of whether allowances should be auctioned to your industry?
Mr Kershaw: We are very pleased with the progress that the European Commission has made in putting forward proposals to include aviation in the EU Emissions Trading Scheme and that includes setting out a sensible set of design elements, many of which we fully support. In terms of the political environment, the French Government for a long time has recognised emissions trading as the most effective tool for aviation in terms of addressing climate change. Certainly German industry recently came out with a piece that said they now felt that emissions trading was the most appropriate instrument and I believe the German Government is more sympathetic than it may have been in the past on emissions trading. There are a lot of positives on emissions trading. We need to not lose sight of the importance of emissions trading and the fact that the UK has taken such a leading position, which is only in our favour, and we must continue to press for the introduction of aviation as soon as we can in emissions trading with practical application.

Q345 Mr Hurd: What about auctions?
Mr Kershaw: I am sorry, I missed the auction question. In our view, auctioning really does not add to the environmental effectiveness of emissions trading. It does, however, introduce high financial burden wherever it is applied. I know the UK is keen on auctioning going forward into the future and there are plans by some Member States to introduce an amount of auctioning into the allocations. I believe the UK in Phase II is planning seven% auctioning. The current proposal for aviation includes the possibility that auctioning would be applied on an average of Member States auctioning them out, so we take an average of what is applied in Phase II and perhaps apply that to aviation. That

seems to be an approach that is fair and consistent in terms of the approach to other sectors, but we remain to be convinced that there is any benefit environmentally to these auctions.

Q346 Chairman: What you are hoping for is a great big bonanza when they are allocated?
Mr Kershaw: Not at all. We expect there is a need to have stringency, as Alan mentioned, on emissions trading. Aviation should be no different, there should be stringency for aviation. It means that by 2011 in the current proposals we will probably have to purchase in the order of between 20 and 30% of the allowances that we need. That is already running into many millions of pounds that we will need to spend on purchasing allowances. I would not agree that there is any free lunch in this, we will have to bear costs in emissions trading.

Q347 Chairman: I apologise, I have got to catch a train rather than a plane. Before I hand over to Joan Walley, can I just reiterate my appreciation to you for coming and there are a lot of issues on BA's papers that regretfully we do not have time to cover.
Mr Buchanan: Thank you for the opportunity.
In the absence of the Chairman, Joan Walley was called to the Chair

Q348 Joan Walley: I think we are almost through anyway but there are just a couple of questions remaining. Climate Care is your offsetter of choice. It would be useful for the Committee to have some idea why it was that you chose Climate Care and whether it is to do with the reputation of the projects or the reputation of the seller?
Mr Buchanan: At the time that the scheme was first set up in September 2005 Climate Care had the best track record for dealing with consumers. They have an informative website, they give clear information about the projects that they run and the costs of running them, and they give financial accounting which means people can find out as much as they want to about the costs. One of the other reasons, before I move on, was that they were one of the first of these agencies to move away from afforestation, so now it only accounts for 15% of their portfolio and I believe they have plans to reduce that even further. They are very good at communicating with consumers, so if you go to their website and look at their Honduras project, for example, they have been replacing old-fashioned wood burning stoves in the houses of people with specific stoves that reduce the emissions but also have a huge health benefit because they reduce the smoke in the atmosphere and they have been fantastic for the homebound, the mothers, children and old people who live there. They are well described, there are short videos that make them very appealing and people can really understand what is happening and the benefits.

Q349 Joan Walley: In terms of your work with them, do you choose specific projects or do you just go along with their portfolio?
Mr Buchanan: They have a committee of, I hesitate to call them wise men, but—

Q350 Joan Walley: Some wise women as well, I hope.
Mr Buchanan: They have a committee of half a dozen or so people who scrutinise and choose the projects and allocate the funds between them.

Q351 Joan Walley: So you do not have any say in choosing which ones your customers go to?
Mr Buchanan: No. We have allowed Climate Care to do that because they are expert at it and we are not.

Q352 Joan Walley: You mentioned their website just now, in terms of the way that it works, do you make any commercial profits from the offsetting service that you offer through Climate Care on your website?
Mr Buchanan: No, we do not; absolutely not.

Q353 Mark Lazarowicz: Can I just be clear about that. Every single penny that someone pays to you through the offsetting on the website goes to Climate Care?
Mr Buchanan: They do not actually pay us, they pay Climate Care direct. We never see the money.

Q354 Mr Chaytor: The cost of offsetting a return flight to Johannesburg on your website is £13.30. That seems incredibly cheap if we consider the Stern Review's estimates of the cost of carbon or the current price of carbon on EU trading exchanges. What is the basis of these calculations?
Mr Buchanan: The basis of calculation is that they have taken average British Airways fuel burn data and applied it to each of the flights. I cannot tell you whether it is—
Mr Kershaw: Broadly the number that you found on the website is right. Obviously there is a calculation of the carbon emissions but the price is something which is set by the project cost and currently that is £7.40 per tonne.

Q355 Mr Chaytor: Sorry, £13.50 per tonne?
Mr Kershaw: £7.50 per tonne of carbon dioxide. That is the price that customers pay through the Climate Care website.

Q356 Mr Chaytor: £7.50 per tonne of CO_2 abated?
Mr Kershaw: Correct.

Q357 Mr Chaytor: That is the working assumption.
Mr Kershaw: So if Johannesburg is almost 15, it is somewhere just short of two tonnes of carbon dioxide, which sounds about right to me.

Q358 Mr Chaytor: The price quoted on your website is actually different from the price quoted on the Climate Care website apparently.
Mr Buchanan: That would be right because in relation to the British Airways scheme we have used British Airways flight data and fuel burn whereas on their general scheme they have calculated differently.

Q359 Mr Chaytor: Okay. What about the impact of radiative forcing? What assumptions do your calculations make about the multiplier effect of radiative forcing? This is a huge area.
Mr Kershaw: We do not apply a multiplier factor. We are advised by the scientific community that multiplier factors are inappropriate science. We can talk more about that if you would like but the headline would be that we do not apply a multiplier because it is not scientifically robust.

Q360 Mr Chaytor: But then lots of submissions we have received suggest there should be a multiplier factor and the scientific advice we have received is not that there should not be a multiplier factor but that it is impossible to assess accurately what the multiplier should be, so the range of multipliers we have seen is somewhere between 1.9 and 5.1. These are huge discrepancies (a) within the range that we have been offered and (b) within your assumption that there should be no multiplier at all.
Mr Kershaw: The reason for the range is that there is a lot of scientific uncertainty about the effects, but the reason we say that a multiplier is not to be used is that the scientific advice we have is that it is fundamentally bad science to apply a multiplier.

Q361 Mr Chaytor: The radiative forcing effect does not exist?
Mr Kershaw: The radiative forcing multiplier, if I can quote from a scientific paper—

Q362 Joan Walley: Can you tell us who it is you are getting this scientific advice from?
Mr Kershaw: This is a paper by Forster et al. I can supply the reference to the Committee if you would like. If I can quote from this paper: "The use of the RFI multiplier is a misapplication of science as it fails to account for the resident timescales of emissions and thus attributes a larger fraction of climate change emissions to aircraft than is currently justifiable". It goes on to argue that essentially the use of a multiplier is inappropriate in aviation. One example they give is that if you apply a multiplier approach to other sectors in the way that is currently used for aviation, which by the way one should because most sectors have some other impacts other than CO_2 emissions, if you apply that to shipping it would demonstrate that an increase in shipping emissions would be beneficial to climate change. In a sense it would lead you to the outcome that more emissions from shipping are actually good for the climate. That is just a demonstration of how—

Q363 Joan Walley: I am sorry, I do not understand the comparison that is being made between aviation and shipping in respect of the scientific evidence in respect of radiative forcing. I think the general public finds this whole issue of offsetting so complex and so technical, it is hardly surprising that perhaps they are not engaged with it. It would be helpful if you could give us a more direct interpretation in plain English of what you are suggesting.
Mr Kershaw: My apologies for that. It is that we should stick to CO_2. CO_2 is the only aviation Kyoto gas. Emissions trading is based on CO_2 and we should stick to CO_2. That would save a lot of confusion, if we are aiming to save confusion. That is not to say that these issues are not important, so we need to understand them better. BA is involved in programmes with the scientific community, including the IAGOS Project, to better understand these effects. It is not to deny that they exist. We must describe them in ways that are consistent with the approach that we are using to describe other climate impacts from other sectors and at the moment the radiative forcing index does not do that, it really attributes a larger fraction, as I quoted earlier, to aircraft than is justifiable. Those are the words of the scientific community.

Q364 Mr Chaytor: Is that agreed by other airlines that are operating offsetting schemes?
Mr Kershaw: There is a general consensus in the aviation industry that the use of multipliers is inappropriate for dealing with the non-CO_2 effects, however, as you know, we have a sustainable aviation strategy, an initiative, and within that the combination of airlines, most of the major ones in the UK, have accepted the need for further work in this area and even committed to the fact that we should develop appropriate mechanisms to deal with these non-CO_2 effects before 2012, and we are continuing to work with the scientific community to understand how we can best move that forward.

Q365 David Howarth: Were you actually saying that aviation engines do not give off NO_x?
Mr Kershaw: No, I am not saying that at all. Aviation creates NO_x emissions.

Q366 David Howarth: Yes, and causes more and more NO_x as you get cleaner burn.
Mr Kershaw: That can happen, although the technology is moving to rapid lower NO_x combustion.

Q367 David Howarth: There is research on it, in fact I know the people doing the research, but it has not succeeded yet.
Mr Kershaw: I think it has. I think the current Trent engines are at least 40% better in terms of NO_x than engines from even 10 years ago. There has been significant improvement in NO_x emissions.

Q368 David Howarth: Why are you saying that NO_x should not be included?
Mr Kershaw: We should deal with NO_x emissions as it affects the climate, I absolutely agree with that. The difficulty is that you cannot use the radiative forcing indicator to properly represent those impacts. To briefly talk to the NO_x subject, NO_x in itself is not the problem in climate change, it is the indirect impact of NO_x. NO_x creates ozone but it also reduces methane, which is a climate change gas. There are some complicated chemical processes even when you speak about NO_x in climate change. There are effects and we must deal with them appropriately

but we need to find robust science and appropriate mechanisms for dealing with those rather than simply imagining that we can use this multiplier number which is a very simplistic and, the scientific community would say, misrepresentative approach.

Q369 Joan Walley: Just before we leave this and come back to Mr Chaytor on this, it was my understanding, and I might be wrong, that the higher effects of a plane's CO_2 also relate to the altitude, that is part and parcel of this particular added problem. I do not understand the comparison you made with merchant shipping, not just merchant shipping but any shipping. I thought that the altitude was part of the additional contribution that planes were making. Am I wrong in that?
Mr Kershaw: There are various aspects to it. The first point is to be clear that CO_2 does not have any different impact at altitude or anywhere on the globe. A tonne of CO_2 is a tonne of CO_2 whether it comes out of an aeroplane in cruise or a power station in India, it has precisely the same impact in terms of the climate.

Q370 Joan Walley: Without going into all the scientific aspects of it, I am not a scientist, I understood there was an issue about the altitude and the particulates, if you like, exacerbating the situation, hence the particular problems from radiative forcing and we need to count that in terms of all the calculations that are being made.
Mr Kershaw: The other effects do vary with altitude, that is right. Contrails is a classic. If you fly lower you can avoid a contrail, that is the condensation trail, cloud basically, but if you fly lower you will burn more fuel and create more CO_2. There are altitude effects, that is correct. The shipping analogy that I was making was to say using the radiative forcing index for aviation is not appropriate and, as an example of that, if we did apply the radiative forcing index to shipping, which currently we do not, you would find an increase in shipping activity is good for the climate using the radiative forcing index. I agree that is absurd but, for me, that demonstrates the radiative forcing index is not necessarily—
Joan Walley: I think we need a note on this.

Q371 Mr Chaytor: Do you think there is any possibility of these voluntary offset schemes taking off, if you will pardon the pun? Unless there is some standardisation of cost the public are going to be completely confused by the different costs that are offered by different schemes to the point at which the whole thing will collapse through lack of credibility. Is not a standardisation of cost, an agreement on basic assumptions underpinning the calculation of the costs, absolutely an essential prerequisite of successful development of voluntary offset schemes in aviation and other fields?
Mr Buchanan: I have no doubt that it would be helpful. We, of course, as an airline are reluctant to discuss with other airlines aspects that may stray into the pricing area for reasons that you would fully understand, I am sure.

Q372 Mr Chaytor: Then the whole thing is dead in the water if British Airways is saying it is giving an offset or suggesting your trip to Johannesburg can be reduced for £28 and Virgin is suggesting £34 and somebody else £23, this is ludicrous, the whole thing has no credibility surely.
Mr Buchanan: I do not think it is dead in the water at all. I agree with you that it would be helpful if there was more of a common position, but to the extent that this is still between airlines, for example, a competitive issue it becomes very difficult for us to come together and harmonise on a standard. I am sure that is something that to the extent we can we are willing to explore, subject to our compliance and legal people telling us that we can.
Mr Kershaw: It is a useful suggestion and we ought to consider how we might go about that because I agree that it is helpful to have a standardised approach so far as that makes things clearer to the general public.

Q373 Joan Walley: On that useful and constructive note, can I bring the session to the end. Can I reiterate our Chairman's thanks to you for coming along today. What we are dealing with is a hugely complex issue and the role of offsetting in all of this does need to be something which goes up in public awareness and it may be that we need to have scientific improvements. Just going back to the detailed note that you said you would give us and details of the article and how that links to radiative forcing and offsetting, the Committee would find it really helpful to have that further evidence from you if you would be so kind.
Mr Buchanan: Mr Hurd asked for confirmation on training for frontline staff as well.
Joan Walley: Exactly, yes. Thank you very much indeed.

Memorandum submitted by British Airways

AIRCRAFT NON-CO_2 EFFECTS

SUMMARY

1. Further to the evidence given by British Airways on 13 March 2007, this paper provides additional information regarding the quantification of aircraft non-CO_2 effects and applicability to carbon offsets.

2. British Airways supports a long-term strategy to limit air transport's climate change contribution based on robust science, sound economics and well-developed policy instruments.

3. There are fundamental scientific barriers in estimating the climate impact of aircraft emissions, because of gaps in current understanding. British Airways is contributing to research to help close these gaps.

4. Non-CO_2 "multipliers" based on the Radiative Forcing Index are a mis-application of science because they fail to account for the resident timescales of emissions. British Airways has commissioned a review of the techniques available to appropriately quantify aircraft non-CO_2 effects.

5. The non-CO_2 effects of aircraft must be addressed, but carbon trading and carbon offsetting are not suitable instruments to achieve this.

6. Technological improvements, specifically in response to demanding airport ambient air quality standards in Europe, are currently sufficient to mitigate the effects of NOx at altitude.

Fundamental Barriers in Scientific Understanding of Aviation Non-CO_2 Atmospheric Effects

7. Like most other combustion activities, air transport contributes to climate change through a range of direct and indirect effects for which there is a wide range of scientific understanding. Aircraft contribute to climate change directly through CO_2 emissions and indirectly through less well understood effects in the atmosphere linked to NOx-induced ozone generation, NOx-induced methane reduction and cirrus cloud formation.

8. There are fundamental scientific barriers in estimating the climate impact of aircraft emissions, because of gaps in current understanding. The atmospheric science community reports 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."[67]

9. Given this range in understanding, specific measures will be necessary for addressing specific effects, and will need to be introduced over different timescales to allow the necessary research to take place.

Non-CO_2 "Multipliers" Based on the Radiative Forcing Index are a Mis-application of Science

10. Quantifying the total climate impacts of aviation remains a subject of primary research. The standard metric used to represent climate change impacts is the Global Warming Potential (GWP). GWP is a policy-relevant metric and takes account of the long residence timescales of greenhouse gases defined in the Kyoto Protocol by integrating over a 100 year period.

11. Radiative Forcing is a general atmospheric science concept that describes any perturbation to the energy balance of the coupled Earth-atmosphere system, for example resulting from the release of CO_2 emissions. The Radiative Forcing Index (RFI) is the ratio between the total radiative forcing from aviation at a given time and the radiative forcing from aviation CO_2 emissions.

12. Crucially however, the use of an "RFI multiplier is a mis-application of science as it fails to account for the resident timescales of emissions and thus attributes a larger fraction of climate change emissions to aircraft than is currently justifiable."[68]

13. If we were to apply a metric equivalent to the Kyoto GWP to aviation climate impacts, the relevant "weighting factor" could be around 1.2.

14. Considered from a different perspective, if we were to apply a RFI multiplier to emissions from shipping, an increase in shipping activity could be interpreted as being beneficial to the climate. This would clearly be a perverse outcome, and it demonstrates the inappropriateness of the RFI multiplier approach.

15. However, this is not to say that a simple "multiplier" philosophy is itself a valid approach to developing policy to address the non-CO_2 effects of aviation. In fact, given that aviation's non-CO_2 effects are not directly related to fuel burn in the same way that CO_2 emissions are, different mechanisms will be required to address the different effects. For example, for CO_2, emissions trading and (the closely related) carbon offsetting are valid and effective policy instruments. But for effects that are related to altitude or location, other mechanisms, such as technology standards or operational limitations are likely to be more valid and effective.

16. British Airways has commissioned a review of the techniques available to appropriately quantify aircraft non-CO_2 effects.

[67] Rogers et al (2002), "The impacts of aviation on the atmosphere", Aeronautical Journal.

[68] Forster P M et al (2006), "It is premature to include non-CO_2 effects of aviation in emissions trading schemes", Atmos. Environ. 40 (2006) 1117–1121 and Forster P M et al (2007) Corrigendum to "It is premature to include non-CO_2 effects of aviation in emission trading schemes", Atmos. Environ. 41.

NON-CO_2 EFFECTS MUST BE ADDRESSED, BUT CARBON TRADING AND CARBON OFFSETTING ARE NOT SUITABLE INSTRUMENTS

17. We welcome the conclusion of the European Commission feasibility study into the EU emissions trading scheme that carbon trading is not a suitable policy instrument for addressing the non-CO_2 atmospheric effects of air transport.[69]

18. Carbon offsetting is a close relative of carbon trading and in many cases amounts to the same thing. It is therefore logical that the use of a non-CO_2 multiplier is as equally unsuitable for carbon offsetting as it is for carbon trading.

19. However, we recognise that scientific uncertainty and inadequate metrics are not reasons for inaction and British Airways supports a programme for addressing these effects through commitments we have made in the UK Sustainable Aviation initiative.[70] These include:

(a) Provide relevant data and expertise for the scientific community to enhance understanding of the non-CO_2 atmospheric effects of air transport, and support improvements in metrics for quantifying and reporting effects.

(b) Propose appropriate mechanisms by 2012 for mitigating non-CO_2 effects based on a consensus of scientific understanding.

(c) Work with research councils, universities and government departments to ensure that academic research is linked with the air transport industry. Specifically, we support establishing a network & regular workshops between scientific researchers, industry and government.

(d) Continual improvement in technology towards the ACARE target of an 80% reduction in NO_x emissions by 2020, based on new aircraft of 2020 relative to equivalent new aircraft in 2000.[71]

20. In addition, British Airways is a partner in IAGOS[72], an EU research project that aims to improve understanding of air transport's NO_x and cirrus effects by installing measuring equipment on commercial in-service 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.

21. NO_x contributes to local air pollution around airports and, during cruise, to the creation of tropospheric ozone. Strenuous efforts have been made through technological improvements to limit the contribution of aircraft NO_x to the local air quality burden around airports. Furthermore, EU air quality standards are now placing considerable pressure on airlines and engine manufacturers to reduce NOx emissions. The industry expects to make further improvements with each new generation of aircraft and engine design in line with the ACARE target for new aircraft in 2020 to emit 80% less NO_x relative to comparable new aircraft in 2000.

22. These considerable improvements in NO_x emissions, driven by air quality stringency have a direct read-across to reductions in NO_x emissions at altitude. This relationship was recently confirmed by the International Civil Aviation Organisation Committee on Aviation Environmental Protection (ICAO CAEP) that concluded "altitude NO_x emissions performance for current engines is controlled by LTO (Landing and take-off flight stage) NO_x emissions certification".[73]

23. Aviation noise and emissions standards have been successfully developed through ICAO for many years. British Airways will continue to work proactively through ICAO to secure tightening of NO_x standards and to further develop long term technology goals to reduce the impact of NO_x emissions.

24. In our view, technological improvements, specifically in response to demanding airport ambient air quality standards in Europe, are currently sufficient to mitigate the effects of NO_x at altitude.

25. The UK Government should focus policy initiatives for addressing aircraft non-CO_2 effects on strengthening atmospheric research. There is a need to raise the priority of this work and ensure sufficient funding is directed to this objective.

30 April 2007

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[69] Wit R C N et al (2005), "Giving wings to emission trading: Inclusion of aviation under the European emission trading system (ETS): design and impacts", Report for the European Commission, DG Environment No ENV.C.2/ETU/2004/0074rCE, Delft, Netherlands. [http://ec.europa.eu/environment/climat/pdf/aviation_et_study.pdf]

[70] Sustainable Aviation (2005), "A strategy towards sustainable development of UK aviation". [http://www.sustainableaviation.co.uk/doc/Sustainable-Aviation-full-document.pdf]

[71] Advisory Council For Aeronautics Research in Europe (ACARE) (2002), Strategic Research Agenda 1, Volume 2, "The Challenge of the Environment". [http://www.acare4europe.org/docs/es-volume1-2/volume2-03-environment.pdf]

[72] Integration of Routine Aircraft Measurements into a Global Observing System (IAGOS). IAGOS is a Design Study for New Infrastructures in FP6, co-funded by the European Commission [http://www.fz-juelich.de/icg/icg-2/iagos]

[73] International Civil Aviation Organisation Committee on Aviation Environmental Protection (ICAO CAEP) (2007), "Report of the Seventh meeting of CAEP", Montreal 5 to 16 February 2007, CAEP/7-WP/68.

Tuesday 20 March 2007

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton
Mr David Chaytor
Tim Farron
Mr Graham Stuart
Dr Desmond Turner

Memorandum from Cheyne Capital Management

Credible and rigorous internationally accepted standards, such as Voluntary Carbon Standard Version 1("VCS"), should govern the otherwise unregulated voluntary offsetting industry to insure that buyers and sellers have financial and legal recourse and accountability. Voluntary markets have traditionally been fragmented, illiquid, inefficient and lacking market mechanisms that ensure quality and promote standardization. We are proponents of internationally accepted transparently created, high integrity standards, such as the VCS, that have been developed through an extensive consultation process involving multiple stakeholders and an independent steering committee with expertise in the voluntary carbon offset markets and the appropriate climate science background that ensure credibility and global buy-in.

The Voluntary Carbon Standard Version 1 ("VCS") was launched by The World Business Council for Sustainable Development, the World Economic Forum, The Climate Group and The International Emissions Trading Association in March 2006.

Creation of the VCS and a standardised emission reduction unit, named a Voluntary Carbon Unit ("VCU"), as a fungible, uniform, tradable and standardised emission reduction offset unit has removed the barriers to entry in the voluntary emission reduction space allowing financial institutions and large industrial companies to manage their reputational risk and participate in the mitigation of their long-term carbon liabilities with real, quantifiable, permanent and additional VCUs.

The VCS concept has created a new commoditised asset class accepted by the financial community. The VCU helps create a benchmark pricing mechanism for certified voluntary carbon units. The voluntary carbon standard and voluntary carbon units have established the first voluntary high quality commoditized assets certified in accordance with a credible performance standard.

All verification and certification protocols for every VCU as specified in the VCS. For example, baseline settings and monitoring must be evaluated and interpreted only by officially United Nations Framework Convention on Climate Change ("UNFCC") accredited Designated Operation Entities ("DOEs"). The Fund uses the top 3 of the 9 internationally accredited DOEs, which adds significant costs but creates certainty, reduces risk and adds an additional layer of performance insurance.

The Cheyne Carbon Fund stores its VCUs in a secure global custody service at The Bank of New York's VCU Registry where VCUs are assigned serial numbers to avoid double counting and ensure transparent reporting of retired VCUs. The Department of Environment, Food and Rural Affairs ("Defra") should adopt the VCS and VCUs as its code of best practice for carbon offsetting and endorse The Bank of New York ("BNY") VCU Registry.

Defra's January 2007 launch of "Developing a Code of Best Practice for carbon offsetting"" is a positive step in the right direction towards creation of a government scheme that accredits providers and promotes international standardisation. However, many concepts, references and definitions in the 56-page Defra document are scientifically incorrect, requiring revision and causes the initiative to lack all credibility.

Much confusion exists regarding Defra's understanding of exactly what VERs and CERs are, the existing voluntary market mechanisms and the purposes and differences of each market. Defra has concluded, before their "consultation" to publicly endorse only certified emission reductions ("CERs") generated for the EU ETS regulatory mechanism in their "Developing a Code of Best Practice for carbon offsetting", which some assumed was a genuine consultation.

EU ETS CER emission reductions generated from destruction of HFC-23 in China, now represent more than 60% of all pipeline emission reductions in the EU ETS CER pipeline. These are produced for pence on the pound and sold for €15.00 on a forward basis. Purchase of these HFC-23 reductions does not promote capital market investment. It does not promote creativity or drive innovation critical to the development of new technologies. It makes no contribution towards sustainable development in the local economy where the destruction occurred. While HFC-23 is a potent greenhouse gas, it is a minor part of the global warming problem. Emissions from carbon dioxide ("CO_2"), methane ("CH4") and nitrous oxide ("N2O") constitute more than 95 percent of all greenhouse gas emissions. Based on the magnitude of the problem and given the high quality and scale of some existing VER projects and standards it seems illogical to arbitrarily exclude VERs before the Defra "consultation" "Developing a Code of Best Practice for carbon offsetting. Purchase of VERs such as VCUs, certified in accordance with the VCS, can contribute substantially more towards the

creation of permanent solutions that mitigate the majority of GHGs impacting global warming and climate change than the purchase of the abundant HFC-23 destruction CERs generated from projects in China, as suggested in the Defra Code of Best Practice for carbon offsetting. Contained in the tables within Defra's "Developing a Code of Best Practice for carbon offsetting" Defra uses an overly crude model to forecast the emissions benefits resulting from 5 different "options" associated with a voluntary vs. mandatory, VER vs CER offset standard. The central factor that Defra uses in determining the estimated emissions avoided as a result of the voluntary offset market is the "consumer uptake" assumption. It concludes that issuing its proposed voluntary-CER code will increase the net emissions reduced by the voluntary offset market in the UK from 5.4 Million Tonnes per Year ("MT/yr") to 32.1 MT/yr, and uses this as quantifiable justification for its proposal to reject high-quality VERs as an eligible source of supply. The numbers chosen by Defra are completely arbitrary and are not supported by any market research or rigorous analysis.

In particular, Defra assumes that under the status quo or voluntary code accepting VERs (options 1 and 2a), consumer uptake will be 5%, whereas under its proposed voluntary CER code (option 3a), consumer uptake increases six-fold to 30%. No real argument or justification or market research is given to back up these random assumptions. Defra simply assumes that the introduction of its voluntary CER standard "might have a positive impact on consumer confidence in the offsetting market, and could therefore increase the take-up of offsetting products".

How this is quantifiably translated to a 30% consumer uptake is not explained, undermining any confidence or credibility in the conclusions drawn from the Defra Regulatory Impact Assessment ("RIA") exercise. As a result, without any documented justification or quantified market research, Defra should retain a 5% consumer uptake figure for its voluntary CER-only code scenario. In that case, the total emissions benefit to the environment will be the same as the status quo, at 5.4 MT/yr. While having a Government-endorsed code may increase consumer confidence and uptake in the market, it is not clear why a CER-only code as opposed to a VER-included code would not have a similar effect. And furthermore, differences in VER and CER prices are not incorporated into the consumer uptake analysis, a critical omission in any market impact assessment. A doubling in the cost of procuring carbon will undoubtedly have a downward effect on consumer uptake.

Below are summary answers to the questions raised by the Committee's voluntary carbon offset market inquiry

(2) *Should there be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

Yes, a UK government accreditation program should be implemented ensuring that the companies involved in the purchase and sale of VERs are creditworthy companies who may be held legally and financially accountable for the offsets they sell. This program should compliment the existing regulatory cap and trade scheme. This presents an enormous opportunity for the UK government to shape broad based international policy consensus regarding the creation and acceptance of internationally accepted high integrity performance standard, the VCS and fungible high quality certified VCUs stored in a industrial strength registry at The Bank of New York's VCU Registry. All verification and certification protocols for VCUs, including all baseline settings and monitoring reports, must be evaluated and interpreted only by United Nations Convention on Climate Change ("UNFCCC") accredited Designated Operation Entities ("DOEs") before the DOE can certify the VERs as VCUs under the VCS. This process adds significant costs but creates certainty, reduces risks and adds an additional layer of performance insurance regarding the robustness and permanence of each certified VCU. The BNY VCU Registry was created to suit the most stringent requirements of institutional clientele in the financial services community and should be adopted as the registry for the UK's voluntary program. The BNY is the world's largest provider of custodial services to the financial markets and is the first bank to provide a robust and credible registry for the voluntary carbon markets. BNY requires proof of title and evidence of ownership chain back to the point of origination, as well as a warranty by the depositor that the emission reductions have not been previously sold or double-counted elsewhere; each VCU has a unique serial number similar to a financial instrument. BNY holds physical custody of the title certificates and the project documentation.

The international voluntary markets may soon evolve as the largest and most effective internationally accepted solution in the mitigation of CO_2 and CO_2e (CO_2 equivalent).

(3) *Should offsetting become mandatory for some of the more carbon-intensive activities?*

Yes, offsetting should be mandatory as this will create an internationally recognised market mechanism that can quantify the "cost of carbon" while discouraging additional investment in high carbon infrastructures and making a strong business case for increased capital market investments that will drive innovation in new technologies which can foster the transformation towards a less carbon intense global economy.

Participation in a robust voluntary scheme such as the VCS should reward early action and investment in new technologies. This same mechanism should severely penalise any additional or new investment in carbon-intense activities and infrastructures. Voluntary offsets may supplement the regulatory caps set by a comprehensive government scheme. A combination of both offset classes should be mandatory in offsetting carbon-intense activities.

(4) *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

No, transparency and capital adequacy should be requirements for accreditation of all emission reduction offsets providers to clarify their financial and legal accountability and ensure that what the offset solutions they provide are exactly what they is represent them to be. This makes credible initiatives such as the Voluntary Carbon Standard a significant step forward in the international standardisation and advancement of the voluntary carbon markets. Offset providers are currently using proprietary protocols lacking the necessary components found in the VCS. These include: verification and certification of all reductions by DOEs, registration of all VCUs at The Bank of New York VCU Registry, transparent reporting of retired VCUs and more stringent accountability of the companies participating in the VCU markets. As this is an emerging market commodity asset class it is essential to create additional, robust, fungible internationally accepted VCUs that are generated from projects certified by DOEs and stored at The Bank of New York's VCU Registry. The Cheyne Carbon Fund contains globally diversified VCUs generated from many different project types and categories.

(5) *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

The VCS does not include GHG emission reductions generated from sectors where long term performance and permanence may be questionable such as: forestry, certain agricultural gasses, forward GHG reductions that have not yet occurred and therefore cannot be verified/certified, and emission reductions generated from project categories that have no existing certification protocol. Emission reduction projects receiving official development assistance/subsidies and or grants are also excluded from the portfolio.

(6) *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes that offset projects finance?*

Verification and certification data of VCUs is extremely comprehensive and based on the CDM methodology including baseline settings, monitoring reports and any other relevant data the UNFCC accredited Designated Operation Entities ("DOEs") may require to evaluate, interpret, guarantee and certify the exact quantity of GHG mitigated in accordance with the VCS protocol. This process may add significant cost but shall create the necessary certainty needed, adding an additional layer of performance insurance regarding the robustness and permanence of the exact amount of GHG mitigated by the VCUs certified by the DOE.

(7) *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

The voluntary and regulatory markets have completely different dynamics and characteristics and each market was created for a different purpose. The Kyoto protocol provided a tradable cap and trade framework on which the EU ETS was designed in conjunction with the UNFCCC. The EU ETS was the first large-scale internationally coordinated cap and trade system that allowed for GHG emission reductions to become freely traded as commodities. The extreme price volatility has illustrated the nature of this emerging market asset class. Random and arbitrary factors greatly influence and determine the arbitrary price action of emission reductions traded in the EU ETS. Governmental rules, artificially created allocations and timelines governing Phase I, II and III are major price determinants in the EU ETS. Any additional credits at the end of a crediting phase mean that the price falls to zero and all additional reductions are meaningless.

In the voluntary markets the corporations or individuals can determine what type of projects to purchase emission reductions from. Investment in verified and certified VCUs can promote investment in high quality sustainable development and drive investment in new technologies. Regulatory uncertainty is a powerful driver in early recognition, evaluation, disclosure and mitigation of climate change risk. Failing to address climate change issues opens corporations up to regulatory scrutiny, investor scrutiny, as well as several other competitive and reputational risks.

(8) *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

Recent opinion polls conducted indicate rapid public awareness and concern about climate change and global warming. The surveys indicate that 85% of the respondents believe action should be taken to mitigate the impacts of climate change and global warming and a further 61% said they would be willing to purchase offsets to mitigate the impact of their actions. The evolution of a voluntary universally credible, fungible, robust, commoditized and verified emission reduction unit or VCU will empower and motivate individuals and corporations to take responsibility for their actions. The substantial increase in volumes of voluntary carbon offsets purchased during the past twelve months provides evidence that global awareness and responsibility is rapidly increasing. As the science improves and receives more press, individuals and corporations take climate change, global warming and their responsibility to contribute to a solution more seriously.

(9) *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

The Carbon Fund maintains a well-balanced and globally diversified portfolio of emission reductions that are generated from projects with genuine environmental benefits and facilitates additional investment towards sustainable development.

It is important to differentiate between making a strong business case for capital market investment in new technologies that can significantly impact mitigation of CO_2 and CO_2e and charitable contributions period. Many of the offset providers blur the line between these two.

As a participant and interested stakeholder in the voluntary carbon markets Cheyne will be available to provide further detailed evidence as requested by the Committee regarding either current or future questions pertaining to this inquiry. Thank you in advance for your consideration.

January 2007

Memorandum submitted by London Climate Change Services

LCCS POSITION ON THE DEFRAS PROPOSED CODE OF BEST PRACTICE FOR THE PROVISION OF CARBON OFFSETTING TO UK CUSTOMERS

Introduction

London Climate Change Services (LCCS) is the representative body for the UKs Climate Change Finance and Services sector. It currently has over 40 members who range from banks, law firms, verifiers, carbon funds, carbon market investors, brokers, training companies, publishers, software companies and CDM Project developers. Any company which employs people in the UK and provides services or finance in relation to climate change issues can become a member. Membership encompasses start ups, SMEs and larger more established companies. More details can be found at (www.londonclimatechange.org)

LCCS established a Voluntary Carbon Markets working group to look at DEFRAs proposed Offset standard. This group has established a common LCCS position which has been endorsed by the membership. This position is set out in this paper.

The Process of the Consultation

- LCCS members welcome the DEFRA consultation on standards to apply within the emerging voluntary market for carbon offsets.
- If designed and implemented properly this standard has the potential to set appropriate standards for the Off-Set industry by providing customers with confidence when presented with a wide choice of options.
- LCCS is fully prepared to participate in the consultation in the expectation that, as with previous consultations, it will be truly open with no avenues closed off from the outset.
- We appreciate that DEFRA will take account of the evidence before deciding on its approach to the regulation of the market, as it is required to do by the consultation process. LCCS members will bring forward evidence to support a case for the ultimate development of a fully mixed market based upon real, third party verifiable, and permanent emissions reductions including those currently regulated under CDM, JI and the EU ETS.
- We are reassured that DEFRA will have regard to the principles of good regulation, as reproduced in Annex 1.

MAINTAINING AND SUPPORTING THE INTEGRITY OF THE VOLUNTARY CARBON MARKET

- LCCS believes that voluntary markets can play a significant role in reducing GHG emissions in those sectors not covered by compliance systems.
- VERs can be of equal validity to CERs as offsets and provide broader choice to consumers provided that appropriate quality controls are applied.
- LCCS members have evidence of many offset projects that arc at least CDM equivalent in quality. Individual members of LCCS cite such projects as the offsets approved under the Voluntary Carbon Standard version 1, the Gold Standard, the Chicago Climate Exchange, the Carbon Neutral Protocol, Greenhouse Friendly (to Australian Government scheme) and offsets used by the Climate Trust etc as examples of such potentially compliant schemes.
- Provided that project-based missions reduction are independently verified to demonstrate tat they arc real, quantifiable, additional and permanent as part of a programme that imposes transparent quality standards and that assures an audit trail of ownership of the reductions, we propose that these instruments be included.
- We are happy to share evidence of the arguments that the voluntary market in VERs can bring a range of benefits, including timeliness, cost efficiency and innovation (see Annex 2).
- We therefore strongly support the principle of a mixed market including high quality VERs with CERs and other government-regulated instruments.
- LCCS is willing to work together with DEFRA to develop criteria and infrastructure which can be used to bring real, quantifiable, additional and permanent, VERs into the scope oft. standard.
- We an willing to work with DEFRA and other relevant NGOs such as the Climate Group to develop a private body or bodies which can act as a third party independent "regulator of bring real, quantifiable, additional, and permanent VERS.

Annex 1

PRINCIPLES OF GOOD REGULATION

- Proportionate: Regulators should only intervene when necessary. Remedies should be appropriate to the risk posed, and costs identified and minimised.
- Accountable: Regulators must be able to justify decisions, and be subject to public scrutiny.
- Consistent: Government rules and standards must be joined up and implemented fairly.
- Transparent: Regulators should be open, and keep regulations simple and user friendly.
- Targeted: Regulation should be focused on the problem, and minimise side effects.

http://www.brc.gov.uk/pub1ications/principlecsentry.asp

Annex 2

BENEFITS FROM VERS

Quick project financing

- The approval process under the CDM is long (usually a minimum of 200 days).
- Under the CDM projects have to be checked by independent verifiers, approved by the. host county then finally approved by the CDM Executive Board. There are also two periods for public consultation. While there are clear benefits of this approach in terms of ensuring that host countries and local communities have a proper voice in the process, the CDM process can also be lengthy and uncertain.
- Some projects require quick project financing to proceed. The voluntary market has a streamlined project approval process that provides quick finance and more assurance to project developers.

Reduced costs and inclusion of new project types

- Approval under CDM has high transaction costs that can be in the hundreds of thousands of dollars. This can exclude projects that may already be high cost such as solar cookers in Africa.
- Inclusion of these projects has the multiple benefits of reducing air pollution from wood cookers.

Opportunities to Innovate

- The voluntary market provides opportunities to experiment with different project types and methodologies.

— The Chicago Climate Exchange applies generic abatement calculations to continuous conservation tilling projects which has streamlined the approval process for a number of projects.

— The Voluntary Carbon Standard is also investigating how to use performance standards approaches to calculate missions baselines. This could streamline the project based approaches used under the CDM.

Sustainable development benefits

— The UNDP recently found that social and other environmental benefits are undervalued in the CDM process.

— Inclusion of projects approved under the Gold Standard would provide these multiple benefits.

Projects from the US, Australia and Turkey

— Projects from these countries would not be eligible to participate under the UK code.

— These countries can provide many new missions reductions opportunities.

— For example, a 30.4 MW wind farm was recently approved in the Turkish Canakkale Province. The project will reduce 62,000 tCO_2e per year and could not have been realised without the revenue from sale of the voluntary carbon credits.

March 2007

Witnesses: **Mr Anthony Hobley,** Chairman of London Climate Change Services (and General Counsel to the Carbon Funds at Climate Change Capital) and **Mr Mitchell Feierstein,** Head of Emissions Products, Cheyne Capital Management (UK) LLP, gave evidence.

Q374 Chairman: Welcome. I think this is the first time before the Committee for both of you. We are delighted to see you here; thank you for coming along. Perhaps I could start on the issue of the Government's consultation. I am aware that you have some criticisms of the process and the documents and so on. Before we get on to the criticisms, is there anything positive you take from the way Defra have set about this and what they are proposing?

Mr Hobley: London Climate Change Services, as the representative body of the UK's climate change clients and services industry, supports the proposal, subject to a couple of caveats which I am sure we will come on to. We think the rationale and reasoning for bringing this forward is good. A lot of offset providers are emerging in the market and if you are a consumer, or even if you are a relatively sophisticated business, you do not have time to plough through more than 33 documents and sets of rules. Therefore, to have some sort of government benchmark for these standards is no bad thing, to bring consistency and . . . integrity is probably the wrong word, but some consumer and business confidence to the offset products that are being provided. We support the proposal; we would just like to see some specific issues addressed. We think it is a good thing and we think this could set a benchmark far beyond the shores of the UK.

Mr Feierstein: Thank you for having me here today on behalf of Cheyne. The UK Government is in an extremely strong position globally because they lead by example. I think it has the best climate change policy out there in the world right now, so you could say, "Look at what we've done and the way we are moving forward. This is an example we are setting to the rest of the world as an industrialised country." Leading from a position of strength is a very powerful instrument to make change, impact change and influence change. It is a very positive step to come out with a policy endorsement for the voluntary carbon market. My most famous phrase is that there are 87 carbon cowboys out there slinging around at anything on the Internet and the possibility for something being less than verified and certified and robust and fungible and internationally accepted in terms of the standardised product is great. There is a need to have quantification that every single tonne that is sold is permanent, additional, verified and certified in accordance with the protocol. The 56-page document is a step in the right direction but it needs to be fine-tuned a bit. I was mostly concerned, as you are aware, of the process, going forward. There was a consultation yesterday, which Anthony attended. I was made aware of it last Thursday but I was travelling on business and flew back for this meeting today. It is important to address risk and mitigation and forward pricing and to deliver financial and legal accountability. I think all those things can be addressed in an appropriate document governing the voluntary markets. Defra has made a step in the right direction but I think they need to take VERs on board as well because some VERs can greatly outweigh certain other programmes. I think there is a strong business case to be made and an increase in capital markets investing in various technologies serves a really very powerful driver to provide scaleable and expeditious solutions to climate change and global warming. In terms of that, that is why I think we need both markets: the CER market and the VER market have two separate roles to play in functionality within those.

Mr Hobley: We welcome the requirement that if you are going to offset those they have to be purchased within a certain period of time and they have to be

retired. We think that consumers and businesses will be given confidence that a certain portion of the money they provide, in the same way as happens with charities, will be used directly in the projects and the amount that will be used for administration will be capped. The proposal to prepare a common calculator I think is incredibly important, because, as Defra will tell you, many consumers get quite confused by the fact that one offset provider's website will tell them that certain tonnes of carbon need to be offset for a flight to Miami and another will tell you a different amount and give you a very different price. That breeds a cynicism, I suspect, in relation to these offset providers which need not be there if there is a common standard for things like that. Many of those things are very good, but on VER issues, which I am sure we will come to in a minute, we have a different set of proposals we would like to see. In terms of the process, I am very concerned—although I was reassured yesterday—that they have made up their minds on certain aspects, such as the exclusion of the VER market for this standard, and this is not really a true consultation across the board. We would be very concerned if this was not a real consultation where there minds were open and they were going to take on board all views.

Q375 Chairman: We will come back to that very point in a moment. Were either of you involved in discussions with Defra before they issued this document? Had they been consulting informally with people like you?

Mr Feierstein: I received a letter from Defra back in November, at which point I contacted Kate Smith. We had been participating, in that we had established the world's first voluntary carbon fund in August 2005, so obviously we had an interest and I asked to be kept appraised of the situation. Defra was going to keep in touch but I never heard back. I sent some subsequent letters. I sent a letter, also, to Ian Pearson on December 12 but I did not receive a response to that letter until late January. I called Kate Smith again to find out what was going on, because in the first document I had received it said they were going to have a consultation in late January, I was assured that we would be able to participate and I never heard anything about the consultation in January. I do not know if it happened or it did not. I then had a meeting with six members of Defra about a month ago—Colin Challen was in attendance—at which point it seemed, from the comments they made, that they had already made their mind up to exclude CERs. I do not know if that position has changed. Once again, they told me they would keep me in touch. Late last week I had to travel to Helsinki on business. I received an email on Thursday, notifying me of the meeting on Monday, but it was too tough to get back so, unfortunately, I missed it.

Mr Hobley: LCCS was invited and we took along 10 members to see the Defra team on 30 November 2006. We were briefed on what the proposal was—rather than it being a discussion—so it was pretty baked at that point in time. We welcomed the proposal. We thought it was a good idea but we did raise some questions at that time about the fact that the VER was going to be excluded. We offered to work with Defra to find ways in which the VER could be included and to ensure that some of the Government's concerns around the VER market could be addressed—because there are some concerns, but we feel that there are a lot of options to address those concerns—to provide the same integrity in the VER market as we have in the regulatory market.

Q376 Dr Turner: There seems to be a certain sense of urgency about Defra in the consultation. Do you think they are right in thinking that intervention now will maximise the benefits of the current interest in offsetting? It seems they cannot wait for a voluntary code to emerge and they want to force the pace.

Mr Feierstein: I think a little bit of a premature effort has come out of the document and I have addressed this in a couple of the comments I have made. Pure is one of the companies that was endorsed by Defra in a few of the documents they released and, unfortunately, they are advertising on the website—and I do not know if you have seen this but I took it off the website yesterday—that: "Pure guarantees to meet the new UK government standards for carbon offsetting" and then there is a quote below from Ian Pearson of endorsement for Pure. I was a bit taken aback because the policy has not come out yet. I do not know how they are endorsing it if there is a consultation under way. This is on the website. I brought this up with Defra at the meeting I had about a month ago and they assured me that this was not happening, but this advertisement seems to speak for itself.

Mr Hobley: In answer to your question from the LCCS perspective, we do think there is some urgency because there is some concern around the "cowboys" in this market and there genuinely is a wide range of standards, shall we say, in terms of those now offering offset products. As I said in my opening statement, we welcome this but it is important to get it right and not rush it and make key mistakes. Our concern is that perhaps it would have been prudent to have had a little bit more consultation with industry bodies like LCCS and others rather than with individual commercial enterprises. It would have been better, I think, to have consulted with the industry as a whole before proposals became as fixed as they have become.

Q377 Dr Turner: It is quite clear that there is a considerable amount of confusion and obfuscation—which is probably as good a word for it as any—out there. If Defra can cut through this and present a clearly understandable standard for all to follow, would that not be a good thing?

Mr Hobley: If they get it right, that would be a good thing.

Q378 Dr Turner: Do you think Defra have their assumptions about the growth in the voluntary market right? They are talking about a six-fold increase in the voluntary carbon offsetting market.

Mr Feierstein: Excuse me for one second on that. On the uptake figures, as in my paper that I sent to the Audit Committee, there is no justification, there is no maths, behind the six-fold uptake if you switch. This is an assumption they make. I had a problem with that assumption. I asked them to address that at the meeting I had over a month ago with Defra and they were going to supply me with the information. That is an arbitrary number that they have created, so that is slightly problematic until I can see how they obtained that figure and how price sensitive that would be, should the prices of CERs go up. But those are two separate markets and I think you have to keep them separate. When I spoke to Defra back in November, I advised them that there is a credible standard out there for voluntary carbon, Voluntary Carbon Standard Version 1. That was launched by The World Business Council for Sustainable Development, The Climate Group, the World Economic Forum, and the International Emissions Trading Association (IETA) back in March 2005. So there are standards out there and yet the document says there are none. I think it is important to take all the information on board, have a thorough consultation and say, "These VERs are going to work for this programme." We see that there is a strong business case to be made for investment in the capital markets infrastructures. That is the way forward for the market. Everything that we would purchase is verified and certified by a designated operational identity which is accredited by the UNFCC. This assures that these have happened. We do not invest in forestry because of the permanence issues associated in that sector. We will only invest in things that are quantifiable and real.

Mr Hobley: I think Defra will tell you that there are some issues for the VER market and the different standards. LCCS does not want to get into endorsing any one standard over any other, although there are some good standards out there. We have put it back and we have been having this discussion with Defra over the last month, but there is a real opportunity here in this proposal for Defra and the UK to set the standard for the voluntary carbon market. They can leave the door open. They can start their offset standard, using regulatory credits, but they can leave the door open and they can set a threshold. They can say, "These are the issues that we are concerned about with the VER and the standards that are out there that we do not think they address." I would be prepared to enter a bet, although I am not really a betting man, that if Defra sets that baseline, that threshold, the voluntary market will respond to that. For example, traceability: there is already a proposal from The Climate Group, working with IETA and others, to put in place an international registry system for VER, so you get that traceability which will go some way to address some of the double-counting issues and so forth. There will be an ability—and, again, The Climate Group and others are looking at this—to put in place an independent body that could verify and validate voluntary projects. The UK has a real opportunity, yet again—because it has done this successfully to-date with the UK scheme and with its early support of things like EU ETS—to set the standard for what will be part of the global carbon market and to influence development in North America and other key markets where VERs for the next three/four/five years will be an incredibly important part of the North American market.

Q379 Dr Turner: Do you think that Defra's input to this will be more effective if it is voluntary (as they are saying at the moment) or if it is made mandatory?

Mr Hobley: My view, personally, and the view of the LCCS is that for the time being it is right that this should be voluntary. I think it would be too much of a step-change politically and otherwise to make it mandatory. I think there is another unquestionable advantage which those who have this Government logo would have in terms of selling their offset product in the market—which is why it is so important to get it right and not to exclude a valuable part of the market on this scheme. I would support, for the time being, it being a voluntary standard.

Mr Feierstein: In terms of the registry, I could not agree more with Anthony, but there is in fact a revenue stream, because we have been trading for over a year and the Bank of New York has created the world's first voluntary carbon registry for voluntary carbon issues as specified in the Voluntary Carbon Standard. The Bank of New York is a double A-minus credit-rated institution that has to go through due diligence to put things into that registry. I think that is highly significant and adds a lot of credibility to the entire voluntary programme. We are agnostic as to what sort of standard is used for the voluntary market as long as it provides permanence, something that can be qualified, something that can be certified and verified, that is real and has happened already—nothing to go forward with that. In terms of regulatory versus voluntary and making an argument as to whether everything should be a cap and trade government type of system, I think you need both. I think there are four really important points: (i) Climate change education; (ii) behaviour and adaptation and modification; (iii) there needs to be government cap and trade; and (iv) energy efficiency. Energy efficiency is really important. Those are four really important components but the fifth one is a credible voluntary programme. The Government regulatory programme, the EU ETS, has developed out of Kyoto. It is a great step in the right direction; it is very small, though, in terms of how many tonnes are going up every year and what that is going to mitigate. One of the problems with the EU ETS is the prices, as we saw in phase 1. There are people selling allocations which do not really accomplish much at all. Going into that, you have artificial timelines. The price action is determined by artificial timelines and in terms of allocations that are

arbitrary from the Government side, so that is going to impact the prices. If you have consumers entering that market, it could make people who have to enter into this market for regulatory reasons make the price go higher or make the price go lower depending upon that. That is why I wanted to see the price assumptions but I think the two should be kept separate, to create additional investment in new technologies and education.

Q380 Chairman: Those of us who have a concern about the level of carbon concentration in the atmosphere would like to see as much offsetting take place as possible, as long as it is genuine, meeting some of the concerns that you expressed. I am interested in whether there is almost an analogy with what is happening on stock exchanges. London has a very successful A market. It is causing some angst in New York, that we are getting a lot of business here, but of course it is good for people trying to raise capital. If we want to encourage offsetting, we want a regulatory regime which is sufficient to boost the confidence of the purchaser but not so bureaucratic that it inhibits the provider of schemes. One of the criticisms I have heard of the CDM process is that it is rather bureaucratic and expensive, and a lot of small schemes will struggle to qualify under the CDM so they might be a natural for a thriving voluntary market. Obviously we need things like a verifiable registry—that seems to me a *sine qua non*—but there is a careful balance to be struck within a level of regulation which does not inhibit the market, is there not?

Mr Feierstein: Absolutely. I make the strong case that if you look at HFC-23, which is 58% of all registered credits right now, it is not the least-cost option and it is a valid CDM programme, but you are paying pence on the pound to destroy one of the world's most potent greenhouse gases, 11,700 tonnes to one tonne of CO_2. And those are CERs. Someone is paying pence on the pound and they are selling them for up to €30 last May. That is not driving new technologies and most of those are generated in China. A VER programme where you are investing money until it could become a CER project—those where you are investing in new technology, like a wind farm, a renewable energy project—are going to be more robust than HFC-23, for one specific example, which would be not included under the current scheme.

Mr Hobley: I think that is right. In my day job as General Counsel to the Carbon Funds at Climate Change Capital, we did two of the biggest HFC-23 deals last year: a 20 million tonne deal and a 30 million tonne deal. The cost per tonne to generate CER from an HFC-23 project is well under one euro a tonne. In the Defra paper I think there is a bit of a misleading statement, where they talk about the fact that CERs and EUAs regulatory units cost more than VERs. The correct analysis is how much it costs to reduce a tonne rather than how much they are trading at. Of course, a CER is going to trade at a higher value than a VER because there is a regulatory mandated need for it: compliant buyers have to have it or they face heavy penalties. So that is all a bit misleading in the paper. Quite a lot of VER projects may cost more per tonne than it will for many CDM projects and you get a lot of associated benefits over and above those you get from an agency HFC-23 project—although I will correct one issue. We have not done any HFC-23 projects outside of China. In China, 65% of the revenues are going into a renewable energy fund and a fund for poverty in Northern China, so Chinese HFC-23 projects have an awful lot of added benefit because the Chinese government have mandated that they do. That is not necessarily the case in places like India. In terms of pricing, the correct analysis is: How much do you spend per tonne? rather than how much you can sell the credits for.

Q381 Mr Caton: You do get the impression, looking at Defra's proposals, that CER is good, VER is bad. Which aspect is worse: the fact that they are putting down VERs or the fact that they are giving too much faith to CERs and EUAs?

Mr Feierstein: The problem with the basic tenet they have is a miscommunication in the document. The document says it is the definitive standard for voluntary carbon offsetting but their definitions of VERs and CERs are not 100% correct. They lead you to believe that a VER is something that cannot be certified. I think there is a lot of confusion in their definitions. All certification means is that a credit has been certified under a protocol. A VER can be certified. The typical definition in the market of a VER is not a voluntary emission reduction; it is a verified emission reduction. In all the documentation I have from every verifier, the DOEs, they refer to VERs as "verified emission reductions" not "voluntary". You can have a voluntary credit that is verified and certified, which is what we purchase and put in the Bank of New York registry, or you can have a CER that is verified and certified under the CDM mechanism. There is a big misunderstanding in the drafting that needs to be addressed.

Mr Hobley: I think that is right. The fund that I work for and the funds of other members of LCCS are predominantly at this stage focused on the regulatory market, but we can spend a significant proportion of the money we have under management in the VER market and we are looking at VER projects. The amount of work you have to do as an investor to ensure they are verified and so on can be more because you, as a buyer of VERs, want to be very sure of their integrity. We are looking at some small projects in Africa, for example, which, because of the CDM infrastructure not necessarily being in place yet and ownership rights around VERs and CERs being more confusing, it is better for us to do as VER projects than as CDM projects. It is just a cost issue, because the bureaucracy to go for the whole CDM process can be daunting. It is also that some of the rules in the CDM process at the moment favour bigger projects. With some of the smaller projects—the common one is the heating stoves or the solar stoves, projects like that in small villages—to make it financially viable you have to aggregate lots of small

households and villages and so forth, which is very difficult to do under the rules of CDM but you have more flexibility in the VER market to do that. It is still absolutely critical, as an investor in those projects, to ensure that they are verified and there are real reductions; otherwise you are throwing your investor's money away. Talking as an investor, it would be good to see a bit more harmony in international standards. Again, I come back to the point that the UK Government has an amazing opportunity here to set the benchmark, to catalyse those standards going to the next level so that you have global confidence in them.

Q382 Mr Caton: You have already mentioned the problem with phase 1 of the EU ETS. We have been told that, on the back of the Government's proposed code, retailers are already offering EUAs on the market, which really is equivalent to "hot air". Do you think there is going to be a backlash against Defra's code, when people realise they might be buying something that has a market value but it is not reducing emissions at all?

Mr Feierstein: You have hit the nail on the head there. I think that could be a big problem. If that comes out to be the case, I think it could be extremely damaging. This is, in essence, an emerging market. When you have an emerging market, it is extremely fragile and anything could set it back quite a way; for example, if you have credits in there that are not 100% robust. I can also refer again to this advertisement for Pure. They talk, in terms of the projects that they have, about a bunch of them, and I know they did have some Chicago Climate Exchange credits. Chicago Climate Exchange has some credits that are "business as usual" and that gets into a whole different round. You have business as usual credits that are not additional; that is, they would have happened in the normal course of business. But Pure may have CERs but they also have credits that they have purchased from other programmes and I notice they word it very carefully on the website by saying that they only buy credits from "100% legally binding programmes". That is the exact terminology that they use for CCX, that it is a "legally binding programme". All that means is that the people who sign up say, "Okay, I agree to offset [*x*] amount" but it does not talk about the quality and it does not quantify the reductions that go in that programme. A lot of people have issue with the transparency and methodology behind verification in that programme, CCX, specifically. If, indeed, they are still purchasing those credits, it would not be good for that programme, and it would really speak poorly for the entire 56-page document because they are endorsing that programme.

Mr Hobley: I have two points on that. Certainly from questions that were asked at their workshop yesterday, Defra have woken up to that issue. I think they are going to address that by timing, in that they are now talking about the standard not being in place until the end of 2007/beginning of 2008. They neatly side-step the issue of having phase 1 EUAs being used in the offset scheme because they recognise now that that could discredit the proposal and weaken their arguments around the regulatory units. It may be something you would want to ask them when they come in later, but if they were to use phase 1EUAs I think that would be an issue. We are all reasonably confident that phase 2, the cap and trade scheme, is going to be more robust, but it is still not completely transparent that the allocations will be as robust as they need to be and it may still be that one phase 2 EUA does not really account for the same reductions as, say, a VER from a properly verified voluntary project.

Q383 Mr Stuart: I am sure it is clear from what you have said already but do you think that if Defra did not go ahead and there was not intervention by Government that the voluntary market would regulate itself? Would the cream rise to the top and would we have, in a few years' time, a robust system based on market pressures?

Mr Hobley: I think we will. The VER market is growing very rapidly. It allows you to deploy capital in a more flexible way alongside the CDM market. There will probably be some backlash against the poor quality end of the market—and, undoubtedly, there is a poor quality end, there is the cowboy end of the market. That backlash will result in the market coming together with all of these different standards, realising they probably should have one standard. Defra have an opportunity to avoid that dip and that backlash and to catalyse that progression much more quickly, and that is what they should do. They have done it already in other climate change policy measures; hence London and the UK has the greatest concentration of expertise and the most successful business sector in this market. They have an opportunity to do that again and therefore influence what happens in North America and other parts of the world where VERs will be an incredibly important part of the market.

Q384 Mr Stuart: If you believe the market will sort itself out anyway then government regulation is always a large, clumsy thumb and will necessarily lead to some distortions. If you believe genuinely they will change, why have it? Why not dissuade them?

Mr Feierstein: Why do I think it is going to be efficient market theory? Efficient market theory will govern where it is going to go. New York has seen, because we have been looking at this for quite a while, a tiering process go on. Premium and different credits are being traded at discount and the market is going to recognise that. It is going to be an efficient market. Right now it is an emerging market. Emerging markets, by definition, have extremely high volatility. That is why we saw a 71% drop in the CER prices in one day back in May, so it is still very, very, very new. In coming up with a government policy that is robust, I cannot add enough that developing a broad-based global policy consensus through the creation of a benchmark standard for VERs as well as CERs is a good thing. The reason for that being the leadership position: you define it and basically you are paving the way to move forward. There is an important difference here out

there. With the carbon cowboys, the 87 of them—once again I will bring up the example—CO_2 mitigation is business. I do not know if you have seen the Lehman Brothers report by John Llewellyn the economist. There are business opportunities out there and they make a strong business case for CO_2 mitigation. There is a charity component to this. Sustainable development is an aspect that we look at in all the credits that we will purchase but you have to differentiate between CO_2 mitigation and charitable contributions. There are people on the websites and people out there who try to "guilt" people into buying credits. They say, "You have to support this tiny little project" but, unfortunately, if those projects are not verified and certified you are then into the problem where it could be a fraud and somebody could be stealing the money and it has never happened. To add assurances that it has happened, we use DOEs. We send somebody in. We want a verification report and we want to see the monitoring report, the baseline studies—we want to see everything to authenticate it.

Q385 Mr Stuart: The point is about the Government. You have misgivings about Defra's policy but are you both saying that you think the UK Government coming in and setting a standard is the right thing to do but it is just that this particular intervention is not the right one? You do not want to leave it to the market; you believe there is a role for the UK Government and that they can then help market, if you like, to cohere around standards.

Mr Feierstein: They could, but they would need to acknowledge that there are some pretty good standards out there which exist. I think they should have had a look at those before they came out with yet another one.

Mr Hobley: The offset proposal is not another standard, in terms of the standards that are out there of the specific projects that create VERs, whereas the offset standard is for an offset product for a company that provides. They are different. I think this is a good thing, provided it is written well. We say, as LCCS, that it is not Government's job to write another standard for individual projects or to pick one standard over another, but they can say—which I think is good governance—"These are the integrity concerns we have over the market. If you bring projects to us that meet these standards . . ." They tell industry what they have to achieve, then industry can come up with the standards and industry has something to aim for. It is not trying to create a standard for individual projects in a vacuum; it is being given a goal or a baseline that has to be achieved. I think that is what governments do all the time. They say: "This is the minimum integrity that has to be achieved. You, the private sector, now go away and do that because that is what you are good at."

Q386 Mr Stuart: In terms of the Government acting to promote the voluntary sector, is that the single most important thing it can do? Is there anything else it should be doing?

Mr Hobley: From our perspective, that is the single most important thing it can do: to galvanise and take the voluntary market to the next level. One of LCCS's objectives is to promote the UK and UK industry in this area, yet again to give the UK and London as the global centre of the carbon market another advantage, which it has done by early regulation to-date.

Mr Feierstein: I think the impact of a good policy is important. Whether it is the role of the Government to come in and do that is another question. And how long it will take to review this properly is a third question that we need to examine carefully. I think there are a lot of people who have been involved. We were the first ones to get involved in August 2005 in creating what we felt was a robust and credible programme to bring to market. If you can get the United States on board, that is fantastic. If the UK Government can come out with something, then that is fantastic as well. But another consideration is that the EU ETS framework was not considered by Australia or the United States and, considering the scale and magnitude of the problem in the US that is not being addressed, if something can be in neutral ground—not saying, "Well, only the EU ETS credits"—it offers a compromise for people in the US to adapt or adopt, and the possibility that these can be used in any future regulatory scheme is their entitlement. So if you set the bar high enough, they could be incorporated in any new regulatory scheme that is set up. That is why I think it is a leadership role and you guys can set a great example by doing it correctly.

Q387 Mr Stuart: I know you are opposed to any future reductions as being allowable: they should all have been verified and achieved. Given the capital investment that is required and given the fact that it is a fledgling market, could one have rules that allowed a timeframe of three- or four-years ahead? Does one need to be as absolute as you appear to be in your paper?

Mr Feierstein: I am not opposed to it. I do not think it is a prudent investment at the current time. I think that could be highly speculative. Responsibly speaking, if I were to be investing in the market I would rather have something that I could quantify. I am not saying, going forward, that we cannot come up with some sort of insurance or reinsurance on that reduction that would pay out should it fall down or be replaced but that is not going to be the most cost-effective allocation of resource to creating a scaleable production that is going to come up with an expeditious, scaleable response to the problem in a three- to five-year window as we seem to have necessary at the present time.

Q388 Mr Stuart: Is that the view of the LCCS?

Mr Hobley: I am sorry, could I clarify the question?

Q389 Mr Stuart: Take forestation, for instance, where there is a whole issue about some offsets taking 100 years before you offset the carbon from your flight, Mr Feierstein's view, very strongly, is

that you should have achieved the offset before you sell it, thus it is verifiable and bankable. Does the LCCS see things in the same way?

Mr Hobley: The standard talks about, if you are the seller of an offset you have to buy it within six months, and, in terms of consumer confidence and business confidence in what they are buying, yes, we would support that. In my day job—and other members of LCCS do this all the time—we are investing in CDM projects and now voluntary projects and we are putting in place contracts for a five- or seven- or ten-year timeframe. There is a bit of a difficulty for anything post-2012 but I think we are fast approaching a point where we will have some confidence around paying money and entering into commitments for post-2012 as well. We say, "We will buy these from you" and quite often we will provide significant advance payments for credits that are not going to be produced until 2008/2009/2010/2011/2012 because we know that there is a market that goes forward until 2012 and so we are making assumptions that there will be buyers and there will be demand for what we are now committing to buy. If you put a voluntary code in place and you know it is going to be in place for a reasonable period of time, you then, as a market player, have funds, and banks will provide liquidity and all the rest of it, to supply this into the market. You can make legitimate assumptions around what the demand will be and then take the business decision about whether you are prepared to enter into a commitment—

Q390 Mr Stuart: Selling it to your investors now on the basis that you will reap the crop later is one thing. Selling it today to the consumer who thinks he has bought an offset today when he has not is another. I wonder, are you opposed to that?

Mr Hobley: We agree with that. Providing there is a framework in place so that you as a buyer can evaluate what the market will be in the future, then that should not be detrimental to investing in those VER projects.

Mr Feierstein: I agree. Could I clarify one thing which I may not have made clear in my answer? I will buy forward credits if we have a project that I own but I will not sell them forward until they have happened.

Mr Stuart: I am clear on that.

Q391 Mr Chaytor: Turning to the CDM, do you think the CDM will continue as a highly bureaucratic or highly regulated mechanism, or is it likely to soften as the years go by and take on more of the characteristics of the voluntary market, more flexibility and greater concern for wider sustainable development issues?

Mr Feierstein: It is an emerging market and it is the first programme that has gone out and said that you could now buy and sell carbon. It is a guideline and there are a lot of really notable things. It is a good thing, it is healthy, but obviously there are going to be teething pains in any programme that you set up that, going forward, people are going to use the methodology more to try to correct.

Q392 Mr Chaytor: But you are optimistic at the moment.

Mr Feierstein: I am very optimistic about it but I think there is also such a need out there for some much more scaleable programme right now. If you can create a voluntary one, it could be integrated into the existing regulatory frameworks out there part and parcel. I think if you make a good enough mousetrap that is robust enough, it could be used everywhere.

Mr Hobley: I am optimistic. Again, if you are asking me to bet, I think there will be a CDM post-2012 and over time it will get better. It will get better resource. You will get better people in the senior executive board: international negotiators and so on; it will become more professionalised; it will build up a cache of knowledge and methodologies. The VER market, if it is allowed to co-exist, can be a wonderful laboratory with lower bureaucratic thresholds that can feed into that learning process on the CDM. The only way you really learn resource projects is by doing them. If the threshold for smaller projects in the CDM is too high, you will not do them, so you will not learn important lessons. The VER market can be a very important laboratory. It can help inform and improve the CDM system.

Q393 Mr Chaytor: Do you think that what we might call the HFC-23 programme is always going to be a feature of CDM?

Mr Hobley: It is an international political issue. I think the current feeling in the market is that you probably will not have new HFC or big industrial gas projects post-2012. My concern, if that happens, is that you do not leave a vacuum, that you do not suddenly have all these incinerators turned off because they are quite expensive to run. You will have lots of HFC-23 in the atmosphere again, so maybe there will be a big discount, but there will be something that will be done to reduce the windfall you get from those huge projects and perhaps create a bit more of a level playing field with the energy efficiency projects and the CO_2 projects.

Mr Feierstein: That speaks again of price tiering. I think we have to look at the overall picture, where you have six greenhouse gases and the high 70 percentile for CO_2. The three really big ones are CO_2, nitrous oxide and methane. That comprises up to almost 96% (though the numbers could be a little bit off), but that is 96% of the problem, so let us talk about proportionality and figuring out how to mitigate those going forward, because that is the biggest part of the issue right now.

Mr Feierstein: There is a lot of criticism of the big industrial gas projects but I would say several things in their defence. HFC-23, nitrous oxide, methane are powerful global-warming gases and if there is not a mechanism there to encourage and incentivise people to reduce those emissions, to destroy those emissions, they will be in the atmosphere causing global warming. If you are going to take them out of CDMs, it is critical you do not leave a vacuum and they are still regulated in some way and there is a heavy discount. Also, for many of us in this market they have created early wins which have impressed

investors, which has allowed us to raise more money and given us more room to do the harder projects: the energy efficiency projects, the projects where you do not quite get those easy wins but where you have to do quite a lot of work to make them happen, even though do not produce as much CO_2. So they have given the financial community more room to manoeuvre and allowed it to raise more capital as a result of those early wins. So those industrial gas projects are not all bad, but in the long term it is probably unsustainable for you to get that huge windfall on those projects as against smaller CDM projects.

Q394 Mr Chaytor: As the voluntary market develops, what do you think the balance will be between investment in North America and Europe as against investment in developed countries?
Mr Feierstein: The CO_2 mitigation, as I have said, would make a strong business case. You are going to invest in technologies wherever you can best implement them. But it is not really significant if you produce a tonne of carbon in Central London or if you produce it in Delhi: taking a tonne out, is taking a tonne out.

Q395 Mr Chaytor: The CDM finance you to reduce it in Central London.
Mr Feierstein: Exactly but I think you should be able to. That is why the two markets are separate. If you can achieve something that is credible or viable, it does not matter where it will be as long as you can come up with methodology that you are comfortable with and have it verified and certified.

Q396 Mr Chaytor: Is it easier to verify in North America and Europe than it is in central Africa?
Mr Feierstein: If you use a company like SGS, which is a big verifier, they have over 45,000 employees in over 1,000 offices around the world so they are pretty well connected everywhere. They have the financial and legal accountability, in that what they are verifying and what they tell you in the documentation it is going to be able to get, and I have confidence and we go with that.
Mr Hobley: It is also that there are different tiers of developing countries in terms of how easy it is to operate and verify. It is a lot easier to verify and feel confident as an investor around projects in China, Brazil, India than it is in maybe Tanzania, Uganda and so on. That is where the VER market can have a much greater impact in these early years, until those countries put in place the infrastructure that they need to work within CDM. There are different figures from Point Carbon and New Energy Finance and so on but I think there is something like—depending on whose figures—€3.5 billion to €6 billion in funds that are being deployed mainly in CDM, normally in JI but mainly in CDM, and that of course is all going to development countries. Of the Climate Change Capital Carbon Fund which is €800 million, we will probably deploy at least €400 million in China, simply because it is easier to do CDM projects and business in China, because of the way they have regulated it, than it is in other countries. A great proportion of the remainder of that will be in Brazil, India, Malaysia, Indonesia and so on. We are looking at Africa, but that is more VER projects, to be honest.

Q397 Chairman: Just for clarification, because of the emphasis which you put rightly, in my view, on additionality, a tonne saved in London is not the same as a tonne saved in Delhi, is it? Because Britain is a signatory to Kyoto and therefore is obliged legally to make reductions. Those will happen under business as usual without the purchase of offset.
Mr Hobley: I think you have raised an important point but additionality will be measured or assessed differently in those different places because of that. Additionality may be easier to show in China or Malaysia or Tanzania, where there is not as much regulation and there is not the same driver at the government level to achieve reductions, so in many respects it may be easier. You have a harder job to show additionality in London because you then have to go through probably quite a detailed regulatory analysis. But if that is an area of the economy which the Government have not regulated, they have not spotted that opportunity to reduce emissions—the Government is not going to spot and regulate every opportunity; they create a framework around that in which entrepreneurs can see the other opportunities they have missed and reduce them—then that should be additional, but you have to do a very careful regulatory analysis to see whether that would happen. Then you have to work with the Government to have that framework in place, because, as you know, each Kyoto Annex B country has an assigned amount and that is measured in these assigned amount units. Ideally, you want to tag that introduction in London with an assigned amount unit so that then there is no double counting, because, once you have spotted it and you reduce the emissions on a voluntary basis, the Government may say, "That's interesting, we should regulate that" and then you get a double-counting issue. You probably need Government to put the framework in place to allow you to do that. One of the things I picked up on yesterday at the Defra workshop is that, apparently, there is a lot of feedback coming in that as part of this offset standard people want to see domestic projects, and that people who offset quite like the fact that they are offsetting locally rather than globally. That is probably an important issue to think about.
Mr Hobley: I agree with the comments. All I will say is that we believe there are things which certain governments have not picked up on yet, there still are opportunities for investment in those sectors, and that is where I would look. It might take a little detail to come up with the project design document but if you can recognise them then I think you would be the first one to be involved in them.

Q398 Chairman: You have expressed some doubt about the market growth assumptions in the Defra consultation paper. If the code was implemented as it stands or if nothing happens—the two different

assumptions—what do you think will happen to the voluntary market? Will it grow faster, slower, disappear?

Mr Feierstein: I have not seen anything to support an uptake increase of six% of the 30% number. I was promised to get something on that but I have not received it yet. I do not know what was used for that. I would like to see the Regulatory Impact Analysis. I would like to see how price impacts that study as well, if at some point I would get that document.

Mr Hobley: I think the voluntary market will still continue to grow alongside the standard. It may inhibit the uptake of this standard, so it may be counterproductive on the standard. If the door is left open to good quality VERs, this standard may find it has a much bigger uptake and influences similar standards globally and around the world. It may have a smaller uptake. The VER market may grow more slowly than it would if Defra took this opportunity to catalyse the development of VER to the next stage. I think there is a lot at stake here.

Mr Feierstein: Finally, I would like to elaborate one more time that getting the United States on board I think is pretty critical. If you are just going to say. "We are going to take the easy way out and say just CERs, which is EU ETS, is going to be accepted" I think Washington would look at that as saying "We have already turned that down once, so do you have another idea?" I think it is important to get broad-based international consensus on it. We have to look at everything very carefully if we are going to set international policy consensus.

Mr Hobley: Coming back to that question of a UK and London perspective, if this opportunity is not taken up I think it does not help. It will not damage overnight the leading position that London is securing as the finance centre for the carbon market, but it will not help either; whereas if Defra does grab this opportunity yet again to put the UK in a leading position in the development of the global carbon market, it will be yet another important development in securing London and the UK as the lead-in centre for the global carbon market and help London stay ahead of New York. Competition is undoubtedly going to come from New York and some of the other financial centres in Asia, so it would be very helpful for UK plc to have this initiative.

Chairman: Thank you both very much indeed. That has been a very interesting and useful session. We are grateful to you for coming.

Memorandum submitted by the Department for Environment, Food and Rural Affairs

What is the voluntary carbon offset market?

In the context of this inquiry, the definition of "voluntary carbon offset market" can be twofold:

1. The voluntary carbon offset market refers to the market for individuals, organisations and governments seeking to offset emissions from activities for which there is no compliance commitment to do so. For example, air travel or energy use in the home. This offsetting can be achieved using emission reduction credits generated by compliance market projects, ie CERs, ERUs and EUAs; through non-compliance projects whose credits are universally branded as VERs; or through the planting of trees on a non-project basis.
2. The voluntary carbon market is the collective term for offsetting projects and providers which do not fall under the Kyoto flexibility mechanisms. These include all credits collectively known as VERs, the vast majority of tree planting schemes, and currently all offsetting projects based in the UK.

This memorandum will refer to each definition where appropriate.

The Role of Offsetting in Climate Change Mitigation

Government acknowledges that carbon offsetting is not a cure for climate change but it can help raise awareness and reduce the impact of our actions.

Offsetting is a useful element of what we can all do to address climate change for several reasons:

- Providing the means to calculate emissions attributable to our activities helps raise awareness of our own impact on climate change. Combined with reducing our emissions, offsetting can be used to address this impact.
- When done in a robust and responsible manner, for example through the purchase and cancellation of CERs, offsetting leads to a reduction in CO_2 emissions in the area local to the offsetting project. On a global scale, offsetting seeks to maintain a balance between emissions creation and reduction.
- Offsetting projects such as those under the CDM provide a mechanism for investment in clean technology in the areas which lack it the most. Such investment can lead to the spread of low-carbon development across entire regions, further reducing climate change impact.

The Role of Offsetting Within Government and How it is Achieved

Government takes a hierarchical approach to addressing its emissions, with offsetting being employed after efforts have been made to minimise emissions at source. In terms of transport, Government advocates the most sustainable mode of transport for the business need, taking account of price, time and carbon emissions.

The majority of government departments are participating in the Government Carbon Offsetting Fund (GCOF) which seeks to address the carbon dioxide emissions created by official and ministerial air travel. Other agencies and NDPBs also participate, including Parliament. To offset its emissions Government will purchase Certified Emission Reduction credits (CERs). These are emissions reductions from projects that are accredited by the UNFCCC Clean Development mechanism (CDM). Government's preference is for CDM projects which are small-scale, involve renewable energy and/or energy efficiency and feature sustainable development benefits.

On 28 December 2006, Government announced that EEA Fund Management Plc have been selected as our GCOF delivery partner. Through EEA, Government will set-up a facility to purchase the requisite number of credits and then unilaterally cancel them to ensure integrity and that these credits are not used to offset future emissions. EEA will source 255,000 CERs by the end of April 2009, with an option for a further 50,000 to be delivered by that date. Depending on the final total of CERs required, the GCOF will spend around £3 million on the purchase and cancellation of CERs.

The commitment to a carbon neutral central government office estate by 2012 will also feature an element of carbon offsetting which, through existing government policy, would involve the purchase and cancellation of CERs. The scope of offsetting within the overall neutrality strategy will be established over the coming years.

The Defra-led Code of Best Practice for Carbon Offsetting Providers

There is a wide range of offset products available to consumers, from an equally wide range of providers. Consumer confidence has however been damaged by reports of particular offset products which have been poorly designed or incorrectly sold. Such reports have generated uncertainty among consumers over how to determine whether an offset product offers good investment value in terms of the carbon abatement it will generate. There is a risk that unless consumer confidence can be increased, this uncertainty will constrain the growth of a robust and UK offset industry.

Government considers that establishing a Code will provide a framework to support the development of robust, transparent, reliable and timely carbon offset products that offer consumers genuine value for money.

At this early stage in the development of the offset market, regulatory or legislative intervention would not be the most effective way for the Government to provide such a framework. A voluntary Code would allow flexibility for market participants and new entrants both to evolve existing business models and to innovate.

The Code will set standards for:

- Robust and verifiable emission reduction credits from the compliance market, ie CERs, EUAs and ERUs;
- Accurate calculation of emissions to be offset, using statistics and factors published for this purpose by the Government;
- Clear information for consumers regarding the mechanism and/or projects supported;
- Transparent pricing;
- Timescales for cancelling credits; and
- Where offered by a company with other goods and services, those companies will offer a "compulsory choice" for the consumer to offset.

What are the arguments against the inclusion of VERs in the Code of Best Practice and Government offsetting schemes?

Including VERs generated by the voluntary market would:

1. Require detailed and universally agreed baseline calculation methodologies for projects, monitoring arrangements and reporting procedures. Credits generated in the compliance market already have this.
2. Require a central VER registry to prove an audit trail to prevent double selling and provide transparency in trading. UK government has, to date, spent in excess of £2 million developing registry software to meet UN and EU requirements which provides a transparent accounting tool

in respect of compliance credits. This software is shared with licensees meaning UK specific changes would be expensive and time consuming to develop and may undermine our ability to share future costs with licensees.

3. Require an additional and parallel system of extensive auditing of projects and offset providers. This is already carried out under the UN and EU mechanisms in respect of EUAs, CERS and ERUs.
4. Establish multiple consumer products and separate carbon currencies, the potential for double crediting of emissions and emissions reductions.
5. Potentially undermine the incentives for joining the international process. Many projects generating VERs are carried out in non-Kyoto countries. Recognising credits generated from projects there may reduce those countries' incentives to engage at an international political level.
6. Accept projects which are not necessarily additional. The reason that many VERs do not go through the CDM process is that they would not meet the same standards on project quantification and additionality that are required.

Government's Preferred Method of Offsetting

Government recognises the CDM as the highest internationally agreed standard for emission reductions, with all projects verified under a unified and transparent regulatory framework.

— CERs are not released for sale until the emission reduction has been verified as actually having occurred.

— They are also tagged and traceable on an international registry, which prevents double selling and provides confirmation that the offset has actually been achieved, ie the credit has been cancelled and therefore permanently removed from circulation.

— Project Assessments and Emissions Monitoring are publicly available and open to public comment and independent review.

Key Questions Highlighted by the EAC Inquiry

1. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

The market for voluntary action is still quite young, but the demand for offsetting is growing rapidly, with industry valued at £60 million in 2006 and estimated at £250 million in 2009. If the market is to continue to grow rapidly but remain largely unregulated, then a compulsory accreditation scheme may eventually have to be introduced to bring standards up to a level with the compliance market and secure consumer confidence. A Europe-wide scheme would be the minimum given the abundance of offsetting providers who act across borders via the internet, however a UK standard might be a logical first step.

The current VER market is entirely unregulated, but several players are moving to establish universal quality standards. In May 2006 The Gold Standard launched its VER standard which incorporates the majority of requirements necessary for CDM projects. The Climate Group, together with IETA is consulting on the latest version of its own VER quality standard.

Other organisations are acting similarly. While the creation of a quality standard for VERs is welcome, the multitude of versions now appearing does little to address the already fractured nature of the market. To attain credibility the industry will need to establish consensus on how to move forward and ensure that aspects such as project quantification and additionality mirror the CDM process.

In the short term there is a case for encouraging other interested EU Member States to adopt an accredited standard in the same way as the UK is proposing to ensure consumer confidence and harmonisation via the Code of Best Practice referred above. If a compulsory scheme was adopted, the UK's Code is the clearest and most robust way of defining a Europe-wide standard. This is because the mechanism used within our standard, ie CERs, EUAs and ERUs are already widely used and are available globally. Government is showing leadership by voluntarily offsetting its air travel through the purchase and cancellation of CERs.

2. *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

Aviation is due to be included under the EU Emission Trading Scheme (EU-ETS) which is essentially a form of cap and trade offsetting scheme. Government believes that the best way of ensuring that aviation contributes towards the goal of climate change stabilisation will be through a well designed, open international emissions trading regime. Offsetting by its very nature does not produce net global reductions in emissions—it merely seeks to preserve a balance of emissions for a specified activity. To that end, offsetting is a complimentary interim measure for tackling the climate change impacts from aviation, which could be promoted to the wider travelling public to be taken up on a voluntary basis. This would provide benefits in terms of increased awareness of climate change, improved understanding of individuals' impacts

and the offsets themselves. This would potentially lead to behavioural change and the use of more sustainable transport options. It is important to educate and empower people to be able to make informed decisions and be responsible for their actions. Voluntary action such as opt-out or compulsory choice offsetting would achieve this. However, if offsetting were made compulsory for all flights these benefits could be lost, with passengers feeling it is acceptable to fly as the environmental consequences are already being paid for. It could also have a detrimental effect on efforts to reduce emissions from other sources, with individuals viewing emissions from activities without compulsory offsetting attached as being inherently less important.

3. *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

The offsetting market has grown rapidly, especially during 2006, but this has not aided clarity. In fact, quite the reverse has taken place, with individuals and businesses failing to understand the role of offsetting in tackling climate change and being unable to distinguish between different schemes and providers. There are several key areas which require clarity in order to increase quality and consumer confidence:

- Type of provider—In a fledgling market it is very difficult for the consumer to distinguish between experienced providers dedicated to selling genuine offsets, and those who are seeking to profit from a lack of consumer knowledge and clarity in the market.
- Transparency of the provider—The consumer needs to know if the provider is a non-profit or a profit-motivated organisation and how much of their payment actually goes towards purchasing the offset. It is also very difficult to find information about how a provider goes about canceling the offset, ie removing it from circulation to prevent double-selling.
- Quality of the offsets—There is a vast array of offsetting projects, standards and products currently on the market.
  - They have very different levels of validation and verification, with the subsequent concerns over quantification and additionality, different project methodologies and are located in different countries.
  - A large proportion of VERs are sold before the emission reduction has actually been achieved, in some cases decades in advance.
  - The Defra-led Code of Best Practice seeks to address this by introducing a standard based on compliance market credits, which cannot be released for sale until the emission reduction has been verified as having taken place.
- Emissions calculations—There are no universal calculation methodologies being employed across the offsetting market. Each website or organisation will offer up a different figure for the amount of CO_2 attributable to an activity. The Defra led Code of Best Practice seeks to address this by adopting government produced methodologies across the board.
- Price per offset—Offsetting providers operating within an unregulated VER market can charge any amount they see fit for a tonne of CO_2 reduced. Current prices vary between £5 and £20 per offset. While it is true that CERs also vary in price depending on the type of project involved and supply at the time, they are at least valued in relation to the compliance market price of carbon.

Education is certainly required. Defra plans to inform and educate consumers and provide an easily recognisable quality mark for those products which meet our standards and comply with our Code of Best Practice so that consumers can offset with confidence.

4. *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

Government prefers offsets to be achieved through avoided emissions above sequestration through forestry. Avoided emissions are achieved in much shorter timescales and result in emission reductions in the project locale. Voluntary forestry also raises questions about additionality, such as existing trees being sold as offsets and one tree being sold multiple times. However, forestry does capture and store CO_2 and we recognise that forestry is used as a form of offset in the national Land Use, Land Use Change and Forestry (LULUCF) GHG inventory.

Defra believes that the science is sufficiently coherent to accurately assess long term carbon gains and losses from afforestation/reforestation projects. However, there are some caveats. We can assess this in the UK (but less sure about overseas projects) over the long term (>20 years) assuming that any afforested/reforested land becomes permanently forested.

For the carbon gains from such projects to appear in the LULUCF GHG inventory requires them to be either undertaken by the Forestry Commission or funded by them under the various Woodland Grant Schemes, as we use Forestry Commission data to estimate the area of new planting each year. Getting an accurate assessment of gains over the short term would be much more difficult because of potential losses through failure of establishment and other disturbances, but these "blips" will even out over the long term.

Modification of current processes employed to ensure compliance with grant scheme requirements could improve the accuracy of assessments, while the development of a certification scheme for forestry offsetting projects would enhance confidence in such schemes and include those not in receipt of grant-aid. The Forestry Commission are preparing a more specific response on forestry-related issues.

5. *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

Assessment and quantification of emissions reductions from projects activities is difficult as it requires an assessment to be made of what would have occurred in the absence of the project activities. There are a variety of approaches to the selection of baselines and assessment of additionality.

The internationally agreed baseline and monitoring methodologies employed by the CDM provide a global standard for projects quantification generating CERs. These same standards are not applied across VER projects due to their existence in an unregulated market. This is not to say that all VER projects do not provide GHG mitigation, but without universally applied standards and central regulation it is impossible to provide any guarantees for specific projects.

6. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

A growing VER market will have no impact on the core purpose of the compliance market, that is to provide offsets for governments to put towards their Kyoto targets. However, if VERs were to dominate the market for voluntary action, the risk of potential double counting and market confusion would increase. Less additional investment would find its way into the CDM, resulting in less pressure for it to develop and evolve. This would potentially slow progress towards more streamlined and efficient procedures and reduce the speed at which new methodologies, such as for the smaller projects favoured by the VER market, can be included.

The bigger problem with sustained growth in the VER market is that without raising standards and providing clarity, offsetting will continue to be carried out in a cheap and potentially ineffective way. The continuance of varied pricing within an unregulated market not tied to the compliance market price of carbon will result in consumers not paying a realistic cost for the CO_2 they emit. There will be no guarantees that robust and verified offsets are being purchased, with an overall result that we cannot prove that sufficient CO_2 has actually been accounted for.

7. *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer? (CEHM)*

Government has not conducted any studies examining the link between carbon offsetting and consumer behaviour change. However, offsetting has not yet emerged into the mainstream of consumer thinking so the opportunities for research have so far been limited. We hope that the launch of the Code of Best Practice for offsetting will raise awareness and educate the consumer in the subject.

Offsetting can raise awareness of the relative climate change impact of their actions, such as realising how much a flight emits in comparison to their household emissions for an entire year. By acting as an education conduit to the consumer, offsetting can deliver behaviour change while also, if done in a responsible manner, reducing emissions in the locale of an offsetting project.

Defra's Code of Best Practice requires offset providers to make information on how to reduce emissions available to their prospective customers. This will add real value to the concept of offsetting and how it is sold to the public.

8. *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense? (CEHM, GA)*

The level of sustainable development benefits varies between offsetting projects. One of the core values of the CDM is sustainability, but this is not always presented in an obvious manner for larger scale projects. However, there are many examples of smaller-scale CDM projects with quantifiable sustainability benefits. It is a widely held misconception that all CDM projects are large and industrial—just under 50% of registered CDM projects are small-scale, which can offer significant sustainable development benefits. There is also the option of using an additional sustainability screen, such as that developed by The Gold Standard. Gold Standard CERs are being used to offset emissions from the World Cup, the Olympics, Government business travel and international conferences. Government is showing leadership by demanding sustainable development benefits for projects included in the Government Carbon Offsetting Fund for air travel.

VER projects are generally more heavily focused on sustainability to provide a face and storyline which the buyer can relate to. However, the same problems persist in that there is no universal standard or regulation governing the projects so longer term sustainability cannot necessarily be verified. There is also a danger of VER projects losing sight of the primary aim of offsetting—to reduce emissions in the project locale. Sustainable development can add to, but should not detract from, reducing emissions.

For example, a small scale VER project in an African village may have excellent sustainability benefits for the local community, but it may only reduce emissions by a few hundred or thousand tonnes every year. On the forestry side, planting trees has any number of environmental and social benefits, but the carbon capture and storage process will take a long time to mature and may be difficult to quantify in the short term, as discussed in the response to question 4. Although rates of sequestration are initially low, afforestation projects have potential for larger emissions reduction in the longer term through direct and indirect fossil fuel substitution.

January 2007

Witnesses: **Ms Jackie Janes,** Head of Climate and Energy: Households and Markets, and **Mr Martin Hession,** International Climate Change Policy Advisor, Defra, gave evidence.

Q399 Chairman: Good morning and welcome. Thank you very much for coming in. This inquiry has elicited a lot of interest in the last few weeks. It, perhaps coincidentally, overlaps with your own consultation process but I hope we will be able to publish our report in time to have some influence on the outcome of yours. Looking at the preparations you made before you published the consultation document in January, we have had some criticisms from some of the witnesses about what they saw as inadequate pre-consultation. Would you like to tell us what you did in the period before the document was published?
Ms Janes: Yes, by all means. We had a range of discussions and meetings with key players. I have a list here of who they were. We had discussions with six different offset providers, six different industry players, 14 aviation industry players, two private sector companies and eight NGOs. We had those discussions largely through meetings but some of them were through regular telephone conversations to get a wide variety of views and to help feed in and inform the draft consultation.

Q400 Chairman: Over what period did that take place?
Ms Janes: Over a fairly short period. We started work on the consultation in September/October of last year with a view originally to publish in December but that was put back until January.

Q401 Chairman: One of the witnesses we have just had from Cheyne Capital Management suggested that the pre-consultation talks were really just an exercise in trying to get support for the code that Defra wanted to present. Is that a fair comment?
Ms Janes: I do not think that is a fair comment. Clearly we were floating proposals and ideas and seeing the degree to which they would elicit support. We did not want to come out with anything that was so far at one extreme that it would be immediately dismissed, so there were probing discussions.

Q402 Chairman: On the Pure website is a quotation from the Minister of State dated 29 November which says, "The Government welcomes the launch of Pure's carbon offsetting scheme. The scheme offers credits that have been generated from emissions reductions that are regulated, verified and for which there is a clear audit trail." Is it surprising to get a comment like that just before a consultation paper which is suggesting that there might be different ways of establishing authenticity of voluntary offsets?
Ms Janes: Clearly ministers were kept closely in touch with discussions and took a very close interest in them. I think their view is that it is important that the additionality of a reduction is clear and that the credits are not double-counted; that you take account of effective calculations in terms of how you establish the baseline and the reductions coming from that baseline and how you deal with linkage. There are fundamental criteria to something delivery the environmental benefit we want it to deliver.

Q403 Chairman: Is the Government open to different views on this, when one of the central principles in the proposal was that the Government will only recognise CERs?
Ms Janes: Absolutely. The purpose of the consultation is to do just that: to consult and get a wide range of views. I think it has been very successful. We had a workshop yesterday with over 150 different participants representing the full spectrum of interests, and we are listening very actively to that. Our job will be to take those responses yesterday and those that come in as a result of the three-month consultation period, and hopefully to have the benefit of this Committee's work, in order to put further advice to the Ministers and for them to reflect on which direction they want to take.

Q404 Dr Turner: Do you think you have the time right? You are proposing to enter the market with a Government code just at a time when there are some apparently quite acceptable codes emerging from the voluntary market. Why choose now to do it rather than piggyback on the work that is already being done out there?
Mr Hession: There was a lot of activity around offsetting and a lot of codes were emerging, but, also, a lot of criticism of the transparency of different

sorts of credits. People had a fear that the credibility of the market would be undermined and there needed to be a step taken. On the merger (?) of codes, over the last five, even 10, years there have been a whole variety of codes coming out. One of the issues is that there has not been any market standard emerging from them, so it was perceived there was a need to avoid a multiplicity of codes and consult the market about what a single standard might be.

Q405 Dr Turner: We have heard a slightly different point of view from other witnesses who think that the emerging Voluntary Carbon Standard will play a significant part in allowing the VER market to cohere and find a robust and acceptable minimum. Is the VCS totally unacceptable to you? If so, why?
Ms Janes: I do not think the CSR has been finalised yet so we have not seen all the details to do with it. One of the issues is wanting to engage with individuals more effectively to play their role. Clearly, we want them to try and avoid and reduce emissions and to offset as a last resort. We can see that offsetting has a very varied role in terms of educating people about their carbon footprint, which may, in turn, lead them to try and avoid and reduce emissions in other ways. One of the concerns the Government has is that it is difficult for consumers to find their way through the market at the moment. I think the Tufts report has showed that in terms of price (they validated 13 different schemes) the different offerings varied by a factor of 10 and in terms of the amount of emissions for the same journey they vary by a factor of three. In terms of the timing of when offsetting occurred, that was very different; with some it had occurred and some it had not occurred. So for consumers to find their way through and for the market to be credible and not discredited (because the Government does not want the market to be discredited because it is a valuable part of trying to tackle climate change) it was felt important to move and try and create and stimulate debate with a view to setting a voluntary code, not a mandatory code, because we recognise the importance of allowing the market to develop.

Q406 Dr Turner: The VCS, as it is emerging, promises to do a lot of the rationalisation that you have just set out the need for. Will you be taking that into account in your proposals?
Ms Janes: We look forward to seeing what they are doing. As I say, we have not had the details of that yet.
Mr Hession: There are a variety of other standards as well to which different off-setters are applying, so we have to consider that there are a variety of standards being pushed and placed by the different players in the market.

Q407 Dr Turner: Just as an aside, why should the Government intervene in this particular voluntary activity if the Government does not vet international aid donations and it does not vet ethical investments? Why vet carbon offsets?
Ms Janes: I think there are a number of reasons. One is that the scale and urgency of the problem means that this is a market that we see growing quite significantly over coming years. Secondly, we do not want the market to be discredited because we think it is a legitimate contribution towards tackling climate change. Thirdly, consumers are actually purchasing something. When consumers buy an offset we believe that they think they are purchasing a tonne of reduction, or however much it is, and that reduction has already occurred, and in some cases that is not the case, and that is a concern.

Q408 Dr Turner: When the Defra code does emerge, how do you see it fitting into the marketplace? Do you think it will replace or displace the existing emerging codes or will it run alongside? If it does that, obviously, there is the potential opportunity for yet more confusion.
Mr Hession: I think the code of practice is not ruling out other approaches but it is saying if you were to get the Government mark of confidence that one would be applying the criteria within the code, and that is not only the choice of credit; at the end of the consultation it might be a variety that apply, not just CDM, and we propose that others should be counted. Also, there is a whole range of other timing issues, transparency issues and information issues attached to it. So they can run in parallel but the Government mark of approval is only given to some and it is not merely about the credits.

Q409 Dr Turner: What do you say to the people who have raised fears that your code has the potential to be counterproductive to the voluntary market? It has been described by some as the possible kiss of death.
Ms Janes: Our objective is not to destroy the voluntary market; our objective is to try and stimulate an increase in standards, robustness and transparency.

Q410 Dr Turner: If it is successful, will you want to spread the good news and good practice throughout Europe on an EU-wide basis?
Ms Janes: We will always look forward to discussions with our EU partners about good practice and best practice. We had at the workshop yesterday some representatives from Europe who were interested because, once again, the UK is playing quite a leadership role.

Q411 Dr Turner: You show a distinct preference for CERs as opposed to VERs. Would you expect EU governments to take the same line?
Ms Janes: That is difficult to say. We have not had those conversations as yet.

Q412 Tim Farron: Are you confident that the majority of market players will seek to hold the proposed quality mark? I would be interested to know how many offset providers have indicated to you that they will definitely seek to hold the mark.

Ms Janes: There was a discussion at the conference yesterday about this and one of the participants said that the commercial attractiveness of a mark would, in part, depend on the degree to which the Government communicated it and let consumers know about it. So if it was high profile and consumers looked for it then it would be more of an interesting proposition to sign up to. We have had discussions with some industrial players and private sector players who are interested in using the mark to verify their own offsetting schemes, but those are at early stage discussions and, clearly, we do not yet know what the final code is going to look like.

Q413 Tim Farron: You will have seen that the Co-op says that leading the voluntary market into the compliance system would see the price of an offset rise from £7.50 to £16.90 per tonne of carbon. If that is so, that is surely going to reduce demand. What work have you done to take this into account?
Ms Janes: I think it is true that a CER costs more than a VER, and there are good reasons for that. The robustness and transparency of the certified market is critical to its legitimacy. We are, through CERs, creating a tradable commodity that has a value, and there needs to be certain rules and regulations around that. That is what you see reflected in the additional price for a CER.
Mr Hession: While it is generally true that a VER is less expensive than a CER, it is not always true, and certainly there are VER products offered on the market at a considerably higher price than its equivalent CER. So it is not always true, it depends on the project and the company.

Q414 Tim Farron: Just following on from that, do you not think that the Defra stamp is likely to lose its dominance once the VER market becomes coherent and more reliable?
Ms Janes: I very much hope that the VER market becomes more robust and transparent. That would be a great result.

Q415 Mr Stuart: Would you like to see the voluntary market only selling already achieved reductions as opposed to future ones? Is there ever a case, given the capital investment requirements, for perhaps having a short time frame ahead that somebody could sell, possibly, with an insurance policy attached to it?
Ms Janes: From an environmental integrity point of view I think it is important that the reduction has already taken place. I think that is probably what the consumer expects when they buy offset. If that is not the case I think it should be clearly and transparently communicated to the person buying the product. It was as a result of discussions prior to the launch of the consultation that we included a provision that actually you could acquire the project and offset within six months. That was one of the things we altered as a result of the discussions last autumn.

Q416 Mr Caton: Notwithstanding what has been said so far this morning, your proposed code does appear to want to push at least part of the voluntary market into the compliance system. Are you worried at all that this will set back sustainable development projects which have measurable carbon benefits and which the VER market claims to specialise in, and also perhaps hinder the voluntary market's ability to be a source of innovation?
Mr Hession: There are a lot of issues here. It depends, one, how you define the voluntary market. The voluntary offsetting market is about people who want to voluntarily offset their emissions and, obviously, the credibility of what they are buying will impact a lot on what they want. The voluntary assessment of emissions is another point in the sense that one needs to examine in principle how transparent those emission reductions are. Could you repeat the question please?

Q417 Mr Caton: You appear from the consultation document to want to push at least part of the voluntary market into the compliance system and some witnesses have given us evidence that they think that will have a detrimental effect on some good work that is being done now.
Mr Hession: Forgive me for going on about one side, but on the other side one needs to look at the fact that the CDM can actually deliver sustainable development projects which I think is another thing to look at. I do not think it is inevitably driving out sustainable development benefits. When you review the market, over 10% of projects are produced small scale of in and around less than 5,000 tonnes and there are 45–50 projects at that level, so I do not think it is inevitable that a standard that moves more towards a compliance market would drive out the sustainable development benefits. On the grounds of innovation, I think it is entirely possible that the various standards that are out there can provide a kind of laboratory for experimentation but I think it is important that that experimentation is fed into the CDM to make it work better, so I do not deny that that point is there. I do not think it will necessarily mean that innovation will not happen within the CDM as well but it will be a useful benefit.

Q418 Mr Caton: Can I put something else to you? There are currently very few CDM projects in Africa. Might not the code further reduce the number of projects there by diverting funds into the CDM system?
Ms Janes: I think it is true that there are not many CDM projects in Africa. I think out of the total 2.75% of CDMs that are registered are in Africa but that is equivalent to the amount of emissions from Africa. Most projects are in the larger countries like Brazil, China, India, Mexico and Chile, and these are the countries where there is the majority of global emissions. What we are talking about primarily is a tool to reduce carbon emissions. That is absolutely critical. If you want to invest in sustainable development there are lots of very effective and good charities by which to invest in sustainable development projects. What we need to be sure about is that when we are investing in emission reduction projects at the minimum they are not causing any harm in terms of sustainable development and preferably is promoting and

causing great synergies with sustainable development. I think it is a slight red herring to look at Africa and say there are not many projects there. That is because there are not many emissions in Africa and this is primarily about emission documents.

Mr Hession: The reason for the lack of projects in Africa, if one accepts that that is the case, is that there is a lack of capacity to undertake them, particularly in the CDM area. That is one of the Government's priorities, to seek to improve capacity in Africa. One could argue that by driving the innovation that there is in the voluntary sector into the CDM market one would be building capacity because the CDM market is a far more substantial market than the voluntary market and there is very little capacity to undertake projects. One method of improving that capacity would be asking the private sector to do more investment through the CDM there. Enabling people to deal with these methodologies and undertake projects is a key issue for CDM in Africa.

Q419 Mr Caton: You have said your code can sit alongside the voluntary system but I get the impression that you would like to see the voluntary market merge into the compliance system. Is that true?

Ms Janes: No. What we would like is to see a great deal more robustness and transparency in the voluntary market. At the moment that is not there. You really do not know how different companies have calculated their emission reductions, what percentage of the money you are paying is going on the emission reduction and what percentage is going towards the profits if it is a for-profit company. In the Tufts report it varied by one company putting as little as between 15 and 30% into emission reduction projects, where another company put in in excess of 90%. That is not transparent to the consumer and that risks destroying the credibility of the market.

Q420 Mr Caton: But if the voluntary market is still going to be there after your code comes in should you not be doing something to regularise that?

Ms Janes: I think the very debate and consultation that we are having on this code is stimulating that type of discussion in a very positive and constructive way.

Q421 Mr Caton: So that could come out of this consultation?

Mr Hession: We have not chosen a final standard but it is an encouragement to reach this level. We have not made it compulsory because we think that there are people with existing financial interests in other systems, but it is intended to drive people towards the top of the market and towards the highest levels of transparency and of accountability to their concerns. That is what it is intended to do, so although the actual outcome of the standard is not dictated the standard should encourage a higher level of transparency.

Ms Janes: I think that is a challenge with the Government talking about a code, albeit a voluntary code, that the players in the market always want the standard to be set just slightly below where they are, and if government is trying to determine what best practice is that is automatically going to be quite demanding and at the higher end of things, and that is a cause of lively discussion and debate, very legitimately so.

Q422 Chairman: Just on this question about best practice, we have been told that one company claiming endorsement from Defra is selling EUAs on the market. As phase one of the ETS was over-allocated and did very little to cut emissions are you happy that the scheme was associated with what is really the sale of hot air to the public?

Ms Janes: I think that is a very important point and that was another point that we took into account in the consultation. We decided not to put in place any code until the end of 2007 so that we would not have the problem of taking on EUAs from phase 1 of the EU ETS.

Q423 Mr Chaytor: In terms of the CDM itself, it is generally agreed to be overly bureaucratic and rigid. Does the Government have any specific criticisms or have you made any representations to try and make it more flexible?

Mr Hession: That is my responsibility. Essentially it is quite a rigid process and a lot of that rigidity comes from the time period within which things are considered. There is third party independent verification, there is room for public comments, there are procedures about the Government being able to intervene if they do not like the projects, so a lot of criticism comes from that. There is also quite detailed guidance on how to do calculations before a method of calculation is approved and all of those things have taken quite a deal of time and there is a lot of complaint about the lack of transparency in the system. About two years ago during the UK Presidency we made it our priority with the Canadians to improve the system. A lot of that was to do with finance. There were only about four people working in the UNFCC on all of this, and there was a general attitude that what was needed was more part-time members of a board rather than support staff, and I think we were quite successful in changing that perception. We have done things like encouraging the smaller scale projects to be subject to more simplified methodologies but that has not been entirely a success, and we have looked at particular methodologies where there has been a problem about small-scale cooking stoves and proposing solutions for those.

Q424 Chairman: Could you speak up please? The shorthand writers are struggling.

Mr Hession: I am doing too long a list of things but we have negotiated simplified rules for small-scale projects. We have made a proposal for particular project types which have not yet been accepted, it is true. We have also proposed a reduction in administrative fees for smaller scale projects. We are

currently looking at commissioning some research on the process and how additionality works, so we keep quite closely in track with it and want to see it improve.

Q425 Mr Chaytor: Have any of these proposals been adopted?
Ms Janes: I think the point to note, and I heard your previous witness making the same point, is that CDM is the pioneer and it is a really difficult area. The issues I am sure this Committee has grappled with, to do with additionality, are really challenging. So there have been teething problems and I would not want to claim that CDM is perfect; it is not at all, it is an iterative process. There is a lot more that can and needs to be done to improve it but I think over the last few years significant strides have been made. One of the issues—absolutely Martin is right—is the number of staff within the UNFCCC; there were four professional staff working on the CDM 18 months to two years ago; now there are 35. We have done a lot of work on consolidating methodologies; it used to take about three years to get a methodology through and now it takes a year, and talking to the UNFCCC Secretariat yesterday they hope that for the more straightforward methodologies they will be able to push those through within six months in future. Because of the consolidation of methodologies you are getting a lot of the same methodologies being used by more than one project. I have got some figures here: for large-scale renewable projects, 367 projects are now using the same methodology; for small-scale renewable projects 512 projects are using the same methodology; for large-scale biomass 119 projects are using the same methodology and for small-scale methane recovery 169 projects are using the same methodology. There are DNA forums in developing countries that happen two or three times a year; all documents are published on the web, the executive board meetings are webcast and there has been a range of improvements for small-scale projects: free registration if the project is below 15,000 tonnes, simplified procedures and methodologies; the Secretariat providing assistance to those projects in developing their methodologies; bundling of projects and, also, the Secretariat now working on, with the executive board, programmatic CDM. These are really positive developments, but we must not stop there, and the UK will continue to press for greater efficiency and effectiveness in the operation of the board.

Q426 Mr Chaytor: Given the level of investments involved and the complexity of the systems that have now been developed it is not conceivable that the CDM would not survive after 2012. Essentially, even though technically there is uncertainty from 2012, in reality it will be the CDM beyond 2012, surely?
Ms Janes: There is a vast amount of international commitment and investment in the CDM and a widespread recognition among Annex One countries of the need to engage developing countries, and the CDM does just that.

Q427 Mr Chaytor: That strengthens the department's assertion that the voluntary market should be incorporated into the CDM. There is a risk about what happens beyond 2012.
Ms Janes: Clearly, there are uncertainties about the period post-2012, and they relate not just to the CDM they relate to the whole international structure and to the EU Emissions Trading Scheme, but there is a great deal of support for the existing framework.

Q428 Mr Chaytor: You are confident that your argument that the voluntary market should be integrated with the compliance market is solid in spite of the uncertainties beyond 2012?
Ms Janes: Yes, I think so, because the key thing—and this was reiterated in the Stern Report in November—to tackle climate change is having a robust and credible carbon price, and the CDM is part of that effort.
Mr Hession: It is our stated position that the CDM is part and parcel of the compliance market post-2012, and there is an enormous loss riding on that as well. I think the CDM will definitely continue. One of the key questions we have for the post-2012 framework is in recognising other countries' commitments. Some countries may want to take on commitments. How do we evolve the CDM to reflect that? The basic picture is that it will continue and I do not think there is any question or can be any question about the commitment to that because we have made it part and parcel of the EU ETS vision that the EU has, and we obviously we need to negotiate that but it is tied to the compliance market as well. So that should give some reassurance.

Q429 Chairman: One quite widely expressed concern about offsetting generally is whether it disincentivises people to actually cut their own carbon emissions, and it is understandable why people would say that. You say the code would require offset providers who want to be accredited to make information available to people about how to reduce their emissions. What is that actually going to involve?
Ms Janes: That is a good question and something we are still considering and discussing with consultees. I think Defra has a lot of views on the types of actions that individuals could take to do with properly insulating your attic, your cavity walls, using energy-efficient light bulbs, energy-efficient appliances, or walking small distances or taking public transport. It would be that type of activity that would be accessible to people to make informed choices.

Q430 Chairman: Someone who is interested enough to think about running an offset and to start making inquiries from a provider, clearly, has got a concern about their carbon footprint and, therefore, they are very ripe for guidance as to how to pick some of the low fruit which still remains—not necessarily through Defra but some other departments—unpicked, at the moment. So there is quite an opportunity here, is there not?

Ms Janes: Absolutely, and interestingly although we talk about avoid, reduce and offset, some people may come into that sort of triumvirate through offsetting; they may have an awareness of offsetting by going in and using the calculations, understand more about their footprint and that, in turn, may encourage them to take further action. A good analogy here is to micro-generation. Some people are interested in micro-generation because it is quite sexy, visible and exciting, but actually by installing micro-generation the anecdotal evidence suggests that their energy use becomes more visible, and then they become more interested in being more efficient and reducing their energy use. So we see a similar analogy to the offsetting.

Q431 Chairman: Is there any danger that by helping people to understand more about offsets it is, in a sense, slightly leapfrogging their state of knowledge, because some people are still relatively uninformed about their own carbon footprint and the whole climate issue. These are quite complex issues for lay people who have not taken an interest in the past. Is there a danger that if we start talking too much about offsets we will just confuse them about what they could and should be doing?
Ms Janes: I think that is a very fair point, and one of the barriers to consumer action is confusion and multiplicity of messages from multiple sources. That is, in part, the motivation behind the code; trying to create more transparency and have a dialogue about some of these issues to cut through some of that confusion as it relates to offsetting, but there is a wider challenge to do with people having a relative framework so they can assess the relative value and impact of different actions they can take to tackle climate change. It is important that people understand that offsetting is not going to solve climate change; you actually need to reduce emissions as well.

Q432 Mr Caton: Following on from that, you talk about anecdotal evidence but is there any objective evidence that offsetting actually encourages behavioural change? Is it not more likely that it is going to salve people's consciences and allow them not to tackle their own carbon footprint?
Ms Janes: That is a very fair point. Some people do feel or have concerns that offsetting could be just a guilt-assuaging activity. I do not think we have a great deal of empirical evidence and research on offsetting; it is an area where Defra wants to do more. We have a six-monthly consumer survey of opinions, and interestingly the last time that was done was October 2006 and that said that 37% of people had heard of offsetting, which was up six% from when the survey was done in March 2006. We are hoping to undertake annual surveys and increase the number of questions about offsetting to understand people's attitudes, why they offset and what they think it achieves, but I think there is a lot we need to learn.

Q433 Mr Caton: Several organisations have told us that they think there is a very real need for research specifically into whether there is a link between offsetting and behaviour change. Would that be part of what you are going to do on an ongoing basis?
Ms Janes: We are open to all ideas and that sounds important.

Q434 Mr Caton: The Environment Agency has chosen not to offset its emissions but to invest the money it would have spent in that way in reducing its own carbon footprint. Is that a better approach?
Ms Janes: We would encourage organisations like the Environment Agency and beyond to reduce their own emissions. There is an issue that the UK has a national cap, so any of their reductions will contribute towards the UK's national cap. That is a legitimate activity.

Q435 Mr Caton: Carbon Clear have told us that only one to two% of individuals currently offset and that basically they are the green and the affluent. Are we going to be able to move beyond the environmentalist and the rich in take-up of offsetting and, if so, how do we do so?
Ms Janes: We have done some work in Defra on different socio-economic groups and their attitudes towards the environment and there is a link between the more affluent groups and their awareness of the environment and climate change. What we need to do is raise awareness in all sectors of society about actions people can take to play their part in reducing emissions, and that may be through offsetting but it may not be. It may be through avoiding or reducing emissions but, because if you are more affluent you tend to have more emissions, clearly that is an important group to reach.

Q436 Mr Caton: So should part of a government publicity programme include making people more aware of the offset option?
Ms Janes: We would not exclude anything. At the moment when we are looking at our communications programmes they are very much about the call for action and Defra is going to be launching what the DfT have already launched but Defra will be using as well, which is the "Act on CO_2" brand to try and get people more engaged in the debate. One of the challenges that we have at the moment though is more basic than that, which is that only about 20% of people link climate change to carbon dioxide emissions, so getting people to understand the link between turning off their lights when they leave a room or turning off their TV on standby and climate change is still quite a big leap for a large percentage of the population.

Q437 Mr Chaytor: The department is supportive of forestry projects but within the CDM for a very few forestry projects, so is this not a paradox, given that you are trying to persuade the voluntary market to move into the compliance market and yet the voluntary market is very good at supporting forestry projects?

Mr Hession: I think one of the reasons there are forestry projects, though not many, it is true, is that the EU ETS does not include forestry as a compliance option, so the demand has not been terribly high. That said, I do not think the standard would exclude using those compliance credits and so therefore it actually provides a source of demand for those budgets, but the broader policy of Government will be to seek to include those projects, both within the EU ETS and also in the future framework expanding into forestry. You can say there is some inconsistency and unfortunately our position within the EU ETS negotiations has not been successful.

Q438 Mr Chaytor: There is a contradiction at the moment because it is the voluntary market that is in a better position to promote forestry projects which you support?
Mr Hession: Indeed. In a sense we have not been able to make the compulsory markets have that option as of yet, but it is our position to do so.

Q439 Mr Chaytor: But are you confident that there will be some change in the compliance market and over what period of time? Before 2012?
Mr Hession: In the review of the European Emissions Trading Scheme they are looking at scope questions over the next six months and the Commission proposal should come out at the end of the summer, so it is within that context but I do not think it will come into force before 2012.

Q440 Dr Turner: Jackie, you told us earlier that in the run-up to the publication of your consultation document you talked to 14 players, if I remember rightly, from the aviation industry, and presumably you were discussing the airlines, such as witnesses that we had, Silverjet, Virgin and BA, who are about to launch into expanded offsetting schemes, but then, lo and behold, they put the whole thing on hold and stopped when the Chancellor put on air passenger duty, so are we a little cynical then about the aviation industry's sincerity on offsetting?
Ms Janes: Not at all. They are a very constructive partner and we want to work with them. We want to encourage best practice and we want to encourage them to take the message to their consumers, so we continue to have a constructive dialogue.

Q441 Dr Turner: But it does seem a little strange that they should equate carbon offsetting with air passenger duty in that if one happens then they do not do the other, so how are we going to get them active in carbon offsetting?
Ms Janes: Clearly the announcement about air passenger duty in December was unwelcome to the aviation industry and I suppose they were trying to make that clear to the Government, so there was a political statement in there, I think. We will continue to work with them. We do have very constructive discussions. There were aviation representatives at the conference yesterday and we are keen to maintain a full dialogue.

Q442 Dr Turner: Yes, but that dialogue does not seem to be leading anywhere at the moment. Have you considered the possibility of using some mandatory mechanism to this?
Ms Janes: The UK's position is that we would like aviation in the European Emissions Trading Scheme and that remains something we will continue to push for. In the meantime, if aviation companies would like to offer offset products to their customers in a transparent fashion we would encourage that, and I think a number of companies are actively developing schemes at the moment.

Q443 Chairman: The announcement of the air passenger duty increase in December was unwelcome to the aviation industry. It is also the case that it was a complete surprise to Defra?
Ms Janes: Yes, but fiscal policy is the prerogative of the Treasury.

Q444 Chairman: Indeed, and we have had that reinforced by the interview with Lord Turnbull this morning. The Government's Carbon Offsetting Fund represents the quality end of the market and therefore the projects are more expensive than the average CER. Do you think that the price of that type of credit might rise once this code is in place, because offset promoters and retailers may be looking for those sorts of credits for their own customers?
Mr Hession: I am responsible for the GCOF. Certainly the price was negotiated on the basis of 90% of the future price of EUAs. That is how we measured its reasonableness. If there is an increase in demand in the market the price should go up but if you look at the volumes in the overall CDM compliance market versus the voluntary market, the voluntary market is relatively small at present, so the price effects, one would imagine, are small. I can give you figures on the relative volumes and values, so undoubtedly an increase in demand would lead to an increase but I do not expect it to be substantial.

Q445 Chairman: Can you tell us how far the Government has got in deciding how to offset emissions from the government estate in the programme to make that carbon neutral?
Mr Hession: We are hopeful that there will be an outcome. There is a cross-government discussion on carbon neutrality and I think the idea of carbon neutrality is a far broader thing than offsetting so, although I would hate to predict the outcome of that, offsetting undoubtedly will be some proportion of it but what proportion I do not know. The one thing I do know is that the offsetting fund has been used for additional offsetting above and beyond the government of aviation and could stand ready to provide that facility, but there has been no conclusion to those discussions yet.
Ms Janes: It is worth adding that one of the things that is actively under review at the moment and was published in the Energy Review is an energy performance commitment which would cover the

central government estate as well as large commercial players.

Q446 Chairman: When do you think we might get an announcement about all this?
Ms Janes: On the energy performance commitment?

Q447 Chairman: No. I meant on how the Government is going to get on with offsetting its own estate.
Mr Hession: I am afraid I cannot give you data at present.
Ms Janes: I think it is actively under consideration but I am afraid neither of us knows the precise timing.

Q448 Chairman: Do you know whether any other EU governments are doing the same sort of thing, either with transport or their own properties?
Mr Hession: There are some governments that have done it for individual events. I am not clear that it is compulsory across government in any country but I know that in Sweden and Germany they are quite interested in what we have been doing and have asked for details.

Q449 Chairman: Okay. I promised my colleagues we would finish at 12 o'clock and it is now 11.59, so thank you very much indeed for coming in.
Ms Janes: Thank you.

Written evidence

Memorandum submitted by Biffa

Thank you for the opportunity to respond to this inquiry. Our interest in this issue stems from the following factors:

(i) The UK waste sector handles an estimated 40–50 million tonnes of biogenic and fossil carbon as end of life discarded material each year, and of that total approximately 20% is recovered via recycling, energy, or soils whilst the balance ends up in landfill. The sector is thus a substantial player in the "carbon chain".

(ii) As a company, we thus have an interest in the impact of economic instruments, in the form of taxes, subsidies, or Traded Pollution Permits, which impact on the valuation of carbon insofar as they can be significant determinants on our forward investment strategies to manage that carbon differently.

(iii) Pressures to do so result from the context of waste in the wider global warming debate, and the development of the carbon economy.

(iv) We are active supporters of all measures targeted at moving the debate forward, recognising the need to move our industry—as well as our customers' waste management practices—forward on the basis of "one planet living". To this end we have, over the last decade, directed support funding into improving understanding of carbon impacts, most notably in the form of underwriting landfill tax funding for the WWF Counting Consumption programme, the University of Oxford Environmental Change Institute on carbon flows in the economy, and numerous other linked initiatives.

Biffa has a turnover of just under £800 million per annum and we are the second largest integrated waste management company in the UK. We handled around 11 million tonnes of material through our collection, landfill, and recycling activities, of which an estimated 60%–70% is biogenic and fossil carbon based.

Turning to the specific points in your inquiry, we offer the following observations:

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

In our experience, voluntary programmes are rarely effective. This issue is a subtext of parallel discussions in the areas of Producer Responsibility and the enlargement of the European Tradeable Permits framework for CO2 offsets. Rarely are there instances of such innovative developments in the emergent environmental market instrument area coming into operation effectively based on voluntary codes of conduct. This may run counter to established wisdom in terms of recommendations from the Better Regulation Task Force, but the risk of freeloaders and peddlers of unsubstantiated claims is simply too great. If allowed to develop in the absence of a strategic framework with poor supervision, there is a risk of substantive loss of public credibility in the medium to long term. Notwithstanding that, we suggest that any regulatory framework be shaped in accordance with the recommendations of the BRTF as well as being in accordance with tenets proposed by the Aldersgate Group, of which we are a member (the Aldersgate Group is chaired by Sir John Harman, chair of the Environment Agency for England and Wales, and more information is available from http://www.eic-uk.co.uk/press/index.cfm?dir = press%5C2006%20Press%20Releases).

Should offsetting become mandatory for some of the more carbon intensive activities, such a flying?

Whilst attractive as a concept, we would counsel against knee-jerk reactions of this sort. Given the real and present danger from global warming, there is a strong case for identifying "low hanging fruit", of which aviation is probably a strong candidate. Equally, the UK waste sector might be in this category and such moves need to be predicated on advance holistic assessments of an appropriate blend of sticks and carrots which could operate. If mandatory systems develop after such consultation, so be it—but they must be predicated on compulsory accreditation and the introduction of a transparent and effective data monitoring framework for carbon flows across the sector. There is also a contingent danger that such initiatives will be interpreted as a measure of disguised taxation, a consequence which will set back the entire initiative. Government needs to consider how such issues can be championed by an executive department with wider powers than is currently the case in DEFRA.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at difference prices?

From our experience with the Biffaward Programme on Sustainable Resource Use we believe there is considerable scope for more selective support in the pure and applied science areas when addressing the question of environmental claims in general. This is an area well populated with misconceptions—for instance compost is not an efficient system for sequestering carbon in soils given that a substantial proportion of its mass reverts to CO_2 within six months of application. We understand from the Forestry Commission in the course of our studies on timber that the entire tree mass of the UK is estimated to sequestrate a mere one million tonnes net of carbon each year, compared to the 170 million tones released

as carbon equivalent from fossil fuels. The idea of planting 170 times the extant UK tree stock year after year after year is clearly ludicrous! It is the role of science to negotiate a way through this labyrinth and for government to create a level playing field which makes life difficult for the charlatans.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long term carbon (or other GHG) gains and losses from such projects?

As a consequence, the coherence of the science has a long way to go. Additional investment in science is needed to establish a firm foundation for policy development and implementation. Such investment in scientific research and assessment needs to be undertaken within an integrated battle plan in three broad categories:

(i) Holistic

(ii) Sectoral/supply chain

(iii) A level of cross cutting basic science

Expanding briefly on each of these:

(i) Holistic

This area should focus on the big issues and the task of context setting, establishing priorities, and issues around public communication. For instance if, in the last 100 years, we have used up 10 million years worth of bio-accumulated fossil carbon that is equivalent, on average, each year to using 100,000 years of "fossilised sunlight". The scientific community needs to develop that sort of context setting challenge to inform the priority setting debate.

(ii) Sectoral/Supply Chain

Our industrialised societies have emerged within the context of (usually) product or service focused supply chain infrastructures. Those infrastructures will not be dismantled and re-assembled to meet the carbon challenge—the latter needs to be adapted within the context of extant economic infrastructures in food, electronics, electricals, automotive and so forth. Thus a carbon based science research programme sectorally focused needs to be developed appropriate to the conditions in each of these sectors.

(iii) A Level of Cross Cutting Basic Science

These relate to cross cutting, important and often pure research relating to (in our sector) measurement of biogenic content, classification, analysis, verification, and many other areas of base level biochemistry in the mechanical, physio-chemical, and thermo-chemical fields.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

Contingent on establishing a framework, there is a need to measure and quantify carbon flows through the economy in much the same way as the Chancellor measures monetary and credit flows to regulate internality economic activity to obviate "overheating". A properly set up holistic, scientific research programme, backed by a regulatory/audit function should meet any data deficiencies.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

We are not qualified to comment.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

We are not qualified to comment on these issues at the level of the individual, although there is a wide body of knowledge and experience extant in academia and consultancy associated with the waste sector in relation to similar issues around domestic recycling, charging, and the like.

As far as our industrial and commercial customers are concerned it would appear that they react decisively and effectively when confronted with regulatory, fiscal, or Tradeable Permit regimes provided they are transparent, backed by appropriate audit trails, and confirmed sufficiently far in advance.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social, or economic sense?

Practical experience suggests that in the early stages of any innovative initiative there will be an explosion of approaches, definitions, standards, and terminology and it takes time to establish stable, fundamental patterns of market transparency and stability. Examples include the European EU ETS, stock market valuations of emergent sectors (dot coms), and the like. It is the role of government to anticipate and remove such potential for perturbation, but in practical terms it can never be entirely successful. The objective is to establish a process of consensus between informed experts with no commitment to vested self interest to shape strategies in the three areas which act as an antidote to misinformation, charlatanry, and exploitation. Those antidotes focus on:

(i) Technological strategies (measurement, reporting, scientific research, standards, etc).

(ii) Economics (monetary valuations, methodologies, taxes, subsidies, Traded Permits, etc).

(iii) Socio-political issues (education, awareness, integration with wider societal messages, reporting frameworks, etc).

January 2007

Memorandum submitted by British Energy

Key Points

- All carbon reduction options will be needed if we are to successfully address climate change. Carbon offsets if implemented well can be a valuable option in these efforts, as they have the potential to engage with developing countries.
- Carbon offsetting needs to be looked at as an option along with reductions in use and increases in efficiency.
- Voluntary carbon offset schemes require accreditation if they are to achieve a consistent and reliable reduction of carbon dioxide.
- Offset schemes must demonstrate clear cost benefit attributes and have the ability to be compared to other offset schemes.
- Offsetting may potentially have a negative impact on customers' behaviour resulting with no change to the frequency of carbon intensive activities.
- Voluntary carbon offsetting schemes may impact the price of carbon. This may in turn impact on the mandatory schemes.

Some Inquiry Issues

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

1. There should be a compulsory UK accreditation scheme for carbon offset projects if the carbon savings achieved are to have the same credibility as other carbon reduction projects.

2. Carbon reduction claims made by companies need to be verifiable. The establishment of carbon offset projects must be developed in accordance with an approved standard. There will need to be a set of rules and guidelines for large and small projects. Companies and organisations that develop the projects will need to be audited by an accredited external body to ensure that the data used in the offset process is accurate.

3. The accreditation scheme can be modelled off existing voluntary accreditation based programs, such as Environmental Management System ISO14001.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

4. Carbon offsetting should not yet become mandatory for carbon intensive activities, such as flying. The first option for carbon intensive activities should be reduction and efficiency.

5. A distinction is required between mandatory carbon offsetting by companies and by individuals. Compliance by individuals to mandatory carbon offsetting for activities such as driving is a complicated process and needs to be considered carefully.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

6. There is not enough clarity within the offset market at this time. A suggestion to improve clarity is to set up a register of carbon offset providers, detailing their products and the methodology and the data source used for their calculations. Once on this register they need to be audited by an approved third party.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

7. The science behind forestry offset projects is not sufficiently sound to assess the long term GHG's gains and losses. Also, see 8) and 9) below.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

8. There is a large body of evidence to generate assumptions of carbon sequestration as the science of forestry is well established, but it is insufficient to guarantee the long-term results. As with all assumptions it is based on certain variables. If these variables change at a non-predicated rate this would alter the results. For example, future temperature and rainfall data is used to predict the growth rate of trees in forestry schemes, the predictions have been made on future climatic conditions but these could change dramatically if we delay action on climate change.

9. Overall, the degree of certainty is decreased in forestry and agricultural offset projects as it involves natural systems, which are dynamic. Certainty of results is increased in reductions of energy use and mechanical efficiency as it is a more simple process of input vs. output.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

10. Voluntary market offset schemes may have implications for the compliance market by driving the price of carbon down. Mandatory schemes have a minimum operating cost that must cover the infrastructure of the system and a more complex approach to carbon reduction.

11. Voluntary projects may lessen the credibility of mandatory schemes if there is a high degree of failure in the projects. Voluntary projects may not deliver as great a carbon reduction as mandatory projects as there is currently not the same rigor in the voluntary schemes.

12. As the cost of voluntary schemes is lower then mandatory schemes this may lead to a reduction of available land for successful projects.

13. On the other hand, voluntary schemes may have a positive impact on the mandatory schemes as they may be able to offer a more pragmatic approach to offsets with similar results.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

14. Offsetting could have positive and negative effects on people's behaviour.

15. On the positive side it could have a double effect of reducing carbon dioxide emissions with an offset and also as it costs money to offset consumers hopefully will reduce the carbon intensive activity as it is costing too much.

16. On the negative side it could lead to inequality, as some people may be able to undertake in certain activities as they have the money to offset. For some it might be easier and cheaper to offset then to change behaviour.

17. Evidence of these trends is shown in the existing schemes, when the price of carbon is low is not a driver to implement change.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

18. Offset schemes that are funded by voluntary payments must ensure that the price of the offset covers the establishment and the long term management of the project. As the cost of carbon increases and thus the price of the offset, emitters may opt out of carbon intensive activities, not requiring the services of offset providers.

19. The social and environmental sustainability merits of current offset schemes need to be broken into two groups:

(a) *Afforestation or reforestation*—Reforestation projects implemented correctly are environmentally and socially sustainable. Afforestation projects have the potential to impact on the environment and the local community, if the land the trees are being planted on is not meant to be covered by trees and if it displaces people who had lived off the land previously.

(b) Renewables—The concept of renewable energy is environmentally sustainable, but some methods of delivery can have social, environmental and economic impacts. The impacts on the local environment need to be first assessed to determine the sustainability of the renewable project. The financial sustainability of the projects must also be evaluated.

January 2007

Memorandum submitted by Carbolibrium Ltd

Carbolibrium is a private limited company engaged in activities related to voluntary carbon offsetting both in the UK and international markets.

We stand at the cusp of a revolution in personal responsibility for climate change. No longer are we prepared to accept the inexorable drift from disregard to denial to despair; instead we must all stand and commit to positive, personal and measurable actions today.

The ability of the private sector to drive innovation and efficiency is widely acknowledged and embraced by this, and previous governments. How then does the Environmental Audit Committee (EAC) propose to harness these positive aspects of private sector involvement within the voluntary carbon offset market, whilst managing the tendency towards excessive profiteering?

Whilst the involvement of the not-for-profit sector should present advantages in terms of altruistic management principles, it is often criticised for its unnecessary overhead burdens and lack-lustre strategic thinking. Does the EAC agree that organisational performance should be made more transparent to the public through the mandatory publishing of common metrics? If these were presented in a clear and understandable format, could this play a useful role for consumers to facilitate comparison between the offerings of public, private and not-for-profit organisations?

Finally, there is a worrying practice emerging within the UK voluntary carbon offset market of structuring carbon offsetting organisations as charities or non-shareholder private limited companies, whilst maintaining misleading, if not actually duplicitous, 'commission' arrangements with related legal entity vehicles. It is the author's inescapable conclusion that this can only be intended to hide the true financial incentives of such organisation's founders, directors or trustees. Does the EAC feel that this practice misleads the public, and if so how should this problem be tackled?

I trust the committee will not squander the opportunity for genuine affirmative action by allowing the unethical behaviour of the few to contribute towards a general climate of cynicism and distrust. This is particularly important in light of recent welcome, yet rigorous, media attention.

January 2007

Memorandum submitted by Carbon Clear Limited

INTRODUCTION

1. Carbon Clear Limited is a UK company limited by shares. The company helps business and individuals reduce their carbon footprint by providing advisory services on cost-effective in-house emissions reductions, and by sourcing and providing voluntary emissions reductions (VERs)—commonly referred to as carbon offsets. To source offsets, we invest in emissions reduction projects sited in countries that have not set national greenhouse gas reduction targets, and track our carbon credits in an auditable Registry. We aim to maintain a carbon credit portfolio, with 20% of our emissions reductions from tree planting projects and 80% from clean energy (renewable energy and efficiency) projects.

2. As an active participant in the UK voluntary carbon offset market, Carbon Clear has an understanding of the process of generating VERs, and the interests, motivations and needs of individual and business purchasers of VERs. The evidence we submit is based on our experience working in this sector and therefore is relevant to the Committee's inquiry.

3. The Committee has offered a list of Inquiry Issues related to the need for regulation of the market and industry, additionality, verification and monitoring, permanence, leakage, double-counting and the relative burden of dealing with the impacts of climate change. Carbon Clear welcomes the widespread adoption of transparent and consistent processes and standards that reduce consumer uncertainty and encourage the growth of a robust and credible voluntary offset industry.

4. This evidence document assigns each of the Committee's Inquiry Issues its own heading and addresses each Inquiry Issue in turn.

Responses to Environmental Audit Committee Issues of Inquiry

5. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

5.1 Carbon Clear supports accreditation schemes that can increase consumer confidence in the sector and reduce search costs that might otherwise discourage customers from offsetting. However, we believe that compulsory accreditation schemes are most essential for those industry sectors where failure to meet standards could result in physical harm or even loss of life. Thus electricians, gas fitters, and doctors are rightly included in compulsory accreditation, while broadband service providers, the fast food industry, and mobile telephone operators operate under voluntary codes of practice.

5.2 Carbon Clear supports a voluntary code of practice and accreditation scheme for carbon offset projects and/or companies, provided the scheme is developed in a way that addresses the needs of the industry and its customers. Voluntary codes of practice have successfully increased consumer confidence in markets as diverse as organic foods (via the Soil Association), ethically sourced products (via the Fairtrade Foundation), and the like, where the immediate physical well-being of the customer is not at risk. A voluntary code and accreditation scheme for carbon offsets, backed by a credible and cost-efficient auditing mechanism has the potential to strengthen the industry.

6. *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

6.1 Carbon Clear does not serve to defend the growth in carbon-intensive activities like flying. Rather we help reduce the environmental impact of those activities when they are unavoidable. Carbon Clear strongly supports efforts to reduce emissions from carbon-intensive activities and regularly offers our customers and visitors to our website recommendations on how to avoid engaging in carbon-intensive activities.

6.2 An intense debate is already underway about whether and how aviation and other carbon-intensive activities should be covered under the European Union's compliance system for greenhouse gas emissions reductions, and we will not revisit those arguments in this evidence document.

6.3 The main challenge for the United Kingdom and the rest of the world is to reduce overall carbon emissions. Offsetting is one of many potential tools for achieving overall and per-capita reductions from activities like flying. However, offsetting not the only tool at our collective disposal. Another way to reduce overall aircraft emissions is to reduce the number of people who choose to fly by offering attractive alternatives like reliable, comfortable high-speed rail services. Yet another alternative is to encourage airlines to operate newer, more efficient aircraft; streamlining aircraft taxi, takeoff, approach, and landing procedures; increasing the ratio of long-haul to short-haul flights; increasing passenger load factors; and increasing the proportion of economy-class versus business and first-class passengers on a given flight.

6.4 Mandating offsets for flying and other carbon-intensive activities without also imposing emissions caps or providing incentives for lower-carbon alternatives might encourage the growth of the offset industry, but might not be the fastest or most cost-effective way to achieve overall emissions reductions.

7. *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

7.1 As with any retail product, there is not always a direct link between the product offerings and the pricing decision of the retailer. The price charged by Carbon Clear and other offset provider will depend as much on the provider's own cost structure, estimates of customer willingness to pay for credits from a particular company or project, and the costs of complying with a given standard or regulatory scheme, as on the cost of the offset project. Carbon Clear believes that, as in other sectors of the economy, pricing decisions should be left to providers, and customers will vote with their feet.

7.2 A recent survey by Clean Air Cool Planet suggests that not all offset providers supply enough information to allow consumers to know how different offset mechanisms or projects compare. In some cases this may simply result from attempts to condense extremely lengthy and complex technical project data into an attractive and presentable format. While the CleanAir-CoolPlanet survey did not report any fraudulent activity, Carbon Clear feels that customer confusion is limiting the growth of the industry, and call for a consistent approach to the way companies describing their offerings and methodologies.

7.3 Carbon Clear supports the use of ISO 14064-2:2006 or equivalent best practice for relevance, completeness, consistency, accuracy, and transparency in the evaluation, selection and communication of our and other offsetters' project mechanisms and practices.

8. *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

8.1 Forest management is a mature discipline, and mechanisms exist to accurately assess the health of tree plots and forests, and the overall long-term carbon gains and losses from afforestation and reforestation projects. These range from on-the-ground surveys that physically measure all or a representative sampling of trees, to dual-camera aerial videography using laser altimeters and computer measurement to track tree growth over time. These methodologies have been field-tested in various parts of the world, and with a wide range of tree species, with considerable success.

8.2 The Clean Development Mechanism (CDM) Executive Secretariat recognises afforestation and reforestation as an accepted mechanism for generating Certified Emission Reductions. As with any offset project, issues of additionality, leakage, and permanence must always be satisfactorily addressed before a methodology is accepted by the CDM Executive Secretariat. Carbon Clear believes that the fact that the CDM Executive Secretariat has already approved multiple afforestation and reforestation project methodologies around the world indicates that the science is sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses.

8.3 In the popular press, the most common concern about these projects is that the stored carbon may be released when the trees die, thus jeopardising the permanence of emissions reductions. The extent to which this actually occurs depends on the ultimate fate of the tree. If the tree burns or decomposes, some of its carbon will be released to the atmosphere and some will be stored in the soil. However, if the tree is cut down and used, for example, to produce furniture and houses, most of the carbon stored in the above-ground part of the tree will remain sequestered. Furthermore, most trees will over their lifetime release seeds that germinate naturally or will be planted by hand, thus reabsorbing any carbon that is released.

8.4 While the lifetime of any given tree cannot be predicted, the average lifetime for a population of trees can be determined to a very high degree of confidence with statistical sampling. Thus, while a project may not be able to guarantee how long carbon will continue to be absorbed by any specific tree, the average carbon savings over the entire project can be predicted. What is more, many afforestation and reforestation projects "over-plant" to compensate for anticipated tree mortality. In the tree-planting projects that Carbon Clear supports, for example, 11 trees are planted for every tonne of CO_2 we offset through afforestation or reforestation, and we use a conservative crediting period that only counts the carbon sequestered in the first ten years of a tree's life. By involving local community members in the project and choosing species whose continued growth provides ancillary livelihoods benefits, the projects we support provide incentives for local stakeholders to keep the trees alive. Again, a robust monitoring methodology helps to address leakage from these and other sources.

9. *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

9.1 Many investments in carbon offset projects provide emissions reductions over many years. As a result, carbon credits are often registered by "vintage" to reflect when the emissions reductions are expected to occur.

9.2 Since it is impossible to predict the future, investments made to produce reductions some years in the future may not always achieve the desired result. Anything from natural disaster to political instability to changed market conditions can affect the long-term effectiveness of a project.

9.3 In many cases, credits for future vintages are priced to account for this risk. Where this is not the case, Carbon Clear believes that offset providers should guarantee to refund or replace any future credits that subsequently fail to materialise, and ensure that their monitoring system and registry account for any deviation between expected and actual reductions in each year.

9.4 Offset providers around the world currently support a diverse array of project technologies, approaches, and sizes in countries around the world. Given sufficient resources. As a result of this diversity, no one methodology can be applied to every project. A range of data collection methodologies have been developed and employed to measure the greenhouse gas emissions reductions that result from these projects. It is important that these methodologies reflect best available practice for ensuring relevance, completeness, consistency, accuracy, and transparency. We follow the ISO 14064:2-2006 recommended practice in this regard, as adopted by the British Standards Institute.

9.5 The greatest challenge facing the monitoring of GHG emissions reductions comes from the costs. It is easier and more cost-effective to apply a detailed and complex monitoring methodology like that required for Certified Emissions Reductions to large projects where large volumes of emissions can be tracked with a single meter. It is considerably more expensive to apply that monitoring system to a project involving large

numbers of relative small emitters—for example, providing efficient cookstoves to 10,000 rural villagers. Attempting to track emissions from thousands of small point-sources could easily outweigh the value of the carbon credits destroy the viability of the project.

10. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

10.1 In 2005, the global voluntary emissions reduction (VER) market generated about 6.1 million tonnes of voluntary carbon offsets, while the compliance market generated 365 million tonnes of Joint Implementation and Certified Emission reduction credits, according to Dr. Venkat Ramana of the World Bank. The European Union has just announced new emissions reduction targets that could increase the size of the market for CERs five-fold over the next decade. Since the VER market would have to grow at nearly 50% per year for the next 15 years to approach the scale of the compliance market, and we expect airlines to be included in the compliance market by 2011, Carbon Clear does not believe the voluntary market will have a significant impact on the compliance market for the foreseeable future.

10.2 Furthermore, these are by definition two separate markets and the motivations of suppliers and customers in these markets are quite different. Participants in the compliance market purchase emissions reductions because they are forced to do so when their emissions exceed a given target. These emissions reduction credits are a commodity, to be sourced at the lowest price possible, which provides a competitive advantage to large-scale projects. Participants in the voluntary market do not face explicit government compulsion and participate in the market because they want to make a broader societal contribution or they want to demonstrate their social responsibility to others. As a result, the types of projects that attract voluntary market investment are often materially different from the ones that attract compliance market investment.

11. *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

11.1 Firms and individuals who choose to voluntarily offset their emissions are by definition under no legal obligation to change their behaviour. Therefore, while behaviour change is desirable, Carbon Clear believes that it is inappropriate to judge voluntary offset providers on the extent to which their customers change behaviour.

11.2 Carbon Clear believes that all offset providers should urge customers to voluntarily reduce their own greenhouse emissions, and to offset only the reasonably unavoidable emissions that remain. Carbon Clear not only encourages behaviour change, but also provide regularly updated advice on easy and cost-effective ways for individuals to reduce their greenhouse gas emissions at home, at work, and in transit. Carbon Clear provides advisory services to businesses who wish to develop internal carbon management strategies to reduce their own carbon footprint.

11.3 The proportion of individuals who choose to offset remains extremely small compared to the overall number of UK households, motorists, and airline passengers. We estimate that only 1–2% of individual consumers currently choose to offset. These customers tend to be "early adopters"—people who are concerned enough about climate change to take the effort to learn about offsetting and make a voluntary payment. Since offsetting is voluntary, Carbon Clear believes this is also the group of people most willing to take action in their own lives.

11.4 Better data on this issue is welcome. Carbon Clear encourages Defra and the Environmental Audit Committee to conduct an in-depth survey of the UK population to provide statistically significant data on the extent to which people who offset are more or less willing to change their behaviour.

12. *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

12.1 Individuals and companies who choose to purchase voluntary offsets are motivated in part by a desire to contribute to broader sustainable development goals, whether environmental, social, or economic. As a result, most voluntary offset providers focus their investments on smaller-scale projects that provide broader sustainability benefits.

12.2 Carbon Clear feels that it is important for these claims to be backed by evidence. For greenhouse gas emissions reductions, we support the use of ISO 14064-2:2006 best practice for relevance, completeness, consistency, accuracy, and transparency in the evaluation, selection and communication of our carbon offsetting mechanisms and practices. For broader social and environmental impacts, we encourage the use of DfID's sustainable livelihoods criteria to gauge the effectiveness of projects.

12.3 Projects funded by voluntary offset companies tend to score higher on broader sustainable development criteria than those funded by the compliance market. According to the World Bank, in 2005, 74% of compliance market CERs came from refrigerant destruction, landfill gas, and coal-mine methane

capture projects. Only 15% of CERs came from the energy efficiency, renewables, and tree planting projects favoured by voluntary offset providers because of their broader sustainability benefits. Only about 2% of all compliance market CERs came from investments in Africa, the poorest continent.

January 2007

Memorandum submitted by Carbon Offsets Ltd

Carbon Offsets Ltd was set up in 2006 to help people reduce their climate change impact through:

— direct action to reduce their own emissions; and

— offsetting those that they are not able to avoid.

Carbon Offsets Ltd supplies carbon offsets in an ethical, efficient and economic way.

We are a young, dynamic, value-driven organisation, with an established record in: carbon offsets, environmental management, the aviation industry, commodity trading and business start-ups. Based in the UK close to London, we have wide international experience.

SUMMARY

— The emissions reduction/carbon offset market needs to be well controlled, but that does not mean one size fits all.

— Some emissions reduction projects are small, community based schemes with a high level of associated sustainable development benefits. Such schemes cannot realistically bear the cost and time delay of full CDM certification.

— The current two tier system (compliance- based and voluntary) should be maintained. However, agreed standards should be developed and the voluntary market should be subject to more regulation to ensure that its greater freedom is not abused.

— There is a risk of missing the opportunity to engage the public in climate change action by offering emissions reduction projects with which they can easily relate.

— Whatever process is used, additionality will be key—and problematical.

— Carbon Offsets Ltd would be happy to participate in a Working Group to develop appropriate standards.

1. *Background*

The basic argument for carbon offsetting/carbon emissions reduction projects is that the cost/price of bringing about a reduction in carbon emissions varies widely. The cost of reducing carbon emissions is lower for society as a whole if the emission reductions (eg in terms of energy efficiency improvements or the development of renewable energy) are carried out in areas where the emission reduction cost is relatively low, and then, through trading, offset against emissions for which the direct reduction might be, or be perceived to be, relatively high.

Originally the market place was entirely voluntary—but small. This changed, however, with the development of the EU-ETS and decision that the Kyoto CDM and JI mechanism units (CERs and ERUs respectively) should be fungible with the EU-ETS unit, the EUA. The concept of offsetting was extended to the compliance market—not only to trading within the EU-ETS itself but also with Kyoto signatories from the developing world and economies in transition.

This led initially to two parallel markets, the compliance market (with EUAs, ERUs, and EUAs) and the voluntary market with its Verified Emissions Reductions (VERs).
Some concerns have been expressed however as to the reliability of the VER market, including, in particular in relation to the quality of the projects supported (eg additionality and actual performance), the avoidance of double selling and the clarity of information in the market place. As a result, DEFRA has decided to promote the use of compliance based instruments to meet the needs of some, or all the voluntary (non-compliance) requirements.

2. *What is the role of the Voluntary market?*

Demand:

Voluntary demand for carbon offsets arises when the concern regarding the climate change impact in a certain field is not being sufficiently satisfied by compliance based action. In this case either individuals, through their own concern for the environment, or businesses, driven by their own desire to be seen to be acting responsibly, will seek opportunities to offset their carbon emissions.

There is a danger that such action can foster a sense of business as usual in terms of the level of emissions generated. Such offsetting always needs to be seen and promoted as part of a solution, alongside active steps to reduce emissions directly. At the same time, the offsetting activity can foster greater carbon emission awareness. On balance, this voluntary demand for carbon offsetting is desirable, providing a funding stream that can be deployed to reduce carbon emissions.

Being voluntary, the demand is affected not only by price, but by other more subjective factors in terms of whether the project is "attractive".

Supply: The prime aim of the market is to supply carbon emission reduction projects that meet the additionality test, are quantifiable, have been measured and externally verified—and sold only once.

Initially, until the CDM and JI processes were established, all projects were VERs. Since the emergence of the Kyoto processes, the majority of emissions reduction tonnage has shifted to the compliance market.

The CDM project development and approval process has been developed with the aim of addressing the above objectives. This is the process that the world has accepted for Kyoto based projects—and it can be argued that such a process provides the most reliable assurance available that the project satisfies the necessary criteria. This process comes however at a cost—estimated at between 50 and 250 thousand dollars (Krolik, T. (2006) "The Argentine Carbon Fund Helps Developers Dance the Dance", The Ecosystem Marketplace, www.ecosystemmarketplace.com/)

There are two main sources of VERs, namely:

1. Small projects, for which the CDM process cannot be justified. Such projects are often community based, and bring with them wider sustainable development benefits. As such, they tend to prove more attractive to individuals who are voluntarily deciding to offset their emissions.
2. Projects/parts of projects that were originally intended for the CDM process. Such projects can give rise to VERs in a number of ways, eg:

— A methodology may not be approved, even though the project has serious merit.

— The country concerned may not have ratified Kyoto (eg Turkey).

— There could be "pre registration credits" eg if a scheme does not meet the Prompt Start deadline.

— A project developer may not be prepared to wait for the year or so to get the CDM approval.

Whilst elements of category 2 above can be debated, the merits of category 1 are difficult to dispute. It is important to ensure that such projects can be encouraged and fostered. The Voluntary/VER market is one which should be encouraged—but it would benefit from standards and an appropriate framework within which to operate.

3. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

The Voluntary Market has been growing steadily in recent years because a significant and growing proportion of society finds that Government (in the UK and elsewhere) has not taken sufficiently robust and timely action to address climate change.

To date the bulk of the offsetting by individuals (and to a lesser extent companies) has been in relation to aviation. It has recently been decided to bring aviation within the EU ETS from 2011. This will help to reduce the pressure for voluntary action—but only so long as a hard line is taken by European Governments in reducing the cap. If that hard line is taken, then voluntary action in relation to aviation is likely to reduce, whilst voluntary action in relation to some other sources of carbon emissions is likely to increase if there are people who are dissatisfied with the rate of Government action in relation to those sources.

4. *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

One approach to providing assurance regarding good projects that are too small to support the CDM/JI certification process is to adopt an accreditation scheme at the level of the vendor company, rather than the project. Standards need to be established for projects—but in a way that caters for small projects. For such projects, the customer can be assured partly through the application of those standards, but also through the knowledge that the carbon offset provider is a member of the accredited scheme.

The objective, we believe, should be to achieve the greatest environmental benefit at least cost. The imposition of costly process on small projects will inevitably make them less attractive to consumers. This could affect the level of public support for offsetting and would consequently reduce the impact of such projects in other relevant areas of sustainable development.

5. *Whether there is enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

The use of a price per tonne of carbon emissions reduction is widely used—but is not ubiquitous. The use of such a measure could be part of the regulation of carbon offset providers. If there are other sustainable development benefits associated with a project, then these can be clearly listed, justifying a higher price in the eyes of some customers.

6. *Whether there is sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

The word guarantee is a legalistic view which tends to override materiality. Normal auditing techniques such as sampling should be permissible. The market would benefit from clear standards in relation to verification, though there are risks in delivery of carbon dioxide reductions even in the best CER projects.

In conclusion, we believe that the government should not only act to regulate the market in CERs but it should protect the responsible market in VERs through appropriate steps such as a code of practice and kite mark.

Carbon Offsets Ltd would be happy to participate in any Working Group established to develop such a code of practice and kite mark.

January 2007

Memorandum submitted by CarbonSense

CarbonSense was formed in 2003 with a mission to help accelerate society's transition towards a low carbon future. We have worked with many companies such as BT, TNT, HSBC and Thames Water, with the Carbon Trust and Energy Saving Trust and with community carbon projects in, for example, Chew Magna and West Suffolk. We have worked with many organisations on issues associated with offsetting but we are not offset providers. We bring a truly independent yet insightful voice to strategic thinking on carbon issues which is valued in boardrooms in the UK and Europe.

Context

There has been considerable growth in offsetting since Applied Energy Services offset power station emissions in Connecticut by planting trees in Guatemala in 1989. At the same time, there has been a growth in scientific evidence indicating that emissions caused by human activity are affecting the global climate now. It is not clear that while afforestation and reforestation may in some cases be beneficial for other reasons, they do not adequately compensate for carbon that has been released from the geological cycle. Questions about regulation of the voluntary carbon offset market therefore need to be considered in the context of current and emerging science on climate change rather than on the basis of UNFCCC assessments which pre-date Kyoto.

Offsetting

Offsetting is an attempt to compensate for an emission but in practice it is frequently inadequate. Critical reasons for this failure include:

- The offset is typically delayed in time, sometimes by many years, relative to the emission.
- The offsetting is typically achieved only over a much longer period than the occurrence of the emission.
- Some offsets often involve absorption into the terrestrial biological carbon cycle in an attempt to compensate for carbon that has been released from the geological cycle.

The term "offset" itself is a technical term that also tends to create a false impression in the mind of the lay person. As a suitable term to use when seeking to obscure the true meaning of the action it describes, it is perhaps best equated to "collateral damage". CarbonSense is now using the word "compensate" rather than "offset".

Carbon Neutrality

The boundaries set for the counting of the carbon that is being offset are boundaries of practical, administrative or arithmetic convenience—for example, Scopes 1 and 2 as defined in the Greenhouse Gas Reporting Protocol, or a flight. This can give a misleading impression of what is actually being offset. This is especially the case when, on the basis of offsetting, a claim of carbon neutrality is made. Many such claims are misleading and perhaps disingenuous.

There is no standard definition of carbon neutral. For an organisation, carbon neutrality should require the neutrality of the whole value chain and whole life cycle of products, services and operations. A company that sells widgets in the UK that are actually manufactured in, say, China, should not be able to claim to be carbon neutral unless they have included the emissions associated with that manufacturing process, the raw materials, transport etc within their counting boundary. Carbon neutrality is a convenient notion but it is open to abuse and obscures a limited and partial attempt to compensate which can be misleading to the public.

Other Terminology

Some other terminology currently being used in the UK also tends to obscure rather than enhance understanding and appropriate action. For example, the concept of ecological or environmental footprinting has proved to be a very useful way of relating resource demands and impacts to land area. But to refer to carbon emissions, which are pollution of the atmosphere, and typically quantified in tonnes, as a carbon "footprint" is to create a confusing and misleading impression. We have recently found the term "carbon shadow" is, in many circumstances, a more meaningful expression for both the consumer and in a corporate context.

The concept of "unavoidable" emissions is requires scrutiny. In practice, it typically means "costly" ie it is a view based on financial considerations, rather than assessed in terms of climate impact and effects, as if the environment is a subset of the economy rather than the other way around.

Recommendations

Further to the above points, we recommend that:

1. An offset should be required to deliver the full carbon benefit equivalent to the emission being compensated for within no more than one calendar year from the date of the emission. Any later, or projected later carbon benefit should be excluded.
2. The Government should stop using terms such as "carbon footprint" and "carbon neutral" which require more rigorous scrutiny. These terms are misleading and will undermine the credibility of positive actions in the minds of the public. While positive actions and projects are to be encouraged, claims that offsetting truly compensates for emissions should be questioned.
3. The Government should only attempt to regulate the voluntary offset market once it has itself adopted a more rigorous and responsible stance on these issues.
4. The government should not attempt to make mandatory a practice—offsetting—which has, to date, failed to deliver robust results in carbon terms.
5. While afforestation and reforestation may in some cases be beneficial for other reasons, they do not adequately compensate for carbon that has been released from the geological cycle.

January 2007

Memorandum submitted by Carbon Trade Watch

1. 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 the past, Carbon Trade Watch has submitted evidence or memoranda on the International Challenge of Climate Change: UK Leadership in the G8 and EU.[1]

2. Carbon Trade Watch welcomes the Environmental Audit Committee's present inquiry into the voluntary carbon market. They are grateful for the opportunity to comment on the following issues in the Committee's remit:

- many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects;
- is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices; and
- is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

[1] See, for example, submissions to inquiries into the Inquiry into the International Challenge of Climate Change: UK Leadership in the G8 and EU.

3. The principal conclusions of this Memorandum are as follows:

— There are many published, scientifically robust studies showing that our current scientific understanding of the carbon cycle and its impact on climate change does not permit an accurate assessment of the overall long-term carbon gains and losses form such projects.

— Customers are being led to believe that their emissions are being immediately neutralised by the offset projects. In reality, the length of time in which the projects are taking to supposedly neutralise emissions means that the whole system of voluntary carbon offsets is based on 'future value accounting' whereby carbon offsets expected to be made in the future are counted as having been offset in the present.

— Customers are not being presented with accurate information as to the effectiveness or the efficiency of the offset projects.

Some of the Studies showing the Uncertainties Regarding the Carbon Cycle and Tree-based Offsets

4. In January 2006, research published in Nature magazine revealed that the planet's plant-life was responsible for far greater methane emissions than had previously been though. Methane, as one of the most potent greenhouse gases, is a serious contributor to climate change. This finding upset a lot of the assumptions that had been made about climate models and undermined the calculations that were being made by offset companies about the net climate benefit of trees.[2]

5. In December 2006, a study was published by Ken Caldeira of the global ecology department at the Carnegie Institution of Washington in Stanford and Govindasamy Bala, of the Lawrence Livermore National Laboratory, California, which said that most forests do not have any overall effect on global temperature, while those furthest from the equator could actually be making global warming worse. The report showed that outside a thin band around the equator, forests trap more heat than they help to get rid of by reducing carbon dioxide, thus negating the supposed climate benefit. The co-author Ken Caldeira commented that, "To plant forests to mitigate climate change outside of the tropics is a waste of time."[3]

Carbon Offsets are Based on the Premise of "Future Value Accounting"

6. Carbon offset schemes are selling the opportunity to be "carbon neutral," that is, the same amount of carbon that one causes to emit is offset through carbon reduction or absorption projects such as tree planting, energy efficiency or renewable energy generation projects. In this way an individual's carbon emissions are "in balance". In place of the term "carbon neutral" the terms "climate neutral" or "zero carbon" are also used. These terms are used interchangeably in this report.

7. This definition however, ignores one key question—over what time frame does the amount of carbon emitted have to be fully offset for our carbon balance to be zero? Searching through the websites of the different offset companies, it is difficult to see how they are treating the time issue. They are clearly making assumptions about how many years the carbon saved will operate over, and so how much carbon will in the end be saved, but these assumptions are not published.

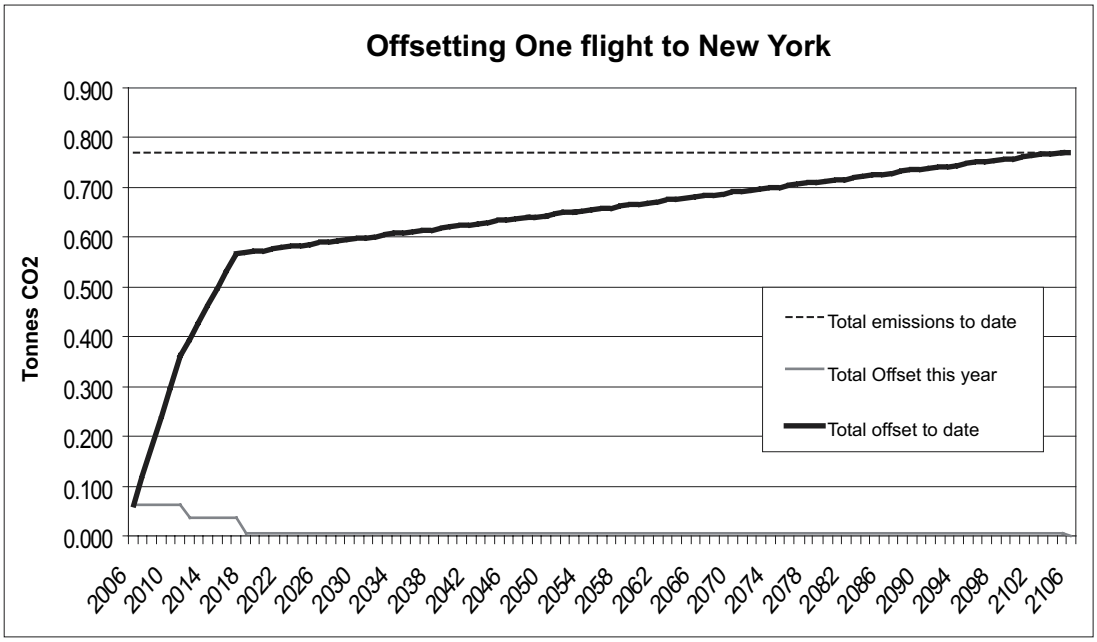
8. One leading offset company has offered three ways to offset your emissions—through energy efficiency projects, which make up 50% of total carbon savings, renewable energy projects, which give 20% of carbon savings, and tree planting, which gives the remaining 30%. This company also presented estimations of the periods of time over which these processes will "neutralise" emissions, as illustrated below:

Type of Project	*Years to offset emissions*	*Basis on which calculated*	*% of all offsets*
Energy efficiency	6 years	Life of low energy light bulb	50%
Renewable energy	12 years	Life of wind turbine	20%
Tree planting	100 years	Life of tree	30%

9. With this information it is possible to calculate how long it takes to offset carbon emissions. For example, if one flew to New York one way, on New Year's Eve 2005, according to this company, this will result in the emission of 0.77 tonnes of carbon dioxide, which can be offset at a cost of £5.77 by the money given to the company being spent on the range of projects listed above. Over time, the individual's carbon balance, being the difference between carbon emitted and carbon offset, will be as shown in figure 1:

[2] Quirin Schiermeier, "Methane finding baffles scientists," Nature 439, 128-128 (12 Jan 2006).
[3] A Jha, "Planting trees to save the planet is pointless," The Guardian (15 Dec 2006).

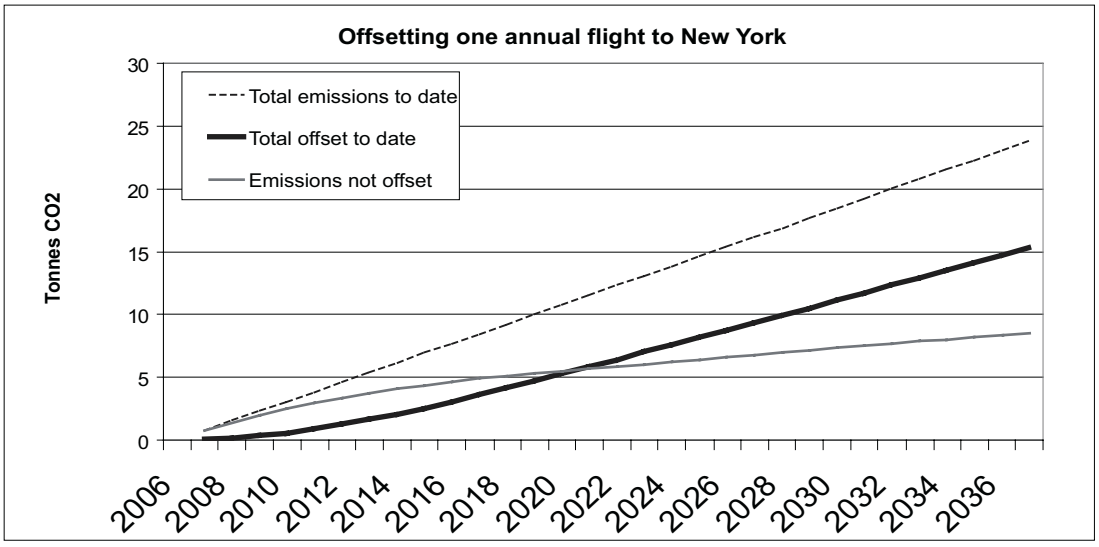
Figure 1



10. By 2018, 12 years after the flight was taken, 80% of the original emissions are offset, predominantly as the result of six years of energy efficiency savings and 12 years of renewable energy generation. But because the tree projects are only offsetting emissions at the rate of 0.3% of original emissions a year, it actually takes till 2106 before the emissions are completely neutralised. In this scenario, the claim that an individual can achieve "carbon neutrality" only holds true if looked at over a period of 100 years.

11. The previous example is based on offsetting a single journey. However customers of offset companies are being encouraged to but offsets every time they fly. The claim is that even if an individual flies every year, so long as that person offsets their emissions they will remain "climate neutral". However in practice the more an individual flies and offsets, the greater is the amount of that individual's carbon dioxide emissions that have not been offset. For example, if one flies to New York and back again, every New Year's Eve for the next 30 years, each time paying the £5.77 to an offset company, using the same basis of calculation, one's carbon balance is as shown in figure 2:

Figure 2



12. As the individual flies every year, the total emissions are steadily rising, as shown by the yellow line. As money is also paid to the offset company every year, the amount of carbon dioxide offset is also rising, as shown by the dark blue line. But the offsets are not rising as fast as the emissions as they occur over a much longer time frame. And so, as the light blue line shows, the total emissions not offset rise after each flight. So not only is the individual's position far from "climate neutral", quite the opposite is true. Each time that person flies, the carbon dioxide in the atmosphere increases despite the offsets.

13. The reason why the offset companies can argue for carbon neutrality is they are using a carbon calculation method which is best termed "future value accounting". Carbon savings expected to be made in the future are counted as savings made in the present. If methods of offsetting which offset carbon faster, such as low energy light bulbs, are used rather than slower methods such as tree planting, the time frame to achieve "carbon neutrality" can be shortened. What rate of offsetting would be acceptable? Intuitively, few people would accept a rate slower than one to two years. But achieving this would require offset methods from three to 50 times more effective.

14. Even if far more effective emission offset mechanisms were to be developed, the fact that the offsets are only achieved at a point in time later than when the original emissions were made means that repeated emissions will lead to an increase in the overall amount of carbon in the atmosphere even with offsetting. Offset companies' claims to achieving "zero emissions", "carbon neutrality" or "climate neutrality" are then both misleading and false.

Offset Customers are not being Informed as to the Effectiveness of the Offset Projects

15. When the rock-band Coldplay promoted their successful album, "A Rush of Blood to the Head" in 2002, they bought the services of the Carbon Neutral Company (CNC) to fund the planting of 10,000 mango trees by villagers in Karnataka to offset the emissions brought about in the recording of the album. Fans of the band were also encouraged to "dedicate" a tree in the plantation. For £17.50, fans could acquire the carbon absorbing rights to a specially dedicated sapling in the forest.

16. In April 2006, it was reported in the Sunday Telegraph that many aspects of the project had been disastrous. Anandi Sharan Miele, head of the NGO Women for Sustainable Development (WSD), CNC's project partner in Karnataka, admitted that of the 8,000 saplings she had distributed, 40% had died. In the village of Lakshmisagara, only one person out of a village of 130 families received saplings, as the rest did not have the water resources to support them. This person was able to sustain 50 saplings out of the 150 she received due to a well she had on the land, but complained that "I was promised 2,000 rupees (£26) every year to take care of the plants and a bag of fertiliser. But I got only the saplings". A number of other people from other villagers told similarly disgruntled stories; "We were promised money for maintenance every year but got nothing," and "[Ms. Mieli] promised us that she'd arrange the water," but the water tanker visited only twice.[4]

17. Part of the problem with such a project is that while everyone would like to claim the credit for a success story, no one is willing to take responsibility for failure. Most offset companies have legal disclaimers that they are not actually able to take responsibility for their project partner's inability to fulfil projects. In this case, while Miele claims that CNC has a "condescending" attitude and that "they do it for their interests,

[4] A Dhillon and T Harnden, "How Coldplay's green hopes died in the arid soil of India," 30 April 2006, Sunday Telegraph.

not really for reducing emissions. They do it because it's good money," CNC claims that it funded only part of the programme and that WSD were contractually obliged to provide water and ongoing support for the plantations.

18. As of June2006, two months after the report in the Sunday Telegraph, the CNC was still selling on its website dedicated mango trees to Coldplay fans and the plantation is still being presented as another of the company's success stories. There has been no transparency or accountability to the people who have paid to see this project realised that things might not have been going according to plan.

19. The newspaper report indicated that as far back as 2003, the Edinburgh Centre for Carbon Management (ECCM) who act as external verifiers for CNC projects had visited Karnataka and concluded that "WSD had been unable to make the anticipated progress with the project and had not delivered carbon payments to farmers".[5] Yet in that time period of two to three years when the monitoring body had reported that there were serious problems of this nature, the CNC had continued to promote and sell the project as a success story. The existence of supposedly independent verifiers like the ECCM seems to serve very little purpose if their findings are not made public and the projects continue irrespective of them.

January 2007

Memorandum submitted by the Carbon Trust

Thank you for this opportunity to contribute to the Committee's inquiry into the voluntary carbon offset market. As you will be aware, the Carbon Trust is an independent company funded by Government and tasked with helping the UK move to a low carbon economy. We do this by working with business and the public sector to reduce carbon emissions, and by capturing the commercial opportunities associated with developing low carbon technologies.

The voluntary offset market has seen rapid growth in the past two years, driven primarily by increasing public awareness of climate change. This is a complex emerging market, which is currently unregulated. We have developed a three stage process to help business and public sector organisations that wish to offset to do so robustly as part of an overall carbon management strategy:

— firstly, focus on direct emissions, reducing their in-house carbon footprint and creating bottom line savings by implementing all cost effective energy efficiency measures. Where cost effective, opportunities to reduce the carbon intensity of energy supply by developing low-carbon energy sources such as on-site generation should also be explored;

— secondly, look at reducing indirect emissions, working with other organisations to reduce emissions (and cut costs) up and down the supply chain, as well as looking for opportunities to develop new low-carbon products and services; and

— thirdly, if appropriate, consider developing an offset strategy, ensuring that only high quality offsets are purchased from verified projects that genuinely create emissions reductions.

Reducing direct and indirect emissions before considering offsetting makes financial sense and increases the environmental integrity of an organisation's carbon management strategy. Recent media interest has shown the reputational damage that can result from an offset-only approach.

Finally, to help with the identification and assessment of good quality offsets, the Carbon Trust recommends that organisations assess offsets against five criteria that they should comply with to provide a minimum level of quality assurance:

— verification—offsets should always be verified by an accredited third party according to a standard or protocol;

— additionality—ensure reductions are additional to what would have happened in the absence of the project;

— leakages—take into account potential negative environmental impacts beyond the project boundary (for example reforestation projects might have negative effects by displacing agricultural activities to other areas where they could generate emissions);

[5] ibid.

— impermanency—ensure the reductions achieved are maintained over time (particularly critical for carbon sink projects, for example forestry projects could re-release the carbon captured in the growing trees if the forest burnt down or the use of the land changed); and

— double counting—avoid offsets being sold or counted more than once.

I have enclosed copies of our recent report, "The Carbon Trust three stage approach to developing a robust offsetting strategy", [not printed] which is a summary of our work in this area and provides a contextual background to the offsetting market and carbon neutrality.

We would be very happy to assist the Committee in its inquiry in any way possible.

January 2007

Memorandum submitted by the City Remembrancer, City of London Corporation

This letter follows up on the Committee's announcement, shortly before the Christmas Recess, of plans for an inquiry in the Voluntary Carbon Offset Market. The City of London Corporation has been engaged in this area for some while.

The City Corporation is the first UK local government authority to develop a Climate Change Adaptation Strategy. It is also, perhaps, worth noting that the City is already one of the largest purchasers of renewable energy in the country. The City is a founder member of the London Climate Change Agency and, in 1999 was a founder member of the UK Emissions Trading Group (UK ETG), which played an important role in laying the foundations upon which the UK, and then EU, Emission Trading Schemes were built.

The City Corporation has taken steps voluntarily to reduce CO_2 emissions from its activities and has actively sought to take advantage of the opportunities available and support the Voluntary Carbon Offset Market. It is recognised that future, bolder use of carbon offsetting could bring economic and social rewards to London and elsewhere and the City is committed to fostering the necessary expertise and technology.

The City Corporation has recognised that carbon can be offset by sustained investment in forests (both afforestation and reforestation) and low energy technology in order to reduce the amount of carbon dioxide produced by society from its future activities. The City is keen to integrate carbon offset programmes into its future work and has a dedicated officer directly responsible for environmental policy and sustainable development.

The Lord Mayor's official travel has been offset for the last five years and, further, for the last four years the City has voluntarily offset the CO_2 produced by the Lord Mayor's Show, using a combination of forestry and energy efficient projects in the UK and developing nations. The City will do this again in 2007. The cost of the offset programme reflects the price of carbon on the European Exchange (typically approximately $6.00 per tonne). The Lord Mayor's Show produced 220 tonnes of carbon in 2006.

Since 2004, the City Corporation has made considerable use of expertise in this emerging sector, including the CarbonNeutral Company, an organisation based in the charitable sector, and CO2e.com, a subsidiary of global financial services firm Cantor Fitzgerald which operates in the European Emissions Trading Market. With the help of other commercial organisations, the City of London Corporation has additionally offset the official travel of staff and Members since November 2001, by the purchase of low energy light bulbs for use by communities in Mauritius. Offsets have saved 221 tonnes of CO_2 emissions associated with essential City vehicle use since November 2001. Further, through the CarbonNeutral Company, the City Corporation has invested in a variety of forestry and development projects. In 2006 the City purchased its carbon offsets through CO2e,com and invested in a project which manufacturers high energy efficiency wood burning stoves for use by South African communities. Through such measures, carbon offsetting has been demonstrated as having a positive environmental impact and an ability to bring wider social and economic benefits.

However, it is also recognised that there could be business opportunities in the carbon emission marketplace for those who are willing to innovate. To this end, the City Corporation has recently published research which highlights the business opportunities that carbon offsetting and emissions trading offer and has sought to identify the next generation of trading opportunities.

January 2007

Memorandum submitted by Vodafone

1. Energy use and our resulting carbon footprint is one of our most significant environmental impacts. Limiting our contribution to climate change is therefore a priority for our business.

2. We are currently implementing a strategy to reduce our impact. To date, we have focussed on increasing energy efficiency, and introducing renewable energy sources where it is feasible to do so. We have not yet introduced measures to offset any of our carbon footprint, although as our energy efficiency improves, it is something we may consider to further reduce our impact on global warming.

3. Vodafone has been concerned about the lack of standardisation in the carbon offset market. We welcome the proposal for a voluntary code of Best Practice for the provision of carbon offsetting set out in Defra's consultation document published on 18 January 2007. Given the range of offset providers and products now available it is important to have a recognised standard which will give consumers and business confidence in the projects and mechanisms they purchase.

4. With regard to some of the specific questions that you pose in your invitation, we have the following responses:

Ought there to be a compulsory UK or European accreditation scheme for carbon offset project companies?

Yes—we believe this would greatly assist potential customers of these projects and allow meaningful comparisons to be made between schemes. Defra's proposal to introduce a voluntary code and quality mark[6] is a positive step in this direction. It will enable customers to have confidence in the integrity and value for money of the offset products available to them. In order to be of greatest benefit, standardisation and accreditation should be as international as possible. Existing schemes such as those for sustainable timber production and the scheme operated by the Marine Stewardship Council could provide some useful learnings.

5. *Should offsetting become mandatory for some of the more carbon-intensive activities such as flying?*

No—the approach favoured by Vodafone, and by many of the stakeholders who inform our strategy, is that reduction in energy consumption, improvements in energy efficiency and introduction of renewable sources should all be considered before offsetting is introduced. The mandatory introduction of offsetting may disincentivise the reduction in carbon emissions by other means.

6. *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

No—a recent review of the carbon offset market by the Context Group Ltd * highlighted huge variations in the activities, costs and verification methods of different providers. As a potential customer of these providers, we do not believe there is enough standardisation to allow an informed choice to be made. We would encourage more transparency in the carbon offset market with regard to price and the process by which carbon offsets are calculated.

* Carbon Offset in Context, Providers and Advisers 2006

7. *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

Many of the organisations who have introduced offsetting have attracted media attention. This has encouraged growing interest from other organisations, and there is a danger that at some point, demand may outstrip supply.

January 2007

Memorandum submitted by The Climate, Community & Biodiversity Alliance

(www.climate-standards.org)[7]

EAC Question: Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area to accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects? YES

[6] Defra: Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers. January 2007.

[7] The Climate, Community and Biodiversity Alliance (CCBA) is a partnership between leading companies, NGOs and research institutes seeking to promote integrated solutions to land management around the world. CCBA members include: BP, Intel, SC Johnson, Weyerhaeuser, GFA, Conservation International, the Hamburg Institute of International Economics, Pelangi and The Nature Conservancy. Advising institutions are: CATIE, CIFOR and ICRAF/WAC.

Carbon Measurement and Monitoring

Methodologies for measuring and monitoring carbon stocks and carbon stock changes are robust, having been developed over many years of forestry expertise. In fact, many would argue that the increased attention this sector has received over the past decade has resulted in carbon measurement and monitoring methodologies that are of higher integrity than those applied to many energy-based offset projects.

Full carbon accounting, ie, the assessment of carbon fluxes within all compartments of a forest ecosystem, can be achieved by choosing between various scientific models, which have been developed by the FAO and scientific forestry research institutions. Reliable and approved measuring methods, the design and application of a comprehensive monitoring methodology, and the verification of specific project setups by an experienced organisation can resolve the main issues associated with estimation of carbon sequestered and leakage. And reserve buffers can be used to account for any potential uncertainty that remains in carbon estimations.

Applying state-of-the-art remote sensing techniques in combination with terrestrial surveys guarantees the accurate monitoring of activities and impacts during the project's lifetime. In many countries complex Geographic Information Systems (GIS) have been installed which provide useful information on the history and development of natural resources, and facilitate monitoring.

The Importance of Including Forestry in Voluntary Carbon Offset Standards

There is no doubt that land use, land use change and forestry (LULUCF) activities are a significant contributor to climate change, causing more than 20% of global greenhouse gas (GHG) emissions. Land use change, dominated by deforestation in the tropics, is also the leading cause of species extinctions worldwide and a significant source of water and air pollution and soil erosion. LULUCF projects are unique in that they have the potential to mitigate climate change, while at the same time addressing these other pressing environmental challenges.

As is being demonstrated at a large number of sites around the world, LULUCF projects can benefit threatened species by restoring and connecting habitat critical for their survival, while also providing sustainable livelihoods for forest-dependent people.

From a development perspective, LULUCF projects represent one of the only means that many of the world's poorest people (including most of Africa, which currently hosts just 2% of all CDM projects) will be able to meaningfully participate in, and benefit from, the global carbon market.[8] For the first time, they have the promise of being able to sustainably capture an ecosystem-service value associated with their land, instead of being forced to liquidate these natural resources just to survive. If forestry is excluded from the VCS, these land-dependent communities will be denied access to a source of capital that could help lift them out of poverty and into sustainable livelihoods.

In addition, LULUCF projects can restore and protect the ecosystem services upon which local people depend, including erosion protection, soil conservation, water purification and storage, and agricultural pollination and natural pest control.

The many benefits that well-designed LULUCF projects provide to people and local communities help ensure their long-term sustainability.

Such projects also offer significant opportunities for combining mitigation and adaptation activities in ways that make poor communities more resilient against the impacts of climate change, including intense and frequent droughts, wildfires and floods.

Given the unique environmental and socio-economic benefits associated with well-designed LULUCF projects, it is important that this sector not be shut out of the voluntary carbon market.

There is no doubt that many buyers recognize the unique multiple-benefits associated with the land use sector, and will continue to fund such projects and buy their credits. In fact, transactions associated with LULUCF projects account for a large share of the total voluntary carbon market.

Finally, it should be noted that virtually every cap-and-trade legislative framework and emissions trading scheme around the world (except for the EU ETS, which is currently reconsidering its decision) credits LULUCF offsets[9]. Maintaining compatibility with these other schemes is another reason why forestry should not be shut out of any government-defined voluntary standards.

January 2007

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[8] Least developed countries can rarely afford fossil fuels to be a large part of their energy mix, reducing the feasibility of developing energy-related carbon projects.

[9] This includes the main regulatory and voluntary schemes in Canada, Japan, Australia and the US—a key voluntary market—including legislation in California and New England, and on the Federal levels (with Bingaman, Feinstein Bills, and 1605(b) program) and voluntary programs such as the CCX, all of which credit forestry activities.

Memorandum submitted by CO2e

Offsetting Greenhouse Gas Emissions

Introduction and overview

CO2e believes that carbon offsetting is about empowering communities through commerce and tackling climate change at the same time. It's about empowering people to make a difference.

CO2e's comments in this memorandum are given with the understanding that offsetting emissions is considered a voluntary activity.

CO2e's experience and relevance to the Committee's inquiry

CO2e.com Ltd (CO2e) is an environmental brokerage firm, owned by Cantor Fitzgerald and Mitsui. CO2e delivers market-based solutions to help companies address climate change issues and opportunities. CO2e has successfully closed transactions for tens of millions of tonnes of emission reductions, and together with our sister company Cantor Environmental Brokerage, have facilitated environmental transactions totalling more than US$10bn. CO2e works in the international carbon markets, has a European desk brokering screen-based and voice-brokered transactions of European Allowances, secures long-term power purchase agreements for renewable energy and helps provide structured finance solutions to projects in these market places. CO2e has won the Environmental Finance Readers award for the past three years for best broker of Kyoto credits, and several other industry awards.

CO2e has been involved in the voluntary offsetting market since the company was founded in 2000. We have brokered tens of millions of voluntary emission reductions from large, small, industrial, energy, energy efficiency and forestry projects from across the globe. Locations of projects include South America, Asia, Oceania, Africa, the Caribbean and North America. We serve our global network through direct offices in the UK, Canada, USA, Mexico, Chile, Brazil, India and Japan, and through agents in many other parts of the world.

We are unusual, in that we are owned by Cantor Fitzgerald and Mitsui—both strong, global, financially focussed institutions—whilst we have probably facilitated the transfer of more carbon dollars to small-scale sustainable projects through emissions trading than any other organisation in the world. There are no other City brokerage firms that have invested the time and effort we have to building markets for small projects and finding ways of moving money to the less-commercial regions of the globe, such as Africa.

A significant proportion of the reductions we have brokered have been Verified Emission Reductions (VERs), some from large projects, traded before the Kyoto Process was developed, and others on an ongoing basis from smaller sustainable projects. As mentioned previously, we supply to many of the companies that sell to individuals, and are also very much involved in public sector activities.

Answers to Some of the Inquiry Issues

Ought there to be a compulsory UK of EU accreditation scheme for carbon offset projects or companies? If so, how should this operate?

CO2e feels that the real opportunity for sustainable development represented by the voluntary carbon market is due to it being voluntary and outside the legislated and regulated compliance market. The voluntary market is where project develops can experiment and small projects can flower without excessive overhead. Having an accreditation scheme or other regulatory frameworks would limit the variety of opportunities. It is difficult to legislate for diversity. Diversity helps to find and come up with a multitude of solutions to combat and mitigate climate change.

Because the voluntary market is outside the scope of accreditation schemes like that of the Clean Development Mechanism (CDM) market, it is not limited to Kyoto geography or to particular methods or technologies in reducing emissions and therefore is able to do more and reach communities and projects that were unable to benefit from carbon financing under the Kyoto Protocol.

Should offsetting become mandatory for some of the more carbon intensive activities, such as flying?

Many of the carbon intensive activities like power generation are already in the European Union Emission Trading Scheme (EU ETS) and airline travel is to be added to the mandatory scheme soon. Thus, there is no need to include offsetting under a mandatory scheme if the more carbon intensive activities are already under legislation.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

We feel providing clarity is not something which is a job or role that should be fulfilled and enforced by Governments. Clarity to help customers make informed choices is something that companies should provide to help distinguish them from the competition.

Customers should, when making a purchase, ask questions about what they are purchasing before handing their money over to a potentially unknown source. CO2e is open with all of its clients and insures that all clients' needs are met and they understand the different schemes and possibilities available for their offsetting needs, whether they are Verified Emission Reductions (VERs), Certified Emission Reductions (CERs), or European Union Allowances (EUAs)—all of which are available to CO2e's customers.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area to accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

We feel there is sufficient coherent science to accurately assess the carbon gains and losses from forestry projects. This is evident by the UN approving methodologies to calculate the emission reductions from such projects. Moreover, we feel it is up to the offset purchaser whether they want to support such activities. It doesn't really matter whether the emission reduction calculation for a particular tree is 1 tCO2eq or 1.5 tCO2eq, but whether the customer wants to give "X"" amount of money to the project.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation on the sorts of schemes which offset projects finance?

This must be evaluated on a project by project basis. There is sufficient data available from the projects CO2e is working with.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

CO2e does not see the voluntary market as having a direct impact on the compliance market. However, we do see some potentially indirect effects related to public views on emissions trading. Offsetting can change the public's views towards Kyoto Protocol and the compliance market. As the general public become increasing aware of their own carbon footprint and offsetting, it could lead to a rippling effect and create a more favourable atmosphere for politicians to tighten the caps on emissions for industry.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

This is difficult to measure accurately and CO2e does not get involved with measuring any changes in clients' carbon behaviours. However, we as well as any responsible offset provider should tell their customers to reduce their emissions as much as possible and only then offset those emissions which can not be avoided.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental social or economic sense?

We can only speak for ourselves and the projects we are involved with and we find the projects in the voluntary market tend to be smaller, more community based, and provide a certain level of socioeconomic benefits to the regions where they are implemented. We find in the compliance market, emission reductions are being purchased because of regulation and buyers do not necessarily care what project they come from, they just want to ensure they will be delivered on time for compliance. In the voluntary market most buyers are looking to be associated with particular projects, which have great stories and have sustainable attributes and socio-economic benefits.

In addition, the voluntary market can help fund sustainable and environmentally friendly projects in countries that have not signed and ratified the Kyoto Protocol, eg Turkey, Australia, USA, etc.

January 2007

Memorandum submitted by the Confederation of Forest Industries (ConFor)

ConFor represents the interests of members across the timber supply chain, including woodland owners and managers.

We would make the following observations in respect of your current consultation on voluntary carbon off-setting.

We do believe that there should be a general and compulsory accreditation scheme for UK carbon off-set schemes, although we make our comments with particular reference to forestry off-sets. A compulsory regulatory regime should not be necessary: the market should be capable of understanding. the difference between accredited and non-accredited off-sets. We suggest that an accreditation system, accompanied by an appropriate information strategy, is essential.

Any scheme should be made as simple as possible for sellers to adhere to and gain accreditation from, and the onus should be on transparency of information with respect to the off-setting claims of the scheme. There are obvious universal requirements for any off-setting scheme, drawn from the principles of the UNFCCC protocols and accords, namely those of: additionality, permanence, biodiversity and socio-economic impacts, and leakage. In addition to these principles there will also be the requirement to monitor and verify that the claimed sequestration/reductions have occurred and will continue to occur for as long as is contracted.

Forestry carbon off-setting schemes hosted in the UK will face fewer of the problems with respect to socio-economic and biodiversity impacts which may obtain in other countries, due to the strict regulation of the industry in the UK. The management of all woodlands in the UK is carried out against provisions of The UK Forestry Standard—the Government's approach to sustainable forestry. The sustainable management of a significant area of the UK's forests and woodlands is already independently assessed against the UK Woodland Assurance Standard (UKWAS) and the scope of this could easily be extended to encompass the independent accreditation of carbon offsets. The science of how much carbon is sequestered by any one planting scheme, could be formulated by another independent body, such as a research institute, and applied in the independent accreditation process. This would ensure that the carbon sequestered by a given pl;anting site was not oversold. We believe that an accredited forestry carbon offset scheme should always be able to show clearly that there is an "insurance margin" between the amount of carbon sequestered and the amount sold. Transparency in this area would ensure that the market would be able to identify the insurance margin provided for by different schemes.

The principles of additionality, permanence, biodiversity and socio-economic impact and leakage are all capable of being satisfied by a properly accredited forest carbon off-set scheme. We believe that the science is strong enough in the areas of afforestation and forestry management to allow credible carbon off-set trading, with the proviso that, as stated above, there is a minimum insurance margin of carbon sequestered, held within the scheme, as a reserve against contingency.

Forestry off-set schemes in the UK are sustainable, both environmentally and economically. Carbon sequestration accounts for only around 10% of the non-market benefits of forestry in the UK, meaning that carbon finance produces considerable environmental and socio-economic co-benefits. Carbon finance also makes the significant, marginal, contribution that makes sub-economic planting viable and ensures that schemes go ahead that would not otherwise have done so.

January 2007

Memorandum submitted by Eaga

Background to Eaga

Eaga manage a wide range of energy efficiency and fuel poverty reduction programmes throughout the UK. We have assisted over five million households in the UK since we were founded in 1990, and currently improve some 250,000 homes per year through the installation of insulation, efficient central heating and household level renewable technologies.

Context

The market for carbon offsets is growing at an increasing pace as collective awareness of climate change builds in tandem with individual recognition of responsibility. Increased media attention around travel and energy use has led to a wider demand to offset these and other activities that may increase an individual carbon footprint and exacerbate dangerous climate change.

The Case for Offsetting

Eaga believes that, in the long-term, the only sustainable way to save carbon and tackle climate change is to invest in renewable energy solutions and to drive behavioural change throughout our energy use. However, the vast majority of currently available renewable energy technologies remain unproven, costly and unable to deliver on a sufficiently large scale basis.

Until such technologies, and the associated infrastructure, are available, accessible and reliable on a wide scale, Eaga believes that offsetting represents an attractive, cost-effective and potentially significant route to save carbon in the interim period.

By offering individuals the opportunity to invest in a range of carbon saving projects very quickly (through for example specialist websites or as packaged in with air travel), offsetting offers an immediacy and simplicity that encourages individuals to buy in to and engage with the carbon reduction agenda.

Offsetting in the UK

A high proportion of the attention currently focussed on offsetting schemes relates to carbon saving projects in the developing world. Customers are able to contribute a small amount to an overall fund that delivers carbon savings in countries such as Nigeria, India and Mexico. Defra recently published a consultation aimed at creating a 'gold standard' that would have the effect of regulating this market.

However, by focussing attention on cheaper projects in the developing world, Eaga firmly believes that an opportunity is missed to reduce the UK's own carbon emissions and help meet the Government's own targets on emissions.

By investing in energy efficiency projects in the UK, consumers could help to save carbon at home. By accrediting schemes that were shown to be additional to current activity, robust in their management and able to deliver auditable, lifetime carbon savings, Government would allow high levels of investment in the UK market that would reduce emissions in the UK.

Such schemes could also be combined with the drive to eradicate fuel poverty—assistance could be targeted to the most vulnerable households. This step, at a time of record fuel price levels, would help to reduce bills in a sustainable way.

Recommendations

Eaga would recommend that:

- Offsetting is recognised as a quick and straightforward way to save carbon in the short-term, whilst work continues apace to develop and bring onstream the long-term solutions of tomorrow
- The benefits of offsetting, in terms of encouraging individuals to engage with their responsibilities regarding climate change and their potential contribution to carbon reduction, are recognised
- Government and key stakeholders recognise the benefits of additional, innovative and auditable carbon saving activity that could form the basis of an offset product in the UK market
- Strong consideration is given to how offsetting schemes in the UK could help to tackle behavioural change in this country, as well as aiding the drive to eradicate fuel poverty and facilitate investment in community projects, such as schools and hospitals.

January 2007

Memorandum submitted by the Eden Project

KEY CONCLUSION —We believe that current government proposals to drive the sale of voluntary carbon offsets towards certified projects from the Kyoto market runs the risk of substantially setting back the cause of sustainable development, the rate at which climate change is tackled and the growth of a constituency of the public willing and able to support change towards a low carbon society.

The Eden Project's focus is on education of sustainable development related issues focused on the widest public audiences. We aim to understand, and find tactics for overcoming, the barriers to prevent many people from showing commitment or even interest in fundamentally important social and environmental challenges.

It is as part of this wider mission that we have developed an interest in voluntary carbon offsets. We have partnered with Climate Care, who we believe to be the best offset provider active in the UK, to develop a new product that will explore how effective offsets can be at driving positive change. There are several points arising from this experience, and especially some perspectives on the goal of 'behaviour change', that we believe are relevant to your review.

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

Of course some regulation of the offset market is needed. Like any trading standards issue, people who are sold offsets should have confidence that what has been promised will be delivered, and the quantification of the offset provided should be verifiable and plausible. (Although this does not necessarily rely only on technical precision—innovative and exploratory portfolios can be developed that guarantee a certain minimum return, but also have the potential to achieve much more.)

Beyond that we do not believe that enforced methodologies are valuable, in fact they could be destructive. The development of ways to reduce the threat from carbon is a field that is in its infancy, and yet could hold the key to humanity's very survival.

The voluntary offset market should be able to explore options that are effective in terms of fostering understanding, motivating people and building funds that can drive sustainable development and proactive responses to climate change as fast as possible. The voluntary market complements rather than threatens the mandatory market, and should be free to be a source of innovation.

The Certified products that are traded through global mandatory schemes are approved as a result of complex international negotiation. Inevitably they are risk averse. The mechanisms by which they are implemented are complex and hard to explain, meaning that the projects they are rarely motivational.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

We support the move towards personal and organisational carbon allowances across all of society. Tackling specific activities makes less sense to us. There will ultimately be a potential issue of double counting, if individuals offset their annual carbon footprint, but also find that particular activities are compulsorily offset.

If individual industries are to be given a carbon offsetting challenge the important question is how should this be done. An important quality of the trading model for pollution reduction is that it drives innovation by providing an incentive for carbon reduction. If compulsory payments are applied in all circumstances, with no link to efficiency, then the incentive for change disappears.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

Not at the moment—the system is complex. We support the recent developments of "consumer advice" papers that evaluate offset provision.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

We do not feel that forestry projects should be encouraged, by either the voluntary or compliance markets, until policy is more evolved and robust. It is not just a question of science. Forestry has complex qualitative dimensions and plantations of fast growing trees can be disastrous for water reserves or biodiversity. Forestry also has complex governance issues and the scope for corruption seems too great. These issues can be addressed, but a framework is needed.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

No—not for either the compliance or voluntary markets. In both cases projects can fail and promised delivery may not materialise. However the question is not helpful, because accurate guarantees are not the only way to structure the schemes. Offset schemes should be more akin to investment portfolios—providers should offer guaranteed minimum returns, and still be free to invest in projects that could give spectacular additional performance.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

The two should be complementary, with the voluntary market free to prove the value of innovative projects and meet wider sustainable development goals. Many voluntary market projects will then be able to move to the compliance market, raising the overall standard.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

Many of the people who call for behaviour change by others are not presenting a well thought through argument, and show a limited understanding of of human behaviour and motivations. In some cases the arguments presented verge towards a poorly focused moral tirade against consumerism. Of course there are aspects of modern "throw away" society that are depressing and worrying, but to really achieve change we need to recognise that social behaviours arise from a complex network of causes, and to really achieve change we need to better understand the role and potential of individual action in a wider context.

There are also complex issues of social justice involved. Whose behaviours need to change, and who decides? Does everyone need to change (in which case is there a case for legislative action) or are we looking for leadership action? If the latter, isn't motivation a better tactic than criticism?

Our perspective is as follows:

Firstly we feel that in many instances spontaneous and voluntary mass behaviour change is not the only positive goal. We believe that voluntary offsets can provide an effective mechanism for encouraging greater understanding and literacy with regard to carbon footprints, carbon allocation and mitigation. The most important outcome may be the development of a wider constituency prepared to accept, and able to see the value of, legislative changes.

To this end we have been exploring different approaches to the presentation of carbon offsets to our visiting public at Eden Project. Our expectation, and our experience, is that the principle of offsetting is still strange and confusing for many people, and there is a substantial education and awareness challenge to be overcome before carbon allocations and the potential for carbon trade become widely accepted. It is important to recognise that the potential learning that comes from seeing offsets for sale is not limited to those who first choose to buy them.

There is also an important question that relates to the potential contribution that personal behaviour change can make to the overall challenge of climate change. The reality is that there are many aspects of the bigger picture that are not in the control of individuals, and need action at a societal level. Simply put, is it enough to change our light bulbs and insulate our homes if the greatest energy wastages are in power stations and across the grid? Is it enough for the UK to tackle its domestic challenges and not look for ways to reduce major emissions elsewhere in the world?

There are many aspects of contemporary life where people are not really individually responsible for the situations they respond to, and where they feel unable to achieve the change they would like to see. Our "behaviours" are often not really in our control. Many of us own cars and drive simply because we live in places where our homes, workplaces and the places we go for goods and services have been separated by planning regulations, and where we have no really effective and affordable public transport options available.

One of the most important dimensions of the voluntary offset market is that offsets give people agency—for the first time we are able to make a contribution to solving bigger infrastructure problems that are normally out of our sphere of influence.

From this perspective there are also strong relationships with a wider international and sustainable development agenda. Offsets give people a chance to invest directly in the future that they want to see. Projects such as better stoves for Africa are powerful because they help tackle multiple problems and are strongly motivational. They show that positive change is possible, and can be influenced by individuals. This is the behaviour change conversation that would be worth having—focusing not on a list of things that "should be stopped" but on a broader question of how we can encourage people to proactively act, and invest, to make the world a better place.

It is often suggested that people who buy voluntary offsets do so to assuage guilt and to justify an unchanged lifestyle. We believe that this is fundamentally flawed thinking, and our research confirms this. Anyone who has understood what an offset is, and how valuable it can be to resolve climate change, to the point where they are prepared to spend money voluntarily is likely to be fundamentally committed to the idea that they should do what they can. Cynics who don't really care or who don't believe in the issue, or those who don't understand it, will have no reason to buy an offset anyway.

Interestingly if a personal carbon allowance was introduced by law, then the question would disappear. People who don't care about climate change will be forced to comply. There is simply no way to avoid the fact that anyone who has the money to do so will probably be able to purchase additional allowances. If they wanted to, they could use these to drive inefficient cars or continue with any other behaviour they choose. The only way to tackle these problems would be to make things like inefficient cars illegal, or find some other incentives.

However even then the net effect of a compulsory scheme would be to discourage people from carbon use and increase consumer demand for manufacturers to produce more energy efficient products. If it was introduced, a scheme of this kind would be like any form of "green tax"—the behaviour change looked for is forced by hitting the pocket and does not rely on a moral "buy in" from the people who are taxed. Does it matter?—maybe not. The most crucial thing is that the problem needs to be tackled urgently.

Even recognising that there may be no real change in attitude for some people with a compulsory scheme, we don't really believe that paying a carbon offset will encourage wasteful energy use, as is sometimes suggested. Does paying an additional tax to have rubbish removed mean that people will run out and look for ways of producing even more waste?

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

It's a very good question—they can and should be focused on wide sustainable development goals, or we tackle the superficial causes of climate change but not the underlying and fundamental ones. Climate change is dangerous in part because it raises the tensions associated with iniquitous global development—how can it be correct that the solutions to climate change do not try and address these issues?

However identifying and verifying good projects that meet multiple aims is complex. Forcing adherence to the compliance market is simply not the right way to try and achieve this. The global map of CDM projects demonstrates this beyond any debate. We desperately need mechanisms that can innovate and promote new solutions in eg Africa.

January 2007

Memorandum submitted by EDF Energy

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include coal and gas-fired electricity generation, combined heat and power plants, electricity networks and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including both residential and business users.

We welcome the opportunity to respond to the Environment Audit Committee's inquiry on the Voluntary Carbon Offset Market. EDF Energy is fully committed to tackling climate change and we share this commitment with our parent company EDF. We support the UK government's ambition to move progressively to a low carbon economy and to play a leading role in the global effort to address climate change.

In 2006, EDF Energy launched its new Climate Balance product as part of its environmental product offerings to customers. Climate Balance allows residential customers to reduce the impact of carbon dioxide (CO_2) emissions associated with the gas and electricity they use in their homes and SMEs to do likewise in respect of the electricity they use, in both cases by off-setting their CO_2 emissions. EDF Energy is a purchaser of emissions reduction credits from the voluntary carbon offset market. However, we are not currently involved in the development and ongoing management of emissions reduction projects that generate these credits.

The voluntary carbon offset market generally sources project credits from small size emissions reduction projects in developing countries. The market is supporting a number of community based projects in the developing countries that help reduce CO_2 emissions and provide other environmental, social and economic benefits. These projects have a strong emphasis on local community and local benefits.

EDF Energy recognises the importance of ensuring legitimate and robust carbon offset projects that produce genuine greenhouse gas emissions reductions. We support the development of a minimum standard for the voluntary offset market focusing on the project development and recommended assurance requirements. However, in the development of a minimum standard, care must be taken not to unnecessarily increase development, transaction and compliance costs and thereby jeopardise these projects and the benefits they provide to the local communities.

We believe carbon offset products based on project credits that meet the proposed minimum standard could be specifically branded or labelled to assist in providing consumer confidence in and credibility for the products.

EDF Energy Response to Questions Raised

In 2006, EDF Energy launched its new Climate Balance product as part of its environmental product offerings to customers. Climate Balance complements EDF Energy's ongoing energy efficiency activity and demonstrates its commitment to tackling climate change through helping both residential and small medium enterprises (SME) customers to reduce their carbon footprint. Climate Balance allows residential customers to reduce the impact of carbon dioxide (CO_2) emissions associated with the gas and electricity they use in their homes and SMEs to do likewise in respect of the electricity they use. For every tonne of $C0_2$ produced by customers taking up this product, EDF Energy will invest in a wide range of sustainable projects to achieve an equivalent reduction in emissions in ways that will bring benefits to local communities both in the UK and around the world.

EDF Energy is a purchaser of emissions reductions credits from the voluntary carbon offset market. However, we are not currently involved in the development and ongoing management of emissions reduction projects that generate these credits.

1 *Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?*

1.1 The voluntary carbon off-set market generally sources emission reduction credits from small size emissions reduction projects in developing countries. These are not economically attractive to larger Kyoto-based carbon markets, largely because of the high transaction and compliance costs involved in the development of these projects and the ongoing requirements under Kyoto Protocol and Clean Development Mechanism Executive Board rules, for example the costs and fees associated with administration, registration, documentation, approval, validation and verification.

1.2 EDF Energy recognises the importance of ensuring legitimate and robust carbon offset projects that produce genuine greenhouse gas emissions reductions. We support the development of a minimum standard for the voluntary offset market, focusing on the project development and assurance processes. This standard could be based on a self-regulation approach that promotes transparency of methodologies for determining emissions reductions of the projects, guidance on documentation and outline monitoring, reporting and verification requirements. We recommend that this minimum standard be prepared by an industry led working group drawing on appropriate existing and draft standards such as the WRI GHG Protocol for Project Accounting, The Gold Standard for Voluntary Offsets and The Voluntary Carbon Standard. However, in the development of a minimum standard, care must be taken not to unnecessarily increase development, transaction and compliance costs and thereby jeopardise these projects and the benefits they provide to the local communities.

1.3 EDF Energy is concerned that the development of a compulsory UK or European accreditation scheme for either projects or companies would increase the cost of developing these small scale projects and place unnecessary administrative burden on these organisations for little value. This could limit the projects being undertaken, resulting in a reduction in technology and capital transfer associated with these projects.

2 *Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?*

2.1 EDF Energy is concerned that mandating the off-setting of more carbon-intensive activities would duplicate emissions reduction activities within specific sectors and add an unnecessary additional cost to the products of emissions intensive industries. We believe the following three key approaches to reducing emissions should be pursued:

- reducing energy consumption and improving energy efficiency;
- investment in low carbon technologies and reducing carbon intensity; and
- then off setting the remainder of emissions.

2.2 We believe the Government should continue to focus on reducing carbon emissions via energy efficiency and investment in low carbon technologies. We do not support mandatory off-setting of greenhouse gas emissions and believe it should remain the choice of consumers and industry.

3 *Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?*

3.1 Purchasers of voluntary emissions reduction (VER) credits would benefit from a greater level of transparency in the development and verification activities associated with emissions reduction projects. We would encourage greater disclosure of the following information to assist in the selection of VER credits:

- the type of emissions reduction project and its coverage;
- the method for determining emissions reductions;
- sustainability benefits;
- monitoring and verification process over the project's life; and
- outcomes of the validation and verification.

3.2 The level of information made available by some sellers of VERs varies considerably. We believe that both the voluntary offset market and customers would benefit from the development of a minimum standard for project development and recommended assurance requirements. This would increase the robustness of the projects and potentially increase purchasers' confidence.

3.3 EDF Energy believes that providing information in a clear, concise and transparent manner is key to allowing consumers to make an informed decision when considering the purchase of products like EDF Energy's Climate Balance. We believe that carbon offset products based on project credits that meet the proposed minimum standard could be specifically branded to assist in providing consumer confidence in and credibility for the products, for example the Australian Greenhouse Office's Greenhouse Friendly trade mark.

4 *Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?*

4.1 We believe that the methodologies used to estimate the emissions reductions from afforestation or reforestation projects should be based on the methodologies developed internationally, for example CDM methodologies, approved by the Clean Development Mechanism Executive Board for emissions reductions for afforestation or reforestation projects and the WBCSD/WRI The Land Use, Land-use Change, and Forestry Guide to GHG Project Accounting.

5 *Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?*

5.1 There are currently numerous guidance documents to assist in the development of projects and the estimation of emissions reductions including Clean Development Mechanism (CDM) approved project methodologies, WRI GHG Protocol for Project Accounting and ISO14064 Greenhouse Gas Accounting and Verification. The accuracy of estimated greenhouse gas emissions reductions is dependent on:

- the methodology for determining emissions reductions including baseline and additionality criteria;
- the boundaries of the projects and accounting for leakage;
- the robustness of the monitoring and reporting plan; and
- Monitoring and verifying emissions reductions during the life of the project.

5.2 Through a robust assurance process covering the above activities, it should be possible to guarantee the accuracy of emissions reductions estimates.

6 *What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?*

6.1 EDF Energy believes the voluntary carbon offset market, ie an unregulated market, will have little impact on the compliance markets, including EU Emissions Trading Scheme (ETS) and Clean Development Mechanism (CDM) markets. The voluntary carbon offset market generally sources project credits from small-size carbon offset projects in developing countries that are not economically attractive to larger Kyoto based carbon markets that have high transaction costs.

6.2 It should be recognised that both the EU ETS and the CDM markets share considerable political uncertainty owing to a lack of international and EU long term frameworks. This is hindering potential investment in low carbon technologies within the EU and is also hindering investment within developing countries. CDM project developers are currently facing difficulties with gaining forward contracts beyond 2012 to underwrite their investments. The voluntary market provides an additional opportunity for CDM contracts beyond 2012 to assist developers during this period of political uncertainty.

7 *What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?*

7.1 We believe that off-setting carbon emissions can assist in changing customers' behaviours. The monitoring and reporting of emissions increases customers' awareness of their emissions profile and provides a value for carbon associated with their behaviours.

7.2 Based on EDF Energy's research, customers likely to take up voluntary environmental products, like EDF Energy's Climate Balance, are already aware of their carbon footprint and are undertaking action to manage their emissions and energy efficiency.

8 *To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?*

8.1 The voluntary carbon offset market generally sources project credits from small size emissions reduction projects in developing countries. The market is supporting a number of community based projects in developing countries that help reduce CO_2 emissions and provide other environmental, social and economic benefits. These projects have a strong emphasis on local community benefits.

8.2 In the development of a minimum standard, care must be taken not to unnecessarily increase development, transaction and compliance costs and jeopardise these projects and the benefits they provide to the local communities.

January 2007

Memorandum submitted by the Environment Agency

Introduction

1. The Environment Agency is pleased to provide evidence to the Committee's inquiry into the voluntary carbon offsetting market. Short responses to the Committee's specific lines of inquiry are embedded in the discussion at paragraphs 14, 19 and 22. We have added some comments on the Government's proposed code of practice and accreditation scheme, but these are necessarily provisional as we will need to consider the proposals in greater depth before responding to the consultation.

Regulating Carbon Offsetting Markets

2. Offsetting has gained popular currency as a means of people and organisations taking direct action to reduce their own "carbon footprint". It is possible to offset emissions arising from the use of energy for travel or consumption in buildings by paying to have emissions reduced elsewhere through financing renewable energy projects, energy efficiency schemes, or more controversially, through paying for new growth of forests or protection of forests or other carbon sinks. Several UK companies now operate as intermediaries between people or organisations wishing to offset their emissions voluntarily and the developers of projects that reduce emissions elsewhere.

3. There are two quite different but overlapping offsetting markets. The first is a voluntary system rooted in personal or organisational environmental responsibility, and the subject of the Committee's inquiry. The second is a formal compliance market in which offsets are traded in emissions control systems where there are legal or contractual obligations to reduce emissions such as the EU Emissions Trading System or by parties to the Kyoto Protocol.

4. The main formal offsetting mechanisms of the Kyoto Protocol are Joint Implementation (JI) and the Clean Development Mechanism (CDM)[10], and high levels of assurance and verification are required before JI or CDM credits can be exchanged to settle obligations in the compliance market. There are processes now in place to establish the quality of credits that can be traded internationally, for example the UN Framework Convention on Climate Change (UNFCCC) has designed a project methodology and registration system for CDM credits[11] and the World Bank has developed expertise in project design with high standards of assurance[12].

5. Building on the UNFCCC methodologies, a consortium that now has 42 non-Governmental organisations has defined a more restrictive "Gold Standard" for carbon reduction projects that assesses wider sustainability characteristics[13]. As well as for JI and CDM projects, the Gold Standard can be used to provide a high standard of assurance in the voluntary offsetting market. For example, it has been adopted in the UK by Reed Paget for its "Penguin Approved" label and will form the basis of a new Climate Credit Card to be launch by Rabobank and WWF in the Netherlands in 2007, in which purchases will be offset with Gold Standard projects.

6. In the voluntary market, individuals, businesses and public sector bodies may have different requirements from offsetting their emissions. An individual will wish to secure an environmental outcome and will not wish to be fooled, but also has no formal external accountability for their spending on offsetting and may wish to see the project contribute to other objectives, such as reducing poverty. However, a business may have to go further and account to its shareholders to show the offsetting has value to the business, through reducing reputational risk, producing a demonstrable environmental outcome and by adding value to its corporate social responsibility programme. A public sector body may need to go further still, because it is spending taxpayers' money on offsetting and must be accountable for value for money. The offsetting market may therefore need to provide different trade-offs between the level of assurance offered and the cost and difficulty of achieving it.

7. For an offsetting transaction to work as a true greenhouse gas mitigation measure, two related conditions must be met:

- The claimed offset emissions reductions must be additional to what would have happened without the offsetting transaction. This is difficult to establish with certainty as future conditions, such as energy or technology prices, are difficult to know. It is also important to avoid double counting resulting from several sources of project finance each taking credit for the carbon savings from the project.
- The claimed offset emissions reductions must have at least the same longevity as emissions that are released because there is little value if the reduced carbon is rapidly returned to the atmosphere. This can be difficult to establish when the emitting activity is different to the offsetting activity (for example, aviation emissions offset by growing trees) and it is related to the first condition because it is possible that the offsetting activity would have happened at some time in the future.

8. These conditions can be both difficult to meet and difficult to verify with the rigour necessary in a compliance market. In the voluntary market, there are trade-offs between the levels of assurance that can be attained, and the value of the transaction and the costs of the assurance process. If these trade-offs are too disadvantageous, then the user will simply do nothing because in the voluntary market they are not acting under any legal or contractual obligation.

[10] JI and CDM frameworks differ in that JI projects are agreements between parties that have both have targets under the Kyoto Protocol, whereas CDM projects are financed by parties with targets that make carbon savings in countries that do not have targets.

[11] UN Framework Convention on Climate Change: CDM project activity cycle http://cdm.unfccc.int/Projects/pac/index.html

[12] See World Bank Carbon Finance Unit www.carbonfinance.org

[13] See Gold Standard web site http://www.cdmgoldstandard.org

9. The Environment Agency is a champion of modern regulation, and we believe modern, risk-based regulation principles should be applied in this market. That means that the levels of assurance and regulation imposed should be proportional to the risk and reflect the needs of the user, whilst achieving a good environmental outcome.

10. The key issue in voluntary offsetting markets is to ensure that the transaction creates the environmental benefits the consumer is paying for. This means that a user should be confident that:

- when they pay their money to the offsetting intermediary the money is actually spent on the projects they claim it will be spent on;
- that the expenses taken by the intermediary are an acceptably small share of the transaction;
- that appropriate calculations are made of the emissions associated with the activity for which emissions are being offset;
- that the emissions claimed for the offsetting projects are valid, additional and properly attributed to the payments received from offsetting; and
- negative environmental impacts associated with the offsetting project are minimised and do not outweigh any value from the offsetting project.

11. It would be possible to devise an elaborate regulatory framework for voluntary offsetting that assessed all of the criteria in the paragraph above at a level of assurance comparable to that required in the compliance market. However, that would risk suffocating the voluntary market, obstructing innovation and costing too much. At the opposite end of the regulatory spectrum there is an argument for application of the principle of caveat emptor, or "buyer beware". With this principle, the purchaser of the offset would take care to choose valid schemes that matched their specific requirements for assurance or risk wasting their money. In theory the intermediary companies would respond with initiatives that built consumer trust—such as greater transparency in assumptions, codes of practice, a voluntary industry-led accreditation scheme etc. This is what the voluntary Gold Standard scheme sets out to achieve. A similar approach has been relatively successful in helping consumers choose sustainable wood products through accreditation to Forest Stewardship Council standards. In this way, the market not only provides offsetting transaction but also the appropriate level of assurance and credibility that users are seeking.

12. Governments and their regulators can play a role between these two extremes of full regulation and a pure buyer-beware, market-based approach. Governments could play a role on both sides of the transaction: helping the market to define what emissions are associated with particular goods or services; and secondly, helping to ensure that the offsetting transaction is fair and transparent.

13. Possible roles for Government intervention might include:

- Facilitating the offsetting process by providing basic data to authoritative standards. Offsetting calculations rely on a range of data such as emissions factors, carbon contents of fuels, relative impact of different greenhouse gases and so on[14]. For more complex calculations, such as the embodied emissions in products the Government could publish "best practice" methodology. Defra provides a wide selection of emissions factors and other data that provides authority and consistency. Though there is no requirement to use these figures, companies tend to stress the reliability of the source of their calculations to build consumer confidence.
- Approving certain types of offsetting project as meeting high standards of additionality and longevity so that users can be confident that their spend will have an environmental benefit.
- Ensuring that information provided to consumers is factually correct—for example preventing false claims about the quality of projects or level of funds spent on projects.
- Ensuring that transaction costs claimed by intermediaries were transparent and comparable (for example by defining a measure like the APR used to characterise borrowing costs)—though this should only be considered if there is evidence of market failure.
- Ensuring that non-Governmental charitable participants in the offsetting market were acting consistently with their charitable objectives.
- For public sector procurement of offsets, a Government procurement agency could set out rules to ensure value for money.

The Government could make some or all of these functions mandatory or voluntary. For example, it could insist on basic standards of business probity and honesty and the provision of information that is not misleading, but it could offer a voluntary "quality mark" that gives a level of assurance about particular offsetting projects. One possible concern with the scheme proposed by the Government for consultation is that is "all or nothing". It may be preferable to make some of its standards mandatory for all offsetting providers, but allow some aspects of the scheme to be voluntary.

14. From the preceding discussion, we can respond to the committee's specific lines of inquiry as follows:

[14] For example, Defra draws together emissions factors from a range of sources in its: *Guidelines for Company Reporting on Greenhouse Gas Emissions Annexes (updated July 2005)* and a large inventory is kept in National Atmospheric Emissions Inventory [www.naei.org.uk] managed by AEA Technology on behalf of the Governments of the UK.

— Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate? There are some aspects of voluntary offsetting transactions that should be subject to mandatory standards (for example the truthfulness of statement made to the public). However, a mandatory scheme that covered all aspects of the offsetting transaction, for example limiting the choice of schemes to those approved for CDM, would be excessive and inconsistent with principles of modern risk-based regulation. The voluntary market should provide appropriate accreditation schemes on the model of the Gold Standard, but the Government could assist by defining voluntary standards or recognising and accrediting standards already developed in the marketplace.

— Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying? No, control of aviation emissions should be achieved through inclusion of aviation in the compliance market through the EU Emissions Trading System, through other instruments and the future development of the Kyoto Protocol. Offsetting should remain a voluntary activity.

— Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices? At present, the level of information provided and the ease with which it can be accessed is insufficient. This is an area where the Government can take an initiative to try to avoid market failures stemming from poor information, by ensuring that a code of practice and accreditation scheme ensures that the consumer has all the necessary information available to make an informed choice.

— What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years? The effect will be beneficial, with greater availability of funds, provided these are subject to an accreditation process. However, if a new accreditation system moves the voluntary market towards sharing the same pool of projects as the compliance market, there may be dangers of a shortage of supply of projects and excessive bureaucratic costs and delays.

— To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense? The situation is necessarily mixed. The use of voluntary accreditation schemes that command widespread support, such as the Gold Standard, should provide a higher level of assurance over time. It is less clear that the formal accreditation system for CDM projects takes wider sustainability concerns sufficiently into account. A concern with the Government's proposal is that it will rely heavily and exclusively on this accreditation system.

Impact of Offsetting on Behaviour

15. The Environment Agency supports the availability of the offsetting option and respects the desire of people and organisations to make a difference to the climate by offsetting their emissions. Because it involves calculating emissions associated with consuming goods and services, offsetting is also an important means of engaging people in greater understanding of their own impact and contribution to climate change. However, offsetting should be placed in hierarchy of responses to climate change based on reducing demand, energy efficiency, and renewable energy, with offsetting as a final stage for residual emissions.

16. One argument against offsetting is that it is a "cop out" or "conscience money", and an alternative to changing personal behaviour and therefore promotes divergence from a long-term sustainable lifestyle. We are unaware of any evidence that voluntary offsetting reduces the individual's effort to reduce emissions. It may well have the opposite effect—sensitising and educating the user about climate change and allowing them to take a positive action. The direction of causation may be hard to establish—people with a high level of concern about the environment are likely to be drawn to offsetting in order to take some sort of action.

17. Even under the most aggressive emissions reductions targets, carbon emitting behaviour will continue in Britain for the foreseeable future, and for any residual carbon it is better to attempt an offset transaction than not to. The change in climate behaviour is more likely to be driven by other factors than small charges associated with offsetting: climate policy should be based on a comprehensive behaviour change strategy of incentives, enabling measures, communications and social marketing, and the public sector leading by example. The priority in climate change policy is to establish this policy framework for behaviour change, and much effort is now invested in that.

18. Given the average UK emissions of 9.6 tonnes CO_2 per capita and offsetting charges typically of £8/tonne CO_2[15], a person could offset their annual carbon footprint for around £77. If making a payment of this nature was the only response made to climate change this would be far from adequate. The overwhelming priority is to move development in the high-emissions developed countries onto an entirely different sustainable path. It might be objected that if a person really can neutralise their emissions by this method, why should they take any further action? The reason is that energy prices do not yet fully reflect costs of carbon (the Stern Review put these costs at over £50/tonne CO_2, which compares to typical offsetting projects at £5–10/tonne). If energy prices properly included environmental costs at this level, they would be

[15] Costs from Carbon Neutral Company—a range of offsetting offers with implied carbon costs from £7.50/tonne to £9/tonne CO_2.

far higher. As a result, many of the offsetting projects that are additional at current energy prices would be business-as-usual at prices that properly reflected environmental costs. Offsetting looks like a cheap response to climate change because energy prices are much lower than they ought to be.

19. From the preceding discussion, we can respond to the Committee's specific lines of inquiry as follows:

— What evidence is there to show that offsetting helps to change the carbon behaviour of the customer? To our knowledge, there is little evidence at present, which is unsurprising given how new the voluntary market is, and how the individuals and organisations using it are self-selected. The key challenge for the Government is to establish powerful and compelling drivers of behaviour change that promote reduced demand, efficient uses of energy and resources and low-carbon energy sources, with offsetting seen as a lower tier in a hierarchy of responses.

Offsetting Through Forestry

20. Offsets that involve developing biomass carbon sinks (eg growing trees) or not destroying biomass carbon reservoirs (deforestation or soil loss) cause particular accounting difficulties. However, recognising the importance of biomass carbon in the overall carbon cycle, the UNFCCC has defined rules for the inclusion of forest projects in the CDM compliance market[16].

21. Though scepticism about the value of forestry offsets is reasonable, the Stern Review highlighted the importance of land use changes and deforestation in climate change, pointing out that globally emissions from these sources were greater than for transport. It may be possible to channel funds from offset transaction to paying the opportunity cost of forest protection (ie compensating for the economic losses of not destroying it). Stern estimated the opportunity cost to be $1–5/tonne CO_2[17], which represents a low-cost potential source of emissions reductions. This would potentially offer a biodiversity dividend if forest protection were focussed on old-growth forest in the Amazon, Africa and Indonesia. There are also opportunities to promote other environmental and development objectives—see Table 1 below.[18]

Table 1

AFFORESTATION CDM PROJECT OVERVIEW—EXAMPLE

The proposed CDM project activity, Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin, China aims to explore and demonstrate the technical and methodological approaches related to credible carbon sequestration and pilot the viability of enhancing the livelihoods of people and natural environment by facilitating reforestation activities in watershed areas along the Pearl River Basin. The proposed CDM project will generate the income to the poor farmers/communities by enabling the carbon sequestered by plantations to act like a "virtual cash crop" for the local project beneficiaries who will gain direct benefits from harvesting the plantation as well as from the sale of carbon credits, which will in turn reduce the threats to natural forests. In addition, forest restoration in this area plays a vital role in biodiversity conservation, soil and water conservation and poverty alleviation, while sequestering carbon dioxide from the atmosphere. The specific project objectives include:

(1) To sequester CO2 through forest restoration in small watershed areas and test and pilot how reforestation activities generate high-quality emission reductions in greenhouse gases that can be measured, monitored and verified.

(2) To enhance biodiversity conservation by increasing the connectivity of forests adjacent to nature reserves.

(3) To improve soil and water erosion control.

(4) To generate income for local communities.

22. From the preceding discussion, we can respond to the committee's specific lines of inquiry as follows:

— Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects? If so, how should this operate? If the Kyoto Protocol parties have accepted the forestry projects can participate in the compliance market, it would be wrong to apply a higher standard of assurance in the voluntary market—and it is desirable to channel money into forestry projects for climate change and wider environmental reasons. The design of forest projects should include sustainable management and favour long-lived applications, for example producing timber rather than pulp.

[16] UNFCCC Methodologies for afforestation and reforestation CDM project activities http://cdm.unfccc.int/methodologies/ARmethodologies

[17] HM Treasury. Stern Review: *The Economics of Climate Change,* page 216.

[18] See for example, CDM project Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin (Ref. GIFDCP02) [link]

— Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance? It varies—a good accreditation scheme will validate only those schemes where there can be sufficient confidence, or alternatively ensure the offset credit is time limited or otherwise discounted to reflect risk.

The Proposed Government Accreditation System

23. We welcome the Government's consultation on a new voluntary code of practice and accreditation system for carbon offsetting announced on 18 January 2007[19]. This could bring important consumer protection benefits to the offset market place and help to ensure that users receive value for money and that the environment really does benefit from expenditure on offsetting.

24. It is important that the scheme is voluntary and that offsetting companies will have the choice to adopt it and customers the choice to insist on it. It is possible that other standards, such as the "Gold Standard" will operate alongside this and provide voluntary users with different characteristics—for example they might be more open to small scale development focussed projects in Africa, which would be unlikely to be validated through the formal CDM process.

25. The Environment Agency will respond more fully to the Government consultation and we are likely to consider the following carefully:

— Is the proposed system unduly restrictive by accepting only those types of credits that are assured for use in the compliance market? This could have several unwanted consequences such as poor uptake of the scheme, excessive bureaucracy costs, artificially narrowing the scope of activities funded by the offsetting market.

— Are there aspects of the voluntary scheme that address consumer protection that ought to be mandatory, even if the quality mark is voluntary overall?

— Should the system be more modular, perhaps with a mandatory component for all providers to ensure basic consumer protections? Going beyond this license to operate, there could more options for awarding quality marks for different types of project, including those outside the formal Kyoto compliance mechanisms that are quality-assured in some other way. In other words, the Government could provide a star rating system or a silver and bronze standard, as well as what it describes as its gold standard.

— Should the Government leave itself the option in the design of the scheme to accredit other accreditation bodies—for example, from other countries or from the voluntary or business sector, if they reach high standards. At present the system proposed for consultation relies on a single assurance regime—the Kyoto mechanisms.

— Should EU Allowances from the EU Emissions Trading System qualify? At present the EU ETS has excessive allocations to member states and there is no scarcity in the system overall. Until there is real scarcity, buying offset credits from the EU ETS would fail the "additionality" test for legitimate offsetting. The offsetter would be purchasing so-called hot air.

— Who is best placed to play the role of the accreditation body, and what implications, if any, would there be for the operation and administration of the EU Emissions Trading System, given that all accredited offsetting companies would need to become members of the registry under the proposal for consultation.

Government Approach to Offsetting its own Emissions

26. The UK is developing a Government Carbon Offsetting Fund (GCOF) to meet the Government's commitment to offset carbon dioxide emissions arising from official and Ministerial air travel from April 2006. This commitment was made by the Prime Minister as part of the wider UK Sustainable Development Strategy, which was launched in March 2005.

27. The GCOF has been developed through an Inter-Departmental Working Group and will be available for all central Government departments to offset emissions from official air travel. The central feature of the GCOF will be a portfolio of projects under the Kyoto Protocol Clean Development Mechanism (CDM), which will deliver the required emission reductions. The portfolio will offset the total estimated emissions of participating departments and agencies for a period of three years, from April 2006 to April 2009.

[19] Defra, DfT. Consultation on establishing a voluntary Code of Best Practice for the provision of carbon offsetting to UK customers, January 2007.

Environment Agency Approach to Offsetting

28. The Environment Agency has taken a different approach. We have audited our carbon footprint and taken measures to reduce it. We have assessed how much spending would be required to purchase offsetting for the residual carbon. Instead of purchasing offsets on the voluntary market, we have instead used the same funding to set up an internal Carbon Reduction Fund to be invested in reducing the Environment Agency's own carbon footprint. The fund stands at £250K per year. 46 projects were proposed by employees and seven were successful:

- Carbon footprint auditing of all buildings owned by the Environment Agency.
- Low Carbon Concrete.
- National Car Share Database.
- Hatchery Energy Efficiency Project.
- Ground Source Heat Pump at Darlington and Bio-Mass boiler at Scots Float.
- Umbrella Bid—Renewable Energy at Environment Agency premises.

29. The Environment Agency keeps its internal carbon management policy under regular review. We are currently considering whether to extend our approach to investment in local community carbon abatement projects and whether to include offsetting projects developed to the Government's proposed code of practice or the voluntary "Gold Standard".

January 2007

Memorandum submitted by the Environmental Industries Commission (EIC)

EIC was launched in 1995 to give the UK's environmental technology and services industry a strong and effective voice with Government.

With over 310 Member companies, EIC has grown to be the largest trade association in Europe for the environmental technology and services industry. It enjoys the support of leading politicians from all three major parties, as well as industrialists, trade union leaders, environmentalists and academics.

EIC has recently launched a Carbon Trading Working Group which already has over 40 Member companies including: Ecosecurities, Sindicatum Carbon Capital, Enviros, Baker and McKenzie, Ashurst, Johnson Matthey, WSP Energy, and the Carbon Neutral Company.

Introduction

EIC's Carbon Trading Working believe that the voluntary carbon market adds significantly to the capacity for carbon reductions worldwide and that carbon offsetting is an important part of the overall mix of instruments available. These Member companies also believe that their work complements the compliance market for carbon reductions by providing further opportunities for carbon management.

EIC is concerned, however, about the impacts of bad and or fraudulent practice on market confidence.

In response to these concerns, some companies in this sector have developed their own stringent operating standards. There are also current initiatives to produce cross-industry international standards for carbon offsetting. We expect that these initiatives will deliver robust frameworks in which a mixed market of diverse instruments, including Certified Emission Reductions (CERs) and Verified Emission Reductions (VERs) can develop.

EIC believe that a system of accreditation for companies and the products they offer is highly desirable. Members believe that a system of accreditation would improve the overall confidence of business and consumers in the voluntary carbon market and the companies that work in it.

EIC therefore welcomes the Environmental Audit Commission's inquiry into the voluntary carbon offsets market.

Operation of an Accreditation Scheme

EIC believes that a system of accreditation should operate in the way in which current arrangements of assuring standards in markets operate, governing both companies and the products they provide—for example the FSA.

EIC believe that the accreditation of companies and instruments offering carbon offsetting should contain the following key requirements:

- The quantification of carbon footprints against best practice environmental standards (eg the GHG Protocol).

— Transparency in the methods of quantifying "carbon footprints"" to end consumers of carbon offset instruments.
— Third party certification of offset service providers.
— Independent verification of carbon offsets by an appropriately accredited third party (eg a Designated Operational Entity under the Clean Development Mechanism (CDM), accredited verifier for the EU Emissions Trading Scheme etc, or appropriately qualified entities in markets where these are not present) against a uniform verification standard, have a clear audit trail, and ideally be recorded in an independently controlled central registry.

Scope of Offsetting Schemes

EIC believes that emissions trading under binding emissions reduction targets is economically preferable to a straight forward cap or tax based approach to reducing emissions. Emissions trading grants companies the flexibility to abate their emissions via a route of their choosing, be that for example technological, or market based.

One of the key virtues of offsetting schemes is that, by providing additional project finance, they can facilitate or accelerate the implementation of innovation in the market. EIC Members welcome this additional incentive to their efforts in providing solutions to the problem of climate change.

Market Clarity

We do not believe that there is sufficient clarity at present and would welcome requirements for the good practice employed by those EIC Members in this sector to be implemented across the industry.

Therefore, EIC believe that there should be a requirement on companies to provide information about:

— Quality of offsets (eg what standards (if any) the offsets adhere to for carbon additionality, and for retail offset providers, the criteria used to select eligible offset projects).
— Audit trails and certifications.
— At what point the carbon offsets are retired.
— Financial practices, for example whether VAT is charged.
— Calculation methods for carbon offsetting requirements, including the areas where there is scientific uncertainty, on aviation emission, for example.

In the absence of accreditation standards there is a risk that consumers and companies are not actually purchasing the requisite quality or quantity of carbon offsets for promised carbon neutrality. In the current unregulated market place it is very unlikely that consumers are able to differentiate between "good" and "bad" carbon offsets and it is likely that the price differential between good and bad offsets will lead to more poor quality offsets.

Calculations of Emission Savings

Central to this are transparent and robust methodologies, for calculating both the emissions being offset, and any emissions reductions used to do so.

Impact of Voluntary Carbon Offset Markets on the Compliance Market

EIC welcomes the Government's initiative to provide the voluntary market with greater transparency but does not advocate that the market should comply with the same stringent requirements as compliance markets such as the CDM and Joint Implementation under the Kyoto Protocol. This is because compliance markets are mandated with implementing specific policy objectives and as such can constrain the scope of qualifying activities, raise transaction costs and suppress innovation.

The voluntary market has the potential to support credible projects which fall outside of the UN approved CDM and to provide innovation to this sector. EIC believe that as long as the projects in the voluntary market are "additional" and fully verifiable, then they can be an excellent driver to move the CDM policy framework forward.

Public Participation

The integrity of the voluntary carbon offset market is paramount in continuing the current wave of public support climate change issues are currently receiving. The voluntary carbon market can be seen to be educating the public about the threat that climate change poses and accordingly a better educated public can influence long term climate change policy at national and international levels. In the absence of standards there is a risk that the public may perceive the market as environmental suspect and the demand for offsets could diminish.

As more sources of offsets enter the market, the absence of a common and appropriate offset standard will become a larger problem. However, while there is a clear need to regulate the operation of voluntary carbon offset market, careful consideration must be made not to regulate it in such a way that discourages innovation and public participation.

January 2007

Memorandum submitted by Forest Carbon Limited

Forest Carbon brokers bespoke and additional off-set schemes for corporate and other organisations.

We would make the following observations in respect of your current consultation on voluntary carbon off-setting.

We do believe that there should be a general and compulsory accreditation scheme for UK carbon off-set schemes, although we make our comments with particular knowledge of and experience in forestry off-sets. A compulsory regulatory regime should not be necessary: the market can sort the good from bad and should understand the difference between accredited and non-accredited off-sets, but in this instance there is insufficient knowledge to enable buyers to make informed decisions. This situation has improved of late, but nonetheless an accreditation system, accompanied by appropriate educational activity, is essential.

Any scheme should be made as simple as possible for sellers to adhere to and gain accreditation from, and the onus should be on transparency of information with respect to the off-setting claims of the scheme. There are obvious universal requirements for any off-setting scheme, drawn from the principles of the UNFCCC protocols and accords, namely those of: additionality, permanence, biodiversity and socio-economic impacts, and leakage. In addition to these principles there will also be the requirement to monitor and verify that the claimed sequestration/reductions have occurred and will continue to occur for as long as is contracted.

Forestry carbon off-setting schemes hosted in the UK will face fewer of the problems with respect to socio-economic and biodiversity impacts due to the strict regulation of the industry in the UK. Many forestry off-sets in the UK are co-funded with Forestry Commission Woodland Grant Scheme (WGS) money, with carbon finance being the marginal income needed to give a positive NPV and therefore incentivise the landowner to go ahead. Any new planting which is done in conjunction with the WGS will have to meet the standards of the UK Woodland Assurance Scheme (UKWAS), and will therefore be a well managed and appropriate undertaking. We would propose that the simplest way of assuring the existence of the forests that claim to host the carbon sequestration claimed for such schemes would be to add an additional section on this to the UKWAS accreditation and monitoring process, and to bring schemes selling sequestration rights but not using WGS funding under the UKWAS umbrella. The science of how much carbon is sequestered would be formulated by another independent body (Forest Research perhaps) and fed into the UKWAS monitoring to produce an outcome. As long as the carbon sold for a given site was not more then amount verified then there should not be a problem, although we believe that the accreditation system should specify an insurance margin (ie that no more than x% of the anticipated sequestration for a given project may be sold, in case of contingency and based on a standardised matrix of various criteria such as, for example, species, proximity to roads and location). Transparency here would mean that the market would come to know which vendors were cutting a fine margin with respect to the insurance margin.

We have entered into discussion with ConFor, the Confederation of Forest Industries, about the compliance role they could play in the forestry off-set market. Ideally we envisage a situation where they would verify our off-sets periodically and hold central copies of contracts, project documentation and site plans, creating complete transparency in our schemes.

Coming back to the first of the principles mentioned above, additionality, we believe that the clear definition of this is essential. Demonstration is a little more difficult to standardise if the accreditation is not to be so difficult that it blocks entry to the market unreasonably. (Anybody that has read the Kyoto Clean Development Mechanism additionality tool will confirm what a formidable exercise it can be to prove this for compliance purposes). The definition of additionality must be clear and prominent in the documents and publicity about an accreditation scheme in order that consumers understand it, and ask the right questions of off-set sellers. A straightforward financial analysis would probably be as far as it could be taken with respect to proving additionality: lifecycle income, lifecycle costs, opportunity costs, all discounted using an appropriate discount rate (perhaps rates that are supplied by the accreditation body, and vary per sector, to prevent financial engineering making the additionality case). It would be impossible to prove the behavioural additionality case with any certainty (ie would y have planted his sub-economic woodland for altruistic reasons even without carbon funding?)

Permanence, or lack of it, has long been a thorny issue in forestry carbon sequestration. Forest Carbon has to date brokered deals around what we would consider to be permanent forest sinks—those that have no future commercial value and are planted for non-commercial reasons on a break-even basis by landowners who have a long term commitment to the forest. These forests reach dynamic equilibrium after, say, 60 years and we would not sell any sequestration beyond that point. We do also believe however that there is scope for using commercial planting as a vehicle for carbon off-setting. Here the additionality case

becomes more critical, with the need to assess the future value of the timber to assess the whether or not the NPV of the proposal is positive, but if this is negative then the lack of permanence of the planting may not be an obstacle due to the need to re-stock if a felling licence is to be issued. There could be no sale of carbon credits for any re-planting however, and an accreditation scheme would need to monitor this (again perhaps through UKWAS).

We believe that the science is strong enough in the areas of afforestation and forestry management to allow credible carbon off-set trading, with the proviso that, as stated above, there is a minimum insurance level (ie a minimum % of the anticipated sequestration of a given scheme should be held as a reserve against contingency or less than anticipated sequestration).

Forestry off-set schemes in the UK are sustainable, both environmentally and economically. Carbon sequestration accounts for only around 10% of the non-market benefits of forestry in the UK[20], meaning that carbon finance produces considerable environmental and socio-economic co-benefits. Carbon finance also makes the significant, marginal, contribution that makes sub-economic planting viable and ensures that schemes go ahead that would not otherwise have done so.

January 2007

Memorandum submitted by The Forestry Commission

THE ROLE OF WOODLANDS IN THE VOLUNTARY CARBON OFFSET MARKET

Background

As part of UK Government, the Forestry Commission is fully committed to the view that offsetting schemes are only of value when used in conjunction with, rather than instead of, emissions reduction.

Forest ecosystems play a key role in addressing climate change by absorbing carbon dioxide from the atmosphere and storing it in growing vegetation and soil. A number of schemes are already up and running allowing individuals, businesses and others to offset their emissions by planting trees. An estimate is made of the carbon sequestered over the lifetime of the woodland and this is marketed as a carbon credit to offset emissions resulting from specified activities of an individual or organisation. Woodlands provide a range of benefits and this can provide an attractive package in the market place. However, the market for domestic forestry offsets currently allows significant discrepancies in quality between schemes and may not fully address the issues of additionality and double-counting.

The Evidence Base

There is generally a good understanding of the underlying science which can be used to assess the amount of carbon locked up, particularly in the above ground biomass. However, understanding of soil processes in forests, as in other ecosystems, is more limited.

The IPCC has produced Good Practice Guidance for Land Use, Land Use Change and Forestry to which national inventories for the UNFCCC and Kyoto have to comply. The guidance represents a broad scientific consensus on estimation and is applicable at project level. UK methodologies have withstood scrutiny of the IPCC.

Setting Standards

In the UK, the Forestry Commission sets standards for sustainable forestry, which apply to all woodland management. Woodlands managed for carbon must adhere to these standards. However, there is no common standard or approach to assessing the carbon sequestered or ensuring that the management of the forest maximises net carbon sequestration.

The Forestry Commission believes there is scope to expand the Standards and Guidance for UK forestry to encompass carbon offset schemes to provide a voluntary benchmark to give consumers a degree of assurance. This would seek to address issues such as the calculation of carbon removals and the need for monitoring of projects. One approach might be to build on the UK's experience developing the voluntary standard for independent 3rd party auditing of woodland management. This was developed as a partnership between Government, the forest sector and the environmental NGOs. It allows buyers to be confident that wood and wood products come from sustainably managed woodlands.

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[20] Willis K.G., et al The social and environmental benefits of forestry in Britain., (2003) Report to Forestry Commission from Centre for Research.

SUSTAINABILITY

The advantage of carbon offsetting through forest based schemes arises because forests offer a sustainable land use with a wide range of benefits over a long time period. The forestry sector has the knowledge and expertise to manage forest resources sustainably to deliver multiple goods and services to society. This knowledge should be used to influence the design of sustainable forestry and climate change programmes. For example, it is important that appropriate species, resilient to climate change, are planted in suitable locations that maximise the range of environmental and social benefits that woodlands can provide and minimise any potentially negative effects.

While we do not believe that planting trees solely for the purpose of carbon sequestration is an appropriate approach to climate change mitigation, carbon offset schemes may provide an additional incentive for creating multi-purpose woodlands. Furthermore, the perceived contribution to climate change mitigation should not be restricted to sequestration in standing biomass, but should consider the wider (and often larger) contribution from harvested wood products (including woodfuel) substituting for fossil fuels and energy intensive materials.

SCOPE

Availability of land for afforestation limits the potential for individuals or organisations to take up these schemes, both in the UK and globally. It is not feasible for the UK to become 'carbon neutral' through afforestation alone. It is estimated that to do this would require creation of some 50 million hectares of forest—approximately twice the land area of the UK.

Nevertheless, our forests and forestry industry have a role to play in combating climate change by providing low energy, renewable materials and alternative energy sources to fossil fuels. Forests and woodlands can also contribute in other ways such as to flood and erosion control, protection of biodiversity and improving the urban environment.

January 2007

Memorandum submitted by FOXY Lady Drivers Club

Introduction to FOXY Lady Drivers Club	FOXY Lady Drivers Club is the UK's only "everyday motoring" membership organisation for women drivers. We exist to bridge a service gap in the retail motor industry, because: — the industry is more male-oriented; — an increasing number of women live alone; — motoring can be highly stressful; and — few women are as well informed about "everyday motoring" matters as they are about their homes, family and gardens. As a direct consequence, it's reasonable to suggest that fewer women than men are sufficiently well informed about carbon offsetting within a motoring context. As a motoring organisation that tries to keep up to date with environmental motoring issues, this debate has certainly foxed us. We are interested in understanding this subject better than we do, so we can inform women on a need-to-know basis and in the face of an increasing number of "ethical" promises made by motoring-related service providers that we know little about.
Voluntary v compulsory scheme	*Voluntary vs compulsory scheme* If this remains a voluntary scheme, how does the consumer know if the offsetting practice is approved and/or if the project is carried out afterwards? Consumers who buy products or services based on price alone (whether hard up or just financially canny) will avoid optional offset payments wherever this means paying more. To attract these consumers, businesses will keep their costs as low as possible. We believe a more equitable way is to link offsetting responsibility to the individual polluter, to be shared between the "offending" business and the individual consumer.
UK v European	*UK versus EU* We favour a UK accreditation scheme rather than European one because we are starting from a more expensive "everyday motoring" cost base and this should be recognised.

	However it seems most unfair to expect British motorists to pay when China and India do not, in the face of a predictable and unprecedented rise in their emissions.
Clarity	*Is there enough clarity. . . .to allow customers to make informed choices based on robust information?* We don't believe there is enough clarity or information for the consumer to make an informed choice whilst this remains a voluntary option. Certainly there isn't enough to provide us (FOXY) with unambiguous information to advise our members. If such a scheme became compulsory, we'd need independent, trustworthy, simple and transparent information about: — offsetting choices; — our individual CO2 excess; — a list of approved organisations/projects; — details of the approval process, transparent details of the cost of projects and how this money will be spent; — a central offsetting record of participating individuals (perhaps this might be tax deductable behaviour like Gift Aid?); and — an ongoing monitoring process of all projects.
Evidence of changed behaviour	*What evidence is there to show any change of carbon behaviour?* We think it's unlikely that voluntary offsetting, per se, will change consumers' carbon behaviour but are confident that good communications about the need for such practices will influence consumer behaviour. As always, one size does not fit all and we predict the following pockets of consumer behaviour: — Those who care about their planet will try to change their own and their family's behaviour. — Wealthy followers of fashion will copy what the celebrities do. — The financially canny won't pay a penny more than they need to. — Carbon cynics will see this as a sales ploy and question the ethics. — Many will question whether the UK alone can make a difference if the USA, China and India don't join in.
FOXY business examples	*Examples we have come across in the motoring services sector* 1 A private limited company selling motor breakdown insurance claims "xxx works like all other motor organisations with one big exception—we are the ethical alternative. By joining xxx you will be supporting our campaign for a sustainable transport system in Britain. By choosing xxx you can start putting something back into the environment—together we can make a difference." This means that if FOXY introduces our members to xxx and they buy a breakdown policy, xxx will plant a tree for us, our member will get a "significant discount" and FOXY will earn a commission "to fund our good work". Is this a sales trick or an appropriate project, are we paying more than we need to and who monitors whether a new tree is planted or not? 2 A FTSE 100 oil conglomerate promises to neutralise our motoring emissions if we pay them c£20 for a typical year's motoring. In view of their extraordinary wealth which the motorist has already contributed to, can we trust them to spend more of our money altruistically and will we feel better as a result? 3 A recent Press release stated "xxx magazine will show drivers how they can cancel their carbon emissions by signing up to Climate Care—a company that funds environmentally friendly projects by monies provided by people who wish to offset their carbon emissions. In this way, xxx magazine offsets its emissions every month. . ." Will we feel happier buying xxx's heavyweight paper Magazine because we've made an offset payment to Climate Care? 4 We then see from Climate Care's website that they have won the "Best Offset Provider" Award in 2006. Is this a recognised benchmark of superior practice? Should FOXY members buy their insurance product from them as a result? How much more will we pay for this performance level?

I hope our submission is helpful. If we have got hold of the wrong end of the stick, on occasion, you can expect that some consumers are unlikely to know that the stick exists.

January 2007

Memorandum submitted by the Institution of Mechanical Engineers (IMechE)

Introduction

The Institution of Mechanical Engineers (IMechE) is a professional body representing over 78,000 engineers in the UK and overseas. The Institution's membership is involved in all aspects of energy conversion, supply and use. They operate in the automotive, rail and aerospace industries, in construction and building services, in renewable energy, fossil-fuel derived power generation and nuclear power, and in the over-arching field of sustainable development. As a Learned Society, IMechE's role is to be a source of considered, balanced, impartial information and advice.

General Comments

The Institution agrees with the Carbon Trust and many others in stating that carbon offsets, as currently established, should only be considered by an individual or organisation after they have first focussed on their own direct emissions and, second, on indirect emissions arising from within their supply chain.

IMechE supports the "energy hierarchy" approach, which puts energy conservation (not using energy needlessly) as the top priority, followed by energy efficiency (using less energy to perform a given task), then making use of renewable, sustainable energy sources, then making use of low carbon, non-sustainable sources.

The key challenge for the carbon offset market is to ensure it delivers genuine carbon reductions, in accordance with energy hierarchy priorities and to meet climate change objectives. As it is currently structured, the Institution does not believe it will do so. The fundamental problem at present is that offset projects, at best, only prevent an equal volume of past emissions being emitted again elsewhere, and therefore make no contribution to reducing current emissions, only to preventing the doubling of those emissions in the future. Even those schemes that aspire to actually remove carbon from the atmosphere (forestation projects), rather than prevent future emissions, can offer no long-term guarantees, as trees will almost inevitably fall down, burn down or be chopped down at some stage.

Until such time as a viable and verifiable method to remove carbon from the atmosphere and store it securely is developed, the concept of carbon neutrality through offsetting is a misnomer. Such a process is not impossible (nature manages it through photosynthesis, the passage of millions of years and the exertion of enormous pressures to turn atmospheric carbon into oil, natural gas and coal). However, to be truly "carbon neutral", while still emitting all the carbon we do now, means our challenge will be to artificially replicate this process. In IMechE's view, it is unlikely that this is a realistic objective over the timescale likely to be available for action against catastrophic climate change.

In the context of current and likely future options, scientific knowledge and technologies, IMechE would suggest that the following criteria be applied to voluntary offset schemes:

1. Schemes should only be used once all reasonable measures to reduce direct and indirect emissions have been taken. The offset providers should work with their customers to ensure this has been done. There is a strong link here with the concept of Energy Services Companies (ESCos) and we see no reason why ESCos cannot also be offset providers and vice-versa, as part of an overall carbon management strategy.

2. Schemes should save significantly more than 100% of the emissions being offset.

3. Schemes should be favoured according to the energy hierarchy, that is focus on energy conservation first, then energy efficiency, then exploitation of renewable sources.

4. Schemes should support climate change and sustainable energy education and research.

5. Schemes should not include forestation projects unless, and until such time as, schemes can prove that they really do sequester the declared volumes of carbon, and keep them sequestered.

6. Schemes should meet the best available standards in terms of additionality, verification, life cycle analyses, promotion of sustainable development, and the avoidance of double counting, eg along the lines of the Clean Development Mechanism (CDM) Gold Standard, developed by WWF and others.

7. Schemes should not be used (or perceived) to suggest that individuals and organisations can simply buy their way out of reducing their own carbon footprint. Offsetting should not be the cheap or easy option, and the term "carbon neutral" should be legally protected to restrict its use to those who genuinely and demonstrably make no net contribution to overall carbon emissions.

Responses to Specific Questions

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

Yes—in accordance with the criteria outlined above.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

All carbon intensive activities, including aviation, should be included in the compliance market, eg the EU ETS. Legislative, fiscal and market pressures, including offsetting, should be brought to bear progressively, so as to drive the behavioural, cultural, organisational and technological changes needed to reduce global carbon emissions by at least 60% by 2050.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

No—that is why accreditation is needed.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

No—while the ultimate aim of offsetting schemes should be to permanently and fully remove the emissions to be offset from the atmosphere, afforestation and reforestation projects cannot yet demonstrate either that they sequester a verifiable quantity of carbon or that they can keep it sequestered indefinitely.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

No. Offset providers currently attempt to forecast the emissions that would have been produced had their projects not gone ahead. They are based on projections and assumptions and can therefore never guarantee complete accuracy.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

There is a danger that there will be too few CDM projects to meet demand from both the compliance market and voluntary market. The voluntary market will favour CDM projects because they reduce risks of double counting and both markets will favour CDM projects because they tend to be much lower cost than similar schemes in the developed world. Unless very tightly regulated, the likely consequence is that the verifiability and additionality of projects will become increasingly dubious, and the claimed/credited carbon reductions will not, in reality, be achieved.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

IMechE is aware of some evidence for this (eg work by the Eden Project), but existing arrangements lend themselves to the allegation that the "carbon greedy" can (falsely) claim to be doing their bit simply by giving a small amount of money to an offset provider. Accredited schemes must address this issue.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

This seems to be highly variable at present—another reason for accreditation. The CDM Gold Standard goes some way to address sustainability issues, principally by ensuring community involvement in offset projects, but there remains tremendous scope to improve the broader sustainability aspects, particularly in overall life-cycle assessments and in encouraging energy conservation.

January 2007

Memorandum submitted by Moor Trees

1. Background

Since 1998, our charity (Moor Trees) has been restoring native woodland in and around Dartmoor National Park. Moor Trees' charitable status and community-based approach requires a highly responsible, ethical and transparent approach to all our activities. As such, we are recognized around the region for our socio-environmental outputs. More recently, we are increasingly engaged in the issue of climate change, both as a source of information, knowledge and objective opinion, and a respected resource for organisations and individuals seeking to play an active role in climate change mitigation and adaptation.

As with the rhetoric of climate change, carbon offset has grown in both public awareness and media appeal. This has inevitably led to a surge in the value (and profitability) of associated markets, with new organisations (mostly for-profit, many internet-based) emerging to take advantage of the anticipated spend, arguably before regulation is introduced. Whilst the (Kyoto Protocol) model of carbon offset is sound in concept, the delivery framework is fundamentally flawed, with emerging issues of monoculture afforestation[21], programme complexity, high levels of bureaucracy and the much maligned "business as usual" concept stimulating acrimonious discussion at many levels.

More recently, the surge of the "voluntary carbon offset" (VCO) market has, whilst similarly based on a good concept, suffers from dubious science, failed investments, accusations of green-washing and, in some cases, a lack of financial and operational transparency. The "for-profit" status of the major players is also very much open to discussion, as is the incredibly low per centage of offset funds that actually go to the project ie 40%–60% top slicing is common.

What should be considered, however, are the potential benefits of VCO. Tackling Climate change requires a holistic approach as we have now moved from prevention to mitigation and adaptation. VCO offers a partial solution through the added value of a community-based (partnership) approach bringing educational as well as purely offset outcomes. In other words, we need to look at a paradigm shift from the "governing of the environment" to "environmental governance". This can only be done through broad stakeholder engagement and partnership working. VCO could play an important role in this.

2. Towards Accreditation?

The question now beckons—how can this emerging market be brought into line to remove its defects and by introducing a more robust and accountable operational framework?

As with many environmental partnerships, commentators suggest that issues of legitimacy, accountability and responsibility are the keys to success. These issues desperately need to be addressed for a partnership approach to environmental governance to succeed.

3. Some Inquiry Issues

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

The market desperately needs a robustly enforced Government-run accreditation scheme (not an NGO which might be highly subjective). Bearing in mind projects should be community-based, funding and expertise must also made available to gain accredited status.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

Many airlines have recently commanded huge media exposure in defence of their aggressive plans for expansion. Their predictions for flight market growth are indicative of forecasted profitability and consumer demand. It is, however, difficult to argue this case due to the medium- to long-term return on offset investments compared with the short-term impact made by high- altitude carbon emissions. The perfect solution is to reduce consumer demand but as long as the airlines continue to offer cheap flights (particularly short-haul), the appeal of flying will continue to grow. Perhaps reductions can only be achieved through taxation leading to significantly increased air fares encouraging the business community to use webcast technology and the tourist staying at home to enjoy the warmer weather.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

Information offered by VCO providers is sparse (invariably due to the in-house media expert) but often flawed. It is difficult for an uninformed, non-scientific audience to accurately judge scheme value and credibility. The solution will come from improved regulation and a governing body.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

Tree-planting (when carried out and supported credibly) undoubtedly helps the natural environment adapt to and mitigate climate change through the improvement of air and water quality, protection of biodiversity, creation of migration corridors and carbon sequestration. However, the science of carbon sequestration is highly complex due to the huge number of carbon uptake variables per planting scheme. Additionally, climate change itself brings further uncertainty due to changing growing conditions, though it is argued by some that these will improve in the UK.

[21] Leading to adverse effects on biodiversity and socio-cultural implications and with often poor science.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

No.

What impact will the voluntary carbon offset market have on the compliance market if the former continues to grow as steadily as it has done over the last few years?

Due to the lack of bureaucracy, quick return and accessibility, the impact could be significant.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

Whilst wide-ranging studies considering behavioural and attitudinal change are lacking, an empirical focus can be brought through the assessment of local projects. Taking into account the activities of our own charity, we have been working with businesses and individuals over the last 12 months in carbon awareness raising activities through tree-planting. By publishing an online calculator using well-researched source data[22], our Climate Action Plan works in partnership with Quangos to firstly reduce and then offset customer emissions. Through this direct engagement in conservation and environmentally focused activities, we have achieved measurable results in both emissions reduction and behavioural change. However, the use of carbon offset schemes by business should be part of a comprehensive environmental management system that involves employees, suppliers and customers in delivering environmental improvements.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

Carbon offset is conceptually underpinned by the notions of sustainability, with the idea of grass-roots level investment for environmental, social and economic benefit being well-rooted in agendas at all levels. Indeed, much discussion of policy and governance at the beginning of the 21st Century indicates a significant shift in the model of governance away from "top-down" government control to a "bottom-up" partnership approach. This "partnership-working" is increasingly being seen as an indispensable part of the transition towards more sustainable development and environmental stewardship. In part, the growing prominence of partnerships is recognition that sustainability cannot be achieved through top-down government but requires the active involvement of a broad range of stakeholder groups, spanning all sections of society, to ensure that sustainability strategies are context-oriented, so meeting the needs of local populations. As such, VCO offers a huge opportunity for increased (financial) investment in the sustainability agenda. Where many schemes currently fail is in successful community involvement, so VCO operational frameworks should reflect this need to both bridge the implementation gap and bring behavioural and attitudinal change.

January 2007

Note submitted by the National Audit Office on the Government Carbon Offsetting Fund

1. The purpose of this note is to provide a briefing for the Environmental Audit Committee on the Government Carbon Offsetting Fund ("GCOF"), as requested by the Committee.

2. The GCOF's purpose is to offset greenhouse gas emissions produced by the majority of central government official and ministerial flights. The Fund will invest money in projects in the developing world to reduce greenhouse gas emissions by increasing the use of renewable energy and energy efficiency measures. In total some 33 government departments and agencies are taking part (see appendix B for a complete list of participating departments), with the exception of the Foreign and Commonwealth Office (FCO) which has its own offsetting scheme in place (see paragraph 26 below). At the time of writing DCMS was unsure whether it would sign up to the GCOF.

3. The GCOF is administered by Defra and it will offset emissions by purchasing Certified Emissions Reductions (CERs) via the Fund Manager EEA.

OFFSETTING

4. Greenhouse gas emissions are offset by either reducing emissions or increasing the absorption of greenhouse gases elsewhere in the world. There are a number of possible ways to offset emissions. These include:

— Reforestation—trees are planted to act as carbon "sinks", soaking up carbon dioxide in the air as they grow.

[22] Defra, NAEI, CEH.

— Investment in renewable energy—to use renewable energy sources rather than conventional fossil fuels, thus reducing net emissions.

— Energy conservation—investment in technology to increase energy efficiency, such as better insulation or low energy light bulbs, to decrease energy consumption and thus reduce net emissions.

5. There are a number of ways carbon offsets are supplied and verified. They can be supplied through the unregulated voluntary market or through more established and objective systems of certification such as the Clean Development Mechanism (CDM) operated under the United Nations Framework Convention on Climate Change (UNFCCC).

Unregulated Voluntary Offsetting

6. There are many companies offering offsetting services. On the whole the market is unregulated. Unregulated voluntary offsetting is often done through investment in reforestation projects. This method of offsetting has been criticised as it does not always guarantee a long term reduction in carbon as the carbon stored in the tree will eventually be released back into the atmosphere when the tree dies. Another potential flaw in the unregulated market is that the investments and emissions reductions obtained are not always "additional"—that is, they might have occurred anyway.

7. Defra has recently published a consultation paper on a voluntary code of best practice on offsetting calling for more standardisation and reliability in the offsetting market.

The Clean Development Mechanism

8. Defra's preferred framework for guaranteeing the legitimacy of emissions offsets is the CDM. The CDM is an arrangement under the Kyoto protocol allowing industrialised countries with a greenhouse gas reduction commitment (so-called Annex 1 countries) to invest in emission reduction projects in developing countries. The CDM was originally conceived as a way to facilitate offsetting for official or required carbon reductions such as those under Kyoto (and the EU Energy Trading Scheme). The CDM was not originally seen as a means for voluntary offsetting, but it is has a well established methodology and system of verification which also suits this purpose. In theory, the CDM allows for a reduction of costs for the industrialised countries, while achieving the same amount of emission reductions.

9. An individual's or an organisation's emissions can be offset by purchasing Certified Emissions Reductions (CERs) from projects which have shown they have reduced an equal amount of emissions. A CER is awarded to a project for every tonne of CO2 or equivalent greenhouse gas emissions reduced as a direct result of the project's activities. Each project goes through a process of appraisal including a public consultation, third party validation, and environmental impact assessment. Article 12 of the Kyoto protocol states that these projects must show real, measurable and long term benefits related to the mitigation of climate change and that any reductions in emissions must be additional to any that would occur in the absence of the project activity.

10. Once certified and placed on the UNFCCC register, CERs can be sold on the open market to any party wishing to offset their emissions liability. The price of CERs varies depending on the way they are purchased. In the majority of cases, Emission Reduction Purchase Agreements (ERPAs) are made at the beginning or during an emission reduction project, with CERs to be delivered once the emissions have been reduced. The prices in the agreements for CERs vary depending on which party takes on the risk of failure to deliver the emissions reductions.

THE GOVERNMENT CARBON OFFSETTING FUND

11. The commitment by government to offset all official and ministerial flights was made in the 2005 Sustainable Development Strategy "Securing the Future". The GCOF will offset all air travel by the 33 participating departments and agencies from April 2006 onwards and will cover Defra and the Prime Minister's Office from April 2005. Defra is also offsetting its road and rail emissions through the GCOF. The GCOF has been developed and is administered by Defra. Major decisions are made by an interdepartmental working group with representatives from all of the government departments and agencies involved. The GCOF has chosen to offset government emissions by purchasing CERs through the CDM.

12. The GCOF will offset aviation emissions until April 2009. Over this three year period the government has forecast that the Fund will need to offset up to 305,000 tonnes of carbon dioxide equivalent, costing up to £3.1 million. We have calculated, using conversion rates (between distance travelled and carbon emitted) typical of those used by departments, that this is the amount of emissions which would be released from flying 1.4 billion passenger kilometres, 10 times the distance to the Sun.

13. The GCOF has chosen to buy CERs from projects which have actually achieved their CERs through a broker, thus taking no risk that the project may fail: a broker has options to buy CERs in a large portfolio of projects and can spread the risk of any project failing by offering this wide range of investments.

14. CERs bought through the GCOF will be more expensive than the cheapest CERs available. CERs can be purchased for as little as £2.50 whereas the GCOF is paying £10 per CER. Defra have stated there are three reasons for this:

- the GCOF is restricting the projects it invests in to small scale projects which are in higher demand and are more expensive;
- the GCOF has a three year fixed price guarantee; and
- the GCOF is taking on none of the risk that the projects may fail.

Offsetting projects

15. The GCOF will offset all official and ministerial flights by purchasing and cancelling CERs from small scale renewable energy and energy efficiency projects with additional sustainable development benefits. The CERs will be purchased through a broker who has been given specific criteria describing the types of project the GCOF wishes to invest in.

16. The renewable energy projects will be small scale, and will be solar voltaic, solar thermal, wind, biofuel or hydro projects. The energy efficiency projects will improve energy efficiency in the domestic, public agricultural or industrial sector.

17. The decision by the GCOF to invest in smaller scale projects was in part taken to show that the CDM could be used successfully to provide funding for these types of projects. The majority of CERs on the market come from large scale projects in large rapidly developing countries such as Brazil, India and China, with fewer additional sustainable development benefits. The CDM has been criticised for being hard to enter for small scale projects, due to the volume of bureaucracy required to achieve certification regardless of the size of the project.

18. Projects the GCOF invests in will be required to provide some of the following additional sustainable development benefits:

- Environmental benefits: water quality, air quality, biodiversity, other pollutants.
- Social benefits: poverty alleviation, access to energy/water/essential services, improved quality of life/local environment, education.
- Economic and technology benefits: employment, technology development and transfer, institutional capacity, skills investment.

19. The projects to be supported have not been finalised by the GCOF's interdepartmental working group. The final list will have around ten projects, which will be made public on Defra's website. This is scheduled to happen in April 2007. The GCOF has also chosen to invest in a range of small scale projects in order to spread the risk should any of the projects fail to deliver. The GCOF will have the option to opt out of any project any time.

20. Defra began a tendering process in October 2006 to find a broker who would supply the GCOF with up to 305,000 CERs over three years; fund managers EEA won the contract. EEA have agreements with projects around the world to trade over one million CERs. In their tendering proposal to Defra, EEA supplied a list of 15 possible small scale renewable and energy efficiency projects that are going through the CDM accreditation process. EEA are contracted to supply 255,000 CERs over three years with the possibility of 50,000 extra in order to offset all flights until April 2009, enough to offset 305,000 tonnes of CO_2 emissions.

21. EEA will only be paid for the CERs once the project has been registered by the CDM Executive Board and the appropriate reductions in emissions have actually been made. The emissions covered by the GCOF can be offset by purchasing the relevant amount of CERs at anytime between now and April 2009.

Calculations of emissions

22. Each department is responsible for calculating its own annual air travel emissions. Data were collected for 2005–06 in order to inform the GCOF's initial phases. 2006–07 is the first year aviation emissions will be officially recorded and offset. The figures will be produced by departments in April 2007 with the CDM projects selection being finalised around the same time. As CERs are not released from projects until the emission reduction has actually happened, it does not matter when the CERs are actually purchased and cancelled. The GCOF is expected to take delivery of CERs from April 2007 to April 2009, with the majority of the main 255,000 arriving in 2008 and 2009.

23. When calculating the 2005–06 emissions some departments had a record of distance travelled whereas some only had a record of air travel spend. In both cases a conversion formula was used to calculate total emissions. To calculate the emissions total, departments with an air travel distance record used the conversion factor published in Defra's "Guidelines for Company reporting on Greenhouse Gas Emissions". These factors are currently 0.11 Kg CO_2 emissions (per passenger kilometre for long-haul travel, and 0.15 Kg CO_2 emissions per passenger kilometre for short-haul. For the purposes of the GCOF a multiplier of two was applied to the estimated totals to take into account the additional climate impact of additional non-CO_2 emission at altitude (known as "radiative forcing").

24. To calculate the emissions from departments that only provided a spend figure, a multiplier was established for tonnes of CO_2 emissions per £ spent using the data from departments that provided both spend and distance figures. The average figure for this, from the 11 departments that provided both spend and distance, was 0.69 Kg CO_2e/£. For those departments with just a spend figure, this average was then multiplied by that spend figure to estimate how much CO_2 emissions would result from their annual spend.

25. The results of this analysis indicated that in 2005–06 ministerial and official government flights produced the equivalent of 70,373 tonnes of CO_2 emissions. To offset this 70,373 CERs would be needed. Based on this data it is estimated the GCOF will cost £2.5–£3.2 million over three years, offsetting between 250,000 and 305,000 tonnes of CO_2e. Appendix A shows what the 2005–06 emissions and cost to each participating department would have been.

Other Government Offsetting Schemes

FCO scheme

26. The FCO offsetting scheme was set up in 2006 to offset all aviation emissions generated by air travel of FCO ministers and staff based in the UK in 2004. The scheme has been managed by the Renewable Energy and Efficiency Partnership (REEEP), an international NGO funded by a partnership of governments and NGOs. REEEP was a partnership that grew out of the Johannesburg World Summit on Sustainable Development in 2002, to facilitate financing for sustainable energy projects. FCO, which is one of the REEEP partners, set up its offsetting scheme before the creation of the GCOF so FCO chose to continue its offsetting arrangements with REEEP rather than join the GCOF.

27. The FCO scheme is run along very similar lines to the GCOF, investing in CERs from small scale energy efficiency and renewable energy projects with added sustainable development benefits. CERs have been purchased via carbon broker CO_2e, from a South African wind farm development, run by Eco-Energy (Pty) Ltd.

G8

28. During the UK's Presidency of the G8 in 2005, the government made a commitment to offset all emissions produced during the running of G8 events. All meetings associated with the UK's Presidency, including the G8 Summit, official G8 conferences and associated meetings, were included in a Defra-led carbon offsetting scheme similar to the GCOF. The calculations included the emissions associated with air travel, local transport, hotel accommodation, and meeting venues. The CERs to be purchased come from the Kuyasa low income housing energy upgrade project located in Cape Town, South Africa. The Kuyasa project was the first CDM project to be registered in Africa and the first project to be registered anywhere in the world which satisfied the Gold Standard—criteria for wider sustainability benefits developed by an NGO of the same name.

29. The proposed emissions reductions achieved by Kuyasa project have not yet been achieved and the CERs are yet to be delivered. The funding through the CDM was going to pay for 20–30 per cent of the project, but so far the project has not secured all the additional funding it will need to progress with the implementation phase. Should the Kuyasa project fail to generate the emissions reductions originally anticipated, the G8 emissions will be offset via the GCOF.

DCMS

30. At the time of writing DCMS had not decided whether or not it would join the GCOF. The Department is in the early stages of launching its own "carbon culture" scheme, an initiative which will help cultural events and institutions to account for their emissions.

APPENDIX A

2005–06 DEPARTMENTAL AVIATION EMISSIONS

Department	*Distance flown*[23] *(Km approx)*	*Tonnes of CO_2 emitted*	*Offsetting cost at £10 per CER*
Department for International Development	57,838,195	8,676	£173,515
Ministry of Defence	50,552,890	7,583	£151,659
HMRC	27,701,664	4,155	£83,105
Department for Trade and Industry	22,691,750	3,404	£68,075
Home Office	15,744,513	2,362	£47,234
Department of Work and Pensions	13,310,036	1,997	£39,930
Treasury	11,080,666	1,662	£33,242
Department for Environment Food and Rural Affairs	9,000,000	1,350	£27,000
Department of Health	6,365,027	955	£19,095
Cabinet Office	5,453,208	818	£16,360
Department for Transport	3,463,749	520	£10,391
Office of the Deputy Prime Minister	2,264,888	340	£6,795
Law Officers Department CPS	1,522,730	228	£4,568
Office of National Statistics	1,269,660	190	£3,809
DCMS	1,007,819	151	£3,023
Department for Education and Skills	986,626	148	£2,960
Department for Constitutional Affairs	928,738	139	£2,785
Law Officers Department SFO	888,122	133	£2,664
ECGD	855,333	128	£2,566
Office of Government Commerce	738,711	111	£2,216
CEFAS	530,949	80	£1,593
LSLO	201,160	30	£603
GAD	152,359	23	£457
Debt Management Office	27,702	4	£83
Total	234,576,190	35,186	£703,729

Source: Defra

Note: not all participating departments and agencies are included in this table as it was drawn up before all parties had signed up to the GCOF.

APPENDIX B

PARTICIPATING DEPARTMENT AND AGENCIES

Discussions are under way to incorporate a further possible eight members.

CO		(Cabinet Office—includes executive agencies)
	Including	
	No 10	(Prime Minister's office)
DCA		(Dept for Constitutional Affairs)
DCLG		(Dept for Communities and Local Government)
Defra		(Dept for Environment Food and Rural Affairs)
	Including	
	CEFAS	(Centre for Environment, Fisheries and Aquaculture Science)
DfES		(Dept for Education and Skills)
DfID		(Dept for International Development)
DfT		(Dept for Transport)
DH		(Dept of Health)
DMO		(Debt Management Office)
DPM		(Deputy Prime Minister's office)
DTI		(Dept for Trade and Industry
DWP		(Dept for Work and Pensions)
ECGD		(Export Credits Guarantee Department)
GAD		(Government Actuary's Department)
HMRC		(Her Majesty's Revenue and Customs)
HMT		(Her Majesty's Treasury)

[23] Short Haul equivalent—as not all departments gave distance figures the distance has been worked out by applying the other departments average spend to distance ratio to work out the short haul equivalent.

HO		(Home Office)
	Including	
	CRB	(Criminal Records Bureau)
	FSS	(Forensic Science Service)
	PS	(Prison Service)
	UKPS	(UK Passport Service)
LOD		(Law Officer's Department)
	Including	
	CPS	(Crown Prosecution Service)
	LSLO	(Legal Secretariat to the Law Officers)
	SFO	(Serious Fraud Office)
Met		(Metropolitan Police)
MoD		(Ministry of Defence)
OGC		(Office of Government Commerce)
ONS		(Office for National Statistics)
Parl		(Parliament)
TRS		(The Rent Service)

Source: Defra

March 2007

Memorandum submitted by The National Consumer Council (NCC)

Sustainability and consumer protection are two of NCC's key objectives. In the past, NCC has worked with Government on the issue of regulating green claims and last year we published jointly with the Sustainable Development Commission (SDC) the Sustainable Consumption Roundtable report entitled I Will if You Will.

NCC is currently following up a number of the recommendations made in this report. Our research has shown that many consumers are willing to lead their lives in a more sustainable manner. Some are even prepared to pay a premium for goods and services in order to do this. However, it is difficult for them to make complex decisions involving the weighing up of detailed scientific information. For this reason, consumers are particularly susceptible to "greenwash" on the part of providers of goods and services. It is therefore particularly important that information provided to consumers is honest, truthful, transparent and verifiable.

These principles extend to the growing market in carbon offsets. Consumers are not in a position to verify the carbon reductions an individual project produces. This is even more difficult if the project is situated overseas. Therefore they are dependent on reliable information if they are to purchase offsets themselves. As well as information on the reliability of any projects used to offset carbon emissions, it is also important that consumers should have information about their total carbon footprint and ways in which they can reduce this. Offsetting should only be seen as a last resort.

Even if it is mainly commercial companies that are purchasing large quantities of carbon offsets at present, they are doing this as part of their Corporate Social Responsibility activity which in turn will feed through to the claims they make for the commercial offerings they make to domestic consumers. Therefore the whole market is relevant to consumers.

Consumers require transparent information about how many carbon emissions are being offset, and the value that is being placed on each of these. Consumers also require transparent information on any charges or commissions that are being made as part of the offset. As a guarantee that the emissions reductions are robust and not being counted twice, consumers require them to be backed by certificates.

For these reasons, NCC will be responding to the consultation process recently launched by Defra. During the next weeks we will therefore be developing our views further on the important questions you are posing in your Inquiry.

January 2007

Memorandum submitted by Rajan Pandhare

1. Reasons of Acceptance of VERs (Voluntary Emission Reductions)

— In the developing world, VERs help small, programmatic Green House Gas (GHG) reduction activities at micro level, (with each activity ensuring a small GHG reduction) such as:

(i) Adoption of solar lighting, heating, pumping devices and other related devices.

(ii) Small Bio-mass gassifiers, micro hydro projects, bio-fuel based DG sets.

(iii) Small methane prevention projects (animal husbandry in rural areas, dairy).

In a normal CDM project development scenario, the complexity of project development, long lead time for approval, and costs will deter project participants from undertaking these projects. All such projects not only deliver on the social impact but also play a role in reduction of GHG.

— VERs generated from plantation activities is crucial but difficult to justify using CDM methodologies. Plantation (afforestation, reforestation and prevention of de-forestation) can form a very important part of global GHG reduction and environmental improvement strategies.

— Adoption of New Products Technologies for which a rigorous methodology development under CDM may be difficult (due to verification and monitoring problems), may be supported by the concept of VER (ex: adoption of micro-turbines, adoption of efficient lighting systems and controls for urban areas).

— Business needs "high certainty (reduced risks) of economic gains" to make investment decisions. However current CDM processes make the registration of a project highly "uncertain"—even for approved methodologies, and even if similar projects are approved before, the chances that a particular project may be rejected are high!. This actually leads to a perverse situation: a business decides to make the investment only when the project is viable without CDM benefits and treat CDM benefits as a "bonus". But this ensures that most CDM projects proposed for registration are not truly "additional"—which is contrary to the objectives of CDM. VER processes however reduce this uncertainty, because of higher tolerance level and less complex processes. VER's therefore may truly support "additional" projects.

— The perceived risk of VER projects is that, although they may be supporting environmentally positive areas but may not be truly additional (may support activities which may be financially viable or may have no technological barrier, or "may" have leakages not so clear to observers in the beginning). However from system perspective, over long term, VER transactions will result in ultimate reduction of GHG emission's and will be environmentally and socially positive (because of VER's focus on the latter).

— Sometimes VER's from renewable energy projects, say, are financially not additional (have attractive returns). This may be true for some hydro power projects or wind power projects. However general market acceptance of VERs from such projects will make it easier for project developers to forecast the VER benefits from such projects and factor in a price. The normal effect of some projects sneaking in without genuine additionality would be higher availability of VER's or reduced prices for VER v/s CERs. This should be acceptable because it encourages genuine investment interest based on ERs, and makes project implementation faster. Renewable Energy Certificates in US is a similar scheme- it uniformly rewards all renewable energy projects irrespective of their additionality.

— The other environmental and social factors related to a project will help the VER sale to customers—VER's without great impact on these dimensions may not find any takers or will be priced low. This is different from a strict compliance oriented scheme of CDM where large sums of money are earned by HFC-23 kind of projects, without any social impact.

In summary, I strongly propose that there be some VER standards for project qualification, measurement, verification and registration. A standard and bouquet of methodologies which evolves (like Linux) may be a good idea to make VER's acceptable. However the complex assessment of additionality and baseline choices should be simplified.

VERs will have a much more of a bigger impact globally then CERs on their own. VERs not only drives GHG reduction but equally enhance on social impact. This dual benefit should not be ignored by the government as it conducts this inquiry. Government support is crucial for VERs- it will help make VER's legitimate in the eyes of the world. Since VER's are important, government should legitimatize VER buying by being a buyer itself.

2. My Background

I am a senior member of President Clinton's HIV/AIDS Initiative (ex Dy Chief Operating Officer, Country Director of India and Cambodia) for the last three years. Prior to this I used to run software companies. I am also a board member of CARE International UK and The Children's Investment Fund Foundation, a leading financial donor for children related programs (healthcare, education, water and

sanitation) across Africa and India. I am also a board member of VERpool Limited which is engaged in using the financial benefits of VERs to support high impact and sustainable social programs across the world.

December 2006

Memorandum submitted by Royal & SunAlliance UK

Description of Royal & SunAlliance Insurance Group Plc and Royal & SunAlliance UK

1. Royal & SunAlliance is one of the world's leading multinational quoted insurance groups, writing business in 130 countries and with major operations in the UK, Scandinavia, Canada, Ireland, the Middle East and Latin America. Focusing on general insurance, it has around 24,000 employees and, in 2005, its net written premiums were £5.4bn. With an almost 300-year heritage. We are the oldest insurance company in the world still trading under its original name.

2. Within the UK, Royal & SunAlliance is the second largest commercial lines insurer, covering the insurance and risk management needs of a significant number of FTSE 100 companies. We are also one of the UK's top three personal motor and household insurers. Royal & SunAlliance won General Insurer of the Year, Claims Initiative of the Year and International Initiative of the Year at the 2006 British Insurance Awards.

Royal & SunAlliance UK and the Voluntary Carbon Offset Market

3. The purchase of voluntary carbon offsets by Royal & SunAlliance is part of a long term programme to manage our environmental impacts as part of our broader corporate responsibility programme. We have tracked and publicly reported on our carbon footprint since 1999 and set improvement targets since 2000.

4. We first purchased offsets for some internal business flights in 2001. In 2006, following measurement and reduction of our carbon footprint for five years, we purchased over 30,000 tonnes of voluntary carbon offsets to become the first UK insurer to achieve carbon neutrality.

Royal & SunAlliance Response to Inquiry Issues

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

5. There are a number of potentially confusing designations and schemes for carbon offsetting currently in operation. It proved challenging for us to identify and critically evaluate the different types of offset that are available and who provided them.

6. We chose to work with the Carbon Neutral Company because they had already developed their own proprietary standard for carbon neutrality and were therefore able to answer many of the standard challenges that we as a company would put to any supplier. We wanted robust criteria to be met, in which any provider could demonstrate the following:

- A documented process for procurement of the offset
- A transparent evaluation of factors such as additionality and environmental impacts
- The involvement of an independent third party making assessment of the operations (in a manner analogous to financial due diligence protocols).

7. Our experience in purchasing offsets has demonstrated the importance of having a proper, comparable evaluation of factors such as additionality as well as third party assessments. We would look for any scheme (whether mandatory or voluntary) to be able to provide such assurance.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

8. Offsetting should be considered just one of the tools available to individuals and businesses to help them reduce their carbon footprint. Education on the most effective ways of minimising carbon impacts should be the priority, as a means of encouraging more responsible behaviour. Where there are no viable opportunities for impact reduction, we consider offsetting to be a positive action.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

9. Many of the problems and challenges we faced on matters such as selection of offset types and protocols have been related to transparency, ie being able to show what was happening and why. For example, we chose not to include forestry based offsets in our purchased portfolio, not necessarily because we do not feel they are valid (indeed anecdotally it appears that some employees make the link between tree planting and carbon reduction more easily than for technology approaches) but rather because we did not want to get involved in debates about permanence and quantification. The technology based offsets we chose also reflected our business interest in areas like renewable energy insurance. Government actions which develop the understanding of offsetting and promote the transparency of different offsets (through voluntary or mandatory means) should help the market develop appropriately.

10. In terms of available guidance we have found the recent Carbon Trust document on developing a robust offsetting strategy to be very useful. We have also drawn on advice and guidance provided by external parties such as Forum for the Future and the Green Alliance

11. There needs to be a broad basic knowledge in place to facilitate intelligent discussion on the pros and cons of offsetting. This is an area in which we think the Government can play a key role, providing information on the subject, building on useful material that is already available from organisations such as the Carbon Trust

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

12. It is still too early for us to be able to assess whether we have achieved behaviour change in our workforce or customers. As mentioned above, we feel that in going carbon neutral and acquiring offsets (over and above reducing our footprint) we are helping to inform our employees on our environmental impact. We see this as part of an ongoing environmental programme within the company, and in meeting the growing concerns of our customers about the challenges of climate change.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

13. Schemes and projects clearly have the potential to have social or economic impacts which in some cases may be unintended. One of the factors in our selection of offset provider and offset projects was that there had been proper initial assessment of wider impacts (including environmental) beyond carbon reduction and that projects could also realise local social and/or economic benefits. In our view this reinforces the need for any scheme to incorporate a documented assessment of sustainability impacts and the involvement of third party assurance.

I hope that the Committee finds this contribution useful. If you would like further information, please do not hesitate to contact me on the number of email below. There are also details of our corporate responsibility actions on the 'About Us' section of our website at www.royalsun.com

January 2007

Memorandum submitted by Treeflights.com.

At Treeflights.com we provide a carbon offset treeplanting service for individual airline passengers. We are the first company in the world to specifically plant trees to absorb the CO_2 released by air travel. My personal area of expertise is in the planting of deciduous trees in Wales in which I have 30 years experience.

I believe that treeplanting can play a critical role in addressing the problem of climate change.

As you know the first ever carbon offsets were provided by treeplanting. In recent times most offset groups have veered away from tree-based (bio-sequestration) towards emission reduction offsets. Two primary reasons for this are that (1) Early treeplanting projects ran into a number of well documented problems and (2) Carbon absorption by trees is impossible to accurately quantify.

At Treeflights.com we have designed our service to address the problems surrounding offset treeplanting with a view to providing a transparent, ethically valid and substantive, secure offset.

To give you some outline idea of how we do this.

The land on which we plant is being given over, in perpetuity, to a charitable trust. Every tree we plant is individually tagged and grid-referenced for verification purposes. We demonstrate clear additionality of planting. We plant mixed deciduous (local provenance) woodland of 8 species. We have a well-developed management plan for our forests using only trees that ultimately may be harvested for timber, thereby locking up CO_2 for the long-term. We specifically warn our customers that their flight will not be "carbon-neutral".

1. My main concern is that in view of the ethical shortcomings of some early (and current) tree-based offset schemes and the difficulties inherent in measuring the amounts of carbon that trees will absorb, the EAC will take a view that carbon-offset treeplanting is not something that should be encouraged.

2. At a time when we have too much CO2 in our atmosphere, we need to remember that trees have evolved over billions of years to be incredibly efficient at withdrawing carbon from the air. It could be a fateful mistake for us not to take advantage of the tremendously powerful absorptive capabilities of trees in this regard, purely because they do not do this in an accurately quantifiable manner.

3. There is in fact a precedent for the large-scale removal of carbon from the atmosphere by trees. All the carbon that we are busily pumping into the air by the use of fossil fuels was originally fixed by trees in the distant past. Whilst there are many arguments against offset treeplanting lets not forget this simple fact:

4. Trees absorb CO_2 from the atmosphere. Let us take advantage of this.

January 2007

Memorandum submitted by the World Development Movement

Introduction to WDM

1. The World Development Movement (WDM) campaigns to tackle the root causes of poverty. With our partners around the world, we win positive change for the world's poorest people. We believe that charity is not enough. We lobby governments and companies to change policies that keep people poor. WDM is a democratic membership organisation of individuals and local groups.

2. Climate change is a justice issue. It has overwhelmingly been caused by the richest countries and people in the world, yet it is the poorest who will suffer soonest and most from its effects. WDM thanks the Environmental Audit Committee (EAC) for initiating this inquiry on voluntary carbon offsetting and for the opportunity to submit written evidence. Below we set out the context in which voluntary carbon offsetting has to be set, and then address four of the Committee's specific questions.

Carbon Offsetting: An Excuse for no Action

3. Voluntary carbon offsetting has to be placed within the wider context of the action needed in order to limit climate change. The UK government and European Union currently aim to prevent the increase in average global temperatures from being higher than 2°C on pre-industrial levels.[24]

4. The Stern Review on climate change in October 2006 stated that to have a 50% chance of not exceeding a 2°C increase requires greenhouse gas concentrations to stabilise at 450 ppmCO_2eq. This in turn requires global emissions to be cut by 70% by 2050, and 75% by 2100.[25]

5. The global responsibility for greenhouse gas emissions is highly unequal. In terms of CO_2, the main focus of offsetting, the average worldwide emissions are 4.24 tonnes per person. The UK emits 9.62 tonnes of CO_2 per person, China emits 3.62 and India 1.04 tonnes of CO_2 per person.

6. The only way the global challenge to cut greenhouse gas emissions by 70% by 2050 will happen is if:

- Rich countries, including the UK, make radical cuts in emissions. The UK needs to cut emissions by at least 85–90% by 2050.
- Large scale-funds are made available from rich countries to enable developing countries to have adequate energy resources to tackle poverty, without rapidly increasing greenhouse gas emissions.
- New technologies are developed. When technologies are developed in rich countries which are suitable for developing countries, they need to be easily transferred.

7. Schemes to offset emissions do not form part of this strategy. Offsetting potentially makes funds available in developing countries to assist in reducing emissions, although there is a growing list of examples where this is not the case (see paragraphs 37–52). But at the same time it provides an excuse for rich country governments, companies and individuals not to reduce their own emissions. Funds have to be made available for low carbon development in poor countries. But they have to be made available in addition to emission cuts in rich countries, not instead of emission cuts in rich countries.

8. In theory, voluntary offsetting could be undertaken in addition to cutting emissions. A public body or company could be on track for making emission cuts in line with a national cut of 90% by 2050, and choose to offset their remaining emissions whilst doing so. However, the reality of offsetting is that it is used as an excuse to continue emitting. Below we list some examples of how offsetting is publicised by companies, offsetting companies and government. These examples are not given to highlight particularly bad examples, but to emphasis how offsetting will inevitably be used.

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[24] HM Government. (2006). *Climate change: The UK programme 2006.* March 2006.
[25] Stern Review. (2006). *Stern Review Executive Summary.* Hm Treasury. London. October 2006.

9. HSBC states on its website that, "In December 2004, HSBC made a commitment to become the world's first major bank to achieve carbon neutrality by 2006. We achieved carbon neutrality in September 2005 through our carbon neutral pilot project."[26] HSBC's claim to "Carbon Neutrality" is due to offsetting their emissions for the last three months of 2005—170,000 tonnes of CO_2.[27] A closer look within HSBC's website shows that HSBC's CO_2 emissions actually rose from 585,000 tonnes of CO_2 in 2004 to 663,000 tonnes of CO_2 in 2005.[28]

10. In September 2006, Barclay's launched a scheme with Climate Care to promote offsetting to Barclay's customers travelling abroad. Barclay's claimed: "Carbon neutral flights really need not cost the earth. Offsetting a flight to New York costs around £12. It's so easy and cheap for everyone to get involved, that it could really take off."[29] Whilst encouraging their customers to offset CO_2 emissions, the latest figures for Barclay's CO_2 emissions show a rise from 200,145 tonnes in 2004 to 207,650 in 2005.[30]

11. BSkyB claims in its 2005 Corporate Social Responsibility report that carbon emissions are "0% . . . after carbon offsetting".[31] BSkyB further says, "In May 2006, Sky became the world's first major media company to go carbon neutral, through measurement, reduction and offsetting our carbon dioxide emissions."[32] BSkyB reports that its emissions have been cut from 36,491 tonnes of CO_2 in 2003–04 to 29,056 in 2005–06. This has been due primarily to a one-off switch to using renewable electricity.[33] Other Sky figures suggest further cuts will be difficult to achieve on current policies. Energy consumption has increased from 93 million kWh in 2003–04 to 119 million kWh in 2005–06, and CO_2 emissions from transport have increased from 6,789 tonnes in 2003–04 to 16,157 tonnes in 2005–06.[34]

12. In the same way, carbon offsetting companies market their products through the use of words such as "neutralise", "balance" and "cancel-out". Climate Care states: "Offsetting means paying someone to reduce CO_2 in the atmosphere by the same amount that your activities add. In this way you can "neutralise" or "balance" the CO_2 added by your activities."[35]

13. Carbon Clear says: "Carbon Clear gives you a convenient way to cancel out the pollution impact of your driving, your flying, home energy use, even your baby's nappies! We help you work out the amount of carbon dioxide you emit, then we identify projects that prevent the same amount of carbon dioxide from entering the atmosphere."[36]

14. Lastminute.com advertises offsetting alongside selling its flights and holidays. It says: "Offsetting lets you repair the damage done by your emissions by funding projects that reduce CO_2."[37] [Lastminute.com's emphasis]

15. Government ministers and departments also use offsetting as a means to show they are doing something to tackle the emissions from central government. Hilary Benn, Secretary of State for International Development, has said, "DFID is committed to the new sustainable operations targets which includes a commitment for a carbon neutral central Government office estate by 2012. All Government air travel has been captured under the Government Carbon Offsetting Scheme since April 2006."[38] DFID do not include targets for reducing emissions in their sustainable development action plan.[39]

16. In a response to a parliamentary question asking what measures the Foreign and Commonwealth Office are taking to reduce carbon emissions, on air travel, Geoff Hoon's response was; "the FCO is offsetting the carbon dioxide and other emissions generated by the air travel of Ministers and officials based in the UK starting with our 2004 emissions—one year ahead of the requirement of Government Departments to offset air travel by April 2006."[40] No mention is made of action to limit emissions from air travel.

17. The act of publicising offsetting itself shows that offsetting is being used as an excuse not to cut actual emissions. If an organisation were making large-scale emissions cuts, and offsetting the remaining emissions, it is the emissions cuts they would publicise, not the offsetting.

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[26] http://www.hsbc.com/hsbc/csr/environment/hsbc-and-climate-change?WT.ac=HGHQ_csr_002 (Downloaded 16/01/07).
[27] http://www.hsbc.com/hsbc/csr/environment/hsbc-and-climate-change/carbon-neutrality (Downloaded 16/01/07).
[28] http://www.hsbc.com/hsbc/csr/environment/environmental-performance (Downloaded on 16/01/07).
[29] http://www.newsroom.barclays.co.uk/Content/Detail.asp?ReleaseID=791&NewsAreaID=2 (Downloaded on 17/01/07).
[30] http://www.barclays.com/corporateresponsibility/doclib/0696-080849-data_tables.pdf (Downloaded on 17/01/07).
[31] http://ccbn.mobular.net/ccbn/7/1930/2119/index.html (Downloaded on 22/01/07).
[32] http://ccbn.mobular.net/ccbn/7/1930/2119/index.html (Downloaded on 22/01/07).
[33] The actual carbon emission reduction gained from switching to a renewable energy supplier is another debatable matter.
[34] http://ccbn.mobular.net/ccbn/7/1930/2119/index.html (Downloaded 22/01/07).
[35] http://www.climatecare.org/about_us/index.cfm?content_id=E168562F-D41F-11ED-A9B906252A24E9C1 (Downloaded 16/01/07).
[36] http://www.carbon-clear.com/ (Downloaded 16/01/07)
[37] http://www.lastminute.com/site/travel/climatewise/ (Downloaded 16/01/07)
[38] Benn, H (2006). Parliamentary question: Departmental Energy Policy 105752. Hansard Column 746W. 11/12/06.
[39] DFID. (2005). *Sustainable development action plan.* Department for International Development. London. December 2005. p 20.
[40] Hoon, G (2006). Parliamentary Question: Department Emissions 81059. Hansard Column 490-91 W. 19/07/06.

18. Vast numbers of the world's population cannot be considered as contributing to dangerous climate change. A 70% cut in greenhouse gas emissions means cutting worldwide CO_2 emissions from 4.24 tonnes per person to 1.27 tonnes per person, on today's population levels. 73 countries, containing 2.5 billion people, currently emit less than 1.27 tonnes of CO_2 per person. It is nonsensical to suggest that climate change can be tackled by cutting emissions from poor people, whilst allowing activities of the rich, such as flying, to continue unabated. Yet this is the basis on which offsetting projects in developing countries are supposed to work.

19. Below we consider four of the specific questions of the EAC's inquiry.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

20. No. As outlined above, offsetting should not be used in order to provide an excuse to making emissions cuts. Making offsetting mandatory would legitimise the emissions of carbon intensive industries, when real action is needed to reduce the emissions of such industries.

21. To take the example of flying, the Tyndall Centre for Climate Change predicts that unless government policy changes, UK CO_2 emissions from aviation will increase from 39.2 $MtCO_2$ in 2004 to 62.8 $MtCO_2$ by 2020 and 117.2 $MtCO_2$ by 2050.[41] If the UK were to cut CO_2 emissions by 85% by 2050, but allow aviation to continue this growth, this would mean aviation accounting for 20% of the UK's CO_2 emissions in 2020 and 135% by 2050.[42]

22. It will be impossible for the UK to make the 85–90% cuts in emissions required by 2050 if aviation is allowed to continue growing. The key policy responses to the aviation sector are for the government to reverse plans for airport expansion and to implement proper environmental taxes on aviation to halt the growth in aviation emissions. If offsetting is used as an excuse not to halt the growth in aviation emissions, then the UK will fail to meet its targets for reducing emissions.

23. It would make more sense to halt UK airport expansion until or unless the technology is developed to radically reduce greenhouse gas emissions from aviation, rather than ploughing ahead with expansion and simply hope that such technology will emerge.

24. Furthermore, the scale of offsetting which would be required to cover aviation emissions alone is huge:

- If the UK's current aviation emissions were to be offset, it would be the equivalent of stopping all emissions from Bangladesh.[43] Bangladesh contains 139.2 million people.
- To offset the UK's aviation emissions in 2020 would be the equivalent of stopping all current emissions from Vietnam.[44] Vietnam contains 83.1 million people.
- To offset the UK's aviation emissions in 2050 would be the equivalent of stopping all current emissions from Pakistan.[45] Pakistan contains 154.8 million people.

25. If offsetting were made mandatory, there would be a massive increase in demand for offsetting projects. It is likely that such an expansion in demand would lower the quality of offset projects, both in terms of the actual carbon emissions reduction achieved, and the negative impacts on communities in developing countries of certain offsetting projects [see paragraphs 37–52].

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

26. Assuming that voluntary carbon offsetting will continue, there should be a compulsory accreditation scheme for all projects. Individuals, companies and public bodies using an offsetting scheme need to know that the offsetting projects they contribute to are making real reductions in emissions, without negative effects on local communities. The only way this certainty can be provided is if an independent body accredits all schemes.

27. Any project which fails to be accredited should not be allowed to be marketed as an offsetting project. An accreditation scheme would need to ensure that offsetting companies can only market projects which:

- Make cuts in emissions of at least the level specified, at the same point in time as the emissions the project is in theory offsetting.
- Can be proved to deliver all the accredited emissions cuts in addition to what would have otherwise happened.

[41] Data from Bows, A (2006). Produced in Cairns, S and Newson, C (2006). *Predict and decide: Aviation, climate change and UK policy.* Environmental Change Institute. University of Oxford.

[42] Calculated by WDM based on global CO_2 cuts of 70% by 2050 and UK CO_2 cuts of 85% by 2050.

[43] UK aviation emissions = 39.2 $MtCO_2$. Bangladesh current total emissions = 37.9 $MtCO_2$, at a rate of 0.27 tonnes per person.

[44] UK aviation emissions in 2020 = 62.8 $MtCO_2$. Vietnam current total emissions = 57.5 $MtCO_2$, at a rate of 0.70 tonnes per person.

[45] UK aviation emissions in 2050 = 117.2 $MtCO_2$. Pakistan current total emissions = 106.3 $MtCO_2$, at a rate of 0.67 tonnes per person.

— Meet a set of environmental, social and economic sustainability criteria, including having gained the prior informed consent of all involved and affected communities.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

28. There are serious flaws associated with afforestation and reforestation projects which mean they should not be counted as offsetting projects.

29. Afforestation and reforestation do not provide net cuts in emissions at the same point in time as the activity being offset. Converting land to forest only has a net effect on taking carbon out of the atmosphere over the time in which it takes the forested area to grow.

30. Once an area has been afforested or reforested, it has to remain so forever to keep the original CO_2 saving. No guarantee can be given that this will happen. Local political decisions may be taken to change land usage, the forested area could burn and not be replaced, or increased temperatures from climate change could lead to the disappearance of forests. Afforestation and reforestation can never guarantee particular emissions savings.

31. There may be other affects on the carbon cycle from humans making changes to land use by afforestation or reforestation. In Ecuador, one study has found that afforestation plantations caused soil quality to deteriorate, releasing carbon trapped in the soil. The net impact of these plantations may well have been to increase the concentration of CO_2 in the atmosphere.[46]

32. One recent scientific study found that outside a thin-band around the equator, forests trap more heat from the sun than they help to get rid of by removing CO_2 from the atmosphere, and thus are no use as an offset.[47]

33. For all of the above reasons, afforestation and reforestation should not be counted as offsetting projects.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

34. For the past 35 years, WDM has been highlighting how "aid" money from Western governments and companies can have a detrimental impact on poor people around the world. There is no reason to assume that the carbon offsetting market should be any different. The marketing basis for offset products is their environmental impact, so it is natural for consumers to assume that offset projects are also socially responsible. Yet offsets are sold by private companies which are normally unaccountable to the communities in which they seek to implement offsetting projects.

35. The economic, social and environmental interests of a community have to be fully reflected in decisions on how to undertake an offsetting project. Offsets on sale in Britain have to be regulated to ensure that projects have gained the consent of communities in which they are working, and environmental safeguards exist.

36. We are sure the EAC has been made aware of the negative effects of many offsetting projects. Below we list some examples.

Guatemala[48]

37. In 1989 the first forestry project funded explicitly for offsetting began in the Western Highlands of Guatemala. The project was run by CARE with the United States Agency for International Development (USAID) and the Guatemalan Directorate General of Forests to offset an 183MW coal-fired power station in Connecticut. The intention of the project was to establish 12,000ha community woodlots, 60,000ha agroforestry, and 2,880km live fences protecting vulnerable slopes in local watersheds.

38. An external evaluation has shown the project has fallen far short of the one million tonnes of carbon it was supposed to offset.[49] Problems have included:

— The transfer of previously communal forest into municipal authorities' control, leading to: conflict between authorities and individual landowners; the criminalisation of subsistence activities such as firewood gathering; and increasing distrust of government forest offices.

— Promotion of inappropriate tree species for the given climate and degraded land areas used.

[46] Vidal, V (1999). *La Aplicacion de Politicas sobre Cambio Climatico en el Sector Forestal del Ecuador.* Autonomous University of Barcelona. October 1999.

[47] Jha, A (2006). Planting trees to save planet is pointless, say ecologists. *The Guardian.* London. 15/12/06.

[48] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

[49] Brown, S (1999). *Carbon sequestration final evaluation: Final report to CARE Guatemala for PNO3 Agroforestry Project.* Winrock International. Arlington.

— Damage by animals and sabotage limited the expansion of reforested areas.

— Needing to channel more resources into complex ways of monitoring the carbon uptake of the project, rather than improving people's lives, as CARE had a reputation for doing previously.

— A shift of reforestation work from assisting local farmers to working with larger farmers better able to help comply with sequestration commitments.

Ecuador[50]

39. Forest Absorbing Carbon Dioxide Emissions (FACE) was established by the Board of Management of the Dutch Electricity Generating Companies in 1990 to offset a 600MW coal-fired power station in The Netherlands. FACE intended to establish 150,000ha tree plantations in developing countries. Since 2000, FACE has been selling carbon credits through Business for Climate and Triodos Climate Clearing House.

40. Programme for Forestation (PROFAFOR) in Ecuador is FACE's largest project, set up in 1993 to plant 75,000ha trees. This was later revised to 25,000ha, which has still to be achieved. Some of the problems with the project are listed here.

— The sites used are paramo, high altitude plains without woodlands. The monoculture trees used by PROFAFOR have not been suited to this environment. The plantations have used large amounts of water, threatening the local water supply and carbon storage capacity.

— One study has found that soils are releasing more carbon and trees absorbing less than the firm accounts for. The effect of the plantations on carbon trapped in the soil means that the carbon balance of the project may well be negative.[51]

— Communities were promised income and employment from the project, with materials and support provided. In reality, the cost of materials and support were deducted from earnings, leaving only half the initial level of income promised. Communities were also charged for the cost of new seedlings to replace those that did not survive their original planting.

— Communities are obliged to maintain the trees for 20–30 years before harvest in order to meet sequestering targets, yet the income they receive does not cover this period, and there is no support for selling the timber.

— The land was previously communal land, assumed by PROFAFOR to be unused or degraded. However, some land had previously been used for family livestock. Where this was the case, the family has had to rent other land or reduce the size of their herds.

Uganda[52]

41. A forestry project was set-up in Bukaleba in 1995 in a Ugandan government forest reserve by Tree Farms, a Norwegian forestry company, with grant aid from the Norwegian Agency for Development Cooperation (NORAD) to offset emissions from new gas-fired power stations to be built in Norway. The land was gained for Tree Farms on a low cost lease from the Ugandan government.

42. Some of the problems are listed here.

— Local people lost access to land which they had in practice been farmed, even though it was official a government reserve. Yet once the plantation began, most jobs were not done by local people. In 2000, only 20 locals were working on the plantation.

— Tree Farms allowed local people to farm between rows in the plantation, until the trees were too big for this to be possible. Most of the work on the plantation, such as weeding, was effectively done by locals without pay. Local farmers were also obliged to pay up to 40% of crops to Tree Farms.

— The offsetting targets were wildly optimistic. Farmers evicted from the land caused emissions elsewhere, particularly where they had to clear new land to farm.

Costa Rica[53]

43. The Costa Rican government Environmental Service Programme pays landowners to establish plantations, and gets carbon rights in exchange. The Environmental Service Programme then sells these rights on the global carbon market.

44. Some of the problems are listed here.

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[50] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

[51] Vidal, V (1999). *La Aplicacion de Politicas sobre Cambio Climatico en el Sector Forestal del Ecuador.* Auttonomous University of Barcelona. October 1999.

[52] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

[53] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

— Monoculture plantations receive 20% of payments under the Environmental Service Programme. These monoculture plantations have had negative impacts on the soil, water and biodiversity that the programme is meant to protect.

— It is impossible to tell from data on the whole country how much carbon storage has increased in Costa Rica since the 1990s. Before and after studies are too expensive.

— Uncontrollable fires have occurred in new areas containing monoculture plantations. In 1998 over 200,000ha burnt in the humid tropical zone where fires had never been reported before. As soon as a plantation burns, its effect on taking carbon out of the atmosphere is zero.

45. As a result of the problems of offsetting through tree plantations in Costa Rica, the government plans to invest more in non-forestry schemes such as renewable energy. However, companies such as US based Rainforest Credits Foundation are eager to set up new schemes, often without much consultation with the government.

Sri Lanka[54]

46. A rural solar electrification programme was set up in 1997 to offset emissions in the US state of Oregon by preventing emissions from kerosene lamps used in houses without electricity.

47. Problems have included:

— The project targeted disadvantaged workers, primarily minority Tamils, in the tea plantation sector. Tea plantation owners supported the project, as they hoped it would boost the productivity of their workers. Workers had to use loans, taking five years to repay, to gain access to the solar power systems. They were then required to work extra days to meet the repayments on such loans.

— The solar panels produced insufficient energy to power lamps, so kerosene use was only reduced by around 50%, not replaced. Solar energy was only available for six to nine months of the year in some areas due to monsoons.

— Gaining electricity for the first time meant energy use increased through other activities, such as watching television, and so did not replace kerosene.

48. It can be expected that many offsetting projects which provide local electricity generating capacity to poor communities will not reduce emissions. Where electricity is provided for the first time, it is likely to increase energy use, and so fail to provide cuts in carbon emissions. Providing renewable energy to poor communities can of course be a valuable action in and of itself, and it helps a low-carbon development process. But proving that CO_2 emissions will fall as a result is more difficult.

Durban, South Africa[55]

49. A project has been developed in Durban to extract methane from the Bisasar Road landfill site to use for electricity generation. The electricity generated will replace electricity otherwise generate from coal, and so lower CO_2 production as methane produces less CO_2 per unit of energy than coal.

50. However, local campaigners have been calling for the landfill site to be shut down as it exposes local people to cancer-causing pollution, and infringes their right to clean air. Concentrations of cadmium, lead, hydrogen chloride, formaldehyde, benzene and trichloroethylene are all high. However, the offsetting project has provided finance to enable the landfill site to keep operating.

Guguletu, South Africa[56]

51. The British company Climate Care began a project in 2005 to replace incandescent bulbs with energy-efficient ones, where locals would have otherwise been unable to afford to switch.

52. The South African power generator Eskom recently distributed five million energy-efficient bulbs to low-income households, negating the claim that without the project such households would not have received energy-efficient bulbs.

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[54] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

[55] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

[56] Lohmann, L (2006). *Carbon trading: A critical conversation on climate change, privatisation and power.* Development Dialogue No 38. Dag Hammarskjöld Centre. September 2006.

Memorandum submitted by WWF-UK

Introduction

A carbon offset negates the release of an amount of CO_2e (carbon dioxide equivalent) by avoiding the release of, or removing from the atmosphere the same amount of CO_2e somewhere else. In the past few years the interest in this market has grown enormously.

Offsetting in itself, however, is not a long term solution to climate change and is rapidly becoming a distraction from the actions that need to be taken by Government, business and individuals to put the UK on a low carbon trajectory. The priority should be firmly placed on decarbonising our own economy first and foremost—not continuing along a business as usual path whilst exporting our emissions reductions to the developing world. Offsetting should therefore be firmly placed at the bottom of the hierarchy of actions—below avoiding and reducing our own emissions.

Marks & Spencer appears to be following this path. It recently announced its intention to become "carbon neutral" and has stated that it will be "using offsetting as a last resort, where there is no short or medium term prospect of green technology being developed."[57]

However, the voluntary market, though still small, is growing at a rapid rate and with this in mind we recognise that it could have a potential role to play in contributing to real reductions of greenhouse gas emissions, and sending a clear price signal to energy markets that provides a real benefit to clean energy technologies. Currently the market is entirely unregulated though which has lead to serious concerns that many offerings lack any credibility.

A Global Perspective

Currently the voluntary market is very small compared to the compliance market[58]. The World Bank estimated that less than 10 million tonnes of CO_2 were offset in 2005 and a recent report by ICF International estimated that the demand for offsets could reach 400 million tonnes a year by 2010[59]. As a rough comparison—in June 2006 the UN Climate Change Secretariat announced that the Clean Development Mechanism (CDM) projects in the pipeline would, if approved, deliver emissions reductions of more than 1billion tonnes CO_2 equivalent by 2012.

This estimate of rapid growth in the voluntary carbon market makes it of the utmost importance that best practice, which ensures environmental integrity, is embedded as soon as possible. An added imperative is if the United States and other non-Kyoto signatory countries such as Australia enter the carbon markets via the voluntary route which would lead to an even bigger demand[60].

Offset Projects

The concept of Additionality

In order to have any validity, emission reductions from carbon offset projects must be additional to what would have occurred under business as usual and in the absence of carbon finance. Additionality is key to the environmental integrity of offsets. However, a major concern of offset projects in both the compliance and voluntary markets is that developers have a clear interest in generating revenue from the sale of credits even if the project would have happened anyway.

Another concern is that an offset project is not additional if it takes place within a country which has taken on a greenhouse gas reduction target under the Kyoto Protocol. Any projects in these countries would merely contribute towards meeting the host government's reduction target and therefore any selling of the offset credits into the voluntary market would be a double counting of the emissions reduction. Projects in the UK for instance are therefore not additional.

Additionality is extremely difficult to translate into practice. The CDM Executive Board, which governs the compliance market, has developed a specific and relatively robust additionality tool in order to provide project developers with clearer guidance on how to deal with the additionality issue in a practical manner. However, it is under pressure from project developers to adopt a less robust or "more stream-lined" approach.

The voluntary market is unregulated and several project standards exist with varying interpretations of additionality—many of them weaker than the Executive Board's.

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[57] *"Marks & Spencer launches 'Plan A'—£200m 'eco plan'"* 15 January 2007, http://www2.marksandspencer.com/thecompany/mediacentre/pressreleases/2007/com2007-01-15-00.shtml

[58] This is the market for carbon that was created by the Kyoto Protocol. This allows countries which have taken on emission reduction targets to meet a proportion of that reduction by investing in emissions reduction projects in other countries.

[59] ICF International, 2006 *"Voluntary carbon offsets market: Outlook 2007"*.

[60] There are currently a number of state level carbon trading schemes in development eg in the United States the Regional Greenhouse Gas Initiative—a cap and trade scheme for the power sector is currently in development. This will allow the use of credits from carbon offset projects to contribute towards the achievement of emissions reduction targets.

Project standards

These include:

- compliance standards eg credits from CDM projects which can be sold by offset providers into the voluntary market;
- independent standards eg the Gold Standard which has been developed for both the compliance and the voluntary market; and
- standards developed by offset providers.

The Voluntary Carbon Standard (VCS)

A new standard is currently being developed by The Climate Group and IETA (International Emissions Trading Association). This appears to have been developed in order to establish a minimum standard in the voluntary carbon market which ensures additionality but does not set any qualitative criteria in terms of sustainable development benefits. However, there are a number of concerns with the second version of the standard (the consultation on which has recently closed) specifically over its additionality requirements which are completely inadequate. The standard also allows for the back-dating and sale of credits to 2000. Together these could result, if the standard is widely used, in a market flooded by lots of very cheap, non-additional credits.

For a more detailed analysis of the VCS please see our response to the consultation on the second version which is enclosed.

The Gold Standard

There is a legitimate concern that offsetting merely transfers the responsibility for tackling climate change from the north to the south. If offsetting is to deliver anything more positive than this then it is crucial that—as well as robust additionality criteria—project standards adopt robust sustainable development criteria.

The only offset project standard advocated by WWF is the Gold Standard—an independent, transparent, internationally recognised benchmark for "high quality" carbon offset projects. This follows a conservative interpretation of additionality (as established by the CDM Executive Board's additionality tool) and in addition prioritises sustainable development benefits. The Gold Standard is restricted to renewable energy and end use efficiency projects, unlike the CDM which is dominated by cheap industrial gas abatement and fuel switch projects which offer little or no wider sustainable development benefits. Currently there are 60 projects in the Gold Standard approval pipeline.

Offset Providers

In addition to concerns over offset project standards are concerns over the way that offset providers market their products and calculate emissions from a particular activity. For example, providers use inconsistent approaches to calculating emissions from a flight, including whether they take into account the non-CO_2 impacts of aviation and hence the multiplier which is used[61]. There appears to be a vast discrepancy amongst providers with regards to this. A recent article in Nature said ". . . Carbon Neutral Company calculates a return flight from London to Bangkok, Thailand, at 2.1 tonnes of CO_2 per passenger. . .. Swiss-based myclimate arrives at 3.6 tonnes. . .. and the German Atmosfair reckons 6.9 tonnes."[62]

We would encourage offset providers to market their products responsibly by presenting them as an additional action that the public, companies and government can take once they have done all they can to reduce their emissions directly. An assessment of the emissions from a particular activity, which takes into account the full climate impacts of that activity (based on the most up to date science), should also be made.

Corporate Responsibility

In an interview given to ENDS in 2005 about HSBC's decision to go "carbon neutral", the company's Chairman Sir John Bond said "The market for VERs (Verified Emissions Reductions) is nascent and unregulated . . . so the onus is firmly on us to ensure that the credits we purchase are credible—or we could literally find ourselves buying a lot of hot air."[63]

[61] The climate impacts of aviation are two to five times higher than the impact of CO_2 alone.

[62] Nature, 444, 976–977, 21 December 2006 *"Why change your lifestyle when you can pay a company to save your greenhouse-gas emissions for you?"*.

[63] ENDS report 369, October 2005, pp 24–26 *"HSBC: testing the waters for carbon neutrality"*.

A claim by a company that it, or its products, are "carbon neutral" and that this has been achieved in full or in part by the purchase of offsets from the voluntary market is the ultimate in green claims. Carbon offset finance is essentially project finance and no company should feel able to make anything approaching such a claim unless they have jumped through the most rigorous hoops on additionality and sustainability. Currently the only standard which ensures these criteria are met is the Gold Standard.

Additional Questions Raised in the Inquiry

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

It should be considered and we welcome the UK Government's efforts to standardise this market via a voluntary code of best practice on carbon offsetting. Please find enclosed our press release regarding this. As a global centre for the compliance carbon market the UK could also have an important role to play in influencing how the voluntary market develops.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

If this provides industry with excuses for not taking on mandatory emissions reductions targets or postpones the introduction of effective abatement policies then any positive environmental benefit from mandatory offsetting would likely be negated.

In addition, the manner in which these products are marketed to consumers is also key to how they are perceived. For example BP's "targetneutral" initiative (www.targetneutral.com) states:

> "We all contribute to CO_2 emissions when we drive. We can all do something about it. It's simple and doesn't cost the earth. On average it's just £20 a year."

Such statements are completely misleading as they imply that it is fine to continue with "business as usual" activities as long as you purchase offsets. As previously stated offsetting should be firmly placed at the bottom of the hierarchy of actions—below avoiding and reducing our own emissions first and foremost.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

No—as it's a voluntary market with no single project or product standard it's hard to compare schemes and make informed choices. Offset providers provide varying amounts of information about the projects they fund; the certification process, if any, that projects have gone through; how the emissions from a particular activity are calculated and what multiplier has been used in the case of flying.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area to accurately assess overall long-term carbon gains and losses from such projects?

> Please see WWF's position statement on carbon offsetting, enclosed with this submission, for specific views on reforestation projects.

It is also perhaps worth noting that in the compliance market only one forestry project has so far been registered under the Clean Development Mechanism. Also, the first phase of the EU Emissions Trading Scheme (EU ETS) excludes the purchase of credits from sink projects for compliance purposes.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

Offset providers often make this claim but we have yet to see any strong evidence and so we remain sceptical. If a product is marketed as a "get of jail free card" (for example see the "targetneutral" initiative mentioned previously) then, in our opinion, it is unlikely to change the behaviour of the customer.

To what extent are the schemes and projects funded by offset companies broadly sustainable, in an environmental, social or economic sense?

WWF consider that the only standard on the market which ensures that projects comply with robust additionality requirements and make a positive contribution towards sustainable development is the Gold Standard.

January 2007

Memorandum submitted by www.thecarbonline.co.uk

About www.thecarbonline.co.uk

www.thecarbonline.co.uk exists to cut carbon emissions & to support business and individuals to reduce carbon emissions. We help business and individuals offset their remaining emissions & boost clean energy production and efficient energy use. We utilise offsets by installing energy efficiency measures and renewable energy systems on UK primary schools. This helps to reduce running costs of UK schools, ensuring more money can be spent on books rather than electricity costs and cuts carbon emissions from schools. Schools in the UK generate 15% of carbon emissions in the public sector. We therefore educate the next generation to be more efficient in using energy, and to use energy generated from clean sources. Our organisation is relevant to the Committees Inquiry as we strongly argue that technology can be used to cut carbon emissions in a verifiable way, whilst educating the public. Public concern over non technological offsets is genuine and the debate should focus on this.

Some Inquiry Issues

Ought there to be a compulsory UK or European accreditation scheme for carbon offset projects or companies? If so, how should this operate?

Yes, in terms of a UK scheme because most offset companies in the world are based in the UK and therefore we really should take ownership. They should be accredited because there is genuine public concern over the effectiveness of schemes, particularly verification of actual carbon saved. We at thecarbonline.co.uk only use verifiable technologies such as energy efficiency equipment like insulation, heating systems, lighting and new ICT; renewable energy technologies such as wind, micro water generation, solar such as solar water heating and photo voltaics and ground source heat pumps. Therefore we are fully verifiable and would stand up to such an accreditation scheme. This would also ensure that the "Arthur Daley offset schemes" (The Observer, 14.01.07) would be closed down and the public will have confidence that their offset actually offsets. Currently there are organisations which could verify technology for the purposes of accreditation.

Should offsetting become mandatory for some of the more carbon-intensive activities, such as flying?

Yes, and we should also consider household offsetting through an increase in the Energy Efficiency Commitment contributions. Households on low incomes could be exempt. This money could then be spent on bringing up current housing stock to a more energy efficient standard. Flying itself creates a difficulty in that the treasury has recently raised taxes to a similar amount to what an offset would cost.

Is there enough clarity within the offset market to allow customers to make informed choices based upon robust information about different schemes at different prices?

If there is an accreditation scheme available then customers could choose based on its robustness. Different prices occur because some projects are more expensive. We use expensive equipment, however we are verified and we also add value as we place our equipment on UK primary schools to educate the next generation about climate change. If we traded under such an accredited scheme we are confident that our customer base would increase, even though we may have a higher price than some in the market.

Many offset projects involve afforestation or reforestation. Is the science sufficiently coherent in this area accurately to assess overall long-term carbon (or other GHG) gains and losses from such projects?

We do not wish to be overly critical of organisations in the market; however we do not believe that forestry projects are sufficiently verifiable to guarantee offsets. This is why we have adopted a technological route which is easily verifiable and can stand up to intense scrutiny. We know exactly how much carbon we can save and so can be confident when dealing with customers that we are actually offsetting their carbon.

Is there sufficient data available to guarantee accurate amounts of carbon or other GHG mitigation in the sorts of schemes which offset projects finance?

No, which is why www.thecarbonline.co.uk is unique in that we can verifiably guarantee carbon emission savings. We have adopted this approach spefically because we were unhappy with some organisations in the market making wild claims and ultimately shattering confidence in carbon offsetting. We are delighted that the committee have taken this approach.

What evidence is there to show that offsetting helps to change the carbon behaviour of the customer?

The simple fact that a customer, in our case corporate or individual, has even considered offsetting suggests a level of concern which may not be apparent in others. Therefore we welcome this concern. To take it to the next level however, we at thecarbonline.co.uk offer advice on cutting emissions and lowering energy consumption. This holistic approach has to be the way forward. The question is what about the other 59.5 million citizens who haven't considered offsetting? We believe that educating the next generation is the most important thing we can do, which is why we provide equipment in schools, supplemented with curriculum materials that teachers relate to in their lessons.

To what extent are the schemes and projects funded by offset companies more broadly sustainable, in an environmental, social or economic sense?

At www.thecarbonline.co.uk we only source UK equipment so that we promote UK jobs and the growing renewable energy manufacturing industry. We also act to cut back our own carbon footprint. We use locally sourced materials where appropriate. For example, at a project in Yorkshire, we are to use local sheep wool to insulate school buildings. This helps sustain the farming community locally at the same time as reducing carbon emissions from the school.

Conclusion

We are absolutely delighted that the Committee have launched this inquiry. We would be happy to give verbal evidence to the Committee also as we feel we have much to offer Members.

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